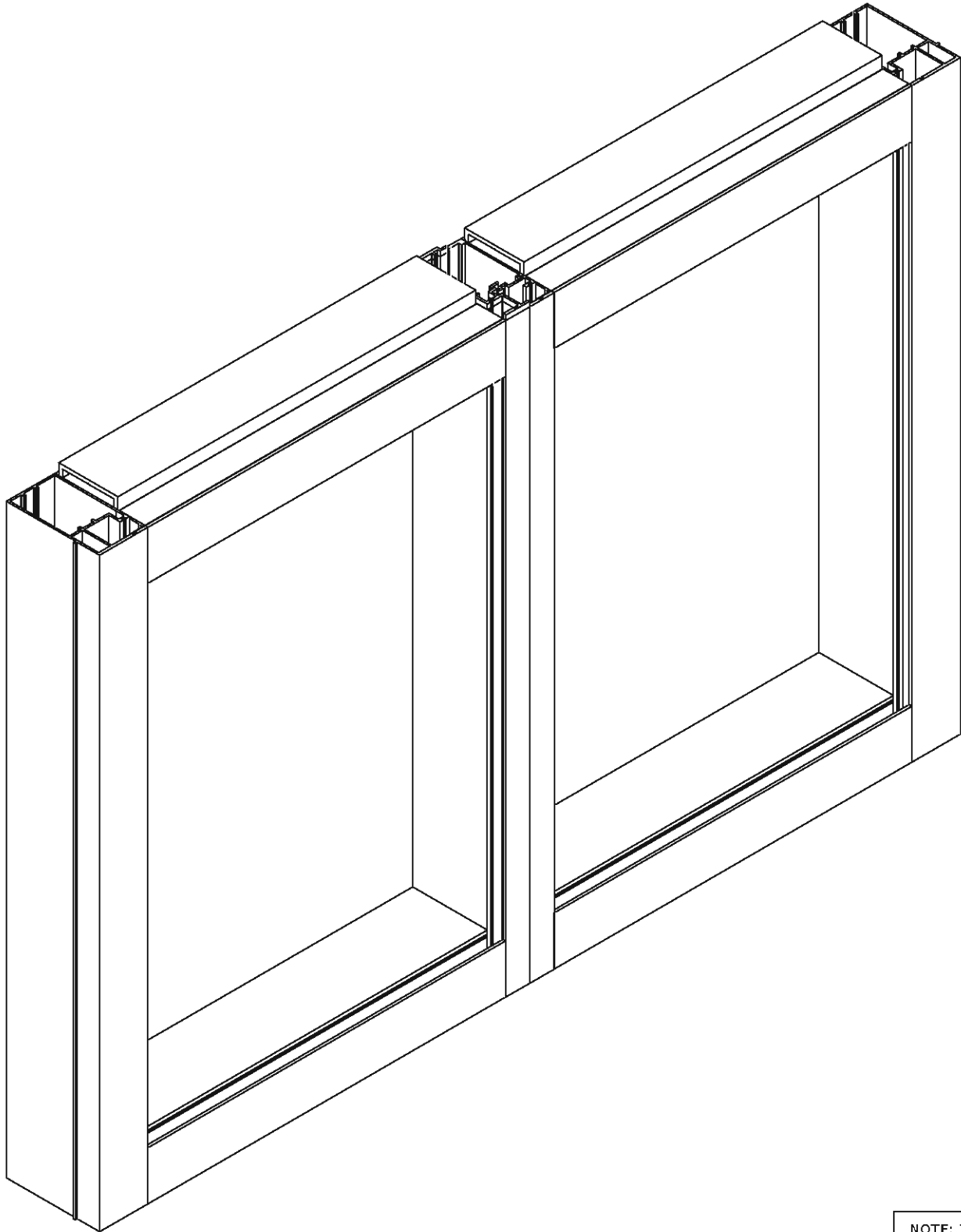


UNITED GLASS SYSTEMS
6000 SERIES ALUMINUM WINDOW WALL
SMALL MISSILE IMPACT (SMI)



NOTE: IMPACT PROTECTION PER FBC
REQUIRED ON INSTALLATIONS 30FT OR LESS

GENERAL NOTES:

- THIS SYSTEM DESCRIBED HEREIN HAS BEEN DESIGNED AND TESTED IN ACCORDANCE WITH THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) PER
a. ASTM E330-14, E331-00, E283-04, E1886-13a, E1996-14
b. TAS 201 / 202 / 203
c. AAMA 501
d. ANSI Z97.1-2015
- FOR USE WITHIN AND OUTSIDE THE HIGH VELOCITY HURRICANE ZONE (HVHZ). AS QUALIFIED IN TEST REPORTS H0561.01-450-18 BY ARCHITECTURAL TESTING, INC.
- DESIGN PRESSURES NOTED HEREIN ARE BASED ON MAXIMUM TESTED PRESSURES DIVIDED BY A 1.5 SAFETY FACTOR.
- UNITS GLAZED WITH 1/2" LAMINATED GLASS (HEAT STRENGTHENED) ARE SMALL MISSILE IMPACT RESISTANT AND DO NOT REQUIRE IMPACT RESISTANT SHUTTERS.
- NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM. WIND LOAD DURATION FACTOR $C_d=1.6$ HAS BEEN USED FOR WOOD ANCHOR DESIGN.
- THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR. WOOD BUCKS (BY OTHERS) SHALL BE ANCHORED PROPERLY TO TRANSFER LOADS TO THE EXISTING STRUCTURE.
- THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
- GLAZING ILLUSTRATED HEREIN UTILIZES SENTRYGLAS INTERLAYER BY KURARAY AMERICA, INC. (NOA# 14-0916.11)
- THE CONTRACTOR IS RESPONSIBLE TO INSULATE ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
- ALL FASTENERS INTO METAL SUBSTRATE TO BE 1/4" Ø DEWALT DRILL-FLEX UNLESS NOTED OTHERWISE. ALL THRU-BOLTS AT INTERMEDIATE VERTICAL MULLIONS TO BE 1/4" DIA THRU-BOLTS WITH FENDER WASHERS AND NUT AS SHOWN HEREIN. FASTENERS SHALL BE CADMIUM-PLATED OR OTHERWISE CORROSION-RESISTANT MATERIAL AND SHALL COMPLY WITH "SPECIFICATIONS FOR ALUMINUM STRUCTURES" SECTION J.3.7.2 BY THE ALUMINUM ASSOCIATION, INC., & ANY APPLICABLE FEDERAL, STATE, AND/OR LOCAL CODES
- ENGINEER SEAL AFFIXED HERE TO VALIDATE STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
- EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATION OR AFFIRMATIONS ARE INTENDED.
- ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.
- SAFEGUARDS MUST BE OBSERVED (NOT IN THIS CERTIFICATION)
- PRODUCT SHALL BE PERMANENTLY LABELED WITH A MINIMUM OF ONE LABEL PER SYSTEM CONTAINING THE FOLLOWING:
UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH, FLORIDA 33442
TAS 201/202/203
APPROVED BY FLORIDA BUILDING COMMISSION
FLORIDA PRODUCT APPROVAL NUMBER FL# 22982.2

SHEET INDEX

# SHEET	DESCRIPTION
1	COVER SHEET
2	ELEVATIONS
3-7	DETAILS
8	LOADING TABLES & GLASS TYPES
9-14	MULLION LOADING TABLES
15-20	ANCHOR LOADING TABLES
21	EXTRUSIONS
22	PART LIST
22	TOTAL

VISIT [ECALC.IO/29331](https://ecalculator.com/29331)

FOR SITE SPECIFIC DEVIATIONS
& MORE INFORMATION ABOUT THIS DOCUMENT
OR SCAN THIS QR CODE

VISIT [ENGINEERINGEXPRESS.COM/STORE](https://engineeringexpress.com/store)
FOR ADDITIONAL PLANS, REPORTS & RESOURCES



Digitally signed by
Frank Bennardo
Date: 2020.10.15
14:42:48 -04'00'

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS®
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	JPOS	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

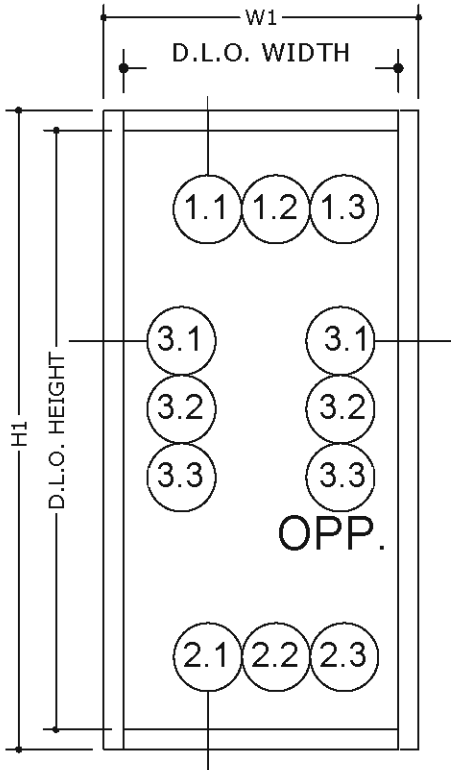
10/14/2020 - 10:29am Francisco C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

INSTRUCTIONS TO DETERMINE
DESIGN PRESSURE RATING

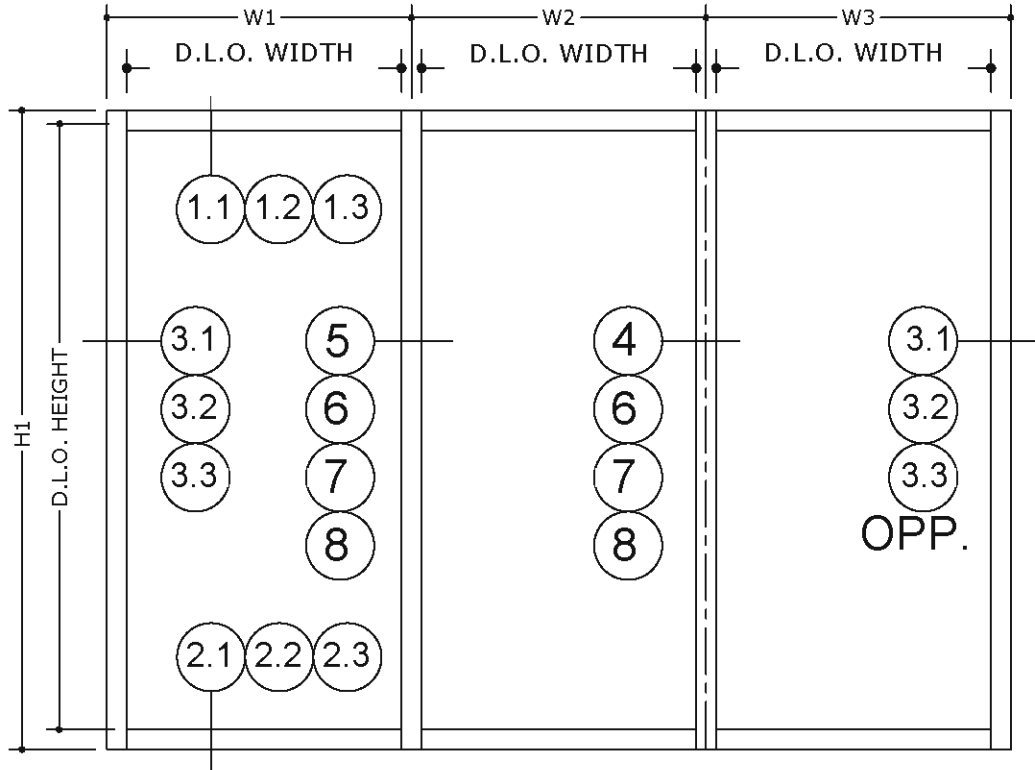
STEP 1: USE THE GLASS LOADING TABLES TO
DETERMINE THE ALLOWABLE PRESSURE OF THE
GLASS.

STEP 2: USE THE MULLION LOADING TABLE TO
DETERMINE THE ALLOWABLE PRESSURES FOR
THE MULLIONS.

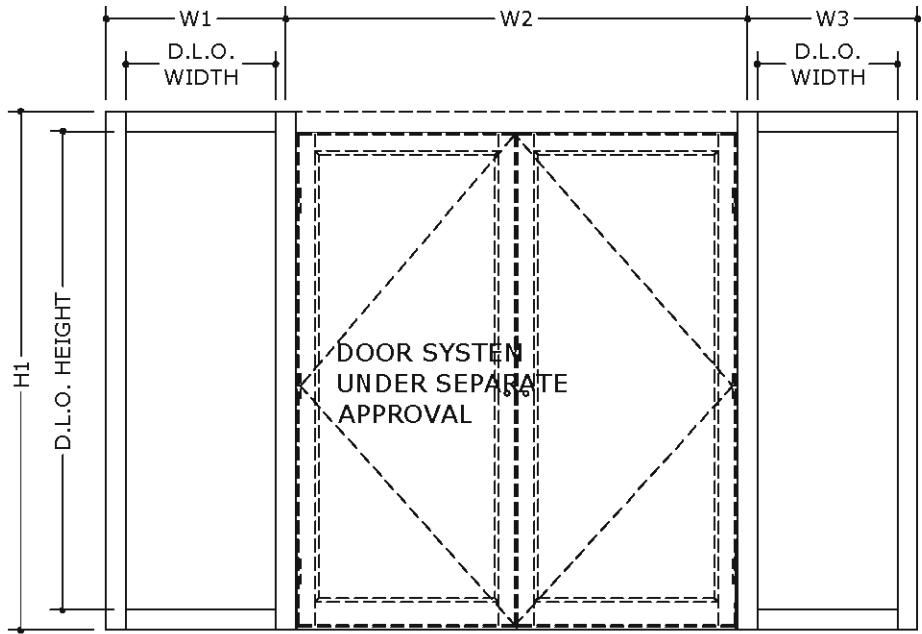
STEP 3: THE MINIMUM VALUE BETWEEN STEP 1
AND STEP 2 WILL DETERMINE THE DESIGN LOAD
PRESSURE FOR THIS SYSTEM.



MULLION TRIBUTARY WIDTH
 $W = W1$

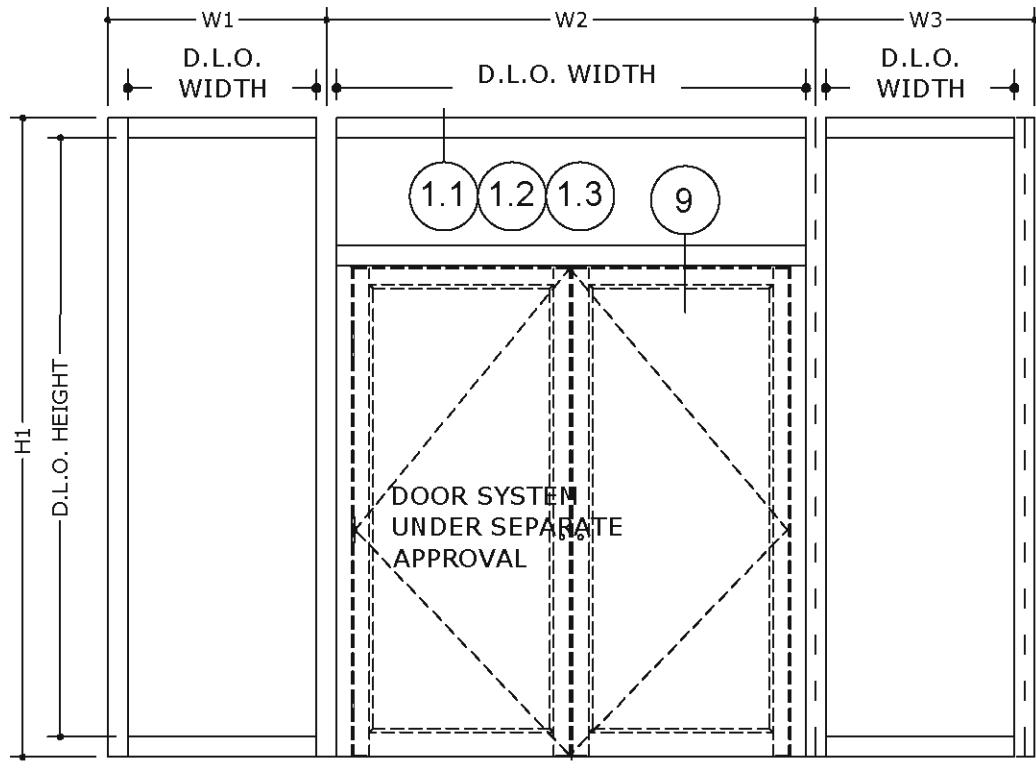


MULLION TRIBUTARY WIDTH
 $W = \frac{W1}{2} + \frac{W2}{2}$



MULLION TRIBUTARY WIDTH
FOR DOUBLE DOORS
 $W = \frac{W1}{2} + \frac{W2}{4}$

MULLION TRIBUTARY WIDTH
FOR SINGLE DOORS
 $W = \frac{W1}{2} + \frac{W2}{2}$



MULLION TRIBUTARY WIDTH
 $W = \frac{W1}{2} + \frac{W2}{2}$

DOUBLE OR
SINGLE DOOR

FRANK BENNARD, PE
PE# 0046549 CA# 9885



**ENGINEERING
EXPRESS**
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

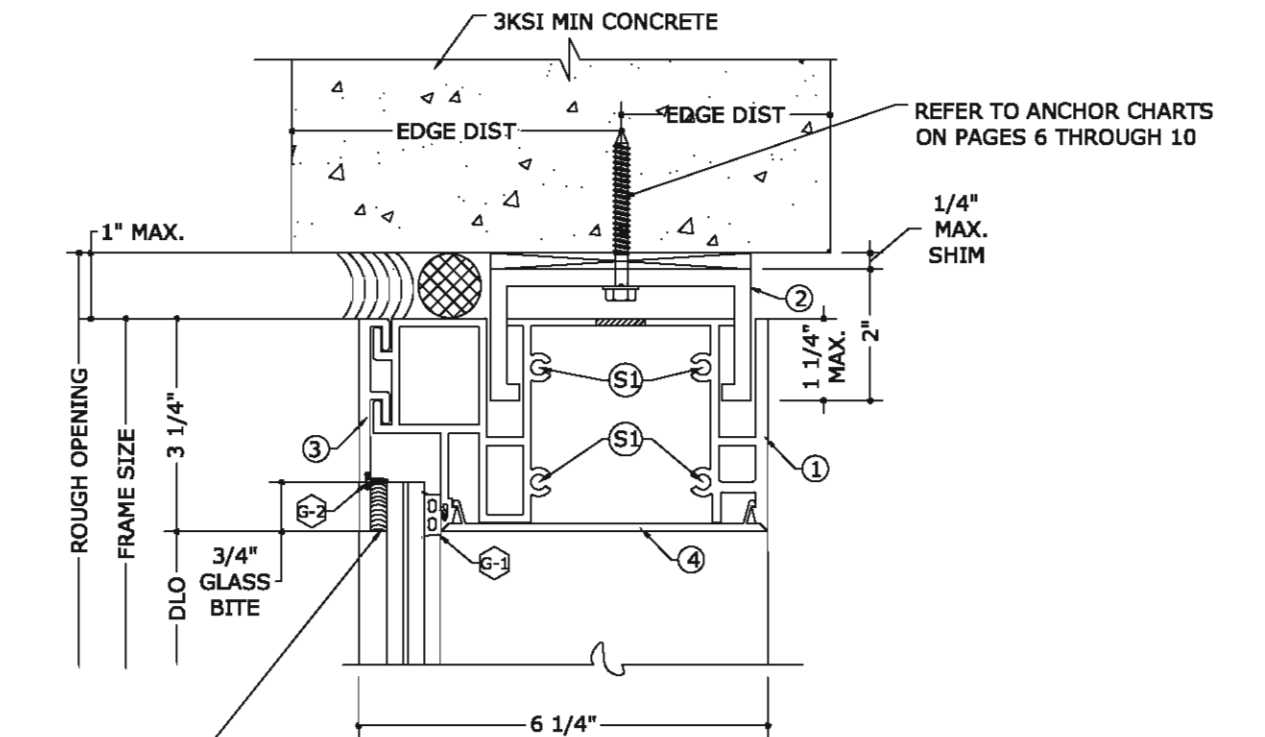
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT
WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS,
ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT
PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

