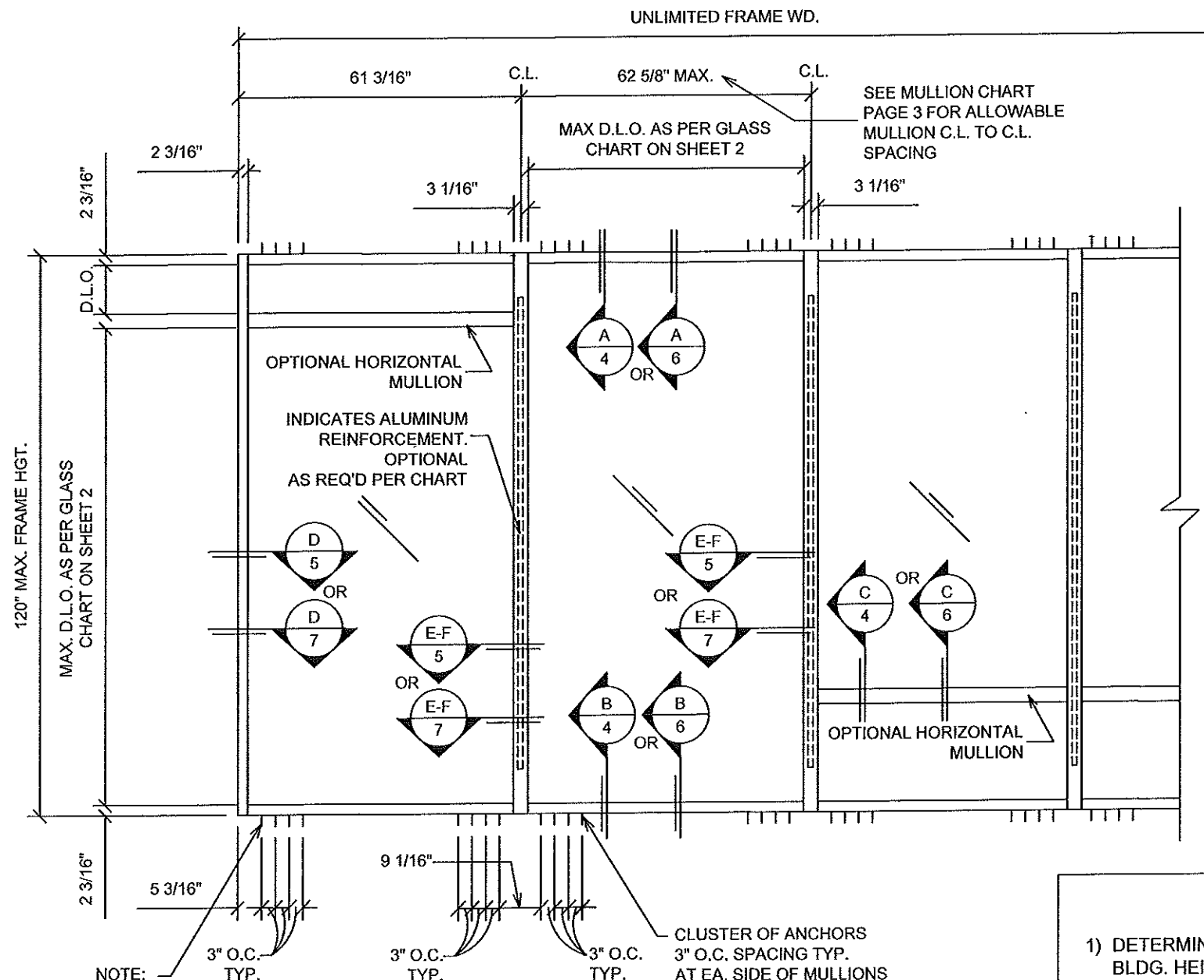


5200 SERIES ALUMINIUM FIXED WINDOW WALL SYSTEM (LARGE MISSILE IMPACT)



**FRAMING ELEVATION
VIEWED FROM EXTERIOR**

GENERAL NOTES:

- 1) THIS PRODUCT HAS BEEN DESIGNED AND MANUFACTURED TO COMPLY WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE, BUILDING, 6TH EDITION (2017), INCLUDING THE HIGH VELOCITY HURRICANE ZONE (HVHZ).
- 2) WOOD BUCK OR STRUCTURAL SUBSTRATE TO BE DESIGNED AND ANCHORED TO PROPERLY TRANSFER ALL LOADS TO STRUCTURE. BUCK OR FRAMING IS RESPONSIBILITY OF ARCHITECT/ENGINEER OF RECORD.
- 3) SHUTTERS ARE NOT REQUIRED WITH THIS PRODUCT.
- 4) ONE-THIRD (33%) INCREASE IN ALLOWABLE STRESS FOR WIND LOAD DESIGN NOT USED. INCREASE USED FOR ANCHORS INTO WOOD.

INSTRUCTIONS:

- 1) DETERMINE DESIGN WIND LOAD REQUIREMENT BASED ON WIND VELOCITY, BLDG. HEIGHT, AND WIND ZONE. USING APPLICABLE ASCE 7 STANDARDS.
- 2) SEE **GLASS DESIGN LOAD CHART** ON PAGE 2 FOR DESIGN LOAD CAPACITY OF DESIRED GLASS TYPE AND SIZE. GLASS DESIGN LOAD CAPACITY SHOULD EQUAL OR EXCEED THE DESIGN LOAD REQUIREMENT DETERMINED IN STEP 1.
- 3) CHECK MULLION CAPACITY FOR GIVEN SPACING (FRAME SIZE WIDTH "W") AND MULLION HEIGHT (FRAME SIZE LENGTH "L") USING THE **MULLION DESIGN LOAD CHART** ON PAGE 3. MULLION DESIGN LOAD CAPACITY SHOULD EQUAL OR EXCEED THE DESIGN LOAD REQUIREMENT DETERMINED IN STEP 1.
- 4) USING THE **ANCHOR CLUSTER LOAD CHART** ON PAGE 9, SELECT ANCHOR OPTION WITH DESIGN LOAD RATING EQUAL TO OR GREATER THAN THE DESIGN LOAD REQUIREMENT DETERMINED IN STEP 1.
- 5) LOWEST DESIGN LOAD OBTAINED FROM STEPS 2, 3 AND 4 SHALL GOVERN FOR THE ENTIRE FRAME.

NOTE:
CLUSTER OF ANCHORS
3" O.C. SPACING TYP.
AT JAMBS AS PER
ANCHOR CHART ON PG. 9

CLUSTER OF ANCHORS
3" O.C. SPACING TYP.
AT EA. SIDE OF MULLIONS
AS PER ANCHOR CHART
ON PG. 9

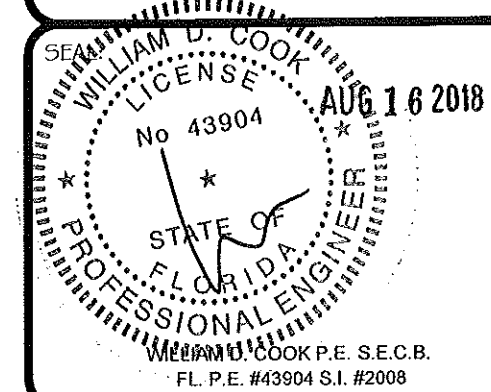
ASTRAL

ALUMINUM AND GLASS INC.

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ph. (954) 203-2977
e-mail: info@astralfla.com

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SUITE #100
FORT LAUDERDALE, FL 33309
TEL: (954) 772-4624 FAX: (954) 772-4634



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PROJECT:

**5200 SERIES ALUMINUM
WINDOW WALL SYSTEM (L.M.I.)**

PRODUCT APPROVAL NO:

FL27900.1

DRAWN BY:
MG

VERIFY BY:

DATE:
08/16/2018

DWG. NO.
5200_FIX-LMI

SCALE:
N/A

SHEET NO.
1 OF 9

GLASS DESIGN LOAD CHART - PSF

| GLASS D.L.O. | | LAMINATED | | | | INSULATED/ LAMINATED | | | |
|--------------|------------|-------------|---------|-------------|---------|----------------------|---------|-------------|---------|
| | | TYPE - "G1" | | TYPE - "G2" | | TYPE - "G3" | | TYPE - "G4" | |
| WIDTH (W) | LENGTH (L) | EXT (+) | INT (-) | EXT (+) | INT (-) | EXT (+) | INT (-) | EXT (+) | INT (-) |
| 24" | 72" | 130 | 130 | 80 | 80 | 130 | 130 | 100 | 100 |
| 36" | | | | | | | | | |
| 48" | | | | | | | | | |
| 54" | | | | | | | | | |
| 56 1/2" | 84" | | | | | | | | |
| 36" | | | | | | | | | |
| 48" | | | | | | | | | |
| 54" | | | | | | | | | |
| 56 1/2" | 98 5/8" | | | | | | | | |
| 40" | | | | | | 130 | 130 | | |
| 44" | | | | | | 125 | 125 | | |
| 48" | | | 130 | 130 | | | 115 | 115 | |
| 52" | | 129 | 129 | | | 109 | 109 | | |
| 56 1/2" | | 120 | 120 | 80 | 80 | 106 | 106 | | |
| 24" | 103 11/16" | 100 | 100 | | | 100 | 100 | | |
| 36" | | | | | | | | | |
| 40" | | | | | | | | | |
| 44 1/2" | | | 100 | 100 | | | 100 | 100 | 100 |

