

# SUBMITTAL REVIEW COVER SHEET

**SPECIFICATION SECTION NUMBER AND TITLE:** Spec Sections: 084100 – Aluminum Storefront  
Spec Sections: 084413 – Curtainwall

**PROJECT NAME:** Laurel School Refurbishment

**DATE:** 12/19/2016

**ARCHITECT:** Mahlum I Scairono Martinez Architects

**CONTRACTOR:** TUNA CONSTRUCTION LLC

Supplier/Preparer: Star Glass Inc.

## Options:

Contractor's Review Stamp

Consultant's Review Stamp

### Tuna Construction L.L.C.

Tuna Construction L.L.C. submission of these Submittals is subject to the provisions of the contract Drawings, Specifications and Addenda. This Action is for general concurrence only. Tuna Construction L.L.C. is not responsible for Errors, Omissions, Lack of Design, or Lack of Proper Detail in the contract documents

Time is of the essence. Delays in timely review of these Submissions will delay completion of the job.

☒ Reviewed

☐ Reviewed Corrections Noted

Reviewed By: Kelli Perkins \_\_\_\_\_

Delivered On: 12/19/2016 \_\_\_\_\_

See notes &  
comments on  
cover sheet  
JHC

## COMMENTS:

All work shall be placed in strict conformance with the requirements of the Contract Documents, particularly the specific specification Sections Spec Sections: 084100 – Aluminum Storefront

Spec Sections: 084413 – Curtainwall

Contractor to field verify all dimensions.



STAR GLASS INC.

1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:

PROJECT NUMBER:  
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# Laurel School

# Refurbishment

## STOREFRONT

## SHOP DRAWINGS

### FIELD MEASUREMENTS

☐ YES ☐ NO

DATE:  
DATE:

### GENERAL NOTES

1. THESE DRAWINGS REPRESENT THE INTERPRETATION BY STAR GLASS INC. OF ARCHITECTURAL INFORMATION PROVIDED AND APPLICATION OF PRODUCTS SHOWN TO SATISFY DESIGN REQUIREMENTS. IT IS IMPORTANT THAT THIS INTERPRETATION BE REVIEWED DIMENSIONAL AND FUNCTIONALLY WITH RESPECT TO ACTUAL ARCHITECT INTENT BY THE GENERAL CONTRACTOR AND ARCHITECT.

2. ALL DIMENSIONS SHOULD BE FIELD VERIFIED AND/OR APPROVED BY THE ARCHITECT PRIOR TO THE ORDERING AND/OR FABRICATION OF GLASS AND FRAMING PRODUCTS.

3. STAR GLASS INC. WILL ASSUME NO RESPONSIBILITY FOR ERRORS RESULTING FROM THE USE OF THESE DRAWINGS FOR SIZES AND ORDERING MATERIALS OR LABOR BY OTHER TRADES.

4. MATERIALS FOR THIS PROJECT WILL NOT BE RELEASED, NOR WILL FABRICATION PRINTS BE PREPARED UNTIL STARGLASSINC. RECEIVES RETURNED"APPROVED"AND/OR"APPROVEDAS NOTED" SHOP DRAWINGS.

5. REQUEST FOR REVISIONS AFTER STAR GLASS INC. HAS BEEN RELEASED FOR FABRICATION WILL RESULT IN CHARGES FOR ALL ENGINEERING, FABRICATION, TRANSPORTATION, AND HANDLING. SCHEDULE DELAYS MAY RESULT DUE TO ANY CHANGES OF THIS NATURE. CHANGES MUST BE APPROVED IN WRITING PRIOR TO ANY REVISIONS BEING UNDERTAKEN.

6. GENERAL CONTRACTOR IS TO CLOSELY SUPERVISE OTHER TRADES TO INSURE THAT ALL INSTALLED GLASS AND/OR FINISH ALUMINUM PRODUCTS ARE PROTECTED DURING WELDING OPERATIONS, FIRE PROOFING OR ANY OTHER PROCESS THAT MAY BE HARMFUL TO THE APPEARANCE AND/OR PERFORMANCE OF PROJECT MATERIALS. THIS INCLUDES PROVIDING OR INSURING THAT PROTECTION FROM STAINING BY WET CARDBOARD, PAPER, AND FROM THE ACTION OF HARSH ALKALIS, SAND IN CONCRETE, STUCCO, MORTAR OR PLASTER WILL BE PROVIDED TO ENSURE THE PREVENTION OF MARRING AND/OR DISCOLORATION.

7. THE BUILDING STRUCTURE AND COMPONENTS THERE OF MUST BE CAPABLE OF SAFELY CARRYING THE LOADS IMPOSED UPON IT BY THE PROJECT MATERIALS, INCLUDING DEAD LOADS, WINDLOADS SHOWN HEREIN ON THE DRAWINGS AND/OR CALCULATIONS, THERMAL LOADS, SEISMIC LOADS, LIVE LOADS, ETC.

8. CONTRACTOR TO REMOVE EXISTING WINDOWS FROM OPENING. ALL ROUGH OPENINGS PROVIDED MUST BE PLUMB, LEVEL, SQUARE, AND WITHIN SPECIFIED BUILDING TOLERANCES.

9. THESE DRAWINGS ARE THE EXCLUSIVE PROPERTY OF STAR GLASS, INC. AND ARE NOT TO BE USED OR DUPLICATED WITHOUT THE WRITTEN AUTHORIZATION FROM STAR GLASS, INC.

10. STAR GLASS INC., IS NOT RESPONSIBLE FOR CLEANING AND PROTECTION, REPAIR AND/OR REPLACEMENT OF MATERIALS, DAMAGED BY OTHERS.

11. CONTRACTOR TO HIRE A LICENSED ELECTRICIAN TO WIRE EL PANIC DEVICE. PANIC DEVICE WARRANTY WILL BE VOIDED IF AN UNLICENSED PERSON(S) WIRES EL PANIC DEVICES.

### FRAME SCHEDULE

STOREFRONT:  
KAWNEER IR500 (2 1/2" X 5")

CURTAINWALL:  
KAWNEER 1600 (2 1/2" X 7 1/2")

DOORS:  
KAWNEER 350 IR

VENT WINDOW:  
KAWNEER 7225 CASEMENT WINDOW

Provide info on hardware at casement windows  
JHC 02/06/2017

### HARDWARE SCHEDULE

1/@Set 1-1  
Door 1001B  
Each opening to have:  
1 ea Continuous hinge 112HD EPT  
1 ea Continuous hinge 112HD  
1 ea Exit device EL9827 NL-OP  
1 ea Exit device 9827 EO  
1 ea Rim cylinder 20-057  
2 ea Closers 4111-Cush  
2 ea Closer brackets 4110-18  
2 ea Pulls 8190-0  
1 ea Powertransfer EPT 10  
1 ea Powersupply PS914 x 900 2RS  
All other hardware by door supplier.

3/@Set 1-2  
Doors 1204A, 1103D, 1103C Each leaf to have  
1 ea Continuous hinge 112HD  
1 ea exit device 98L  
1 ea Rim cylinder 20-057  
1 ea Closer 4111-Cush  
1 ea Closer bracket 4110-18  
All other hardware by door supplier

3/@Set 1-~~2~~ 4  
Doors 1002B, 1401B, 1402B  
Each opening to have  
2 ea Continuous hinges 112HD  
2 ea Exit devices 9827L  
2 ea Rim cylinders 20-057  
2 ea Closers 4111-Cush  
2 ea Closer brackets 4110-18  
All other hardware by door supplier

### PROJECT INFORMATION

CONTRACTOR: TUNA CONSTRUCTION, LLC.  
2420 DAWSON ST  
KENNER, LA 70062  
P: (504) 305-2249

ARCHITECT: MAHLUM SCAIRONO MARTINEZ ARCHITECTS  
3642 MAGAZINE ST  
NEW ORLEANS, LA 70115  
P: (504) 896-2000

### FINISH SCHEDULE

CLEAR ANODIZED

### SEALANT SCHEDULE

S1 DOW CORNING 795  
COLOR: SILVER  
LOCATION: PERIMETER SEALANT

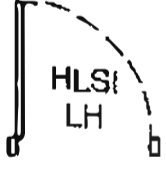
### DOOR SWING DIRECTION



HINGE LEFT SWING OUT  
LEFT HAND REVERSE



HINGE RIGHT SWING OUT  
RIGHT HAND REVERSE



HINGE LEFT SWING IN  
LEFT HAND



HINGE RIGHT SWING IN  
RIGHT HAND

### CORRECTIVE PROCEDURES

THE FOLLOWING PROCEDURES MUST BE ADHERED TO IF ANY CORRECTIVE WORK IS REQUIRED ON THIS PROJECT

BEFORE ANY CORRECTIVE WORK IS BEGUN, THE PROJECT MANAGER AT STAR GLASS INC. MUST BE CONTACTED. THE DETAILS OF THE PROBLEM ALONG WITH RECOMMENDATIONS OF THE CORRECTIVE REQUIREMENTS SHOULD BE ADDRESSED AT THAT TIME. ONCE THE PROJECT MANAGER HAS THIS INFORMATION, COURSES OF ACTION WILL BE EVALUATED WITH OTHER INTERNAL PERSONNEL; AUTHORIZATION WILL BE PROVIDED IF REWORK IS TO BE PERFORMED, THEN AND ONLY THEN WILL SUCH WORK BE UNDERTAKEN.

### PROJECT DOCUMENTATION

|  | DESCRIPTION        | DATE       |
|--|--------------------|------------|
| <input type="checkbox"/> YES <input type="checkbox"/> NO | ARCHITECTURAL DWGS | AA-AA-AAAA |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | STRUCTURAL DWGS    |            |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | SPECIFICATIONS     |            |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | ADDENDUM - ASI- CP |            |

### DRAWING INDEX

| SHEET   | DESCRIPTION         |
|---------|---------------------|
| 000     | PROJECT INFORMATION |
| 100-108 | ELEVATIONS & FLOOR  |
| 200-201 | SECTIONS DETAILS    |
| 300-307 | FRAME FABRICATION   |

Not submitted  
JHC 02/06/2017



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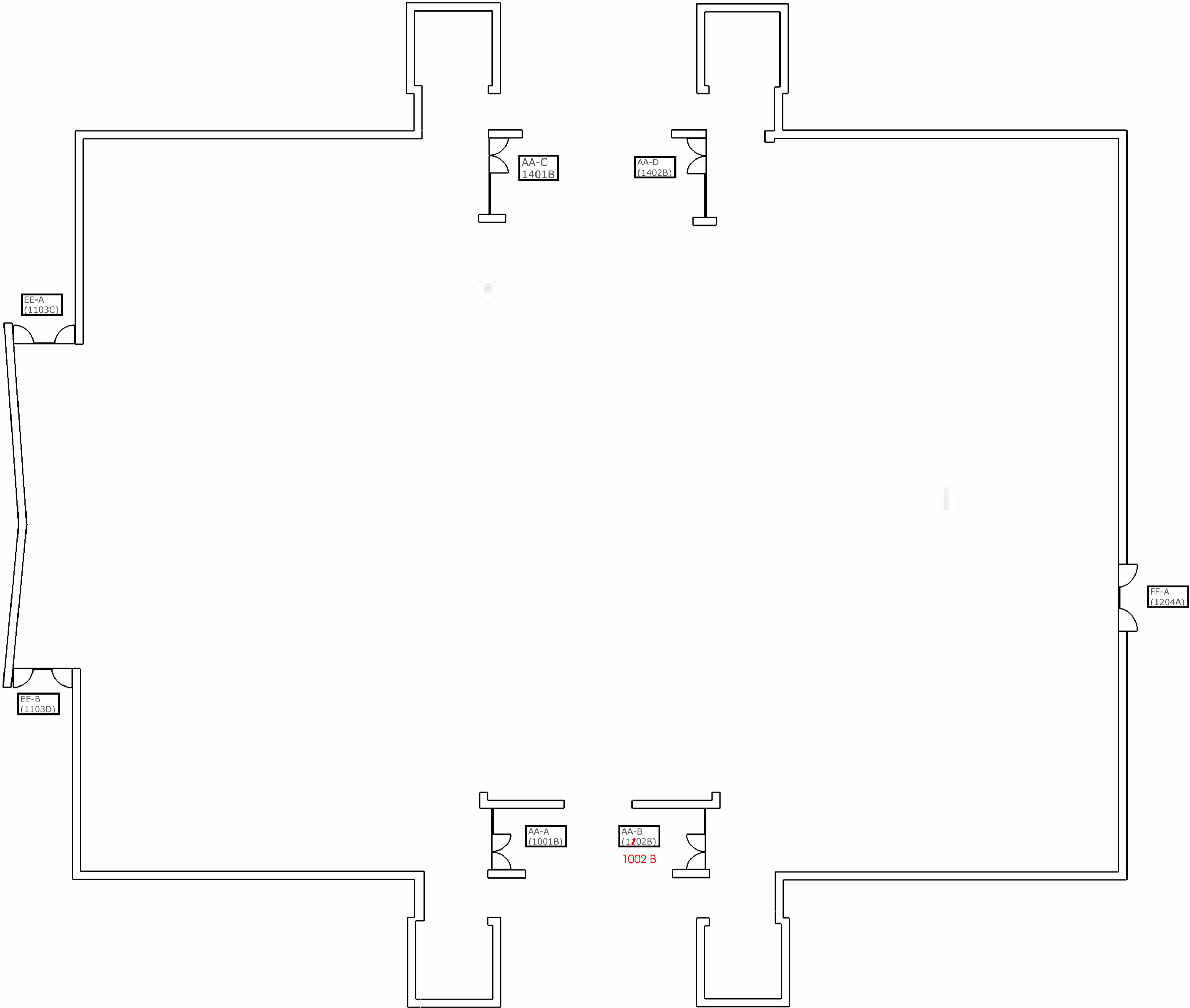
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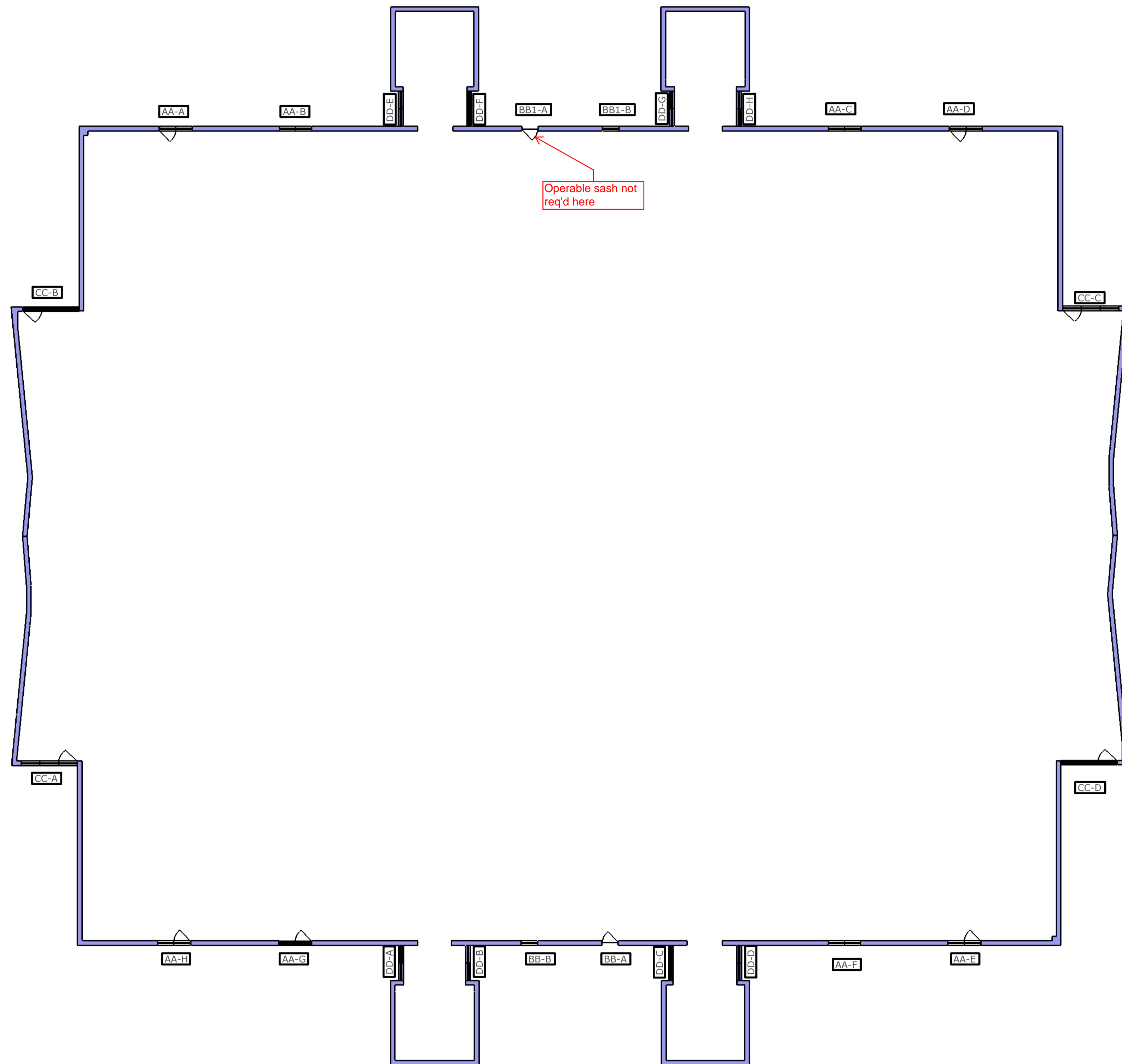
ANNUNCIATION ST



JACKSON AVE

1ST FLOOR PLAN

ANNUNCIATION ST



JACKSON AVE

2ND FLOOR PLAN



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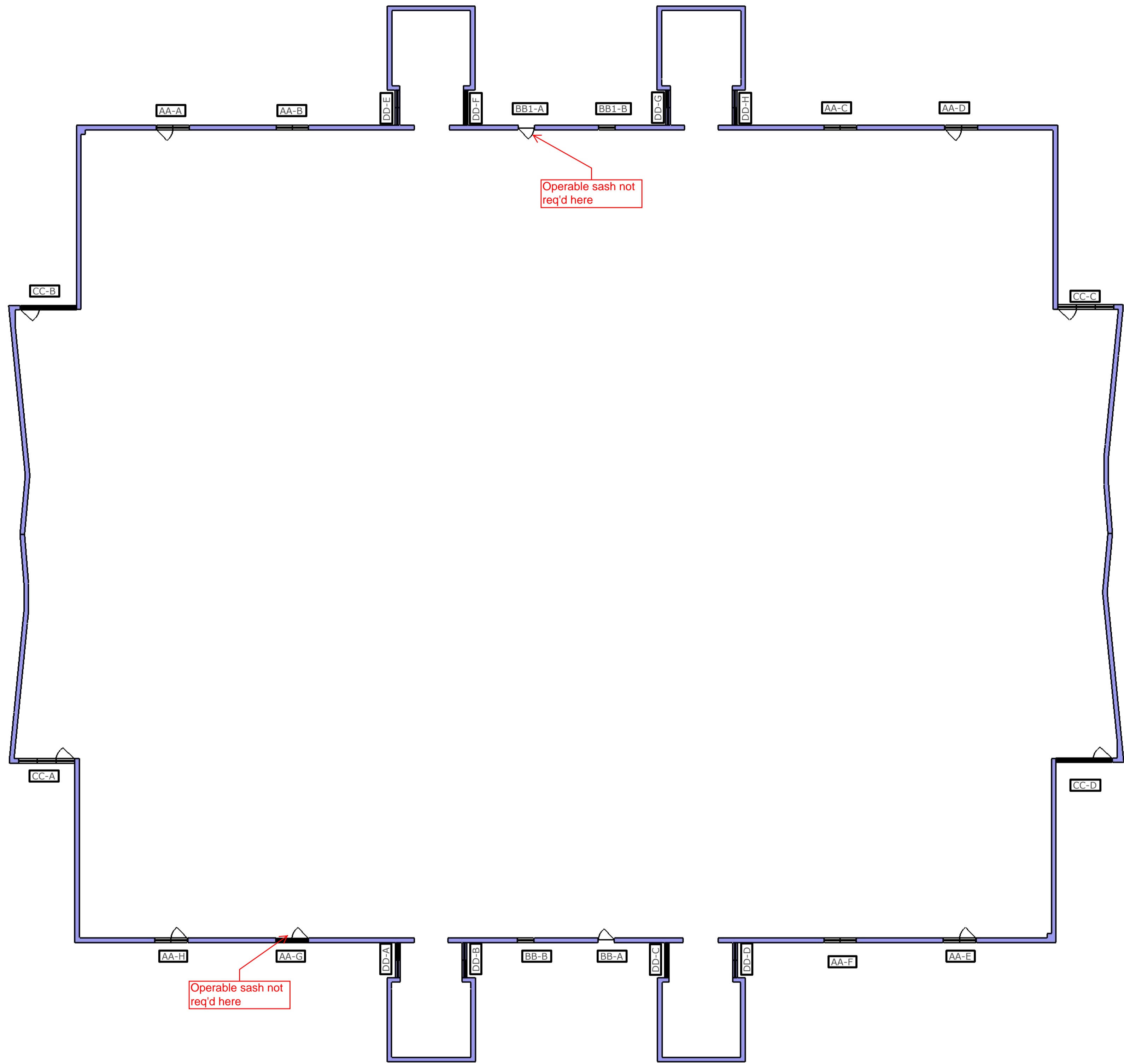
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102

ANNUNCIATION ST



JACKSON AVE

3RD FLOOR PLAN



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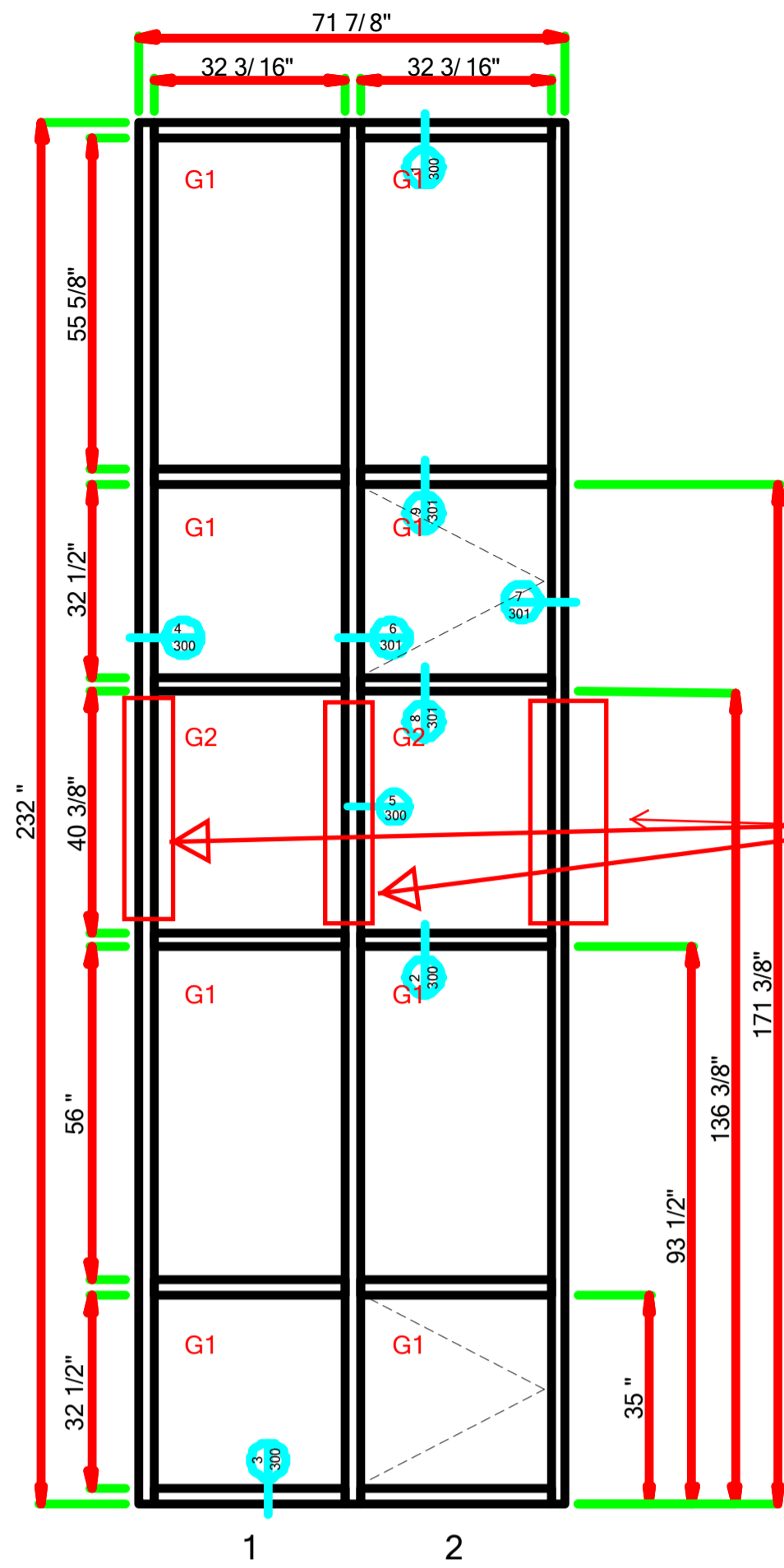
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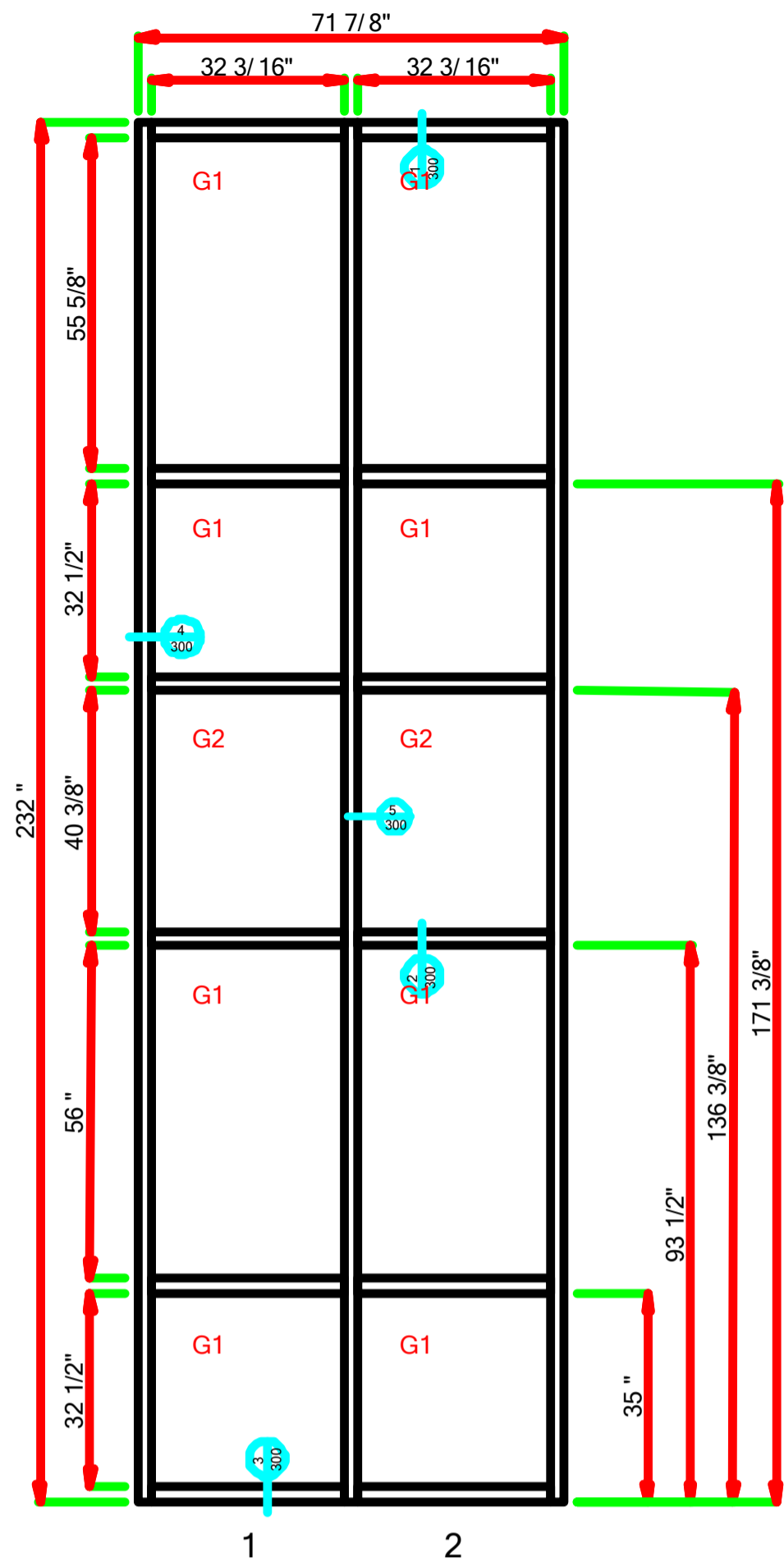
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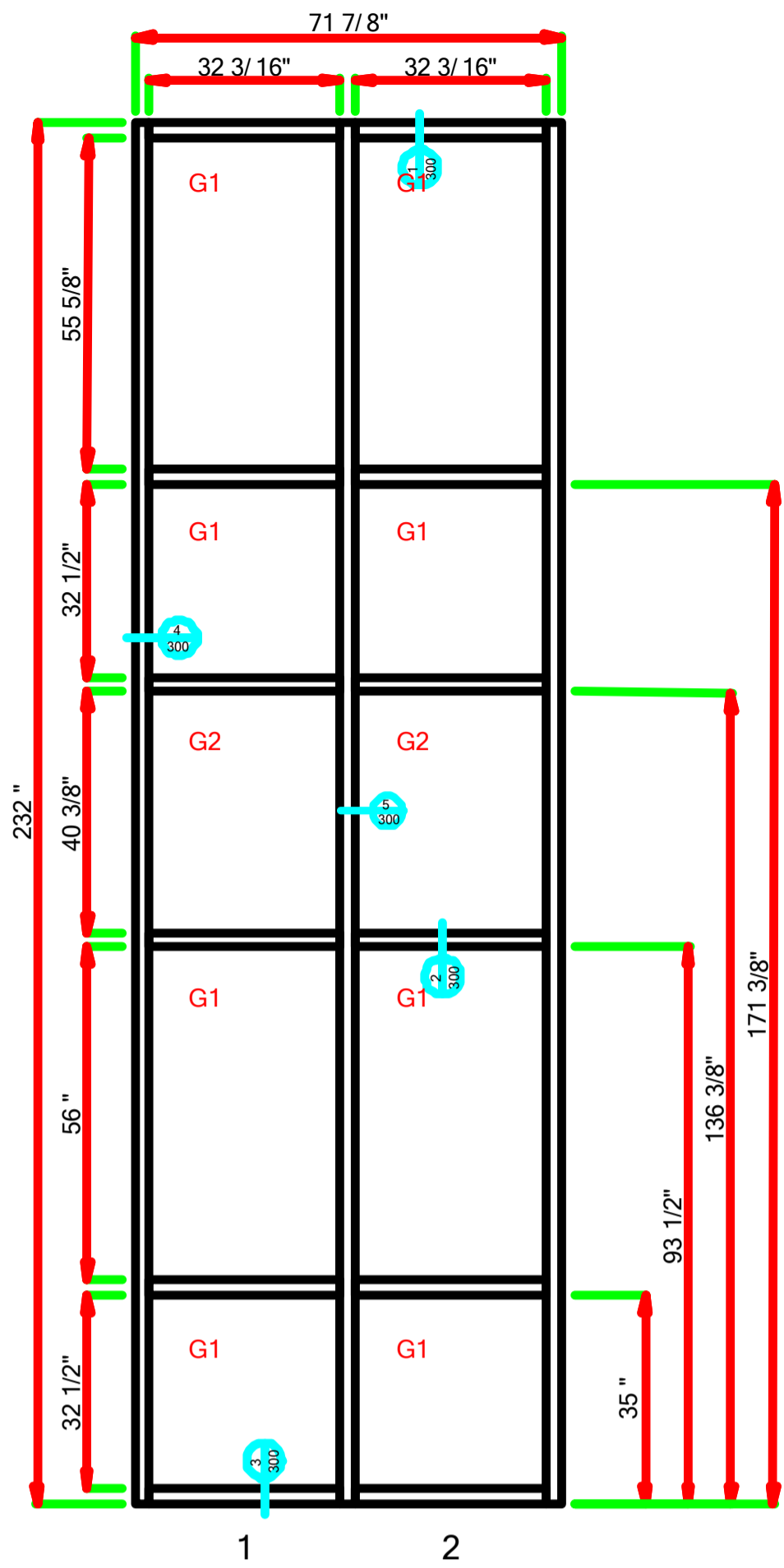


Resubmit mullion  
@ structure, typ all  
AA, BB, CC & DD  
JHC 02/06/2017

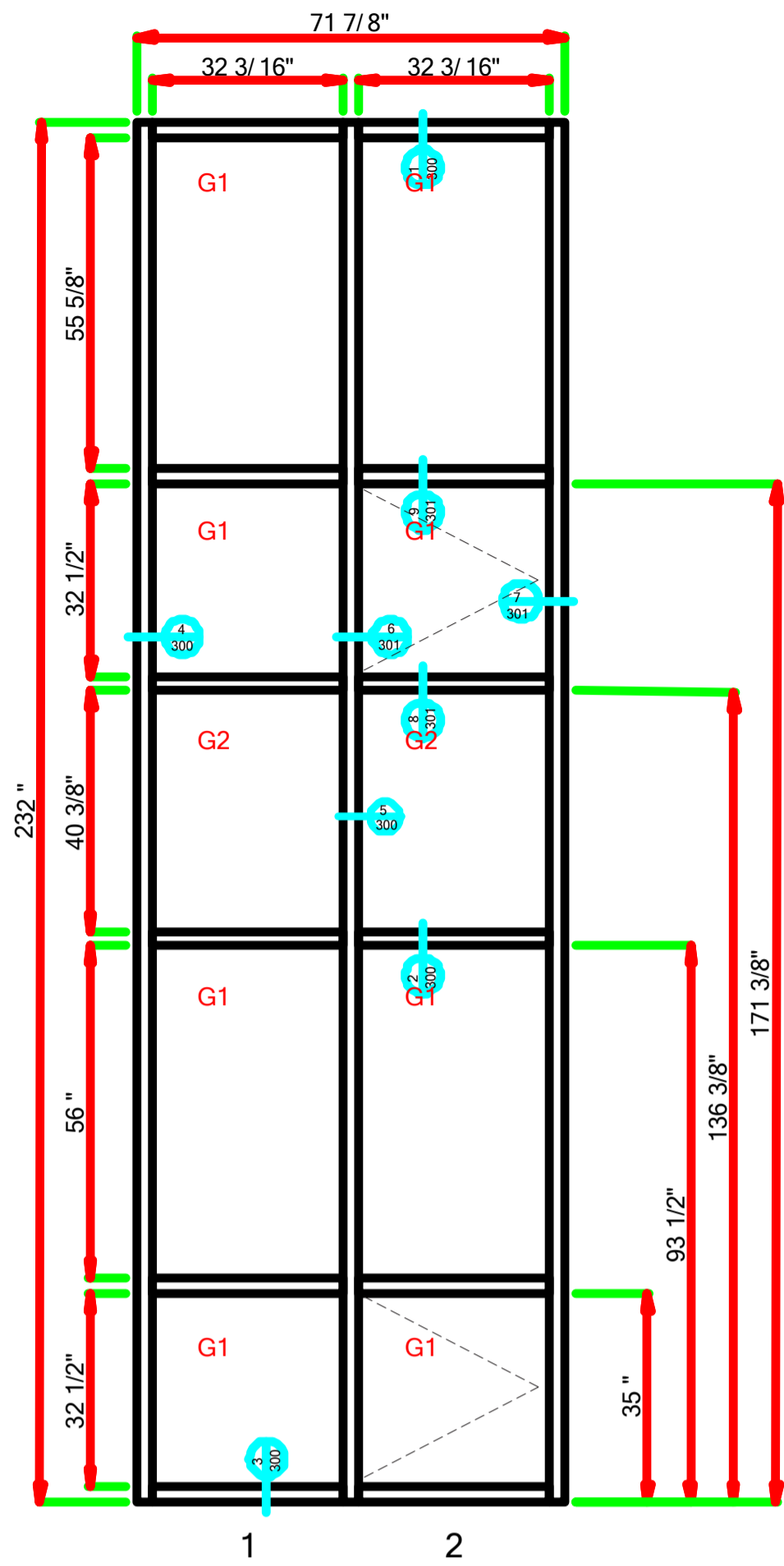
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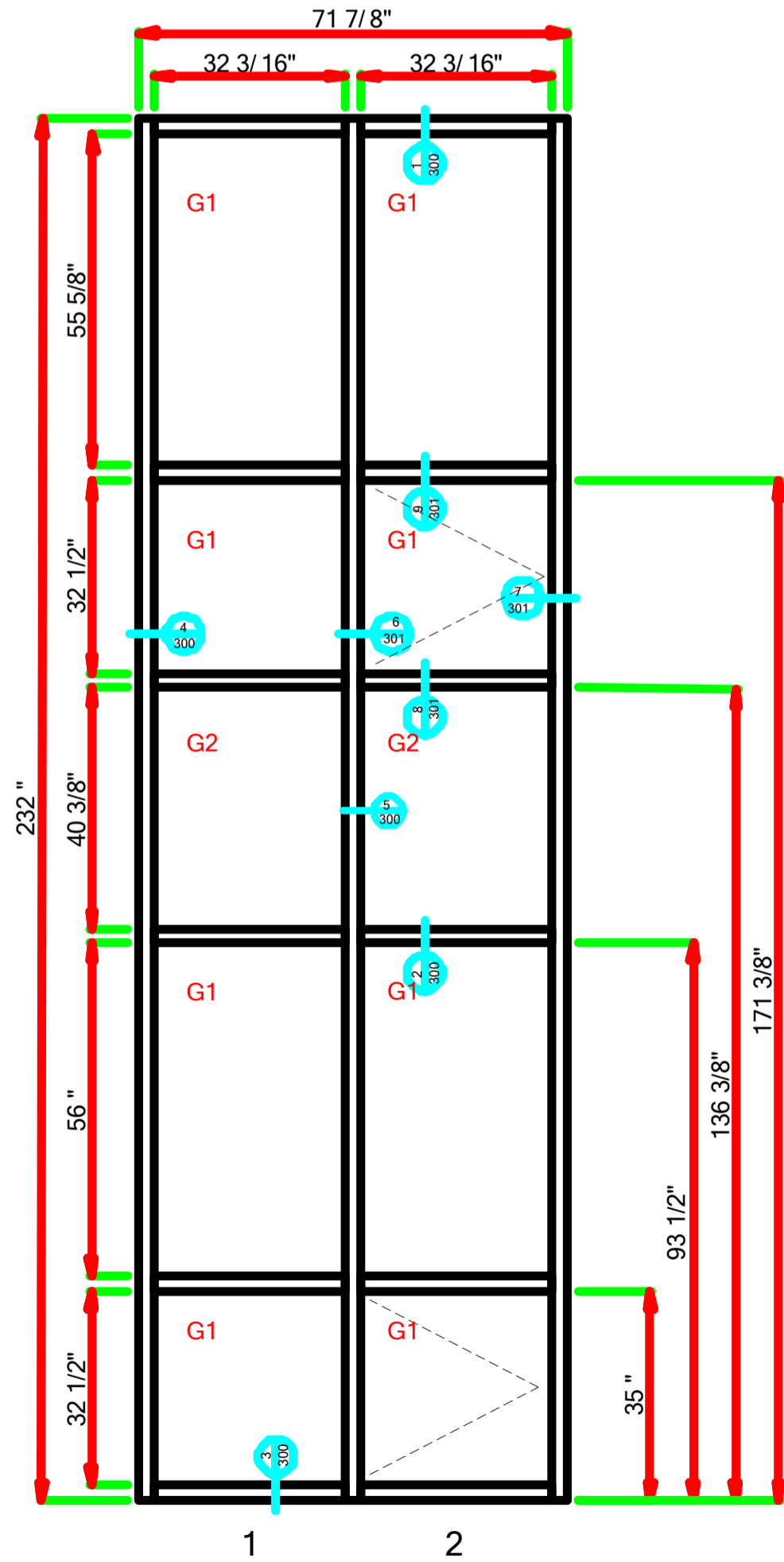
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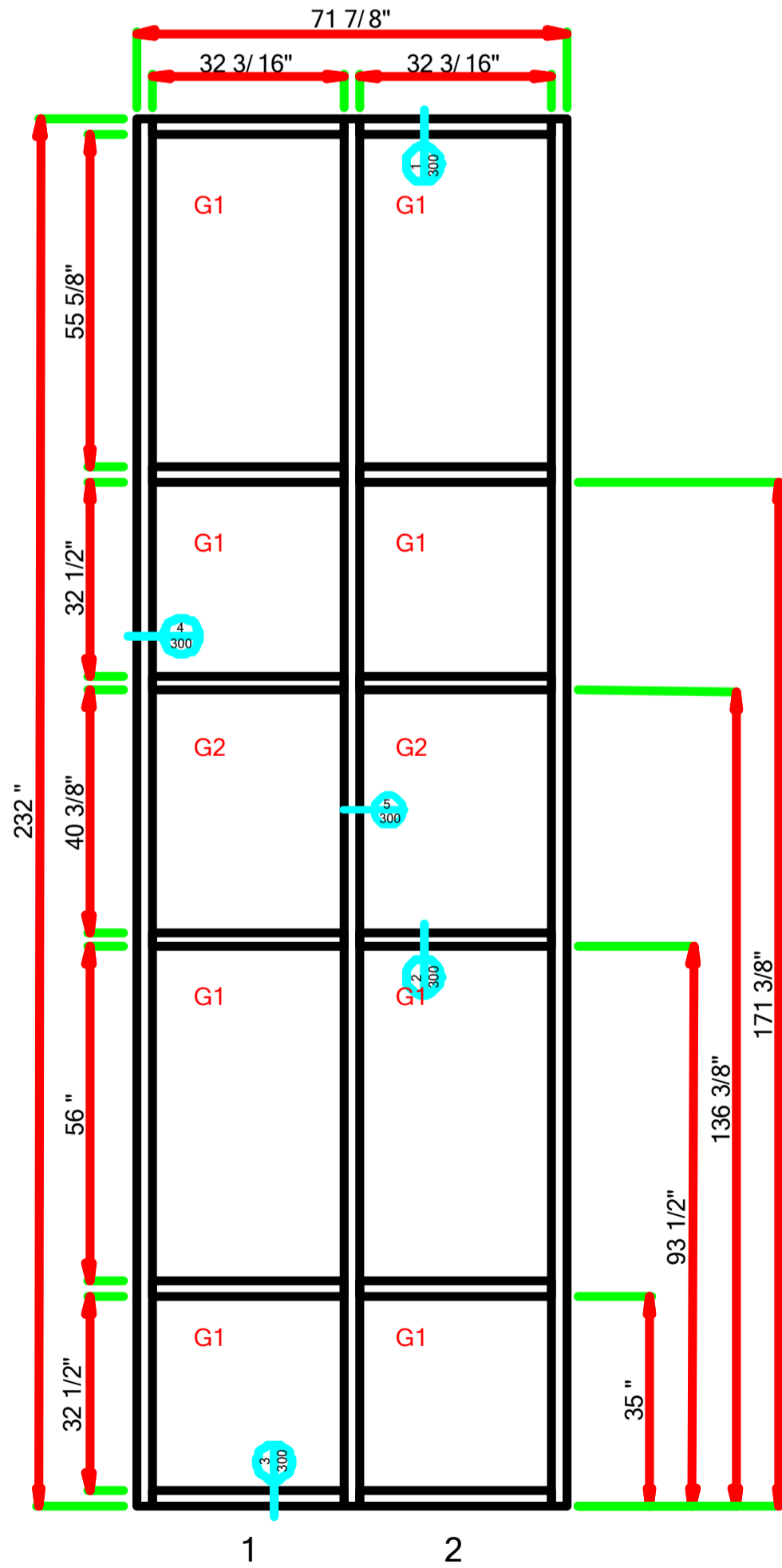
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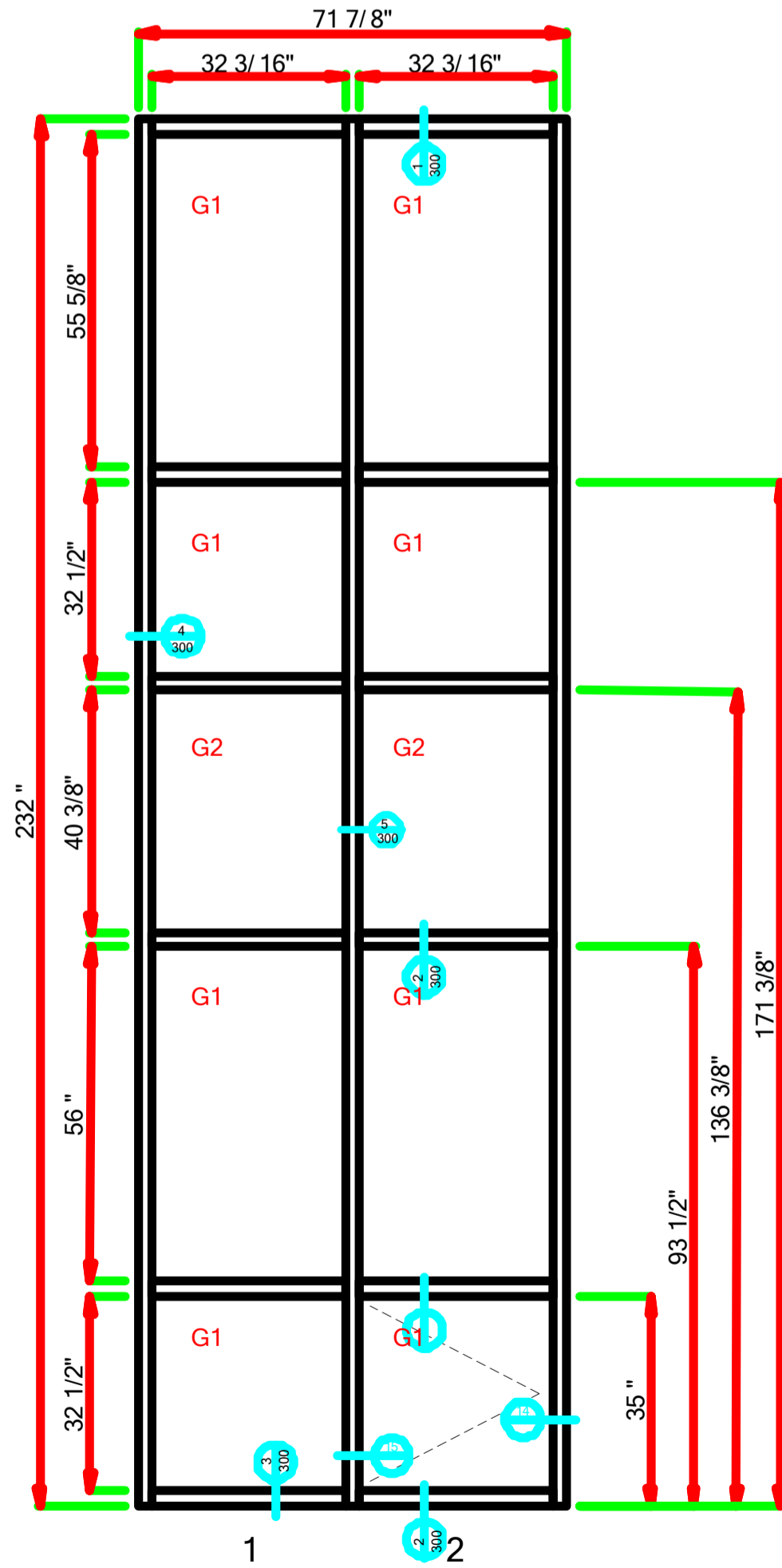
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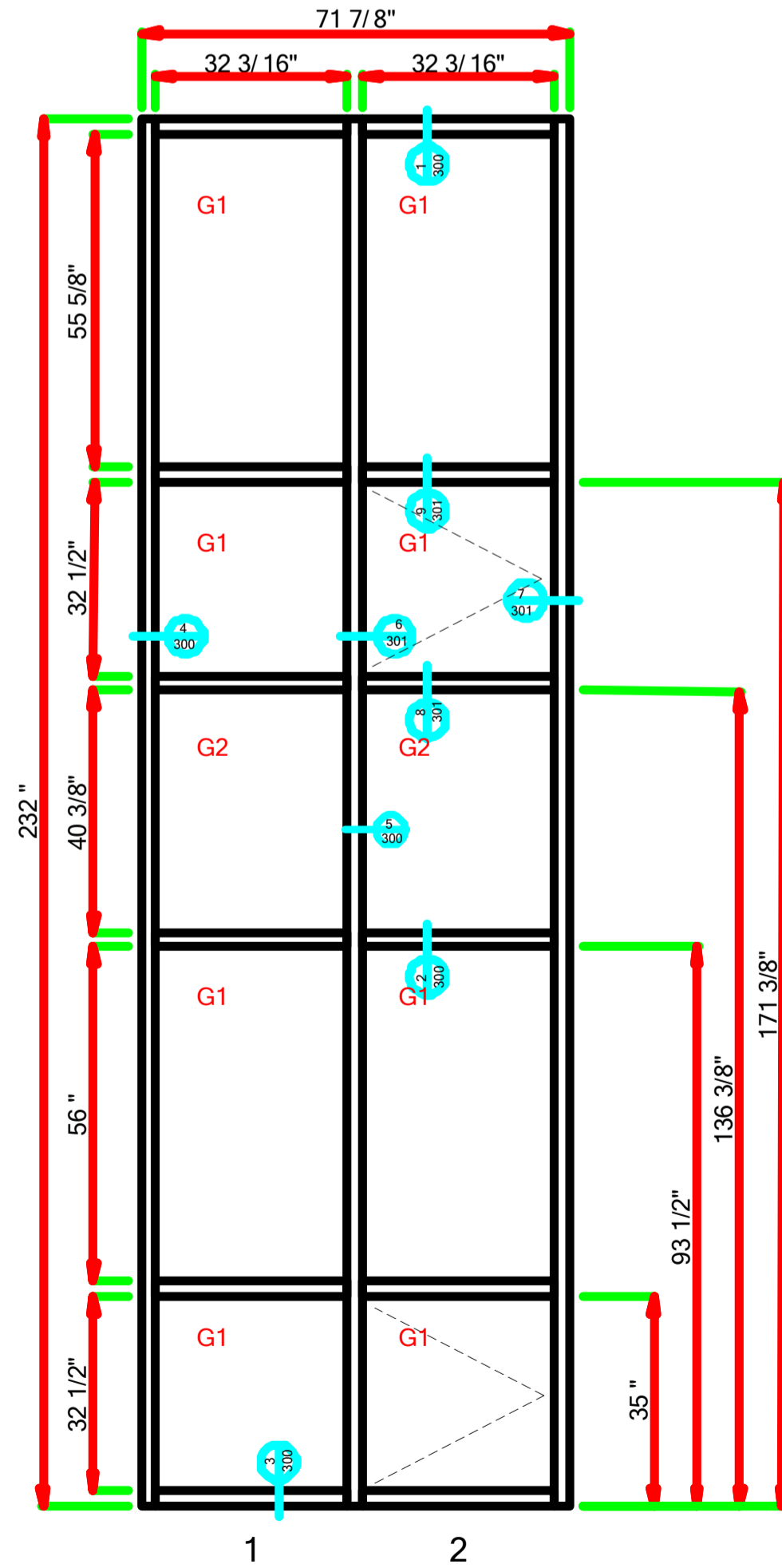
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LAUREL - 006 - MARK AA-F.dwg (1 Thus)



LAUREL - 007 - MARK AA-G.dwg (1 Thus)



LAUREL - 008 - MARK AA-H.dwg (1 Thus)



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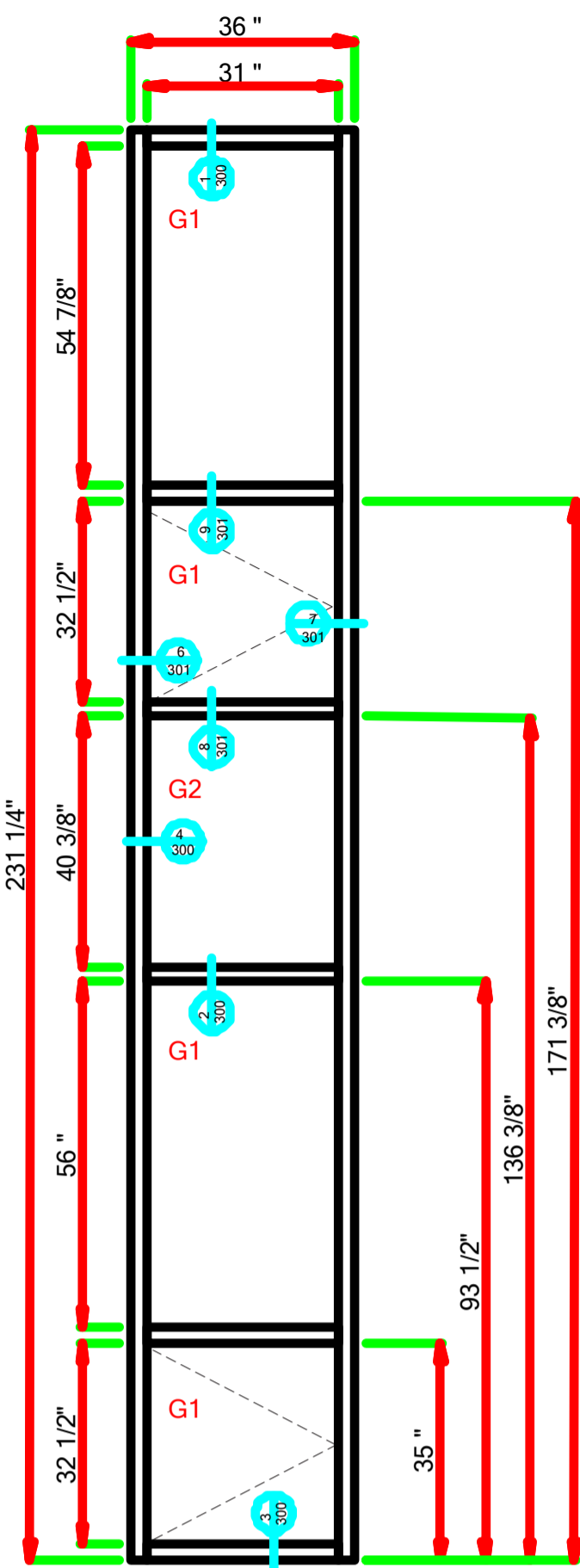