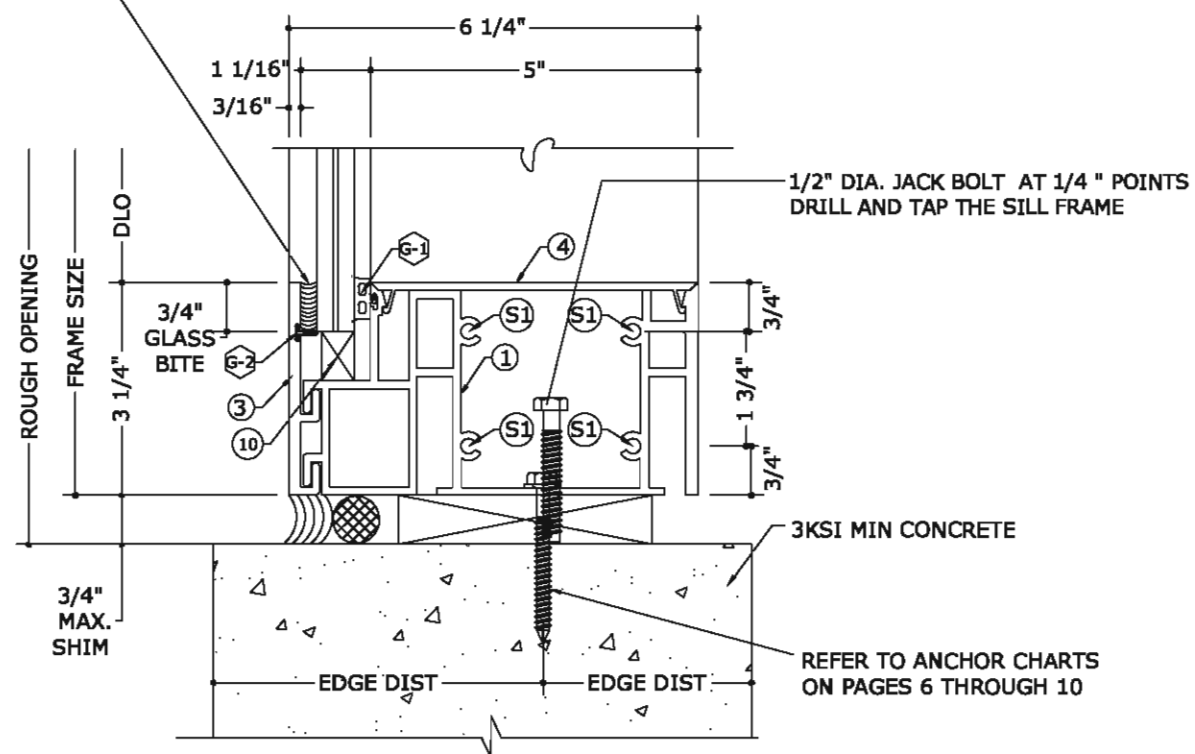
20-29331b

SCALE: NTS UNLESS NOTED

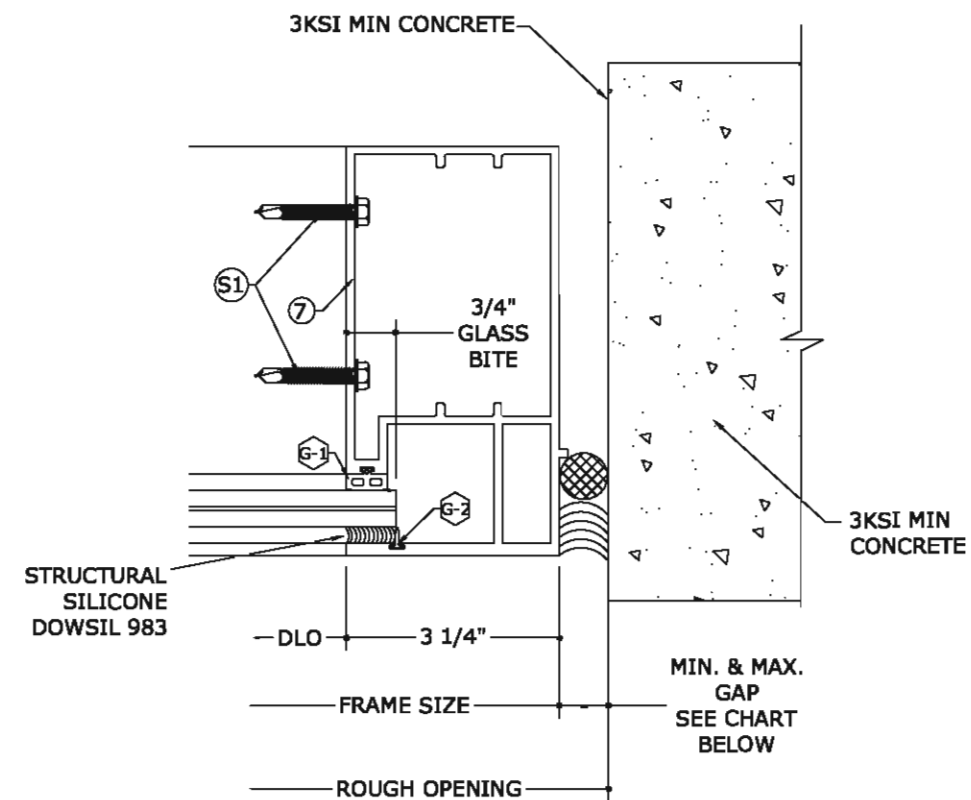
C:\Users\Francisco\Engineering\Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:29am



1.1 HEAD DETAIL (CONCRETE)
N.T.S



2.1 SILL DETAIL (CONCRETE)
N.T.S



3.1 JAMB DETAIL (CONCRETE)
N.T.S

MAX. FRAME HEIGHT	GAP	
	MIN.	MAX.
UP TO 96"	1/4"	3/4"
UP TO 120"	3/8"	3/4"
UP TO 144"	7/16"	3/4"

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

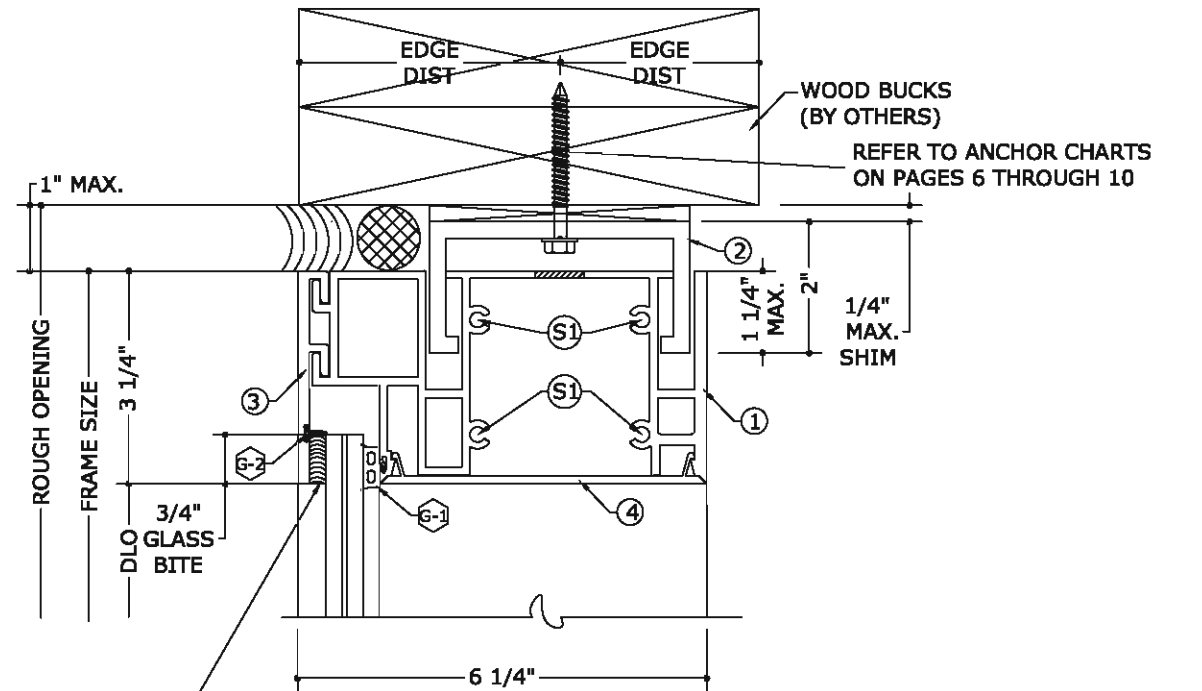
WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.			

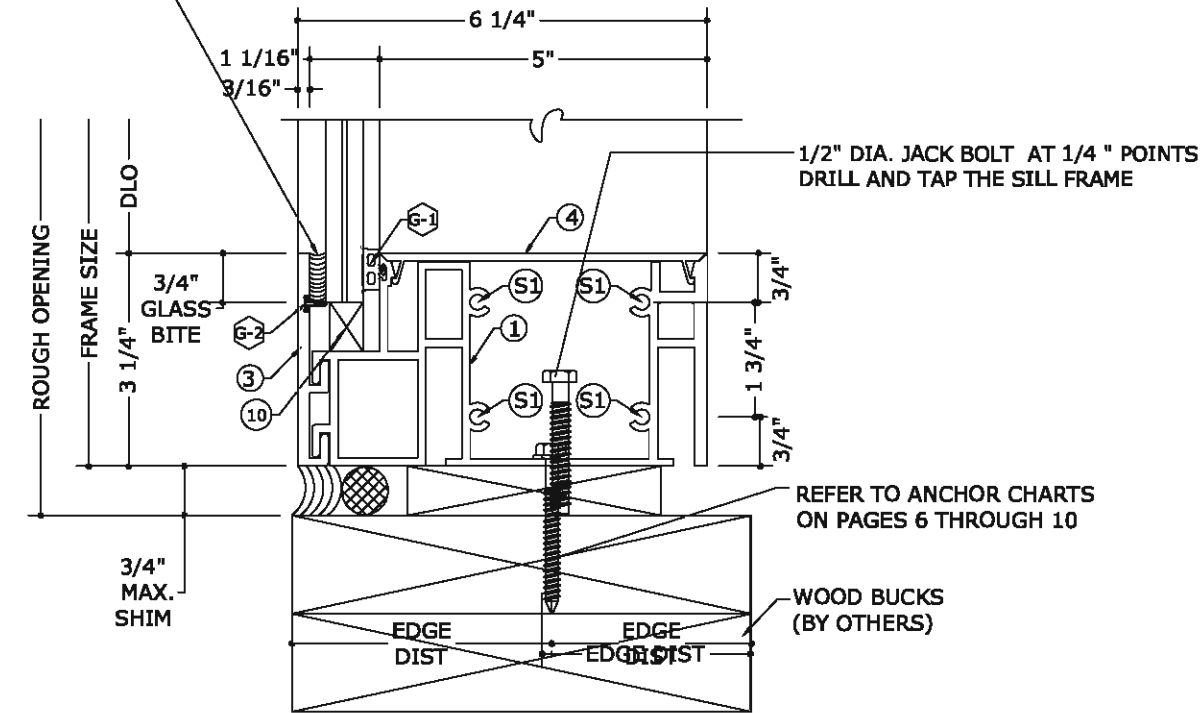
20-29331b

SCALE: NTS UNLESS NOTED

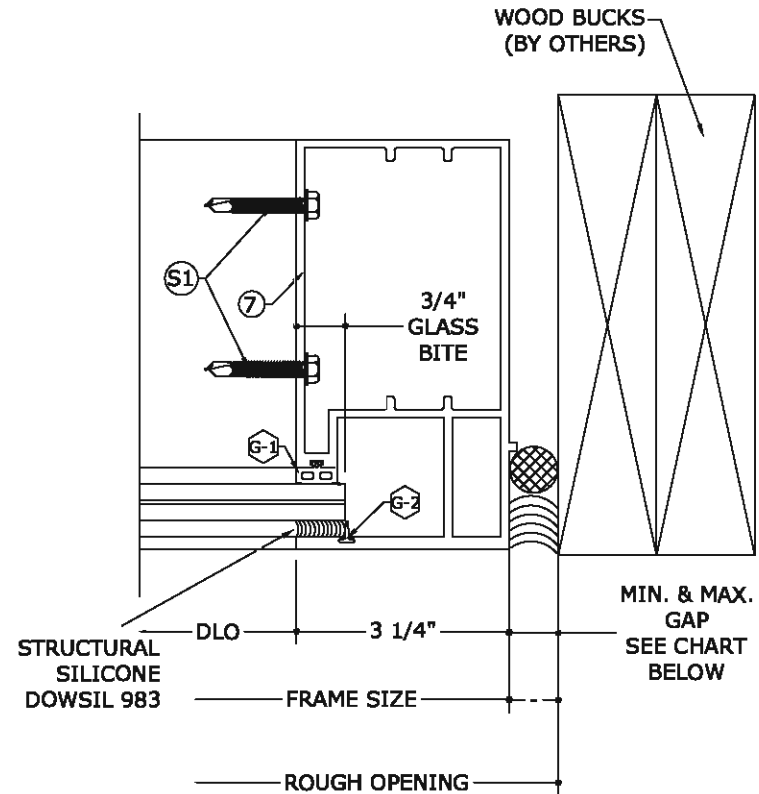
C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:29am



1.2 HEAD DETAIL (WOOD)
N.T.S



2.2 SILL DETAIL (WOOD)
N.T.S



3.2 JAMB DETAIL (WOOD)
N.T.S

MAX. FRAME HEIGHT	GAP	
	MIN.	MAX.
UP TO 96"	1/4"	3/4 "
UP TO 120"	3/8"	3/4 "
UP TO 144"	7/16"	3/4 "

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

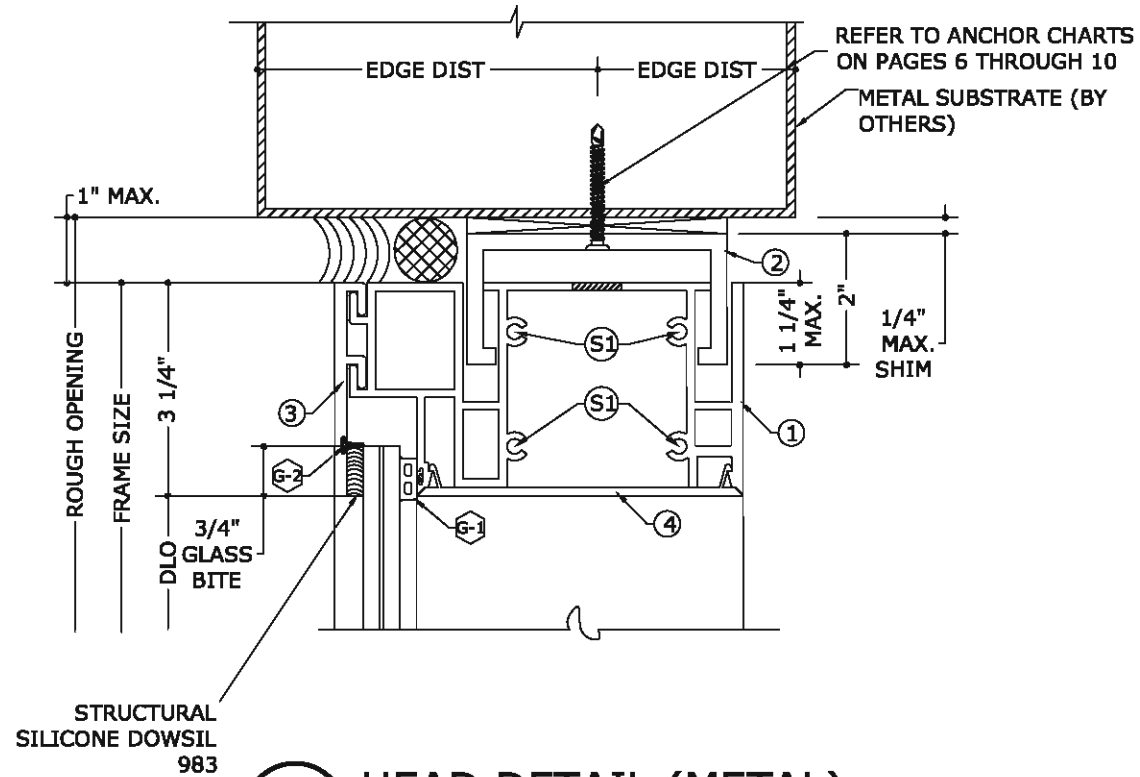
REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.			