NOTE: GLASS LOADS BASED ON TESTING AND ASTM E1300-04

WATER INFILTRATION MAX.
+ 22.5 PSF

GLAZING OPTIONS:

G1: 9/16" LAMINATED:
1/4" HEAT STRENGTHENED GLASS -
.075" VANCEVA COMPOSITE INTERLAYER -
1/4" HEAT STRENGTHENED GLASS.
(VANCEVA COMPOSITE INTERLAYER BY "EASTMAN CHEMICAL")

G2: 9/16" LAMINATED:
1/4" HEAT STRENGTHENED GLASS -
.090" PVB INTERLAYER-1/4" HEAT STRENGTHENED GLASS.
(PVB BUTACITE INTERLAYER BY "DUPONT")

G3: 1 1/4" INSULATED/LAMINATED GLASS:
1/4" HEAT STRENGTHENED GLASS -
0.075" VANCEVA COMPOSITE INTERLAYER -
3/16" HEAT STRENGTHENED GLASS-
1/2" STAINLESS STEEL SPACER -
3/16" FULLY TEMPERED GLASS
(VANCEVA COMPOSITE INTERLAYER BY "EASTMAN CHEMICAL")

G4: 1 1/4" INSULATED/LAMINATED GLASS:
3/16" HEAT STRENGTHENED GLASS -
0.075 VANCEVA COMPOSITE INTERLAYER -
3/16" HEAT STRENGTHENED GLASS-
1/2" STAINLESS STEEL SPACER -
1/4" FULLY TEMPERED GLASS
(VANCEVA COMPOSITE INTERLAYER BY "EASTMAN CHEMICAL")

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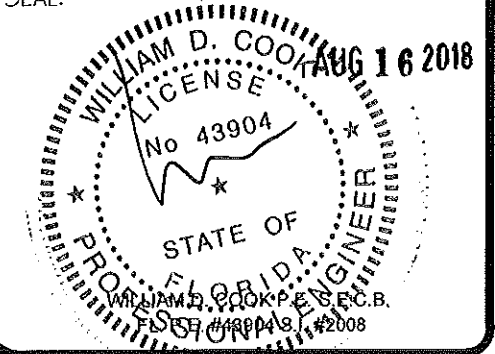
ALUMINUM AND GLASS INC.

2280 N.W. 33rd Court
Pompano Beach, FL 33069
ph. (954) 203-2977
e-mail: info@astral.com

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SEAL:



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PROJECT:

5200 SERIES ALUMINUM
WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:

FL27900.1

DRAWN BY:

MG

VERIFY BY:

DATE:

08/16/2018

DWG. NO.

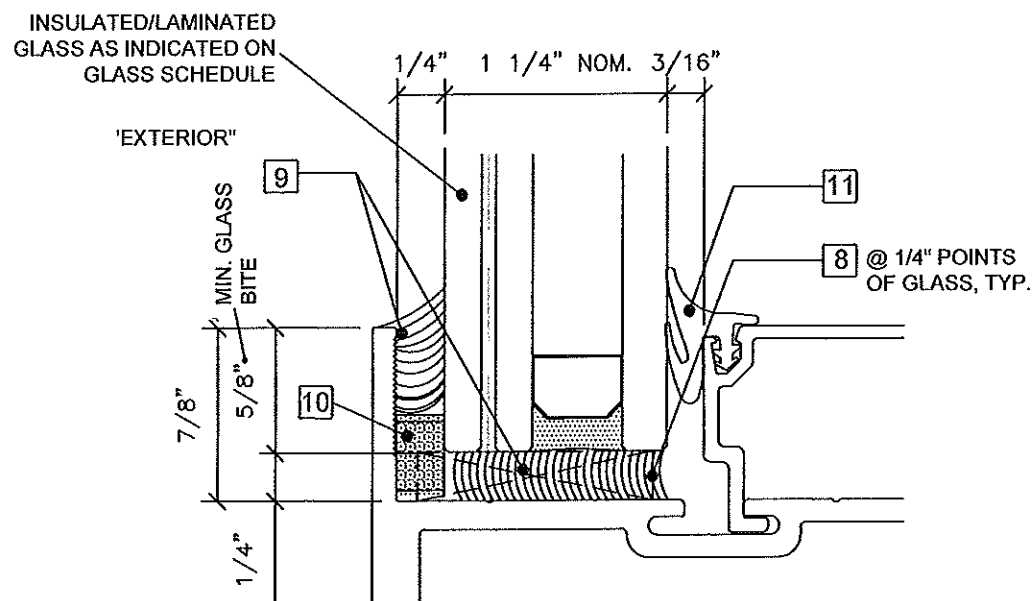
5200_FIX-LMI

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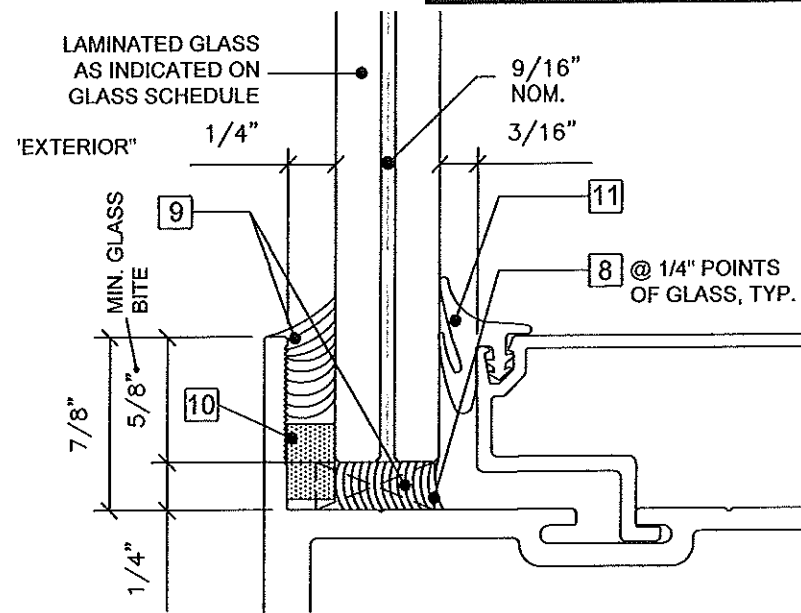
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SHEET NO.

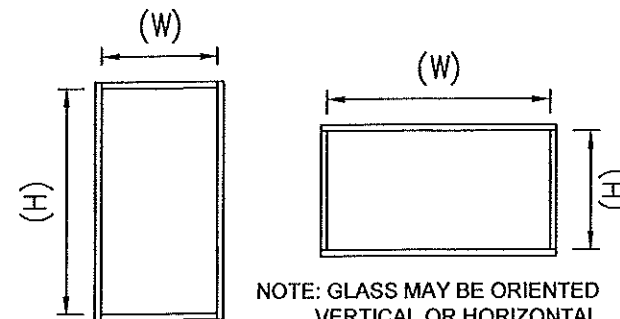
2 OF 9



G3 & G4 TYPICAL INSULATED GLAZING DETAIL
1 1/4" NOM. THICK GLASS



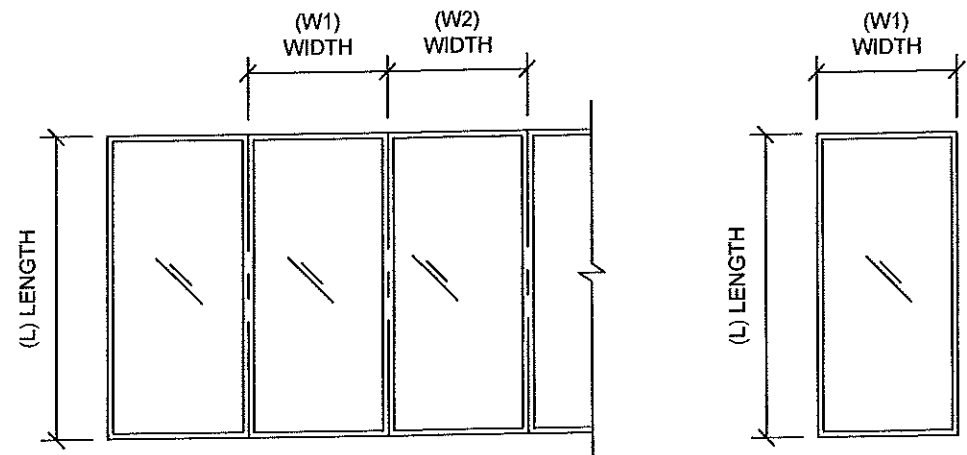
G1 & G2 TYPICAL LAMINATED GLAZING DETAIL
9/16" NOM. THICK GLASS



NOTE: GLASS MAY BE ORIENTED
VERTICAL OR HORIZONTAL

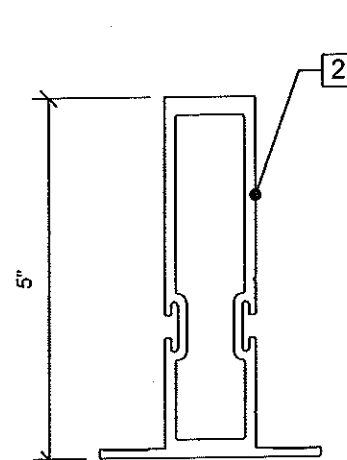
MULLION DESIGN LOAD CHART - PSF

| FRAME SIZE | | TYPE - "M1" | | TYPE - "M2" | | TYPE - "J1" | |
|------------|------------|----------------|---------|-------------|---------|----------------|---------|
| | | NON-REINFORCED | | REINFORCED | | NON-REINFORCED | |
| WIDTH (W) | LENGTH (L) | EXT (+) | INT (-) | EXT (+) | INT (-) | EXT (+) | INT (-) |
| 36" | 60" | 100 | 100 | 130 | 130 | 130 | 130 |
| 48" | | | | | | | |
| 54" | | | | | | | |
| 60" | | | | | | | |
| 36" | 72" | | | | | | |
| 48" | | | | | | | |
| 54" | | | | | | | |
| 60" | | | | | | | |
| 36" | 84" | | | | | | |
| 48" | | | | | | | |
| 54" | | | | | | | |
| 60" | | | | | | | |
| 36" | 96" | | | | | | |
| 48" | | 100 | 100 | | | | |
| 54" | | 92 | 92 | | | | |
| 60" | | 82 | 82 | | | | |
| 36" | 103" | | | | | | |
| 48" | | 100 | 100 | | | | |
| 54" | | 83 | 83 | 130 | 130 | | |
| 60" | | 74 | 74 | 128 | 128 | | |
| 36" | 108" | | | | | | |
| 42" | | | | 130 | 130 | | |
| 48" | | | | 125 | 125 | | |
| 36" | | | | 121 | 121 | 130 | 130 |
| 42" | 120" | | | 104 | 104 | 120 | 120 |
| 48" | | | | 91 | 91 | 105 | 105 |