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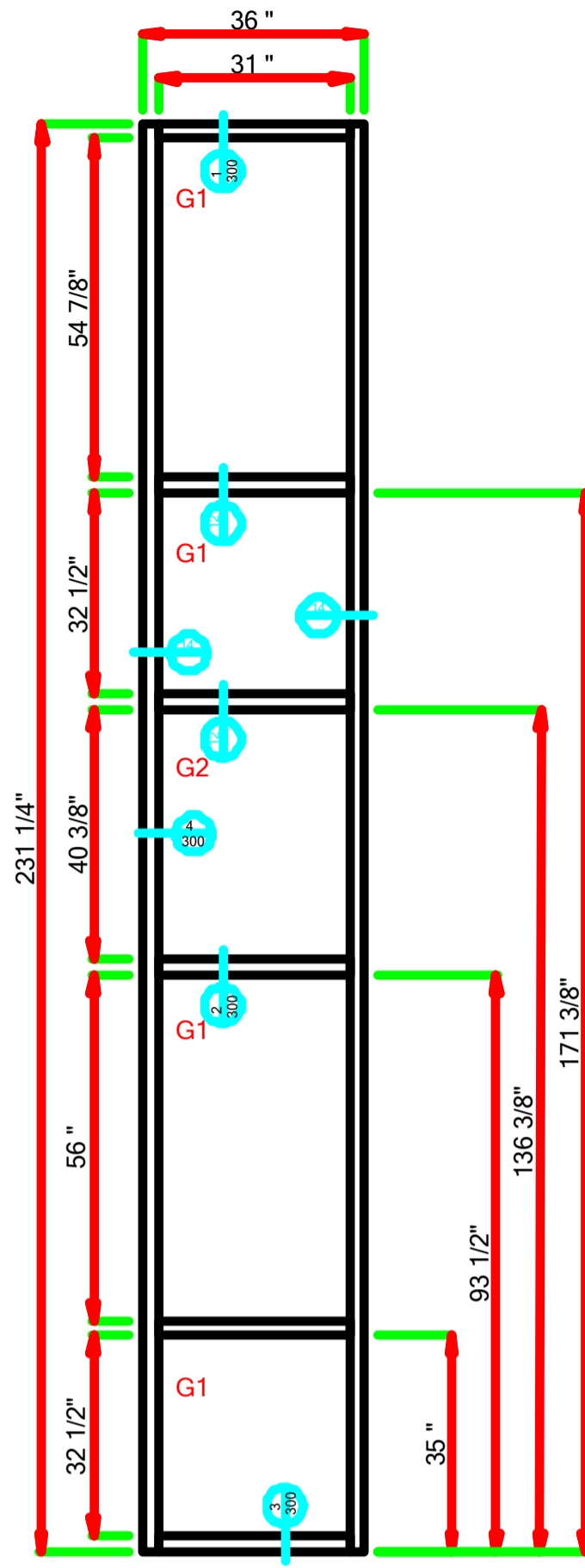
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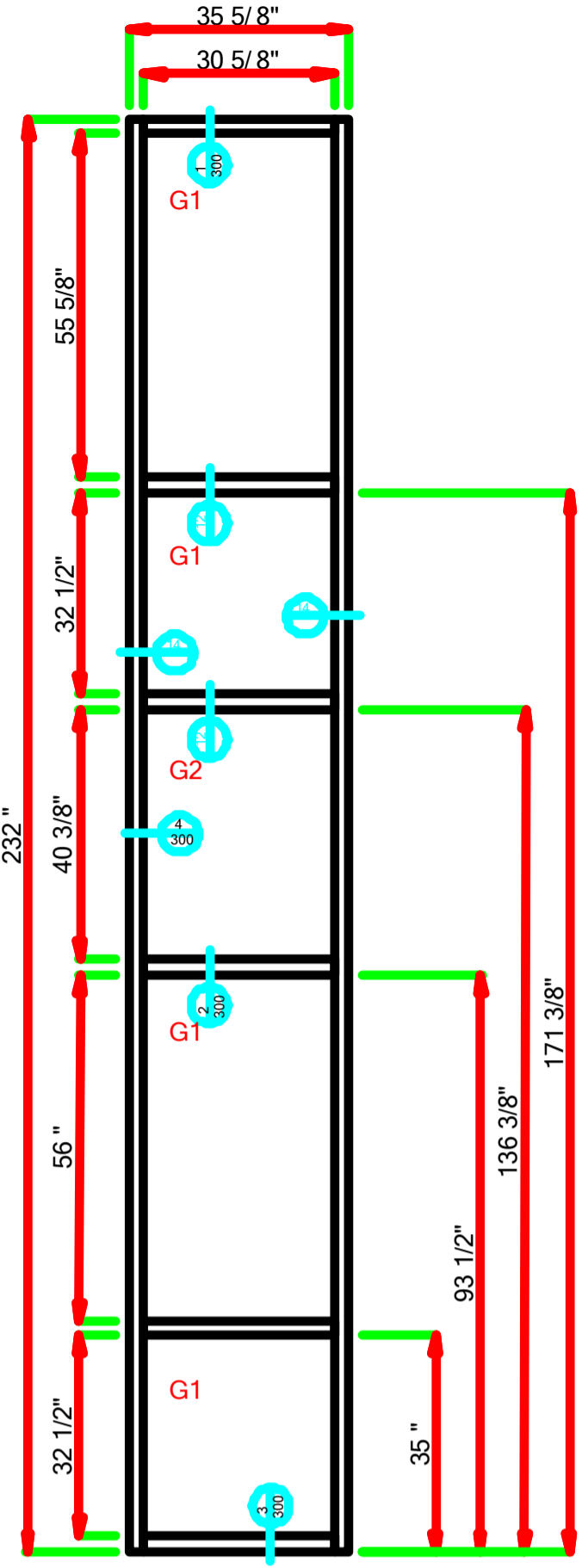
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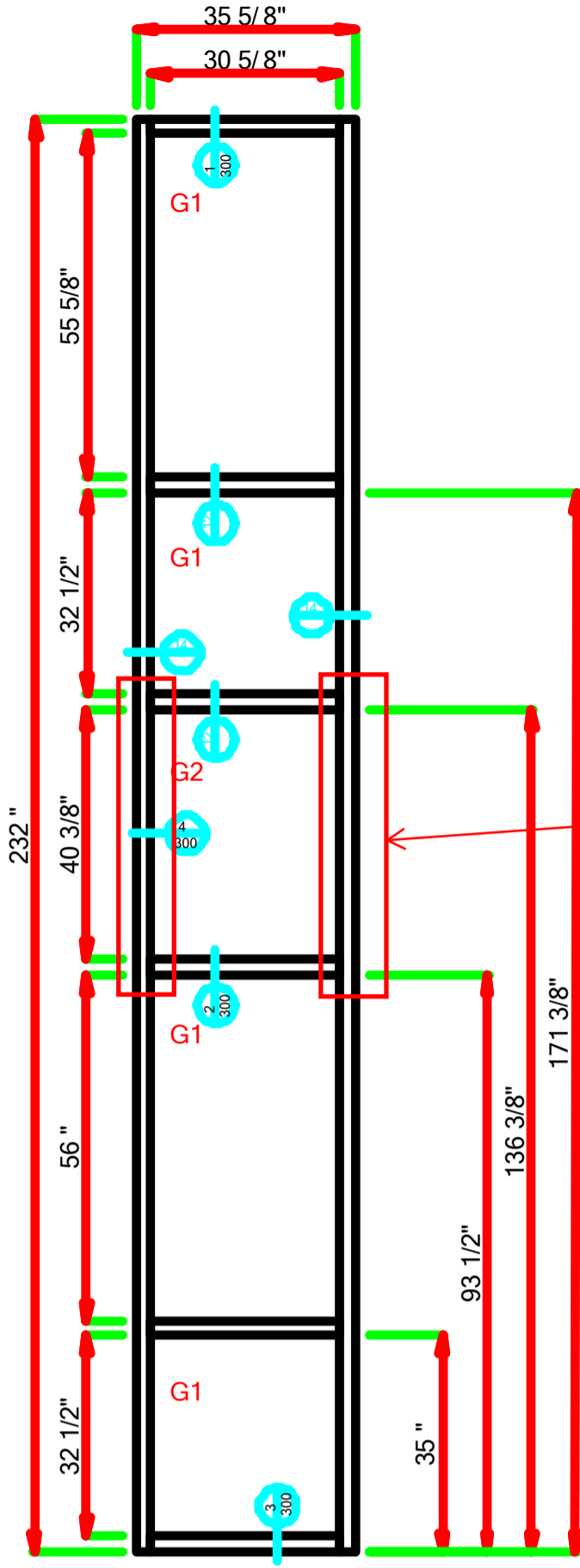
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LAUREL - 010 - MARK BB-B.dwg (1 Thus)

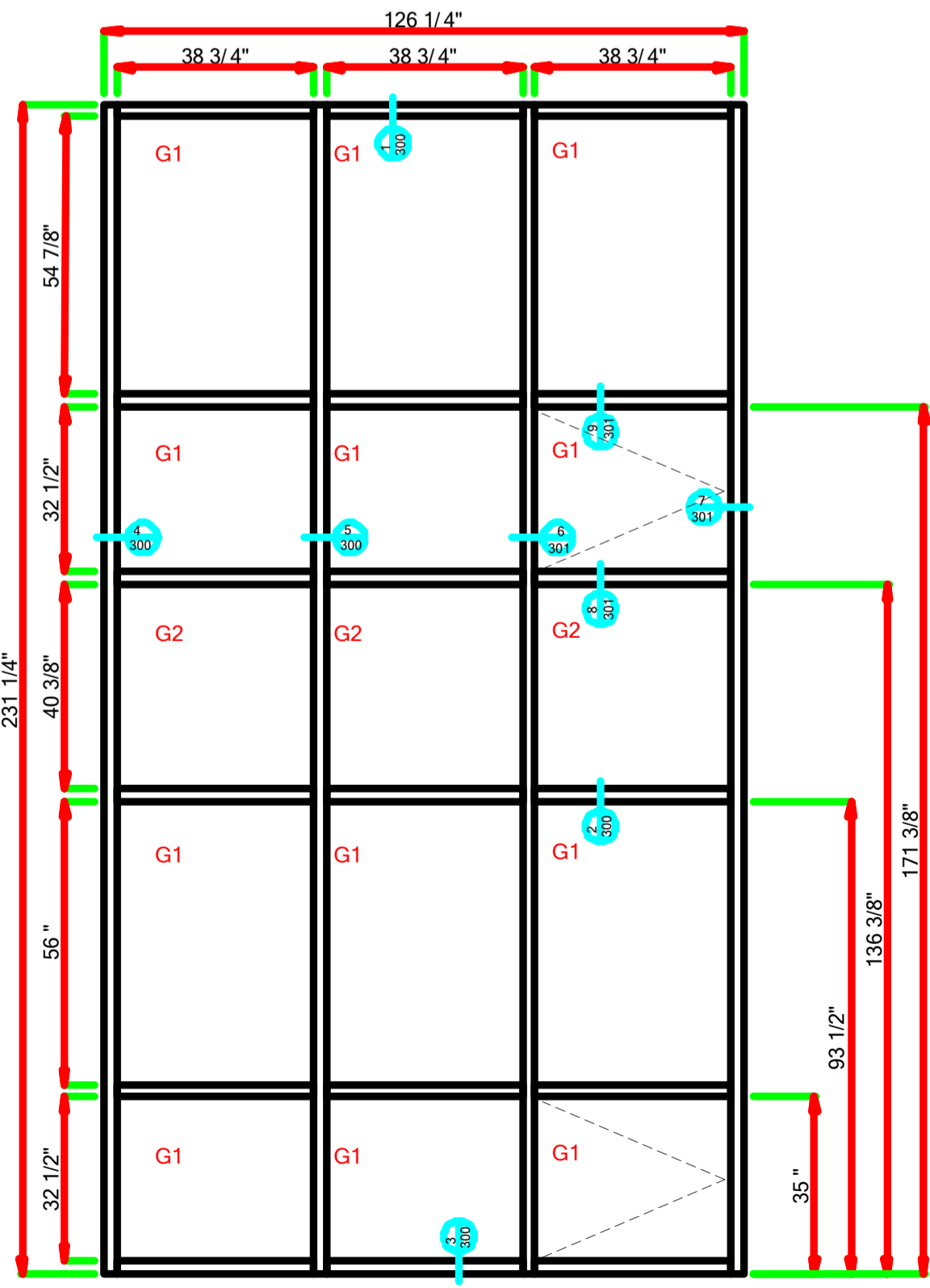


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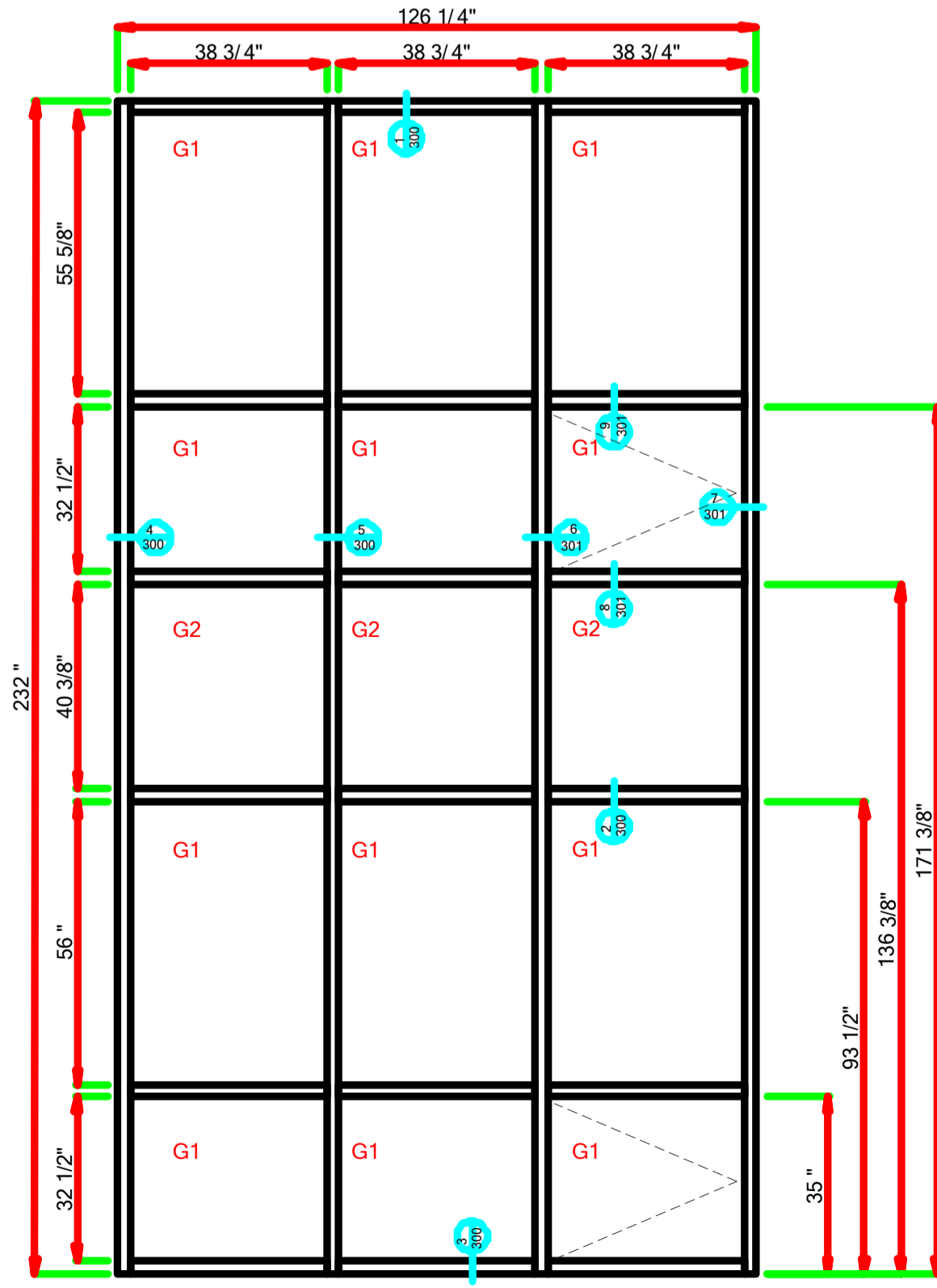


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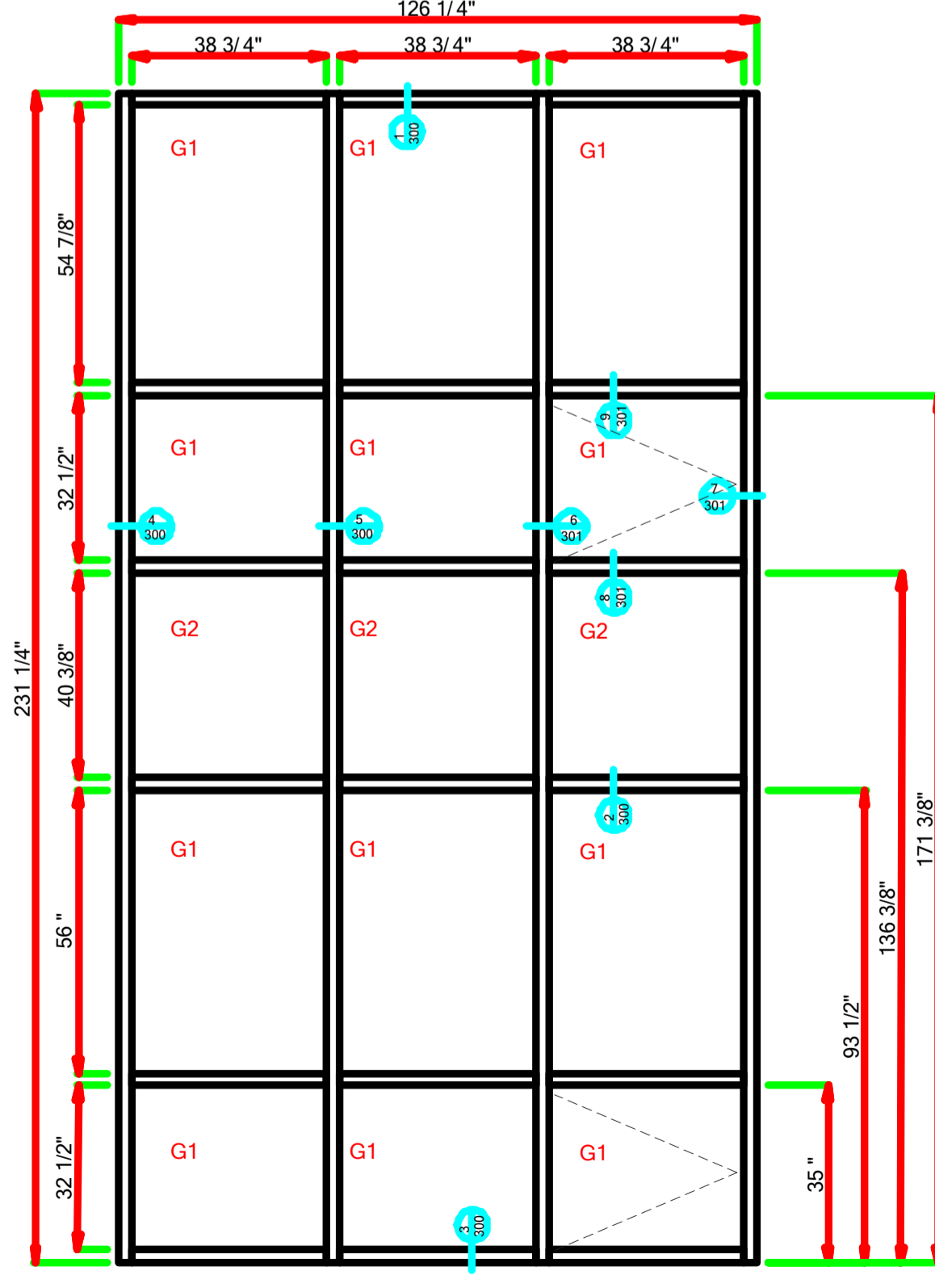
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structure, typ all AA, BB, CC  
& DD  
JHC 02/06/2017



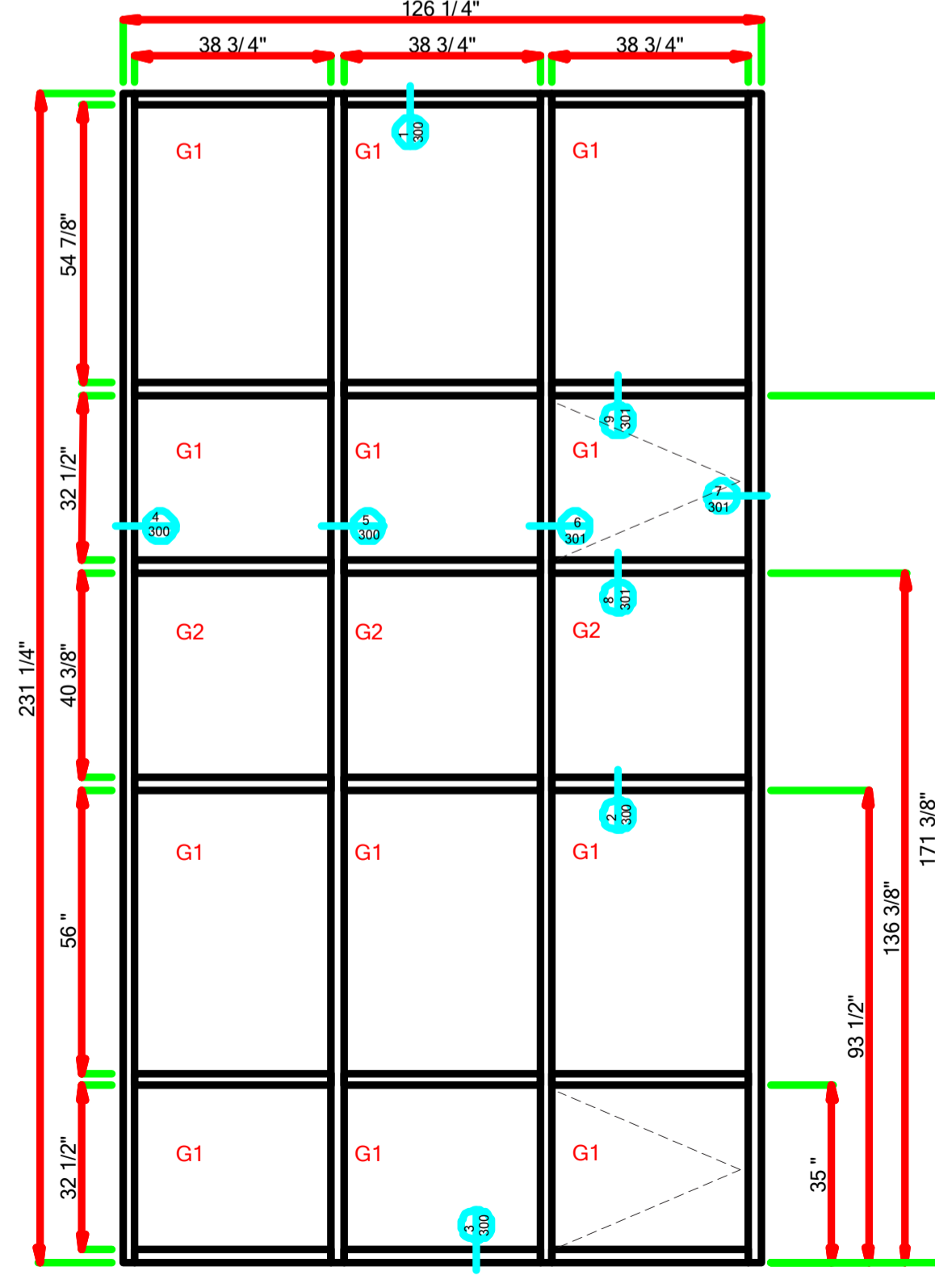
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LAUREL - 014 - MARK CC-B.dwg (1 Thus)



LAUREL - 015 - MARK CC-C.dwg (1 Thus)



LAUREL - 016 - MARK CC-D.dwg (1 Thus)



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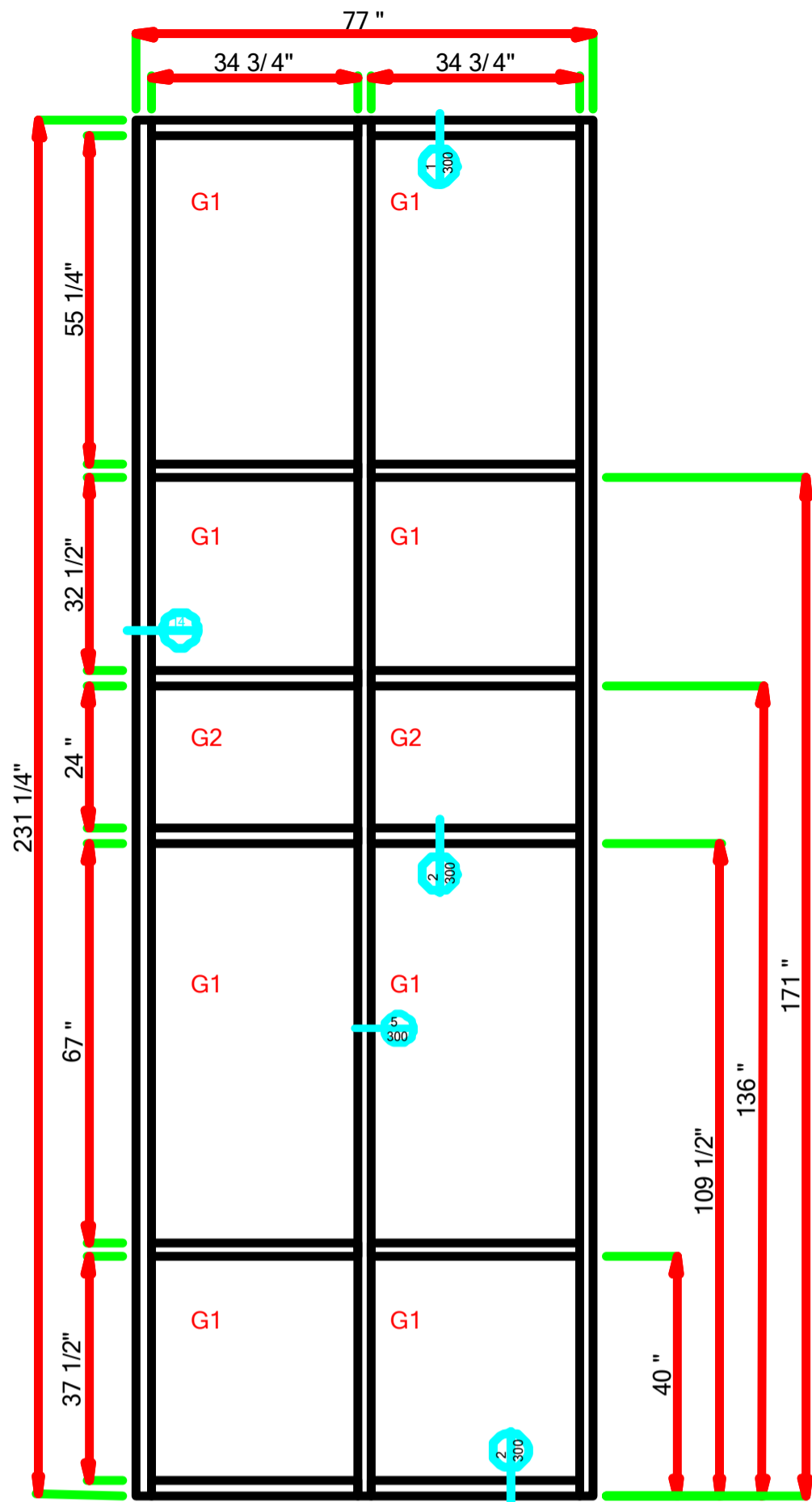
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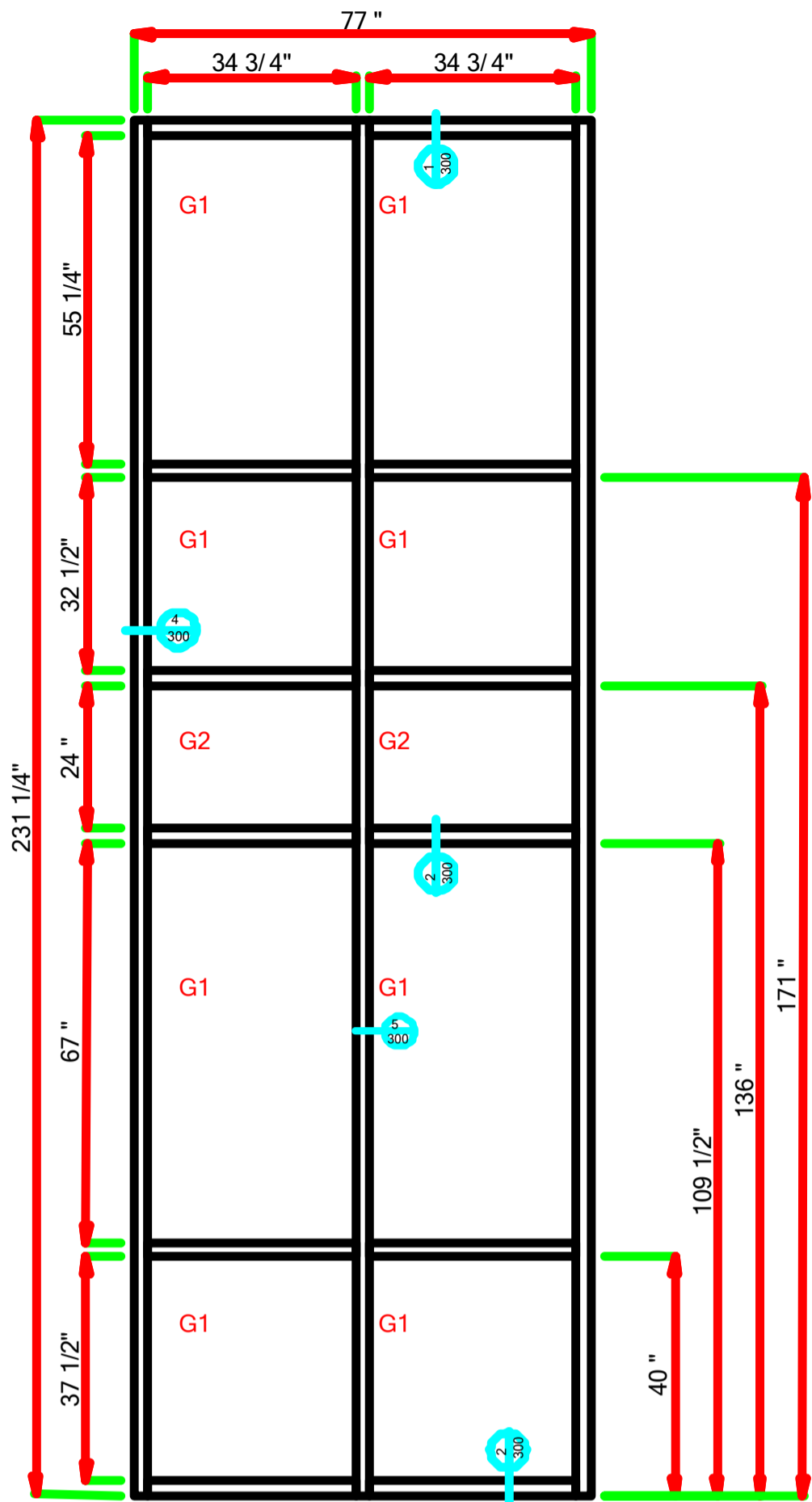
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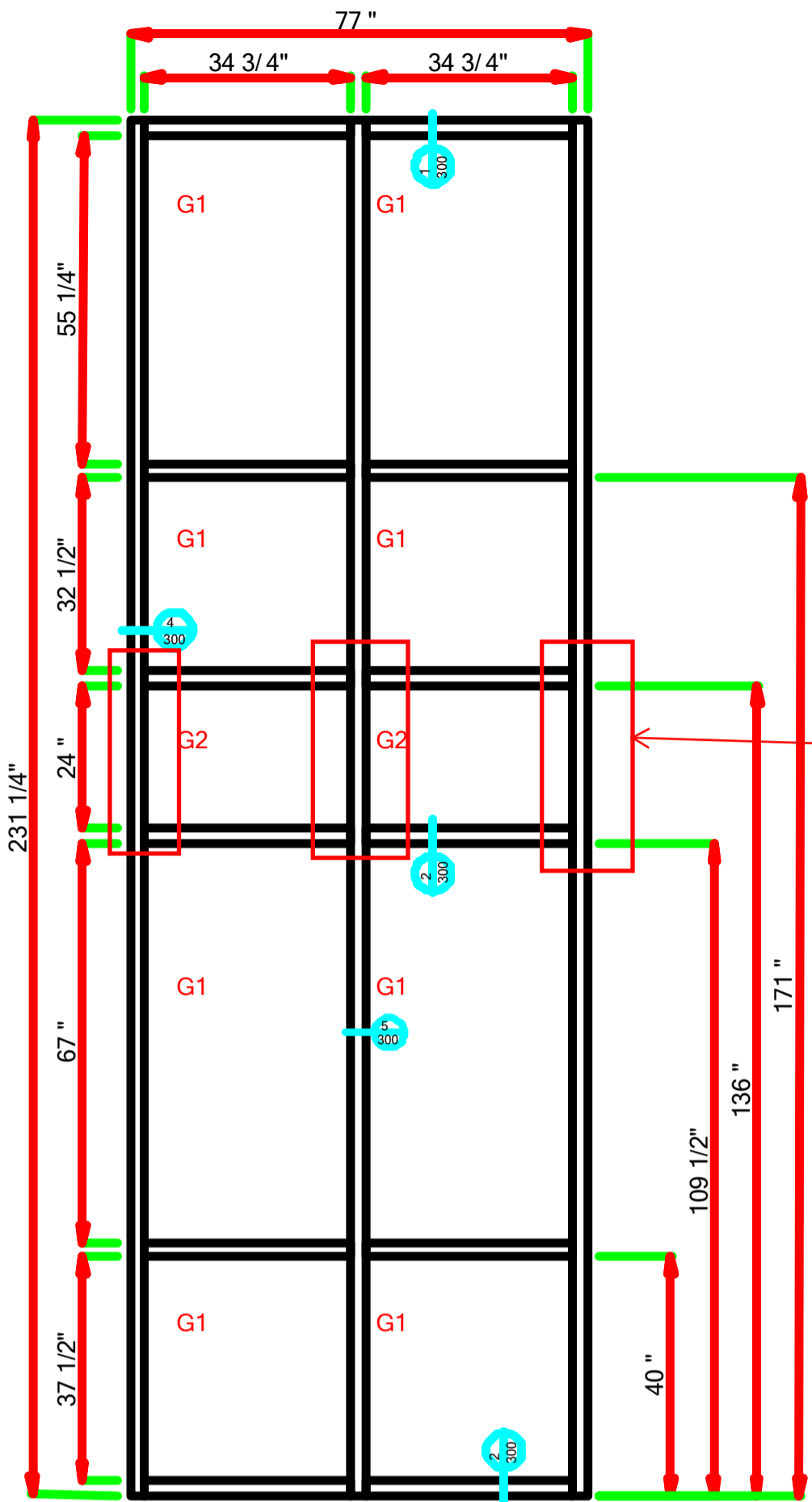
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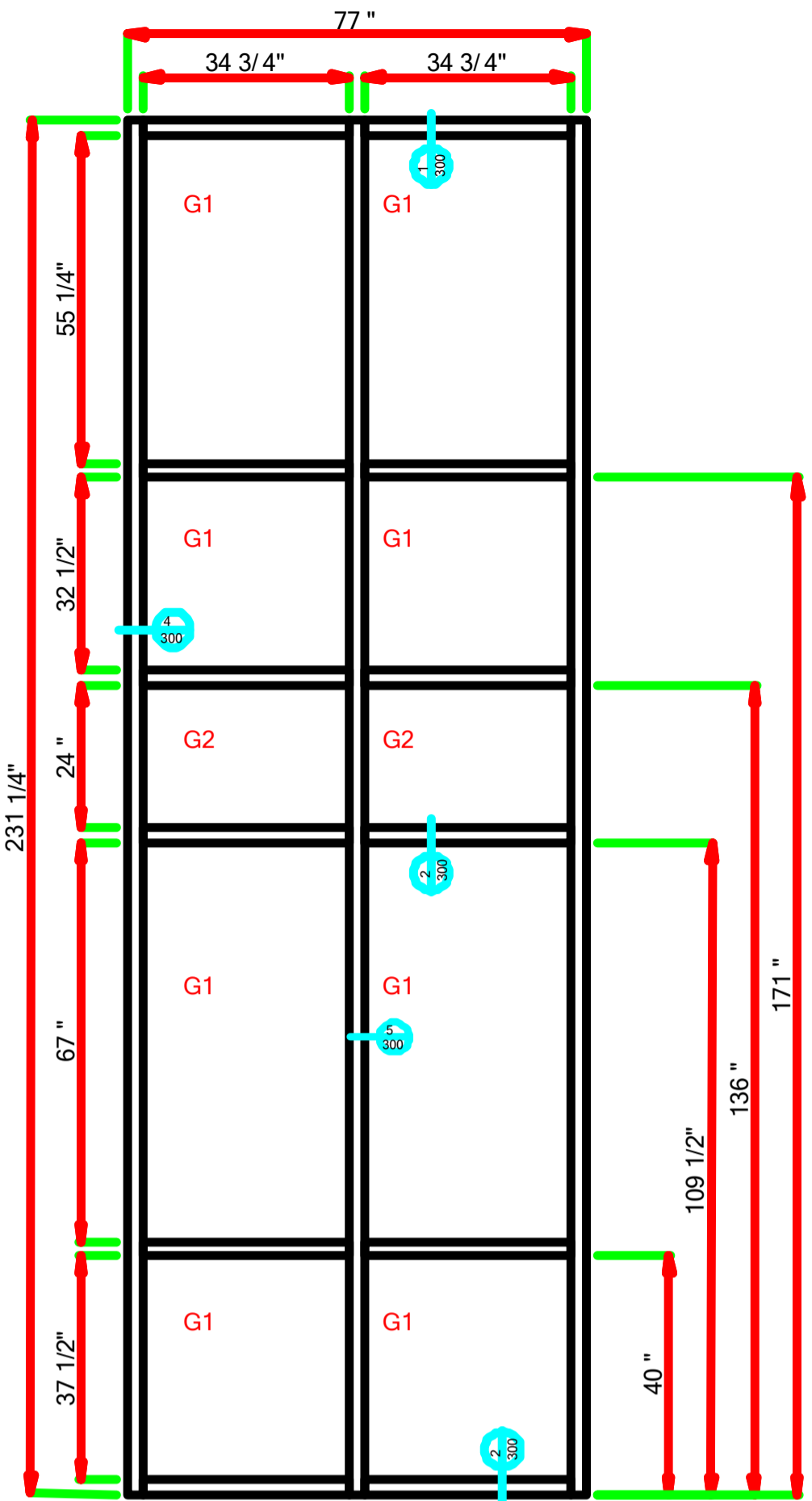
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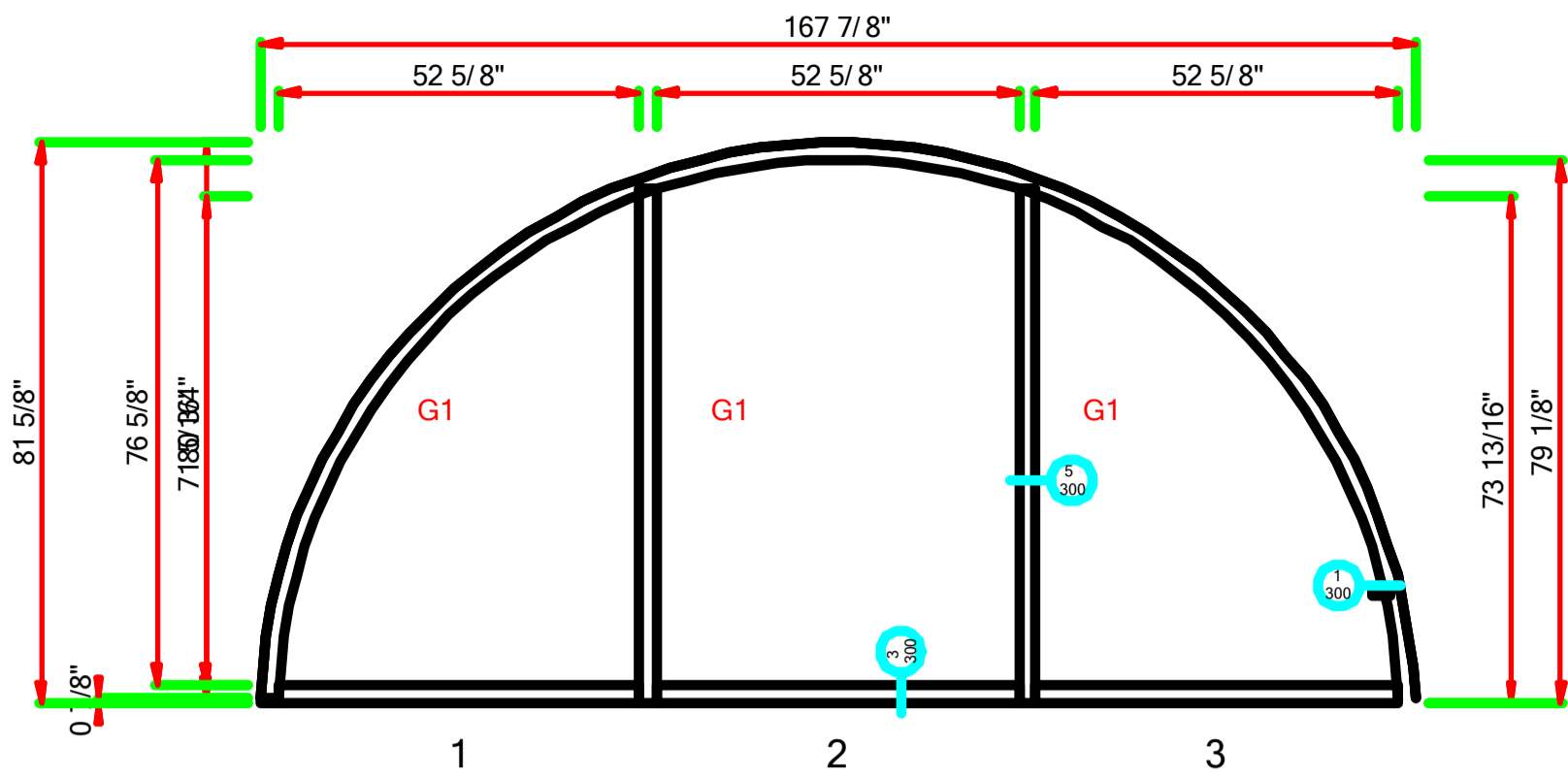


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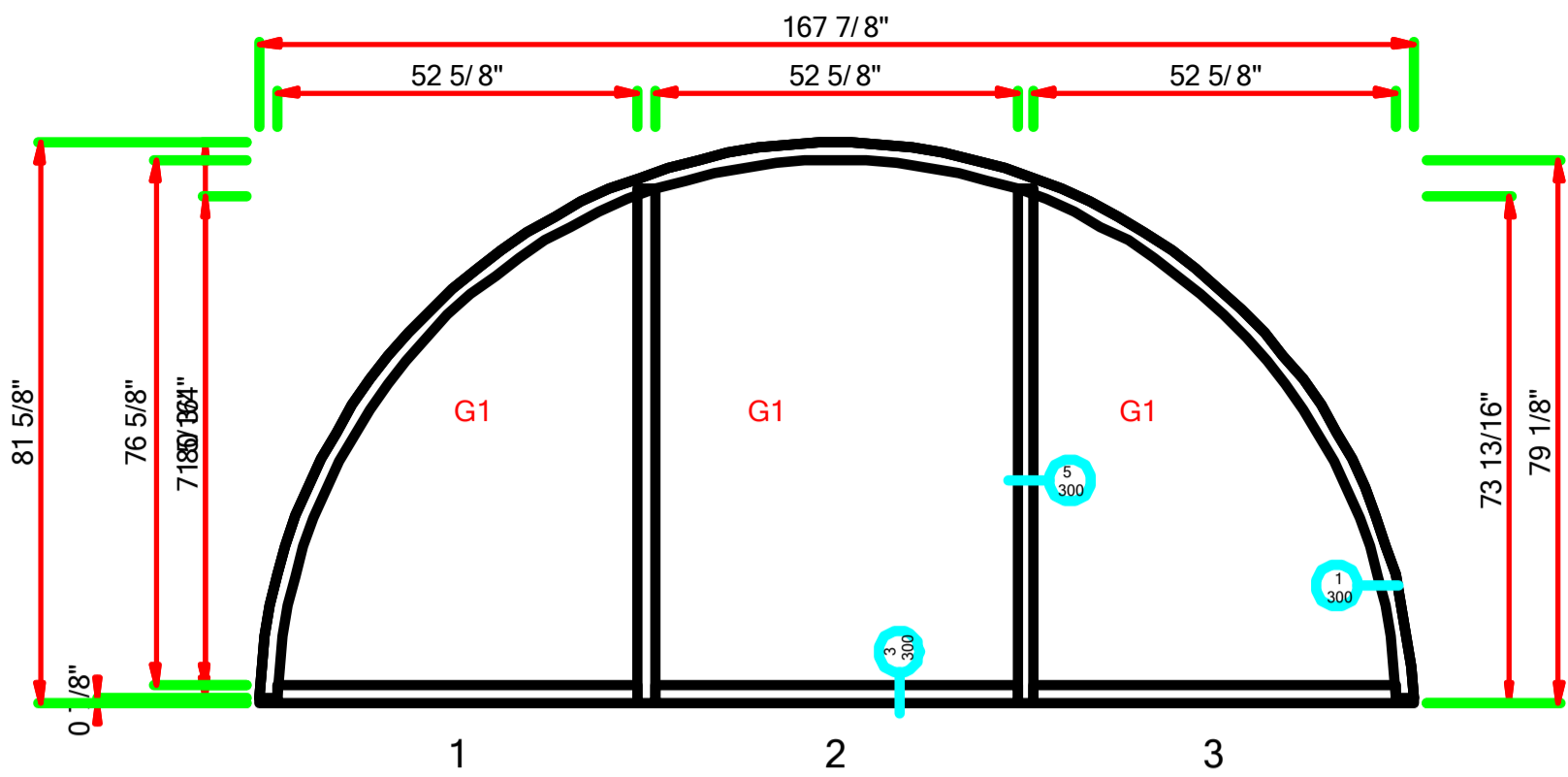
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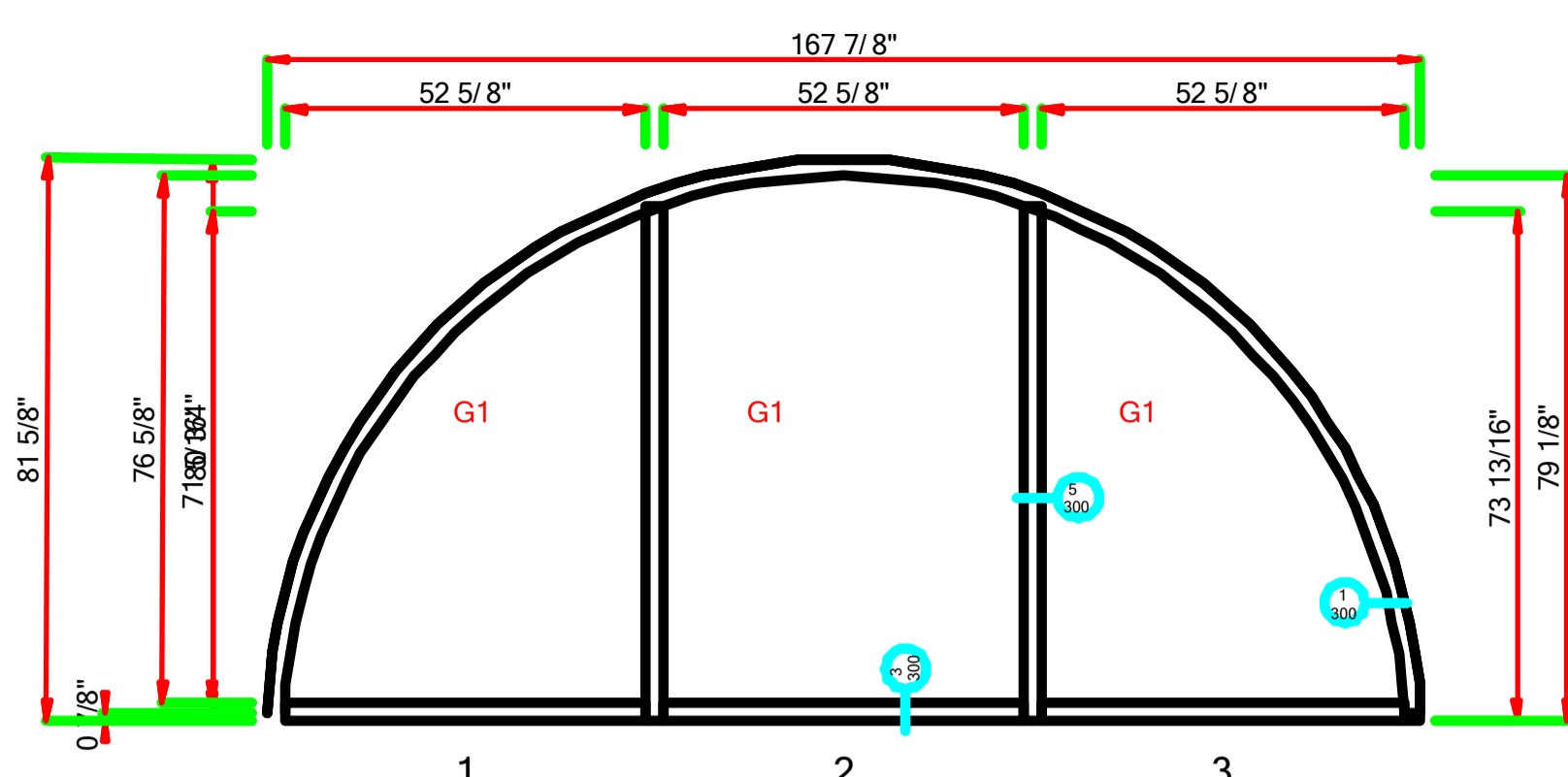
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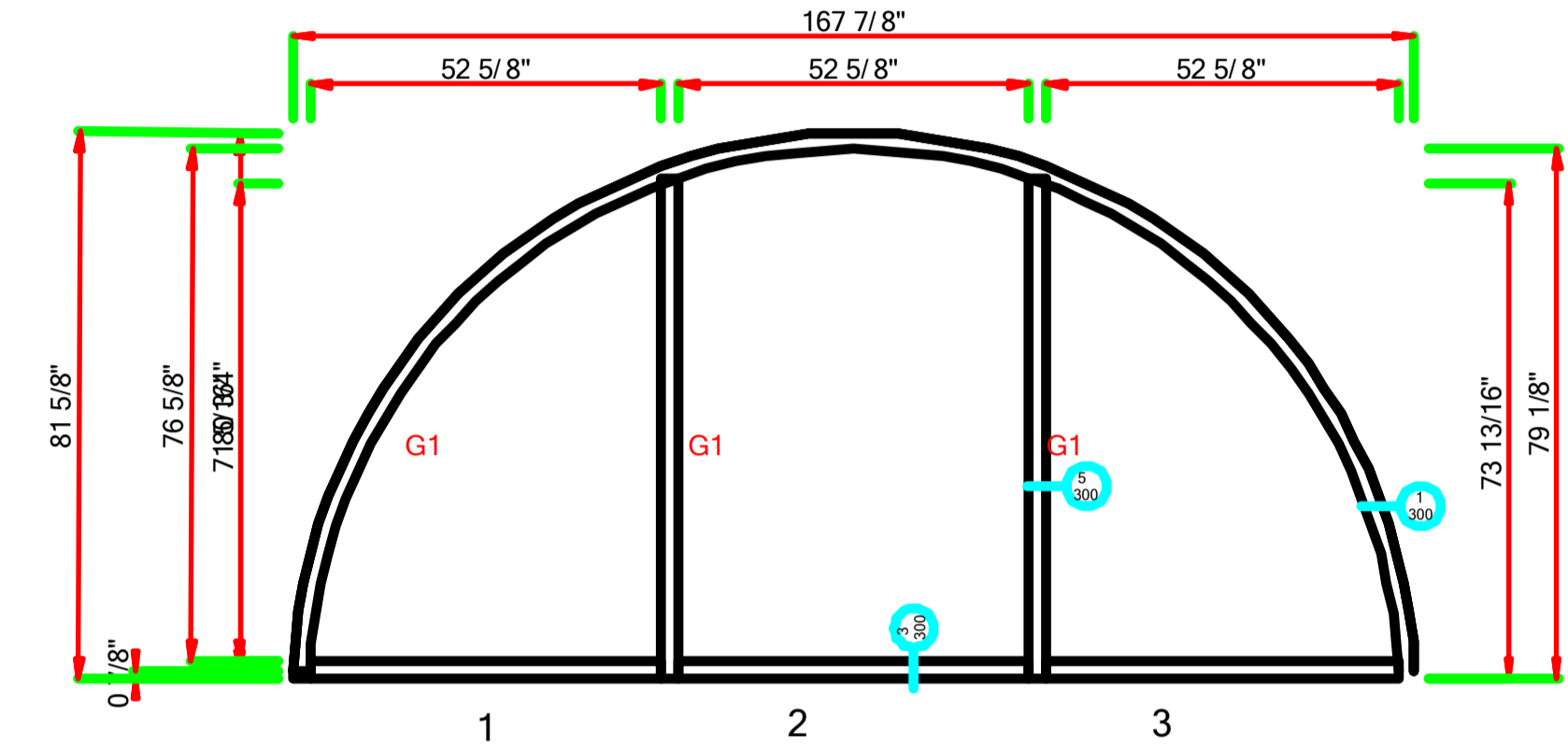
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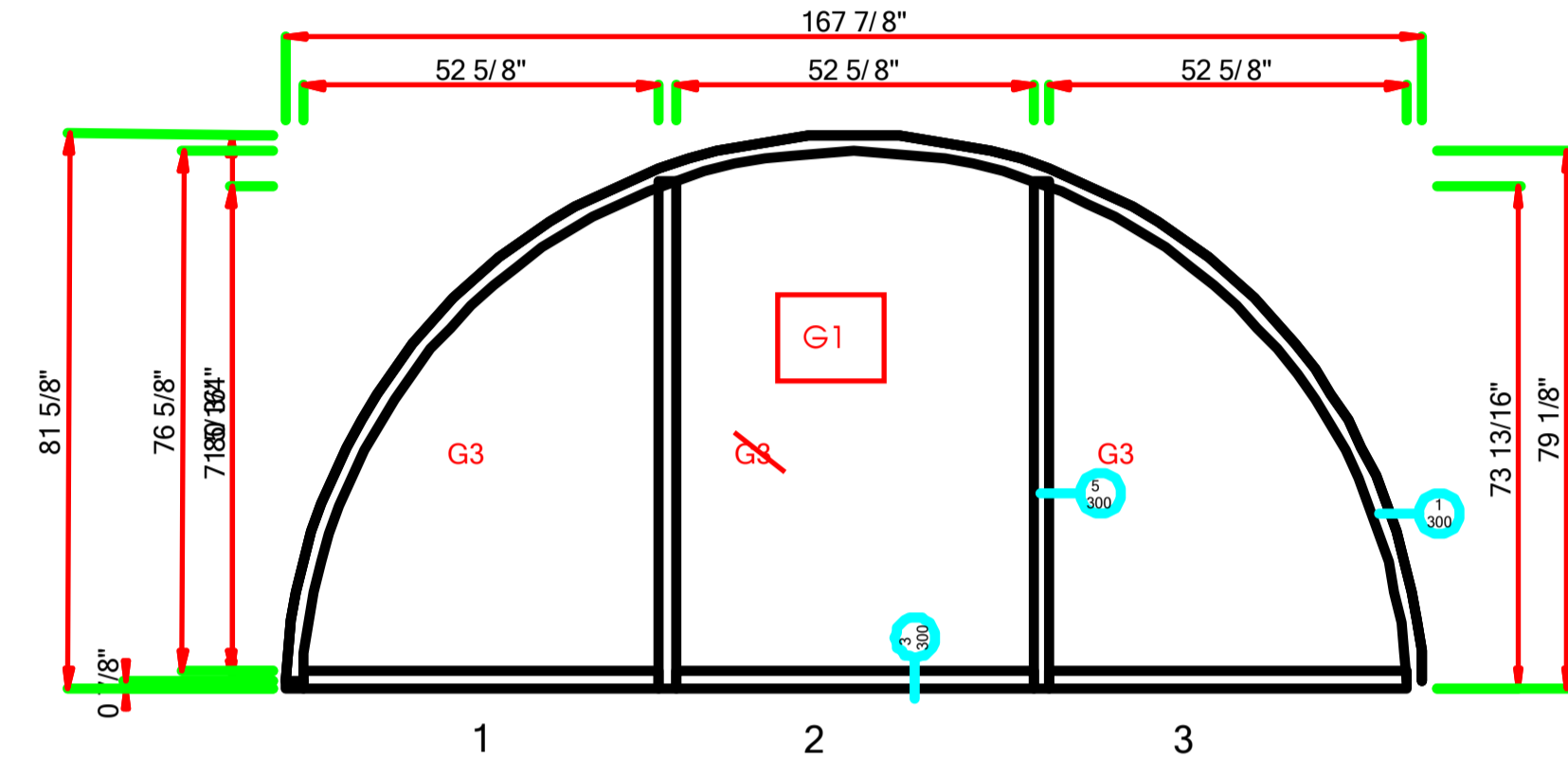
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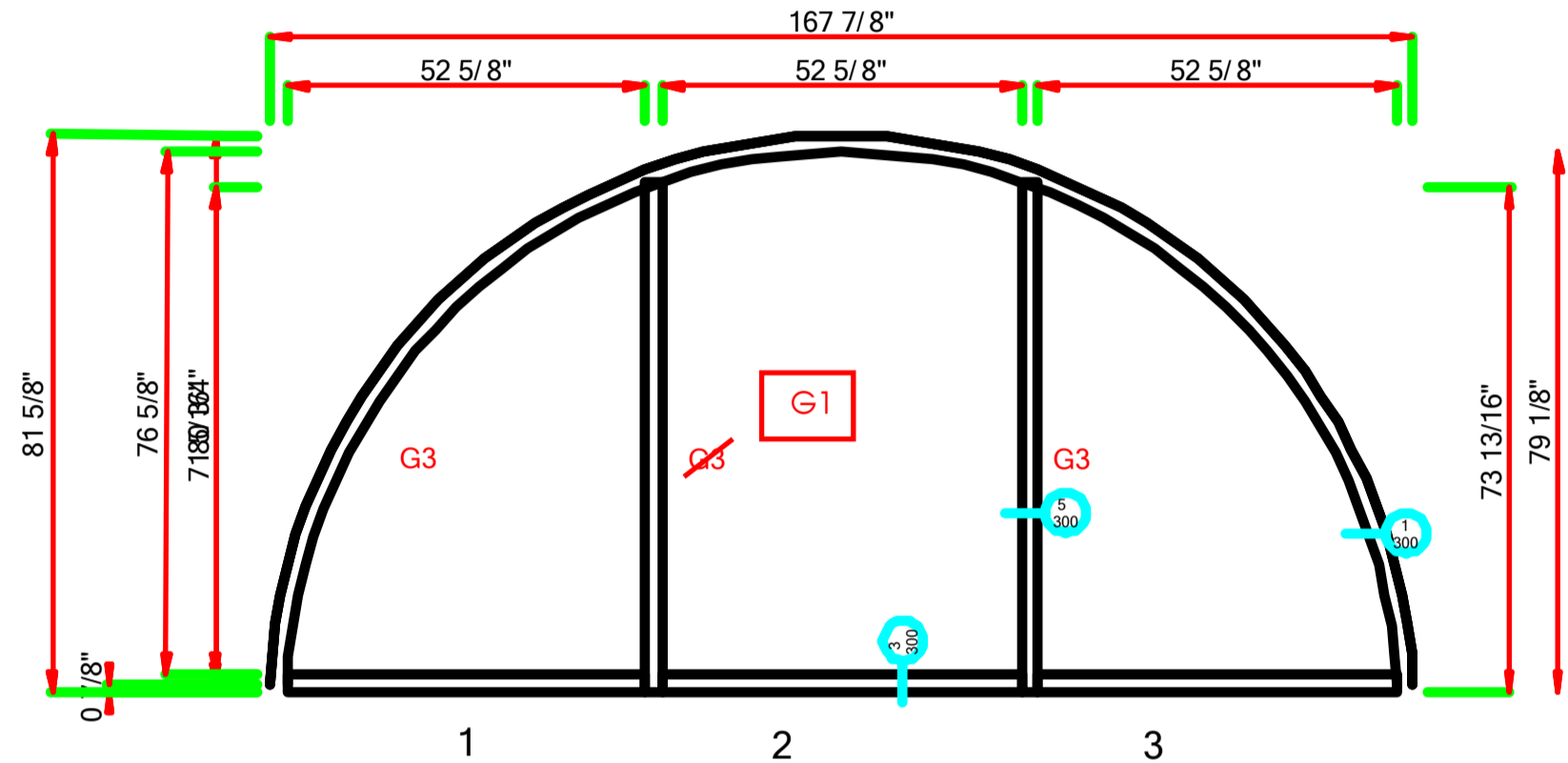
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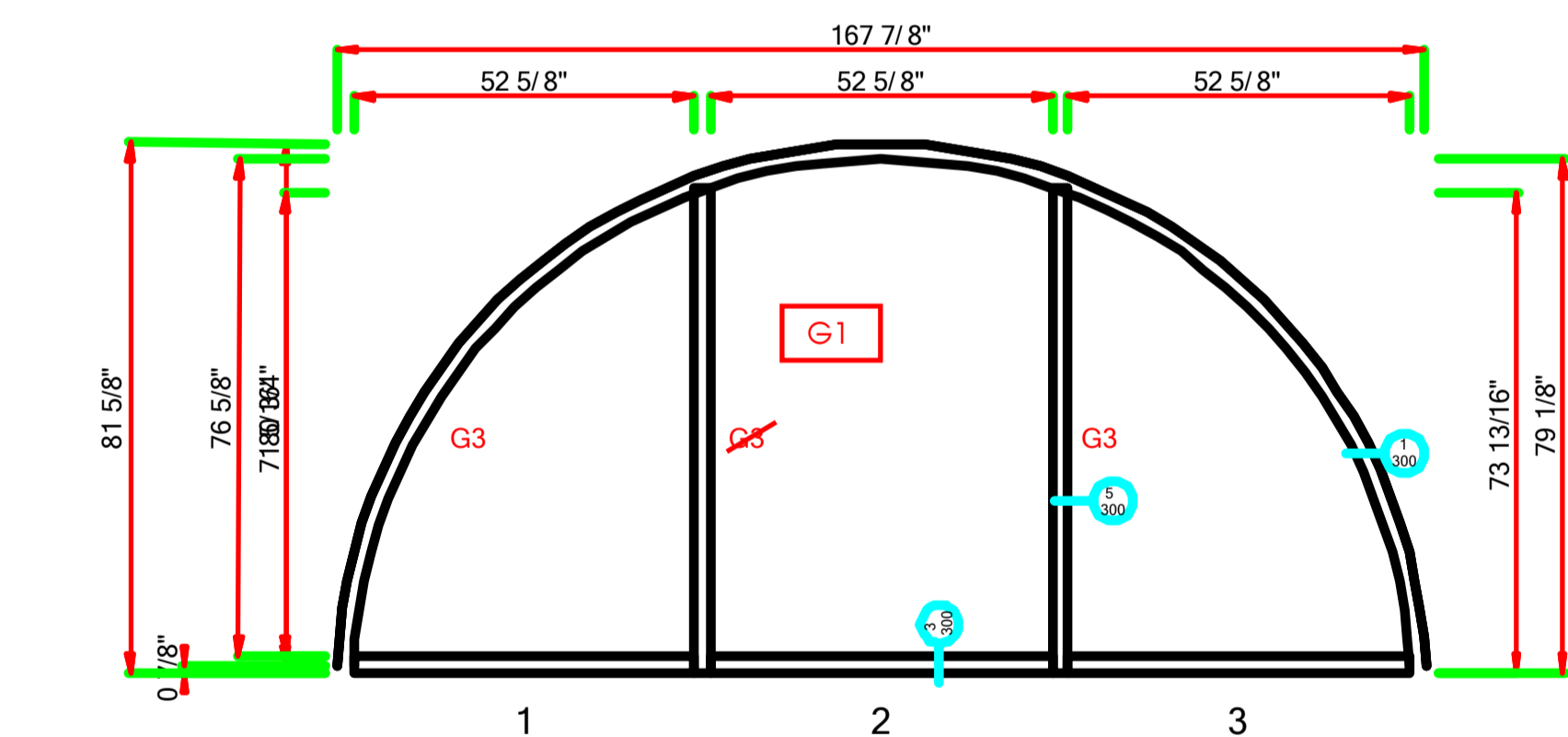
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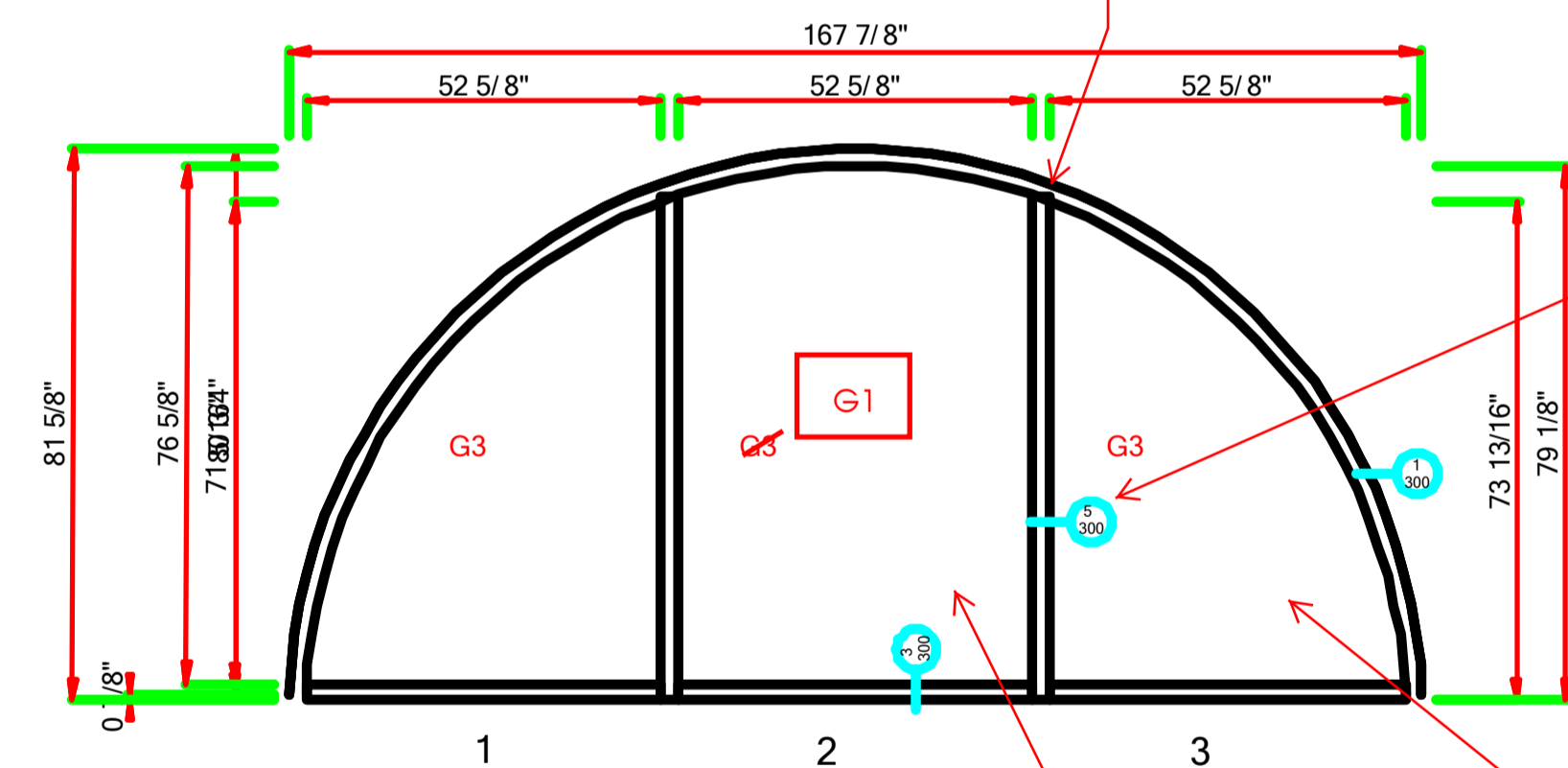
LAUREL - 025 - MARK FF-A.dwg (1 Thus)