COPYRIGHT ENGINEERING EXPRESS®

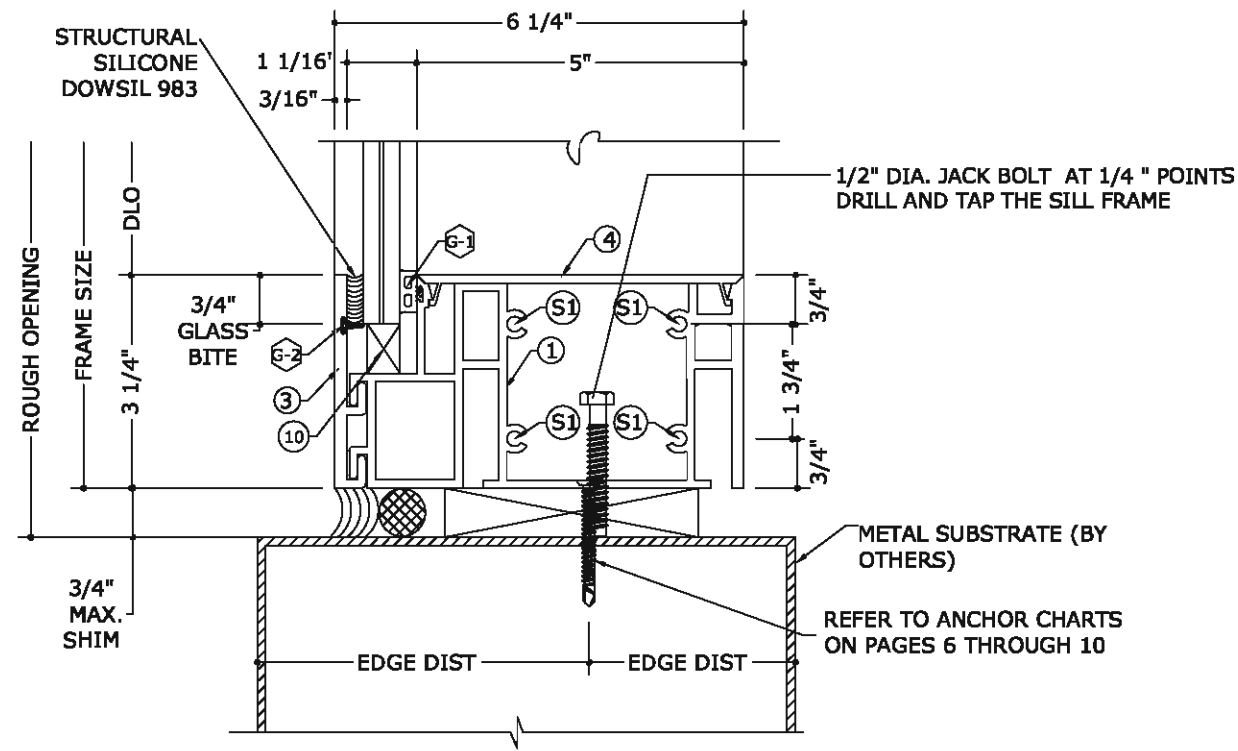
20-29331b

SCALE: NTS UNLESS NOTED

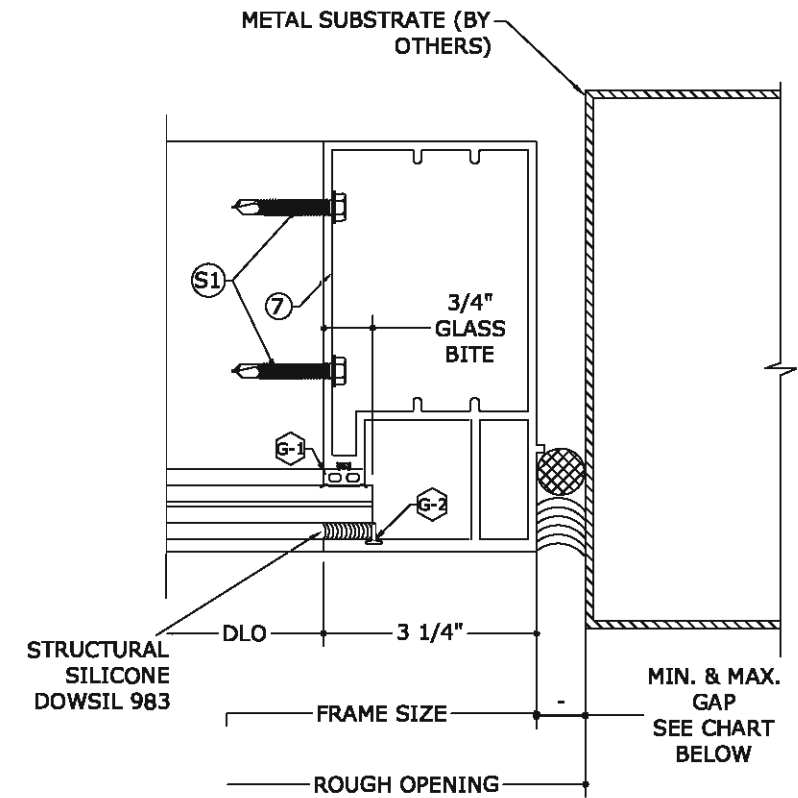
C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:29am



1.3 HEAD DETAIL (METAL)
N.T.S



2.3 SILL DETAIL (METAL)
N.T.S



3.3 JAMB DETAIL (METAL)
N.T.S

MAX. FRAME HEIGHT	GAP	
	MIN.	MAX.
UP TO 96"	1/4"	3/4"
UP TO 120"	3/8"	3/4"
UP TO 144"	7/16"	3/4"

FRANK BENNARD, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

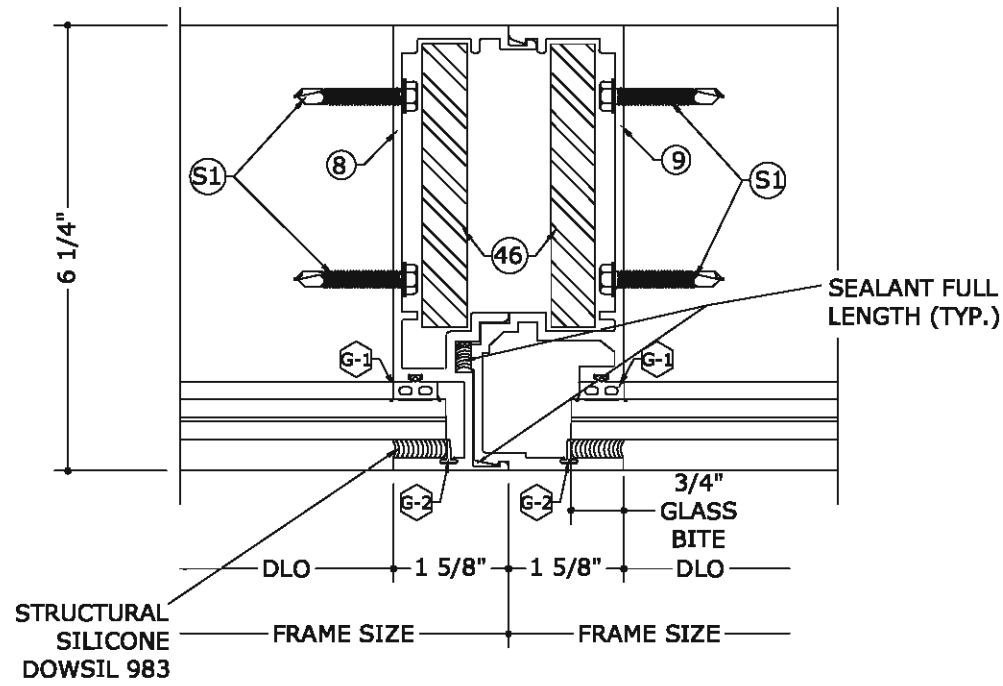
WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
	JPOSA	AJP	08/15/17
INT ISSUE	CCB	AJP	10/13/20
2020 FBC			
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.			

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

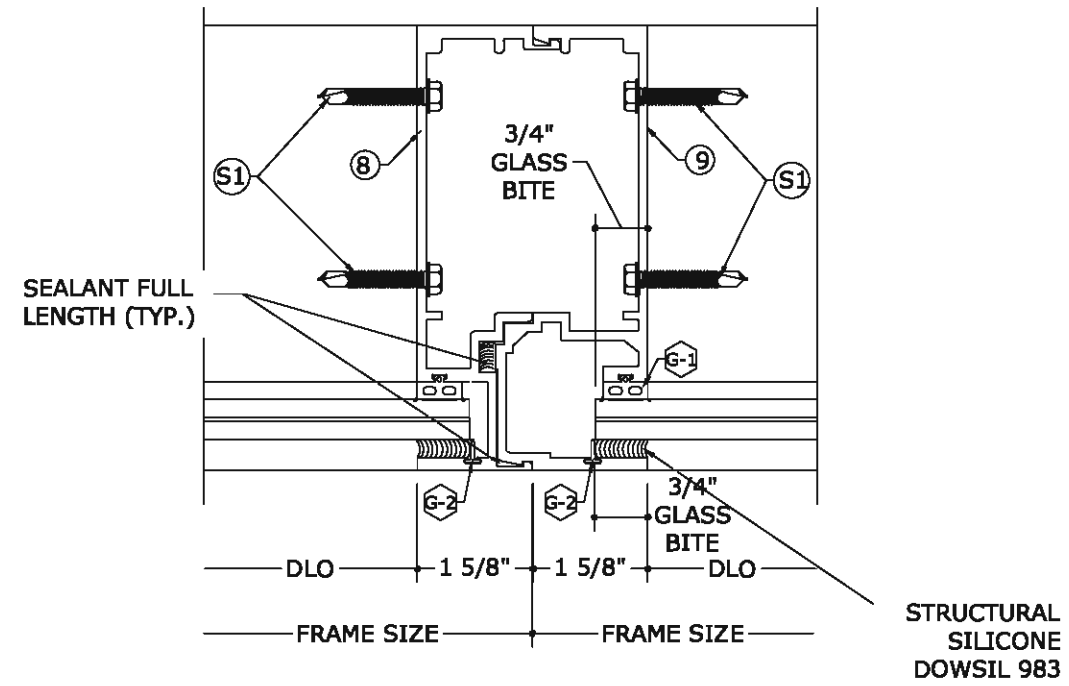
SCALE: NTS UNLESS NOTED



4 VERTICAL INTERMEDIATE DETAIL (REINFORCED)

4

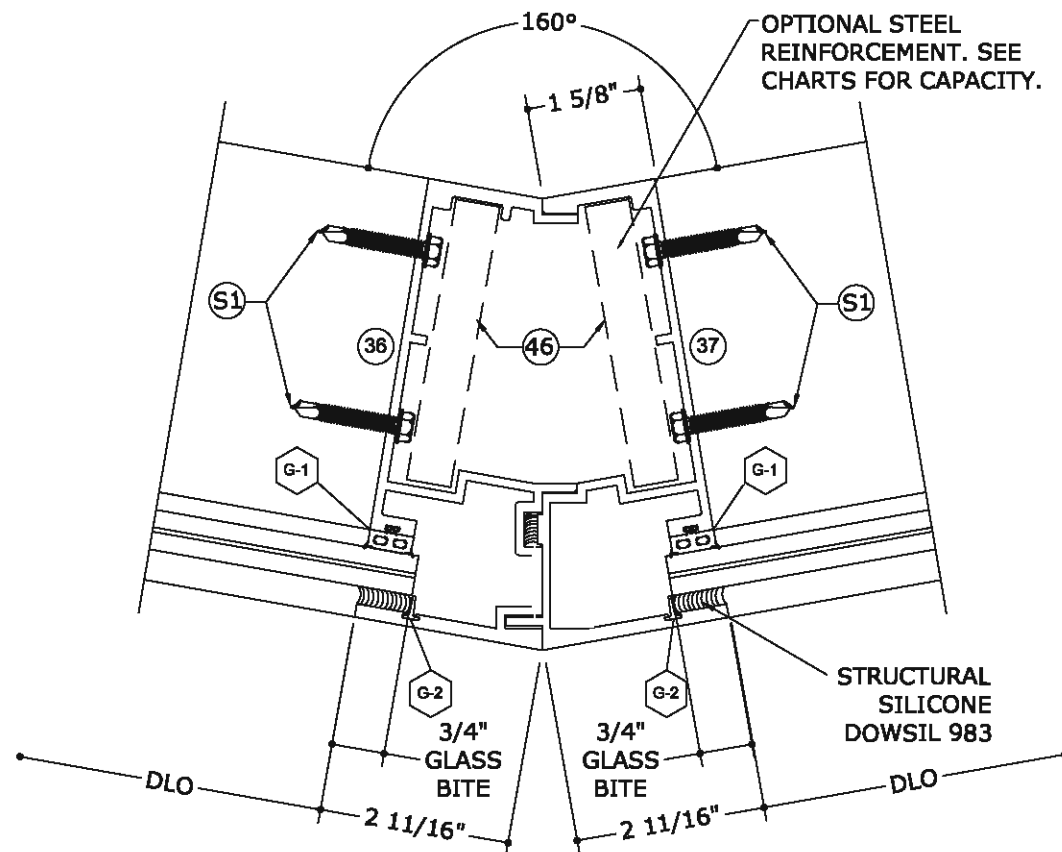
N.T.S



5 VERTICAL INTERMEDIATE DETAIL

5

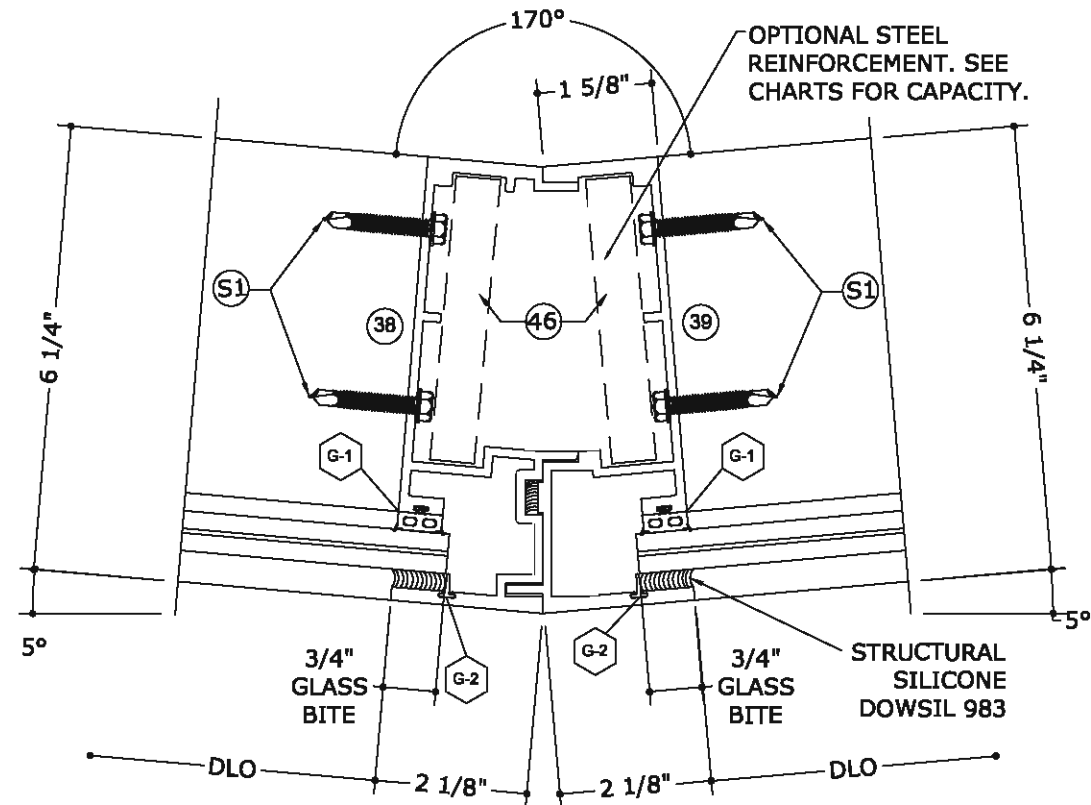
N.T.S



6 VERTICAL INTERMEDIATE DETAIL SEGMENTED 160 DEGREE MULLION

6

N.T.S



7 VERTICAL INTERMEDIATE DETAIL SEGMENTED 170 DEGREE MULLION

7

N.T.S

FRANK BENNARD, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

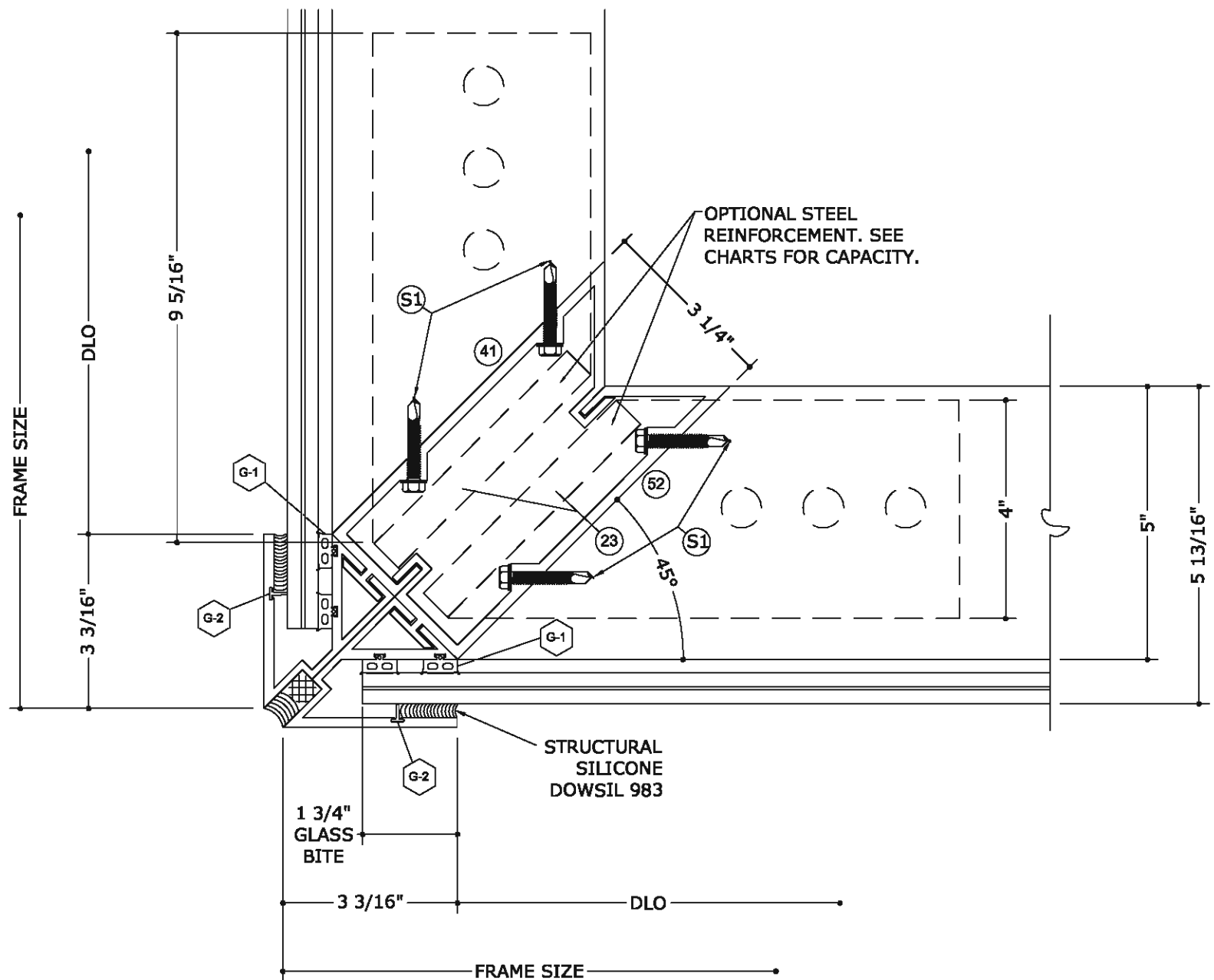
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