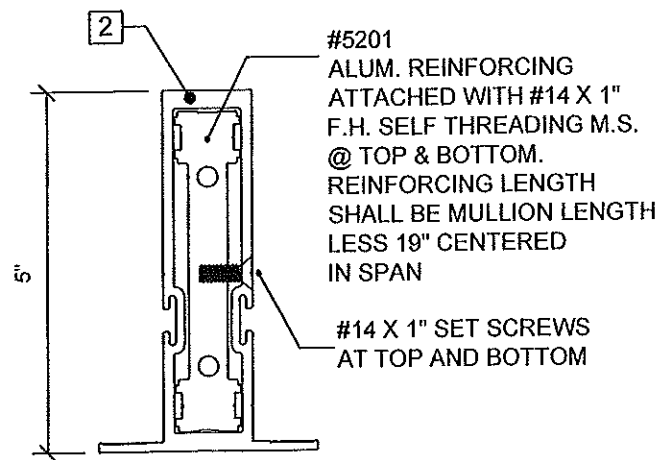
TRIBUTARY WIDTH = $W = \frac{(W1) + (W2)}{2}$

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



MULLION TYPE - "M1"
NON-REINFORCED

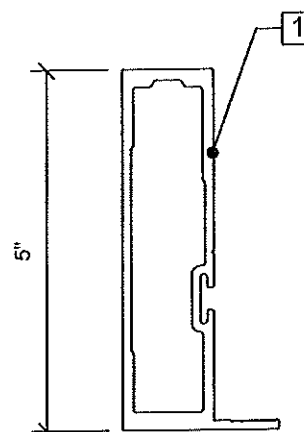
MULLION: $I_{xx} = 7.1 \text{ in}^4$
 $S_{xx} = 2.84 \text{ in}^3$



MULLION TYPE - "M2"
REINFORCED

MULLION: $I_{xx} = 7.1 \text{ in}^4$
REINF. $I_{xx} = 5.2 \text{ in}^4$ (IN ALUM.)
TOTAL: $I_{xx} = 12.3 \text{ in}^4$

TOTAL: $S_{xx} = 4.92 \text{ in}^3$



JAMB TYPE- J1
NON-REINFORCED

JAMB: $I_{xx} = 6.19 \text{ in}^4$
 $S_{x-x} = 2.48 \text{ in}^3$

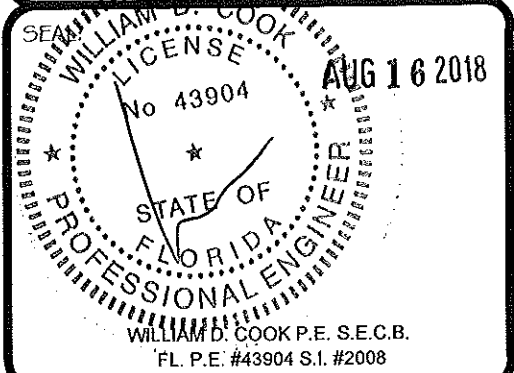
ASTRAL

ALUMINUM AND GLASS INC.

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Pompano Beach, FL 33069
ph. (954) 203-2977
e-mail: info@astralfla.com

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PROJECT:

5200 SERIES ALUMINUM
WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:

FL27900.1

DRAWN BY:

MG

VERIFY BY:

DATE:

08/16/2018

DWG. NO.

5200_FIX-LMI

SCALE:

N.T.S.

SHEET NO.