LAUREL - 026 - MARK FF-B.dwg (1 Thus)



LAUREL - 027 - MARK FF-C.dwg (1 Thus)



LAUREL - 028 - MARK FF-D.dwg (1 Thus)

Clarify if there is a change to frame at change from Mapes to glass, typ.  
JHC 02/06/2017

Resubmit detail @ inside vertical w/ Mapes on one side / glass on the other, typ.  
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Center panel glass, typ.  
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Coord. Mapes panel w/ duct & flashing, typ.  
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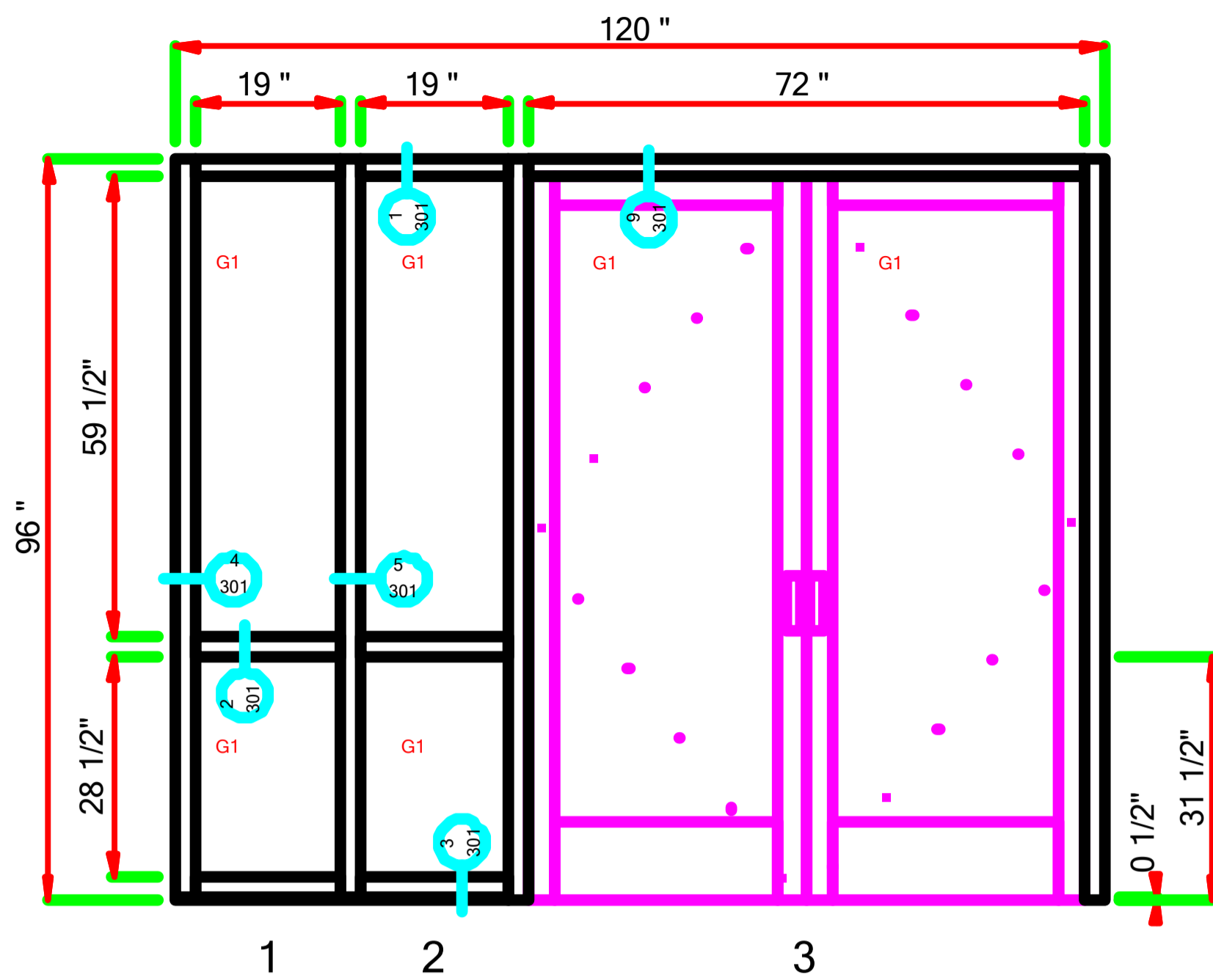


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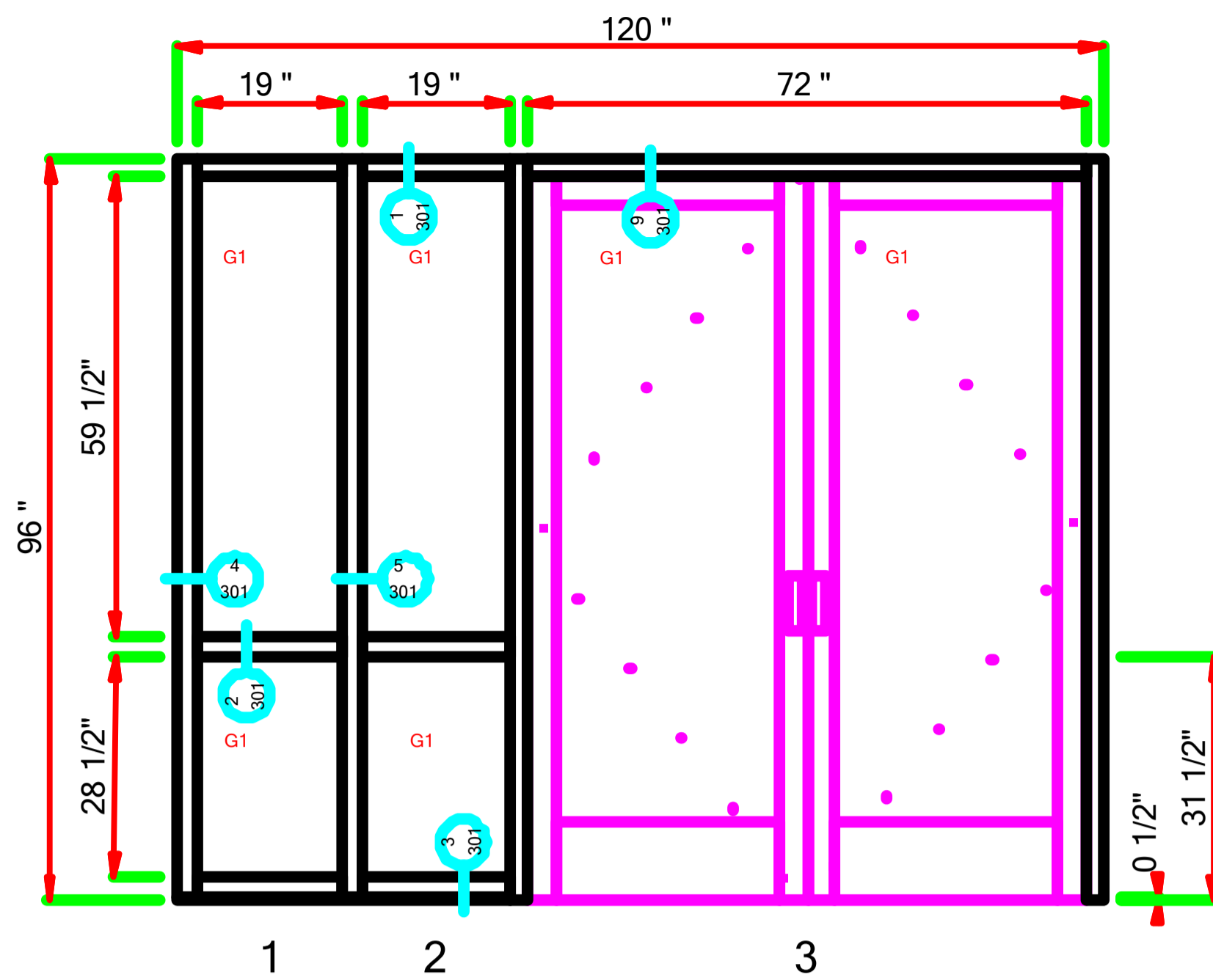
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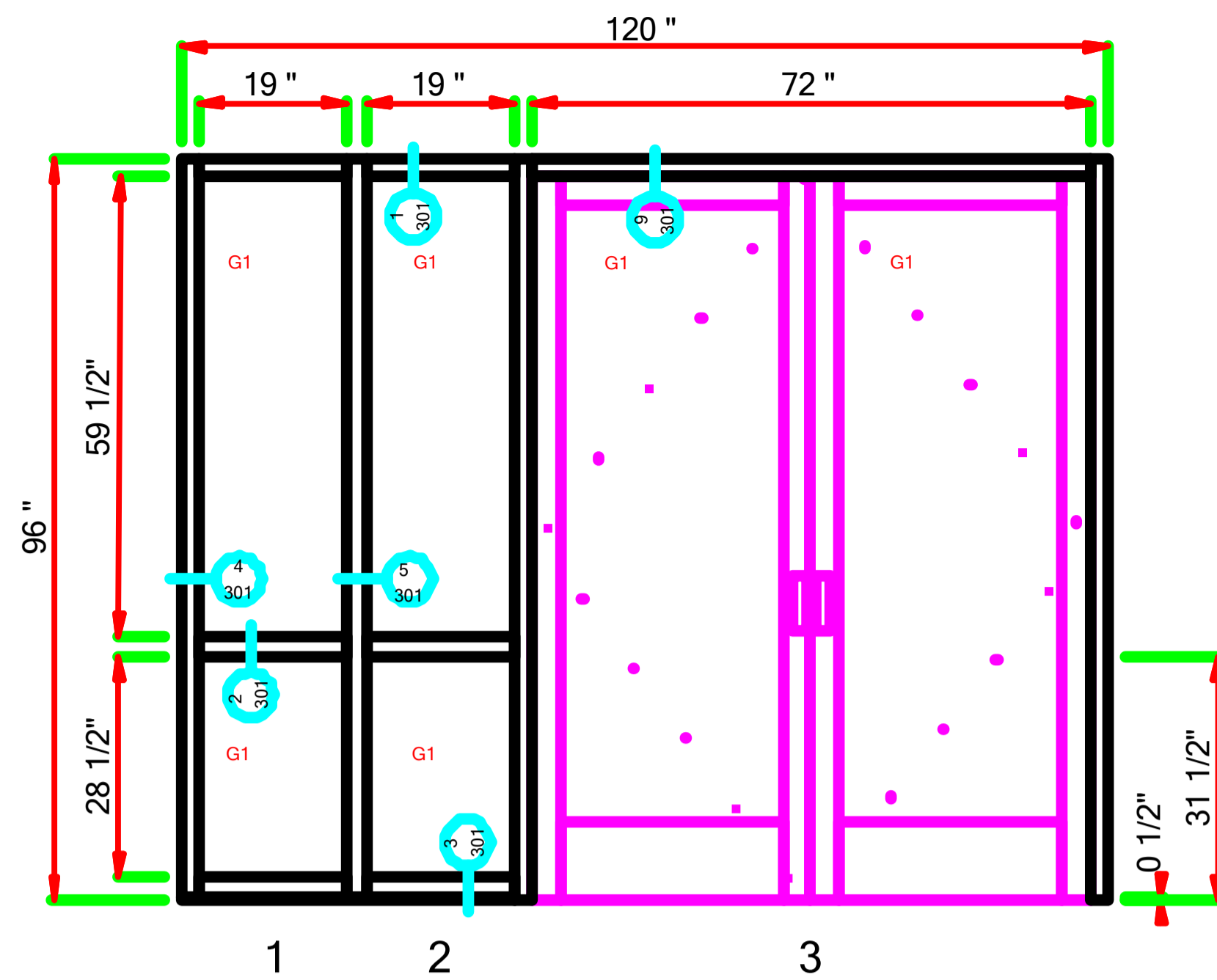
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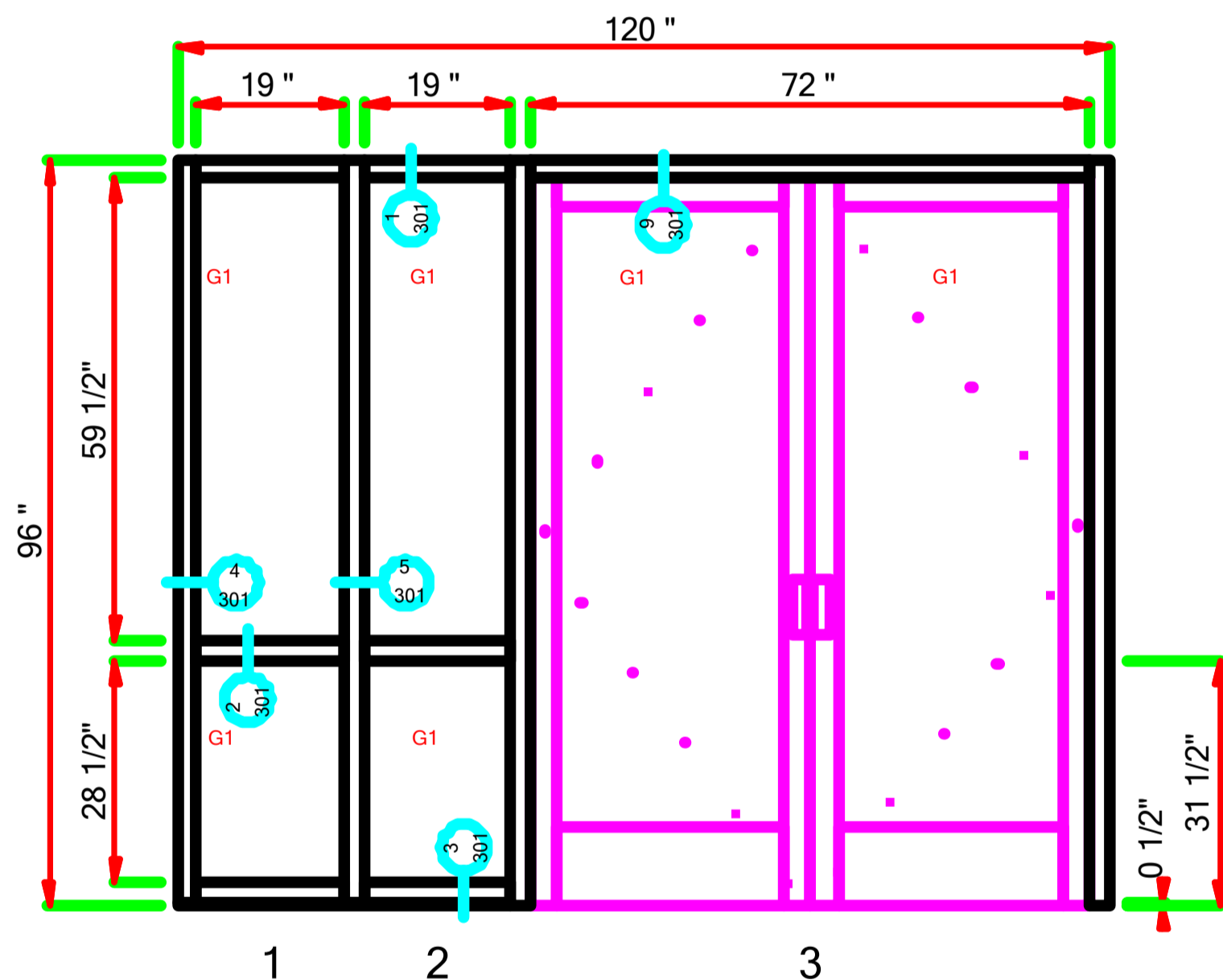
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Frame: (C2-Clear) E44000 : Storefront : ForceFront Storm : 2-1/2 x 5 : Screw Spline



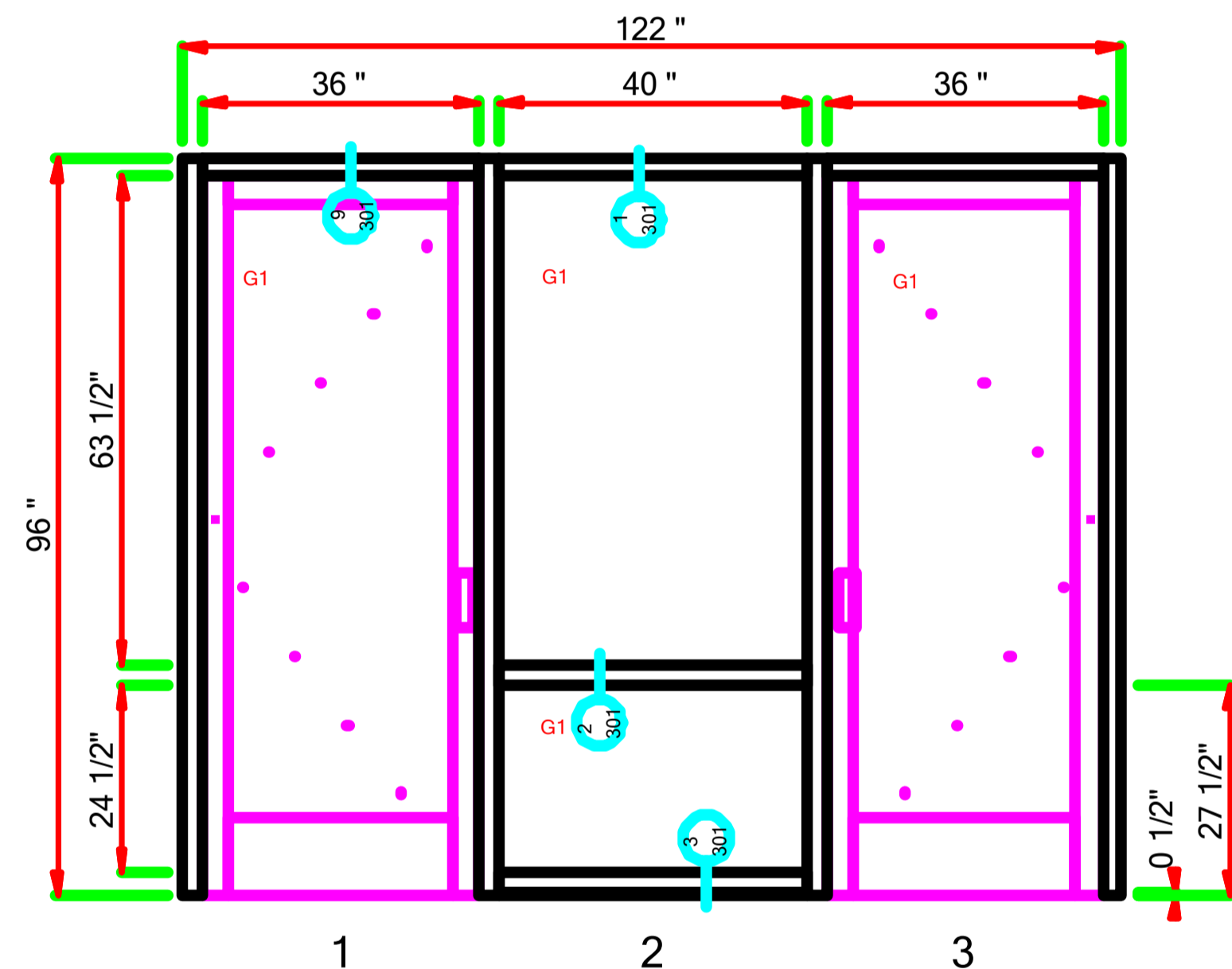
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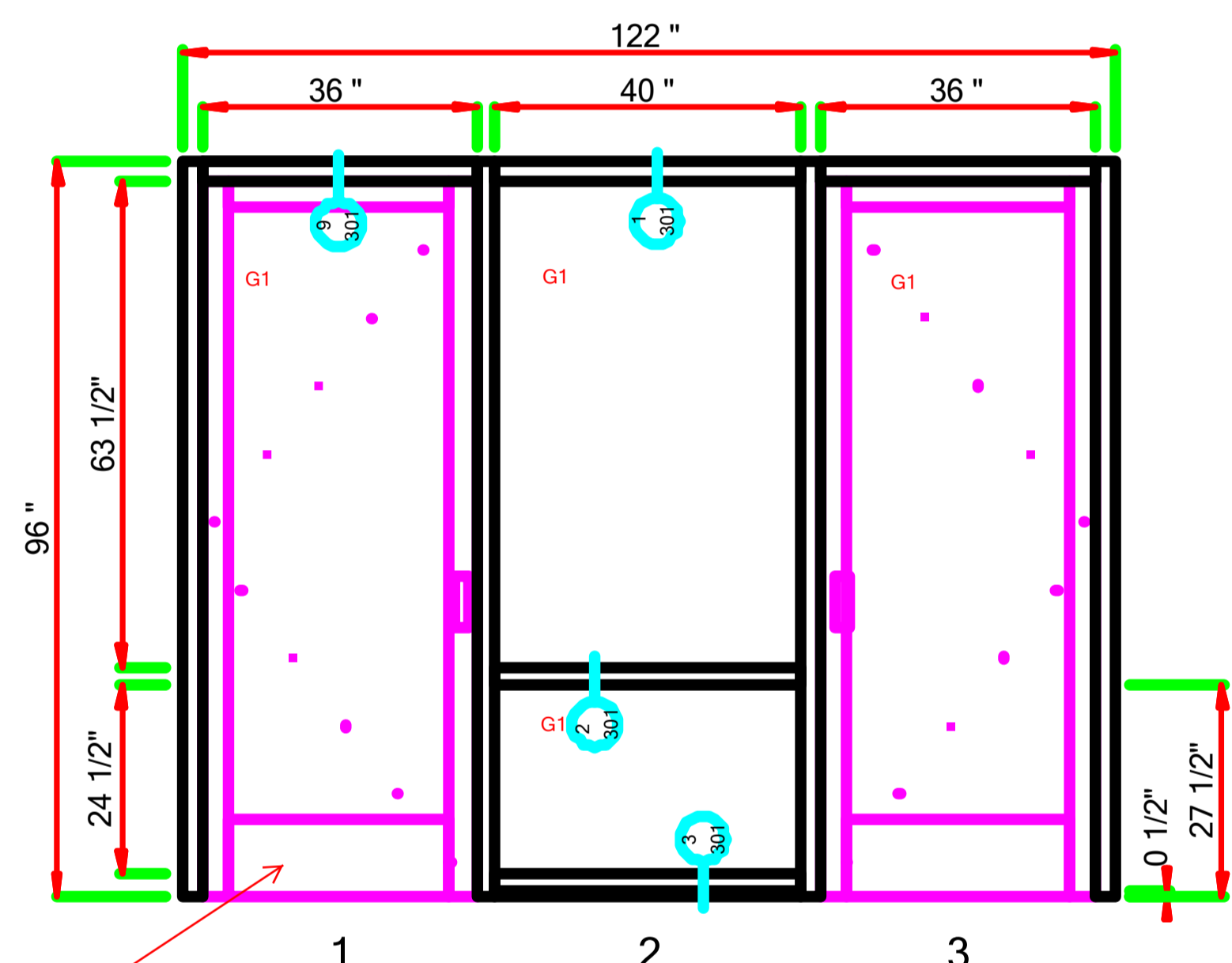
LAUREL - 031 - MARK AA-C DOOR 1401B HWD .dwg (1 Thus)  
Frame: (C2-Clear) E44000 : Storefront : ForceFront Storm : 2-1/2 x 5 : Screw Spline



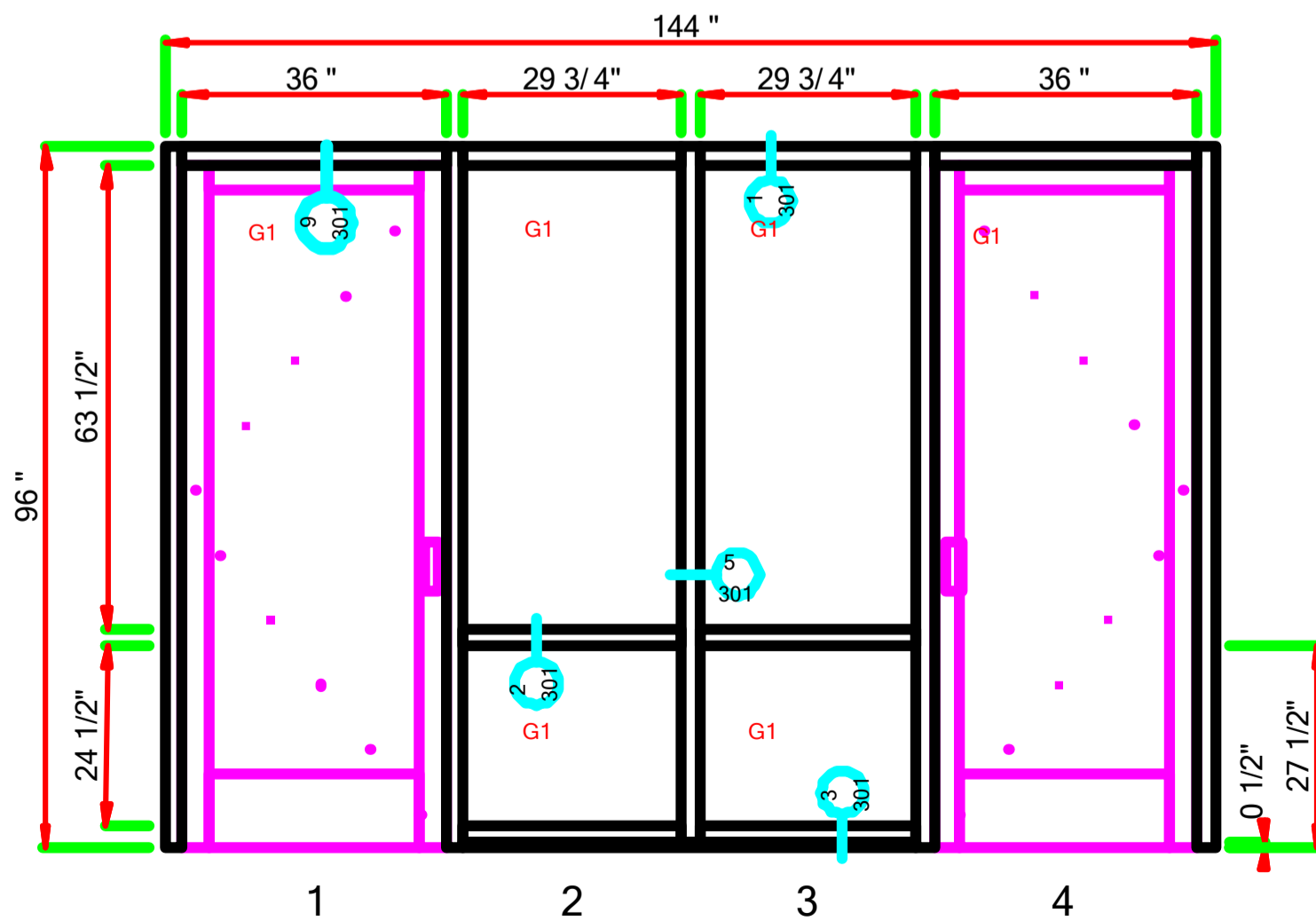
LAUREL - 032 - MARK AA-D DOOR 1402B HWD .dwg (1 Thus)  
Frame: (C2-Clear) E44000 : Storefront : ForceFront Storm : 2-1/2 x 5 : Screw Spline



LAUREL - 033 - MARK EE-A DOOR 1103C HDW .dwg (1 Thus)  
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LAUREL - 034 - MARK EE-B DOOR 1103D HWD .dwg (1 Thus)  
Frame: (C2-Clear) E44000 : Storefront : ForceFront Storm : 2-1/2 x 5 : Screw Spline



LAUREL - 035 - MARK FF-A DOOR 1204A HWD .dwg (1 Thus)  
Frame: (C2-Clear) E44000 : Storefront : ForceFront Storm : 2-1/2 x 5 : Screw Spline

Provide jamb & sill details @  
doors, typ.  
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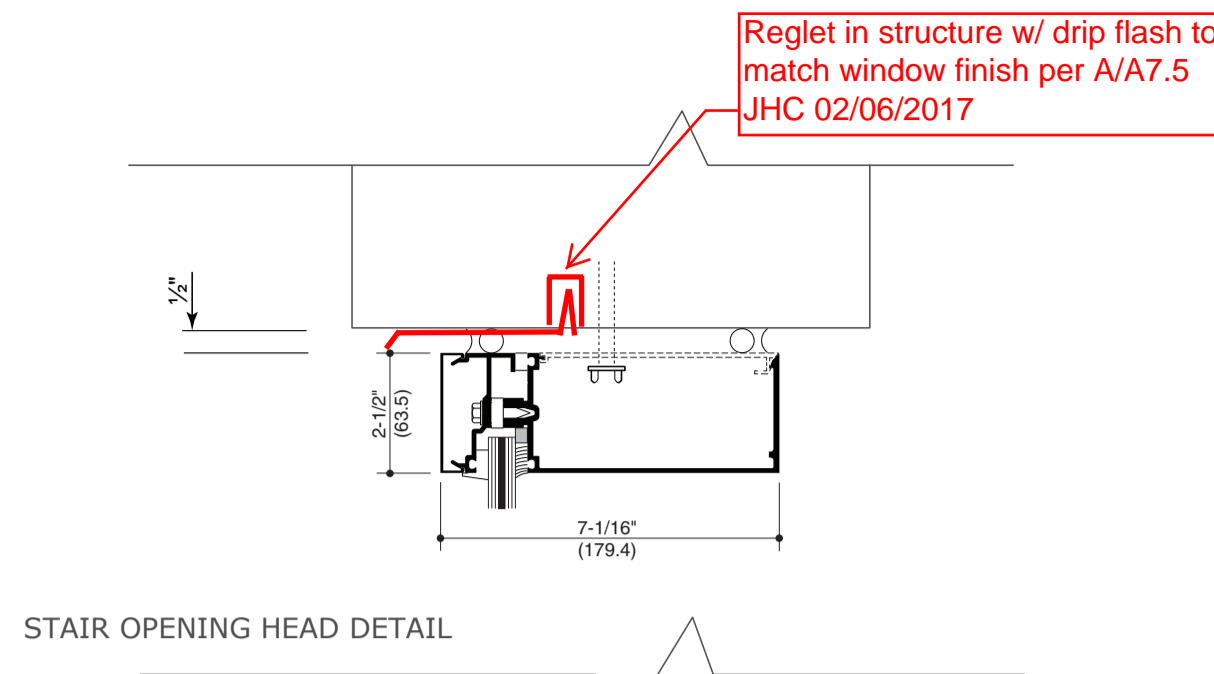
REVISION DATE:  
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PROJECT NUMBER:  
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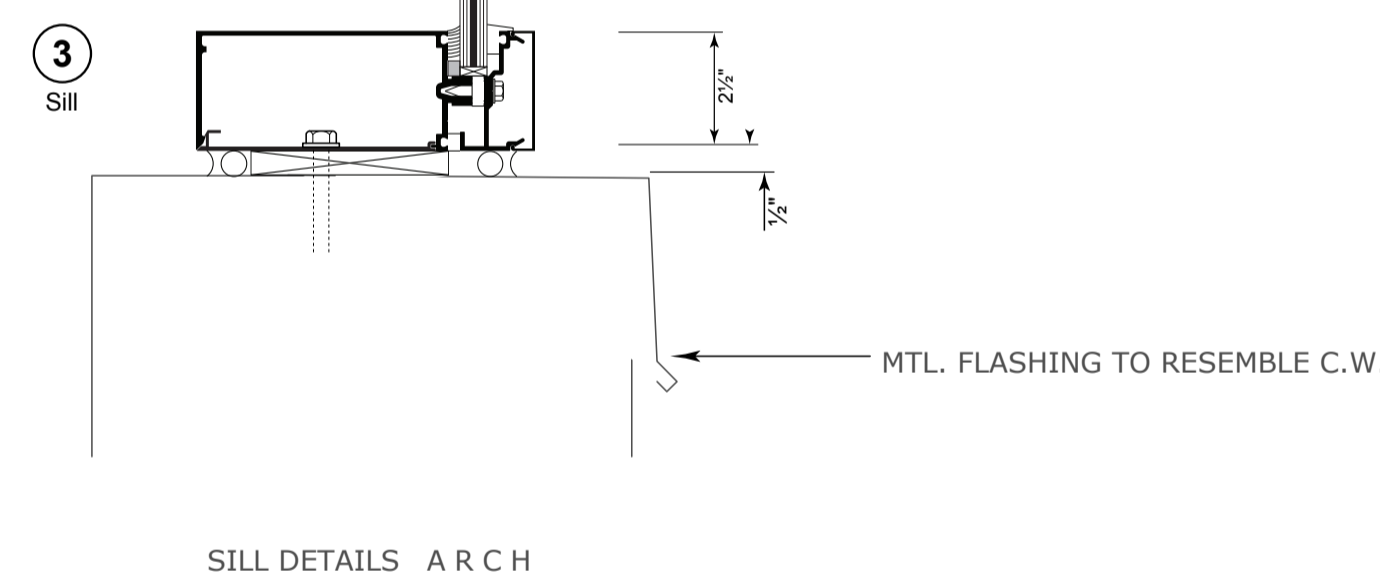
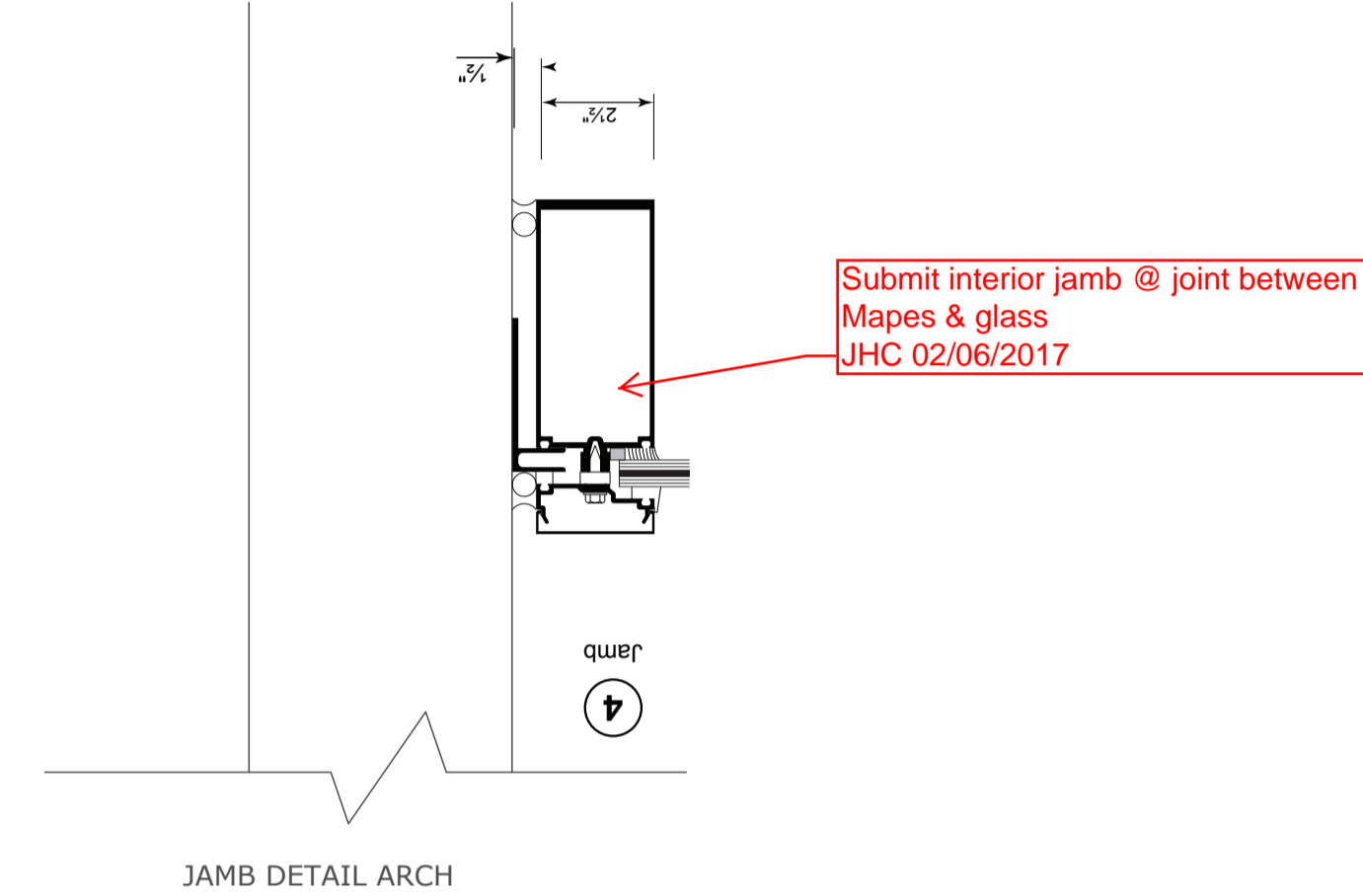
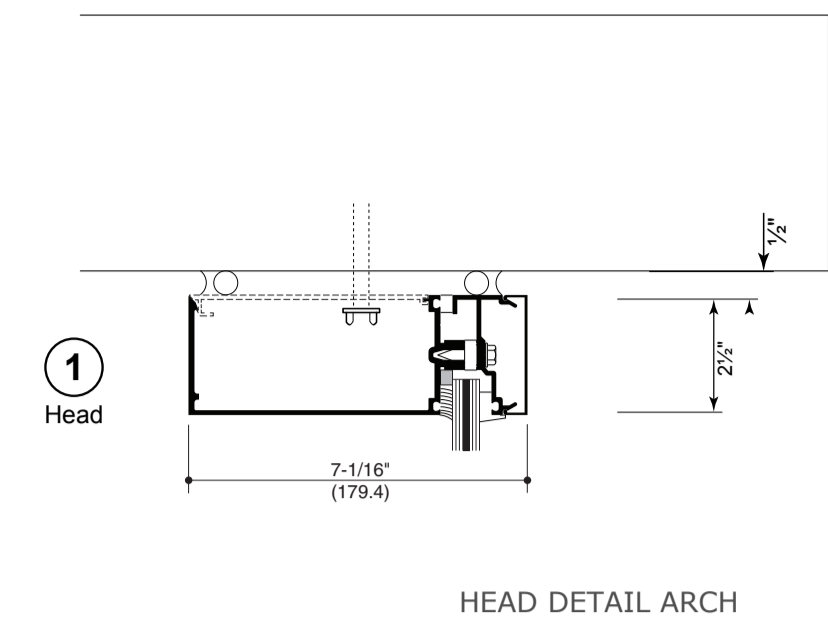
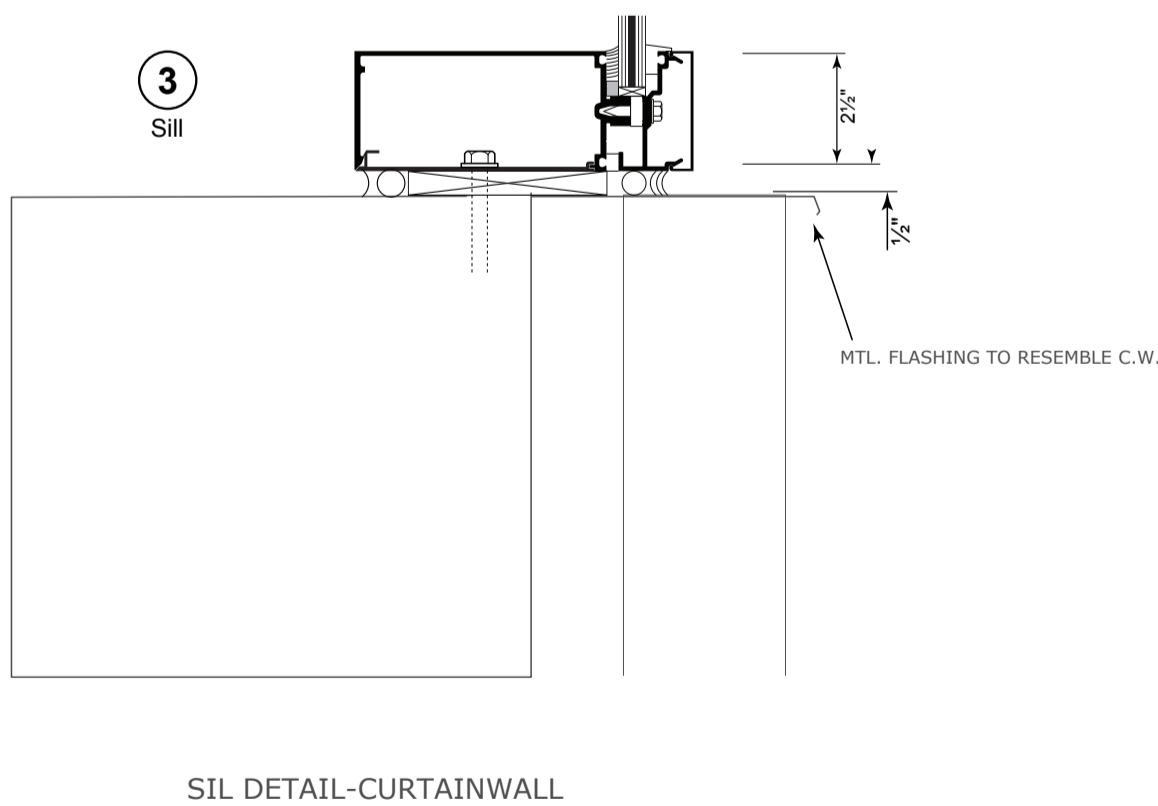
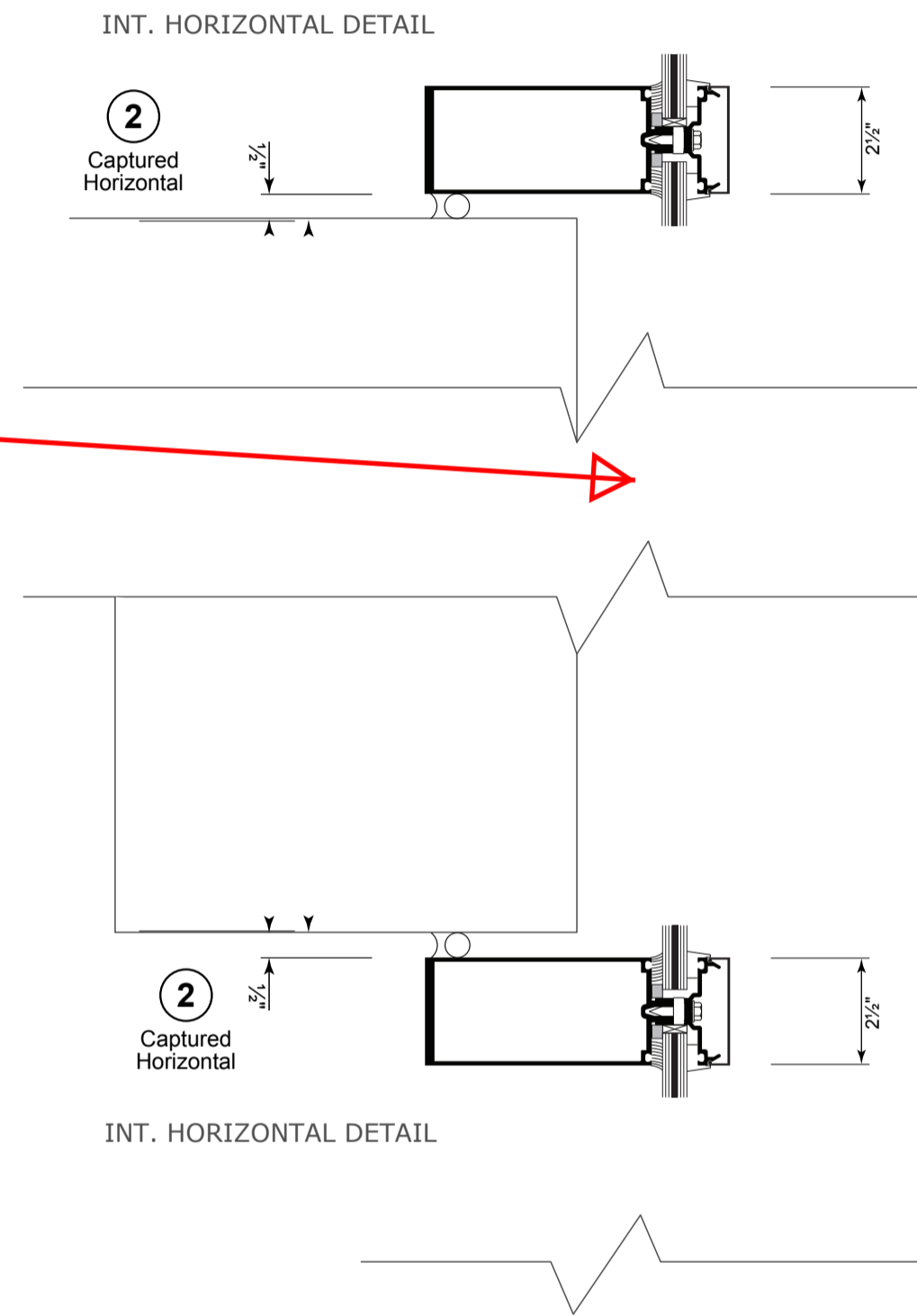
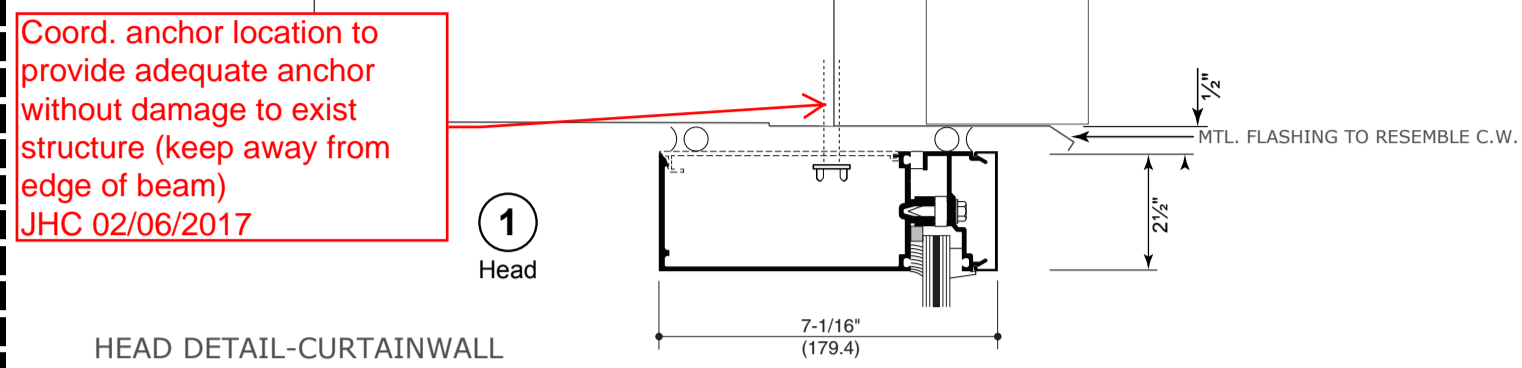
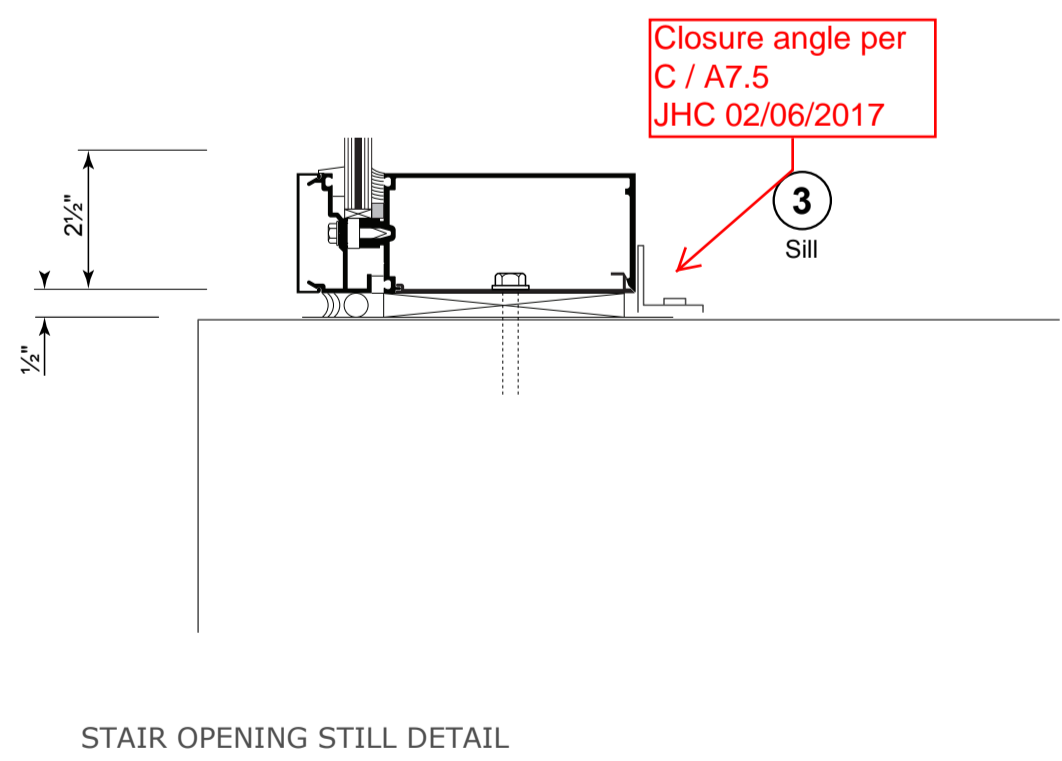
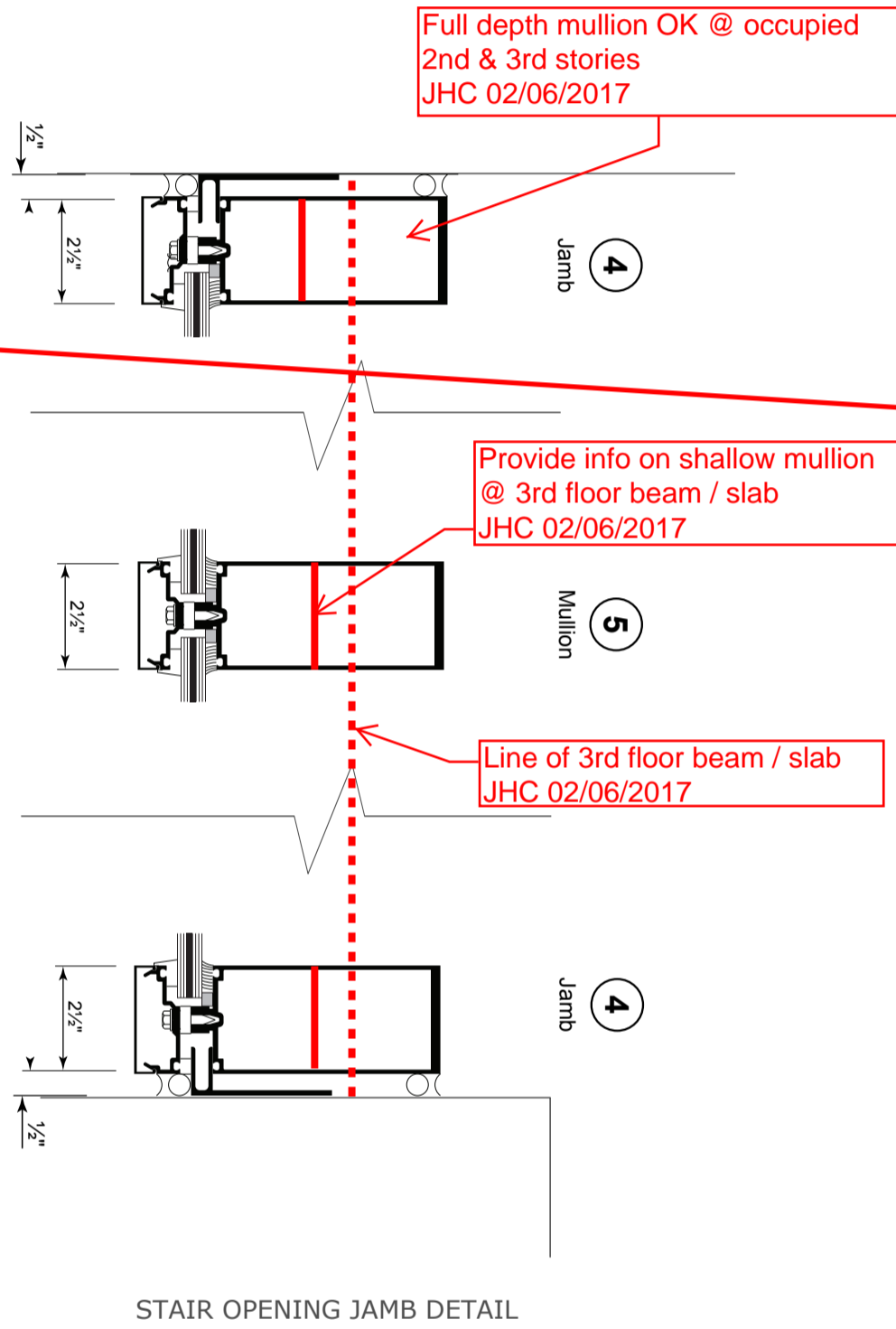
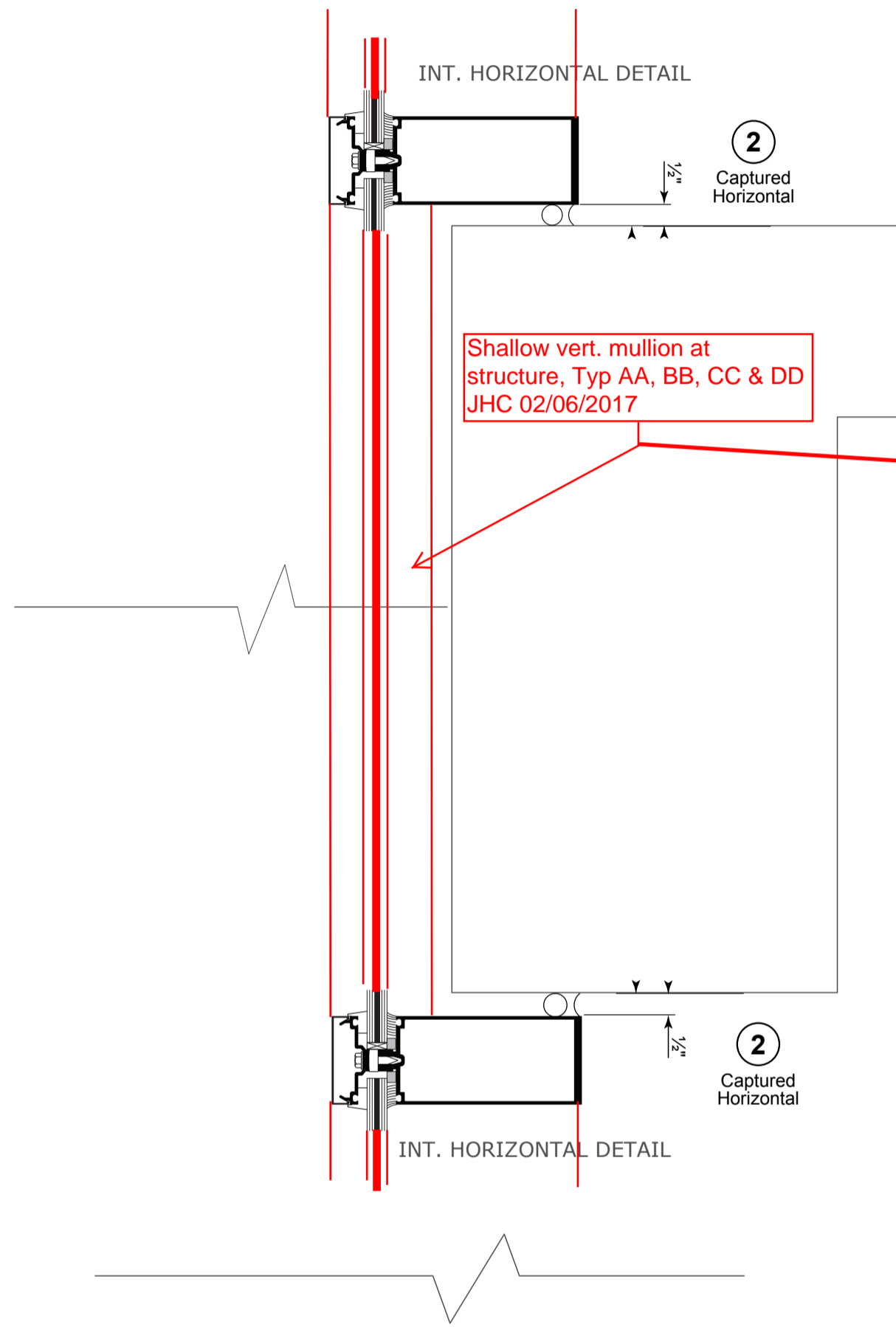
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P.S.