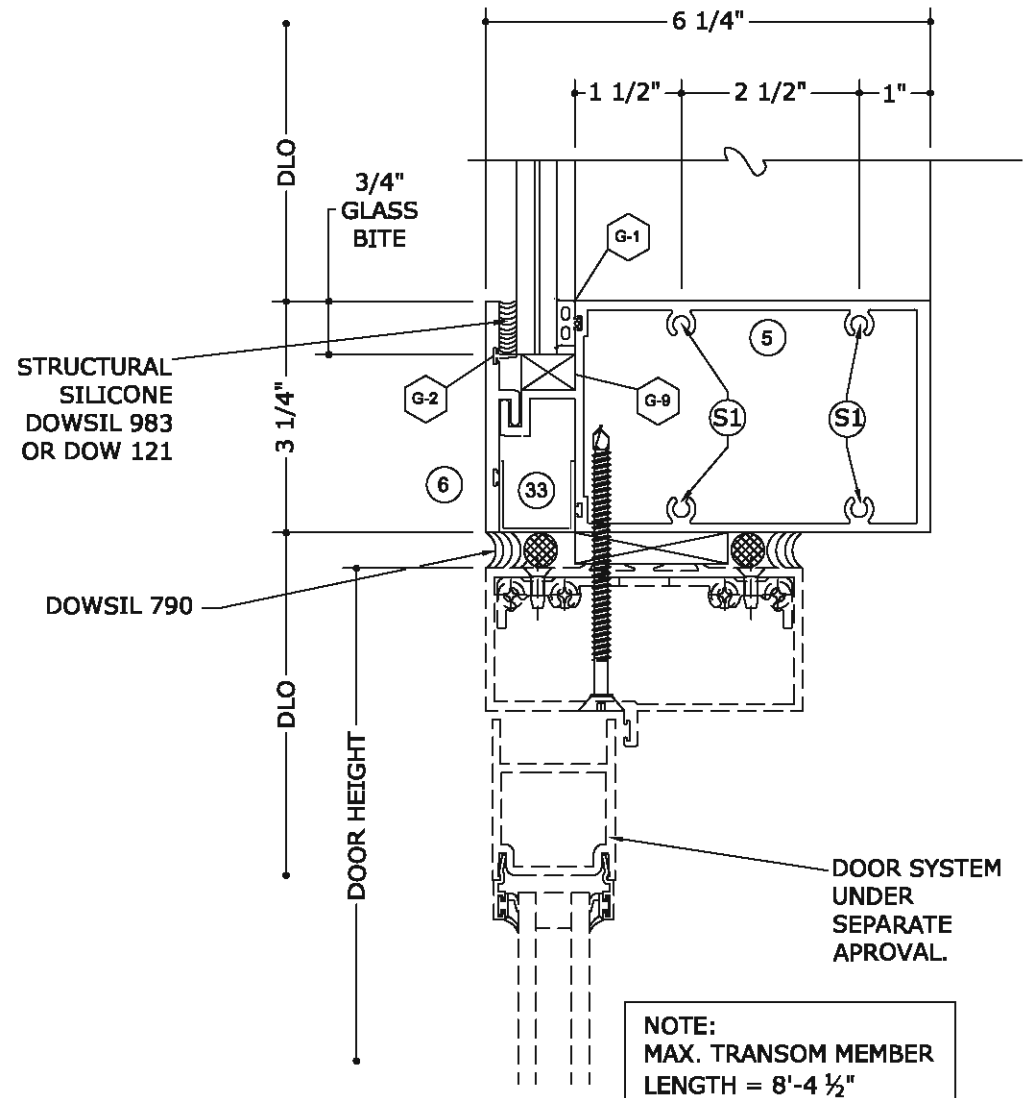
10/14/2020 - 10:29am Francisco C:\Users\Francisco\Engineering\Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg



8

VERTICAL INTERMEDIATE DETAIL SEGMENTED 90 DEGREE MULLION

N.T.S



9

HORIZONTAL DETAIL

N.T.S

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



 **ENGINEERING
EXPRESS**

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

20-29331b

SCALE: NTS UNLESS NOTED

7

22

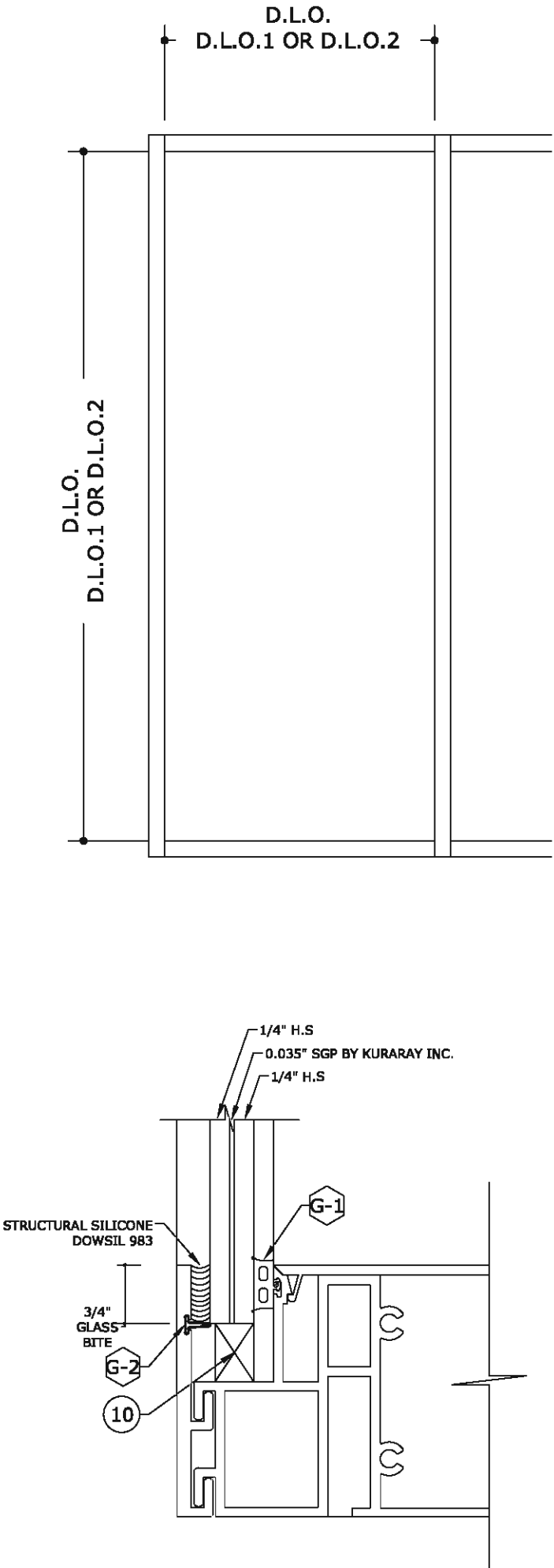
C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg 10/14/2020 - 10:30am Francisco

D.L.O. DIMENSIONS			
D.L.O. 1 (In)	D.L.O. 2 (In)	(+) P.S.F	(-) P.S.F
36	42	120	140
42		120	127
44.75		120	127
48		120	127
54		120	127
60		120	127
66		120	127
68.75		120	127
36	48	120	140
42		120	127
44.75		120	120
48		111	111
54		111	111
60		111	111
66		111	111
68.75		111	111
36	54	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		99	99
66		99	99
68.75		99	99
36	60	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		89	89
68.75		89	89
36	66	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		81	81

D.L.O. DIMENSIONS			
D.L.O. 1 (In)	D.L.O. 2 (In)	(+) P.S.F	(-) P.S.F
36	72	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		78	78
36	78	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		78	78
36	84	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		78	78
36	90	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		78	78
36	96	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60		89	89
66		81	81
68.75		78	78

NOTE:
GLASS CAPACITIES ON THIS SHEET ARE
BASED ON ASTM E1300-09 (3 SEC. GUSTS)

D.L.O. DIMENSIONS			
D.L.O. 1 (In)	D.L.O. 2 (In)	(+) P.S.F	(-) P.S.F
36	102	120	140
42		120	127
44.75		120	120
48		111	111
54		99	99
60	108	89	89
36		120	140
42		120	127
44.75		120	120
48		111	111
54	113.5	99	99
36		120	140
42		120	127
44.75		120	120
48		111	111
54	120	99	99
36		120	130
42		120	120
44.75		120	120
48		111	111
36	126	120	120
42		120	120
44.75		120	120
48		111	111
54	132	120	120
36		120	120
42		120	120
44.75		120	120
48		111	111
36	137.5	120	120
42		120	120
44.75		120	120
48		111	111
54		120	120
60		120	120
36		120	120
42		120	120
44.75		120	120
48		111	111



FRANK BENNARDO, PE
PE# 0046549 CA# 9885

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

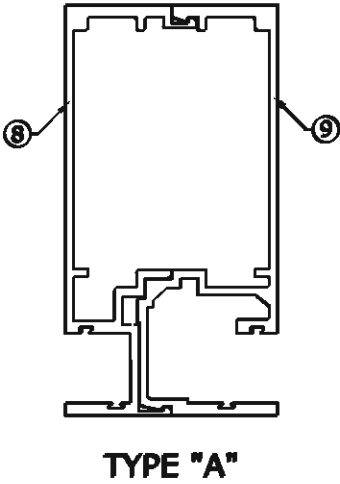
SCALE: NTS UNLESS NOTED

OF 22

10/14/2020 - 10:30am Francisco C:\Users\Francisco\Engineering\Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

INTERMEDIATE MULLION LOADING TABLE (NON REINFORCED) - TYPE A											
		NON REINFORCED				NON REINFORCED				NON REINFORCED	
WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F
36	42	120	140	36	60	120	140	36	84	120	140
42		120	140	42		120	140	42		120	140
48		120	140	48		120	140	48		120	140
54		120	140	54		120	140	54		120	140
60		120	140	60		120	140	60		120	140
66		120	140	66		120	140	66		120	140
72		120	140	72		120	140	36	90	120	140
78		120	140	78		120	140	42		120	140
84		120	140	84		120	140	48		120	140
90		120	140	90		120	140	54		120	140
96		120	140	96		120	140	60		120	140
102		120	140	36	66	120	140	36	96	120	140
108		120	140	42		120	140	42		120	140
114		120	140	48		120	140	48		120	140
120		120	140	54		120	140	54		120	140
126		120	140	60		120	140	60		120	139
132		120	140	66		120	140	36	102	120	140
36	48	120	140	72		120	140	42		120	140
42		120	140	78		120	140	48		120	140
48		120	140	84		120	140	54		120	136
54		120	140	36	72	120	140	36	108	120	140
60		120	140	42		120	140	42		120	140
66		120	140	48		120	140	48		120	137
72		120	140	54		120	140	36	114	120	140
78		120	140	60		120	140	42		120	140
84		120	140	66		120	140	48		120	128
90		120	140	72		120	140	36	120	120	140
96		120	140	78		120	140	42		120	132
102		120	140	36	78	120	140	48		120	120
108		120	140	42		120	140				
114		120	140	48		120	140				
120		120	140	54		120	140				
36	54	120	140	60		120	140				
42		120	140	66		120	140				
48		120	140	72		120	140				
54		120	140								
60		120	140								
66		120	140								
72		120	140								
78		120	140								
84		120	140								
90		120	140								
96		120	140								
102		120	140								

NON REINFORCED MULLIONS



FRANK BENNARDO, PE
PE# 0046549 CA# 9885





CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

20-29331b

SCALE: NTS UNLESS NOTED

OF 22



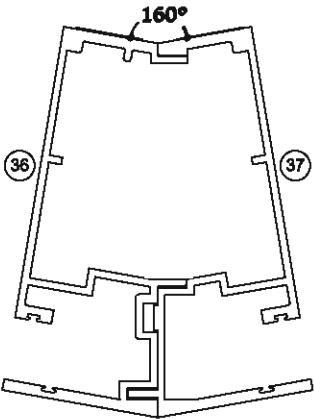
C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

Francisco

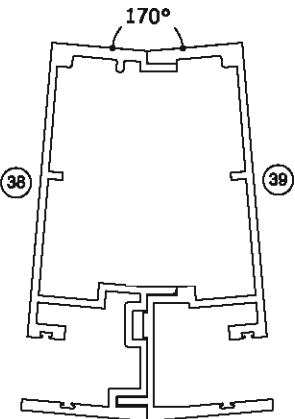
10/14/2020 - 10:30am

INTERMEDIATE MULLION LOADING TABLE (NON REINFORCED) - TYPE B, C & D															
		NON REINFORCED													
WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F
24	42	120	120	24	54	120	120	24	72	120	120	24	96	120	120
30		120	120	30		120	120	30		120	120	30		120	120
36		120	120	36		120	120	36		120	120	36		120	120
42		120	120	42		120	120	42		120	120	42		120	120
48		120	120	48		120	120	48		120	120	48		120	120
54		120	120	54		120	120	54		120	120	54		120	120
60		120	120	60		120	120	60		120	120	60		120	120
66		120	120	66		120	120	66		120	120	66		120	120
72		120	120	72		120	120	72		120	120	72		120	120
78		120	120	78		120	120	78		120	120	78		120	120
84		120	120	84		120	120	84		120	120	84		120	120
90		120	120	90		120	120	90		120	120	90		120	120
96		120	120	96		120	120	96		120	120	96		120	120
102		120	120	102		120	120	102		120	120	102		120	120
108		120	120	108		120	120	108		120	120	108		120	120
114		120	120	114		120	120	114		120	120	114		120	120
120		120	120	120		120	120	120		120	120	120		120	120
126		120	120	126		120	120	126		120	120	126		120	120
132		120	120	132		120	120	132		120	120	132		120	120
138	48	120	120	24	60	120	120	24	78	120	120	24	106	120	120
144		120	120	30		120	120	30		120	120	30		120	120
24		120	120	36		120	120	36		120	120	36		120	120
30		120	120	42		120	120	42		120	120	42		120	120
36		120	120	48		120	120	48		120	120	48		120	120
42		120	120	54		120	120	54		120	120	54		120	120
48		120	120	60		120	120	60		120	120	60		120	120
54		120	120	66		120	120	66		120	120	66		120	120
60		120	120	72		120	120	72		120	120	72		120	120
66		120	120	78		120	120	78		120	120	78		120	120
72		120	120	84		120	120	84		120	120	84		120	120
78		120	120	90		120	120	90		120	120	90		120	120
84		120	120	96		120	120	96		120	120	96		120	120
90		120	120	102		120	120	102		120	120	102		120	120
96		120	120	108		120	120	108		120	120	108		120	120
102		120	120	114		120	120	114		120	120	114		120	120
108		120	120	120		120	120	120		120	120	120		120	120
114	48	120	120	24	66	120	120	24	90	120	120	24	120	120	120
120		120	120	30		120	120	30		120	120	30		120	120
126		120	120	36		120	120	36		120	120	36		120	120
132		120	120	42		120	120	42		120	120	42		120	120
138		120	120	48		120	120	48		120	120	48		120	120
144		120	120	54		120	120	54		120	120	54		120	120
				60		120	120	60		120	120	60		120	120
				66		120	120	66		120	120	66		120	120
				72		120	120	72		120	120	72		120	120
				78		120	120	78		120	120	78		120	120
				84		120	120	84		120	120	84		120	120
				90		120	120	90		120	120	90		120	120
				96		120	120	96		120	120	96		120	120
				102		120	120	102		120	120	102		120	120
				106		120	120	106		120	120	106		120	120

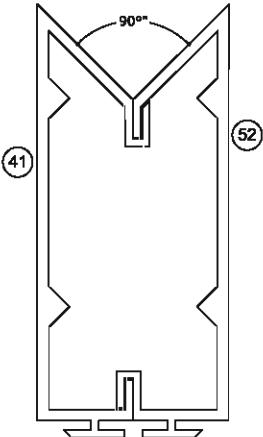
NON REINFORCED MULLIONS



TYPE "B"



TYPE "C"



TYPE "D"

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING
EXPRESS®

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2

6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

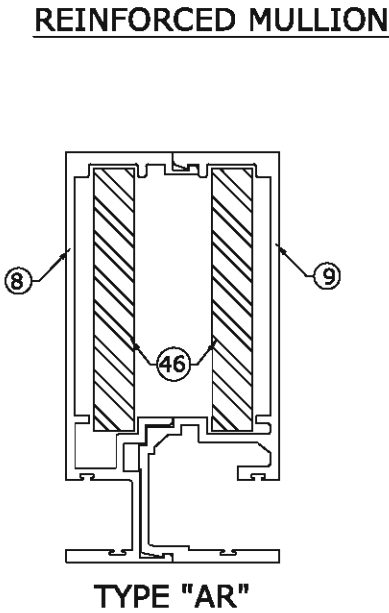
COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

10/14/2020 - 10:30am Francisco C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

INTERMEDIATE MULLION LOADING TABLE (REINFORCED) - TYPE AR											
		REINFORCED				REINFORCED				REINFORCED	
WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F
24	42	120	140	24	54	120	140	24	66	120	140
30		120	140	30		120	140	30		120	140
36		120	140	36		120	140	36		120	140
42		120	140	42		120	140	42		120	140
48		120	140	48		120	140	48		120	140
54		120	140	54		120	140	54		120	140
60		120	140	60		120	140	60		120	140
66		120	140	66		120	140	66		120	140
72		120	140	72		120	140	72		120	140
78		120	140	78		120	140	78		120	140
84		120	140	84		120	140	84		120	140
90		120	140	90		120	140	90		120	120
96		120	140	96		120	140	96		120	120
102		120	140	102		120	140	102		120	120
108	48	120	140	108	60	120	120	108	72	120	120
114		120	140	114		120	120	114		120	120
120		120	140	120		120	120	120		120	120
126		120	140	126		120	120	126		120	120
132		120	140	132		120	120	24		120	140
138		120	120	138		120	120	30		120	140
144		120	120	144		120	120	36		120	140
24		120	140	24		120	140	42		120	140
30		120	140	30		120	140	48		120	140
36		120	140	36		120	140	54		120	140
42		120	140	42		120	140	60		120	140
48		120	140	48		120	140	66		120	140
54		120	140	54		120	140	72		120	140
60		120	140	60		120	140	78		120	140
66		120	140	66		120	140	84		120	120
72		120	140	72		120	140	90		120	120
78		120	140	78		120	140	96		120	120
84		120	140	84		120	140	102		120	120
90		120	140	90		120	140	108		120	120
96		120	140	96		120	140	114		120	120
102		120	140	102		120	120	120		120	120
108		120	140	108		120	120				
114		120	140	114		120	120				
120		120	140	120		120	120				
126		120	120	126		120	120				
132		120	120	132		120	120				
138		120	120	138		120	120				
144		120	120	144		120	120				