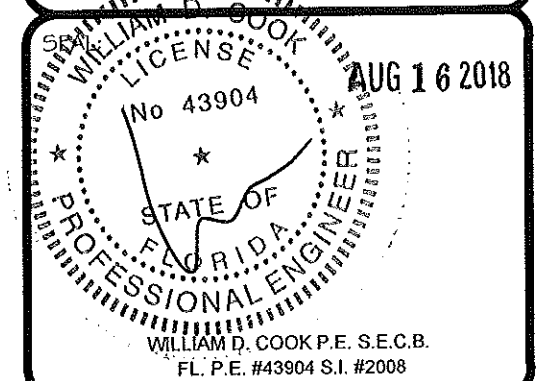
3 OF 9

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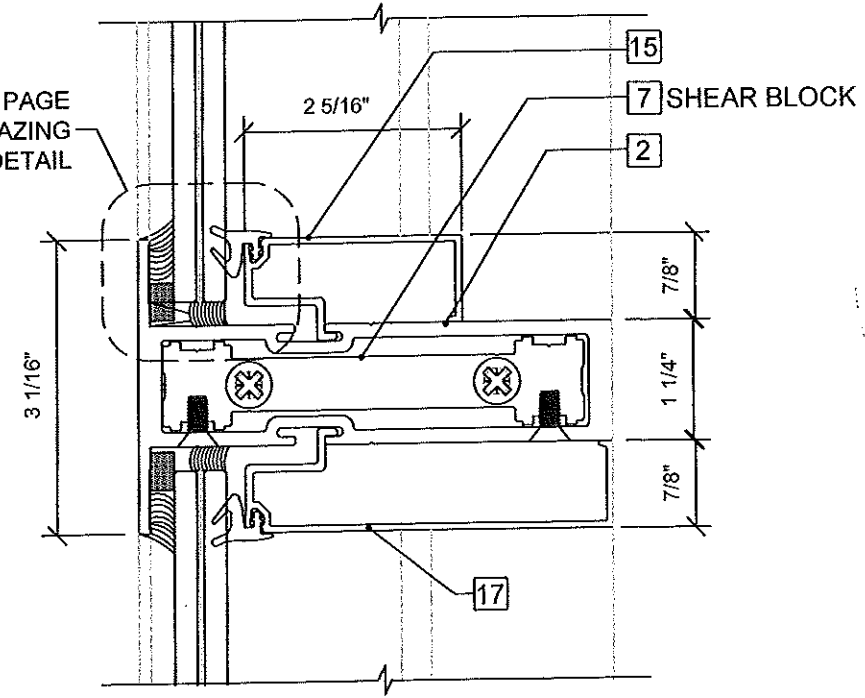
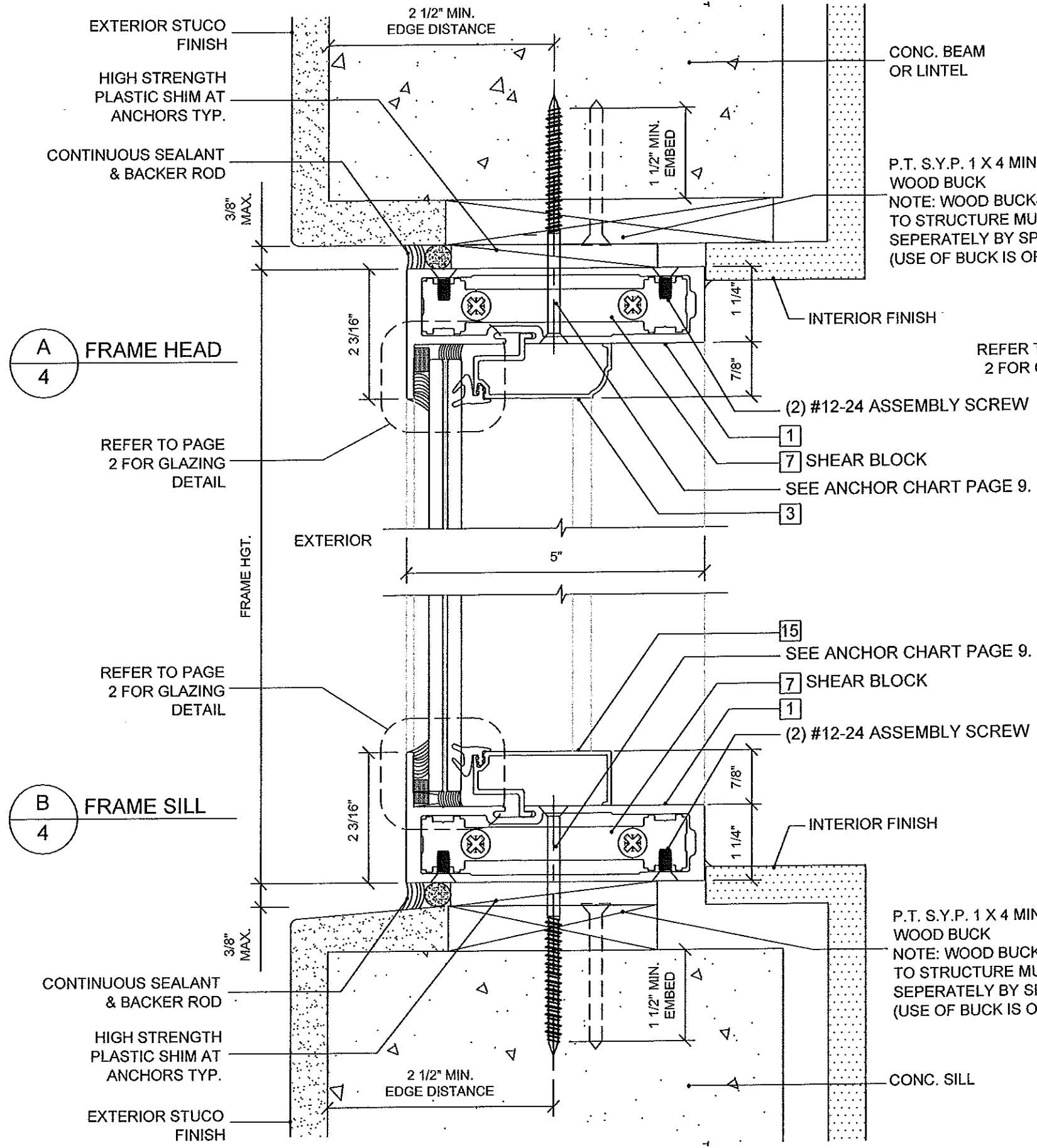
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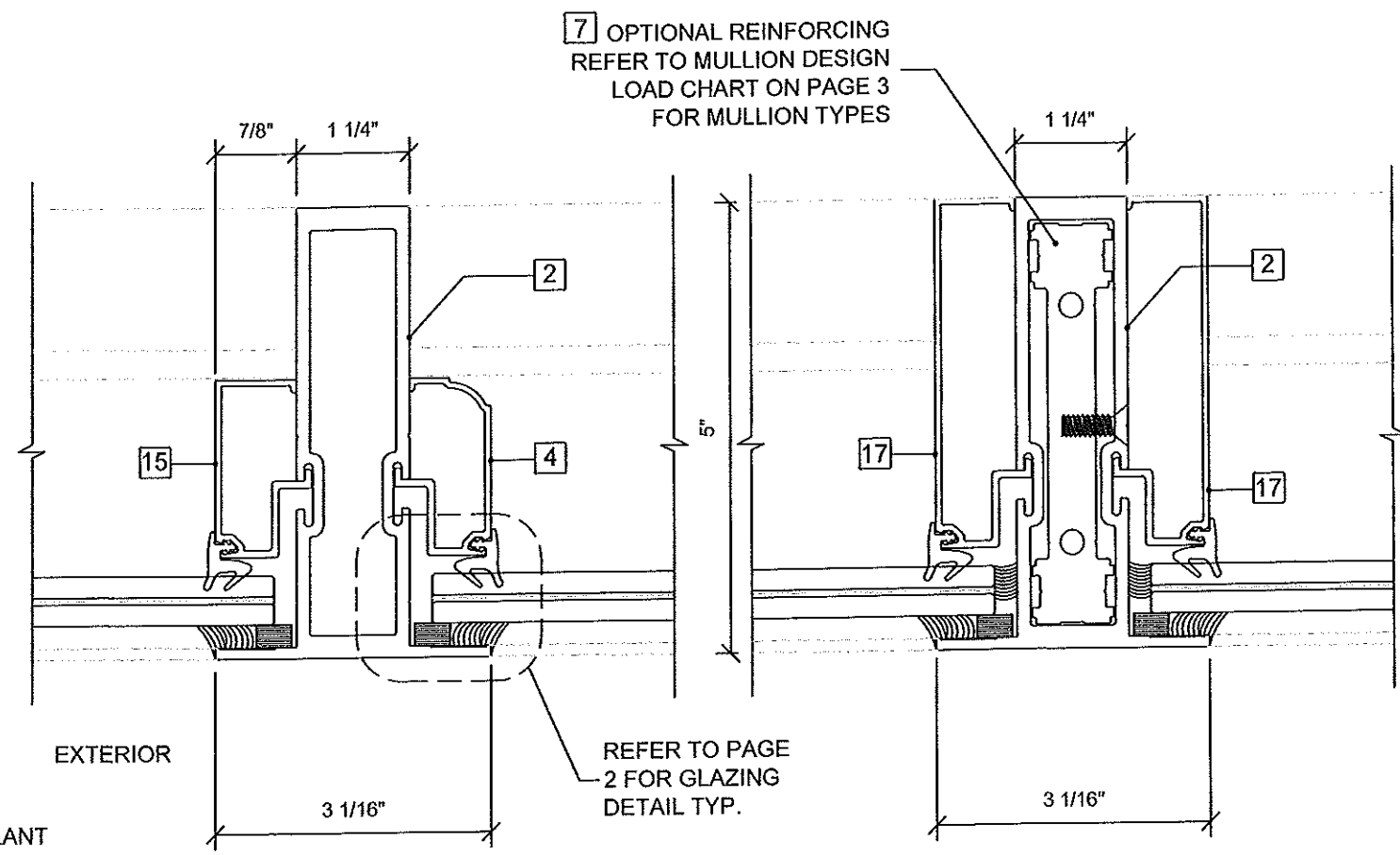
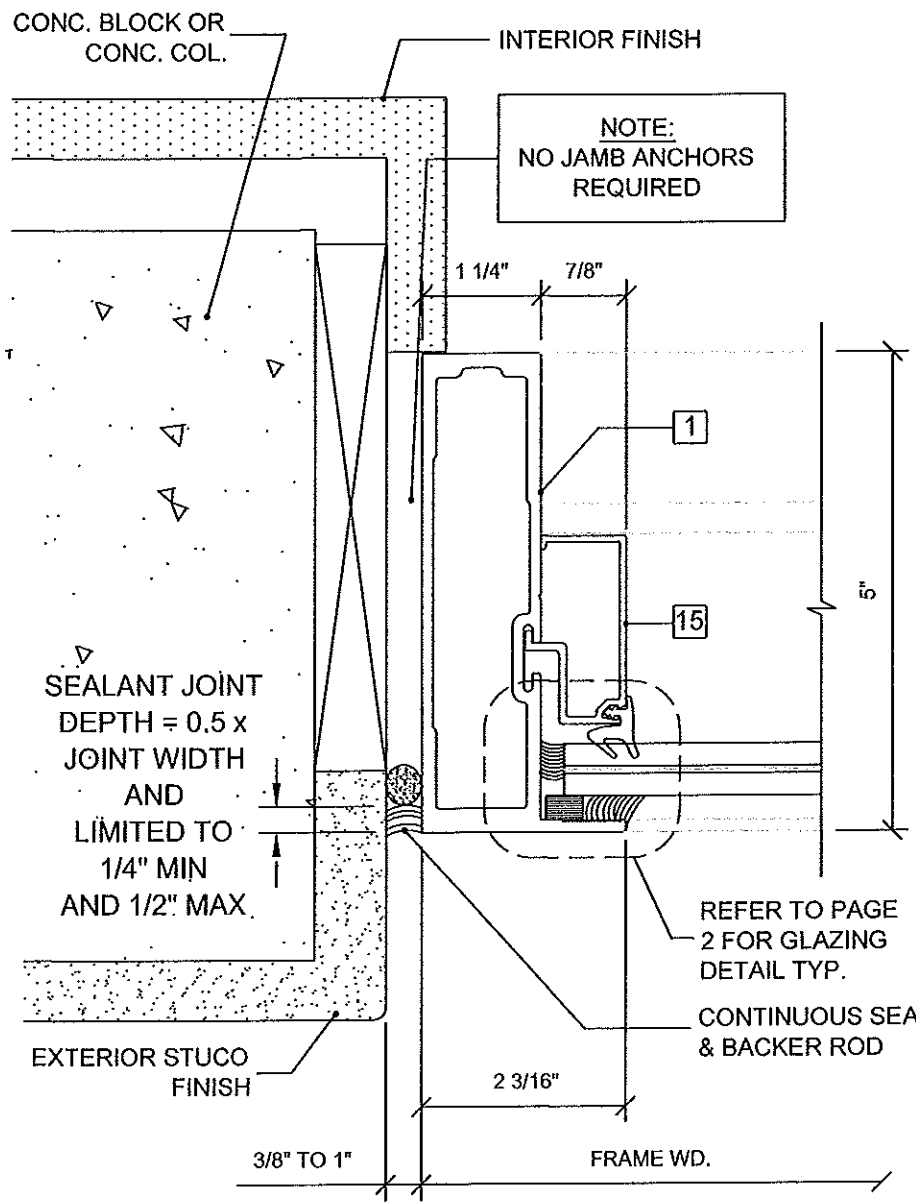
PROJECT:
5200 SERIES ALUMINUM WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:
FL27900.1

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| DRAWN BY: MG | VERIFY BY: |
| DATE: 08/16/2018 | DWG. NO. 5200_FIX-LMI |
| SCALE: 1/2"=1" | SHEET NO. 4 OF 9 |



8/16/2018
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D
5 FRAME JAMB

E
5 VERTICAL
MULLION W/O
REINFORCING

F
5 VERTICAL
MULLION W/
REINFORCING

JAMB SEALANT NOTES:

PERIMETER SEALANT OPTIONS:
TREMCO SPECTREM II
TREMCO DYMONIC
DOW-CORNING 795/790 SILICONE

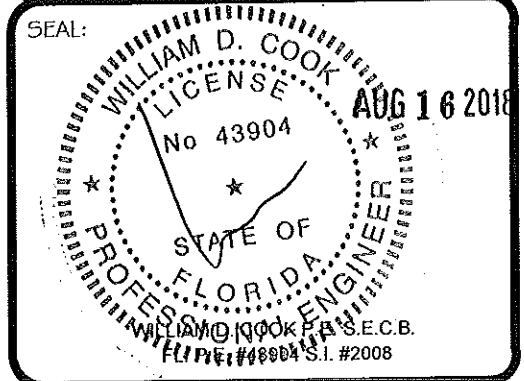
ALTERNATE SEALANTS AND JAMB GAPS:
TO BE APPROVED BY DESIGN
PROFESSIONAL OF RECORD AND
SEALANT MANUFACTURER.