SHEET

108



\*NOTE  
NO APPROVED MANUFACTURE  
OFFERS 5 1/2" CURTAINWALL SYSTEM.  
C.W. HORIZONTALS WILL NEED TO SIT  
ON TOP OF THE FLOOR @ STAIRS.  
REFERENCE DETAILS.



**Laurel School Refurbishment**  
**820 Jackson Ave New Orleans, LA**  
**70130 RSD Project No.**  
**2011-0891-0001**

DATE DRAWN:  
11-21-2016

REVISION DATE:  
A

PROJECT NUMBER:  
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DRAWN BY:  
P.S.



STAR GLASS INC.

1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:

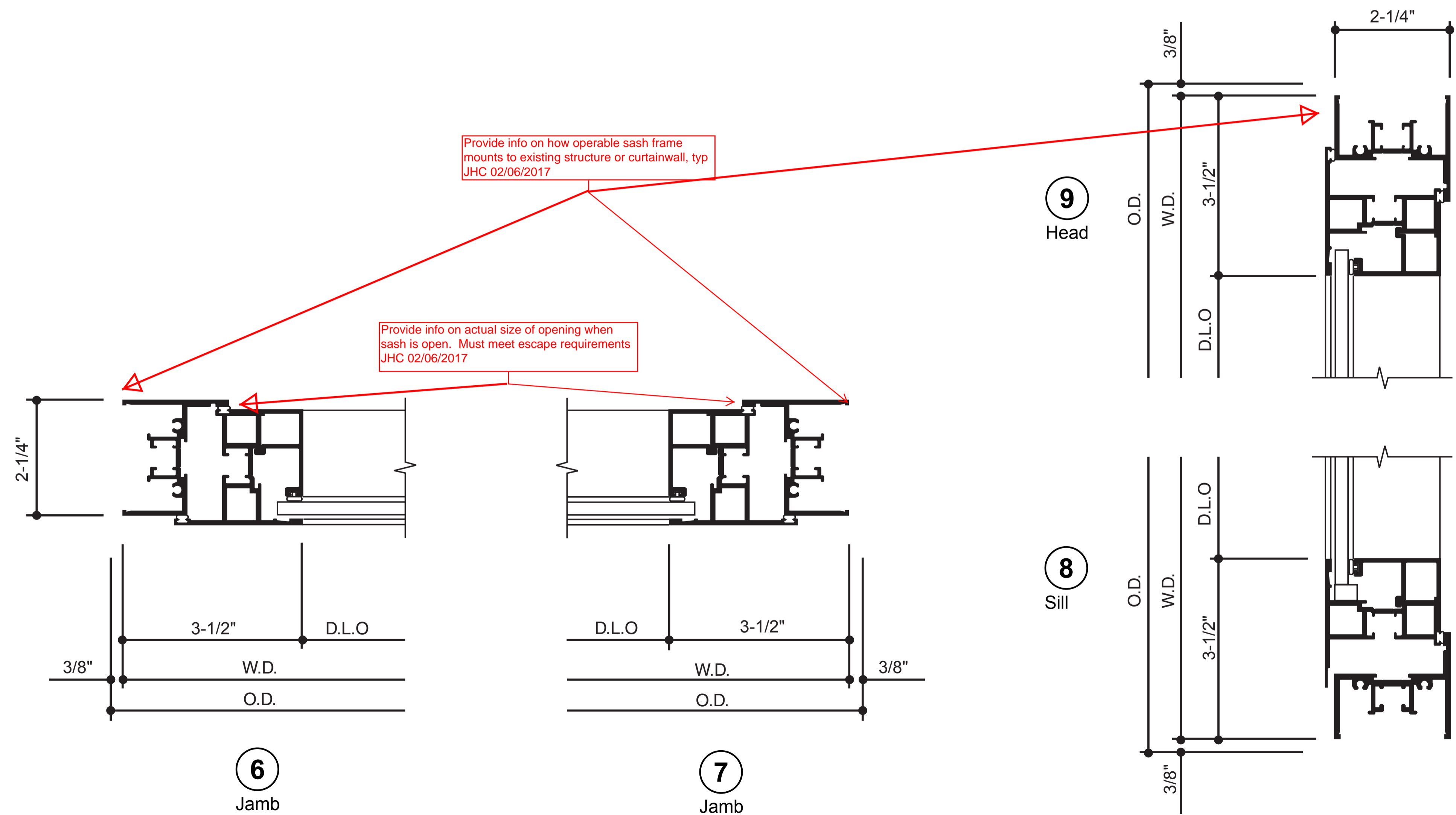
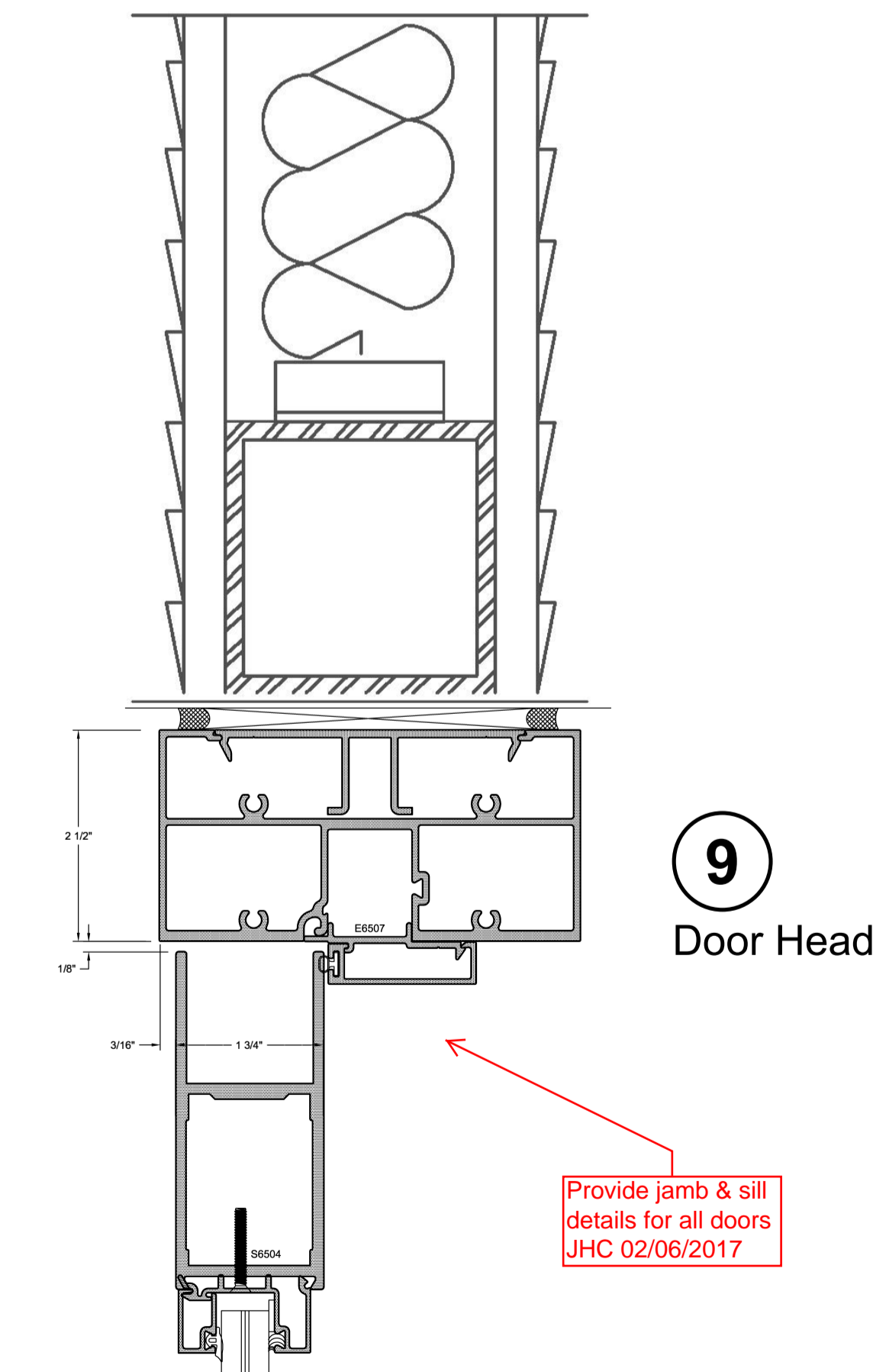
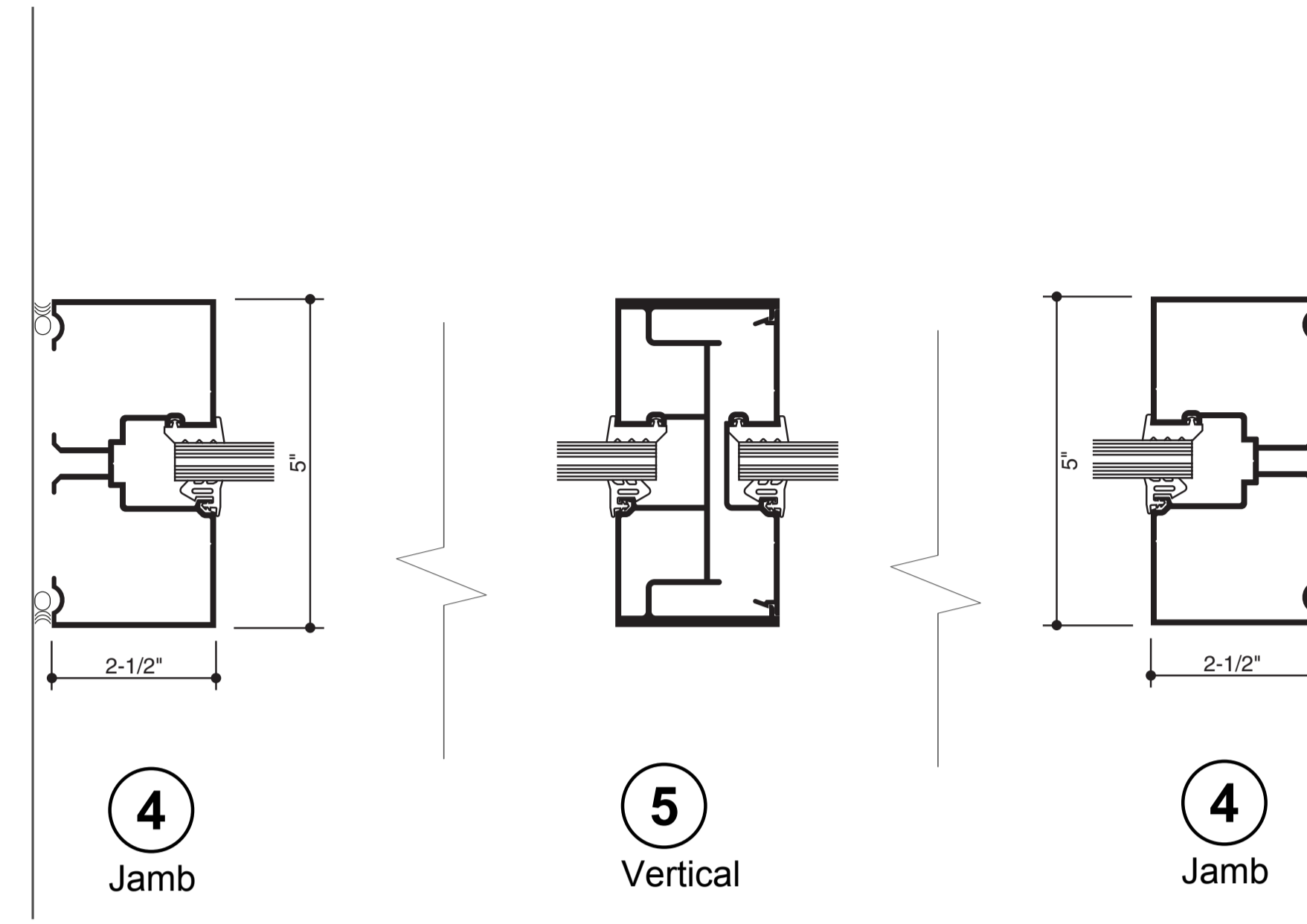
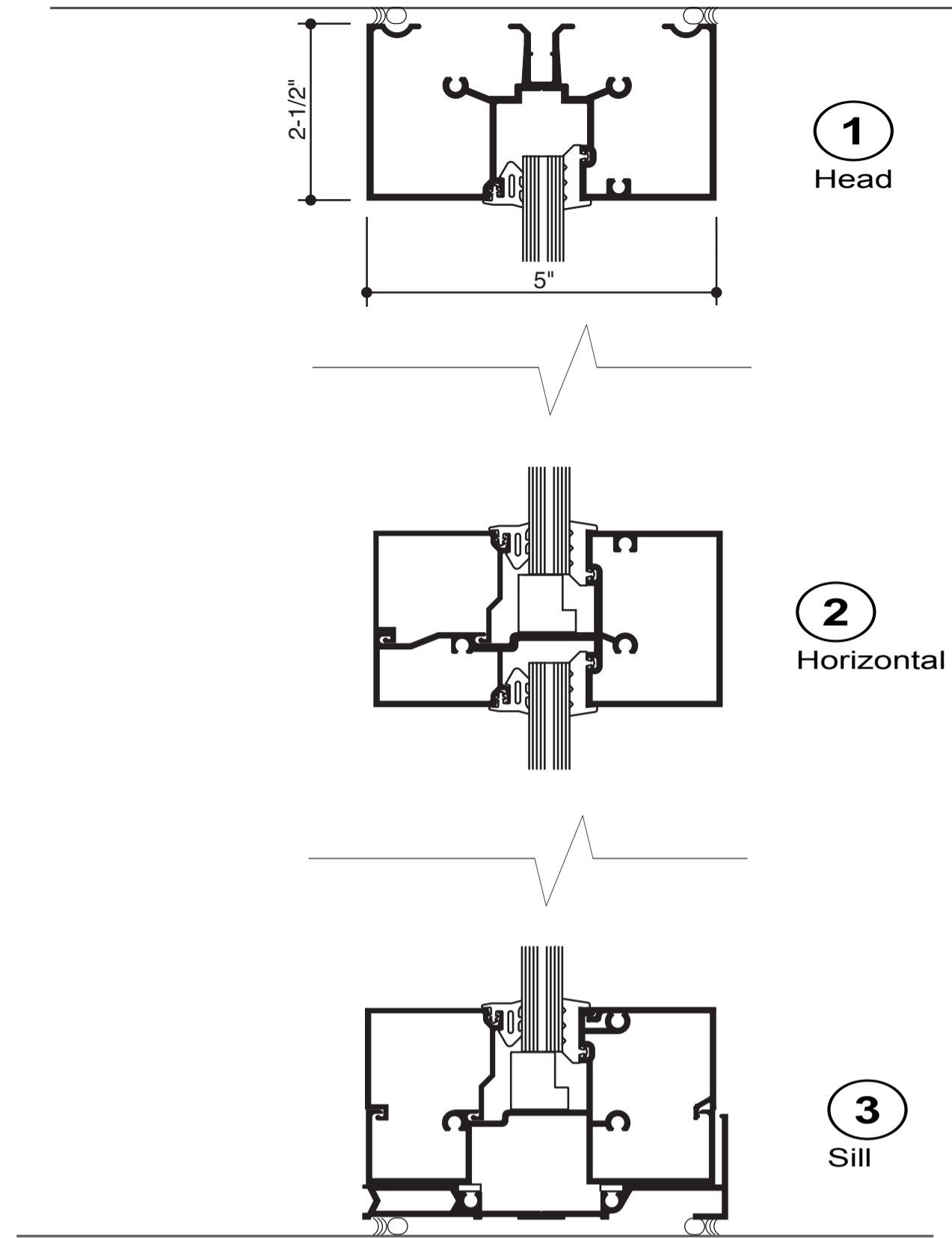


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P.S.

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201



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CURTAIN WALL TEST REPORTS FOLLOW



STAR GLASS INC.  
1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:



PROJECT NUMBER:

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DRAWN BY:  
P.S.

SHEET

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1. THESE CURTAIN WALL SYSTEMS HAVE BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
2. OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
3. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS. SPECIFIED ANCHOR EMBED TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
4. THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH ASTM E330, E283, E331, E1886 & E1996 FOR SMALL MISSILE IMPACT CURTAIN WALL SYSTEMS.
5. THESE CURTAIN WALL SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC).
6. THIS CURTAIN WALL SYSTEM MAY NOT BE INSTALLED AT ELEVATIONS BELOW 30 FT. ABOVE GRADE WITHOUT AN APPROVED SHUTTER.
7. ALL ANCHORS SECURING CURTAIN WALL FRAME TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
8. DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY. FOR WIND LOAD CALCULATIONS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, A DIRECTIONALITY FACTOR OF  $K_D = 0.85$  MAY BE APPLIED PER THE ASCE-7 STANDARD.
9. NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE CERTIFICATION OF THIS PRODUCT. WIND LOAD DURATION FACTOR  $C_D = 1.6$  WAS USED FOR WOOD SCREW ANALYSIS ONLY.
10. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE SEPARATED OR COATED AS REQUIRED TO AVOID CORROSION OF EITHER MATERIAL.
11. THERE SHALL BE NO LIMIT TO THE NUMBER OF HORIZONTAL & VERTICAL PANELS USED FOR ANY JOB PROVIDING ALL RESTRICTIONS ARE MET PER THE ELEVATIONS.
12. TO THE BEST OF OUR KNOWLEDGE, THE CURTAIN WALL SYSTEMS SHOWN HEREIN ARE QUALITY ASSURED BY AN APPROVED CERTIFICATION/QA ENTITY & SHALL BE LABELED IN ACCORDANCE WITH APPLICABLE STANDARDS. THESE DRAWINGS SHOW ALL APPLICABLE ELEVATION, COMBINATION, INSTALLATION & COMPARATIVE ANALYSIS CONDITIONS AS DETERMINED THROUGH TESTING & ENGINEERING RATIONAL ANALYSIS. CURTAIN WALL ASSEMBLY SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, THE MANUFACTURER'S QUALITY ASSURANCE SPECIFICATIONS & TESTING REPORTS.
13. CERTIFICATION OF THESE CURTAIN WALL SYSTEMS SHALL BE CONSIDERED VOID IF THEY ARE INSTALLED WITHOUT A BUILDING PERMIT FROM THE APPLICABLE LOCAL BUILDING DEPARTMENT OR IF THEY ARE INSTALLED BY ANYONE OTHER THAN A LICENSED CONTRACTOR EXPERIENCED WITH CURTAIN WALL INSTALLATIONS.

| OPENING TYPE<br>(SUBSTRATE)                          | FRAME/CLIP TO OPENING<br>FASTENER TYPE                  | MINIMUM<br>EMBED | MINIMUM<br>EDGE DIST. |
|--|---|------------------|-----------------------|
| F-PERIMETER ANCHOR SCREWS                            |   |                  |                       |
| MIN. 16 GA. 50 KSI METAL STUD                        | 1/4-14 GR. 5 SELF TAP/DRILL SCREW                       | FULL             | 1/2"                  |
| MIN. 2X6 WOOD FRAME OR<br>BUCK (MIN. GR. 2 & G=0.55) | 1/4" DIA. GR. 5 COARSE THREAD<br>SCREW                  | 1 1/4"           | 3/4"                  |
| MIN. 1/8" THK A36 STEEL                              | 1/4-14 OR 20 GR. 5 SELF TAP/DRILL SCREW                 | FULL             | 1/2"                  |
| MIN. 3000 PSI CONCRETE                               | (1) 3/8" CONCRETE SCREW ANCHOR                          | 2 1/2"           | 2 1/2"                |
| T, F & U-ANCHOR SCREWS/BOLTS (VERTICAL MEMBER ENDS)  |   |                  |                       |
| MIN. 1/4" THK A36 STEEL                              | 3/8"-16 430 SS HCMS OR GR. 5 CS THREAD<br>FORMING SCREW | FULL             | 3/4"                  |
|  | 3/8" GR. 5 CS OR 410 SS BOLT WITH LOCK<br>WASHER & NUT  | FULL             | 3/4"                  |
|  | 1/4-14 OR 20 GR. 5 SELF TAP/DRILL SCREW                 | FULL             | 1/2"                  |
|  | 1/4" GR. 5 CS OR 410 SS BOLT WITH LOCK<br>WASHER & NUT  | FULL             | 1/2"                  |
|  | 5/16-24 GR. 5 SELF TAP/DRILL SCREW                      | FULL             | 5/8"                  |
|  | 5/16" GR. 5 CS OR 410 SS BOLT WITH LOCK<br>WASHER & NUT | FULL             | 5/8"                  |
| (2) MIN. 3000 PSI CONCRETE                           | (1) 1/2" CONCRETE SCREW ANCHOR                          | 3 1/4"           | SEE DETAILS           |





CORNER CONSTRUCTION:

ONE-PIECE VERTICAL AND HORIZONTAL FRAMING AND INTERMEDIATES: VERTICAL MEMBERS RUN THROUGH<sup>5</sup> WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #9); THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 12 X 7/16" PHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 NO. 12 X 1 1/2" FHTF SCREWS. CORNERS ARE SEALED WITH DOW 795 SILICONE SEALANT.

TWO-PIECE VERTICAL AND HORIZONTAL FRAMING AND INTERMEDIATES: VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #9). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 12 X 7/16" PHTF SCREWS & . THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 FH & 2 PH NO. 12 X 1 1/2" FHTF SCREWS. CORNERS ARE SEALED WITH DOW 795 SILICONE SEALANT.

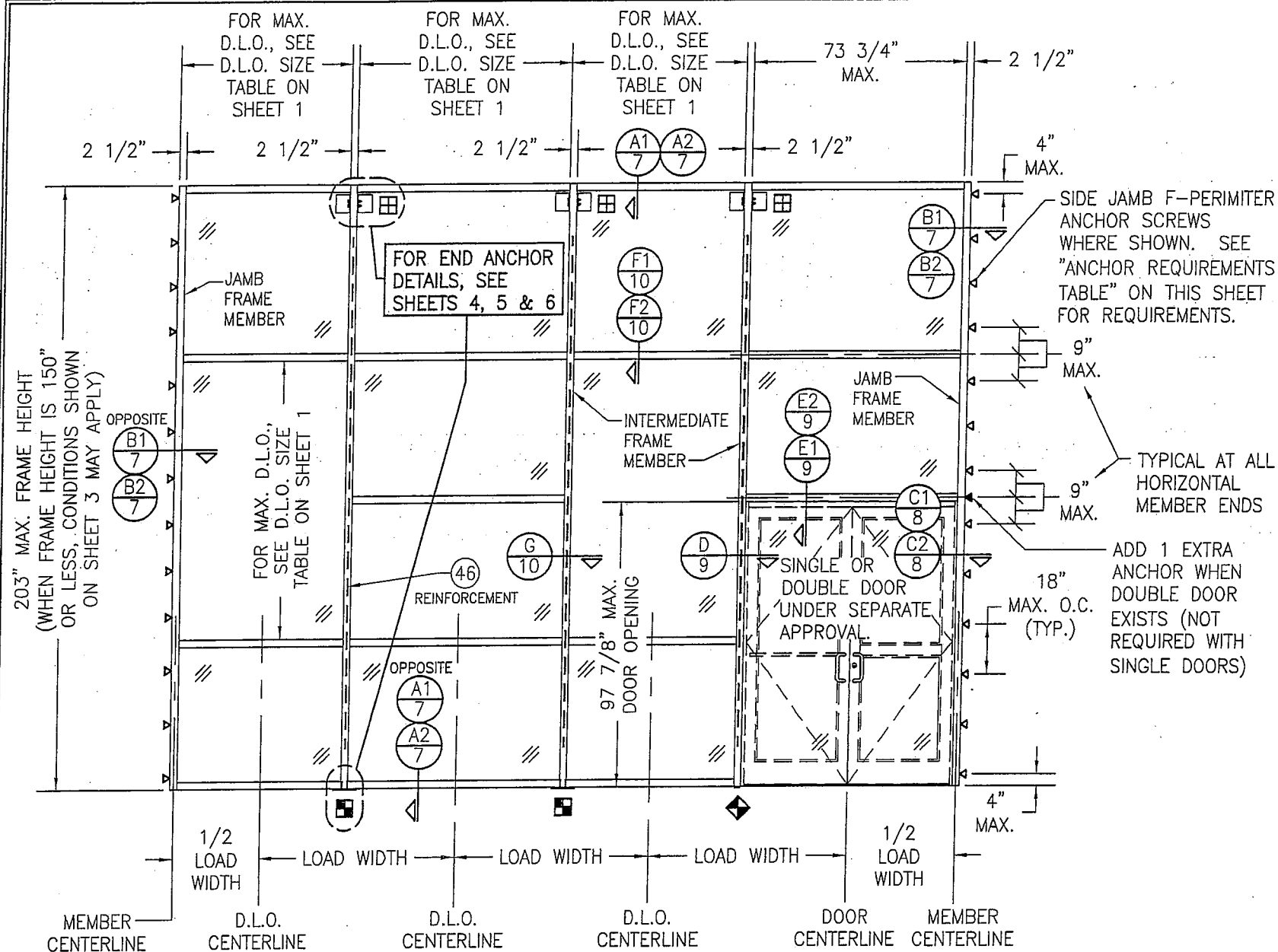
| GLASS<br>OPTIONS | MAXIMUM<br>D.L.O.<br>WIDTH | MAXIMUM<br>D.L.O.<br>HEIGHT | ALLOWABLE<br>DESIGN<br>PRESSURE |
|------------------|----------------------------|-----------------------------|---------------------------------|
| 1, 2, 3 & 4      | 58 1/2"                    | 82 1/8"                     | +/-90 PSF                       |
|                  | 51 3/8"                    | 93 1/2"                     | +/-90 PSF                       |
|                  | 50 5/8"                    | 94 3/4"                     | +/-90 PSF                       |
|                  | 73 3/4"                    | 54 5/8"                     | +/-90 PSF                       |
| 1 & 2            | 58 1/2"                    | 93 1/2"                     | +/-65 PSF                       |
|                  | 57 3/4"                    | 94 3/4"                     | +/-65 PSF                       |
| 5 & 6            | 58 1/2"                    | 93 1/2"                     | +/-90 PSF                       |
|                  | 57 3/4"                    | 94 3/4"                     | +/-90 PSF                       |
|                  | 73 3/4"                    | 54 5/8"                     | +/-90 PSF                       |

EVALUATION OF THIS PRODUCT IS BASED ON APPLICABLE STANDARDS AND/OR INFORMATION & RESULTS FROM APPLICABLE TEST REPORTS. THE BUILDING CODE VERSION CONSIDERED WITH THIS EVALUATION WAS THAT IN FORCE AT THE TIME OF THE EVALUATION. IN THE EVENT OF CODE VERSION CHANGES/UPDATES OR IN THE EVENT THAT NEW OR ADDITIONAL TESTING IS COMPLETED ON THIS PRODUCT, PRIOR TO STATING CODE COMPLIANCE, THE MANUFACTURER SHALL CONFIRM WITH THE EVALUATION ENGINEER OF RECORD THAT EVERYTHING SPECIFIED HERE-IN IS CURRENT WITH ALL CURRENT TESTING, CODES AND APPLICABLE STANDARDS.

| ANCHOR LEGEND   |                              |
|---|------------------------------|
| ANCHOR SYMBOL   | ANCHOR DESCRIPTION           |
|  | STANDARD WIND LOAD ANCHOR    |
|  | STANDARD T-ANCHOR            |
|  | DOOR JAMB U-ANCHOR           |
|  | F-ANCHOR (FRAME MEMBER ENDS) |
| SEE SHEETS 4-6 FOR DETAILS OF ANCHORS   |                              |

A circular professional engineer seal for the State of Texas. The outer ring contains the text "STATE OF TEXAS" on the left and "PROF. ENGINEER" on the right, separated by stars. The inner circle contains the name "WARREN W. SCHAEFER" at the top and the license number "113497" at the bottom, also separated by stars. A five-pointed star is positioned in the center of the seal.

[illegible]



EXTERIOR ELEVATION:  
SINGLE-SPAN REINFORCED CURTAIN WALL

SCALE: 1/4" = 1'-0"

**NOTES APPLICABLE TO SINGLE-SPAN REINFORCED CURTAIN WALLS**

1. REINFORCEMENT SHALL RUN CONTINUOUS IN INTERMEDIATE VERTICAL MEMBERS & EXTEND TO WITHIN 17 1/2" OF THE ENDS.
2. THERE IS NO LIMIT TO THE NUMBER OF SECTIONS HORIZONTALLY PROVIDING THE OPENING IS DESIGNED TO SUPPORT THE LOADS TRANSFERRED FROM THE WALL SYSTEM.
3. THE SINGLE-SPAN ELEVATION SHOWN SHOWS ONE DOOR SECTION. MULTIPLE DOOR SECTIONS MAY OCCUR SIDE-BY-SIDE IN ONE WALL SYSTEM PROVIDING ALL REQUIREMENTS WITHIN THIS DRAWING ARE MET & PROPER LOAD WIDTH (DISTANCE BETWEEN DOOR CENTERS) IS CONSIDERED WHEN DETERMINING ALLOWABLE DESIGN PRESSURE.
4. ALTHOUGH A DOOR SECTION IS SHOWN AT A SIDE JAMB, THAT SECTION MAY EXIST WITH OR WITHOUT A DOOR & THE DOOR MAY EXIST IN ANY BAY.
5. THE ELEVATION HERE-IN SHOWS T-ANCHORS AT THE BASE OF THE WALL ONLY. THESE ANCHORS MAY ALSO BE USED AT THE TOP OF A WALL IN LIEU OF THE WIND LOAD ANCHORS SHOWN PROVIDING THEY ARE INSTALLED THE SAME AS SHOWN AT THE BASE.
6. DOOR OPENINGS WIDER THAN THAT SHOWN ARE NOT PART OF THE SCOPE OF THIS APPROVAL. IF WIDER DOOR OPENINGS ARE REQUIRED, THEY SHALL BE EVALUATED & CERTIFIED UNDER SEPERATE JOB APPROVAL.

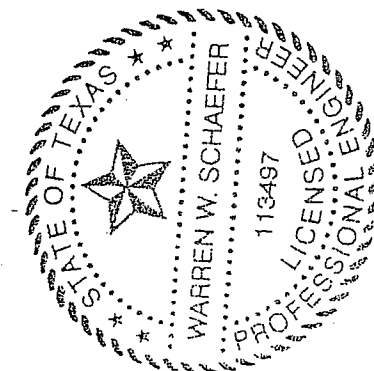
**ALLOWABLE DESIGN PRESSURE  
(SINGLE SPAN REINFORCED  
CURTAIN WALL)**

| MAXIMUM MULLION SPAN (IN.) | MAXIMUM LOAD WIDTH (IN.) | ALLOWABLE PRESSURE (POS & NEG PSF) |
|----------------------------|--------------------------|------------------------------------|
| 203                        | 76 1/4                   | 81.0                               |
|                            | 72                       | 85.8                               |
|                            | 68 5/8                   | 90.0                               |
|                            | 62                       | 99.6                               |
| 192                        | 76 1/4                   | 85.6                               |
|                            | 72                       | 90.7                               |
|                            | 68 5/8                   | 95.2                               |
|                            | 62                       | 105.3                              |
| 180 & LESS                 | 76 1/4                   | 90.0                               |
|                            | 72                       | 95.3                               |
|                            | 68 5/8                   | 100.0                              |
|                            | 62                       | 110.0                              |

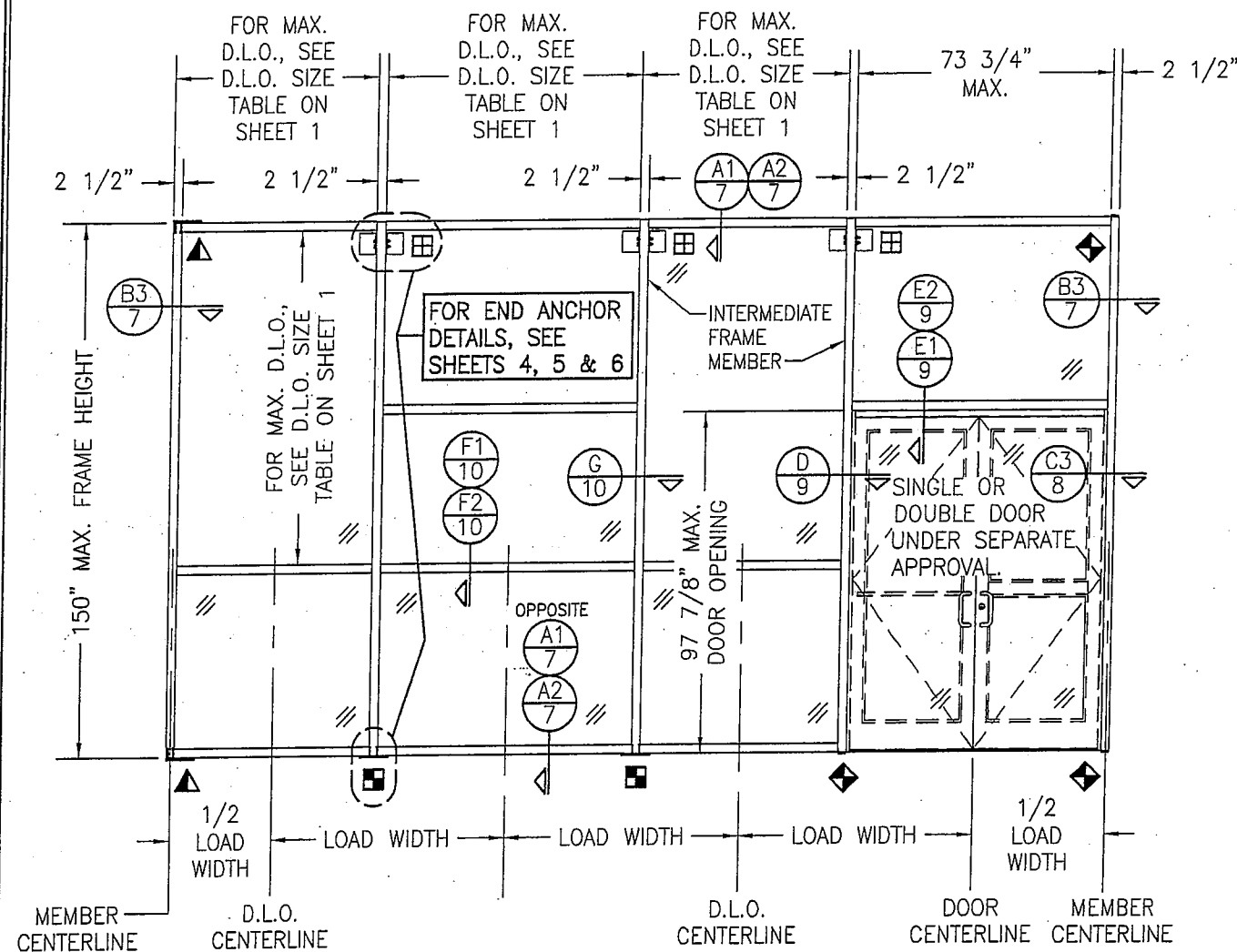
**NOTES:**

1. SEE ELEVATION FOR DIMENSIONING OF LOAD WIDTH.
2. PRESSURES SHOWN ARE SPECIFIC TO EACH INDIVIDUAL MULLION SUPPORT AREA. ALLOWABLE PRESSURE MAY VARY FROM BAY TO BAY AS DICTATED BY EACH INDIVIDUAL MULLION CONDITION.
3. LESSER OF PRESSURES STATED IN THIS TABLE & THE ALLOWABLE GLASS PRESSURE, AS SHOWN ON SHEET 1, SHALL CONTROL AS ALLOWABLE FOR THE WALL ASSEMBLY.
4. AT SPAN OF 180" & LESS, LOAD WIDTH CONTROLS THE ALLOWABLE PRESSURE. THEREFORE, IT SHALL NOT BE ASSUMED THAT INTERPRETATION OF PRESSURE VALUES CAN BE DONE WITH SPANS UNDER 180". INTERPRETATION OF PRESSURE VALUES BETWEEN THOSE SHOWN MAY APPLY.

Provide info for submitted curtain wall (71/4" not 10 13/16")  
& stamped by Louisiana engineer  
JHC 02/06/17



|  |    |  |     |
|--|----|--|-----|
| DRAWN BY:<br>W.W.S.  |    | CHECKED BY:<br>W.W.S.  |     |
| PLOT:<br>1=48  |    | DATE:<br>03/16/13  |     |
| DATE   | BY | REVISION DESCRIPTION   | NO. |
|  |    |  |     |
| DRAWING TITLE<br>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)  |    | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |     |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |    | CERTIFICATION<br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497                          |     |
| DRAWING NO.<br>1795T   |    | REV.   |     |
| SHEET NO.<br>2 OF 12   |    |  |     |



EXTERIOR ELEVATION:  
SINGLE-SPAN NON-REINFORCED CURTAIN WALL  
SCALE: 1/4" = 1'-0"

#### NOTES APPLICABLE TO SINGLE-SPAN NON-REINFORCED CURTAIN WALLS

1. THE ELEVATION SHOWN ILLUSTRATES SIDE JAMB FRAME MEMBERS WITH FULL SPANS END SUPPORTED BY "F" OR "U" ANCHORS. IT IS OPTIONAL TO OMIT THE "F" & "U" ANCHORS AND INSTALL THE SIDE JAMB F-PERIMETER ANCHOR SCREWS AS SHOWN IN THE REINFORCED WALL ELEVATION ON SHEET 2.
2. THERE IS NO LIMIT TO THE NUMBER OF SECTIONS HORIZONTALLY PROVIDING THE OPENING IS DESIGNED TO SUPPORT THE LOADS TRANSFERRED FROM THE WALL SYSTEM.
3. THE SINGLE-SPAN ELEVATION SHOWN SHOWS ONE DOOR SECTION. MULTIPLE DOOR SECTIONS MAY OCCUR SIDE-BY-SIDE IN ONE WALL SYSTEM PROVIDING ALL REQUIREMENTS WITHIN THIS DRAWING ARE MET & PROPER LOAD WIDTH (DISTANCE BETWEEN DOOR CENTERS) IS CONSIDERED WHEN DETERMINING ALLOWABLE DESIGN PRESSURE.
4. ALTHOUGH A DOOR SECTION IS SHOWN AT A SIDE JAMB, THAT SECTION MAY EXIST WITH OR WITHOUT A DOOR & THE DOOR MAY EXIST IN ANY BAY.
5. THE ELEVATION HERE-IN SHOWS T-ANCHORS AT THE BASE OF THE WALL ONLY. THESE ANCHORS MAY ALSO BE USED AT THE TOP OF A WALL IN LIEU OF THE WIND LOAD ANCHORS SHOWN PROVIDING THEY ARE INSTALLED THE SAME AS SHOWN AT THE BASE.
6. DOOR OPENINGS WIDER THAN THAT SHOWN ARE NOT PART OF THE SCOPE OF THIS APPROVAL. IF WIDER DOOR OPENINGS ARE REQUIRED, THEY SHALL BE EVALUATED & CERTIFIED UNDER SEPERATE JOB APPROVAL.
7. WHEN THERE IS NO CONTINUOUS JAMB SUPPORT, THE MINIMUM & MAXIMUM ALLOWABLE SPACE BETWEEN JAMB FRAME MEMBERS & THE OPENING SUBSTRATE OR FINISHES SHALL BE SPECIFIED BY THE ENGINEER OR ARCHITECT OF RECORD FOR EACH JOB BUT SHALL NOT BE LESS THAN 1/2" NOR GREATER THAN 1 3/8". WHEN CONSIDERING TYPE, DEPTH & JOINT SPAN OF SEALANT, THE ENGINEER/ARCHITECT SHALL TAKE INTO CONSIDERATION THE DEFLECTION OF THE JAMB MEMBER THAT WOULD OCCUR WHILE SUPPORTING THE JOB REQUIRED DESIGN WIND PRESSURE. ALSO TO BE CONSIDERED SHALL BE THE MATERIALS & SURFACES TO WHICH THE SEALANT WILL BE APPLIED.

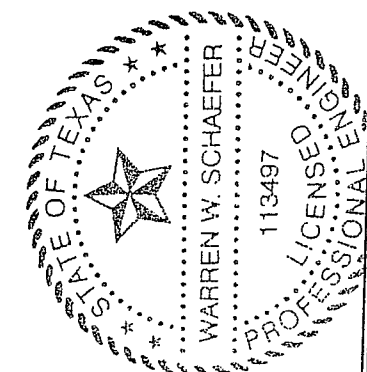
#### ALLOWABLE DESIGN PRESSURE (SINGLE SPAN NON-REINFORCED CURTAIN WALL)

| MAXIMUM<br>MULLION<br>SPAN<br>(IN.) | MAXIMUM<br>LOAD<br>WIDTH<br>(IN.) | ALLOWABLE<br>PRESSURE<br>(POS & NEG<br>PSF) |
|-------------------------------------|-----------------------------------|---|
| 150                                 | 76 1/4                            | 81.0  |
|                                     | 72                                | 85.8  |
|                                     | 68 5/8                            | 90.0  |
|                                     | 62                                | 99.6  |
| 144                                 | 56                                | 110.0                                       |
|                                     | 76 1/4                            | 84.4  |
|                                     | 72                                | 89.4  |
|                                     | 68 5/8                            | 93.8  |
| 132 & LESS                          | 62                                | 103.8                                       |
|                                     | 58                                | 110.0                                       |
|                                     | 76 1/4                            | 90.0  |
|                                     | 72                                | 95.3  |
|                                     | 68 5/8                            | 100.0                                       |
|                                     | 62                                | 110.0                                       |

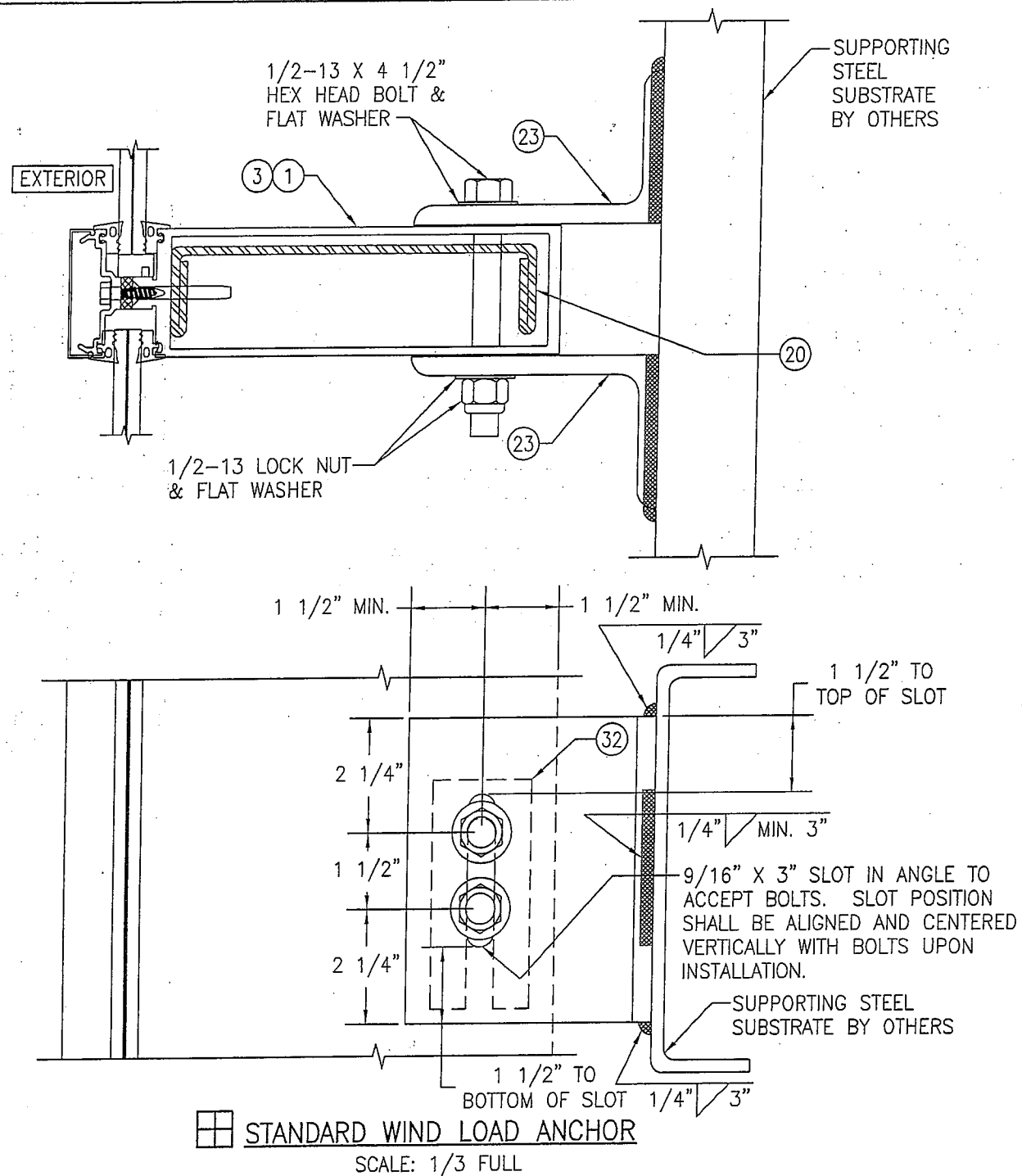
#### NOTES:

1. SEE ELEVATION FOR DIMENSIONING OF LOAD WIDTH.
2. PRESSURES SHOWN ARE SPECIFIC TO EACH INDIVIDUAL MULLION SUPPORT AREA. ALLOWABLE PRESSURE MAY VARY FROM BAY TO BAY AS DICTATED BY EACH INDIVIDUAL MULLION CONDITION.
3. LESSER OF PRESSURES STATED IN THIS TABLE & THE ALLOWABLE GLASS PRESSURE, AS SHOWN ON SHEET 1, SHALL CONTROL AS ALLOWABLE FOR THE WALL ASSEMBLY.
4. AT SPAN OF 132" & LESS, LOAD WIDTH CONTROLS THE ALLOWABLE PRESSURE. THEREFORE, IT SHALL NOT BE ASSUMED THAT INTERPRETATION OF PRESSURE VALUES CAN BE DONE WITH SPANS UNDER 132". INTERPRETATION OF PRESSURE VALUES BETWEEN THOSE SHOWN MAY APPLY.

Provide info for submitted curtain wall (71/4" not 10 13/16")  
& stamped by Louisiana engineer  
JHC 02/06/17

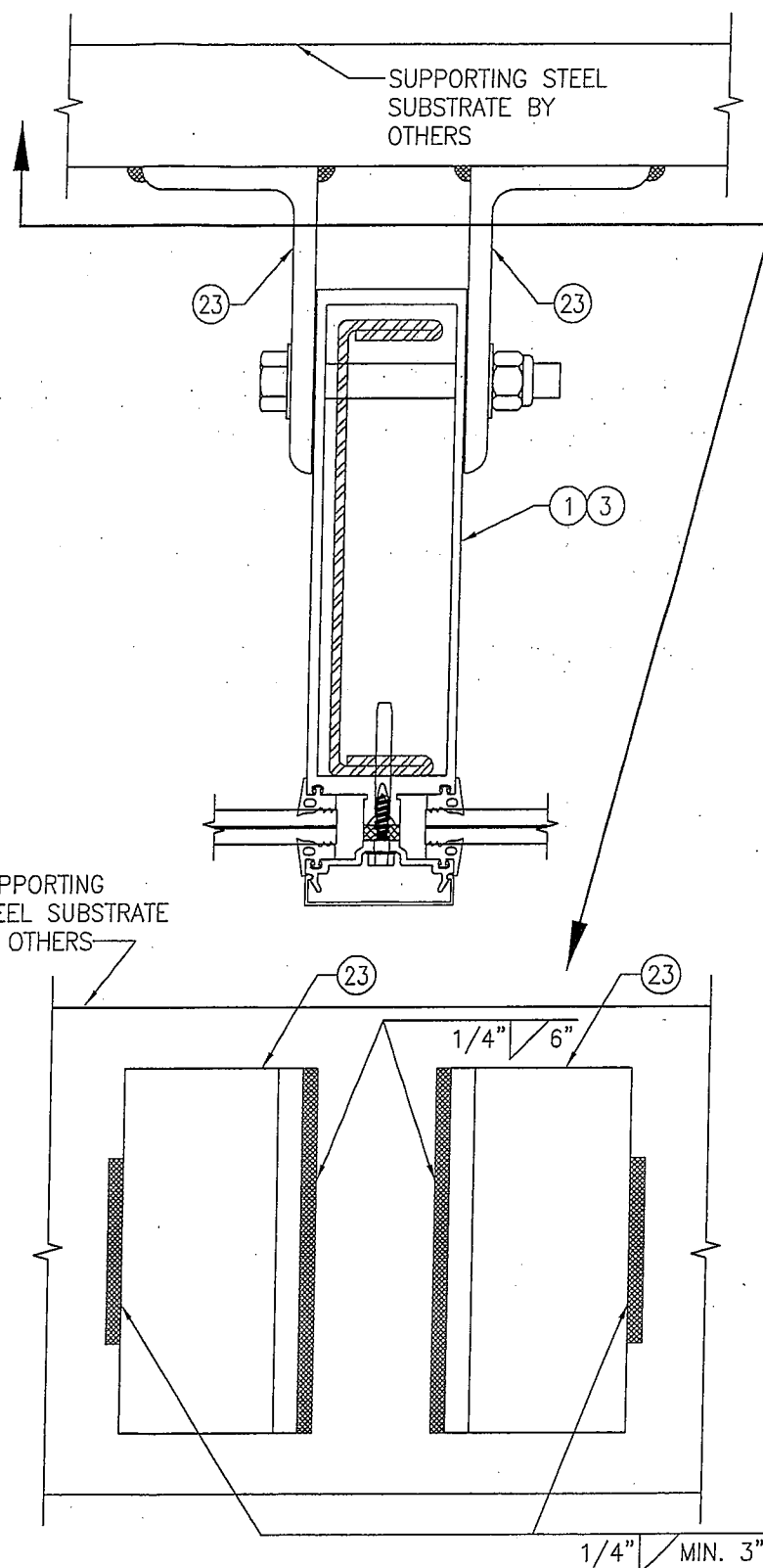


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|---|----------|--|------|
| DRAWN BY:<br>W.W.S.   |          | CHECKED BY:<br>W.W.S.  |      |
| PLOT:<br>1=48   |          | DATE:<br>03/16/13  |      |
| NO.   | REVISION | DESCRIPTION  | DATE |
|   |          |  |      |
| DRAWING TITLE<br>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)             |          |  |      |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) |          | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |      |
| DRAWING NO.<br>1795T  |          | REV.<br>SHEET NO.<br>3 OF 12   |      |



NOTE: ALL 1/2" BOLTS CONNECTING ANGLES TO MULLIONS SHALL BE GRADE 5 STEEL OR 300 SERIES STAINLESS STEEL.