FRANK BENNARDO, PE
PE# 0046549 CA# 9885

ENGINEERING
EXPRESS®
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

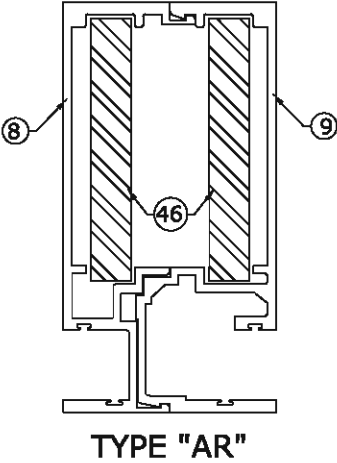
SCALE: NTS UNLESS NOTED

11

OF 22

INTERMEDIATE MULLION LOADING TABLE (REINFORCED) - TYPE AR											
		REINFORCED				REINFORCED				REINFORCED	
WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F
24	78	120	140	24	102	120	140	24	132	120	120
30		120	140	30		120	140	30		120	120
36		120	140	36		120	140	36		120	120
42		120	140	42		120	140	42		120	120
48		120	140	48		120	140	48		120	120
54		120	140	54		120	136	54		120	120
60		120	140	60		120	120	60		120	120
66		120	140	66		120	120	24	138	120	120
72		120	140	72		120	120	30		120	120
78		120	120	78		120	120	36		120	120
84		120	120	84		120	120	42		120	120
90		120	120	24	108	120	140	48		120	120
96		120	120	30		120	140	54	144	120	120
102		120	120	36		120	140	60		120	120
108		120	120	42		120	140	24		120	120
24	84	120	140	48		120	137	30		120	120
30		120	140	54		120	120	36		120	120
36		120	140	60		120	120	42		120	120
42		120	140	66		120	120	48		120	120
48		120	140	72		120	120	54		120	120
54		120	140	78		120	120	60		120	120
60		120	140	24	114	120	140	24	144	120	120
66		120	140	30		120	140	30		120	120
72		120	120	36		120	140	36		120	120
78		120	120	42		120	140	42		120	120
84		120	120	48		120	128	48		120	120
90		120	120	54		120	120	54		120	120
96		120	120	60		120	120	60	120	120	120
102		120	120	66		120	120	66		120	120
24	90	120	140	72		120	120	72		120	120
30		120	140	24	120	120	140	24	126	120	120
36		120	140	30		120	140	30		120	120
42		120	140	36		120	140	36		120	120
48		120	140	42		120	132	42		120	120
54		120	140	48		120	120	48		120	120
60		120	140	54		120	120	54		120	120
66		120	120	60		120	120	60		120	120
72		120	120	66		120	120	66	96	120	120
78		120	120	72		120	120	72		120	120
84		120	120	24		120	120	24		120	120
90		120	120	30		120	120	30		120	120
96		120	120	36		120	120	36		120	120
24	96	120	140	42		120	120	42		120	120
30		120	140	48		120	120	48		120	120
36		120	140	54		120	120	54		120	120
42		120	140	60		120	120	60		120	120
48		120	140	66		120	120	66		120	120
54		120	140	24	126	120	120	24	132	120	120
60		120	139	30		120	120	30		120	120
66		120	120	36		120	120	36		120	120
72		120	120	42		120	120	42		120	120
78		120	120	48		120	120	48		120	120
84		120	120	54		120	120	54		120	120
90		120	120	60		120	120	60		120	120

REINFORCED MULLION



FRANK BENNARDO, PE
PE# 0046549 CA# 9885

ENGINEERING
EXPRESS®
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

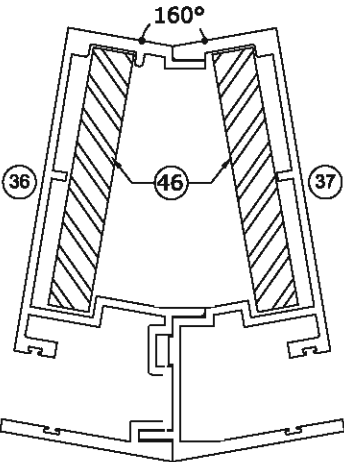
12

OF 22

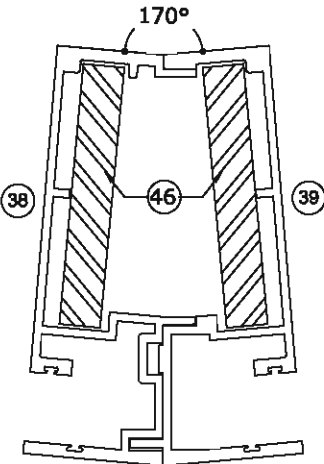
C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg 10/14/2020 - 10:30am Francisco

INTERMEDIATE MULLION LOADING TABLE (REINFORCED) - TYPE BR, CR & DR											
		REINFORCED				REINFORCED				REINFORCED	
WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F	WIDTH (In.)	HEIGHT (In.)	(+) P.S.F	(-) P.S.F
24	42	120	120	24	54	120	120	24	66	120	120
30		120	120	30		120	120	30		120	120
36		120	120	36		120	120	36		120	120
42		120	120	42		120	120	42		120	120
48		120	120	48		120	120	48		120	120
54		120	120	54		120	120	54		120	120
60		120	120	60		120	120	60		120	120
66		120	120	66		120	120	66		120	120
72		120	120	72		120	120	72		120	120
78		120	120	78		120	120	78		120	120
84		120	120	84		120	120	84		120	120
90		120	120	90		120	120	90		120	120
96		120	120	96		120	120	96		120	120
102		120	120	102		120	120	102		120	120
108	48	120	120	108	60	120	120	108	72	120	120
114		120	120	114		120	120	114		120	120
120		120	120	120		120	120	120		120	120
126		120	120	126		120	120	126		120	120
132		120	120	132		120	120	24		120	120
138		120	120	138		120	120	30		120	120
144		120	120	144		120	120	36		120	120
24		120	120	24		120	120	42		120	120
30		120	120	30		120	120	48		120	120
36		120	120	36		120	120	54		120	120
42		120	120	42		120	120	60		120	120
48		120	120	48		120	120	66		120	120
54		120	120	54		120	120	72		120	120
60		120	120	60		120	120	78		120	120
66		120	120	66		120	120	84		120	120
72		120	120	72		120	120	90		120	120
78		120	120	78		120	120	96		120	120
84		120	120	84		120	120	102		120	120
90		120	120	90		120	120	108		120	120
96		120	120	96		120	120	114		120	120
102		120	120	102		120	120	120		120	120
108		120	120	108		120	120				
114		120	120	114		120	120				
120		120	120	120		120	120				
126		120	120	126		120	120				
132		120	120	132		120	120				
138		120	120	138		120	120				
144		120	120	144		120	120				

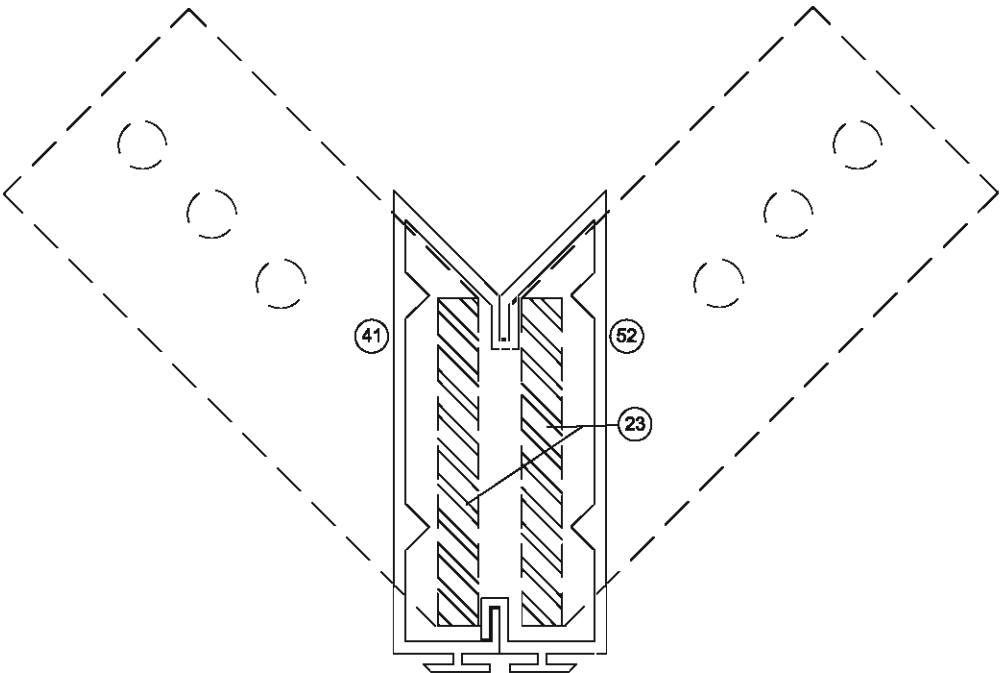
REINFORCED MULLIONS



TYPE "BR"



TYPE "CR"



TYPE "DR"

FRANK BENNARDO, PE
PE# 0046549 CA# 9885

ENGINEERING
EXPRESS®
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRAWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

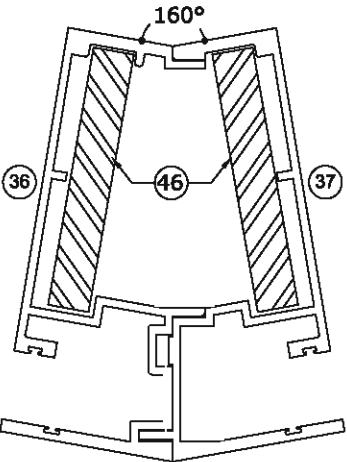
13

OF 22

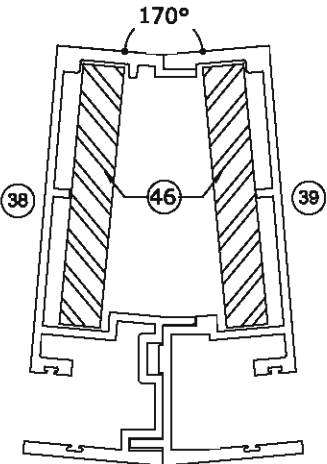
10/14/2020 - 10:30am Francisco C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

INTERMEDIATE MULLION LOADING TABLE (REINFORCED) - TYPE BR, CR & DR											
		REINFORCED				REINFORCED				REINFORCED	
WIDTH (In)	HEIGHT (In)	P.S.F	(-) P.S.F	WIDTH (In)	HEIGHT (In)	P.S.F	(-) P.S.F	WIDTH (In)	HEIGHT (In)	P.S.F	(-) P.S.F
24	78	120	120	24	102	120	120	24	126	120	120
30		120	120	30		120	120	30		120	120
36		120	120	36		120	120	36		120	120
42		120	120	42		120	120	42		120	120
48		120	120	48		120	120	48		120	120
54		120	120	54		120	120	54		120	120
60		120	120	60		120	120	60		120	120
66		120	120	66		120	120	66		120	120
72		120	120	72		120	120	24		120	120
78		120	120	78		120	120	30		120	120
84		120	120	84		120	120	36		120	120
90		120	120	24		120	120	42		120	120
96		120	120	30		120	120	48		120	120
102		120	120	36		120	120	54		120	120
108	84	120	120	42	108	120	120	60	132	120	120
24		120	120	48		120	120	24		120	120
30		120	120	54		120	120	30		120	120
36		120	120	60		120	120	36		120	120
42		120	120	66		120	120	42		120	120
48		120	120	72		120	120	48		120	120
54		120	120	78		120	120	54		120	120
60		120	120	24	114	120	120	60		120	120
66		120	120	30		120	120	24		120	120
72		120	120	36		120	120	30		120	120
78		120	120	42		120	120	36		120	120
84		120	120	48		120	120	42		120	120
90		120	120	54		120	120	48		120	120
96		120	120	60		120	120	54		120	120
102		120	120	66		120	120	60		120	120
24	90	120	120	72		120	120	24	144	120	120
30		120	120	24	120	120	120	30		120	120
36		120	120	30		120	120	36		120	120
42		120	120	36		120	120	42		120	120
48		120	120	42		120	120	48		120	120
54		120	120	48		120	120	54		120	120
60		120	120	54		120	120	60		120	120
66		120	120	60		120	120	24		120	120
72		120	120	66		120	120	30		120	120
78		120	120	72		120	120	36		120	120
84		120	120	24		120	120	42		120	120
90		120	120	30		120	120	48		120	120
96		120	120	36		120	120	54		120	120
24	96	120	120	42		120	120	60		120	120
30		120	120	48		120	120	24	126	120	120
36		120	120	54		120	120	30		120	120
42		120	120	60		120	120	36		120	120
48		120	120	66		120	120	42		120	120
54		120	120	72		120	120	48		120	120
60		120	120	24	102	120	120	54		120	120
66		120	120	30		120	120	60		120	120
72		120	120	36		120	120	24	132	120	120
78		120	120	42		120	120	30		120	120
84		120	120	48		120	120	36		120	120
90		120	120	54		120	120	42		120	120
96		120	120	60		120	120	48		120	120
24	102	120	120	66		120	120	54		120	120
30		120	120	72		120	120	60		120	120
36		120	120	24	114	120	120	24	138	120	120
42		120	120	30		120	120	30		120	120
48		120	120	36		120	120	36		120	120
54		120	120	42		120	120	42		120	120
60		120	120	48		120	120	48		120	120
66		120	120	54		120	120	54		120	120
72		120	120	60		120	120	60		120	120
78		120	120	66		120	120	24	144	120	120
84		120	120	72		120	120	30		120	120
90		120	120	24	120	120	120	36		120	120
96		120	120	30		120	120	42		120	120
24	108	120	120	36		120	120	48		120	120
30		120	120	42		120	120	54		120	120
36		120	120	48		120	120	60		120	120
42		120	120	54		120	120	24	126	120	120
48		120	120	60		120	120	30		120	120
54		120	120	66		120	120	36		120	120
60		120	120	72		120	120	42		120	120
66		120	120	24	102	120	120	48		120	120
72		120	120	30		120	120	54		120	120
78		120	120	36		120	120	60		120	120
84		120	120	42		120	120	24	132	120	120
90		120	120	48		120	120	30		120	120
96		120	120	54		120	120	36		120	120
24	114	120	120	60		120	120	42		120	120
30		120	120	66		120	120	48		120	120
36		120	120	72		120	120	54		120	120
42		120	120	24	108	120	120	60		120	120
48		120	120	30		120	120	24	126	120	120
54		120	120	36		120	120	30		120	120
60		120	120	42		120	120	36		120	120
66		120	120	48		120	120	42		120	120
72		120	120	54		120	120	48		120	120
78		120	120	60		120	120	54		120	120
84		120	120	66		120	120	60		120	120
90		120	120	72		120	120	24	132	120	120
96		120	120	24	114	120	120	30		120	120
24	120	120	120	30		120	120	36		120	120
30		120	120	36		120	120	42		120	120
36		120	120	42		120	120	48		120	120
42		120	120	48		120	120	54		120	120
48		120	120	54		120	120	60		120	120
54		120	120	60		120	120	24	138	120	120
60		120	120	66		120	120	30		120	120
66		120	120	72		120	120	36		120	120
72		120	120	24	102	120	120	42		120	120
78		120	120	30		120	120	48		120	120
84		120	120	36		120	120	54		120	120
90		120	120	42		120	120	60		120	120

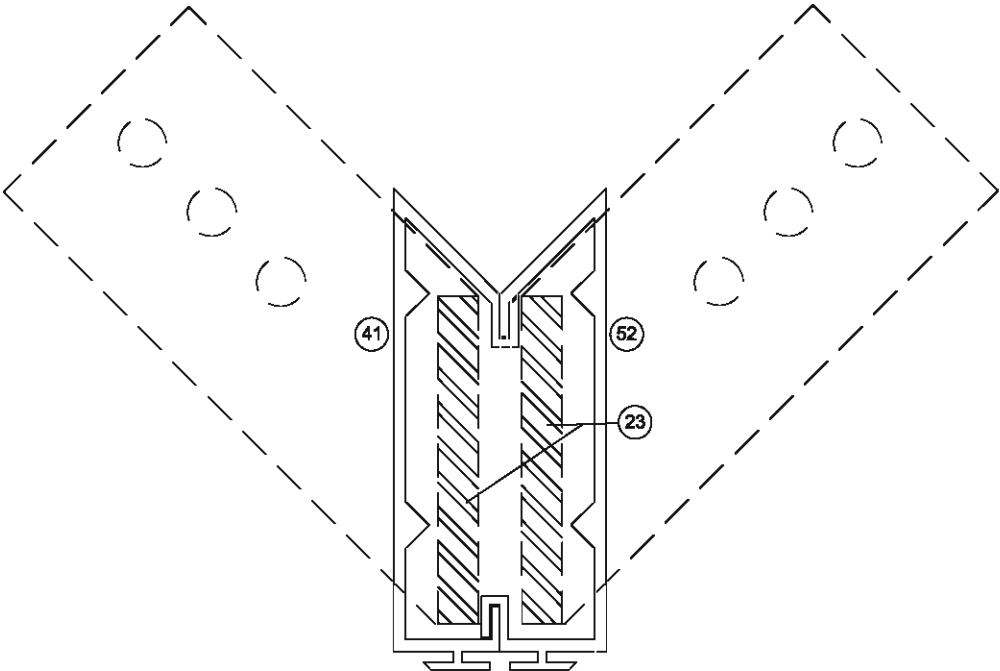
REINFORCED MULLIONS



TYPE "BR"



TYPE "CR"



TYPE "DR"

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

Francisco

10/14/2020 - 10:30am

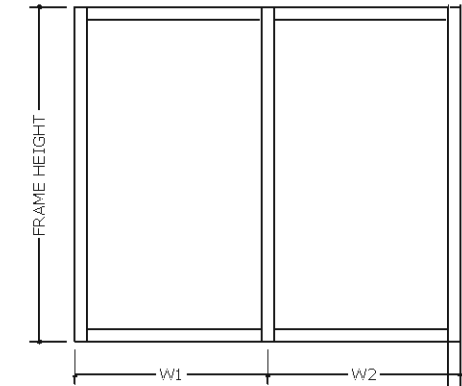
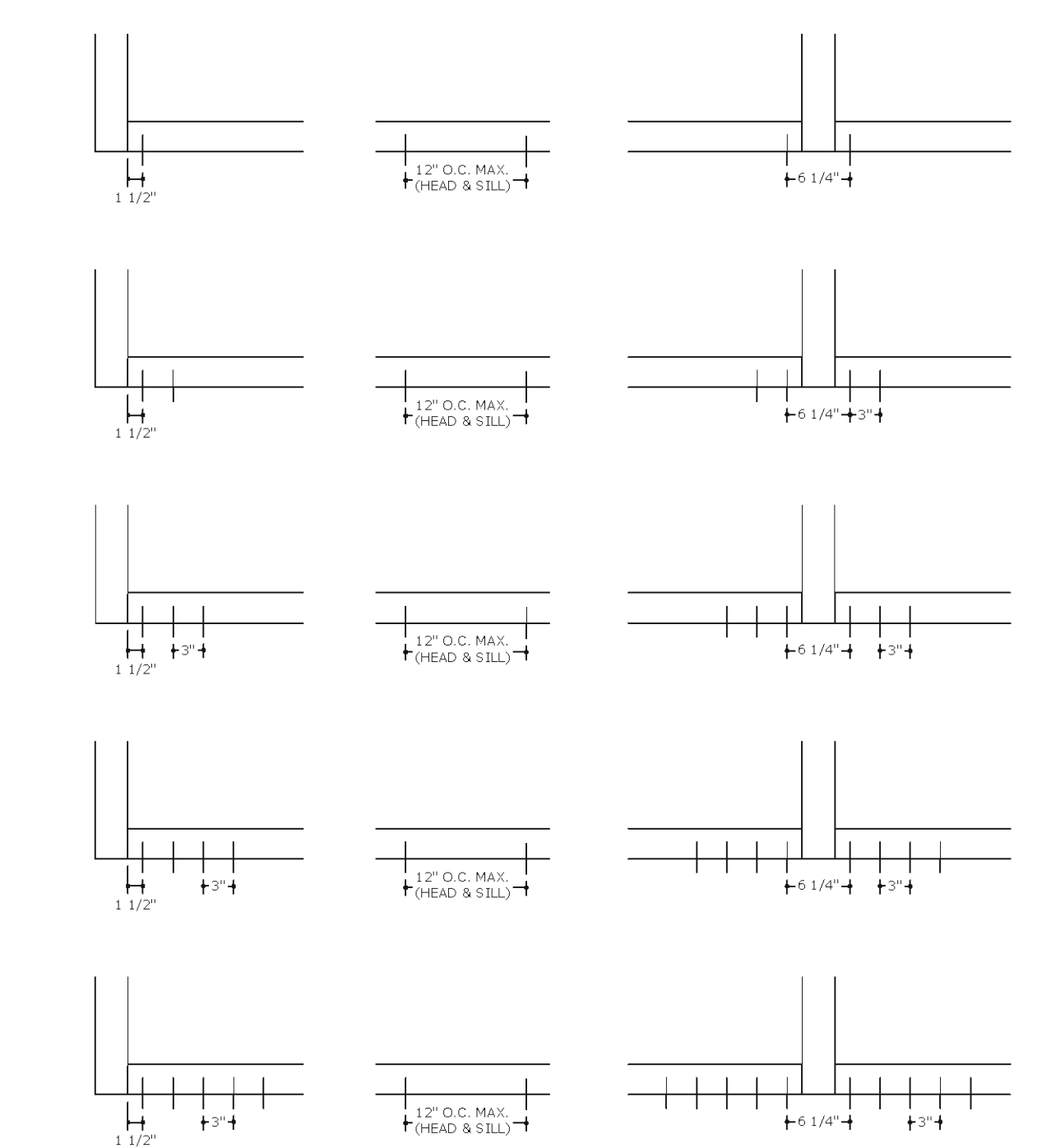
ANCHOR LOAD CAPACITY CHART 1/4" SHIM MAX - (CONDITION 1 AND CONDITION 2)