ASTRAL

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PROJECT:
**5200 SERIES ALUMINUM
WINDOW WALL SYSTEM (L.M.I.)**

PRODUCT APPROVAL NO:
FL27900.1

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| DRAWN BY: MG | VERIFY BY: |
| DATE: 08/16/2018 | DWG. NO. 5200_FIX-LMI |
| SCALE: 1/2"=1" | SHEET NO. 5 OF 9 |

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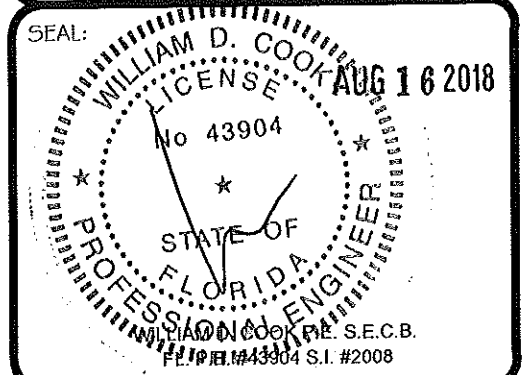
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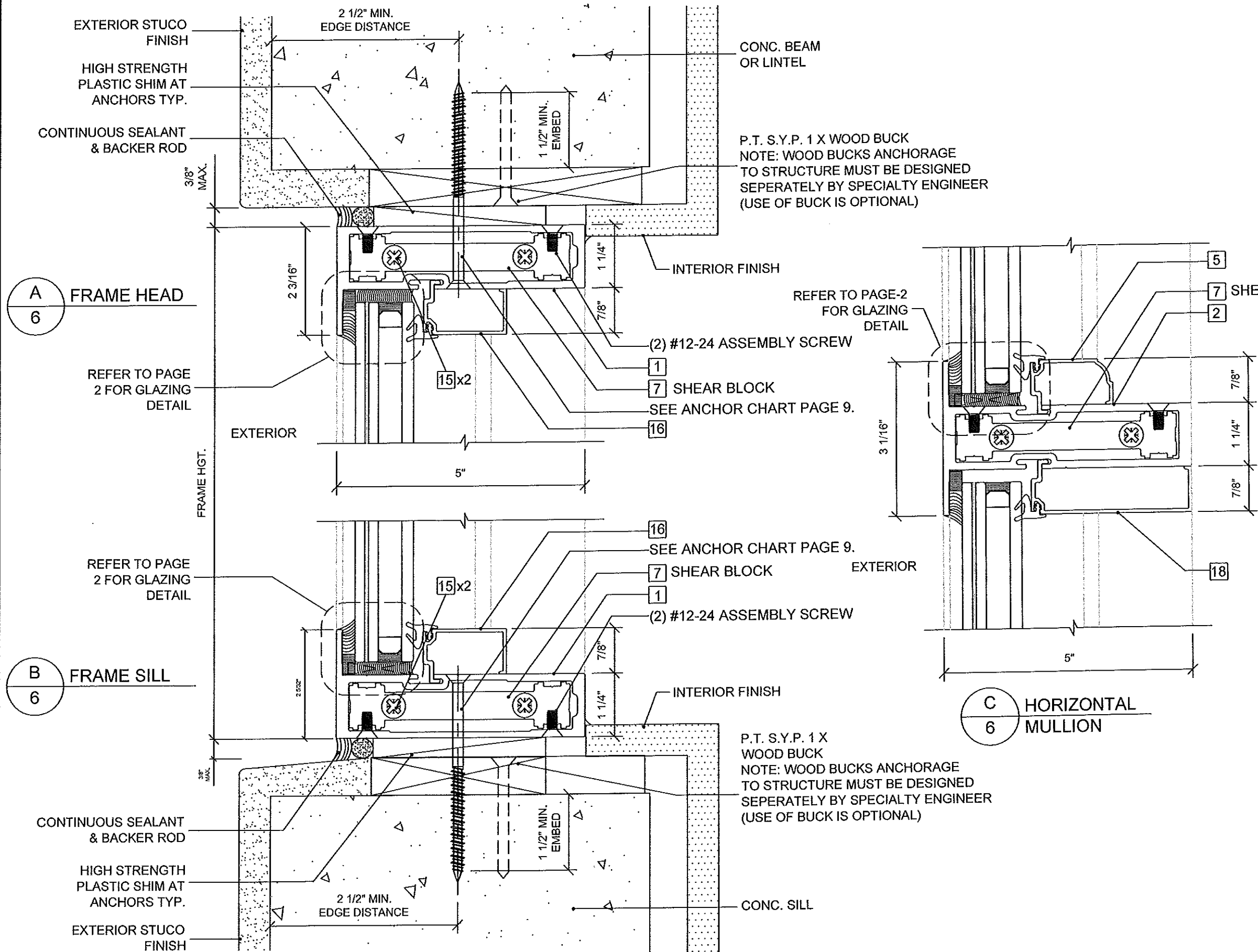
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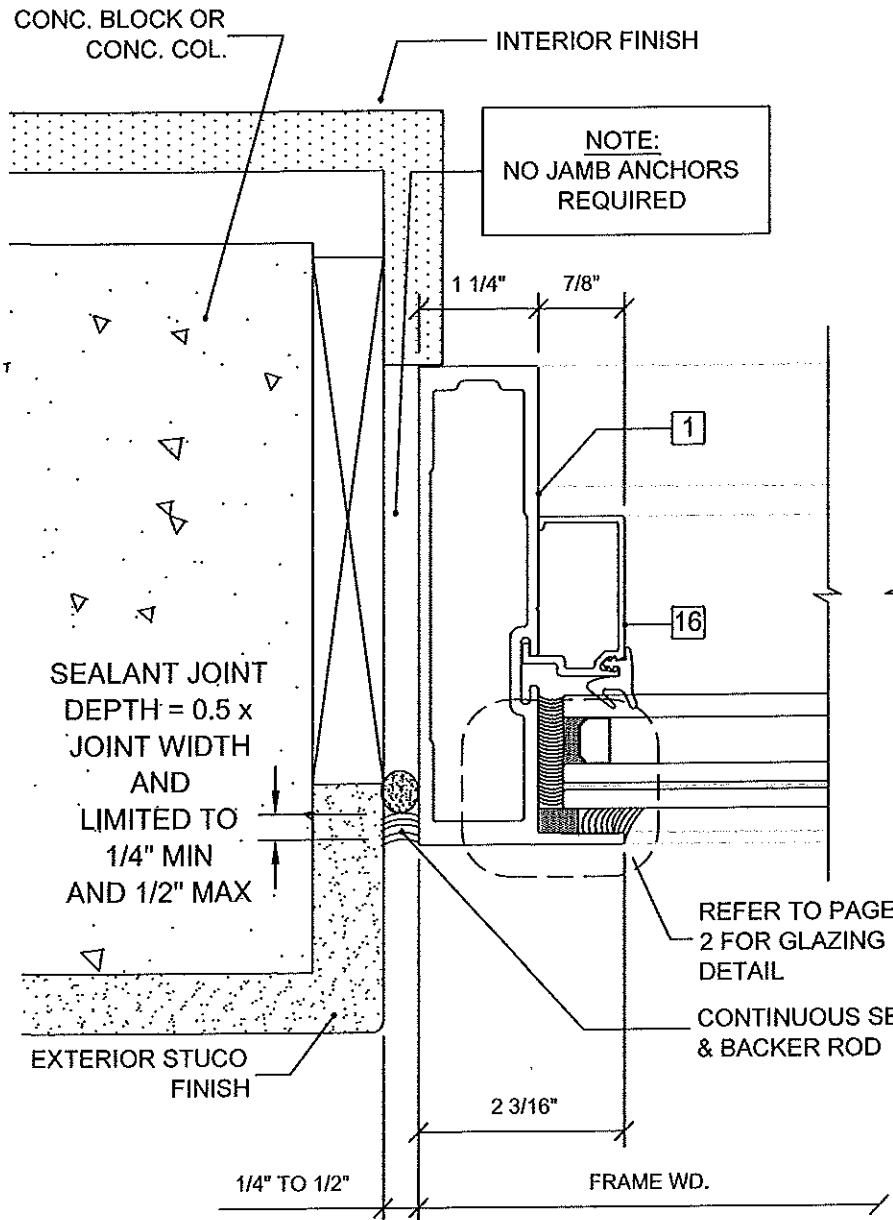
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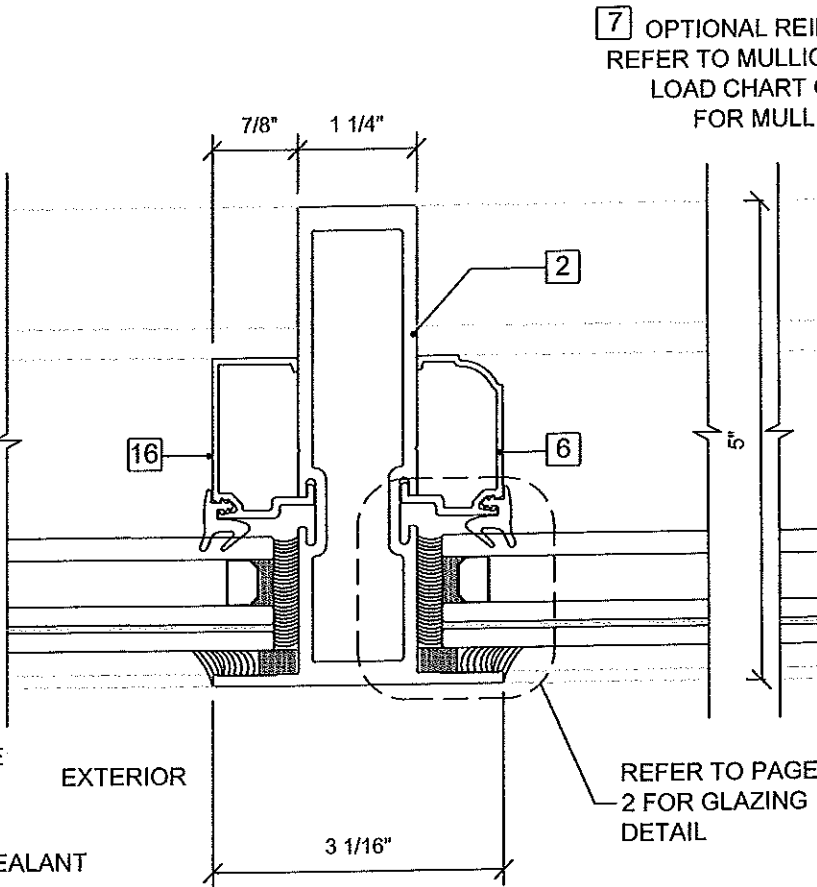
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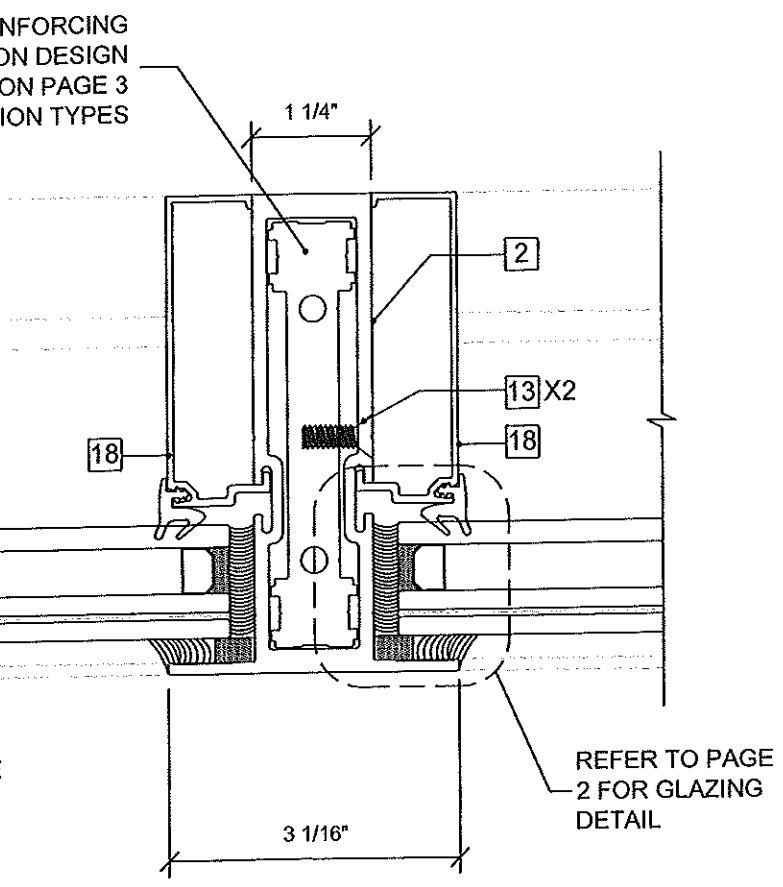
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 5/19/2018