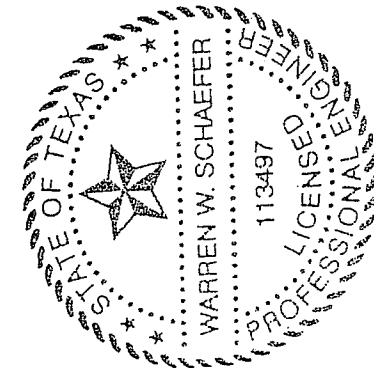
SUPPORTING STEEL SUBSTRATE BY OTHERS



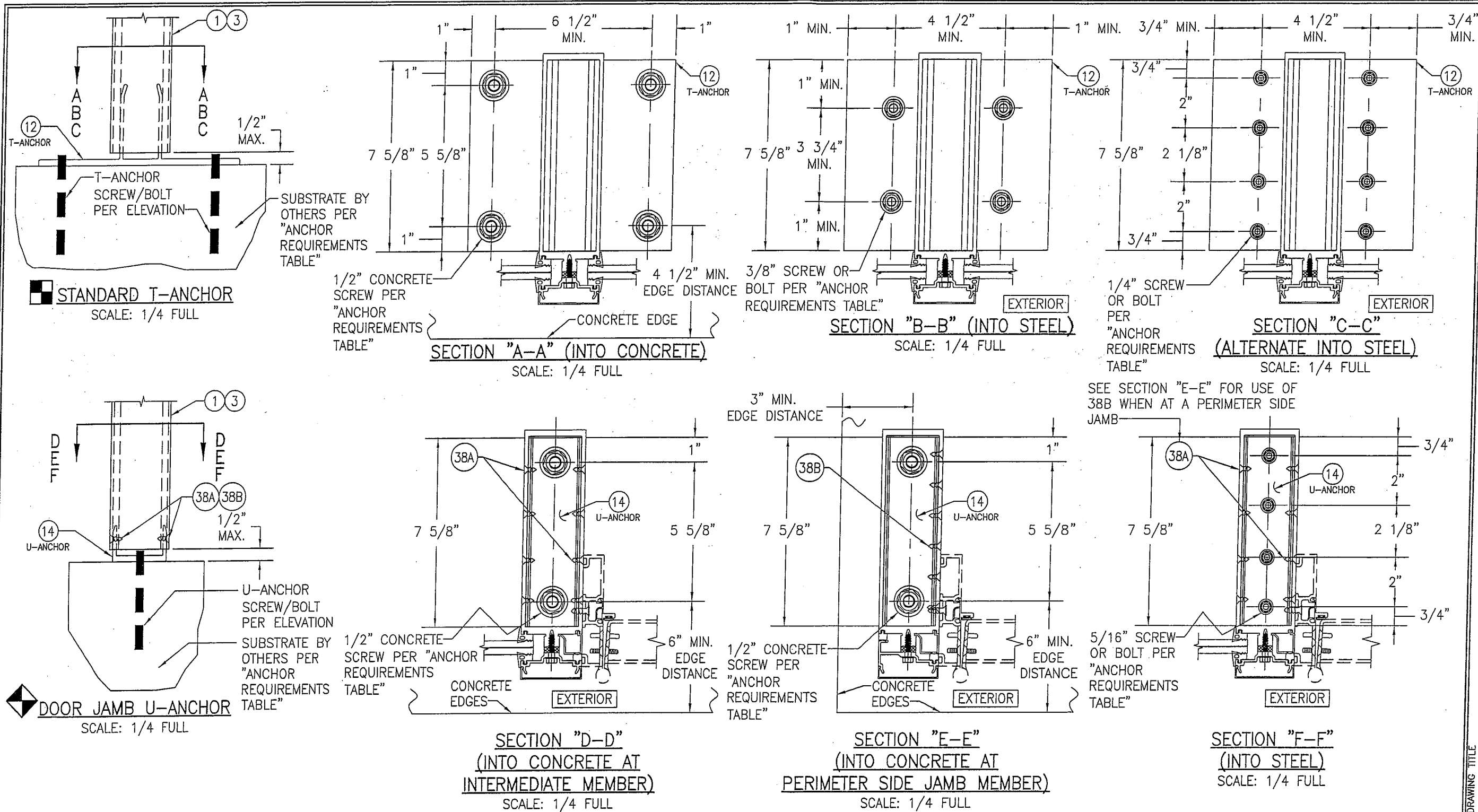
ALTERNATE WELD DETAIL FOR WIND LOAD ANCHORS

SCALE: 1/3 FULL

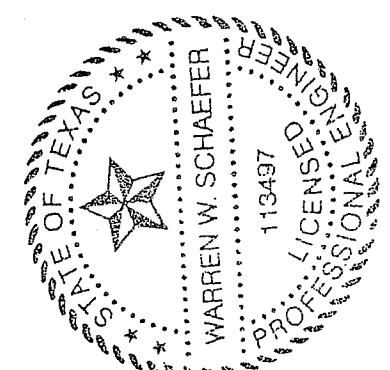
Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer JHC 02/06/17



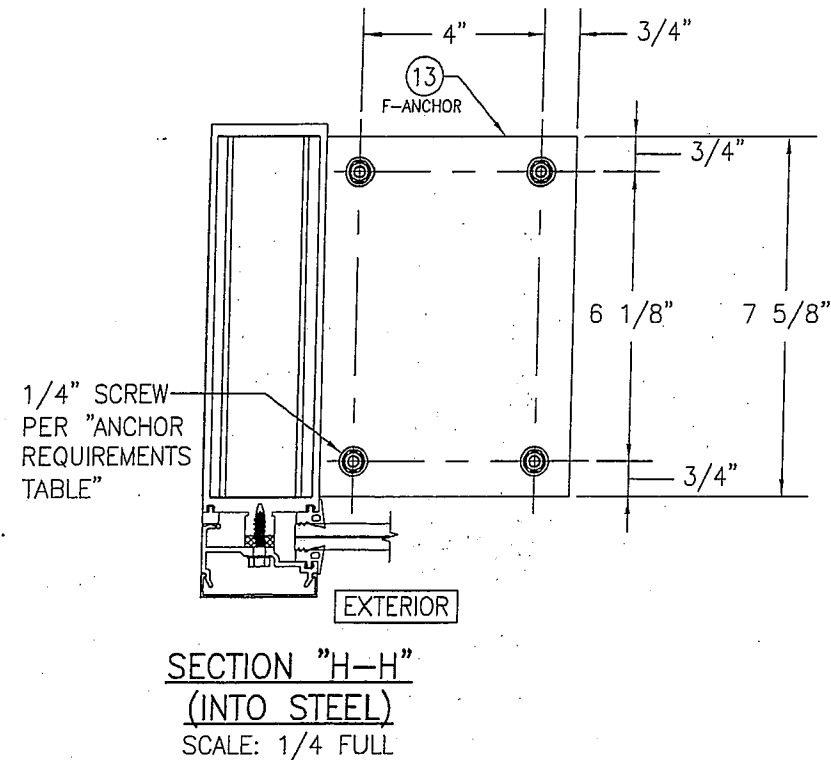
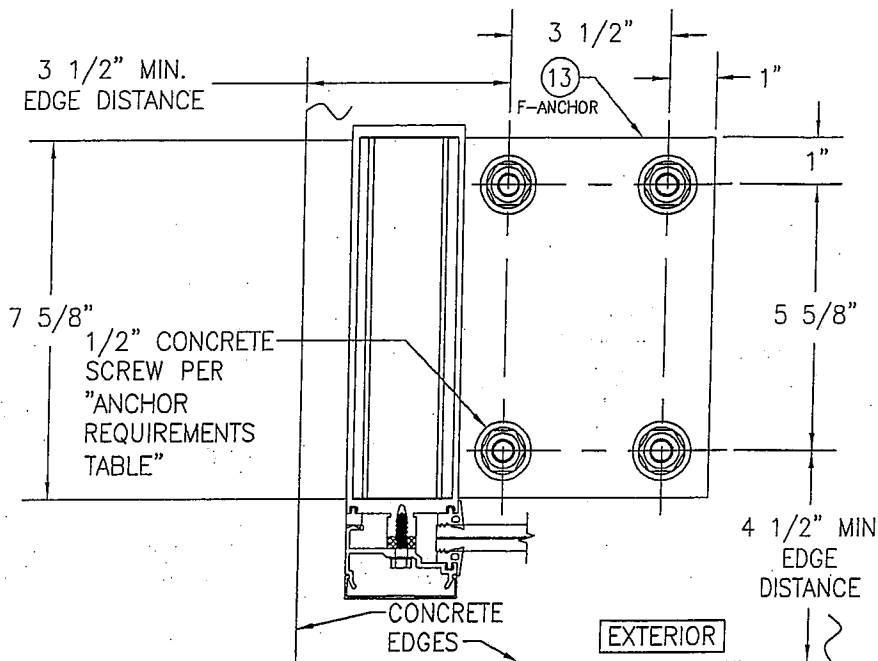
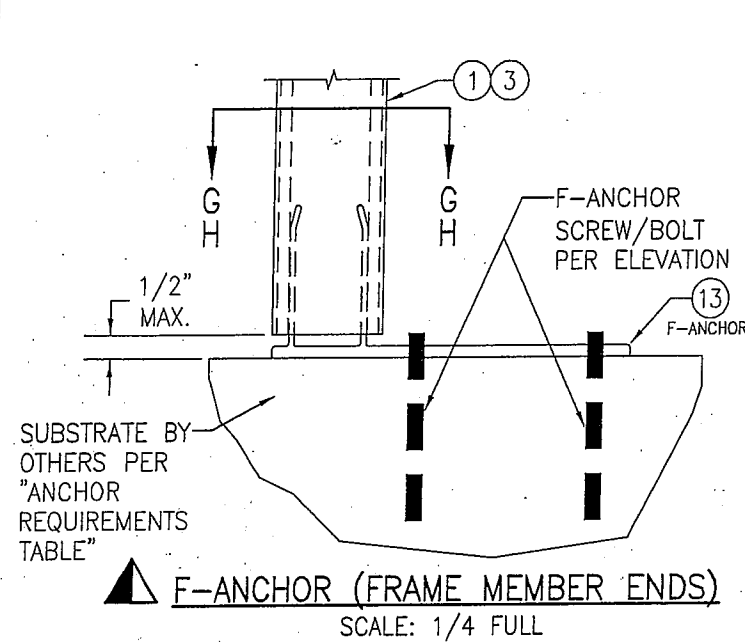
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| DRAWN BY: W.W.S.  |                 | CHECKED BY: W.W.S.   |      |
| PLOT: 1=3   |                 | DATE: 03/19/13   |      |
| NO.   | REVISION        | DESCRIPTION  | DATE |
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|   |                 |  |      |
| DRAWING TITLE: 10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)             |                 |  |      |
| CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) |                 | JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIDGE COURT NORCROSS, GA 30092 770-449-5555 |      |
| 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424       |                 |  |      |
| CERTIFICATION   | MAR 20 2013     |  |      |
| WARREN W. SCHAEFER, P.E.  | P.E. NO. 113497 |  |      |
| DRAWING NO. 1795T   | REV.            |  |      |
| SHEET NO. 4 OF 12   |                 |  |      |



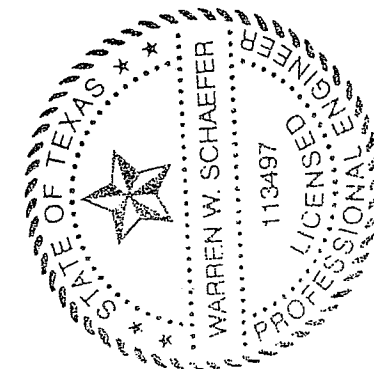
Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer  
JHC 02/06/17



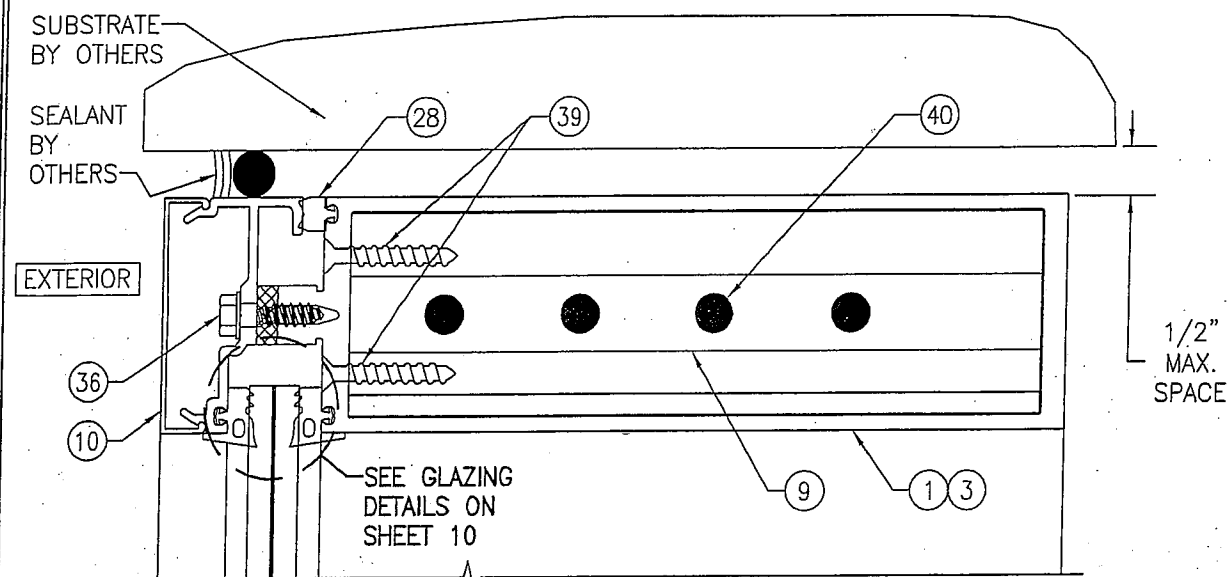
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|--|--|-----------------------|--|-----------------------|--|
| DRAWING TITLE<br><b>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)</b>                                     |  | DRAWN BY:<br>W.W.S.   |  | CHECKED BY:<br>W.W.S. |  |
| CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b>                     |  | PLOT:<br>1=4          |  | DATE:<br>03/19/13     |  |
| JOB INFORMATION:<br><b>KAWNEER COMPANY, INC.<br/>555 GUTHRIE COURT<br/>NORCROSS, GA 30092<br/>770-449-5555</b> |  | NO.                   |  | REVISION DESCRIPTION  |  |
| CERTIFICATION<br><b>MAR 20 2013</b>  |  | SHEET NO.<br><b>5</b> |  | OF<br><b>12</b>       |  |



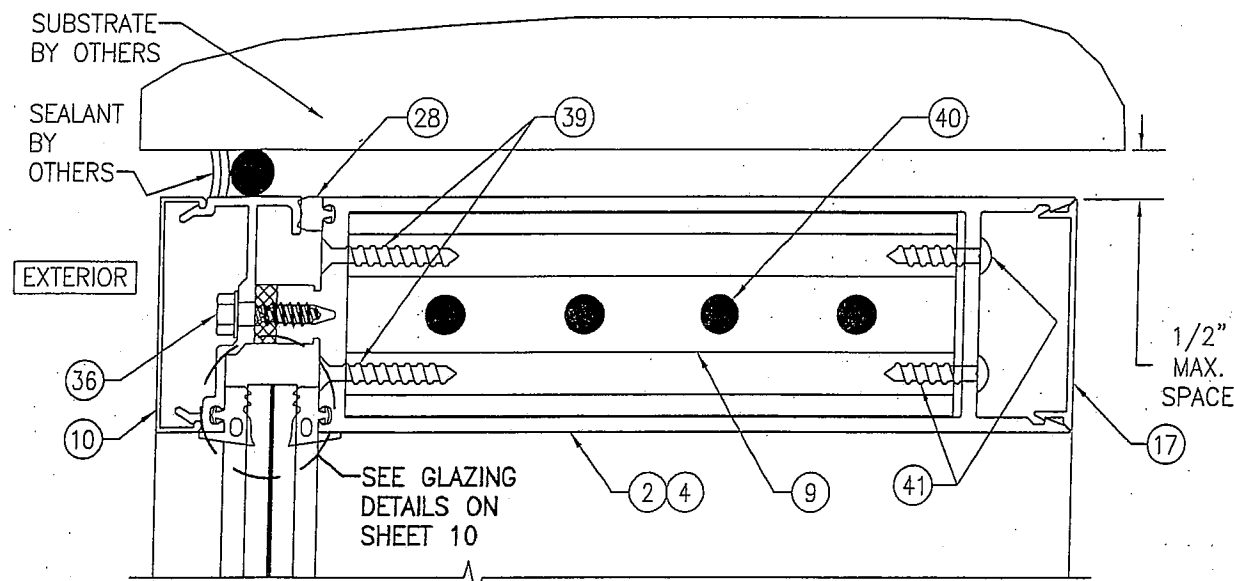
Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer JHC 02/06/17



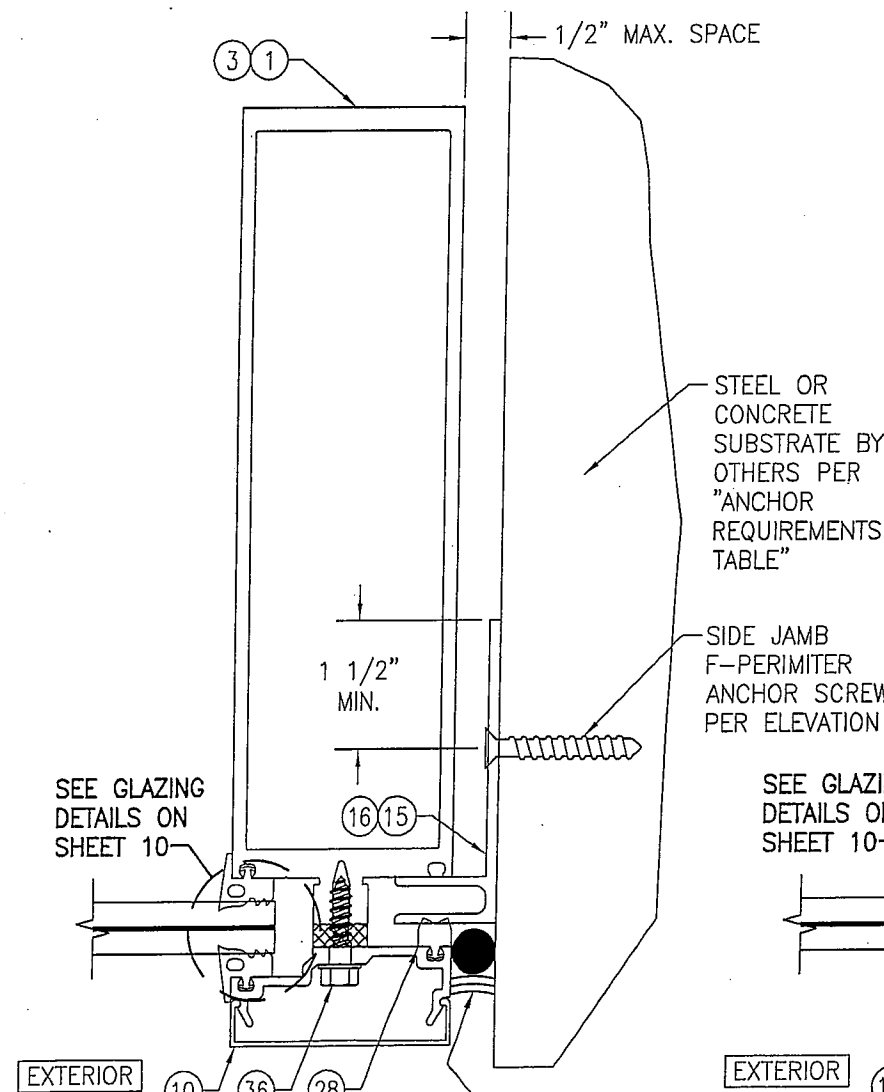
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| DRAWN BY:<br>W.W.S.   |                      | CHECKED BY:<br>W.W.S.   |      |
| PLOT:<br>1=4  |                      | DATE:<br>03/19/13   |      |
| NO.   | REVISION DESCRIPTION | BY  | DATE |
|   |                      |   |      |
| DRAWING TITLE<br><b>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)</b>  |                      |   |      |
| CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b><br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |                      | JOB INFORMATION:<br><b>KAWNEER COMPANY, INC.</b><br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |      |
| CERTIFICATION<br><b>MAR 20 2013</b><br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |                      | DRAWING NO.<br><b>1795T</b>   |      |
| SHEET NO.<br><b>6 OF 12</b>   |                      | REV.  |      |



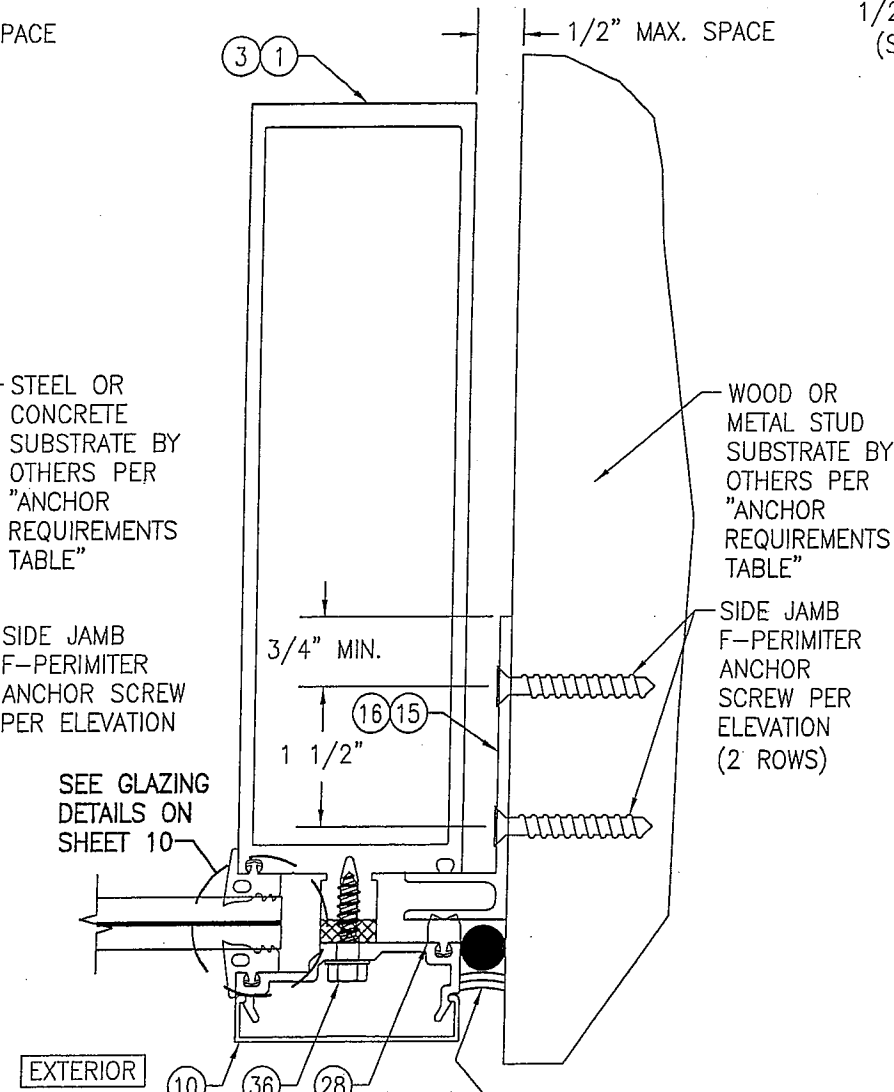
SECTION A1  
SCALE: 1/2 FULL



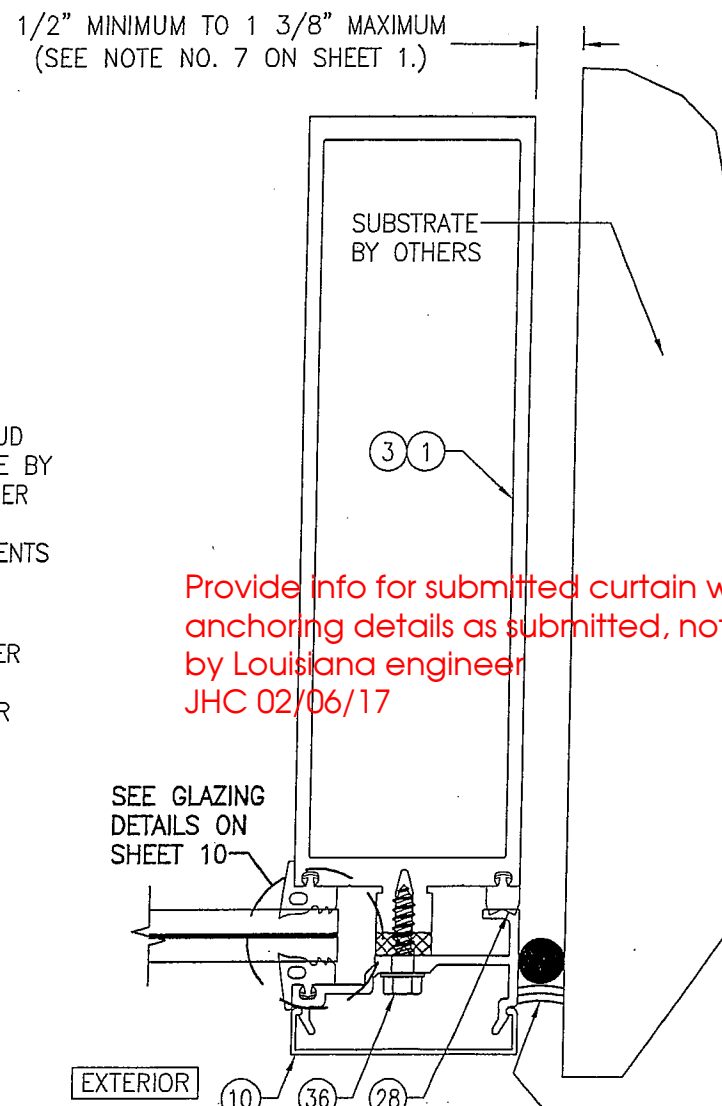
SECTION A2  
SCALE: 1/2 FULL



SECTION B1  
SCALE: 1/2 FULL  
(SIDE JAMB F-ANCHOR TO STEEL AND CONCRETE)

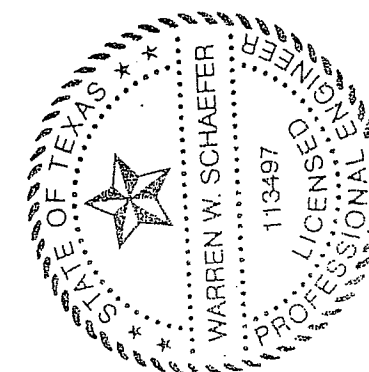


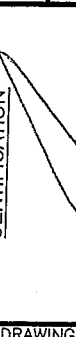
SECTION B2  
SCALE: 1/2 FULL  
(SIDE JAMB F-ANCHOR TO WOOD OR METAL STUD)

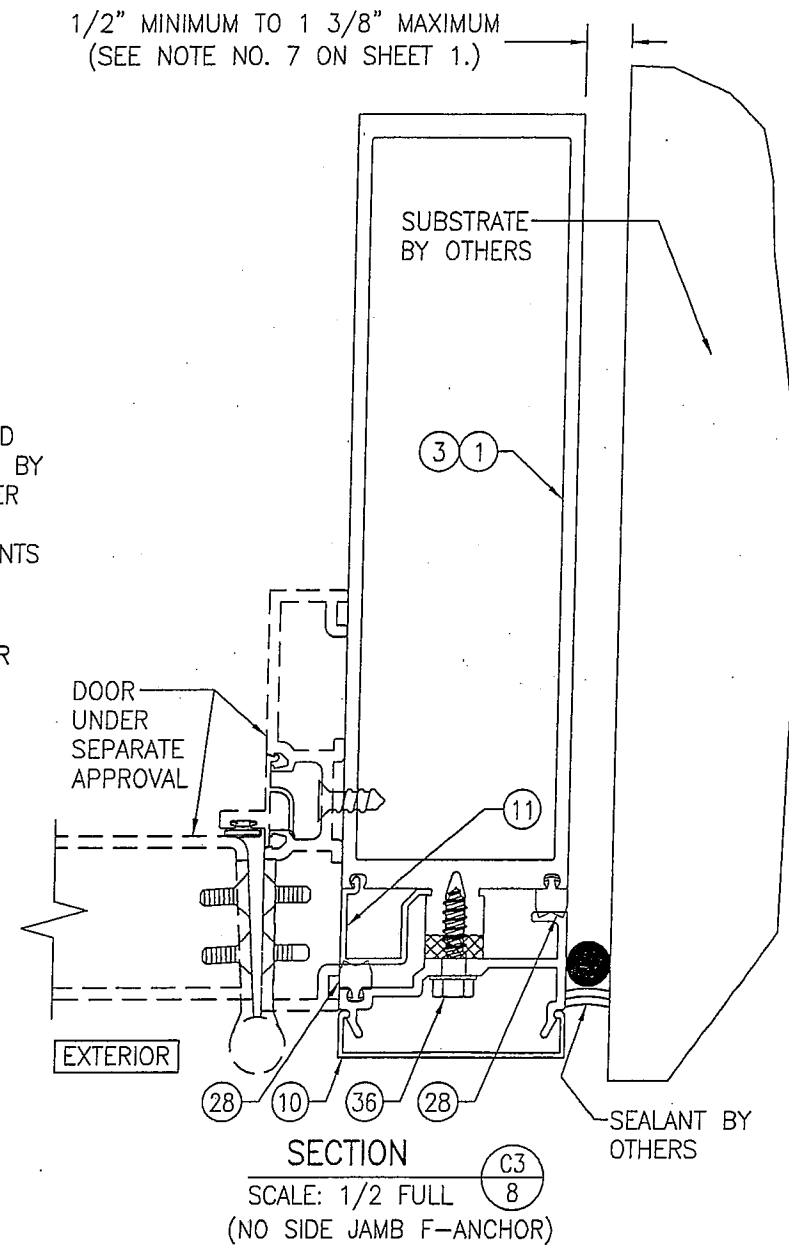
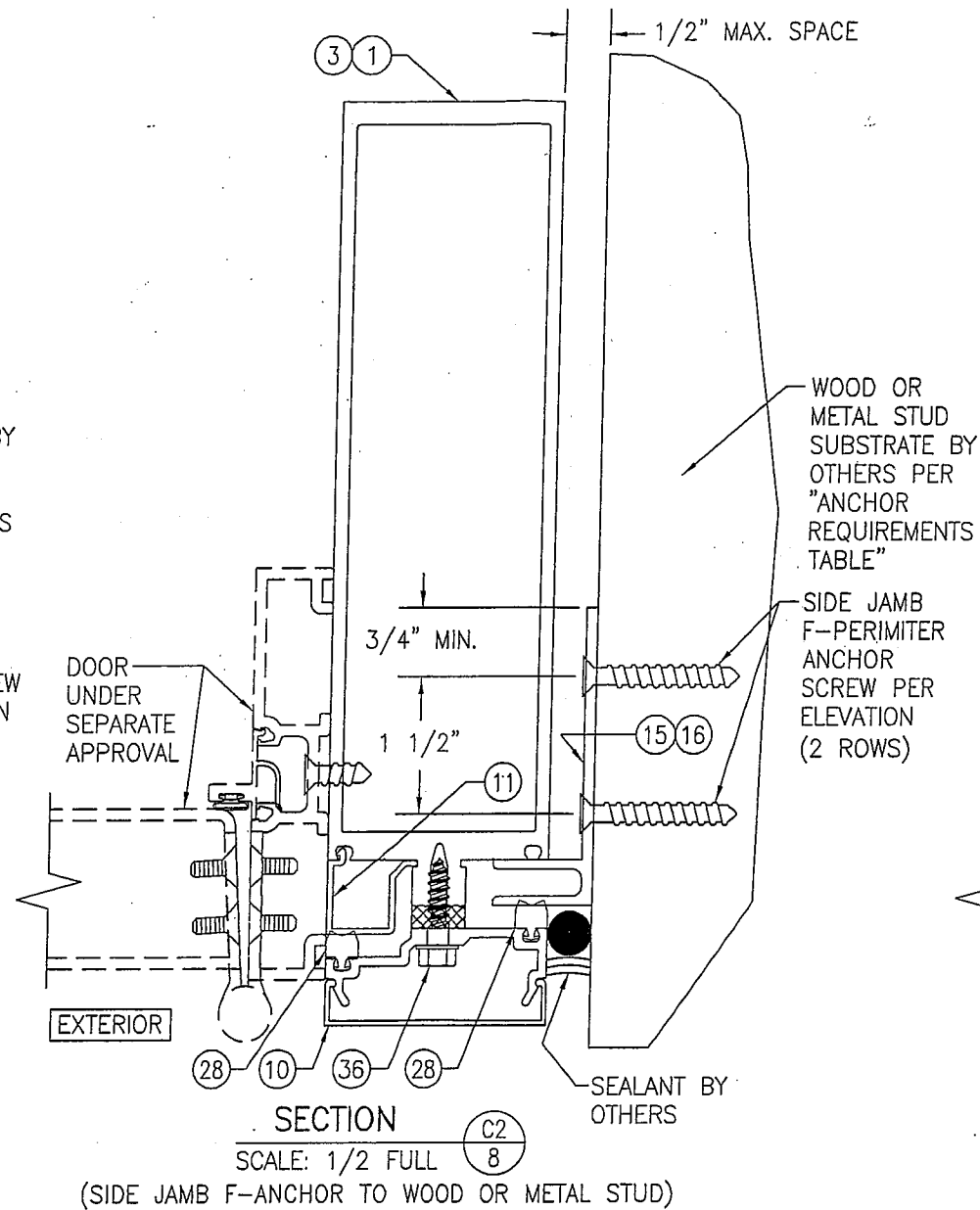
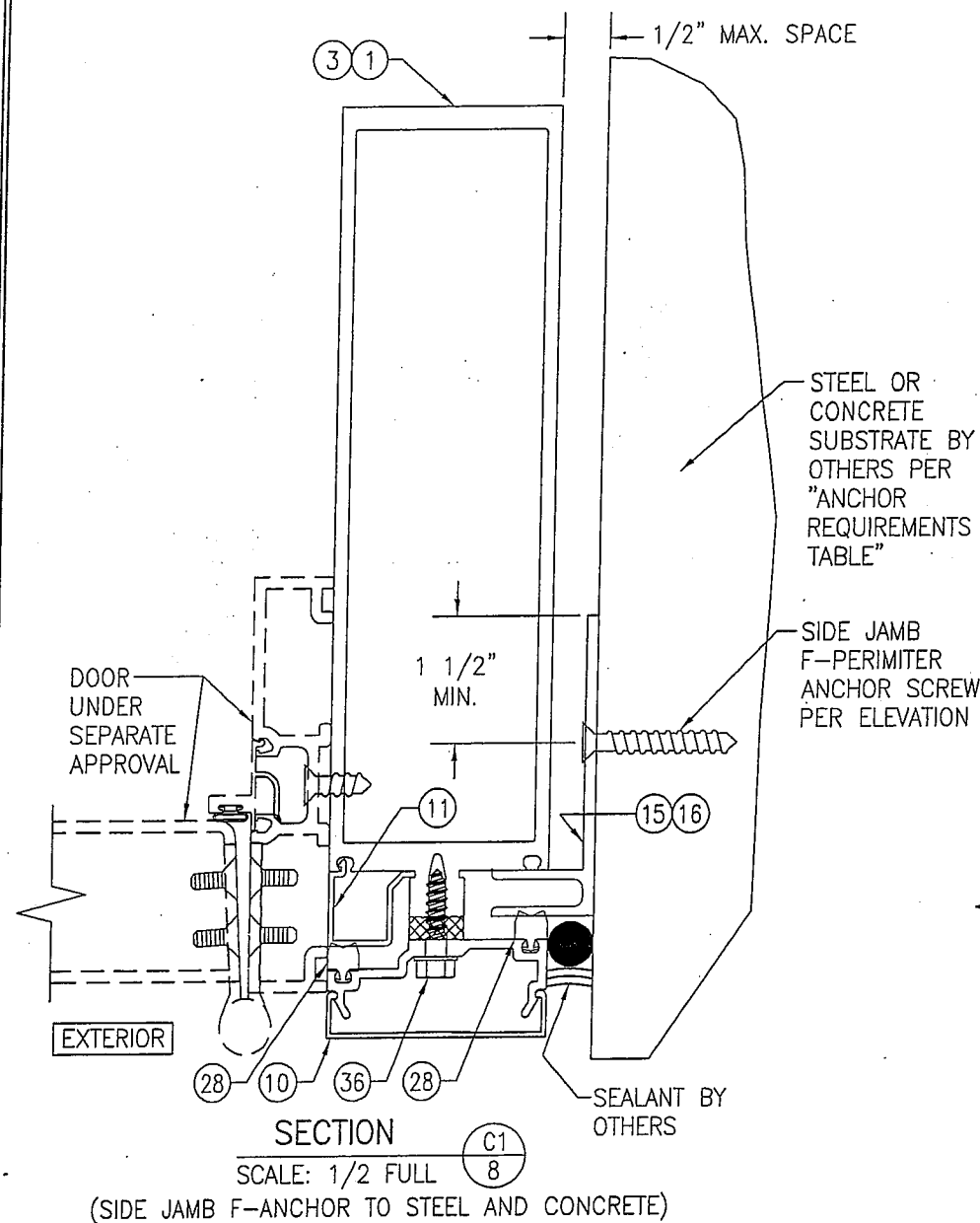


SECTION B3  
SCALE: 1/2 FULL  
(NO SIDE JAMB F-ANCHOR)

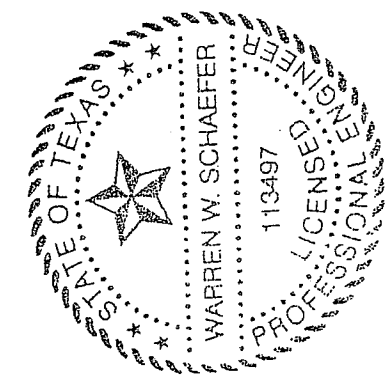
Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer JHC 02/06/17



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|--|----------------------|-----------------------|------|--|--|-------------------|--|
| DRAWING TITLE<br>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)  |                      |                       |      | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |  |                   |  |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING &<br>CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424  |                      |                       |      |  |  |                   |  |
| CERTIFICATION<br><br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497 |                      |                       |      |  |  |                   |  |
| DRAWING NO.<br>1795T   |                      |                       |      | REV.   |  |                   |  |
| SHEET NO.<br>7 OF 12   |                      |                       |      |  |  |                   |  |
| DRAWN BY:<br>W.W.S.  |                      | CHECKED BY:<br>W.W.S. |      | PLOT:<br>1=2   |  | DATE:<br>03/19/13 |  |
| NO.  | REVISION DESCRIPTION | BY                    | DATE |  |  |                   |  |
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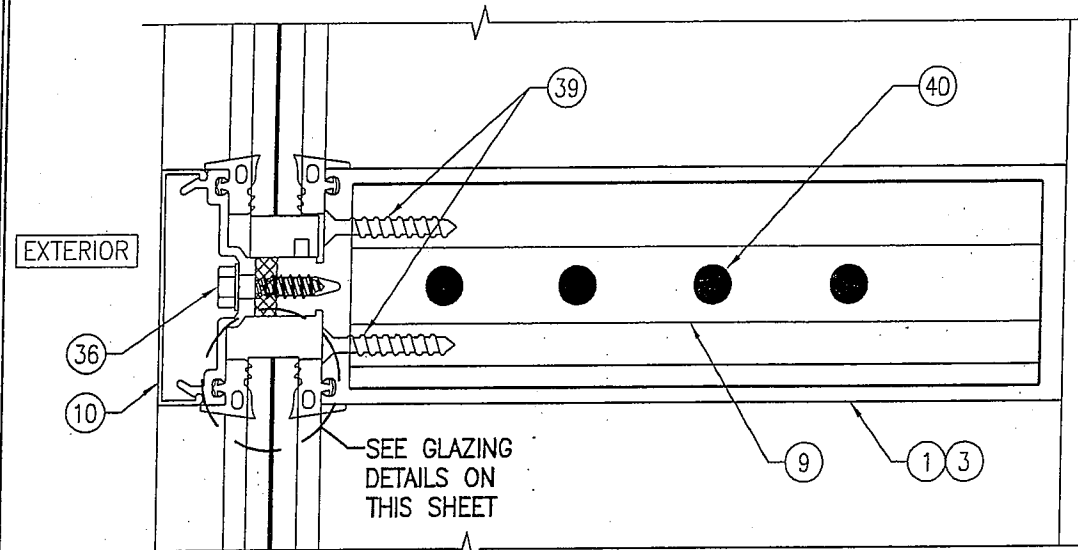


Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer  
JHC 02/06/17

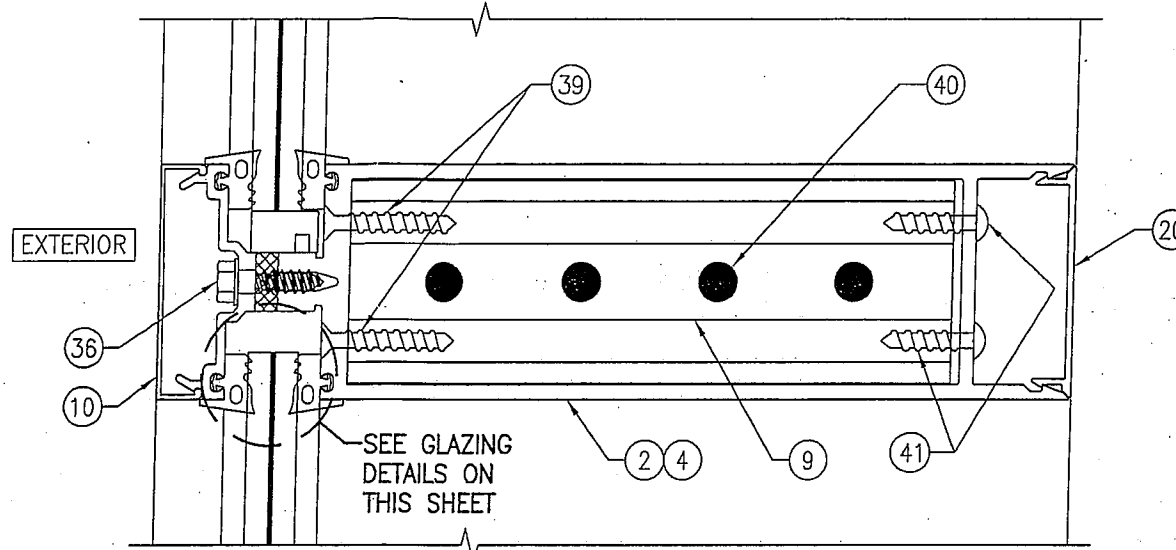


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| DRAWING BY: W.W.S.  |                      | CHECKED BY: W.W.S.   |    |
| PLOT: 1=2   |                      | DATE: 03/19/13   |    |
| NO.   | REVISION DESCRIPTION | DATE   | BY |
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|   |                      |  |    |
| DRAWING TITLE: 10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)             |                      |  |    |
| CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) |                      | JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIE COURT NORCROSS, GA 30092 770-449-5555 |    |
| 7480 150TH COURT NORTH PALM BEACH GARDENS, FL 33418 PHONE: 561-744-3424       |                      |  |    |
| CERTIFICATION: MAR 20 2013  |                      | WARREN W. SCHAEFER, P.E. P.E. NO. 113497   |    |
| DRAWING NO. 1795T   |                      | REV.   |    |
| SHEET NO. 8 OF 12   |                      |  |    |

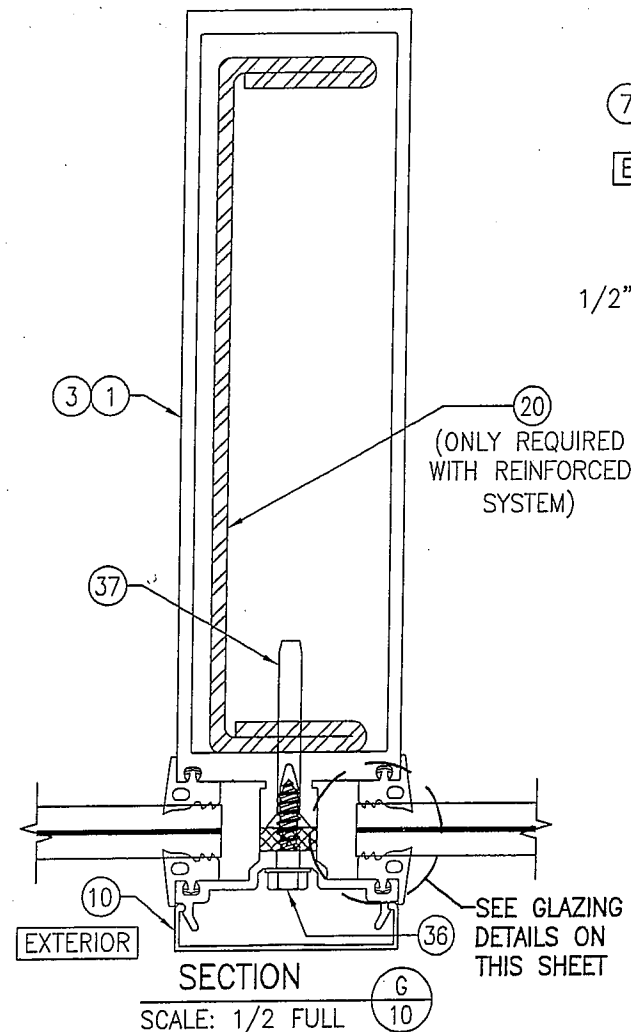




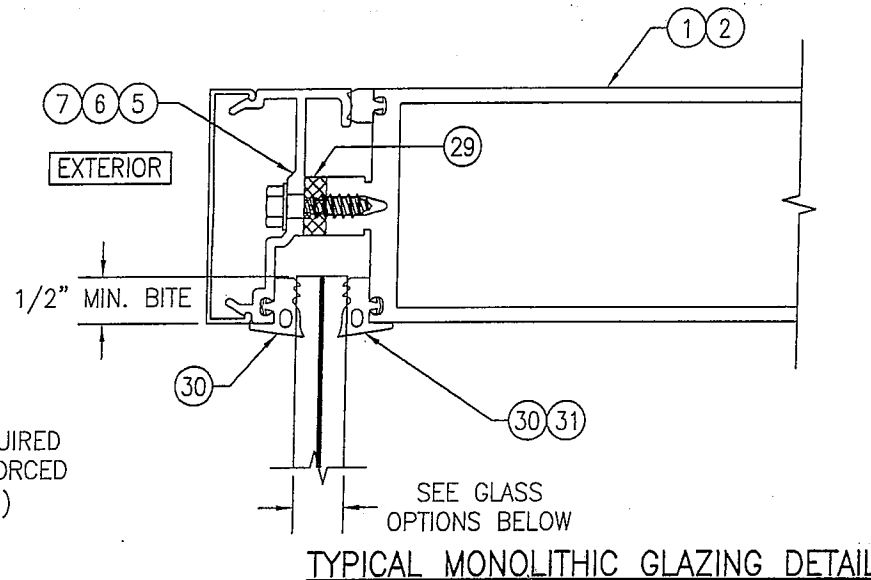
SECTION F1  
SCALE: 1/2 FULL



SECTION F2  
SCALE: 1/2 FULL

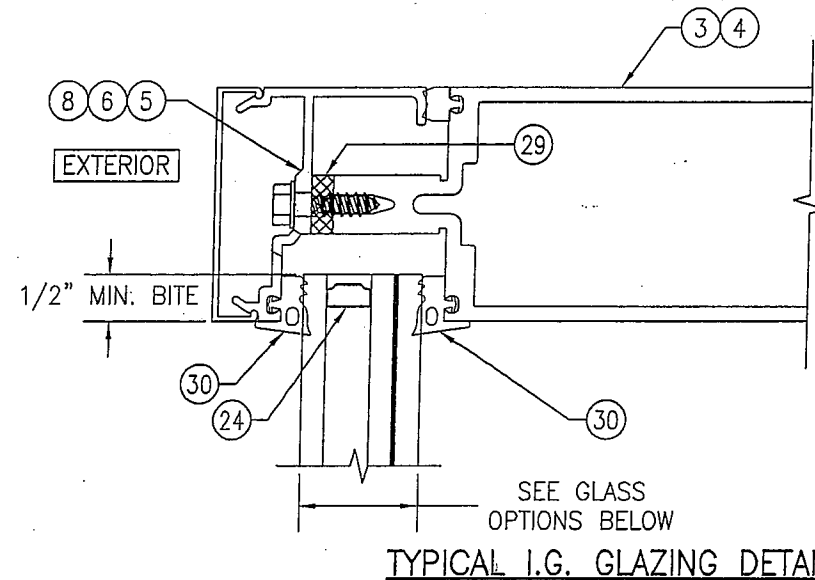


SECTION G  
SCALE: 1/2 FULL



**GLASS OPTIONS:**

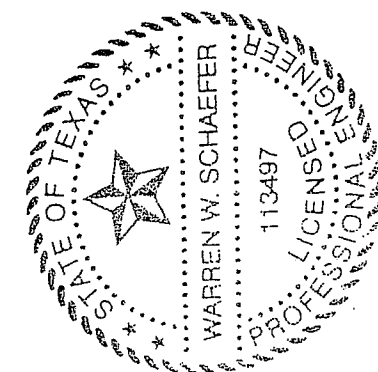
- OPTION 1: 1/2" THICK LAMINATED GLASS (1/4" HT. ST./0.060" DUPONT BUTACITE PVB/1/4" HT. ST.)  
 OPTION 2: 1/2" THICK LAMINATED GLASS (1/4" HT. ST./0.060" SOLUTIA SAFLEX/1/4" HT. ST.)  
 OPTION 3: 9/16" THICK LAMINATED GLASS (1/4" HT. ST./0.090" DUPONT BUTACITE PVB/1/4" HT. ST.)  
 OPTION 4: 9/16" THICK LAMINATED GLASS (1/4" HT. ST./0.090" SOLUTIA SAFLEX/1/4" HT. ST.)