		TYPE A NUMBER OF ANCHORS AT THE CLUSTER					TYPE B NUMBER OF ANCHORS AT THE CLUSTER				TYPE C NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-					ALLOWABLE PRESSURE (PSF) +/-				ALLOWABLE PRESSURE (PSF) +/-				
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	2	4	6	8	2	4	6	8	10
48	48	101	140	140	140	140	111	140	140	140	116	140	140	140	140
	54	90	140	140	140	140	99	140	140	140	103	140	140	140	140
	60	81	140	140	140	140	89	140	140	140	92	140	140	140	140
	66	73	140	140	140	140	81	140	140	140	84	140	140	140	140
	72	67	135	140	140	140	74	140	140	140	77	135	140	140	140
	78	62	124	140	140	140	68	137	140	140	71	124	140	140	140
	84	58	115	140	140	140	64	127	140	140	66	115	140	140	140
	90	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	96	51	101	140	140	140	56	111	140	140	58	101	140	140	140
	102	48	95	140	140	140	52	105	140	140	54	95	140	140	140
	108	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	114	43	85	128	140	140	47	94	140	140	49	85	128	140	140
	120	40	81	121	140	140	45	89	134	140	46	81	121	140	140
	126	38	77	115	140	140	42	85	127	140	44	77	115	140	140
54	132	37	73	110	140	140	40	81	121	140	42	73	110	140	140
	138	35	70	105	140	140	39	77	116	140	40	70	105	140	140
	144	34	67	101	135	140	37	74	111	140	39	67	101	135	140
	42	103	140	140	140	140	113	140	140	140	117	140	140	140	140
	48	90	140	140	140	140	99	140	140	140	103	140	140	140	140
	54	80	140	140	140	140	88	140	140	140	91	140	140	140	140
	60	72	140	140	140	140	79	140	140	140	82	140	140	140	140
	66	65	131	140	140	140	72	140	140	140	75	131	140	140	140
	72	60	120	140	140	140	66	132	140	140	68	120	140	140	140
	78	55	110	140	140	140	61	122	140	140	63	110	140	140	140
	84	51	103	140	140	140	57	113	140	140	59	103	140	140	140
	90	48	96	140	140	140	53	105	140	140	55	96	140	140	140
	96	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	102	42	84	127	140	140	47	93	140	140	48	84	127	140	140
60	108	40	80	120	140	140	44	88	132	140	46	80	120	140	140
	114	38	76	113	140	140	42	83	125	140	43	76	113	140	140
	120	36	72	108	140	140	40	79	119	140	41	72	108	140	140
	126	34	68	103	137	140	38	75	113	140	39	68	103	137	140
	42	92	140	140	140	140	102	140	140	140	106	140	140	140	140
	48	81	140	140	140	140	89	140	140	140	92	140	140	140	140
	54	72	140	140	140	140	79	140	140	140	82	140	140	140	140
	60	65	129	140	140	140	71	140	140	140	74	129	140	140	140
	66	59	118	140	140	140	65	129	140	140	67	118	140	140	140
	72	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	78	50	99	140	140	140	55	110	140	140	57	99	140	140	140
	84	46	92	139	140	140	51	102	140	140	53	92	139	140	140
	90	43	86	129	140	140	47	95	140	140	49	86	129	140	140
	96	40	81	121	140	140	45	89	134	140	46	81	121	140	140
66	102	38	76	114	140	140	42	84	126	140	43	76	114	140	140
	108	36	72	108	140	140	40	79	119	140	41	72	108	140	140
	114	34	68	102	136	140	37	75	112	140	39	68	102	136	140
	36	98	140	140	140	140	108	140	140	140	112	140	140	140	140
	42	84	140	140	140	140	92	140	140	140	96	140	140	140	140
	48	73	140	140	140	140	81	140	140	140	84	140	140	140	140
	54	65	131	140	140	140	72	140	140	140	75	131	140	140	140
	60	59	118	140	140	140	65	129	140	140	67	118	140	140	140
	66	53	107	140	140	140	59	118	140	140	61	107	140	140	140
	72	49	98	140	140	140	54	108	140	140	56	98	140	140	140
	78	45	90	136	140	140	50	100	140	140	52	90	136	140	140
	84	42	84	126	140	140	46	92	139	140	48	84	126	140	140
	90	39	78	118	140	140	43	86	129	140	45	78	118	140	140
	96	37	73	110	140	140	40	81	121	140	42	73	110	140	140
	102	35	69	104	138	140	38	76	114	140	40	69	104	138	140

ANCHORS AT JAMB AREA

ANCHORS BETWEEN CLUSTERS

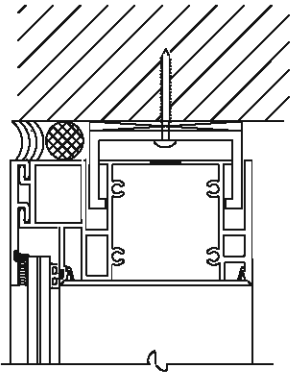
ANCHORS AT INTERMEDIATE AREA



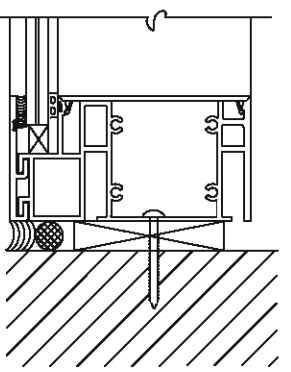
WIDTH (W) = $\frac{W1 + W2}{2}$

WIDTH (W) = W1 (AT FRAME JAMBS)

CONDITION 1 HEAD/SILL
WITH SUB BUCK (1/4" MAX SHIM)



CONDITION 2 HEAD/SILL
WITHOUT SUB BUCK (3/8" MAX SHIM)



FRANK BENNARD, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS
3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRAWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

OF 22

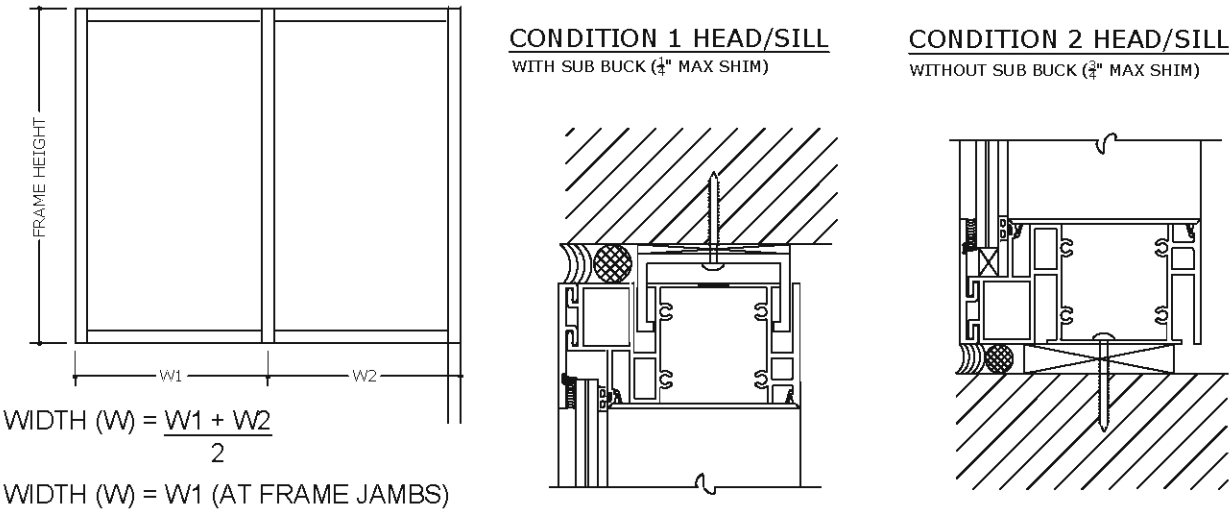
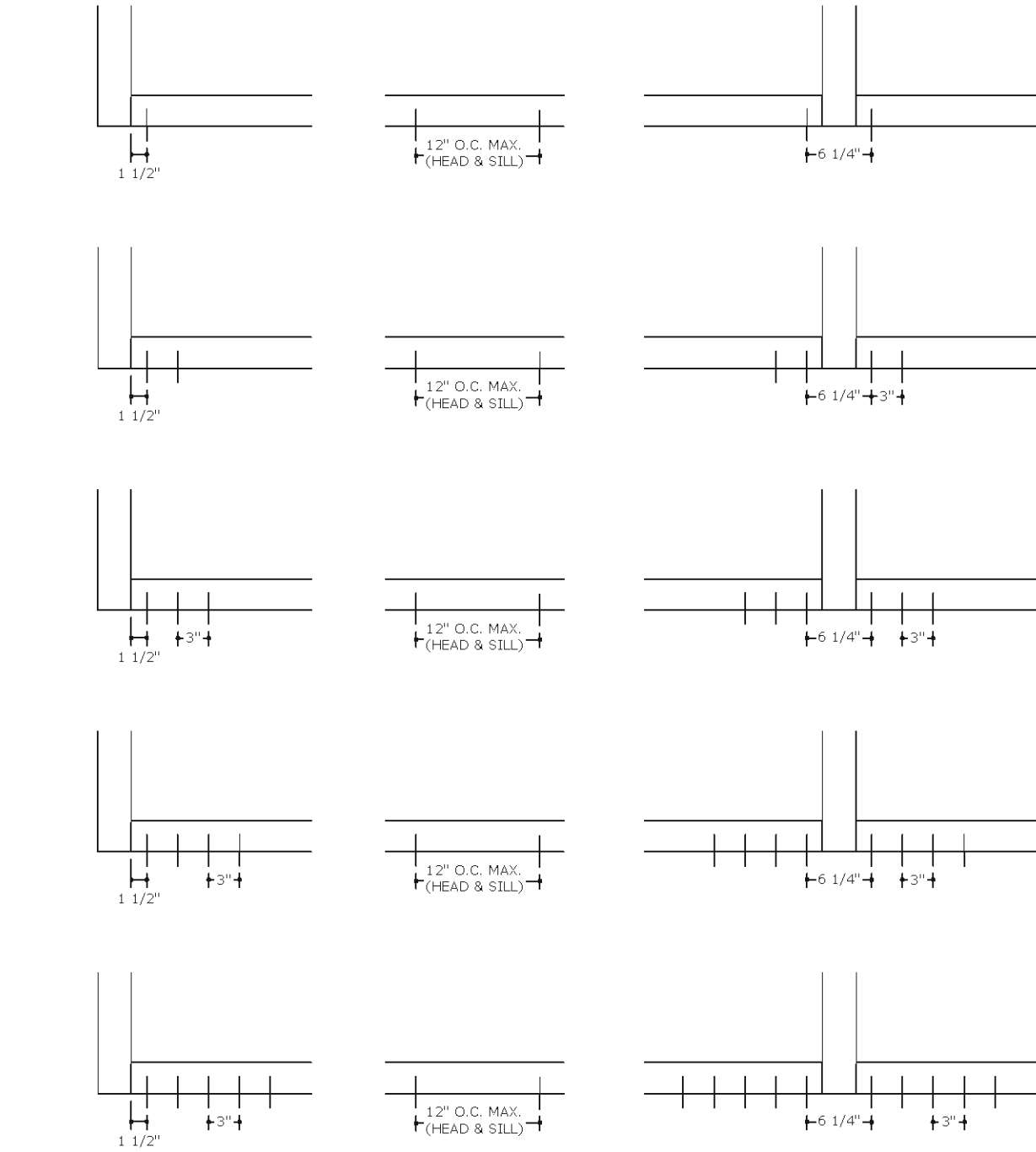
15

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP2020 FBC\20-29331 - FL22982.2 - DWG2.dwg 10/14/2020 - 10:31am Francisco

ANCHOR LOAD CAPACITY CHART 1/4" SHIM MAX - (CONDITION 1 AND CONDITION 2)

		TYPE A NUMBER OF ANCHORS AT THE CLUSTER					TYPE B NUMBER OF ANCHORS AT THE CLUSTER				TYPE C NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-					ALLOWABLE PRESSURE (PSF) +/-				ALLOWABLE PRESSURE (PSF) +/-				
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	2	4	6	8	2	4	6	8	10
72	24	135	140	140	140	140	140	140	140	140	140	140	140	140	140
	30	108	140	140	140	140	119	140	140	140	123	140	140	140	140
	36	90	140	140	140	140	99	140	140	140	103	140	140	140	140
	42	77	140	140	140	140	85	140	140	140	88	140	140	140	140
	48	67	135	140	140	140	74	140	140	140	77	135	140	140	140
	54	60	120	140	140	140	66	132	140	140	68	120	140	140	140
	60	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	66	49	98	140	140	140	54	108	140	140	56	98	140	140	140
	72	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	78	41	83	124	140	140	46	91	137	140	47	83	124	140	140
78	84	38	77	115	140	140	42	85	127	140	44	77	115	140	140
	90	36	72	108	140	140	40	79	119	140	41	72	108	140	140
	96	34	67	101	135	140	37	74	111	140	39	67	101	135	140
	24	124	140	140	140	140	137	140	140	140	140	140	140	140	140
	30	99	140	140	140	140	110	140	140	140	114	140	140	140	140
	36	83	140	140	140	140	91	140	140	140	95	140	140	140	140
	30	99	140	140	140	140	110	140	140	140	114	140	140	140	140
	36	83	140	140	140	140	91	140	140	140	95	140	140	140	140
	42	71	140	140	140	140	78	140	140	140	81	140	140	140	140
	48	62	124	140	140	140	68	137	140	140	71	124	140	140	140
84	54	55	110	140	140	140	61	122	140	140	63	110	140	140	140
	60	50	99	140	140	140	55	110	140	140	57	99	140	140	140
	66	45	90	136	140	140	50	100	140	140	52	90	136	140	140
	72	41	83	124	140	140	46	91	137	140	47	83	124	140	140
	78	38	76	115	140	140	42	84	126	140	44	76	115	140	140
	84	36	71	107	140	140	39	78	117	140	41	71	107	140	140
	24	115	140	140	140	140	127	140	140	140	132	140	140	140	140
	30	92	140	140	140	140	102	140	140	140	106	140	140	140	140
	36	77	140	140	140	140	85	140	140	140	88	140	140	140	140
	42	66	132	140	140	140	73	140	140	140	75	132	140	140	140
90	48	58	115	140	140	140	64	127	140	140	66	115	140	140	140
	54	51	103	140	140	140	57	113	140	140	59	103	140	140	140
	60	46	92	139	140	140	51	102	140	140	53	92	139	140	140
	66	42	84	126	140	140	46	92	139	140	48	84	126	140	140
	72	38	77	115	140	140	42	85	127	140	44	77	115	140	140
	78	36	71	107	140	140	39	78	117	140	41	71	107	140	140
	24	108	140	140	140	140	119	140	140	140	123	140	140	140	140
	30	86	140	140	140	140	95	140	140	140	99	140	140	140	140
	36	72	140	140	140	140	79	140	140	140	82	140	140	140	140
	42	62	123	140	140	140	68	136	140	140	70	123	140	140	140
96	48	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	54	48	96	140	140	140	53	105	140	140	55	96	140	140	140
	60	43	86	129	140	140	47	95	140	140	49	86	129	140	140
	66	39	78	118	140	140	43	86	129	140	45	78	118	140	140
	72	36	72	108	140	140	40	79	119	140	41	72	108	140	140
	24	101	140	140	140	140	111	140	140	140	116	140	140	140	140
	30	81	140	140	140	140	89	140	140	140	92	140	140	140	140
	36	67	135	140	140	140	74	140	140	140	77	135	140	140	140
	42	58	115	140	140	140	64	127	140	140	66	115	140	140	140
	48	51	101	140	140	140	56	111	140	140	58	101	140	140	140
102	54	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	60	40	81	121	140	140	45	89	134	140	46	81	121	140	140
	66	37	73	110	140	140	40	81	121	140	42	73	110	140	140
	72	34	67	101	135	140	37	74	111	140	39	67	101	135	140
	24	95	140	140	140	140	105	140	140	140	109	140	140	140	140
	30	76	140	140	140	140	84	140	140	140	87	140	140	140	140
	36	63	127	140	140	140	70	140	140	140	72	127	140	140	140
	42	54	109	140	140	140	60	120	140	140	62	109	140	140	140
	48	48	95	140	140	140	52	105	140	140	54	95	140	140	140
	54	42	84	127	140	140	47	93	140	140	48	84	127	140	140
	60	38	76	114	140	140	42	84	126	140	43	76	114	140	140
	66	35	69	104	138	140	38	76	114	140	40	69	104	138	140

ANCHORS AT JAMB AREA ANCHORS BETWEEN CLUSTERS ANCHORS AT INTERMEDIATE AREA



FRANK BENNARD, PE
PE# 0046549 CA# 9885

10/15/2028

ENGINEERING
EXPRESS

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRAWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALUATE OUR CERTIFICATION.