D
7
FRAME JAMB



E
7
VERTICAL MULLION W/O REINFORCING



F
7
VERTICAL MULLION W/ REINFORCING

JAMB SEALANT NOTES:

PERIMETER SEALANT OPTIONS:
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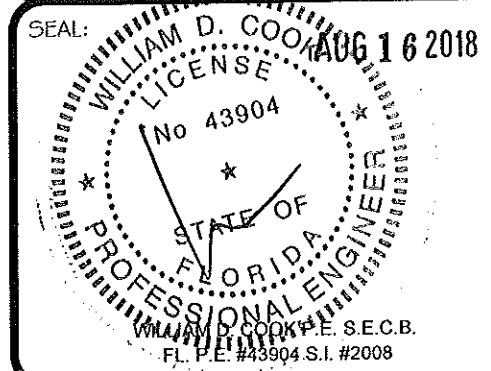
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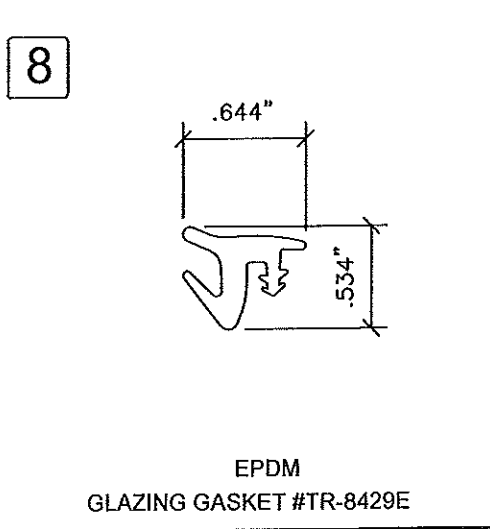
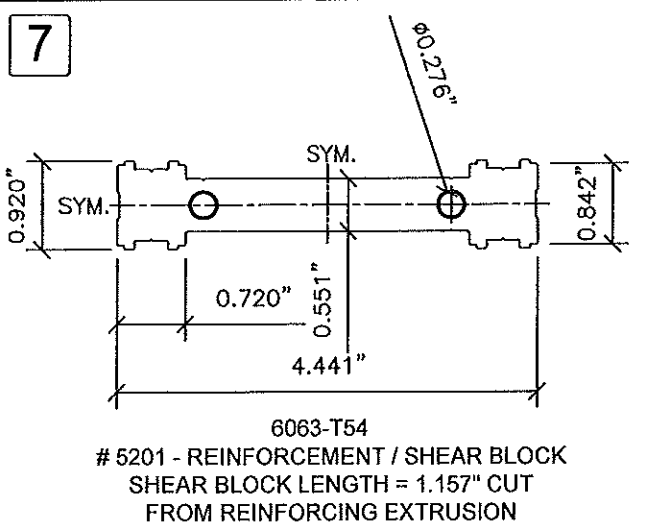
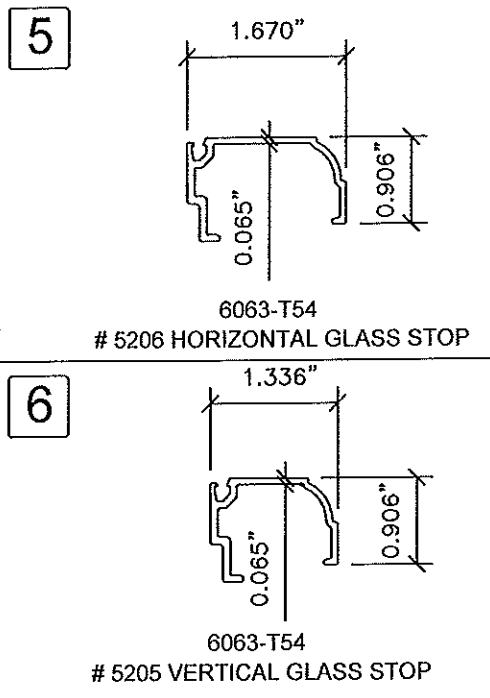
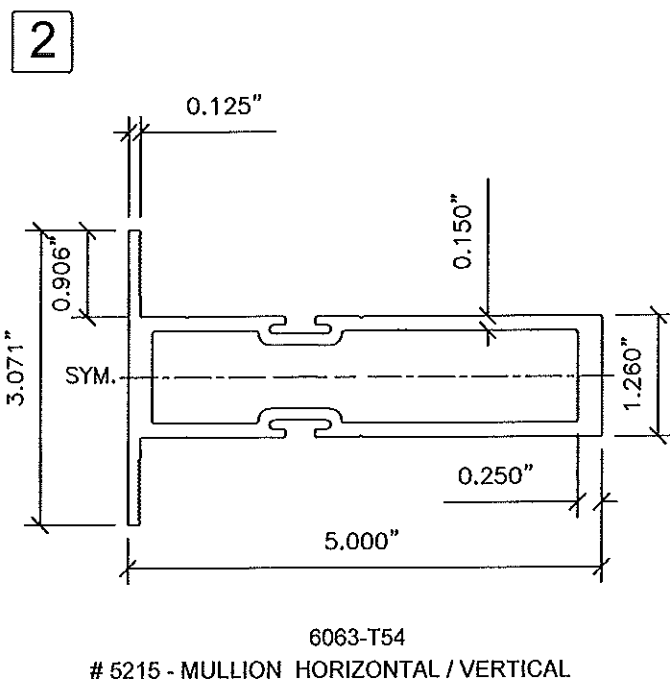
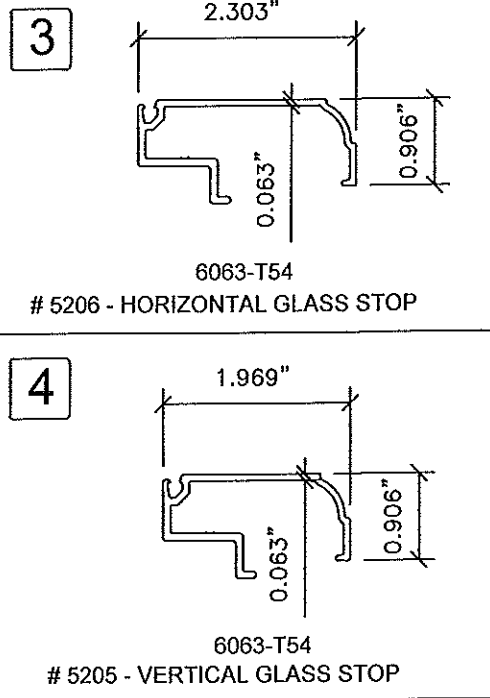
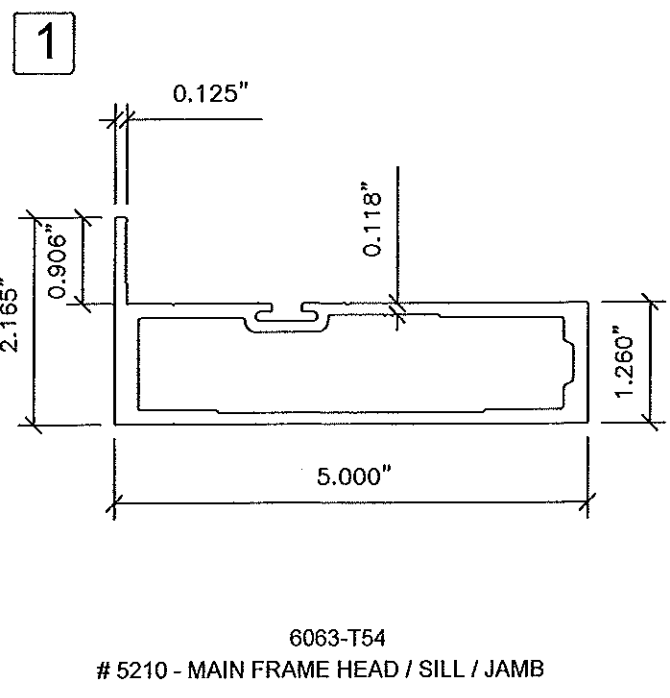
PROJECT:
 5200 SERIES ALUMINUM WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:
 FL27900.1