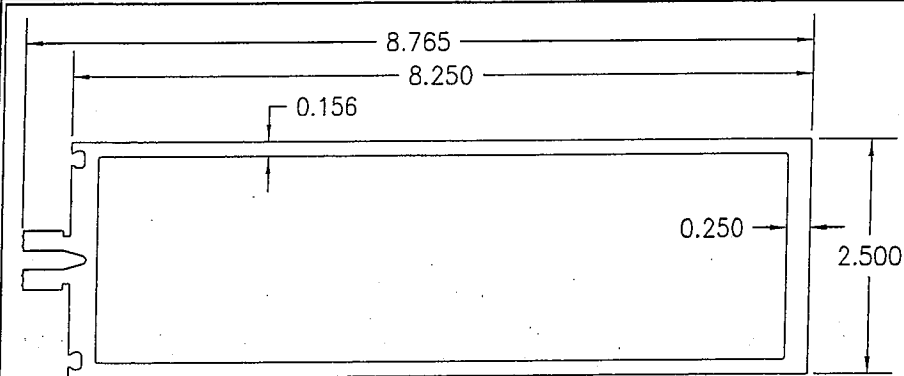
**GLASS OPTIONS:**

- OPTION 5: 1 5/16" THICK I.G. LAMINATED GLASS (1/4" TEMPERED EXTERIOR; 1/2" AIR SPACE; 1/4" HT. ST./0.060" SOLUTIA SAFLEX/1/4" HT. ST. INTERIOR)  
 OPTION 6: 1 5/16" THICK I.G. LAMINATED GLASS (1/4" TEMPERED EXTERIOR; 1/2" AIR SPACE; 1/4" HT. ST./0.060" DUPONT BUTACITE PVB/1/4" HT. ST. INTERIOR)

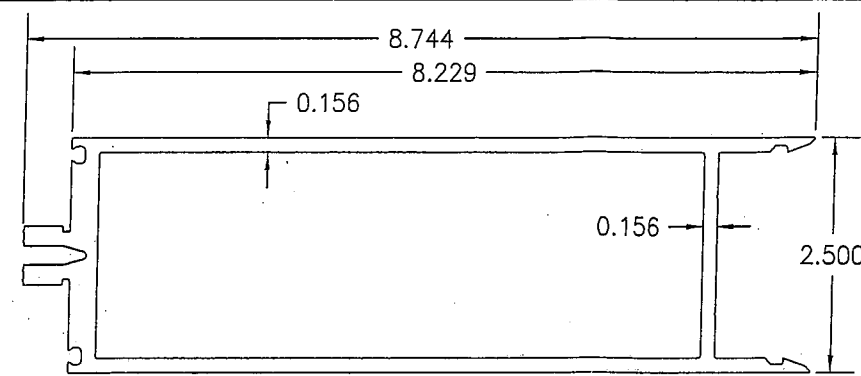
Provide info for submitted curtain wall (71/4" with anchoring details & glass as submitted, not 10 13/16") & stamped by Louisiana engineer  
 JHC 02/06/17



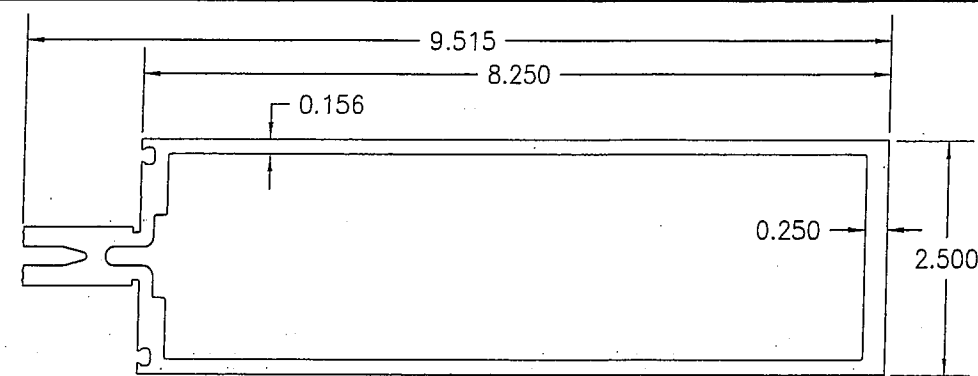
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|---|----------------------|--|----|
| DRAWN BY:<br>W.W.S.   |                      | CHECKED BY:<br>W.W.S.  |    |
| PLOT:<br>1=2  |                      | DATE:<br>03/19/13  |    |
| NO.   | REVISION DESCRIPTION | DATE   | BY |
|   |                      |  |    |
|   |                      |  |    |
|   |                      |  |    |
| DRAWING TITLE<br>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)             |                      |  |    |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) |                      | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |    |
| DRAWING NO.<br>1795T  |                      | REV.   |    |
| SHEET NO.<br>10 OF 12   |                      |  |    |



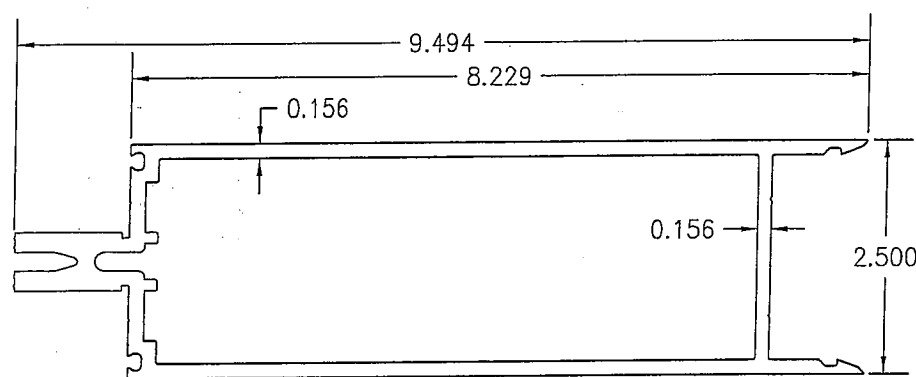
### ① VERTICAL AND HORIZONTAL FRAMING USED WITH MONOLITHIC GLASS



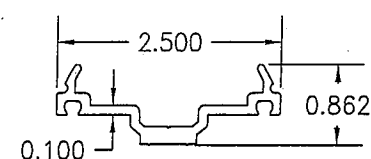
② ALTERNATE HORIZONTAL FRAMING USED WITH MONOLITHIC GLASS



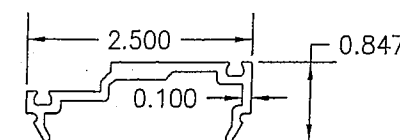
### ③ VERTICAL AND HORIZONTAL FRAMING USED WITH I.G. GLASS



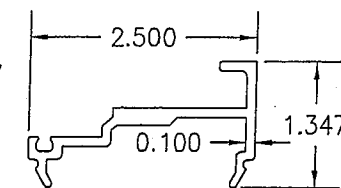
④ ALTERNATE HORIZONTAL FRAMING USED WITH I.G. GLASS



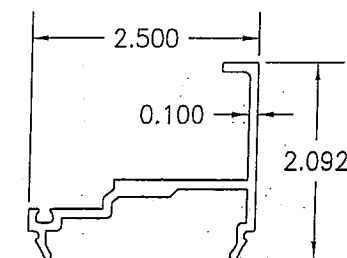
⑤ PRESSURE PLATE



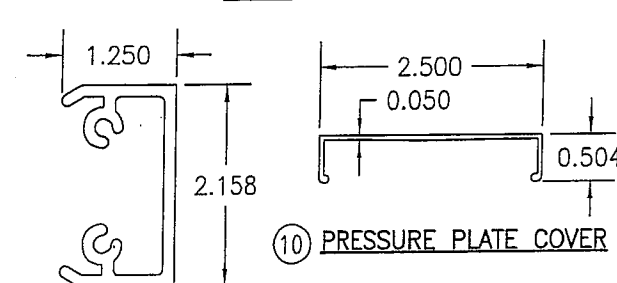
⑥ PRESSURE PLATE



⑦ PRESSURE PLATE



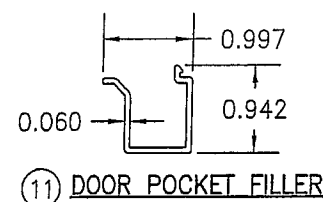
⑧ PRESSURE PLATE



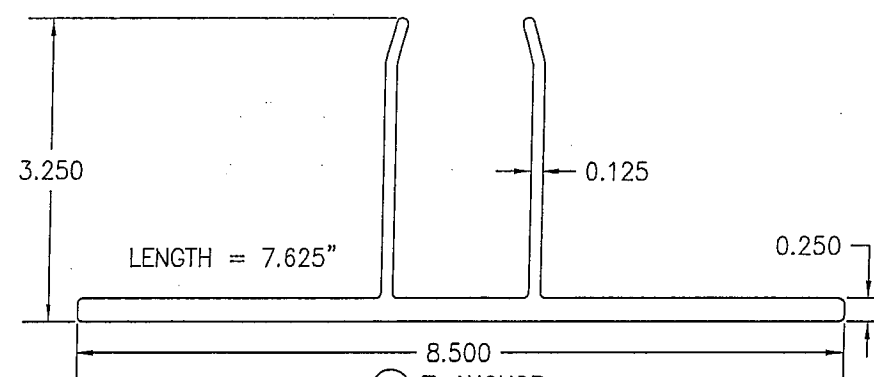
⑩ PRESSURE PLATE COVER

LENGTH = 6.625" WITH PARTS 2 & 4  
LENGTH = 7.625" WITH PARTS 1 & 3

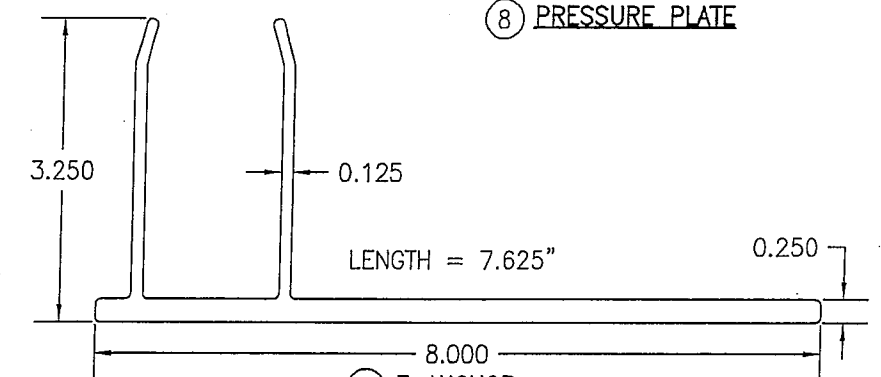
⑨ SHEAR BLOCK



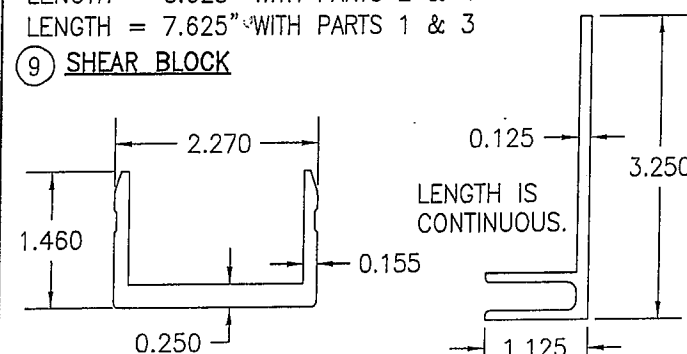
⑪ DOOR POCKET FILLER



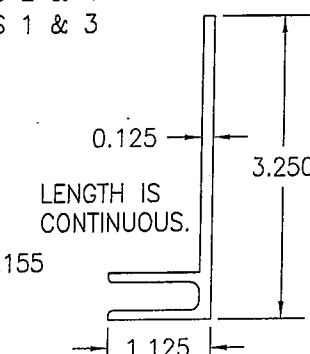
⑫ T-ANCHOR



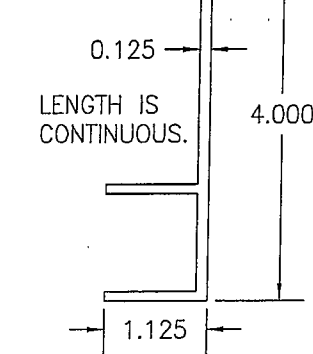
⑬ F-ANCHOR



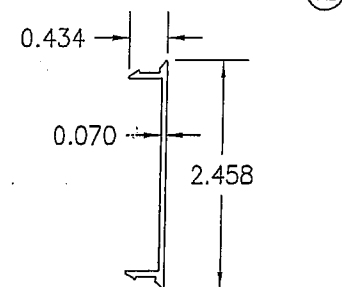
LENGTH = 7.7  
(14) U-ANCHOR



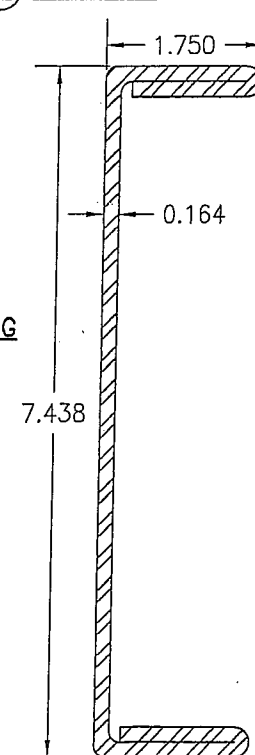
⑮ F-PERIMETER ANCHOR  
USED WITH MONOLITHIC  
GLASS SYSTEMS



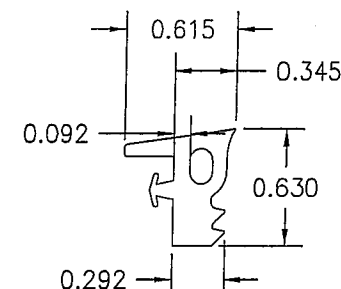
⑩ F--PERIMETER ANCHOR  
USED WITH WITH I.G.  
GLASS SYSTEMS



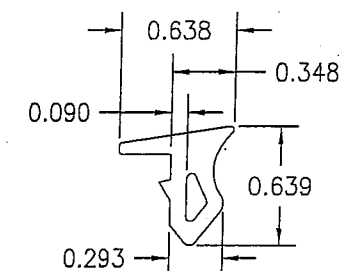
⑪ HORIZONTAL FRAMING  
FILLER



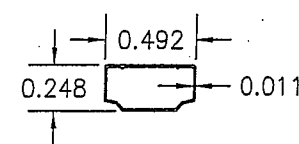
②② MULLION REINFORCEMENT



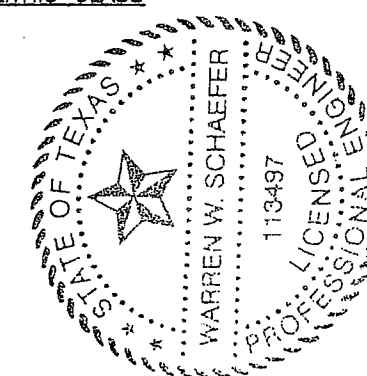
(30) INTERIOR & EXTERIOR  
GLAZING FIXED GASKET USED  
WITH I.G. & 9/16"  
MONOLITHIC GLASS



31 INTERIOR GLAZING FIXED  
GASKET USED WITH 1/2"  
MONOLITHIC GLASS



②④ 1/2" I.G. GLASS SPACER



|   |                     |                      |                       |      |
|---|---------------------|----------------------|-----------------------|------|
| DRAWING TITLE<br><b>10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)</b>  | DRAWN BY:<br>W.W.S. |                      | CHECKED BY:<br>W.W.S. |      |
|   | PLLOT:<br>1=2       | DATE:<br>03/19/13    |                       |      |
| CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b><br><br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 | NO.                 | REVISION DESCRIPTION | BY                    | DATE |
|   |                     |                      |                       |      |
| JOB INFORMATION:<br><br><b>KAWNEER COMPANY, INC.</b><br><b>555 GUTHRIDGE COURT</b><br><b>NORCROSS, GA 30092</b><br><b>770-449-5555</b>  | NO.                 | REVISION DESCRIPTION | BY                    | DATE |
|   |                     |                      |                       |      |
| <div> <div>CERTIFICATION</div> <div> <div>MAR 20 2013</div> <div>WARREN W. SCHAEFER, P.E.</div> <div>P.E. NO. 113497</div> </div> </div>  | NO.                 | REVISION DESCRIPTION | BY                    | DATE |
|   |                     |                      |                       |      |
| DRAWING NO.<br><b>1795T</b>   | REV.                |                      |                       |      |
| SHEET NO.<br><b>11</b> OF <b>12</b>   |                     |                      |                       |      |

| ITEM #           | ITEM DESCRIPTION   | MANUFACTURER/NOTES  |
|------------------|--|---|
| PARTS            |  |   |
| 1                | VERTICAL AND HORIZONTAL FRAMING USED WITH MONOLITHIC GLASS                       | 6063-T6 ALUMINUM  |
| 2                | ALTERNATE HORIZONTAL FRAMING USED WITH MONOLITHIC GLASS                          | 6063-T6 ALUMINUM  |
| 3                | VERTICAL AND HORIZONTAL FRAMING USED WITH I.G. GLASS                             | 6063-T6 ALUMINUM  |
| 4                | ALTERNATE HORIZONTAL FRAMING USED WITH I.G. GLASS                                | 6063-T6 ALUMINUM  |
| 5                | PRESSURE PLATE   | 6063-T6 ALUMINUM  |
| 6                | PRESSURE PLATE   | 6063-T6 ALUMINUM  |
| 7                | PRESSURE PLATE   | 6063-T6 ALUMINUM  |
| 8                | PRESSURE PLATE   | 6063-T6 ALUMINUM  |
| 9                | SHEAR BLOCK  | 6063-T6 ALUMINUM  |
| 10               | STANDARD PRESSURE PLATE COVER  | 6063-T6 ALUMINUM  |
| 11               | DOOR POCKET FILLER   | 6063-T6 ALUMINUM  |
| 12               | T-ANCHOR   | 6063-T6 ALUMINUM  |
| 13               | F-ANCHOR   | 6063-T6 ALUMINUM  |
| 14               | U-ANCHOR   | 6063-T6 ALUMINUM  |
| 15               | F-PERIMETER ANCHOR USED WITH MONOLITHIC GLASS SYSTEMS                            | 6063-T6 ALUMINUM  |
| 16               | F-PERIMETER ANCHOR USED WITH I.G. GLASS SYSTEMS                                  | 6063-T6 ALUMINUM  |
| 17               | HORIZONTAL FRAMING FILLER  | 6063-T6 ALUMINUM  |
| 20               | MULLION REINFORCEMENT  | ASTM A-653/A-04A GRADE 50                                     |
| 23               | 5" X 3" X 3/8" X 6" LONG ANGLE   | 50 KSI STEEL  |
| 24               | 1/2" I.G. GLASS SPACER   | 3005 OR 3105 ALUMINUM   |
| SEALS & SEALANTS |  |   |
| 28               | FIXED GASKET   | TREMCO TR4726P EPDM DUROMETER 70 +/-5                         |
| 29               | THERMAL SEPERATOR  | TREMCO TR-4015P EPDM DUROMETER 60 +/-5                        |
| 30               | INTERIOR & EXTERIOR GLAZING FIXED GASKET USED WITH I.G. & 9/16" MONOLITHIC GLASS | TREMCO TR-4014P EPDM DUROMETER 60 +/-5                        |
| 31               | INTERIOR GLAZING FIXED GASKET USED WITH 1/2" MONOLITHIC GLASS                    | TREMCO TX-4305P EPDM DUROMETER 70 +/-5                        |
| 32               | STEEL TO ALUMINUM SEPERATOR  | THERMO-TOK TN-9004  |
| FASTENERS        |  |   |
| 36               | 1/4" X 1" HWHTF TYPE "AB" SCREW 300 SERIES S.S.                                  | WITHIN 3" FROM ENDS & 9" MAX. O.C. (300 SERIES S.S.)          |
| 37               | 1/4-20 X 2" FNTCS 300 SERIES S.S.  | WITHIN 9" FROM ENDS & 9" MAX. O.C. (GR. 5 STEEL)              |
| 38A              | NO. 8 X 1/2" FHTFS 300 SERIES S.S.   | 8 PER U-ANCHOR AT INTERMEDIATE MEMBERS (4 PER SIDE OF MEMBER) |
| 38B              | NO. 8 X 1/2" FHTFS 300 SERIES S.S.   | 6 PER U-ANCHOR AT SIDE JAMB MEMBERS (AT 1 SIDE OF MEMBER)     |
| 39               | NO. 12 X 1 1/2" FHTF TYPE "B" SCREW 300 SERIES S.S.                              | 2 PER SHEAR BLOCK (300 SERIES S.S.)                           |
| 40               | NO. 12 X 7/16" PHTF TYPE "AB" SCREW 300 SERIES S.S.                              | 4 PER SHEAR BLOCK (430 SERIES S.S.)                           |
| 41               | NO. 12 X 1" PHTF TYPE "AB" SCREW 300 SERIES S.S.                                 | 2 PER SHEAR BLOCK (300 SERIES S.S.)                           |

DRAWN BY:  
W.W.S.

CHECKED BY:  
W.W.S.

PLOT:  
1=2

DATE:  
03/19/13

NO.

REVISION DESCRIPTION

BY

DATE

DRAWING TITLE  
10 13/16" DEEP 1600 SYSTEM 1 CURTAIN WALL (S.M.I.)

CONSULTANTS  
W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)  
7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

JOB INFORMATION:  
KAWNEER COMPANY, INC.  
555 GUTHRIDGE COURT  
NORCROSS, GA 30092  
770-449-5555

CERTIFICATION  
MAR 20 2013  
WARREN W. SCHAEFER, P.E.  
P.E. NO. 113497

DRAWING NO.  
1795T

REV.

SHEET NO.  
12

OF  
12

Provide info for submitted curtain wall (71/4" with anchoring details as submitted, not 10 13/16") & stamped by Louisiana engineer  
JHC 02/06/17

STATE OF TEXAS  
WARREN W. SCHAEFER  
113497  
PROFESSIONAL ENGINEER

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STOREFRONT & DOOR TEST REPORTS FOLLOW



STAR GLASS INC.  
1000 WESTBANK EXPY.  
GRETN, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:



PROJECT NUMBER:  
\*\*

DRAWN BY:  
P.S.

SHEET

000

# GENERAL NOTES:

1. THESE STORE FRONT SYSTEMS HAVE BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
2. OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
3. ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS. SPECIFIED ANCHOR EMBED TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
4. THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH ASTM E330, E283, E331, E1886 & E1996 FOR LARGE MISSILE IMPACT STORE FRONT SYSTEMS.
5. THESE STORE FRONT SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC).
6. IMPACT SHUTTERS ARE NOT REQUIRED WITH THIS STORE FRONT SYSTEM.
7. ALL ANCHORS SECURING STORE FRONT FRAME TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
8. DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY. FOR WIND LOAD CALCULATIONS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, A DIRECTIONALITY FACTOR OF  $KD = 0.85$  MAY BE APPLIED PER THE ASCE-7 STANDARD.
9. NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE CERTIFICATION OF THIS PRODUCT. WIND LOAD DURATION FACTOR  $CD = 1.6$  WAS USED FOR WOOD SCREW ANALYSIS ONLY.
10. MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE SEPARATED OR COATED AS REQUIRED TO AVOID CORROSION OF EITHER MATERIAL.
11. TO THE BEST OF OUR KNOWLEDGE, THE STORE FRONT SYSTEMS SHOWN HEREIN ARE QUALITY ASSURED BY AN APPROVED CERTIFICATION/OA ENTITY & SHALL BE LABELED IN ACCORDANCE WITH APPLICABLE STANDARDS. THESE DRAWINGS SHOW ALL APPLICABLE ELEVATION, COMBINATION, INSTALLATION & COMPARATIVE ANALYSIS CONDITIONS AS DETERMINED THROUGH TESTING & ENGINEERING RATIONAL ANALYSIS. STORE FRONT ASSEMBLY SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, THE MANUFACTURER'S QUALITY ASSURANCE SPECIFICATIONS & TESTING REPORTS.
12. CERTIFICATION OF THESE STORE FRONT SYSTEMS SHALL BE CONSIDERED VOID IF THEY ARE INSTALLED WITHOUT A BUILDING PERMIT FROM THE APPLICABLE LOCAL BUILDING DEPARTMENT OR IF THEY ARE INSTALLED BY ANYONE OTHER THAN A LICENSED CONTRACTOR EXPERIENCED WITH STORE FRONT INSTALLATIONS.

## CORNER & FRAME END CONSTRUCTION:

**FRAME HEAD CORNER (APPLICABLE TO ITEM #1A & 1B):** HEAD IS SQUARE CUT, BUTTED TO SIDE, FASTENED WITH THREE(3) NO. 12 X 1" PHTFS FASTENERS THROUGH THE SIDE MEMBER INTO THE HEAD MEMBER SCREW SPLINES & SEALED WITH SILICONE.

**FRAME HEAD CORNER (APPLICABLE TO ITEM #1C):** HEAD IS MITER OR SQUARE CUT, BUTTED TO SIDE, FASTENED WITH TWO(2) NO. 12 X 1 1/2" PHTFS FASTENERS THROUGH THE SIDE MEMBER INTO THE HEAD MEMBER SCREW SPLINES & SEALED WITH SILICONE.

**FRAME SILL CORNER:** SILL IS SQUARE CUT, BUTTED TO SIDE, FASTENED WITH THREE(3) NO. 12 X 1" PHTFS FASTENERS THROUGH THE SIDE MEMBER INTO THE SILL MEMBER SCREW SPLINES & SEALED WITH SILICONE.

**FRAME DOOR JAMB SILL CORNER:** SILL IS SQUARE CUT, BUTTED TO SIDE, FASTENED WITH 1 JAMB PIVOT ASSEMBLY. EACH PIVOT ASSEMBLY WAS FASTENED TO THE SIDE WITH THREE(3) NO. 12-24 X 5/8" FHMS. THE THRESHOLD IS THEN FASTENED TO PIVOT ASSEMBLY WITH TWO(2) NO. 12-24 X 3/8" FHMS & SEALED WITH SILICONE.

**HORIZONTAL FRAME MULLION END (APPLICABLE TO ITEMS #6A & #7):** HORIZONTAL IS SQUARE CUT, BUTTED TO SIDE, FASTENED WITH THREE(3) NO. 12 X 1" SS PHTFS FASTENERS THROUGH THE SIDE MEMBER INTO THE MULLION MEMBER SCREW SPLINES & SEALED WITH SILICONE.

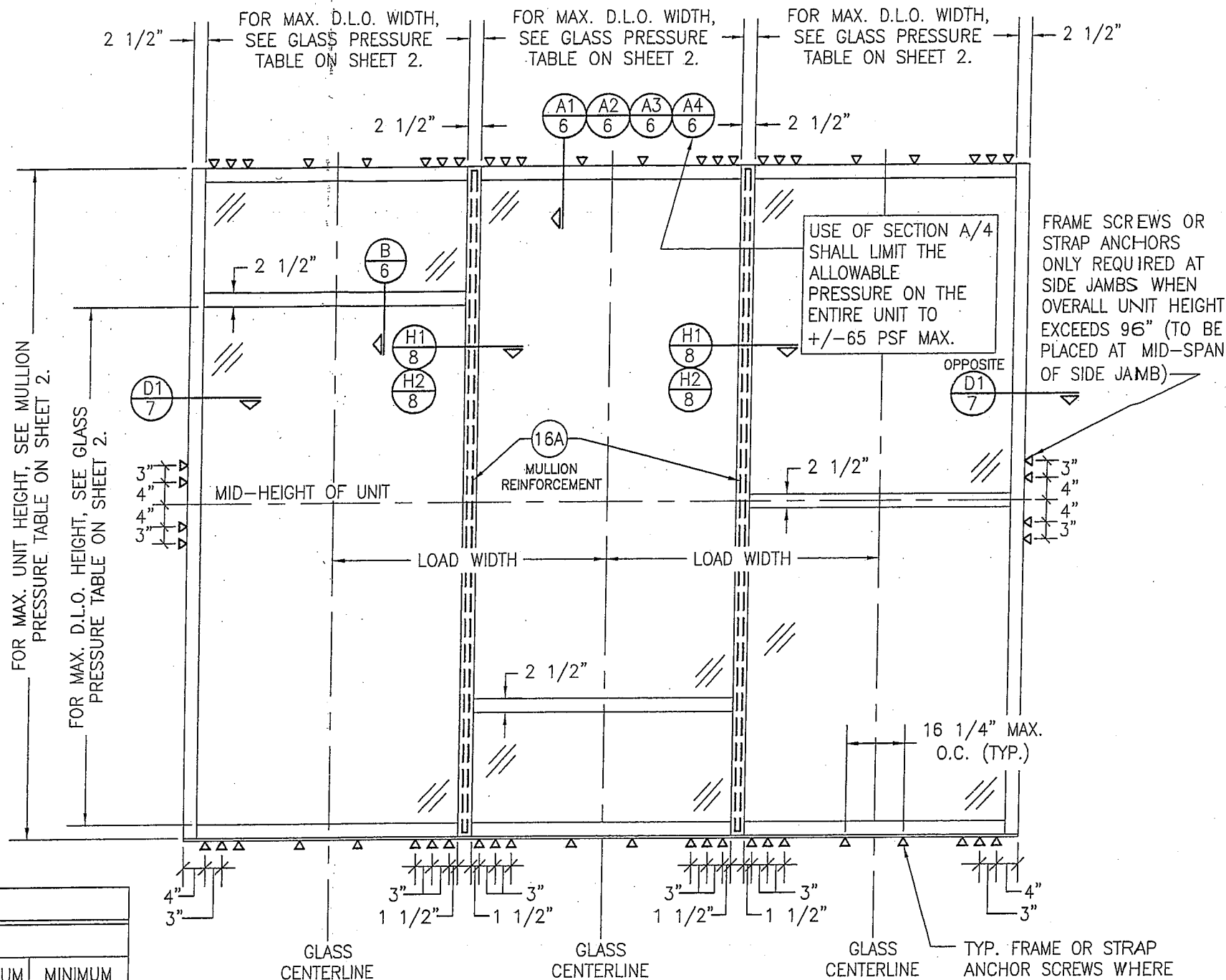
**HORIZONTAL FRAME MULLION END (APPLICABLE TO ITEM #6B):** HORIZONTAL IS SQUARE CUT, BUTTED TO SIDE, JOINED VIA A SHEAR BLOCK (PART #21). THE SHEAR BLOCK IS FASTENED TO THE VERTICAL FRAME MEMBER WITH FOUR(4) NO. 12 X 1 7/8" FHTF TYPE B SCREWS. THE HORIZONTAL MEMBER IS FASTENED TO THE SHEAR BLOCK WITH THREE(3) NO. 12 X 1" FHTF TYPE AB SCREWS. EACH CORNER IS SEALED WITH DOW 795 SILICONE SEALANT.

## FRAME ANCHOR REQUIREMENTS TABLE

### FRAME & STRAP ANCHOR SCREWS

| OPENING TYPE | OPENING TYPE (SUBSTRATE)                          | FRAME TO OPENING FASTENER TYPE  | MINIMUM EMBED | MINIMUM EDGE DIST. |
|--------------|---|---------------------------------|---------------|--------------------|
| A            | MIN. 2X6 WOOD FRAME OR BUCK (MIN. GR. 3 & G=0.55) | (4) NO. 14 SMS OR WOOD SCREW    | 1 1/4"        | 3/4"               |
| B            | MIN. 1/8" THK A36 STEEL                           | 1/4" GR. 5 SELF TAP/DRILL SCREW | FULL          | 1/2"               |
| C            | MIN. 3000 PSI CONCRETE                            | (1) 1/4" CONCRETE SCREW         | 1 1/2"        | 2 1/2"             |
| D            | MIN. 16 GA. 33 KSI METAL STUD                     | 1/4" GR. 5 SELF TAP/DRILL SCREW | FULL          | 1/2"               |
| E            | MIN. C-90 CMU                                     | (1) 1/4" CONCRETE SCREW         | 1 1/4"        | 2 1/2"             |
| (3) F        | MIN. 3000 PSI CONCRETE                            | (2) 3/8" WEDGE/SLEEVE ANCHOR    | 2 1/2"        | 3"                 |

- (1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS (C.S.), ELCO CRETE-FLEX (S.S.), ITW RAMSET/RED HEAD TAPCONS (C.S. OR S.S.) OR HILTI KWIK-CON II (C.S. OR S.S.).
- (2) WEDGE/SLEEVE ANCHORS SHALL BE RAMSET/RED HEAD DYNABOLT, HILTI KWIK-BOLT 3, OR POWERS RAWL POWER BOLT (STEEL OR S.S.).
- (3) ANCHOR TYPE "F" IS ONLY APPLICABLE FOR USE WITH THE SILL ANCHOR BLOCK AT THE VERTICAL DOOR MULLION BOTTOM END.
- (4) WHILE 1/4" MAX. SHIM GAP IS SPECIFIED IN THE SECTIONS, A 3/8" SHIM GAP MAY BE USED WITH ALL SUBSTRATES PROVIDING THE SCREWS ARE AS SPECIFIED IN THIS TABLE EXCEPT THAT THE SCREWS TO WOOD SUBSTRATE MUST BE 1/4"-14 GRADE 5 SCREWS.



## EXTERIOR ELEVATION MULTIPLE FIXED PANEL STORE FRONT ASSEMBLY (WHEN ANCHORED TO WOOD, METAL STUD, CONCRETE OR CMU)

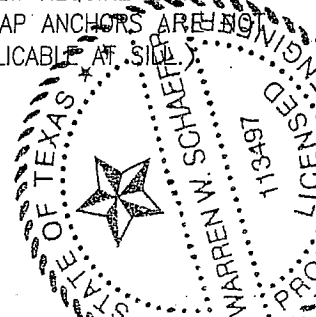
SCALE: 1/2"=1'-0"

HORIZONTAL STACKING & OVERALL UNIT WIDTH IS UNLIMITED PROVIDING DIMENSIONS SPECIFIED ARE NOT EXCEEDED. NUMBER OF VERTICAL PANELS IS UNLIMITED BUT MUST FIT INSIDE MAXIMUM UNIT HEIGHT SHOWN.

NOTE: CMU IS APPLICABLE ONLY AT SIDES.

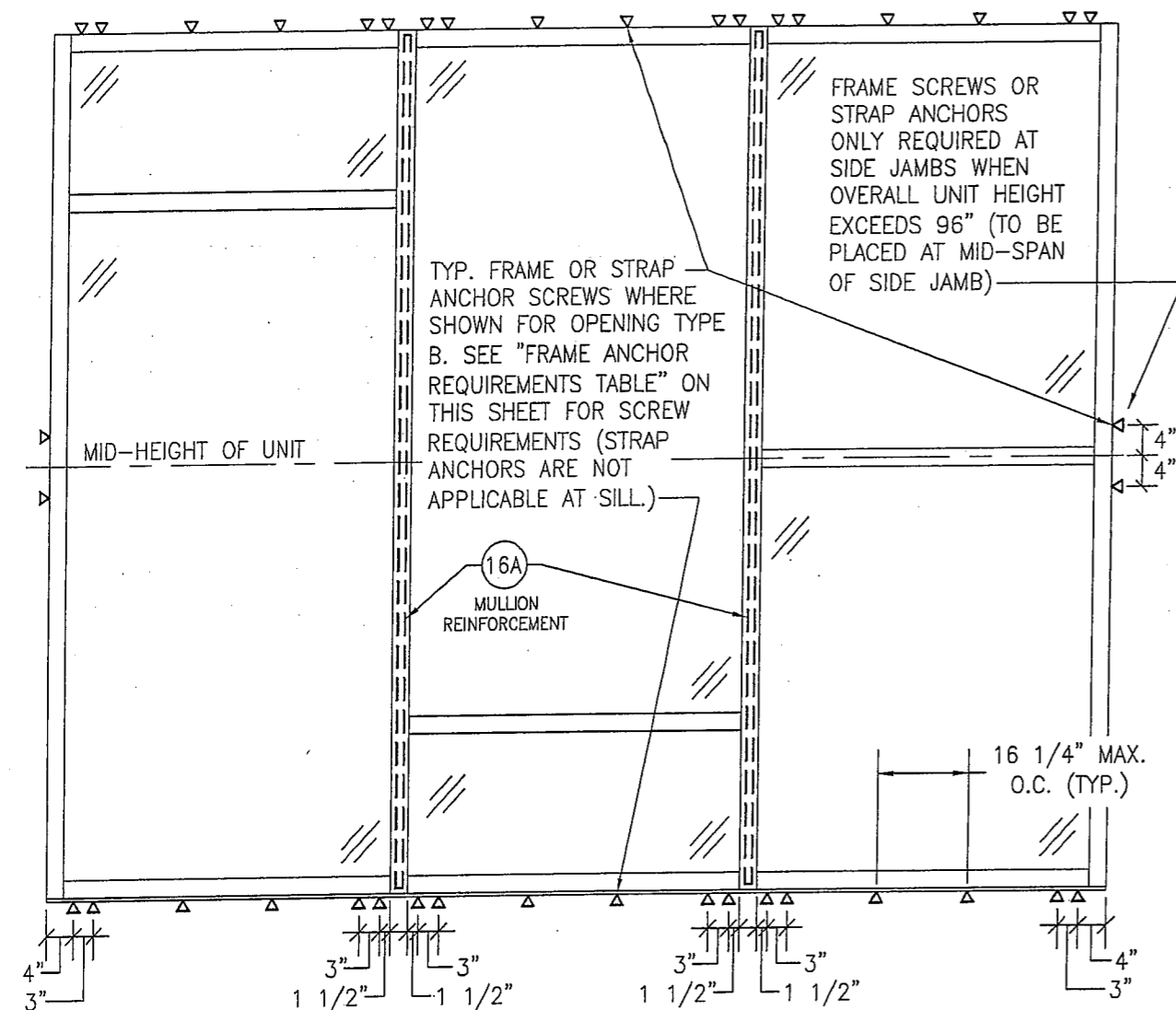
Provide stamped by Louisiana engineer  
JHC 02/06/2017

TYP. FRAME OR STRAP ANCHOR SCREWS WHERE SHOWN FOR OPENING TYPE A, C, D OR E. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON THIS SHEET FOR SCREW REQUIREMENTS. (STRAP ANCHORS ARE NOT APPLICABLE AT SIDES)



THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR RATIONAL AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

|   |    |                    |             |
|---|----|--------------------|-------------|
| DRAWN BY: W.R.M.  |    | CHECKED BY: W.W.S. |             |
| PLOT: 1-24  |    | DATE: 03/19/13     |             |
| DATE  | BY | REVISION           | DESCRIPTION |
|   |    |                    |             |
|   |    |                    |             |
|   |    |                    |             |
|   |    |                    |             |
| JOB INFORMATION:  |    |                    |             |
| IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT  |    |                    |             |
| KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555  |    |                    |             |
| CONSULTANTS:<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |    |                    |             |
| DRAWING NO. 1633T   |    |                    |             |
| SHEET NO. 1 OF 10   |    |                    |             |



NOTES:

1. SEE ELEVATIONS FOR DIMENSIONING OF LOAD WIDTH.
2. ALLOWABLE UNIT PRESSURE SHALL BE THE LESSER OF THE PRESSURE SHOWN IN THIS TABLE & THAT SPECIFIED FOR THE GLASS.
3. "N/A" DESIGNATES A SIZE NOT APPLICABLE TO THAT REINFORCEMENT CONDITION.
4. SEE SECTION H2/8 FOR DETAIL OF NON-REINFORCED MULLION & SECTION H1/8 FOR REINFORCED MULLION.

NOTES:

1. SEE ELEVATIONS FOR DIMENSIONING OF D.L.O. HEIGHT & WIDTH.
2. ALLOWABLE UNIT PRESSURE SHALL BE THE LESSER OF THE PRESSURE SHOWN IN THIS TABLE & THAT SPECIFIED FOR THE VERTICAL MULLIONS.
3. "N/A" DESIGNATES A SIZE NOT APPLICABLE TO THAT REINFORCEMENT CONDITION.

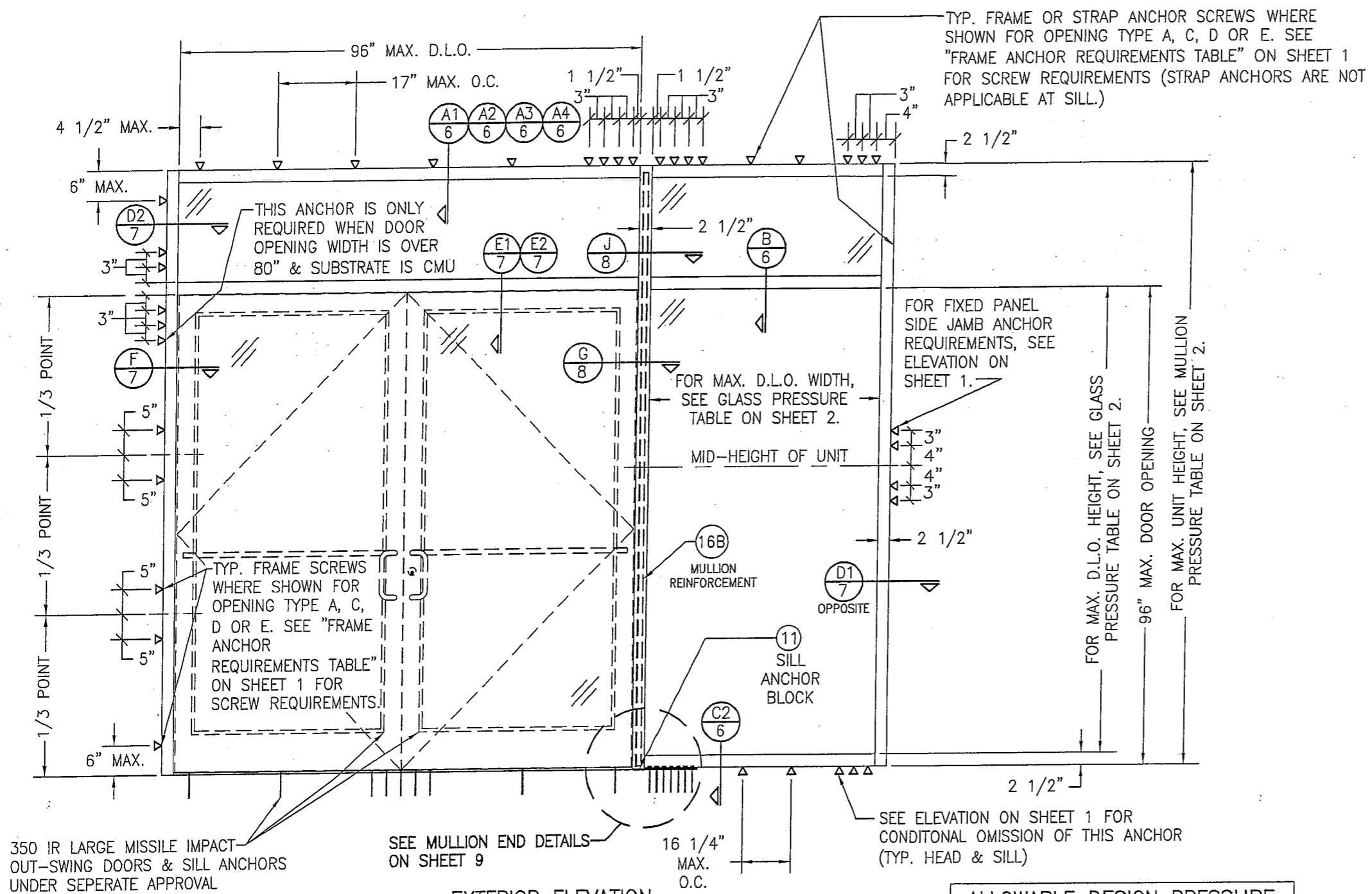
EXTERIOR ELEVATION  
MULTIPLE FIXED PANEL STORE FRONT ASSEMBLY  
(WHEN ANCHORED TO STEEL)  
SCALE: 1/2"=1'-0"

\* FOR ALL FRAMING & D.L.O. DIMENSIONS AND OTHER INFORMATION NOT SHOWN, SEE ELEVATION ON SHEET 1.  
\* IF SILL IS CONCRETE, SEE ELEVATION ON SHEET 1 FOR SILL ANCHORAGE REQUIREMENTS.

A circular professional engineer seal for the State of Texas. The outer ring contains the text "STATE OF TEXAS" on the left and "PROFESSIONAL ENGINEER" on the right, separated by stars. The center of the seal features a five-pointed star and the name "WARREN W. SCHAEFER" above the license number "113497".

| DRAWING TITLE   | CERTIFICATION  |
|---|--|
| IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT<br>CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A.</b> (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 | MAR 20 2013<br><br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497 |
| JOB INFORMATION:<br><b>KAWNEER COMPANY, INC.</b><br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555   |  |
| DRAWING BY:   | CHECKED BY:  |
| DATE:   | DATE:  |
| PLOT:   |  |
| NO.   | REVISION DESCRIPTION   |
| BY  | DATE   |

DRAWING NO. 1633T SHEET NO. 2 OF 10 REV. \_\_\_\_\_  
 DATE: \_\_\_\_\_



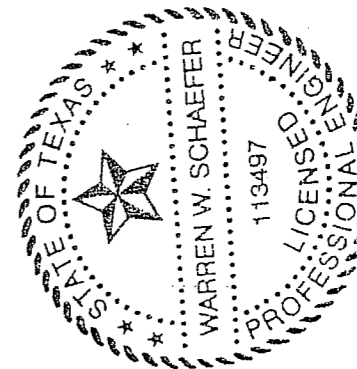
**EXTERIOR ELEVATION**  
**STORE FRONT ASSEMBLY WITH DOORS & TRANSOM**  
**(WHEN ANCHORED TO WOOD, METAL STUD, COINCRETE OR CMU)**

SCALE: 1/2"=1'-0"

- \* SINGLE SIDELIGHT SHOWN, MULTIPLE SIDELIGHT CONDITION ALSO APPLIES WITH SIDELIGHT AT ONE OR BOTH SIDES.
- \* DOUBLE DOOR CONDITION SHOWN, SINGLE DOOR CONDITION ALSO APPLIES.
- \* HORIZONTAL STACKING & OVERALL UNIT WIDTH IS UNLIMITED. NUMBER OF VERTICAL PANELS IS UNLIMITED BUT MUST FIT INSIDE MAXIMUM FRAME HEIGHT SHOWN.

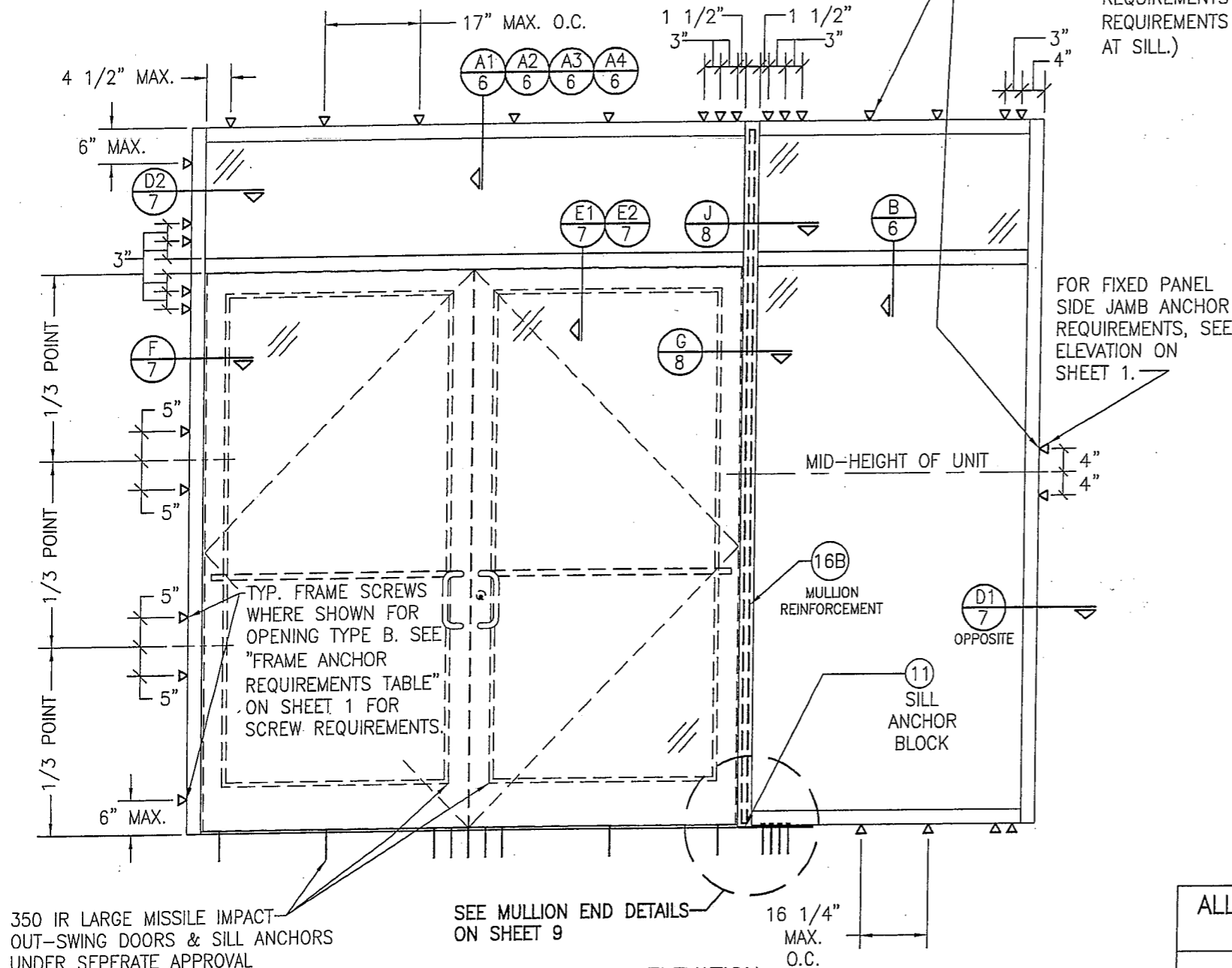
**ALLOWABLE DESIGN PRESSURE**  
**(DOOR UNITS)**  
 +/-65 PSF

ONLY THE DOOR/TRANSOM AREA & THE PANEL SECTIONS DIRECTLY NEXT TO THE DOOR AREA ARE RESTRICTED TO +/-65 PSF. FOR ALLOWABLE PRESSURE ON GLASS PANEL AREAS OF THE STOREFRONT ASSEMBLY AWAY FROM THE DOORS, SEE GLASS AND MULLION PRESSURE TABLES ON SHEET 2.



|  |  |
|--|--|
| DRAWING TITLE<br><b>IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT</b>   |  |
| DRAWN BY:<br>W.R.M.  | CHECKED BY:<br>W.W.S.                                      |
| PLOT:<br>1=24  | DATE:<br>03/19/13  |
| NO.  | REVISION DESCRIPTION                                       |
| DATE   | BY   |
| JOB INFORMATION:   |  |
| <b>CONSULTANTS</b><br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b><br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |  |
| <b>KAWNEER COMPANY, INC.</b><br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555  |  |
| CERTIFICATION  | MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497 |
| DRAWING NO.<br><b>1633T</b>  | REV.   |
| SHEET NO.<br><b>3</b>  | OF <b>10</b>   |

TYP. FRAME OR STRAP ANCHOR SCREWS WHERE SHOWN FOR OPENING TYPE B. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON SHEET 1 FOR SCREW REQUIREMENTS (STRAP ANCHORS ARE NOT APPLICABLE AT SILL.)



350 IR LARGE MISSILE IMPACT  
OUT-SWING DOORS & SILL ANCHORS  
UNDER SEPERATE APPROVAL

SEE MULLION END DETAILS  
ON SHEET 9

**EXTERIOR ELEVATION  
STORE FRONT ASSEMBLY WITH DOORS & TRANSOM  
(WHEN ANCHORED TO STEEL)**

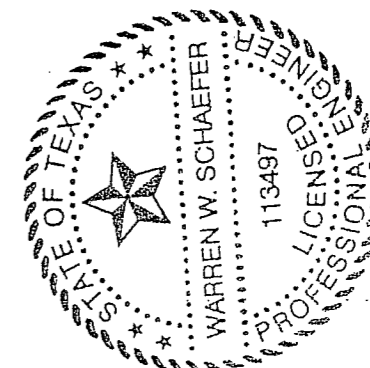
SCALE: 1/2"=1'-0"

- \* SINGLE SIDELIGHT SHOWN, MULTIPLE SIDELIGHT CONDITION ALSO APPLIES WITH SIDELIGHT AT ONE OR BOTH SIDES.
- \* DOUBLE DOOR CONDITION SHOWN, SINGLE DOOR CONDITION ALSO APPLIES.
- \* HORIZONTAL STACKING & OVERALL UNIT WIDTH IS UNLIMITED. NUMBER OF VERTICAL PANELS IS UNLIMITED BUT MUST FIT INSIDE MAXIMUM FRAME HEIGHT SHOWN.
- \* FOR ALL FRAMING & D.L.O. DIMENSIONS, SEE ELEVATION ON SHEET 3.

**ALLOWABLE DESIGN PRESSURE  
(DOOR UNITS)**

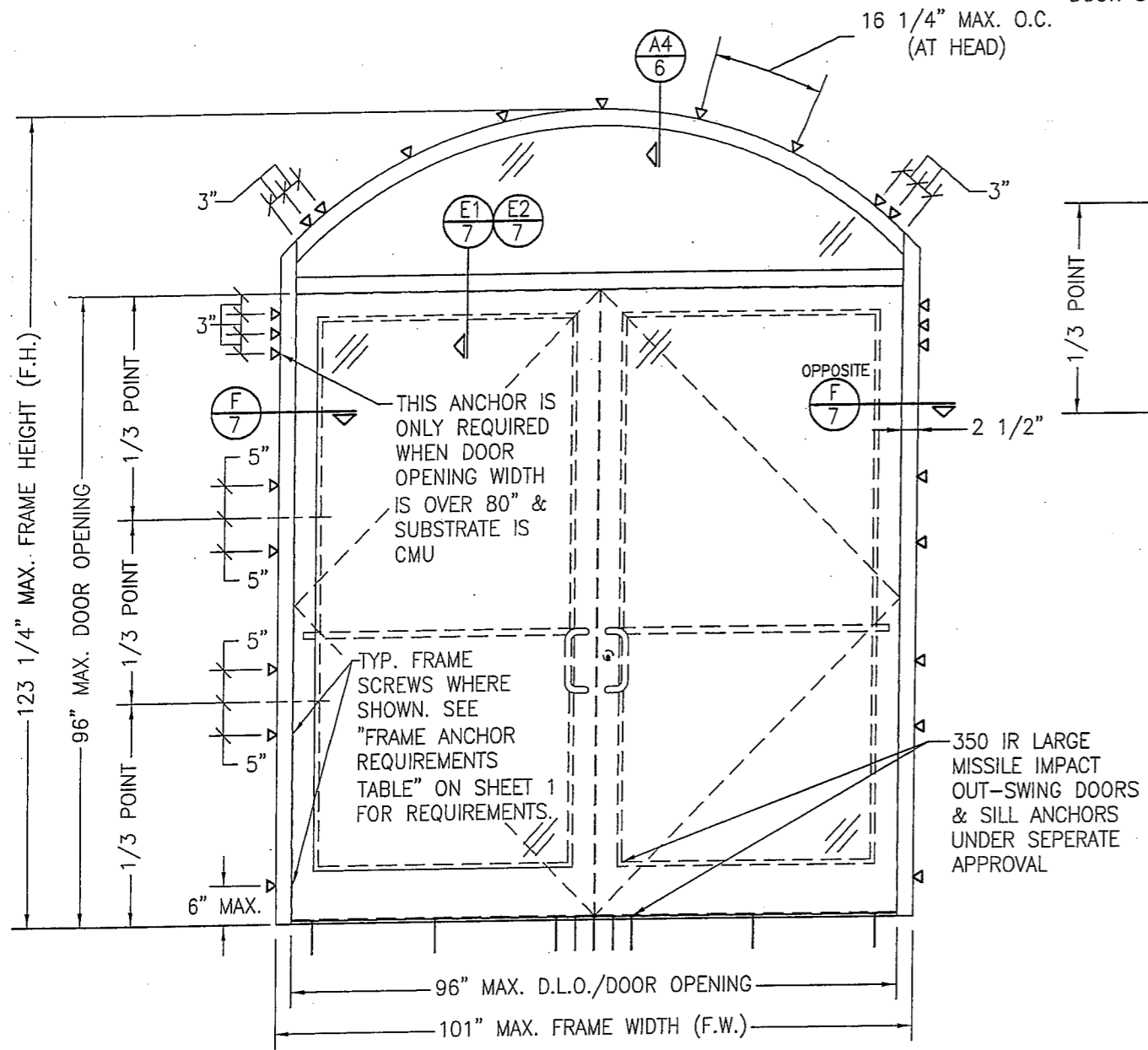
+/-65 PSF

ONLY THE DOOR/TRANSOM AREA & THE PANEL SECTIONS DIRECTLY NEXT TO THE DOOR AREA ARE RESTRICTED TO +/-65 PSF. FOR ALLOWABLE PRESSURE ON GLASS PANEL AREAS OF THE STOREFRONT ASSEMBLY AWAY FROM THE DOORS, SEE GLASS AND MULLION PRESSURE TABLES ON SHEET 2.



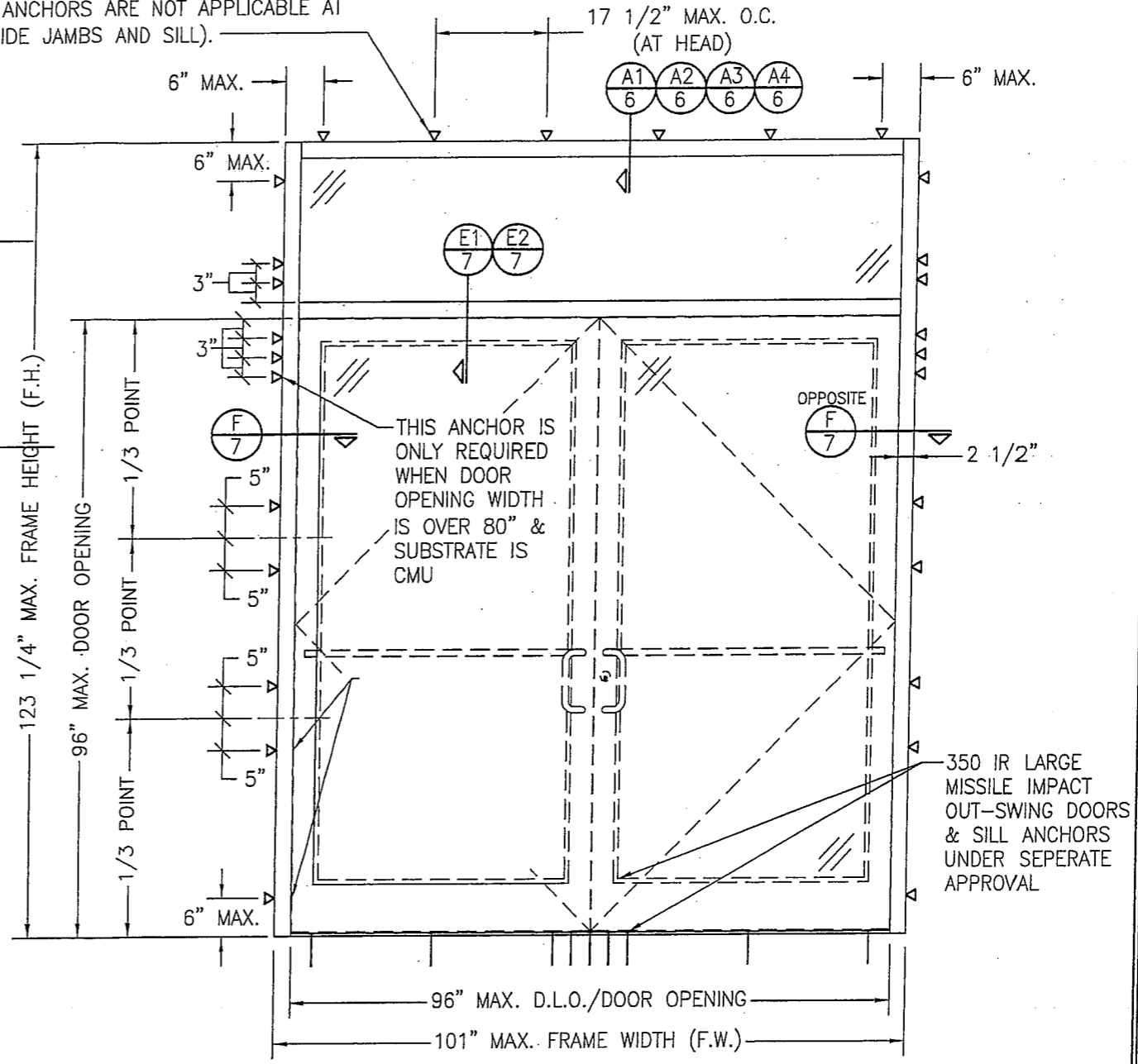
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| DRAWING TITLE<br><b>IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT</b> |                      | DRAWN BY:<br>W.R.M.  |      | CHECKED BY:<br>W.W.S. |  |
| PLOT:<br>1-24  |                      | DATE:<br>03/19/13  |      |                       |  |
| NO.  | REVISION DESCRIPTION | BY   | DATE |                       |  |
|  |                      |  |      |                       |  |
| JOB INFORMATION:   |                      | KAWNEER COMPANY, INC.<br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555   |      |                       |  |
| CONSULTANTS  |                      | W. W. SCHAEFER ENGINEERING &<br>CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |      |                       |  |
| CERTIFICATION  |                      | MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497   |      |                       |  |
| DRAWING NO.<br><b>1633T</b>  |                      | REV.   |      |                       |  |
| SHEET NO.<br><b>4 OF 10</b>  |                      |  |      |                       |  |

TYP. FRAME OR STRAP ANCHOR SCREWS WHERE SHOWN. SEE "FRAME ANCHOR REQUIREMENTS TABLE" ON SHEET 1 FOR REQUIREMENTS (STRAP ANCHORS ARE NOT APPLICABLE AT DOOR SIDE JAMBS AND SILL).