20-29331b

SCALE: NTS UNLESS NOTED

16

OF 22

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

Francisco

10/14/2020 - 10:31am

ANCHOR LOAD CAPACITY CHART 1/4" SHIM MAX - (CONDITION 1 AND CONDITION 2)

		TYPE A NUMBER OF ANCHORS AT THE CLUSTER					TYPE B NUMBER OF ANCHORS AT THE CLUSTER				TYPE C NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-					ALLOWABLE PRESSURE (PSF) +/-				ALLOWABLE PRESSURE (PSF) +/-				
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	2	4	6	8	2	4	6	8	10
108	24	90	140	140	140	140	99	140	140	140	103	140	140	140	140
	30	72	140	140	140	140	79	140	140	140	82	140	140	140	140
	36	60	120	140	140	140	66	132	140	140	68	120	140	140	140
	42	51	103	140	140	140	57	113	140	140	59	103	140	140	140
	48	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	54	40	80	120	140	140	44	88	132	140	46	80	120	140	140
114	24	85	140	140	140	140	94	140	140	140	97	140	140	140	140
	30	68	136	140	140	140	75	140	140	140	78	136	140	140	140
	36	57	113	140	140	140	62	125	140	140	65	113	140	140	140
	42	49	97	140	140	140	54	107	140	140	56	97	140	140	140
	48	43	85	128	140	140	47	94	140	140	49	85	128	140	140
	54	38	76	113	140	140	42	83	125	140	43	76	113	140	140
120	24	81	140	140	140	140	89	140	140	140	92	140	140	140	140
	30	65	129	140	140	140	71	140	140	140	74	129	140	140	140
	36	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	42	46	92	139	140	140	51	102	140	140	53	92	139	140	140
	48	40	81	121	140	140	45	89	134	140	46	81	121	140	140
	54	36	72	108	140	140	40	79	119	140	41	72	108	140	140
126	24	77	140	140	140	140	85	140	140	140	88	140	140	140	140
	30	62	123	140	140	140	68	136	140	140	70	123	140	140	140
	36	51	103	140	140	140	57	113	140	140	59	103	140	140	140
	42	44	88	132	140	140	48	97	140	140	50	88	132	140	140
132	24	73	140	140	140	140	81	140	140	140	84	140	140	140	140
	30	59	118	140	140	140	65	129	140	140	67	118	140	140	140
	36	49	98	140	140	140	54	108	140	140	56	98	140	140	140
	42	42	84	126	140	140	46	92	139	140	48	84	126	140	140
138	24	70	140	140	140	140	77	140	140	140	80	140	140	140	140
	30	56	112	140	140	140	62	124	140	140	64	112	140	140	140
	36	47	94	140	140	140	52	103	140	140	54	94	140	140	140
	42	40	80	120	140	140	44	88	133	140	46	80	120	140	140
144	24	67	135	140	140	140	74	140	140	140	77	135	140	140	140
	30	54	108	140	140	140	59	119	140	140	62	108	140	140	140
	36	45	90	135	140	140	49	99	140	140	51	90	135	140	140
	42	38	77	115	140	140	42	85	127	140	44	77	115	140	140
	48	34	67	101	135	140	37	74	111	140	39	67	101	135	140

TYPICAL ANCHOR TYPES:

TYPE A - $\frac{5}{16}$ " DEWALT ULTRA CON OR EQUAL, 1 $\frac{1}{2}$ " MIN ENGAGEMENT INTO SOUTHERN YELLOW PINE #2 WOOD (SG=0.55 MIN.) WITH 1-1/4" MIN EDGE DISTANCE

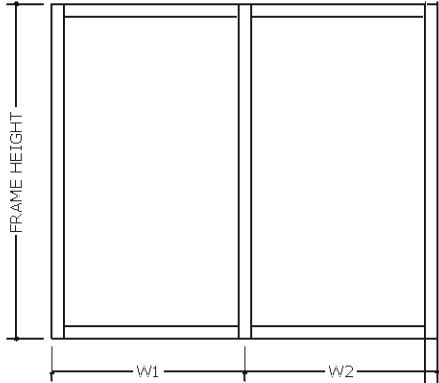
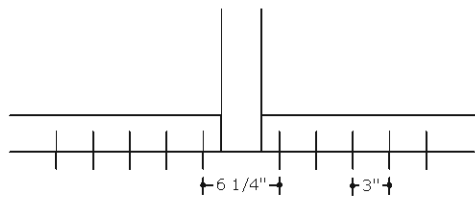
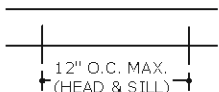
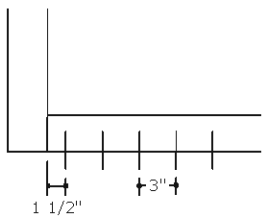
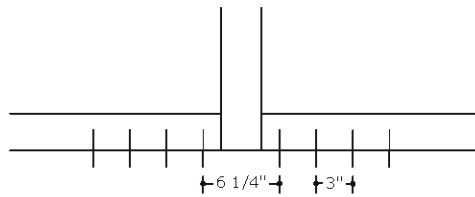
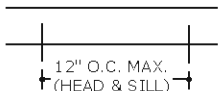
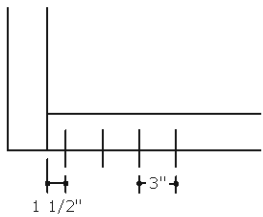
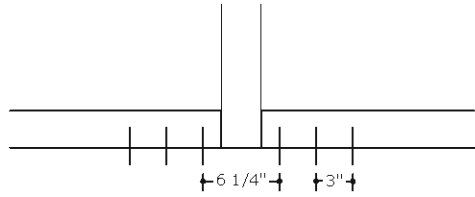
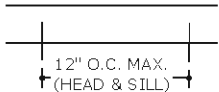
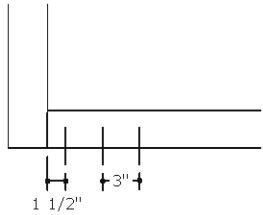
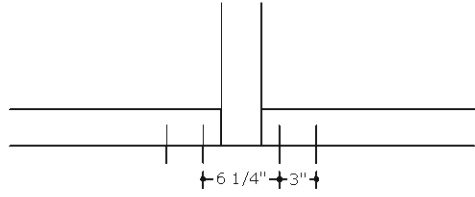
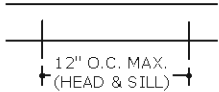
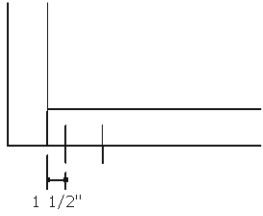
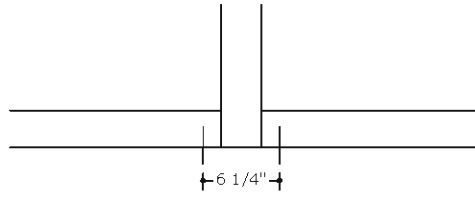
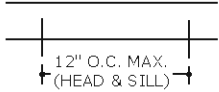
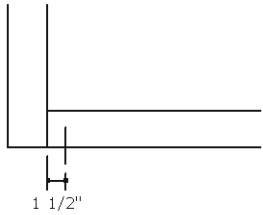
TYPE B - $\frac{5}{16}$ " DEWALT ULTRA CON OR EQUAL, 2" EFFECTIVE EMBEDMENT INTO 3000 PSI CONCRETE MIN. WITH 2 $\frac{1}{2}$ " EDGE DISTANCE

TYPE C - $\frac{5}{16}$ - 24 DEWALT DRILL FLEX OR EQUAL, ENGAGING 5 PITCHES PASSED THE THREAD PLANE INTO $\frac{1}{8}$ " ALUMINUM (6063-T5 MIN) OR $\frac{1}{8}$ " STEEL (A36 MIN), $\frac{3}{4}$ " MIN EDGE DISTANCE

ANCHORS AT JAMB AREA

ANCHORS BETWEEN CLUSTERS

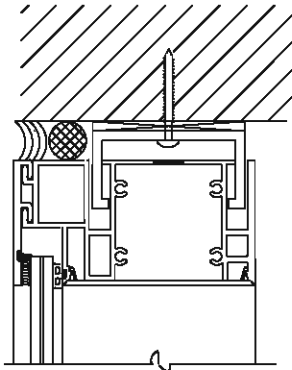
ANCHORS AT INTERMEDIATE AREA



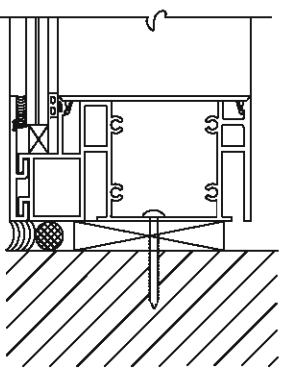
WIDTH (W) = $\frac{W1 + W2}{2}$

WIDTH (W) = W1 (AT FRAME JAMBS)

CONDITION 1 HEAD/SILL
WITH SUB BUCK ($\frac{1}{4}$ " MAX SHIM)



CONDITION 2 HEAD/SILL
WITHOUT SUB BUCK ($\frac{1}{4}$ " MAX SHIM)



FRANK BENNARD, PE
PE# 0046549 CA# 9885



ENGINEERING
EXPRESS

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRAWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

17 OF 22

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:31am

ANCHOR LOAD CAPACITY CHARTS FOR 3/8" SHIM MAX - (CONDITION 2 ONLY)

FRAME HEIGHT		TYPE A,B,C				
		NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-				
WIDTH (W)		2	4	6	8	10
48	48	90	140	140	140	140
	54	80	140	140	140	140
	60	72	140	140	140	140
	66	66	131	140	140	140
	72	60	120	140	140	140
	78	56	111	140	140	140
	84	52	103	140	140	140
	90	48	96	140	140	140
	96	45	90	135	140	140
	102	42	85	127	140	140
	108	40	80	120	140	140
	114	38	76	114	140	140
	120	36	72	108	140	140
	126	34	69	103	138	140
54	132	33	66	98	131	140
	138	31	63	94	126	140
	144	30	60	90	120	140
	42	92	140	140	140	140
	48	80	140	140	140	140
	54	71	140	140	140	140
	60	64	128	140	140	140
	66	58	117	140	140	140
	72	53	107	140	140	140
	78	49	99	140	140	140
	84	46	92	138	140	140
	90	43	86	128	140	140
	96	40	80	120	140	140
	102	38	76	113	140	140
60	108	36	71	107	140	140
	114	34	68	101	135	140
	120	32	64	96	128	140
	126	31	61	92	122	140
	42	83	140	140	140	140
	48	72	140	140	140	140
	54	64	128	140	140	140
	60	58	116	140	140	140
	66	53	105	140	140	140
	72	48	96	140	140	140
	78	44	89	133	140	140
	84	41	83	124	140	140
	90	39	77	116	140	140
	96	36	72	108	140	140
	102	34	68	102	136	140
	108	32	64	96	128	140
	114	30	61	91	122	140

FRAME HEIGHT		TYPE A,B,C				
		NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-				
WIDTH (W)		2	4	6	8	10
66	36	88	140	140	140	140
	42	75	140	140	140	140
	48	66	131	140	140	140
	54	58	117	140	140	140
	60	53	105	140	140	140
	66	48	95	140	140	140
	72	44	88	131	140	140
	78	40	81	121	140	140
	84	38	75	113	140	140
	90	35	70	105	140	140
	96	33	66	98	131	140
	102	31	62	93	124	140
	24	120	140	140	140	140
	30	96	140	140	140	140
72	36	80	140	140	140	140
	42	69	138	140	140	140
	48	60	120	140	140	140
	54	53	107	140	140	140
	60	48	96	140	140	140
	66	44	88	131	140	140
	72	40	80	120	140	140
	78	37	74	111	140	140
	84	34	69	103	138	140
	90	32	64	96	128	140
	96	30	60	90	120	140
	24	111	140	140	140	140
	30	89	140	140	140	140
	36	74	140	140	140	140
78	30	89	140	140	140	140
	36	74	140	140	140	140
	42	63	127	140	140	140
	48	56	111	140	140	140
	54	49	99	140	140	140
	60	44	89	133	140	140
	66	40	81	121	140	140
	72	37	74	111	140	140
	78	34	68	103	137	140
	84	32	63	95	127	140

FRAME HEIGHT		TYPE A,B,C				
		NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-				
WIDTH (W)		2	4	6	8	10
84	24	103	140	140	140	140
	30	83	140	140	140	140
	36	69	138	140	140	140
	42	59	118	140	140	140
	48	52	103	140	140	140
	54	46	92	138	140	140
	60	41	83	124	140	140
	66	38	75	113	140	140
	72	34	69	103	138	140
	78	32	63	95	127	140
	24	96	140	140	140	140
	30	77	140	140	140	140
	36	64	128	140	140	140
	42	55	110	140	140	140
90	48	48	96	140	140	140
	54	43	86	128	140	140
	60	39	77	116	140	140
	66	35	70	105	140	140
	72	32	64	96	128	140
	24	90	140	140	140	140
	30	72	140	140	140	140
	36	60	120	140	140	140
	42	52	103	140	140	140
	48	45	90	135	140	140
	54	40	80	120	140	140
	60	36	72	108	140	140
	66	33	66	98	131	140
	72	30	60	90	120	140
96	24	85	140	140	140	140
	30	68	136	140	140	140
	36	57	113	140	140	140
	42	49	97	140	140	140
	48	42	85	127	140	140
	54	38	76	113	140	140
	60	34	68	102	136	140
	66	31	62	93	124	140
	24	80	140	140	140	140
	30	64	128	140	140	140
	36	53	107	140	140	140
	42	46	92	138	140	140
	48	40	80	120	140	140
	54	36	71	107	140	140
102	24	85	140	140	140	140
	30	68	136	140	140	140
	36	57	113	140	140	140
	42	49	97	140	140	140
	48	42	85	127	140	140
	54	38	76	113	140	140
	60	34	68	102	136	140
	66	31	62	93	124	140
	24	80	140	140	140	140
	30	64	128	140	140	140
	36	53	107	140	140	140
	42	46	92	138	140	140
	48	40	80	120	140	140
	54	36	71	107	140	140
108	24	85	140	140	140	140
	30	68	136	140	140	140
	36	57	113	140	140	140
	42	49	97	140	140	140
	48	42	85	127	140	140
	54	38	76	113	140	140
	60	34	68	102	136	140
	66	31	62	93	124	140
	24	80	140	140	140	140
	30	64	128	140	140	140
	36	53	107	140	140	140
	42	46	92	138	140	140
	48	40	80	120	140	140
	54	36	71	107	140	140

FRAME HEIGHT		TYPE A,B,C				
		NUMBER OF ANCHORS AT THE CLUSTER				
		ALLOWABLE PRESSURE (PSF) +/-				
WIDTH (W)		2	4	6	8	10
114	24	76	140	140	140	140
	30	61	122	140	140	140
	36	51	101	140	140	140
	42	43	87	130	140	140
	48	38	76	114	140	140
	54	34	68	101	135	140
	60	30	61	91	122	140
	24	72	140	140	140	140
120	30	58	116	140	140	140
	36	48	96	140	140	140
	42	41	83	124	140	140
	48	36	72	108	140	140
	54	32	64	96	128	140
	24	69	138	140	140	140
126	30	55	110	140	140	140
	36	46	92	138	140	140
	42	39	79	118	140	140
	48	34	69	103	138	140
	24	66	131	140	140	140
	30	53	105	140	140	140
132	36	44	88	131	140	140
	42	38	75	113	140	140
	48	33	66	98	131	140
	24	63	126	140	140	140
	30	50	100	140	140	140
	36	42	84	126	140	140
138	42	36	72	108	140	140
	48	31	63	94	126	140
	24	60	120	140	140	140
	30	48	96	140	140	140
	36	40	80	120	140	140
	42	34	69	103	138	140
144	48	30	60	90	120	140

WIDTH (W) = $\frac{W1 + W2}{2}$

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:31am

ANCHOR LOAD CAPACITY CHARTS FOR 3/4" SHIM MAX - (CONDITION 2 ONLY)

		TYPE A, B, C NUMBER OF ANCHORS AT THE CLUSTER					
		ALLOWABLE PRESSURE (PSF) +/-					
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	12
48	48	50	101	140	140	140	140
	54	45	89	134	140	140	140
	60	40	80	121	140	140	140
	66	37	73	110	140	140	140
	72	34	67	101	134	140	140
	78	31	62	93	124	140	140
	84	29	57	86	115	140	140
	90	27	54	80	107	134	140
	96	25	50	75	101	126	140
	102	24	47	71	95	118	140
	108	22	45	67	89	112	134
	114	21	42	63	85	106	127
	120	20	40	60	80	101	121
	126	19	38	57	77	96	115
	132	18	37	55	73	91	110
	138	17	35	52	70	87	105
54	144	17	34	50	67	84	101
	42	51	102	140	140	140	140
	48	45	89	134	140	140	140
	54	40	79	119	140	140	140
	60	36	71	107	140	140	140
	66	32	65	97	130	140	140
	72	30	60	89	119	140	140
	78	27	55	82	110	137	140
	84	26	51	77	102	128	140
	90	24	48	71	95	119	140
	96	22	45	67	89	112	134
	102	21	42	63	84	105	126
	108	20	40	60	79	99	119
	114	19	38	56	75	94	113
	120	18	36	54	71	89	107
	126	17	34	51	68	85	102
60	42	46	92	138	140	140	140
	48	40	80	121	140	140	140
	54	36	71	107	140	140	140
	60	32	64	96	129	140	140
	66	29	58	88	117	140	140
	72	27	54	80	107	134	140
	78	25	49	74	99	124	140
	84	23	46	69	92	115	138
	90	21	43	64	86	107	129
	96	20	40	60	80	101	121
	102	19	38	57	76	95	114
	108	18	36	54	71	89	107
	114	17	34	51	68	85	102

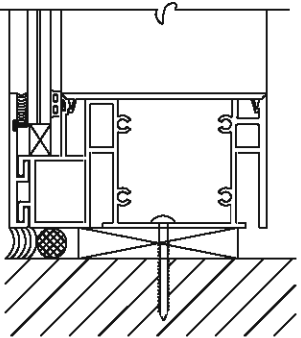
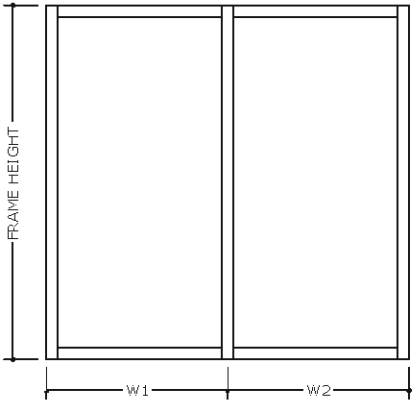
		TYPE A, B, C NUMBER OF ANCHORS AT THE CLUSTER					
		ALLOWABLE PRESSURE (PSF) +/-					
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	12
66	36	49	97	140	140	140	140
	42	42	84	125	140	140	140
	48	37	73	110	140	140	140
	54	32	65	97	130	140	140
	60	29	58	88	117	140	140
	66	27	53	80	106	133	140
	72	24	49	73	97	122	140
	78	22	45	67	90	112	135
	84	21	42	63	84	104	125
	90	19	39	58	78	97	117
	96	18	37	55	73	91	110
	102	17	34	52	69	86	103
	24	67	134	140	140	140	140
	30	54	107	140	140	140	140
	36	45	89	134	140	140	140
	42	38	77	115	140	140	140
72	48	34	67	101	134	140	140
	54	30	60	89	119	140	140
	60	27	54	80	107	134	140
	66	24	49	73	97	122	140
	72	22	45	67	89	112	134
	78	21	41	62	82	103	124
	84	19	38	57	77	96	115
	90	18	36	54	71	89	107
	96	17	34	50	67	84	101
	24	62	124	140	140	140	140
	30	49	99	140	140	140	140
	36	41	82	124	140	140	140
	30	49	99	140	140	140	140
	36	41	82	124	140	140	140
	42	35	71	106	140	140	140
	48	31	62	93	124	140	140
78	54	27	55	82	110	137	140
	60	25	49	74	99	124	140
	66	22	45	67	90	112	135
	72	21	41	62	82	103	124
	78	19	38	57	76	95	114
	84	18	35	53	71	88	106