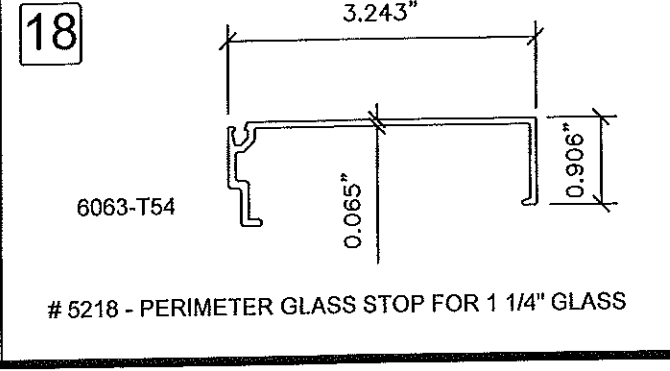
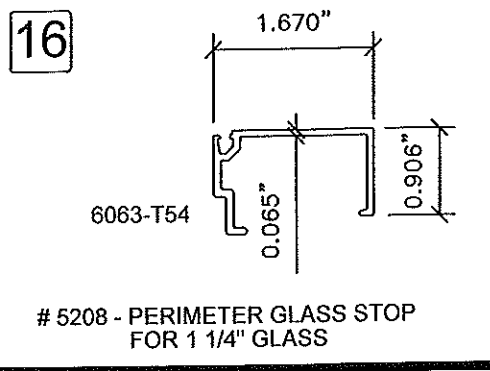
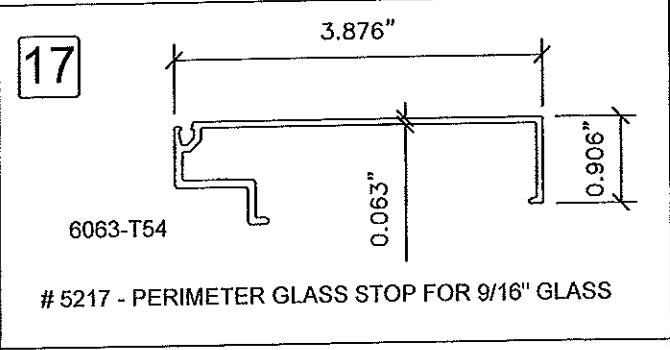
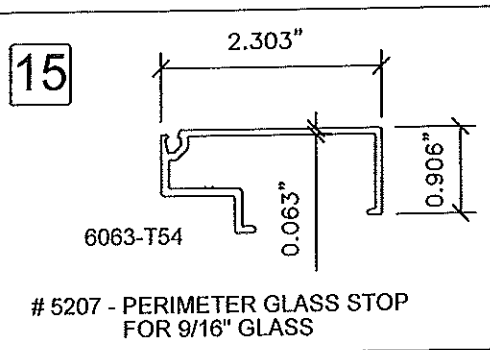
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|---------------------|--------------------------|
| DRAWN BY: MG | VERIFY BY: |
| DATE: 08/16/2018 | DWG. NO. 5200_FIX-LMI |
| SCALE: 1/2"=1" | SHEET NO. 7 OF 9 |

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6/16/2018 chris day N:\Users\chris\My Documents\Projects\5200 Series Window Wall System (LMI)\5200_FIX-LMI DWG.dwg



| PARTS/MATERIALS LEGEND | | |
|------------------------|------------|--|
| ITEM# | PART# | DESCRIPTION/MATERIAL |
| 1 | 5210 | MAIN FRAME (HEAD, SILL & JAMB) 6063-T54 ALUM. |
| 2 | 5215 | MAIN FRAME (VERTICAL/HORIZONTAL MULLION) 6063-T54 ALUM. |
| 3 | 5206 | GLASS STOP (HORIZONTAL 9/16" GLAZING) 6063-T54 ALUM. |
| 4 | 5205 | GLASS STOP (VERTICAL 9/16" GLAZING) 6063-T54 ALUM. |
| 5 | 5206 | GLASS STOP (HORIZONTAL 1 1/4" GLAZING) 6063-T54 ALUM. |
| 6 | 5205 | GLASS STOP (VERTICAL 1 1/4" GLAZING) 6063-T54 ALUM. |
| 7 | 5201 | SHEAR BLOCK/REINFORCING 6063-T54 ALUM. |
| 8 | TR-8429E | SETTING BLOCK EPDM RUBBER 70 SHORE A DUROMETER |
| 9 | N/A | STRUCTURAL SILICONE (GE SCS 2000 OR DOW-CORING 995) |
| 10 | V2100 | FOAM GLAZING TAPE NORTON 1/4" X 3/8" |
| 11 | 5200-G-103 | GLAZING GASKET (INTERIOR) EPDM RUBBER 65 SHORE A DUROMETER |
| 12 | N/A | #12-24x1-3/4" LG. ASSEMBLY SCREW |
| 13 | N/A | NOT USED |
| 14 | 5200-G-103 | #14-20x1-1/2" LG. SHEAR BLOCK SCREW |
| 15 | 5207 | PERIMETER GLASS STOP FOR 9/16" GLASS 6063-T54 ALUM. |
| 16 | 5208 | PERIMETER GLASS STOP FOR 1 1/4" GLASS 6063-T54 ALUM. |
| 17 | 5217 | PERIMETER GLASS STOP FOR 9/16" GLASS 6063-T54 ALUM. |
| 18 | 5218 | PERIMETER GLASS STOP FOR 1 1/4" GLASS 6063-T54 ALUM. |

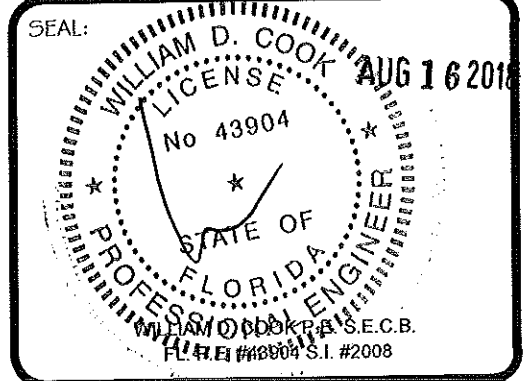


ASTRAL

ALUMINUM AND GLASS INC.