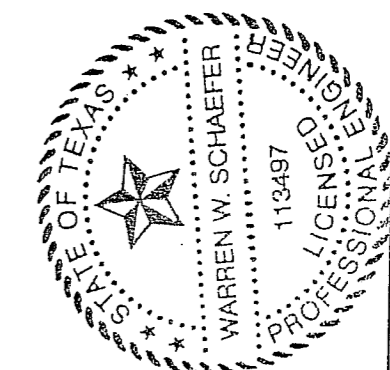


**EXTERIOR ELEVATION**  
**STORE FRONT FRAMING WITH DOORS & EYEBROW TRANSOM**  
 (APPLICABLE WITH ALL SUBSTRATES)  
 (DOUBLE DOOR CONDITION SHOWN, SINGLE DOOR CONDITION ALSO APPLIES)  
 SCALE: 1/2"=1'-0"

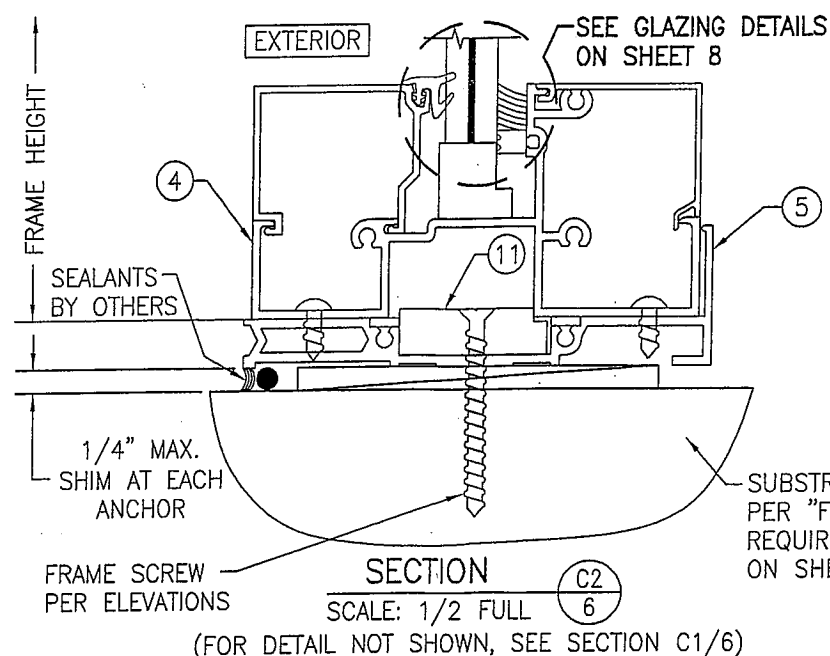
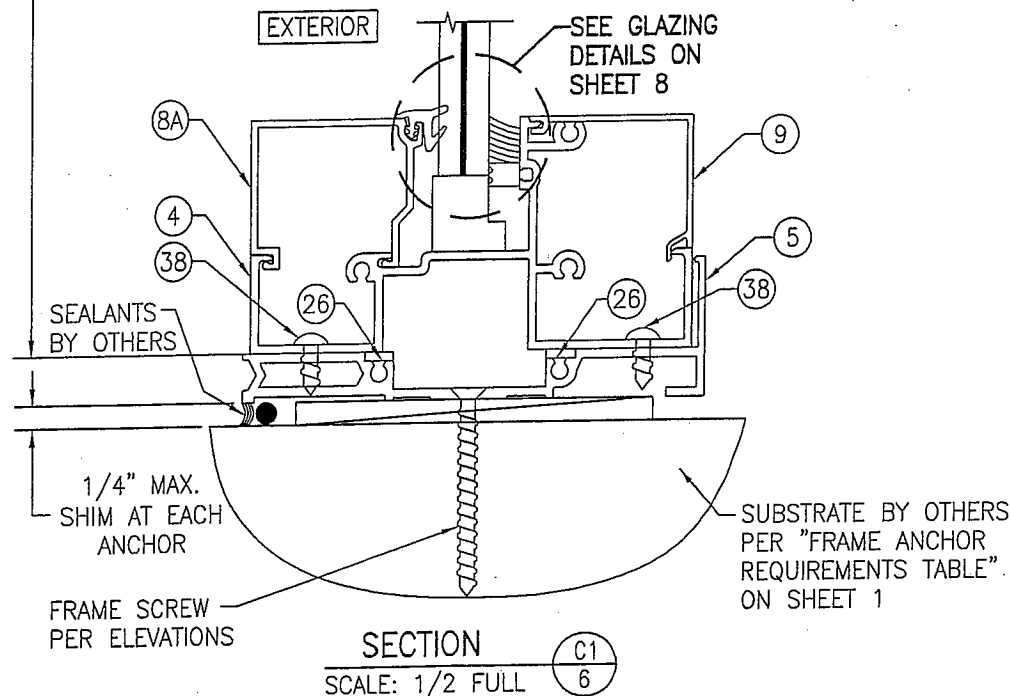
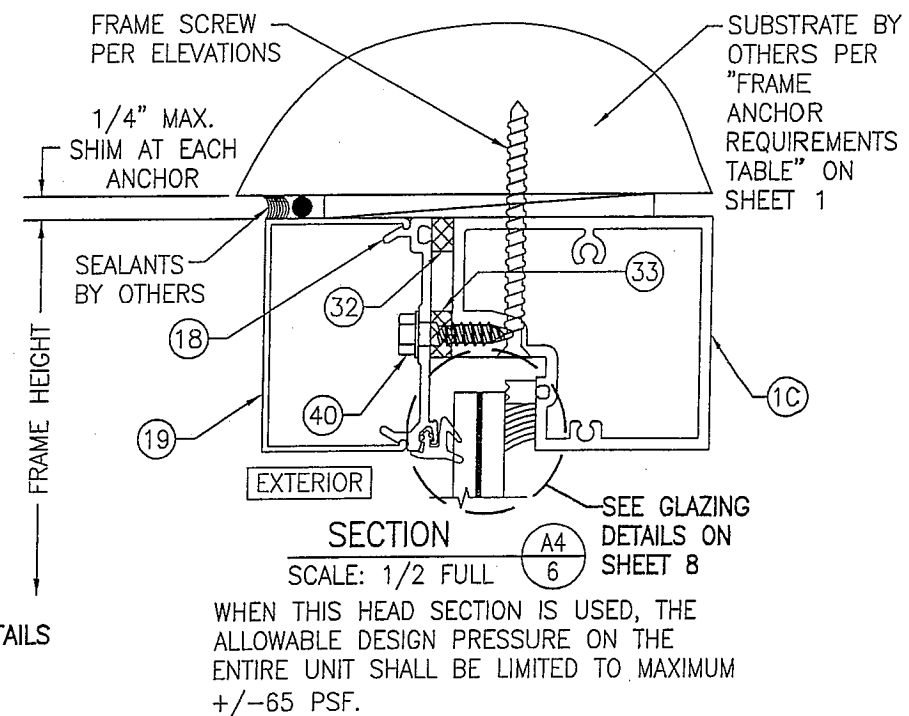
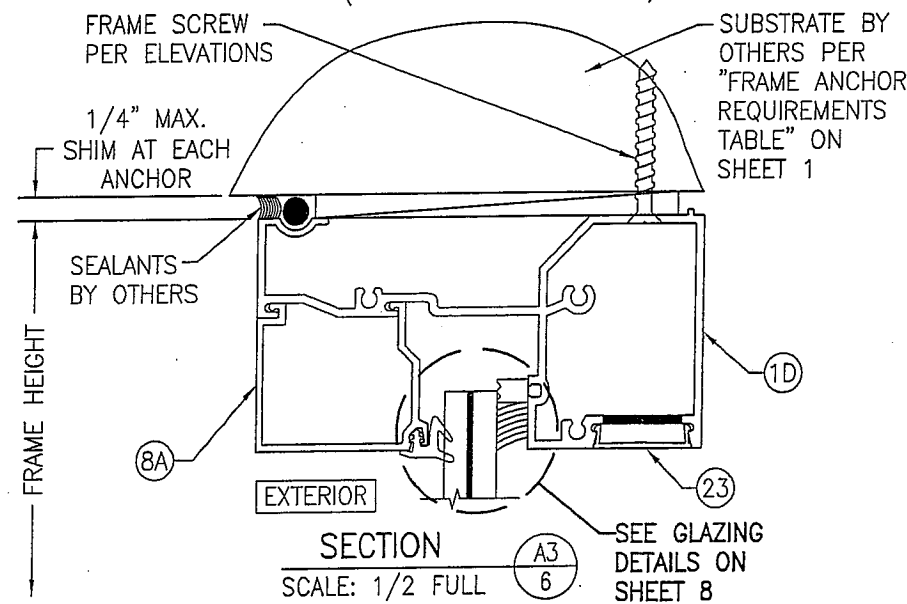
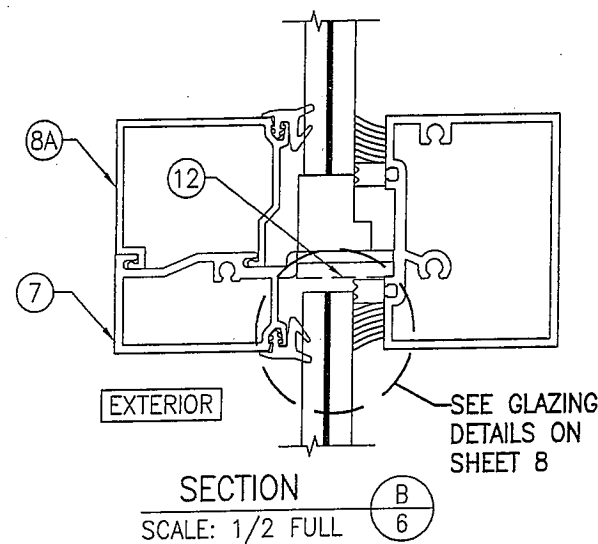
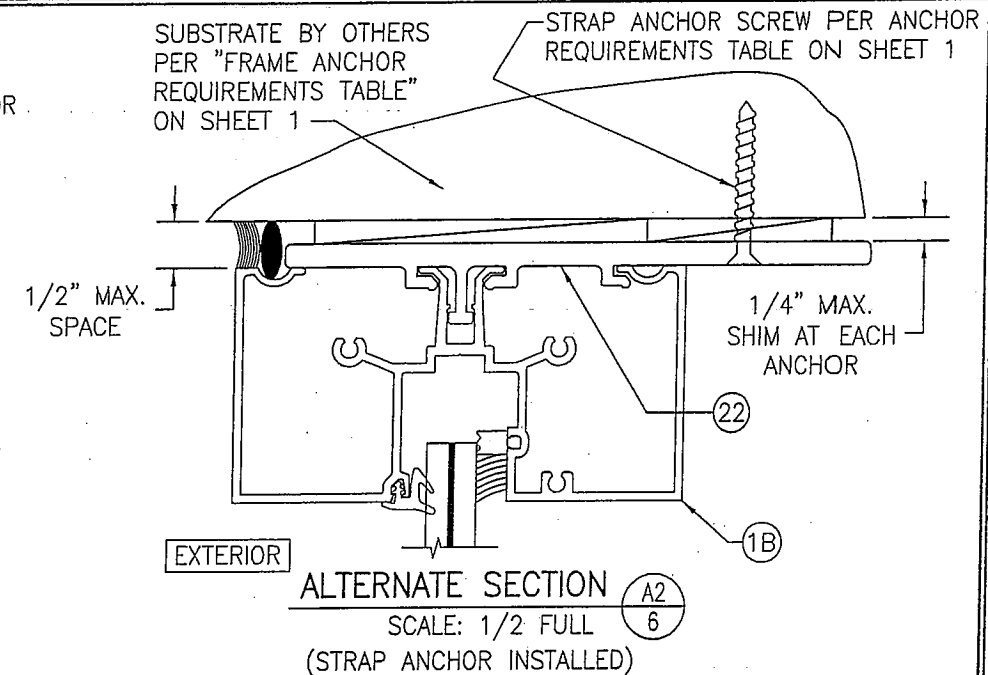
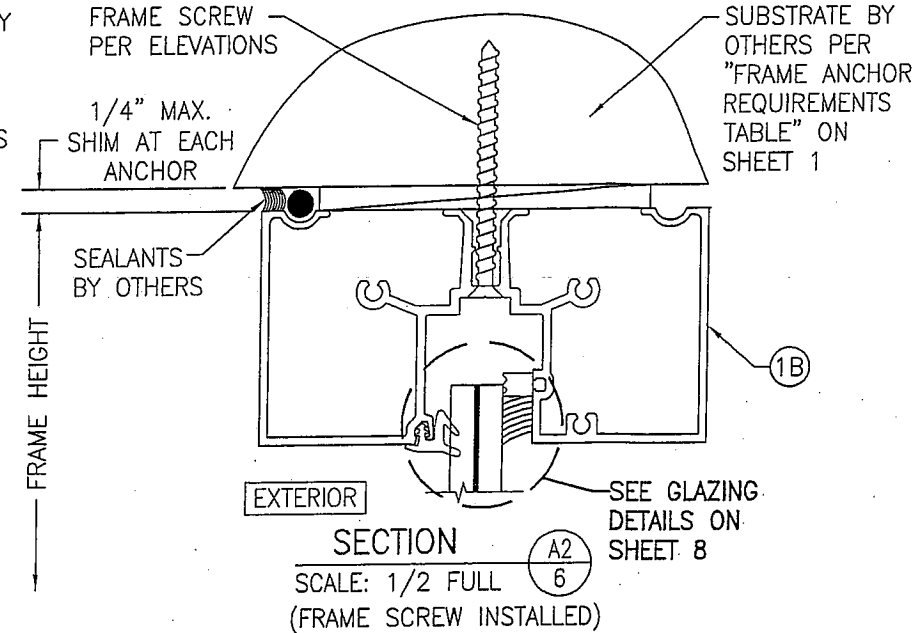
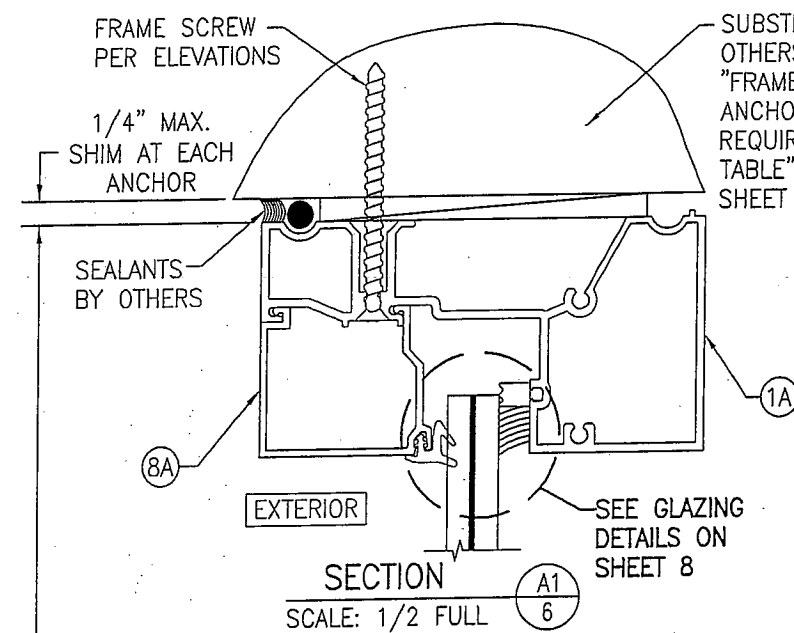
ALLOWABLE DESIGN PRESSURE  
 (DOOR WITH TRANSOM UNITS)  
 +/-65 PSF



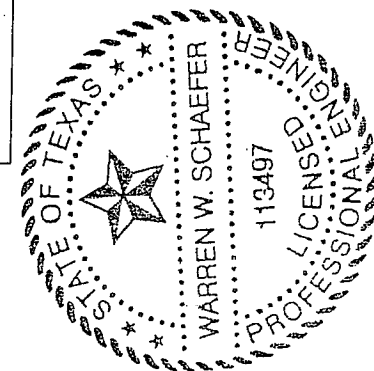
**EXTERIOR ELEVATION**  
**STORE FRONT FRAMING WITH DOORS & RECTANGULAR TRANSOM**  
 (APPLICABLE WITH ALL SUBSTRATES)  
 (DOUBLE DOOR CONDITION SHOWN, SINGLE DOOR CONDITION ALSO APPLIES)  
 SCALE: 1/2"=1'-0"



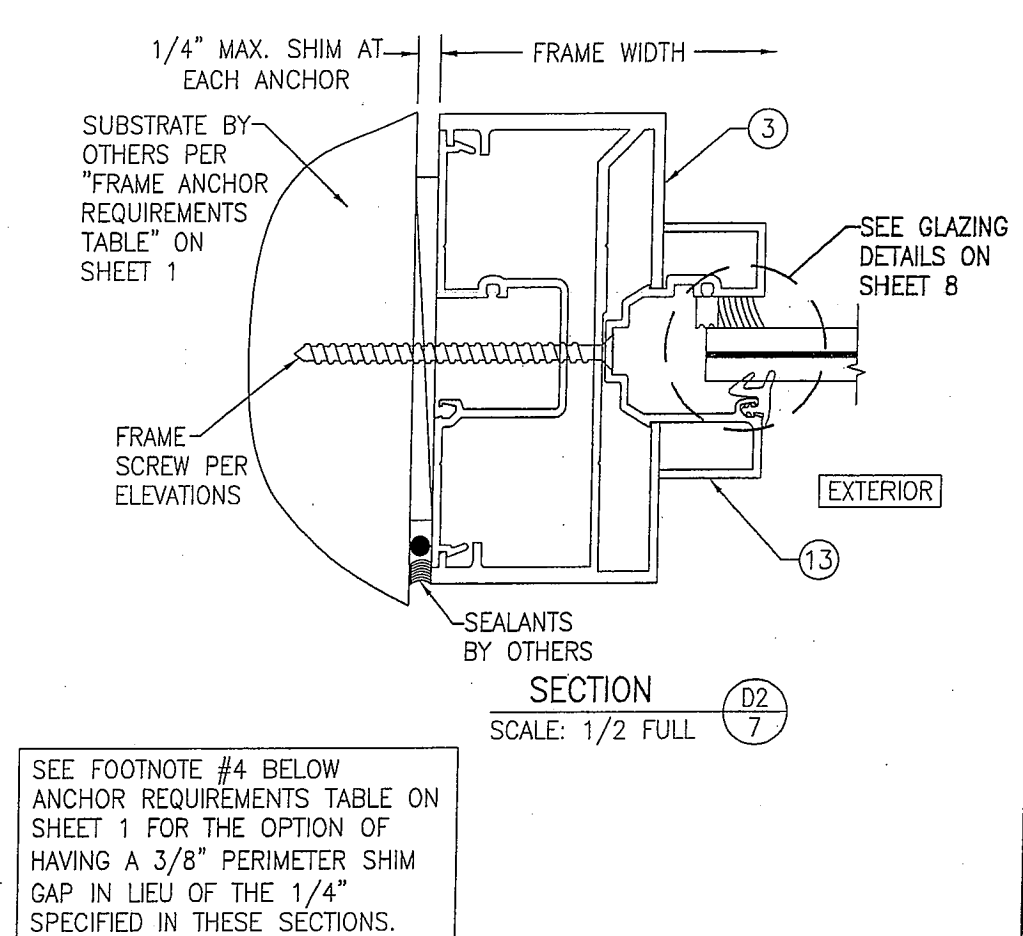
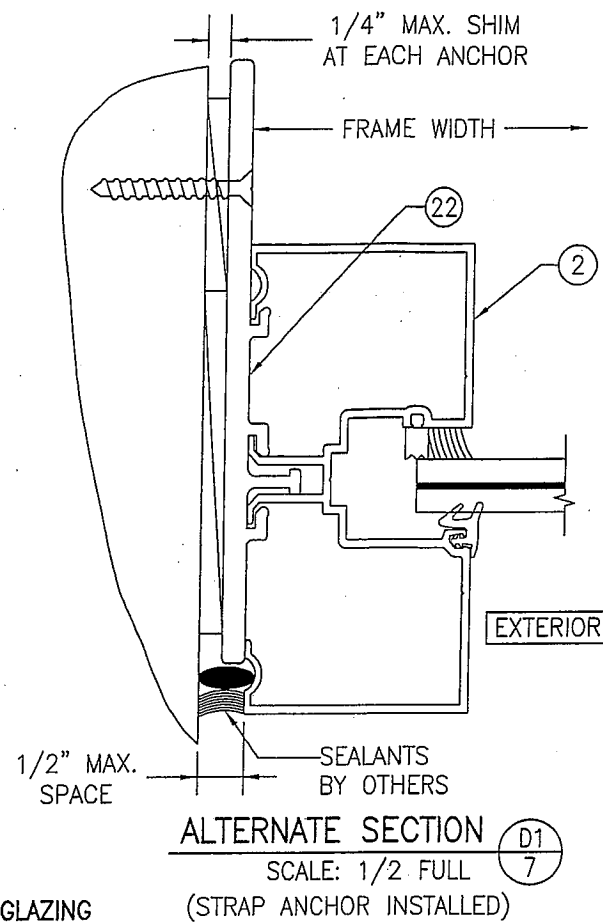
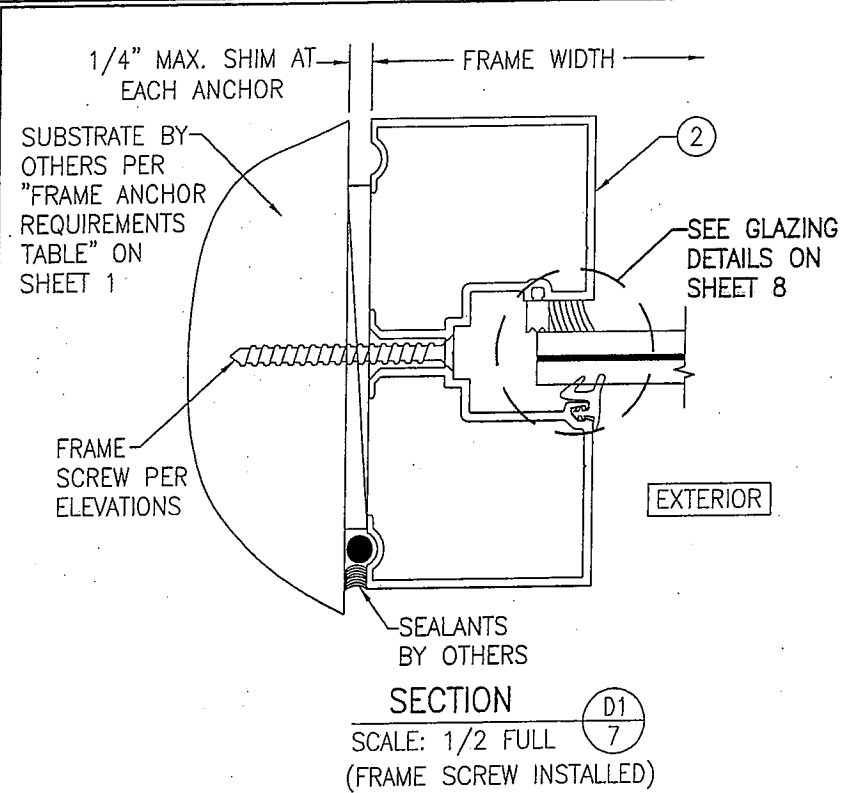
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| DRAWN BY:<br>W.R.M.  |                      | CHECKED BY:<br>W.W.S. |      |
| PLOT:<br>1=24  |                      | DATE:<br>03/19/13     |      |
| NO.  | REVISION DESCRIPTION | BY                    | DATE |
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| DRAWING TITLE<br>IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT  |                      |                       |      |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |                      |                       |      |
| JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555   |                      |                       |      |
| CERTIFICATION  | MAR 20 2013          |                       |      |
| WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |                      |                       |      |
| DRAWING NO.<br>1633T   | REV.                 |                       |      |
| SHEET NO.<br>5 OF 10   |                      |                       |      |



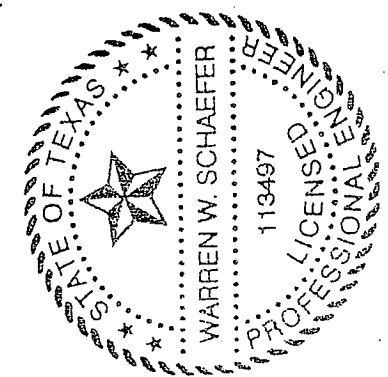
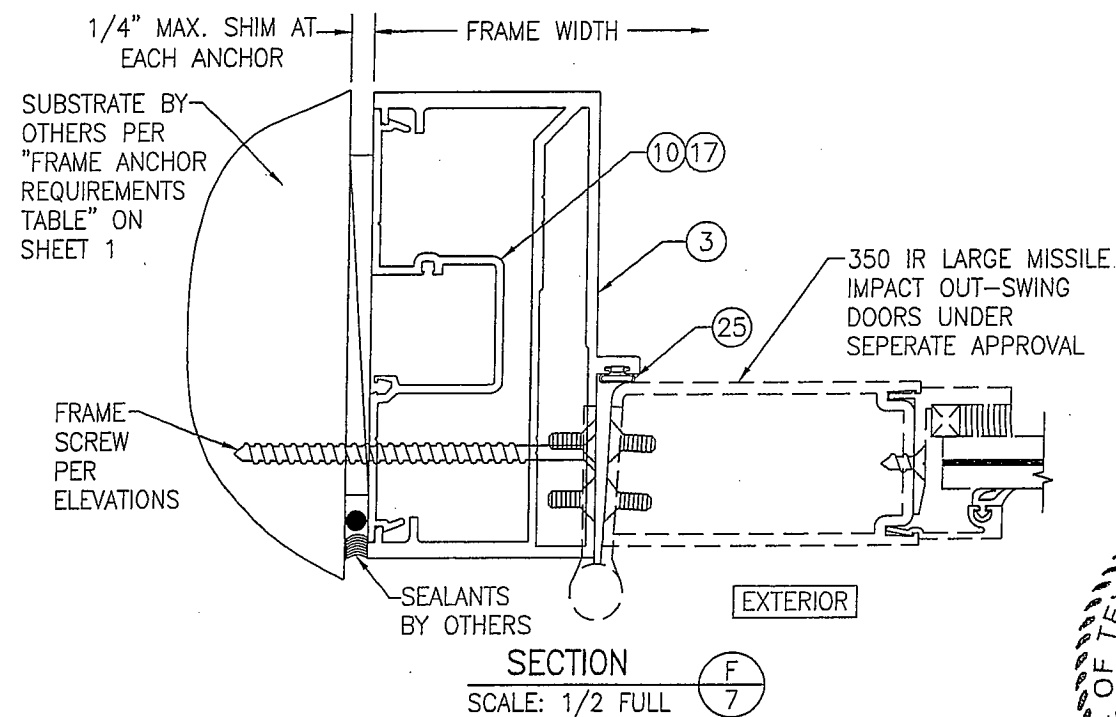
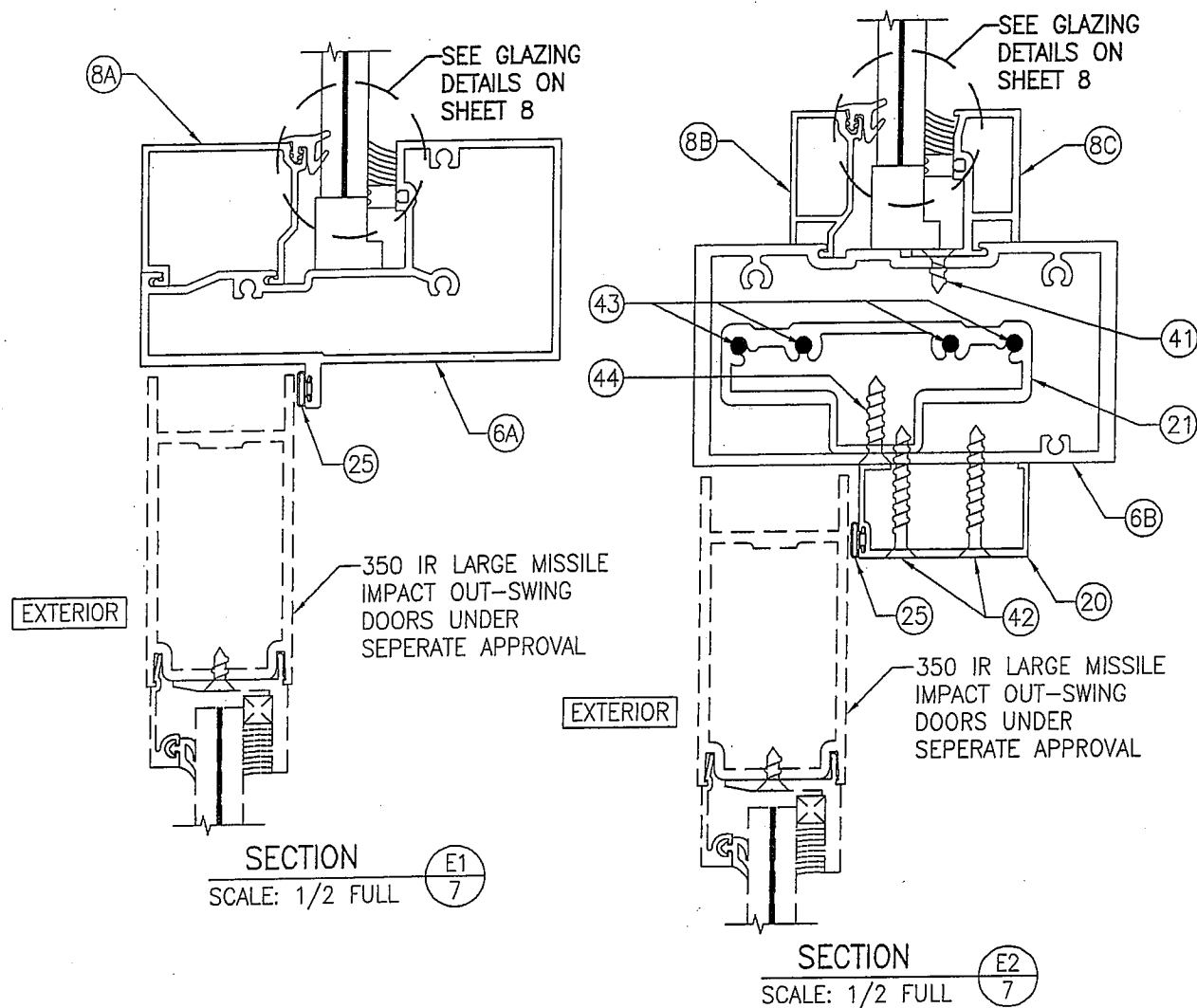
SEE FOOTNOTE #4 BELOW  
ANCHOR REQUIREMENTS TABLE ON  
SHEET 1 FOR THE OPTION OF  
HAVING A 3/8" PERIMETER SHIM  
GAP IN LIEU OF THE 1/4"  
SPECIFIED IN THESE SECTIONS.



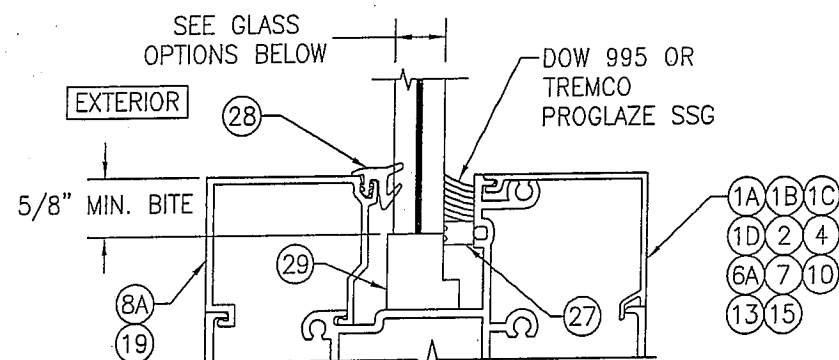
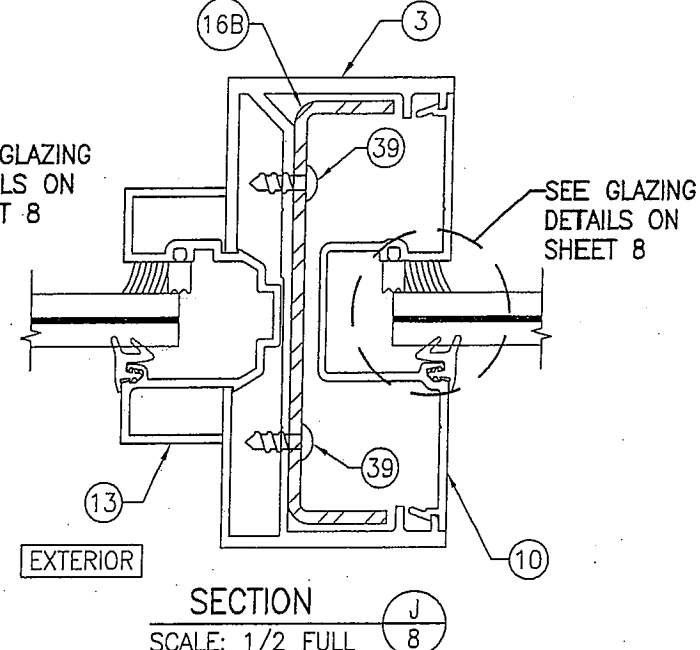
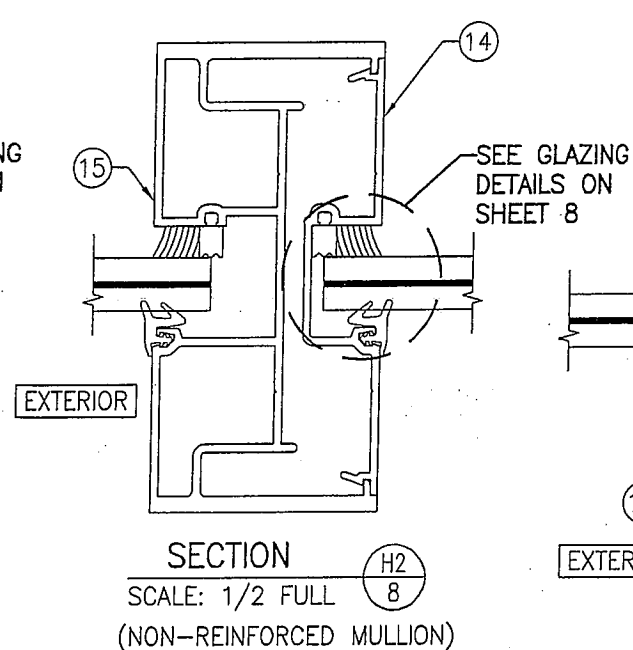
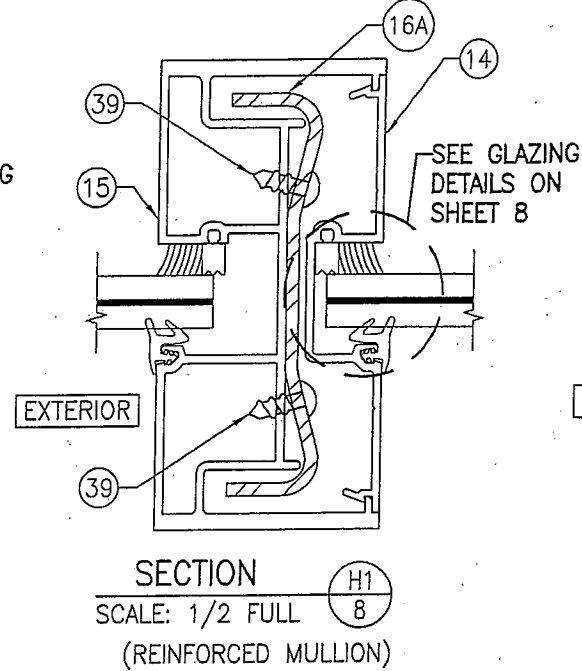
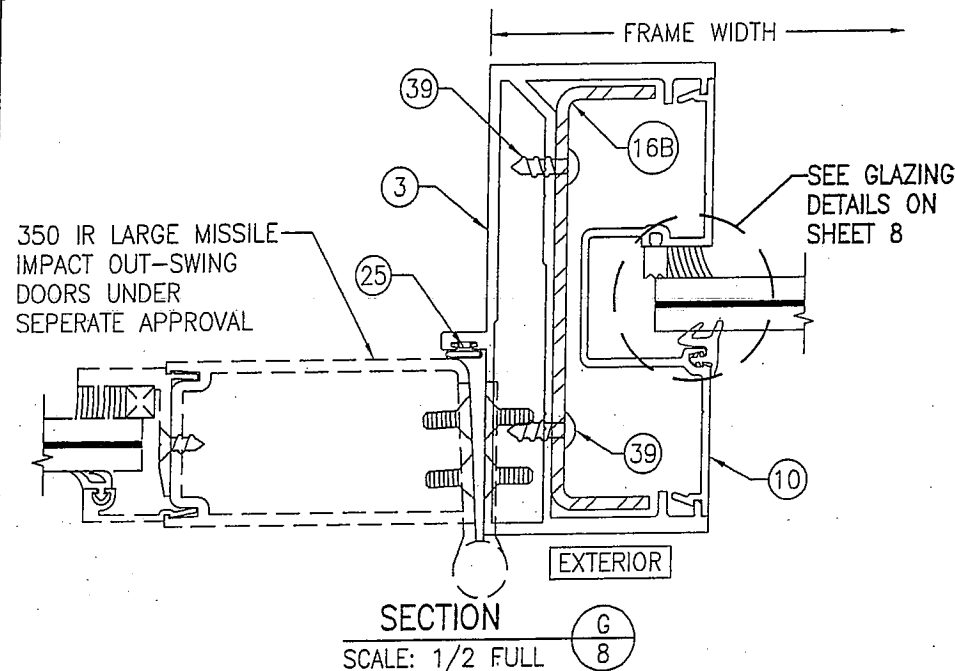
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| DRAWING TITLE<br><b>IR500 ALUMINUM STORE FRONT SYSTEM — LARGE MISSILE IMPACT</b>  | DRAWN BY:<br>W.R.M. |   | CHECKED BY:<br>W.W.S. |    |      |
|   | PLOT:<br>1=2        |   | DATE:<br>03/19/13     |    |      |
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| JOB INFORMATION:  |                     |   |                       |    |      |
| CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b><br><br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |                     | <b>KAWNEER COMPANY, INC.</b><br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |                       |    |      |
| WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497   |                     |   |                       |    |      |
| DRAWING NO.<br><b>1633T</b>   |                     | REV.  |                       |    |      |
| SHEET NO.<br><b>6 OF 10</b>   |                     |   |                       |    |      |



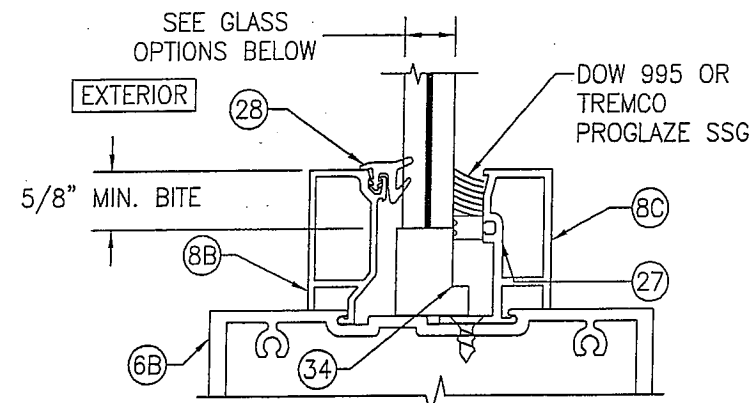
SEE FOOTNOTE #4 BELOW ANCHOR REQUIREMENTS TABLE ON SHEET 1 FOR THE OPTION OF HAVING A 3/8" PERIMETER SHIM GAP IN LIEU OF THE 1/4" SPECIFIED IN THESE SECTIONS.



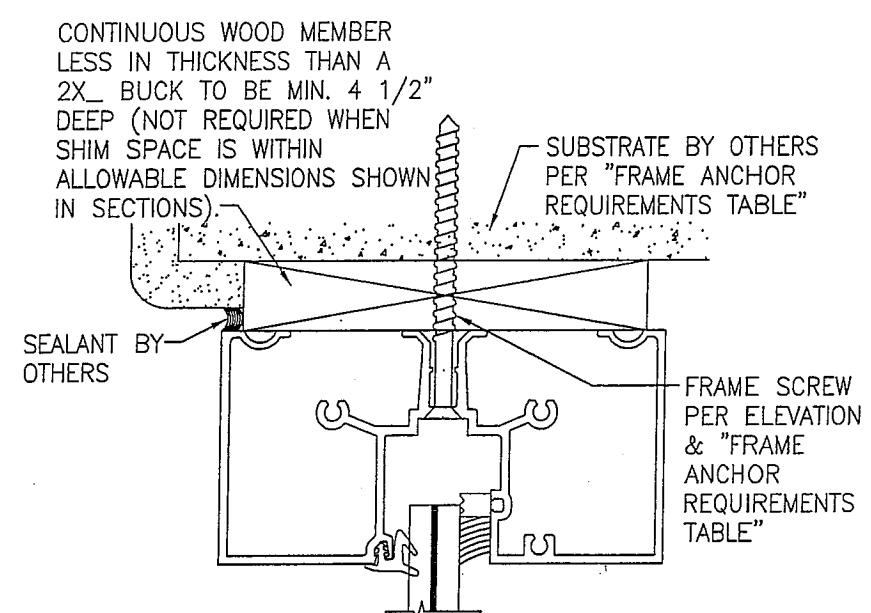
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| DRAWING NO.<br>1633T  |          | REV.              |      |
| SHEET NO.<br>7 OF 10  |          |                   |      |
| DRAWN BY:<br>W.R.M.   |          |                   |      |
| CHECKED BY:<br>W.W.S. |          |                   |      |
| PLOT:<br>1=2          |          | DATE:<br>03/19/13 |      |
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**TYP. GLAZING DETAIL**  
**(WET GLAZED: SINGLE GLAZING BEAD CONDITION)**

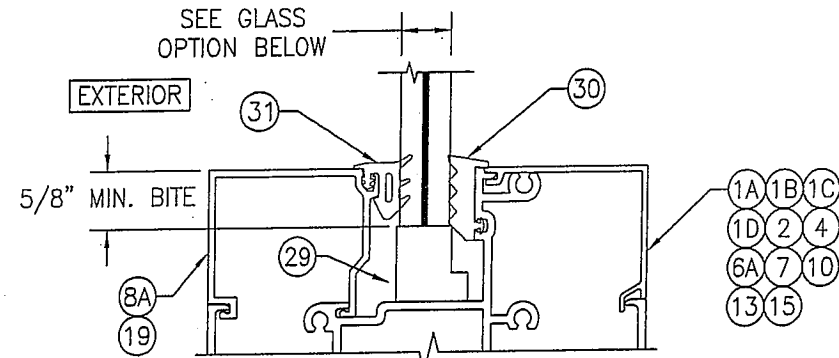


**TYP. GLAZING DETAIL**  
**(WET GLAZED: DOUBLE GLAZING BEAD CONDITION)**



**OPTIONAL DIRECT MOUNT DETAIL**  
**TO SUBSTRATE WITH SPACER**

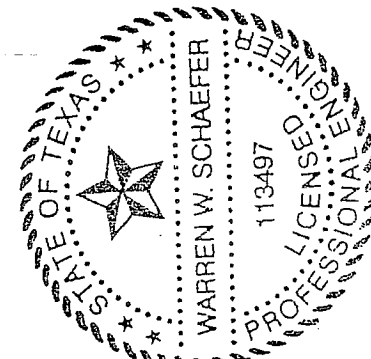
\* HEAD SECTION SHOWN WITH HEAD FRAME PART #1B; SILL & SIDES WITH OTHER APPLICABLE FRAME PARTS MAY BE INSTALLED THE SAME (NOT APPLICABLE WITH STRAP ANCHOR INSTALLATIONS).  
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



**TYP. GLAZING DETAIL**  
**(DRY GLAZED: SINGLE GLAZING BEAD CONDITION)**

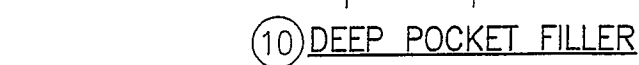
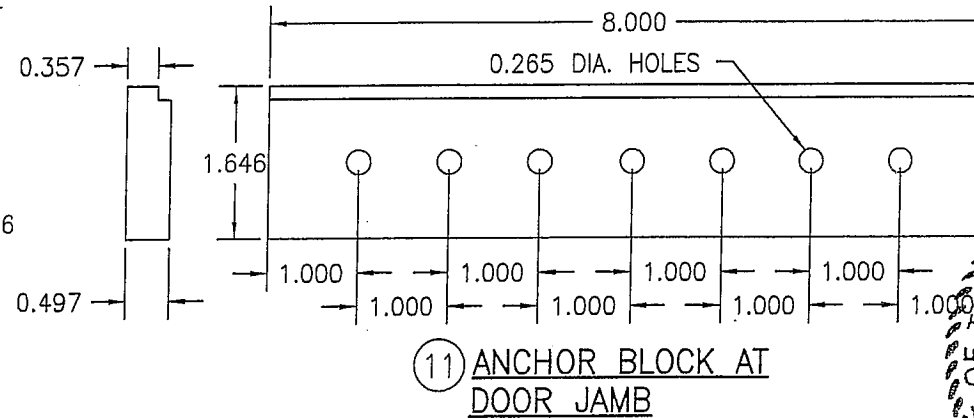
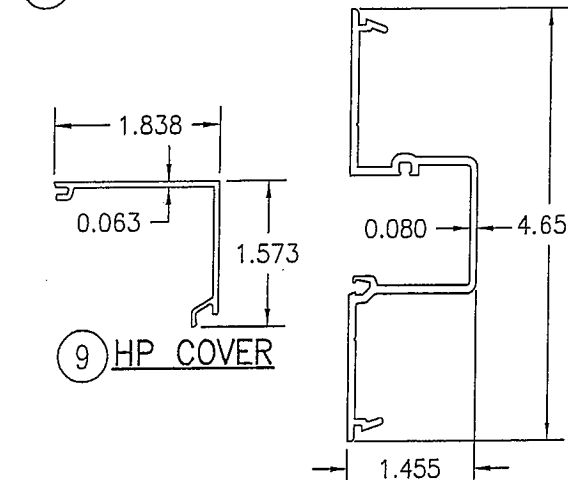
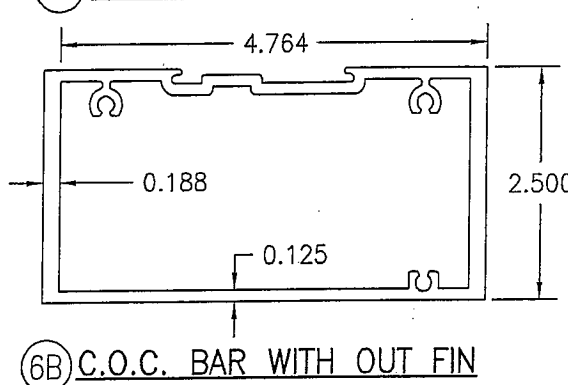
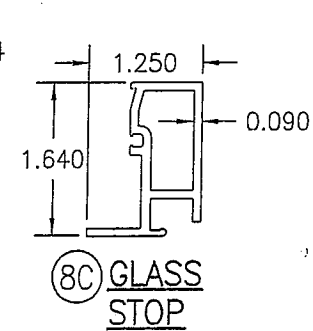
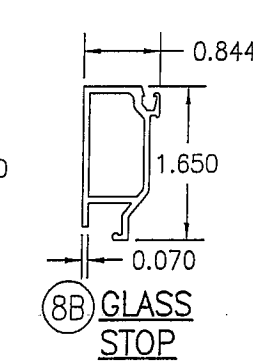
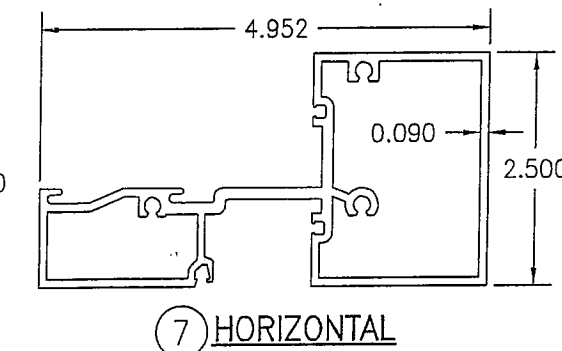
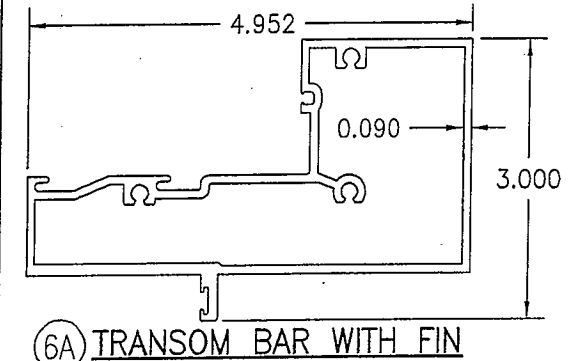
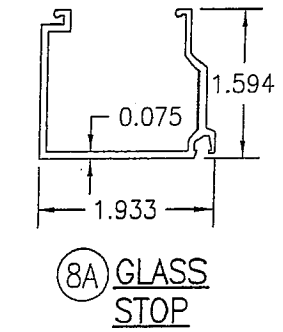
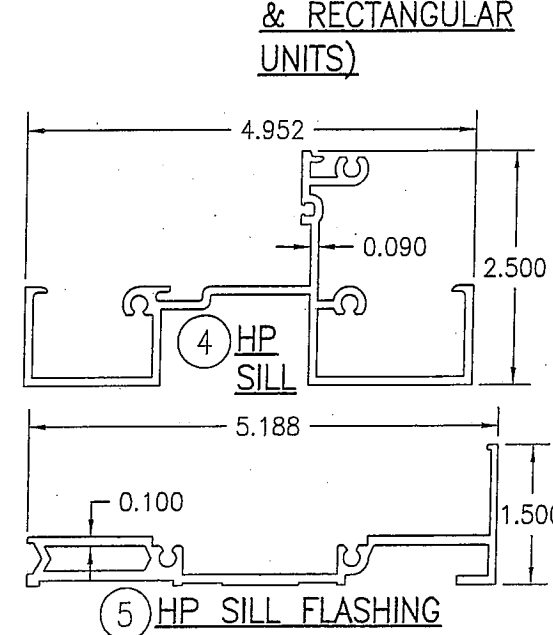
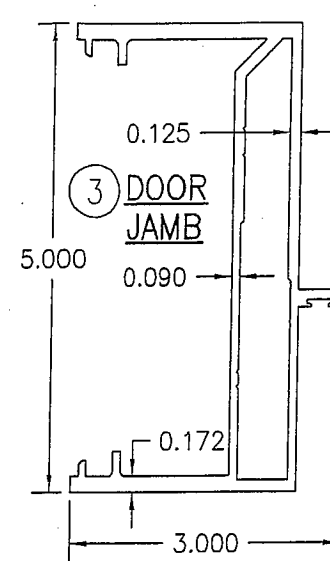
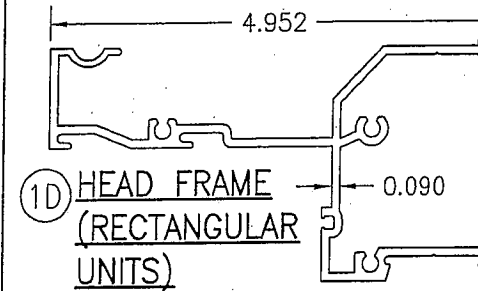
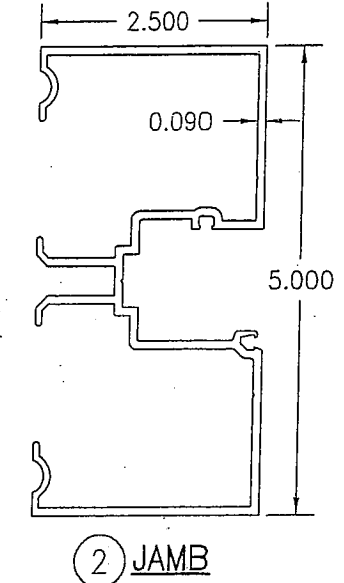
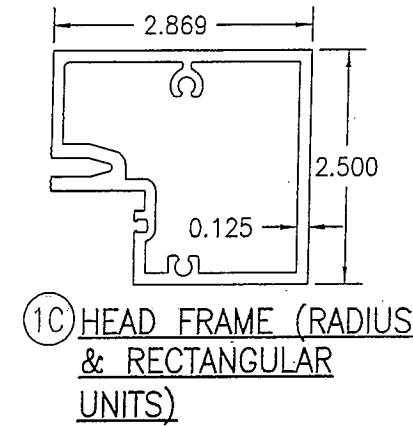
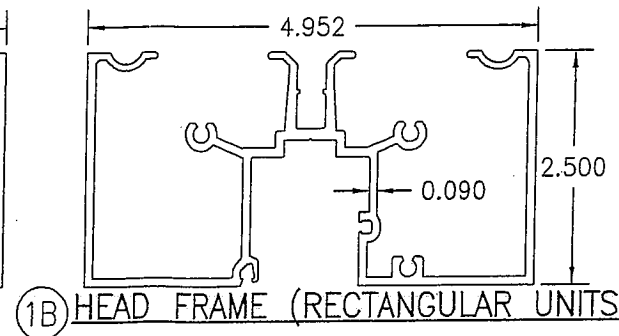
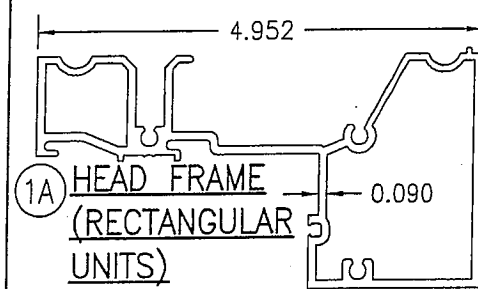
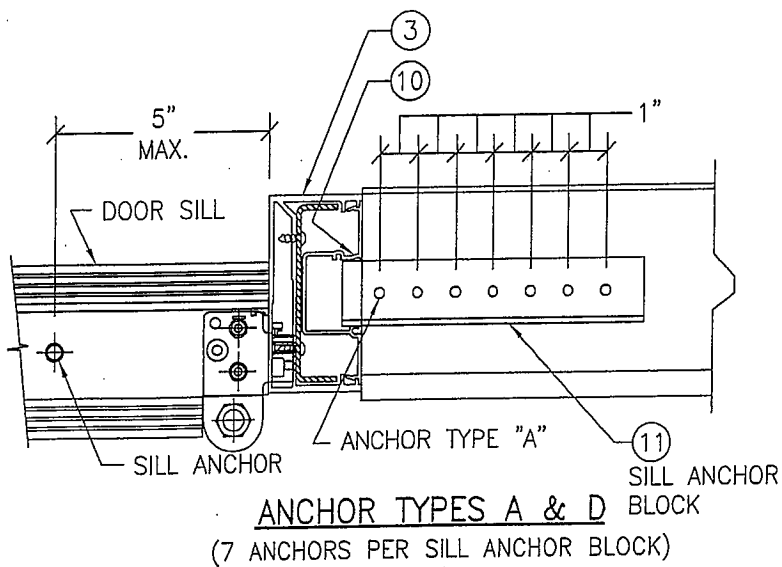
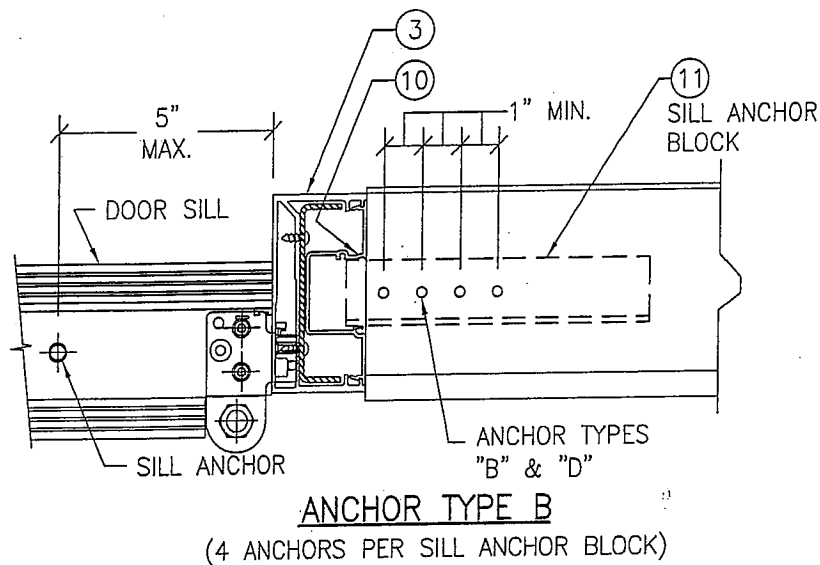
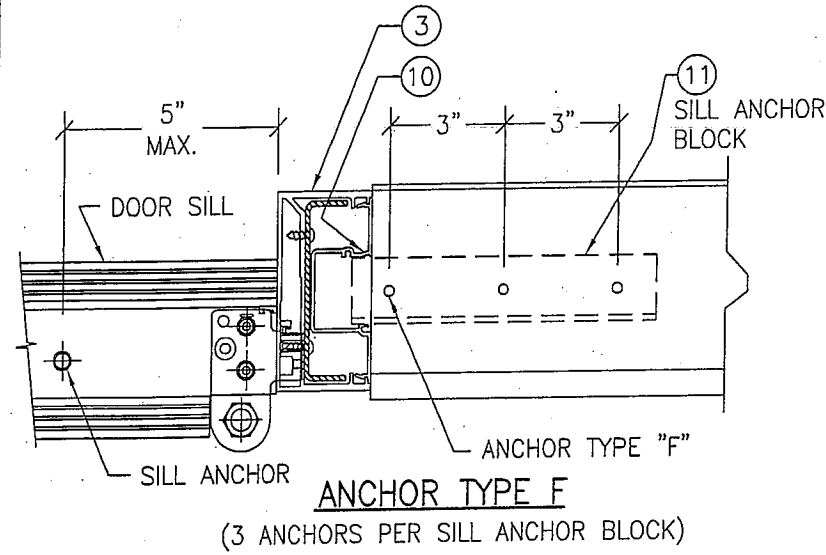
**GLASS OPTION (DRY GLAZED):**  
**OPTION 5:** 9/16" THICK LAMINATED GLASS BY DUPONT (1/4" HT. ST./0.09 DUPONT SG/1/4" HT. ST.)