		TYPE A, B, C NUMBER OF ANCHORS AT THE CLUSTER					
		ALLOWABLE PRESSURE (PSF) +/-					
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	12
84	24	57	115	140	140	140	140
	30	46	92	138	140	140	140
	36	38	77	115	140	140	140
	42	33	66	98	131	140	140
	48	29	57	86	115	140	140
	54	26	51	77	102	128	140
	60	23	46	69	92	115	138
	66	21	42	63	84	104	125
	72	19	38	57	77	96	115
	78	18	35	53	71	88	106
	24	54	107	140	140	140	140
	30	43	86	129	140	140	140
	36	36	71	107	140	140	140
	42	31	61	92	123	140	140
	48	27	54	80	107	134	140
	54	24	48	71	95	119	140
90	60	21	43	64	86	107	129
	66	19	39	58	78	97	117
	72	18	36	54	71	89	107
	24	50	101	140	140	140	140
	30	40	80	121	140	140	140
	36	34	67	101	134	140	140
	42	29	57	86	115	140	140
	48	25	50	75	101	126	140
	54	22	45	67	89	112	134
	60	20	40	60	80	101	121
	66	18	37	55	73	91	110
	72	17	34	50	67	84	101
	24	47	95	140	140	140	140
	30	38	76	114	140	140	140
	36	32	63	95	126	140	140
	42	27	54	81	108	135	140
96	48	24	47	71	95	118	140
	54	21	42	63	84	105	126
	60	19	38	57	76	95	114
	66	17	34	52	69	86	103
	24	45	89	134	140	140	140
	30	36	71	107	140	140	140
	36	30	60	89	119	140	140
	42	26	51	77	102	128	140
	48	22	45	67	89	112	134
	54	20	40	60	79	99	119

		TYPE A, B, C NUMBER OF ANCHORS AT THE CLUSTER					
		ALLOWABLE PRESSURE (PSF) +/-					
FRAME HEIGHT	WIDTH (W)	2	4	6	8	10	12
114	24	42	85	127	140	140	140
	30	34	68	102	135	140	140
	36	28	56	85	113	140	140
	42	24	48	73	97	121	140
	48	21	42	63	85	106	127
	54	19	38	56	75	94	113
	60	17	34	51	68	85	102
	24	40	80	121	140	140	140
120	30	32	64	96	129	140	140
	36	27	54	80	107	134	140
	42	23	46	69	92	115	138
	48	20	40	60	80	101	121
	54	18	36	54	71	89	107
	24	38	77	115	140	140	140
	30	31	61	92	123	140	140
	36	26	51	77	102	128	140
126	42	22	44	66	88	109	131
	48	19	38	57	77	96	115
	24	37	73	110	140	140	140
	30	29	58	88	117	140	140
	36	24	49	73	97	122	140
	42	21	42	63	84	104	125
	48	18	37	55	73	91	110
	24	35	70	105	140	140	140
132	30	28	56	84	112	140	140
	36	23	47	70	93	117	140
	42	20	40	60	80	100	120
	48	17	35	52	70	87	105
	24	34	67	101	134	140	140
	30	27	54	80	107	134	140
	36	22	45	67	89	112	134
	42	19	38	57	77	96	115
138	48	17	34	50	67	84	101

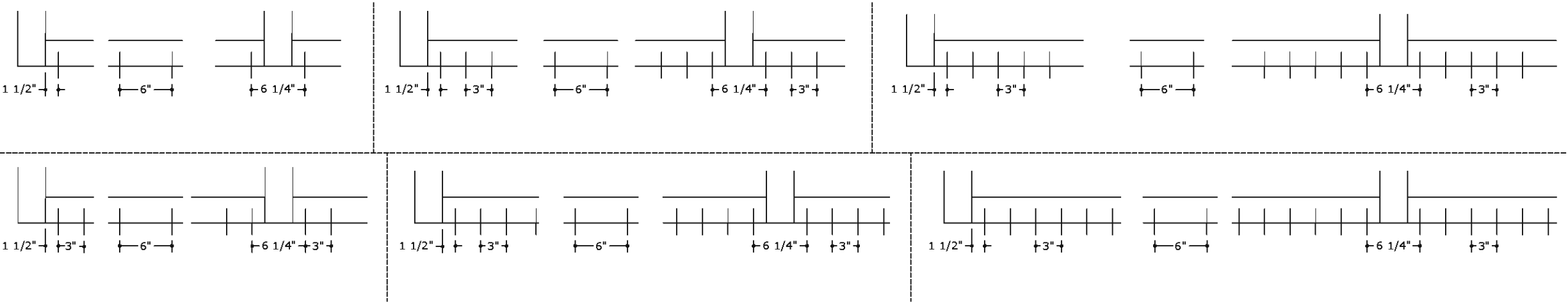
WIDTH (W) = $\frac{W1 + W2}{2}$

WIDTH (W) = W1 (AT FRAME JAMBS)



CONDITION 2 HEAD/SILL
WITHOUT SUB BUCK (3/4" MAX SHIM)

ANCHOR LAYOUT FOR FRAME ENDS, BALANCE SPACING AND INTERMEDIATE MULLIONS WITH 3/4" MAX SHIM SPACING



FRANK BENNARDO, PE
PE# 0046549 CA# 9885

ENGINEERING
EXPRESS

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS
INT ISSUE
2020 FBC

DRWN CHKD
JPOSA AJP
CCB AJP

DATE
08/15/17
10/13/20

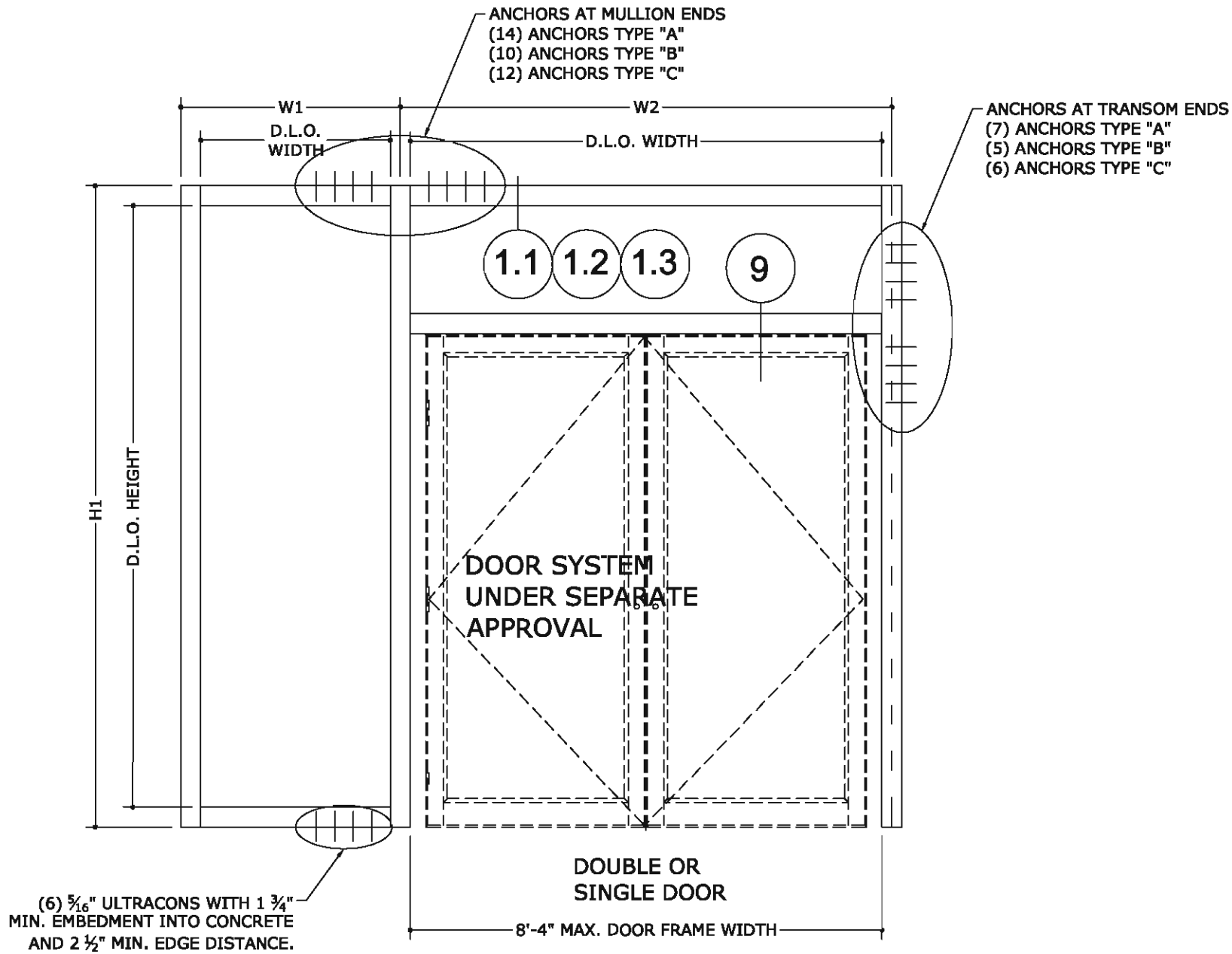
THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

20-29331b

SCALE: NTS UNLESS NOTED

19 OF

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg
Francisco
10/14/2020 - 10:31am



TYPICAL ANCHOR TYPES:

TYPE A - $\frac{5}{16}$ " DEWALT ULTRAICON OR EQUAL, $1\frac{1}{2}$ " MIN ENGAGEMENT INTO SOUTHERN YELLOW PINE #2 WOOD (SG=0.55 MIN.) WITH 1-1/4" MIN EDGE DISTANCE

TYPE B - $\frac{5}{16}$ " DEWALT ULTRAICON OR EQUAL, 2" EFFECTIVE EMBEDMENT INTO 3000 PSI CONCRETE MIN. WITH $2\frac{1}{2}$ " EDGE DISTANCE

TYPE C - $\frac{5}{16}$ " - 24 DEWALT DRILLFLEX OR EQUAL, ENGAGING 5 PITCHES PASSED THE THREAD PLANE INTO $\frac{1}{8}$ " ALUMINUM (6063-T5 MIN) OR $\frac{1}{8}$ " STEEL (A36 MIN), $\frac{3}{4}$ " MIN EDGE DISTANCE

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING EXPRESS
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

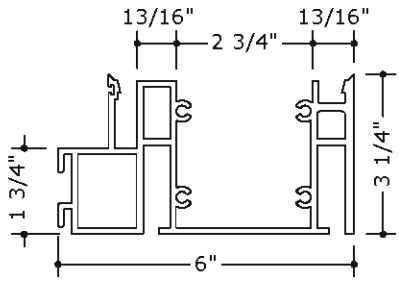
20-29331b

SCALE: NTS UNLESS NOTED

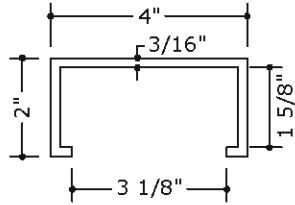
C:\Users\Francisco\Engineering\Express\Production - Documents\Projects\20-29331 - 6000 Series Aluminum Window Wall\WP\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg

Francisco

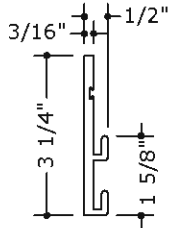
10/14/2020 - 10:31am



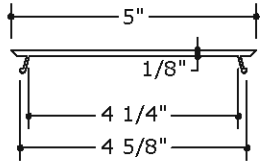
1 HEAD & SILL
HORIZONTAL



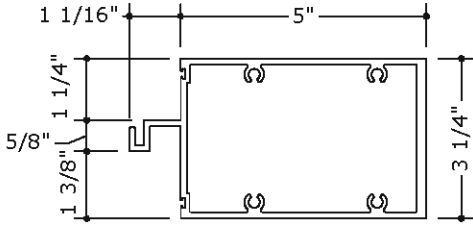
2 SUB -
BUCK



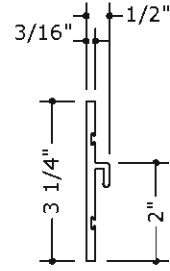
3 EXTERIOR CAP



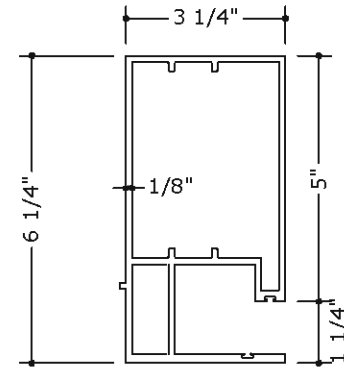
4 INTERIOR TRIM



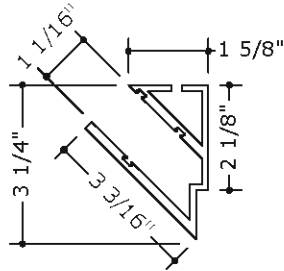
5 INTERMEDIATE
HORIZONTAL



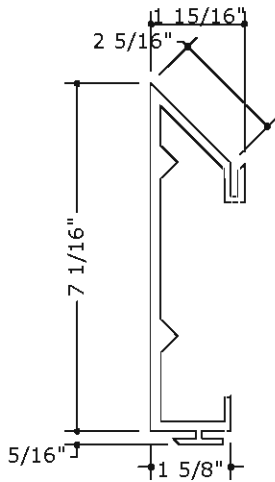
6 EXTERIOR CAP



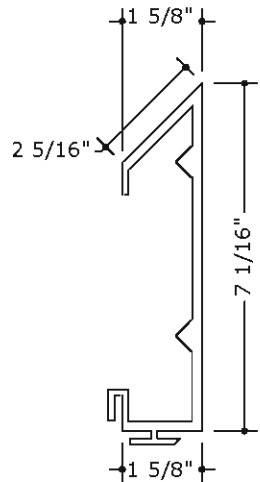
7 JAMB



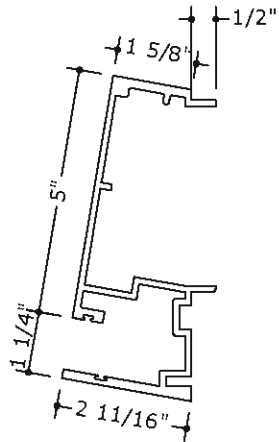
35 45 DEGREE
VERTICAL
MULLION



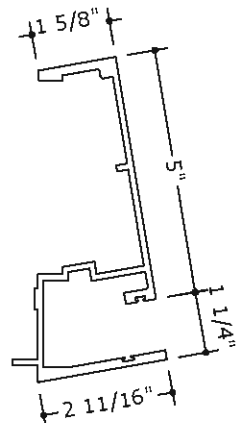
41 45 DEGREE
VERTICAL
MULLION



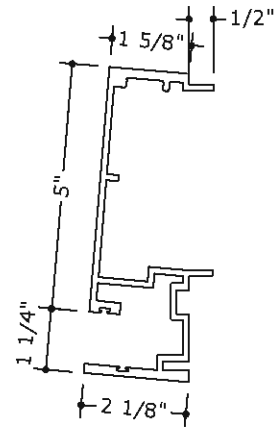
52 45 DEGREE
VERTICAL
MULLION



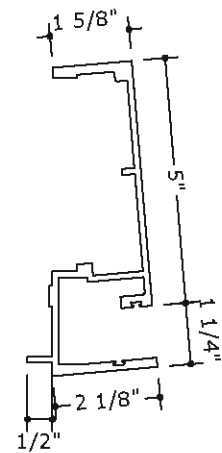
36 SEGMENTED
MULLION



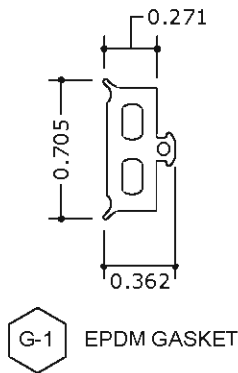
37 SEGMENTED
MULLION



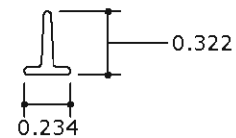
38 SEGMENTED
MULLION



39 SEGMENTED
MULLION



G-1 EPDM GASKET



G-2 POLYETHYLENE GASKET

FRANK BENNARDI, PE
PE# 0046549 CA# 9885



**ENGINEERING
EXPRESS®**
CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH, FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS
AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT
WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS,
ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT
PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED

21

OF
22

C:\Users\Francisco\Engineering Express\Production - Documents\Projects\20-29331 - FL22982.1.2 - 6000 Series Aluminum Window Wall\WP1\2020 FBC\20-29331 - FL22982.2 - DWG2.dwg 10/14/2020 - 10:31am Francisco

BILL OF MATERIALS				
PART No.	DESCRIPTION	MATERIAL	LOCATION	MANUFACTURER
①	HEAD & SILL HORIZONTAL	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
②	SUB BUCK	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
③	EXTERIOR CAP	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
④	INTERIOR TRIM	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑤	INTERMEDIATE HORIZONTAL	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑥	EXTERIOR CAP	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑦	JAMB MULLION	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑧	VERTICAL MULLION	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑨	VERTICAL MULLION	ALUM. AL. 6005-T5	FRAME	UNITED GLASS
⑩	85 ± SHORE A DUROMETER BLOCKS	—	FRAME	UNITED GLASS
③⑤	45 DEGREE VERTICAL MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
④①	45 DEGREE VERTICAL MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
⑤②	45 DEGREE VERTICAL MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
③⑥	SEGMENTED MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
③⑦	SEGMENTED MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
③⑧	SEGMENTED MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
③⑨	SEGMENTED MULLION	ALUM. AL. 6005-T6	FRAME	UNITED GLASS
④⑥	STEEL REINFORCEMENT	STEEL (A-36 MIN.)	VERTICAL MULLION	UNITED GLASS
⑥①	EPDM GASKET	EPDM	FRAME	UNITED GLASS
⑥②	POLYETHYLENE GASKET	—	FRAME	UNITED GLASS
⑥⑨	BLOCK GLASS	—	FRAME	UNITED GLASS
⑤①	1/4-14x 1 1/2" HEX WASHER HEAD SCREW	ALLOY STEEL (GRADE 5)	ASSEMBLY SCREWS	DEWALT DRIL-FLEX

FRANK BENNARDO, PE
PE# 0046549 CA# 9885



ENGINEERING
EXPRESS®

CORPORATE OFFICE:
160 SW 12th AVE, SUITE 106
DEERFIELD BEACH, FL 33442
(954) 354-0660 | (866) 396-9999
TEAM@ENGINEERINGEXPRESS.COM
ENGINEERINGEXPRESS.COM

UNITED GLASS SYSTEMS

3500 SW 15TH STREET
DEERFIELD BEACH , FL
(754) 227-5287

WINDOW WALL SYSTEM - FL# 22982.2
6000 SERIES WINDOW WALL SMALL MISSILE IMPACT (SMI)

REMARKS	DRWN	CHKD	DATE
INT ISSUE	JPOSA	AJP	08/15/17
2020 FBC	CCB	AJP	10/13/20

THIS DOCUMENT IS THE PROPERTY OF ENGINEERING EXPRESS, AND SHALL NOT BE REPRODUCED IN WHOLE OR PART WITHOUT WRITTEN CONSENT OF ENGINEERING EXPRESS. ALTERATIONS, ADDITIONS, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE OUR CERTIFICATION.

COPYRIGHT ENGINEERING EXPRESS®

20-29331b

SCALE: NTS UNLESS NOTED