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REVISIONS:

| NO. | DATE: | DESCRIPTION: | BY: |
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PROJECT:
5200 SERIES ALUMINUM WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:
FL27900.1

| | |
|---------------------|--------------------------|
| DRAWN BY: MG | VERIFY BY: |
| DATE: 08/16/2018 | DWG. NO. 5200_FIX-LMI |
| SCALE: 1:2 | SHEET NO. 8 OF 9 |

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| DESIGN LOAD RATING | ANCHOR CLUSTER LOAD CHART - PSF | | | | | |
|--------------------|---------------------------------|------------|-----------------|--------------|-------------|----|
| | FRAME SIZE | | TYPE - "A" | TYPE - "B" | TYPE - "C" | |
| | WIDTH (W) | LENGTH (L) | CONCRETE (QTY.) | METAL (QTY.) | WOOD (QTY.) | |
| P= +/- 130 PSF | 40" | 120" | 10 | 10 | 18 | |
| | 48" | | 12 | 12 | 22 | |
| | 40" | 108" | 8 | 8 | 18 | |
| | 48" | | 10 | 10 | 20 | |
| | 40" | 103" | 10 | 10 | 20 | |
| | 48" | | 12 | 10 | 24 | |
| | 40" | 96" | 8 | 8 | 18 | |
| | 48" | | 10 | 10 | 22 | |
| | 40" | 84" | 8 | 8 | 16 | |
| | 48" | | 10 | 10 | 20 | |
| | P= +/- 115 PSF | 40" | 120" | 8 | 8 | 16 |
| | | 48" | | 10 | 10 | 20 |
| 40" | | 108" | 8 | 8 | 14 | |
| 48" | | | 8 | 8 | 18 | |
| 48" | | 103" | 8 | 8 | 16 | |
| 60" | | | 10 | 10 | 22 | |
| 48" | | 96" | 8 | 8 | 16 | |
| 60" | | | 10 | 10 | 20 | |
| 48" | | 84" | 8 | 8 | 14 | |
| 60" | | | 8 | 8 | 18 | |
| P= +/- 100 PSF | | 36" | 120" | 6 | 6 | 12 |
| | | 40" | | 8 | 8 | 16 |
| | 48" | 8 | | 8 | 18 | |
| | 36" | 108" | 6 | 6 | 14 | |
| | 40" | | 6 | 6 | 14 | |
| | 48" | | 8 | 8 | 16 | |
| | 40" | 103" | 6 | 6 | 12 | |
| | 48" | | 8 | 8 | 14 | |
| | 60" | | 10 | 10 | 18 | |
| | 48" | 96" | 6 | 6 | 12 | |
| | 48" | | 8 | 8 | 14 | |
| | 60" | | 8 | 8 | 18 | |
| | 40" | 84" | 6 | 6 | 10 | |
| | 48" | | 6 | 6 | 12 | |
| | 60" | | 8 | 8 | 14 | |

ANCHOR QUANTITIES = TOTAL NUMBER OF ANCHORS.
 INSTALL HALF ON EACH SIDE OF MULLION AS SHOWN ON
 ELEV. SHEET 1.
 JAMB MEMBERS RECEIVE HALF OF TOTAL NUMBER.

ANCHOR TYPE SCHEDULE:

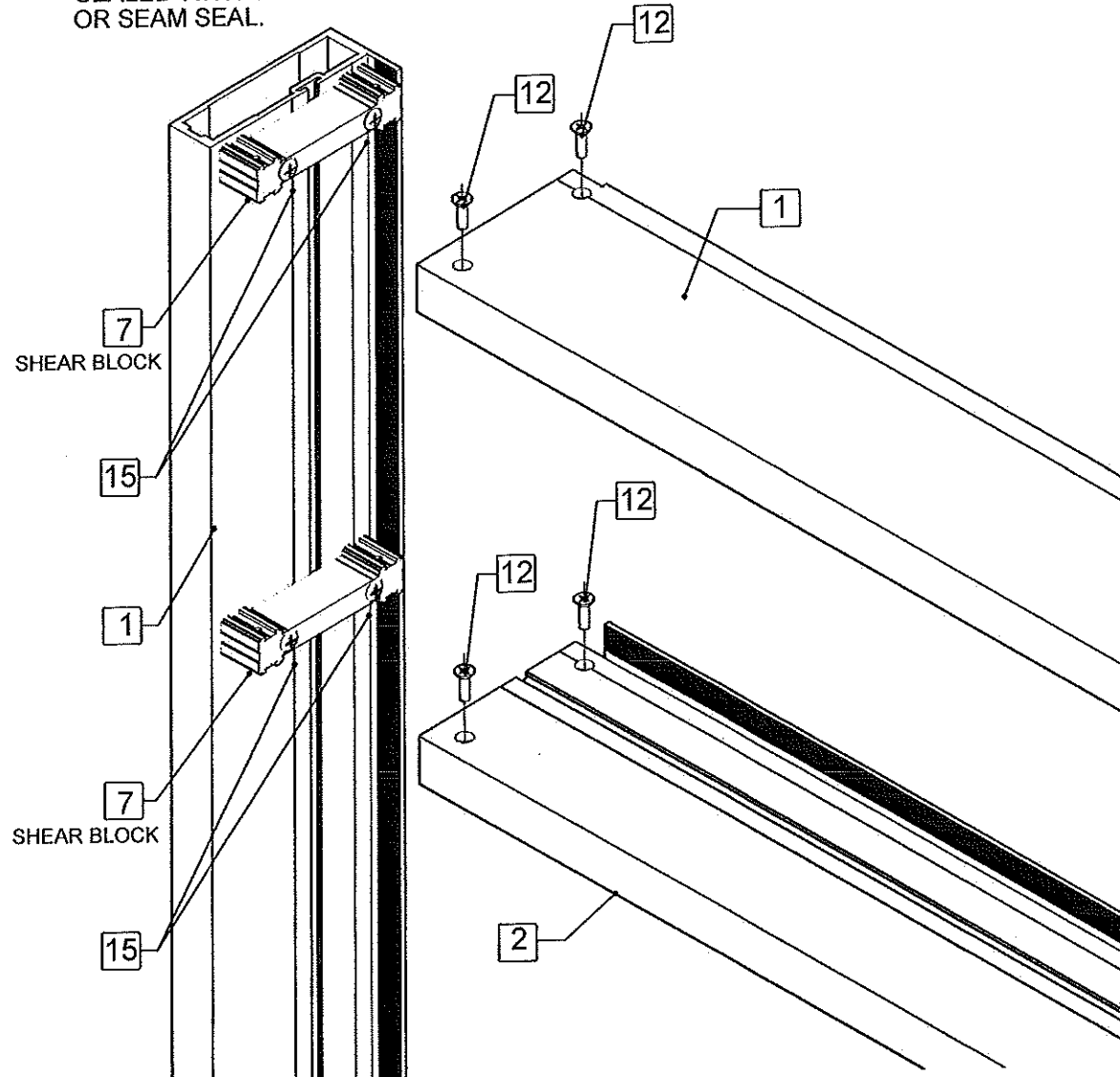
- THRU 1x BUCK OR DIRECTLY INTO GROUT FILLED CMU, OR 2700 PSI CONCRETE SUBSTRATE.
- (A) USE: 1/4" DIA. RAWL TAPPER OR 1/4" DIA. HILTI KWIK CON II. EMBED 1 1/2" MIN. BEYOND STUCCO. MIN. EDGE DIST= 2 1/2". MIN. SPACING = 2 1/4". Fu min=120 Ksi Fy min= 92 Ksi
- INTO 1/8" MIN. STEEL (A36) OR ALUMINUM (MIN. 6063-T5).
- (B) USE: #14 ELCO DRILL-FLEX STRUCTURAL SELF DRILLING FASTENER. GRADE -5
- INTO NO-2 SYP WOOD FRAMING:
- (C) USE: #14 SMS, WOOD SCREW OR TAPPER. EMBED 1 3/4" INTO BASE MATERIAL. MIN. EDGE DIST= 1". MIN. SPACING = 1 1/2". Fu min=74 Ksi Fy min= 57 Ksi

NOTE: ALL ANCHORS SHALL BE SHIMMED WITH HARD PLASTIC SHIMS. USE SHIMS WHERE GAP IS GREATER THAN 1/16".

SEALANT

ALL JOINTS AND FRAME CONNECTIONS TO BE SEALED WITH SPECTREM 2 SILICONE. OR SEAM SEAL.

FRAME ASSEMBLY DETAIL



ASTRAL

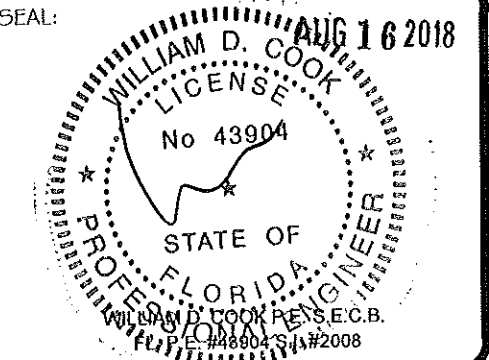
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SEAL:



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PROJECT:

5200 SERIES ALUMINUM WINDOW WALL SYSTEM (L.M.I.)

PRODUCT APPROVAL NO:

FL27900.1

DRAWN BY:

MG

VERIFY BY:

DATE:

08/16/2018

DWG. NO.

5200_FIX-LMI

SCALE:

N.T.S.

SHEET NO.

9 OF 9