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| DRAWN BY: W.R.M. |          | CHECKED BY: W.W.S. |      |
| PLOT: 1=2        |          | DATE: 03/19/13     |      |
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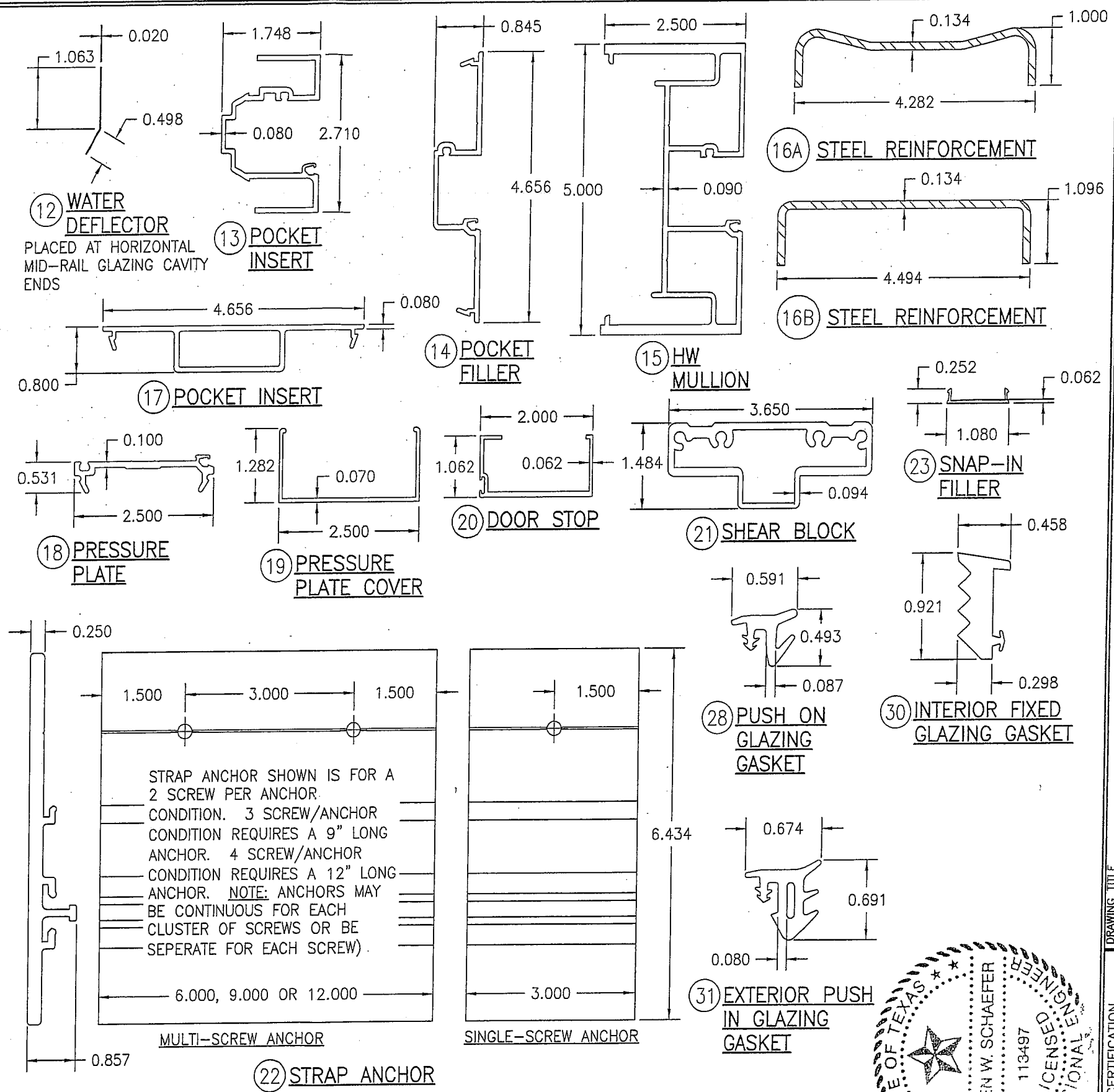
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| DRAWING NO. 1633T |  | REV.  |  |
| SHEET NO. 8       |  | OF 10 |  |

**MULLION END CONNECTION DETAILS AT VERTICAL  
MULLIONS ALONG SIDE DOORS  
(TYPICAL AT SILL ONLY)**



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| DRAWN BY:<br>W.R.M. |          | CHECKED BY:<br>W.W.S. |      |
| PLOT:<br>1=2        |          | DATE:<br>03/19/13     |      |
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| ITEM #                    | ITEM DESCRIPTION                        | MANUFACTURER/NOTES                                    |
|---------------------------|---|---|
| <b>PARTS</b>              |   |   |
| 1A                        | HEAD FRAME (RECTANGULAR UNITS)          | 6063-T6 ALUMINUM                                      |
| 1B                        | HEAD FRAME (RECTANGULAR UNITS)          | 6063-T6 ALUMINUM                                      |
| 1C                        | HEAD FRAME (RADIUS & RECTANGULAR UNITS) | 6063-T6 ALUMINUM                                      |
| 1D                        | HEAD FRAME (RECTANGULAR UNITS)          | 6063-T6 ALUMINUM                                      |
| 2                         | JAMB                                    | 6063-T6 ALUMINUM                                      |
| 3                         | DOOR JAMB                               | 6063-T6 ALUMINUM                                      |
| 4                         | HP SILL                                 | 6063-T6 ALUMINUM                                      |
| 5                         | HP SILL FLASHING                        | 6063-T6 ALUMINUM                                      |
| 6A                        | TRANSOM BAR WITH FIN                    | 6063-T6 ALUMINUM                                      |
| 6B                        | C.O.C. TRANSOM BAR                      | 6063-T6 ALUMINUM                                      |
| 7                         | HORIZONTAL                              | 6063-T6 ALUMINUM                                      |
| 8A                        | GLASS STOP                              | 6063-T6 ALUMINUM                                      |
| 8B                        | GLASS STOP                              | 6063-T6 ALUMINUM                                      |
| 8C                        | GLASS STOP                              | 6063-T6 ALUMINUM                                      |
| 9                         | HP COVER                                | 6063-T6 ALUMINUM                                      |
| 10                        | DEEP POCKET FILLER                      | 6063-T6 ALUMINUM                                      |
| 11                        | ANCHOR BLOCK AT DOOR JAMB               | 6063-T6 ALUMINUM                                      |
| 12                        | WATER DEFLECTOR                         | 6063-T6 ALUMINUM                                      |
| 13                        | POCKET INSERT                           | 6063-T6 ALUMINUM                                      |
| 14                        | POCKET FILLER                           | 6063-T6 ALUMINUM                                      |
| 15                        | HW MULLION                              | 6063-T6 ALUMINUM                                      |
| 16A                       | STEEL REINF.                            | A36 STEEL   |
| 16B                       | STEEL REINF.                            | A36 STEEL   |
| 17                        | POCKET INSERT                           | 6063-T6 ALUMINUM                                      |
| 18                        | PRESSURE PLATE                          | 6063-T6 ALUMINUM                                      |
| 19                        | PRESSURE PLATE COVER                    | 6063-T6 ALUMINUM                                      |
| 20                        | DOOR STOP                               | 6063-T6 ALUMINUM                                      |
| 21                        | SHEAR BLOCK                             | 6063-T6 ALUMINUM (PART #450-140)                      |
| 22                        | STRAP ANCHOR                            | 6063-T6 ALUMINUM                                      |
| 23                        | SNAP-IN FILLER                          | 6063-T6 ALUMINUM                                      |
| <b>SEALS AND SEALANTS</b> |   |   |
| 25                        | DOOR BULB WEATHERING                    | ALCRYN  |
| 26                        | SILL TO FLASHING GASKET                 | CCN SPONGE  |
| 27                        | SLIDE IN SPACER                         | SANTOPRENE (PART #127-012)                            |
| 28                        | STANDARD PUSH ON GLAZING GASKET         | EPDM (DUROMETER = 70) (PART #027-074)                 |
| 29                        | SETTING BLOCK                           | EPDM  |
| 30                        | INTERIOR FIXED GLAZING GASKET           | EPDM (DUROMETER = SPONGE) (PART #127-146)             |
| 31                        | EXTERIOR PUSH IN GLAZING GASKET         | EPDM (DUROMETER = 70) (PART #127-147)                 |
| 32                        | GASKET                                  | EPDM (DUROMETER = 70)                                 |
| 33                        | THERMAL SEPARATOR                       | EPDM (DUROMETER = 70)                                 |
| 34                        | SETTING BLOCK                           | EPDM  |
| <b>FASTENERS</b>          |   |   |
| 38                        | NO. 12 X 7/16" S.S. PHTF SCREW          | 1.5" & 4.5" FROM ENDS & 16 1/4" MAX. O.C.             |
| 39                        | NO. 12 X 5/8" S.S. PHTF SCREW           | 4" FROM ENDS (2 ROWS)                                 |
| 40                        | 1/4" X 1" S.S. HWHTF SCREW              | 3" FROM ENDS & MAX. 9" O.C.                           |
| 41                        | NO. 10 X 1/2" S.S. FHTF SCREW           | 3" FROM ENDS & MAX. 18" O.C.                          |
| 42                        | NO. 10 X 1 5/8" S.S. FHTF SCREW         | 1" FROM ENDS; 4 GROUPED AT MID-SPAN; 16" MAX. BETWEEN |
| 43                        | NO. 12 X 1 7/8" FHTF SCREW              | 4 PER SHEAR BLOCK                                     |
| 44                        | NO. 12 X 1" FHTF SCREW                  | 3 PER SHEAR BLOCK                                     |



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|---|----|--|-----|
| DRAWN BY: W.R.M.  |    | CHECKED BY: W.W.S.   |     |
| PLOT: 1=2   |    | DATE: 03/19/13   |     |
| DATE  | BY | REVISION DESCRIPTION   | NO. |
|   |    |  |     |
| DRAWING TITLE: IR500 ALUMINUM STORE FRONT SYSTEM - LARGE MISSILE IMPACT       |    |  |     |
| CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980) |    | JOB INFORMATION: KAWNEER COMPANY, INC. 555 GUTHRIE COURT NORCROSS, GA 30092 770-449-5555 |     |
| CERTIFICATION: MAR 20 2013  |    | WARREN W. SCHAEFER, P.E. P.E. NO. 113497   |     |
| DRAWING NO. 1633T   |    | REV.   |     |
| SHEET NO. 10  |    | OF 10  |     |

| ALLOWABLE SIZE/PRESSURE TABLE |                               |                                |                         |                          |                 |                  |                   |                                  |                           | FRAME ANCHOR REQUIREMENTS TABLE                       |   |               |                    |
|-------------------------------|-------------------------------|--------------------------------|-------------------------|--------------------------|-----------------|------------------|-------------------|----------------------------------|---------------------------|---|---|---------------|--------------------|
| DOOR TYPE                     | MAX. DOOR OPENING WIDTH (IN.) | MAX. DOOR OPENING HEIGHT (IN.) | MAX. D.L.O. WIDTH (IN.) | MAX. D.L.O. HEIGHT (IN.) | LOCK OPTION (3) | GLASS OPTION (1) | MISSILE LEVEL (2) | ALLOWABLE PRESSURE (+/- PSF)     |                           | OPENING TYPE (SUBSTRATE)                              | FRAME & MULLION PLATE TO OPENING FASTENER TYPE                  | MINIMUM EMBED | MINIMUM EDGE DIST. |
|                               |                               |                                |                         |                          |                 |                  |                   | DOORS IN 450, 451 OR 1600 FRAMES | DOORS IN IR500/501 FRAMES |   |   |               |                    |
| DOUBLE                        | 96                            | 96                             | 38 13/16                | 83 13/16                 | 1 OR 2          | 1, 2 OR 5        | D                 | 110                              | 90                        | (2) MIN. 2X6 WOOD FRAME OR BUCK (MIN. GR. 2 & G=0.55) | NO. 14 OR 1/4" GR. 5 COARSE THREAD SCREW OR 1/4" CONCRETE SCREW | 1 1/4"        | 3/4"               |
|                               | 96                            | 96                             | 38 13/16                | 83 13/16                 | 1               | 5                | E                 | 110                              | 90                        |   |   |               |                    |
|                               | 72                            | 108                            | 30 13/16                | 95 3/16                  | 1 OR 2          | 1 OR 2           | D                 | 110                              | 90                        |   |   |               |                    |
|                               | 96                            | 96                             | 38 13/16                | 83 13/16                 | 1 THRU 3        | 1, 2, 3 & 5      | D                 | 70                               | 70                        |   |   |               |                    |
|                               | 72                            | 96                             | 30 13/16                | 83 13/16                 | 1 THRU 3        | 4                | D                 | 60                               | 60                        |   |   |               |                    |
| SINGLE                        | 48                            | 96                             | 38 13/16                | 83 13/16                 | 1 OR 2          | 1, 2 OR 5        | D                 | 110                              | 90                        | (3) MIN. C-90 CONCRETE FILLED BLOCK                   | (1) 1/4" CONCRETE SCREW   | 1 1/2"        | 2 1/2"             |
|                               | 48                            | 96                             | 38 13/16                | 83 13/16                 | 1               | 5                | E                 | 110                              | 90                        |   |   |               |                    |
|                               | 36                            | 108                            | 30 13/16                | 95 3/16                  | 1 OR 2          | 1 OR 2           | D                 | 110                              | 90                        |   |   |               |                    |
|                               | 48                            | 96                             | 38 13/16                | 83 13/16                 | 1 THRU 3        | 1, 2, 3 & 5      | D                 | 70                               | 70                        |   |   |               |                    |
|                               | 36                            | 96                             | 30 13/16                | 83 13/16                 | 1 THRU 3        | 4                | D                 | 60                               | 60                        |   |   |               |                    |

**LOCK OPTIONS:**

- OPTION 1 = ADAMS RITE 1850 3 POINT LOCK AT ACTIVE PANEL (ITEM #57) & ADAMS RITE FLUSHBOLTS AT HEAD AND SILL (ITEM #58) OF INACTIVE PANEL.
- OPTION 2 = KAWNEER 1686 DEADBOLT & PANIC DEVICE (ITEM #59) AT ACTIVE PANEL & KAWNEER 1686 PANIC DEVICE (ITEM #60) AT INACTIVE PANEL.
- OPTION 3 = SCHLAGE DEADBOLT WITH & EITHER FALCON HH 1690 OR VON DUPRIN HH9947 CVR PANIC DEVICE (ITEM #61) AT ACTIVE PANEL & EITHER FALCON HH 1690 OR VON DUPRIN HH9947 CVR PANIC DEVICE (ITEM #62) AT INACTIVE PANEL.

**PRESSURE TABLE FOOTNOTES:**

(1) FOR GLASS OPTIONS SEE GLAZING DETAILS ON SHEET 11.

(2) WHEN MISSILE LEVEL E IS REQUIRED ONLY LOCK OPTION 1 & GLASS OPTION 5 ARE APPLICABLE.

**NOTE:** THESE DOORS ARE NOT APPROVED FOR USE WHERE WATER INFILTRATION RESISTANCE IS REQUIRED BY THE DOOR. UNLESS UNITS ARE INSTALLED IN NON-HABITABLE AREAS WHERE THE UNIT & THE AREA ARE DESIGNED TO ACCEPT WATER INFILTRATION, UNITS SHALL BE INSTALLED ONLY AT LOCATIONS PROTECTED BY A CANOPY OR OVERHANG WHERE-BY THE OVERHANG(OH) RATIO IS EQUAL TO OR MORE THAN.

**GENERAL NOTES:**

- THESE DOOR SYSTEMS HAVE BEEN TESTED, ANALYZED & APPROVED FOR DESIGN PRESSURES NOT TO EXCEED THOSE SHOWN IN THE "ALLOWABLE DESIGN PRESSURE TABLE(S)".
- OPENINGS, BUCKING & BUCKING FASTENERS MUST BE PROPERLY DESIGNED & INSTALLED TO TRANSFER WIND LOADS TO THE STRUCTURE.
- ALL HARDWARE & FASTENERS SHALL BE IN ACCORDANCE WITH THESE DRAWINGS & SHALL NOT VARY UNLESS SPECIFICALLY MENTIONED ON THE DRAWINGS. SPECIFIED ANCHOR EMBED TO BASE MATERIAL SHALL BE BEYOND WALL FINISH OR STUCCO.
- THE DETAILS & SPECIFICATIONS SHOWN HEREIN REPRESENT THE PRODUCTS TESTED & PROPOSED FOR WATER, AIR, IMPACT, CYCLIC & UNIFORM STATIC AIR PRESSURE TESTING IN CONFORMANCE WITH ASTM E330, E283, E1886, E1996 & AMMA 1304 FOR LARGE MISSILE IMPACT DOORS.
- THESE DOOR SYSTEMS HAVE BEEN DESIGNED IN ACCORDANCE WITH AND MEET THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (IBC).
- IMPACT SHUTTERS ARE NOT REQUIRED WITH THESE DOORS.
- ALL ANCHORS SECURING DOOR FRAME TO PRESSURE TREATED BUCKS OR WOOD FRAMING SHALL BE CAPABLE OF RESISTING CORROSION CAUSED BY THE PRESSURE TREATING CHEMICALS IN THE WOOD.
- DETERMINE THE POSITIVE & NEGATIVE DESIGN LOADS TO USE WHEN REFERENCING THESE DOCUMENTS IN ACCORDANCE WITH THE GOVERNING CODE AND GOVERNING WIND VELOCITY. FOR WIND LOAD CALCULATIONS IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE, A DIRECTIONALITY FACTOR OF KD = 0.85 MAY BE APPLIED PER THE ASCE-7 STANDARD.
- NO INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE CERTIFICATION OF THIS PRODUCT. WIND LOAD DURATION FACTOR CD = 1.6 WAS USED FOR WOOD SCREW ANALYSIS ONLY.
- MATERIALS, INCLUDING BUT NOT LIMITED TO STEEL SCREWS, THAT COME INTO CONTACT WITH OTHER DISSIMILAR MATERIALS SHALL BE SEPARATED OR COATED AS REQUIRED TO AVOID CORROSION OF EITHER MATERIAL.
- TO THE BEST OF OUR KNOWLEDGE, THE DOOR SYSTEMS SHOWN HEREIN ARE QUALITY ASSURED BY AN APPROVED CERTIFICATION/QA ENTITY & SHALL BE LABELED IN ACCORDANCE WITH APPLICABLE STANDARDS. THESE DRAWINGS SHOW ALL APPLICABLE ELEVATION, COMBINATION, INSTALLATION & COMPARATIVE ANALYSIS CONDITIONS AS DETERMINED THROUGH TESTING & ENGINEERING RATIONAL ANALYSIS. DOOR ASSEMBLY SHALL BE IN ACCORDANCE WITH THESE DRAWINGS, THE MANUFACTURER'S QUALITY ASSURANCE SPECIFICATIONS & TESTING REPORTS.
- CERTIFICATION OF THESE DOOR SYSTEMS SHALL BE CONSIDERED VOID IF THEY ARE INSTALLED WITHOUT A BUILDING PERMIT FROM THE APPLICABLE LOCAL BUILDING DEPARTMENT OR IF THEY ARE INSTALLED BY ANYONE OTHER THAN A LICENSED CONTRACTOR EXPERIENCED WITH DOOR INSTALLATIONS.

| FRAME ANCHOR REQUIREMENTS TABLE                       |   |               |                    |
|---|---|---------------|--------------------|
| OPENING TYPE (SUBSTRATE)                              | FRAME & MULLION PLATE TO OPENING FASTENER TYPE                  | MINIMUM EMBED | MINIMUM EDGE DIST. |
| FRAME SCREWS  |   |               |                    |
| (2) MIN. 2X6 WOOD FRAME OR BUCK (MIN. GR. 2 & G=0.55) | NO. 14 OR 1/4" GR. 5 COARSE THREAD SCREW OR 1/4" CONCRETE SCREW | 1 1/4"        | 3/4"               |
| MIN. 16 GA. 33 KSI METAL STUD                         | 1/4" GR. 5 SELF TAP/DRILL SCREW                                 | FULL          | 1/2"               |
| MIN. 1/8" THK A36 STEEL                               | 1/4" GR. 5 SELF TAP/DRILL SCREW                                 | FULL          | 1/2"               |
| MIN. 0.100" THK 6063-T5 ALUM.                         | 1/4" GR. 5 SELF TAP/DRILL SCREW                                 | FULL          | 1/2"               |
| (3) MIN. C-90 CONCRETE FILLED BLOCK                   | (1) 1/4" CONCRETE SCREW   | 1 1/2"        | 2 1/2"             |
| MIN. 3000 PSI CONCRETE                                | (1) 1/4" CONCRETE SCREW   | 1 3/4"        | 2 1/2"             |

(1) CONCRETE SCREWS SHALL BE ELCO ULTRACONS (C.S.), ELCO CRETE-FLEX (S.S.), ITW RAMSET/RED HEAD TAPCONS (C.S. OR S.S.) OR HILTI KWIK-CON II (C.S. OR S.S.).

(2) 2X6 BUCKS SHALL BE OF A MINIMUM DEPTH REQUIRED TO MEET ANCHOR EDGE DISTANCE REQUIREMENTS BUT NO LESS THAN 4 1/4".

(3) CONCRETE FILLED BLOCK SUBSTRATE IS NOT APPLICABLE AT HEAD & SILL.

**CORNER CONSTRUCTION:**

**TRIFAB 450 OR 451 FRAME HEAD:** VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #17). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 10 X 1 19/32" PHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 NO. 10 X 9/16" FHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.

**IR500/501 FRAME HEAD:** VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #18). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 12 X 1 7/8" FHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE MULLION WITH 3 NO. 12 X 1" PHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.

**FRAME HEAD WITHIN 1600 SYSTEM 1 CURTAIN WALL:** VERTICAL MEMBERS RUN THROUGH WHILE THE HORIZONTAL MEMBERS ARE SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBERS VIA A SHEAR BLOCK (ITEM #19). THE SHEAR BLOCK IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 4 NO. 10 X 1 19/32" PHTF SCREWS. THE HORIZONTAL FRAME MEMBERS ARE ATTACHED TO THE SHEAR BLOCK WITH 2 NO. 10 X 9/16" FHTF SCREWS. CORNERS ARE SEALED WITH SILICONE SEALANT.

**SILL:** VERTICAL MEMBERS RUN THROUGH WHILE THE THRESHOLD IS SQUARE CUT, BUTTED AND MECHANICALLY FASTENED TO THE VERTICAL MEMBER VIA A PIVOT ASSEMBLY OR CLIP (ITEM #30). THE CLIP IS MECHANICALLY FASTENED TO THE VERTICAL FRAME MEMBER WITH 3 NO. 12-24 X 3/8" FHMS. THE THRESHOLD MEMBER IS ATTACHED TO THE CLIP BLOCK WITH 2 NO. 12-24 X 3/8" FHMS. CORNERS ARE SEALED WITH SILICONE SEALANT.

**DOOR PANEL:** VERTICAL STILES RUN THROUGH AND ARE SECURED TO THE RAILS AT THE TOP & BOTTOM WITH 1/4" THICK EXTRUDED CHANNELS. EACH CHANNEL IS FASTENED TO THE STILE & RAIL WITH 1/4-20 X 3/4" PHMS & 3/16" THICK STEEL NUT PLATES. THE INTERSECTION OF EACH CORNER JOINT WAS WELDED WITH A 1/2" DIA. PLUG WELD AND A 1 1/8" LONG FILLET WELD AT BOTH WEBS OF THE RAIL.

DRAWING TITLE: IR350/500-HW WIND ZONE 4 L.M.I. OUT-SWING DOORS

CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)

7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

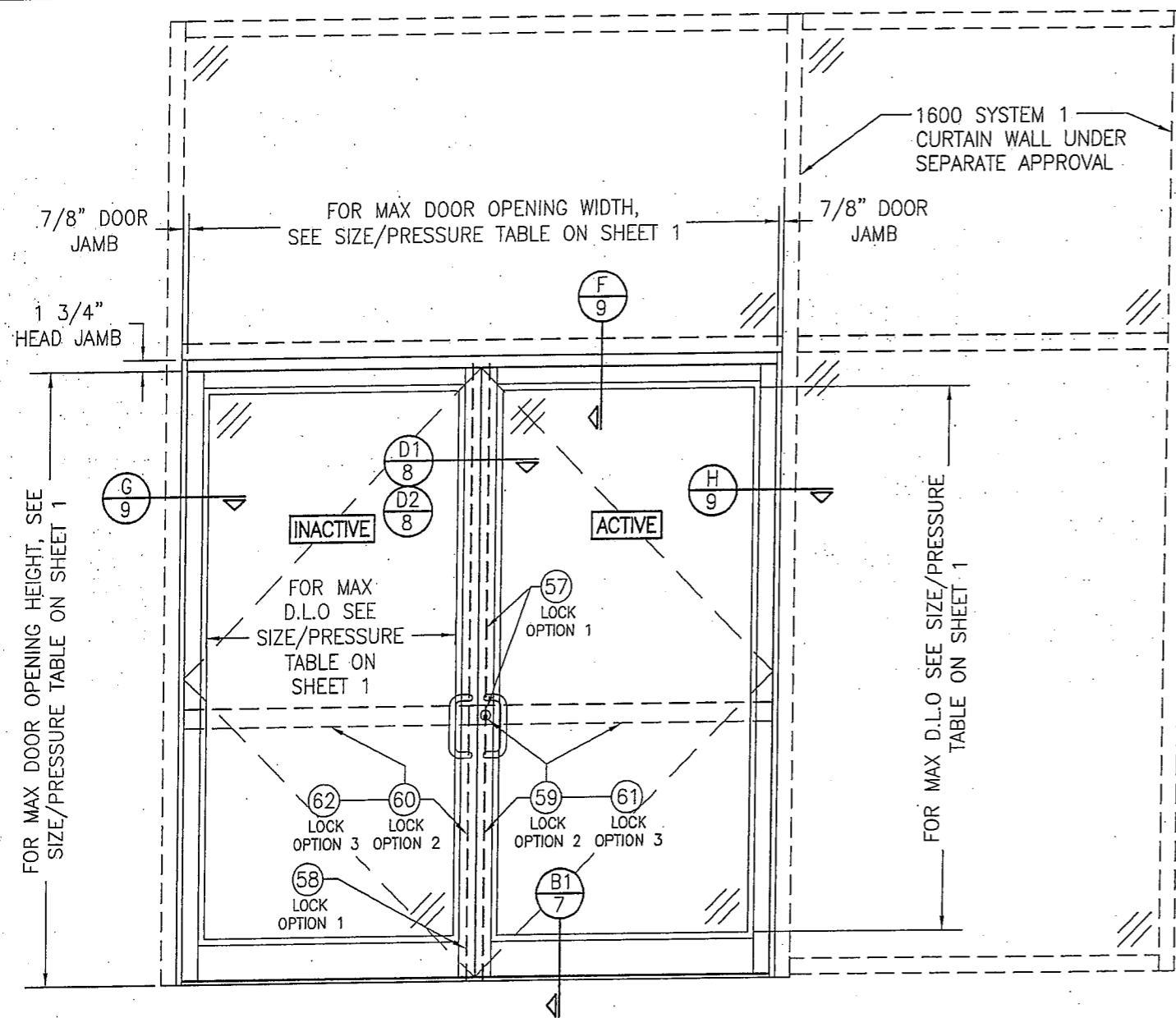
CERTIFICATION: MAR 20 2013

WARREN W. SCHAEFER, P.E.  
P.E. NO. 113497

THESE DRAWINGS ARE APPLICABLE ONLY TO THE PRODUCT SPECIFIED. THEY MAY NOT BE USED FOR THE ASSEMBLY AND/OR INSTALLATION OF ANY OTHER PRODUCT NOR MAY THEY BE USED FOR RATIONAL AND/OR LOCAL APPROVAL OF ANY PRODUCT NOT PRODUCED BY THE MANUFACTURER STATED ON THESE DRAWINGS.

DRAWING NO. 1821T  
SHEET NO. 1 OF 12





**EXTERIOR ELEVATION:**  
**DOUBLE DOOR WITHIN 1600 SYSTEM 1 CURTAIN WALL**

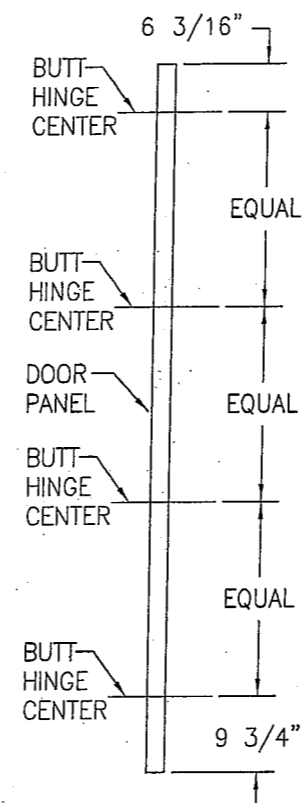
SCALE: 1/2" = 1'-0"

(FOR HINGE REQUIREMENTS, SEE HINGE LOCATION DIAGRAMS ON THIS SHEET.)

**ALLOWABLE DESIGN PRESSURE**  
 SEE SIZE/PRESSURE TABLE ON SHEET 1

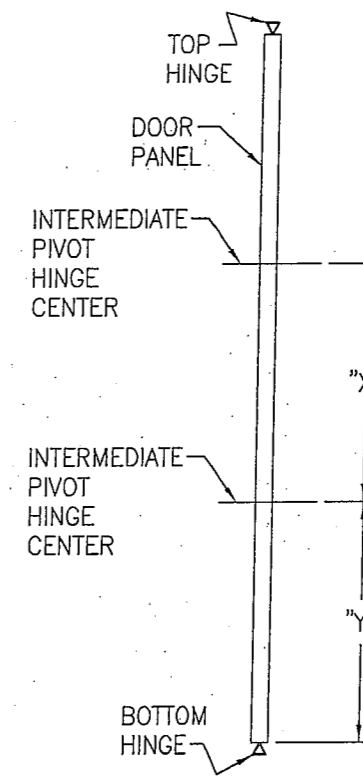
**NOTES:**

1. FOR DOOR INSTALLATION CONDITIONS NOT SHOWN, SEE INSTALLATION ELEVATIONS ON SHEET 4, 5 & 6.
2. DOUBLE DOOR SHOWN, SINGLE DOOR CONDITION ALSO APPLIES.
3. FOR CURTAIN WALL FRAMING REQUIREMENTS, SEE RESPECTIVE CURTAIN WALL APPROVAL.
4. ALTHOUGH DOOR SECTION IS SHOWN AT A SIDE JAMB, THE DOOR MAY BE LOCATED IN ANY BAY OF THE CURTAIN WALL.
5. THE LESSER ALLOWABLE PRESSURE FOR THE DOOR AND THAT FOR THE 1600 WALL SYSTEM SHALL CONTROL AS THE ALLOWABLE PRESSURE ON THE ASSEMBLY.



**BUTT HINGE LOCATION DIAGRAM**

SCALE: 1/2" = 1'-0"



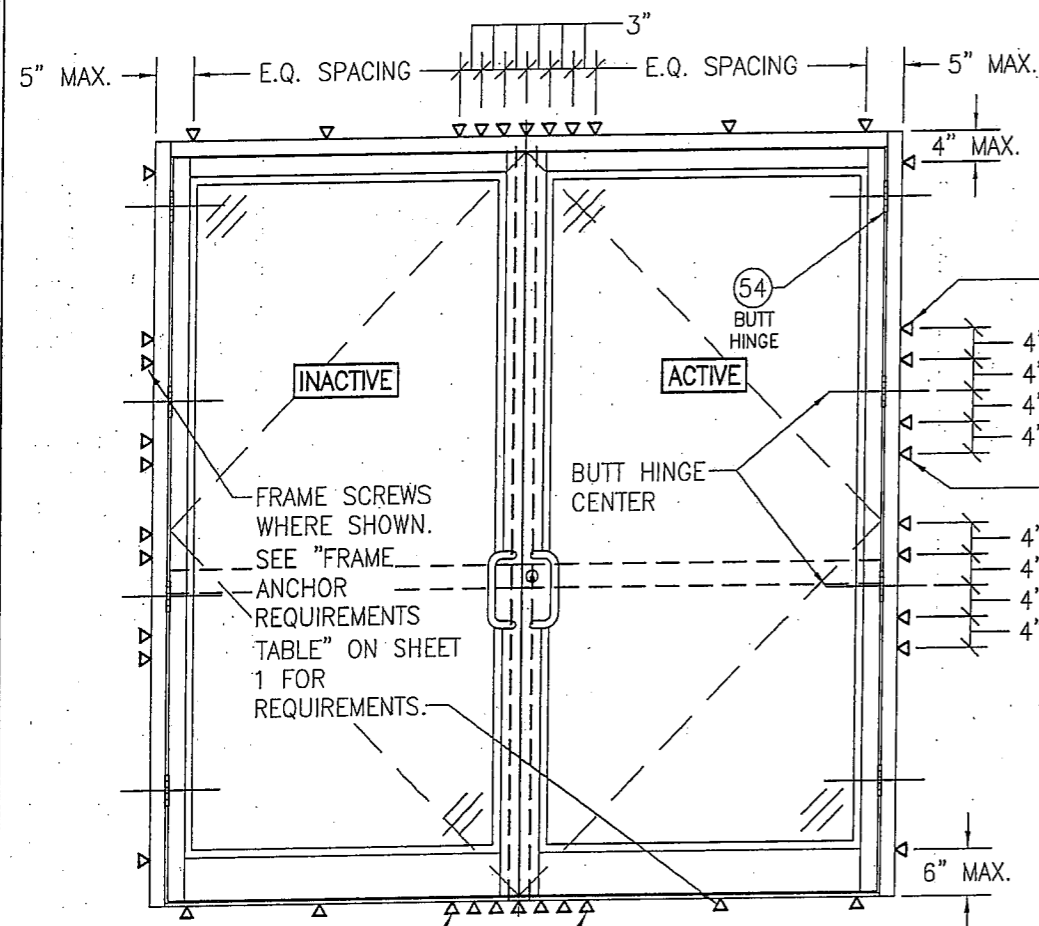
**PIVOT HINGE LOCATION DIAGRAM**

SCALE: 1/2" = 1'-0"

"X" = DOOR OPENING HEIGHT/(NUMBER OF INTERMEDIATE HINGES + 1)

"Y" = "X" - 13/16"

|   |          |  |      |
|---|----------|--|------|
| DRAWN BY:<br>W.R.M.   |          | CHECKED BY:<br>W.W.S.                        |      |
| PLOT:<br>1-24   |          | DATE:<br>03/19/13                            |      |
| NO.   | REVISION | DESCRIPTION                                  | DATE |
|   |          |  |      |
|   |          |  |      |
| DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS<br>CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424<br>JOB INFORMATION: KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |          |  |      |
| CERTIFICATION<br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497   |          | DRAWING NO.<br>1821T<br>SHEET NO.<br>3 OF 12 |      |



NOTE: WHEN JOB  
REQUIRED  
PRESSURE IS  
+/-70 PSF OR  
LESS, THESE  
OUTER MOST  
SCREWS AT EACH  
HINGE LOCATION  
ARE NOT REQUIRED

NOTE: WHEN JOB  
REQUIRED PRESSURE IS  
+/-70 PSF OR LESS,  
SCREW SPACING MAY BE  
INCREASED TO 17\"/>

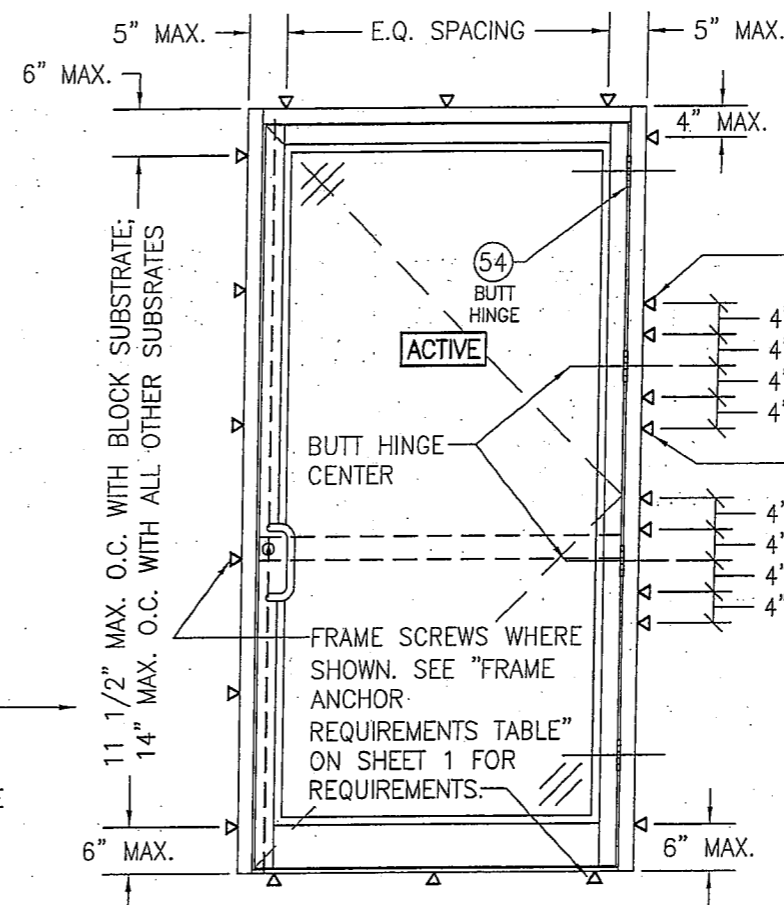
THESE 2 FRAME ANCHORS ARE  
ONLY REQUIRED WHEN DESIGN  
PRESSURE EXCEEDS +/-70  
PSF (TYP. HEAD AND SILL)

**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS  
WITH BUTT HINGES**

SCALE: 1/2" = 1'-0"

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER  
THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED  
WALL OPENING OR CURTAIN WALL SYSTEM OPENING.  
WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR  
500/501 STOREFRONT SYSTEM (NOT A PUNCHED  
OPENING), THE INSTALLATION REQUIREMENTS OF THE  
STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR  
PANELS BEING HINGED AND LOCKED TO THE FRAMING AS  
SHOWN HERE-IN.



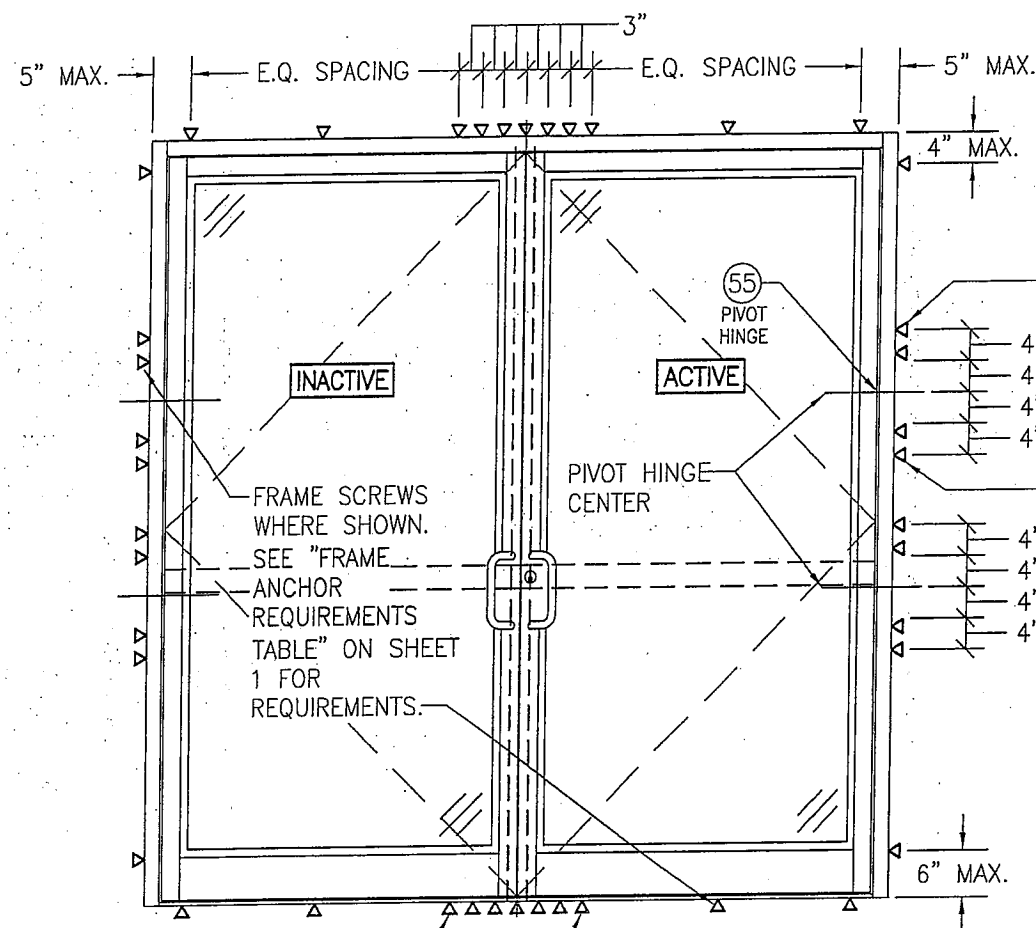
NOTE: WHEN JOB  
REQUIRED  
PRESSURE IS  
+/-70 PSF OR  
LESS, THESE  
OUTER MOST  
SCREWS AT EACH  
HINGE LOCATION  
ARE NOT REQUIRED

**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR SINGLE  
DOORS WITH BUTT HINGES**

SCALE: 1/2" = 1'-0"

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON  
SHEETS 2 & 3)

|  |    |                       |             |
|--|----|-----------------------|-------------|
| DRAWN BY:<br>W.R.M.  |    | CHECKED BY:<br>W.W.S. |             |
| PLOT:<br>1=24  |    | DATE:<br>03/19/13     |             |
| DATE   | BY | REVISION              | DESCRIPTION |
|  |    |                       |             |
| DRAWING TITLE<br>IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS   |    |                       |             |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |    |                       |             |
| JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555   |    |                       |             |
| CERTIFICATION<br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113487  |    |                       |             |
| DRAWING NO.<br>1821T   |    | REV.                  |             |
| SHEET NO.<br>4   |    | OF 12                 |             |



THESE 2 FRAME ANCHORS ARE ONLY REQUIRED WHEN DESIGN PRESSURE EXCEEDS +/-70 PSF (TYP. HEAD AND SILL)

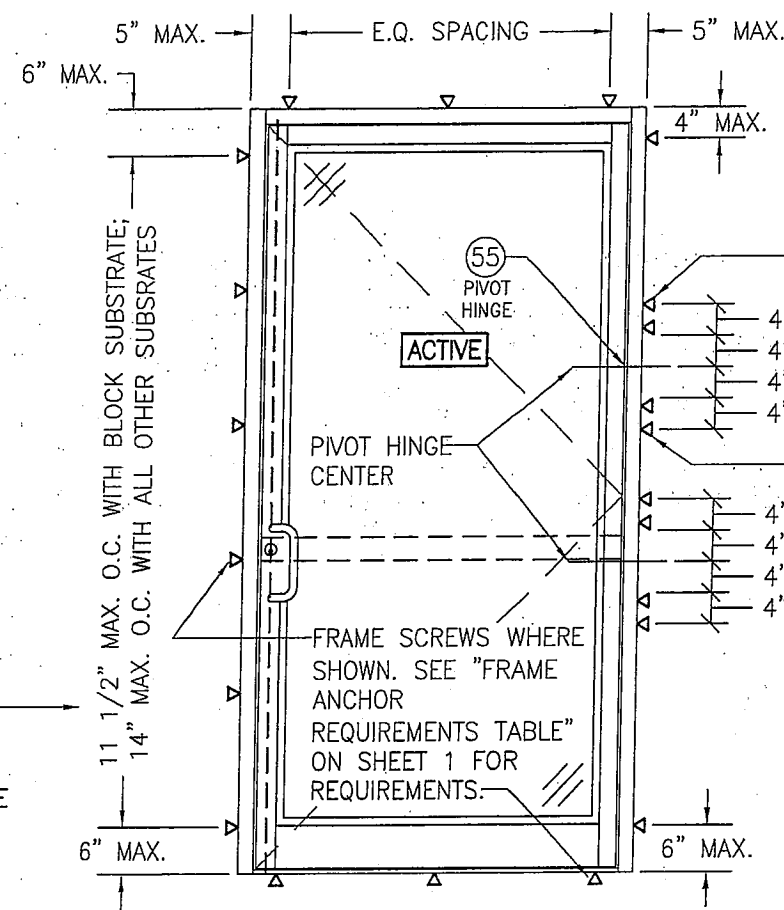
**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS  
WITH PIVOT HINGES**

SCALE: 1/2" = 1'-0"

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, SCREW SPACING MAY BE INCREASED TO 17" O.C. WITH ALL SUBSTRATES



**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR SINGLE  
DOORS WITH PIVOT HINGES**

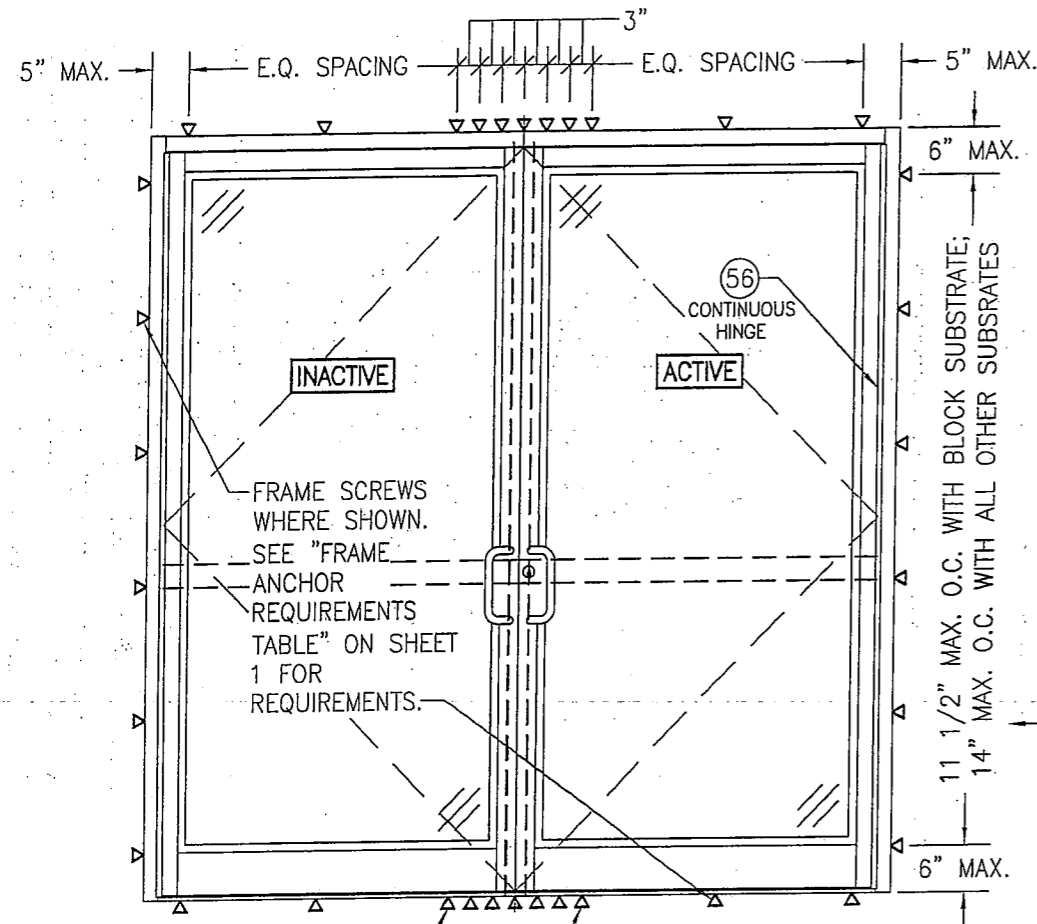
SCALE: 1/2" = 1'-0"

(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, THESE OUTER MOST SCREWS AT EACH HINGE LOCATION ARE NOT REQUIRED

THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED WALL OPENING OR CURTAIN WALL SYSTEM OPENING. WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR 500/501 STOREFRONT SYSTEM (NOT A PUNCHED OPENING), THE INSTALLATION REQUIREMENTS OF THE STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR PANELS BEING HINGED AND LOCKED TO THE FRAMING AS SHOWN HERE-IN.

|  |    |  |     |
|--|----|--|-----|
| DRAWN BY:<br>W.R.M.  |    | CHECKED BY:<br>W.W.S.  |     |
| PLOT:<br>1=24  |    | DATE:<br>03/19/13  |     |
| DATE   | BY | REVISION DESCRIPTION   | NO. |
|  |    |  |     |
| DRAWING TITLE<br>IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS   |    |  |     |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |    | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |     |
| CERTIFICATION<br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |    |  |     |
| DRAWING NO.<br>1821T   |    | REV.   |     |
| SHEET NO.<br>5   |    | OF 12  |     |

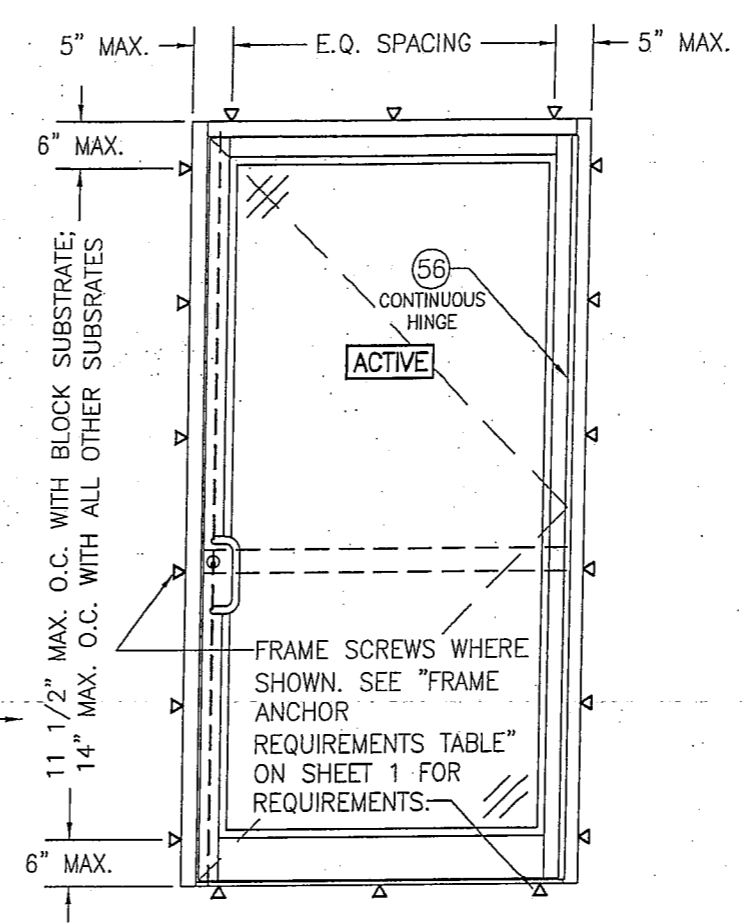


THESE 2 FRAME ANCHORS ARE ONLY REQUIRED WHEN DESIGN PRESSURE EXCEEDS +/-70 PSF (TYP. HEAD AND SILL)

**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR DOUBLE DOORS  
WITH CONTINUOUS HINGES**  
SCALE: 1/2" = 1'-0"  
(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

THE CONDITIONS SHOWN IN THESE ELEVATIONS CONSIDER THE PERIMETER FRAMING TO BE INSTALLED TO A PUNCHED WALL OPENING OR CURTAIN WALL SYSTEM OPENING. WHEN DOOR PANELS ARE INSTALLED INTO A 450, 451 OR 500/501 STOREFRONT SYSTEM (NOT A PUNCHED OPENING), THE INSTALLATION REQUIREMENTS OF THE STORE FRONT APPROVAL SHALL CONTROL WITH THE DOOR PANELS BEING HINGED AND LOCKED TO THE FRAMING AS SHOWN HERE-IN.

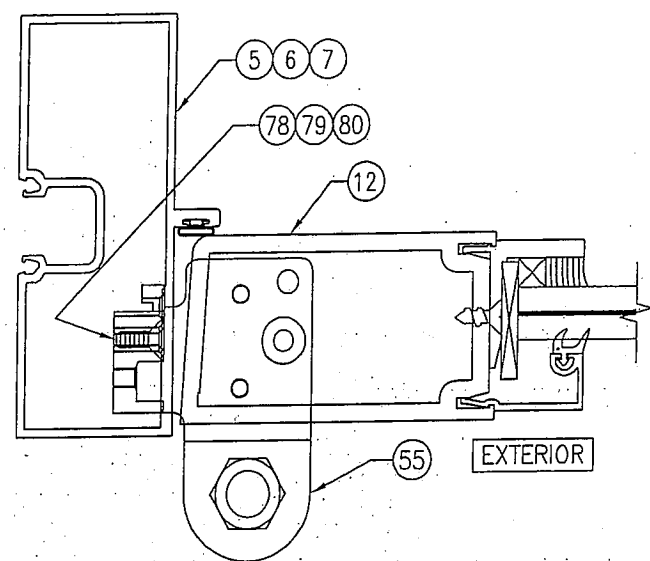
NOTE: WHEN JOB REQUIRED PRESSURE IS +/-70 PSF OR LESS, SCREW SPACING MAY BE INCREASED TO 17" O.C. WITH ALL SUBSTRATES



**EXTERIOR ELEVATION:  
INSTALLATION REQUIREMENTS FOR SINGLE  
DOORS WITH CONTINUOUS HINGE**  
SCALE: 1/2" = 1'-0"  
(FOR DOOR DETAIL NOT SHOWN, SEE ELEVATIONS ON SHEETS 2 & 3)

|   |          |                    |      |
|---|----------|--------------------|------|
| DRAWN BY: W.R.M.  |          | CHECKED BY: W.W.S. |      |
| PLOT: 1=24  |          | DATE: 03/19/13     |      |
| NO.   | REVISION | DESCRIPTION        | DATE |
|   |          |                    |      |
|   |          |                    |      |
|   |          |                    |      |
| DRAWING TITLE: IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS<br>CONSULTANTS: W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424<br>JOB INFORMATION: KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |          |                    |      |
| CERTIFICATION: MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497   |          |                    |      |
| DRAWING NO. 1821T   |          | REV.               |      |
| SHEET NO. 6   |          | OF 12              |      |

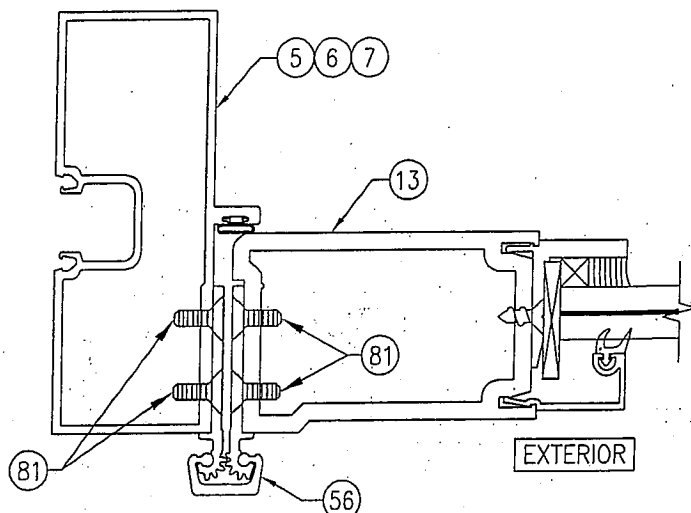




### ALTERNATE HINGE SECTION

(PIVOT HINGE CONDITION)

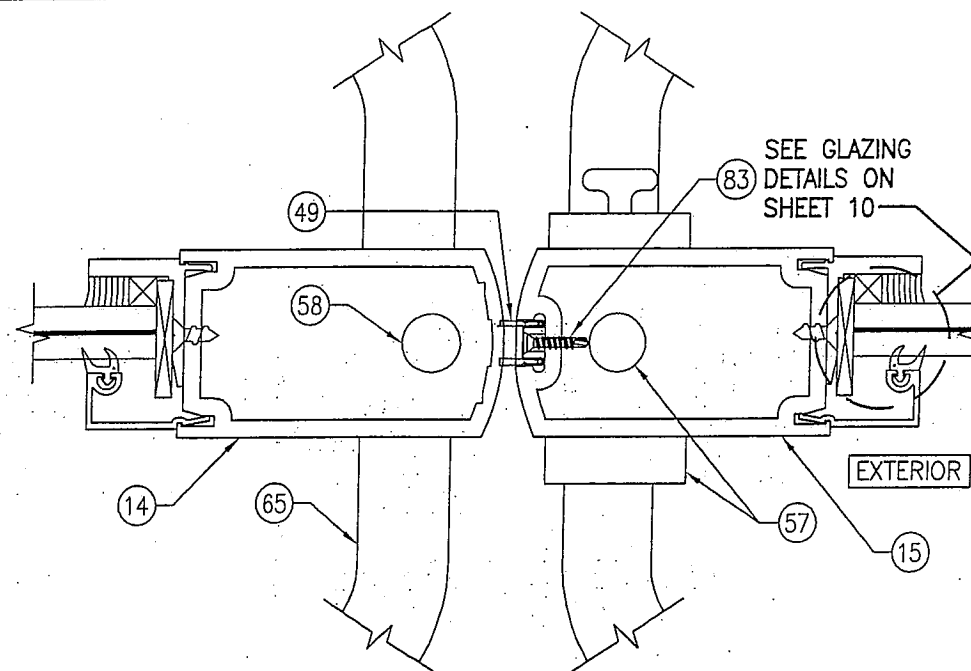
(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION C1/7)



### ALTERNATE HINGE SECTION

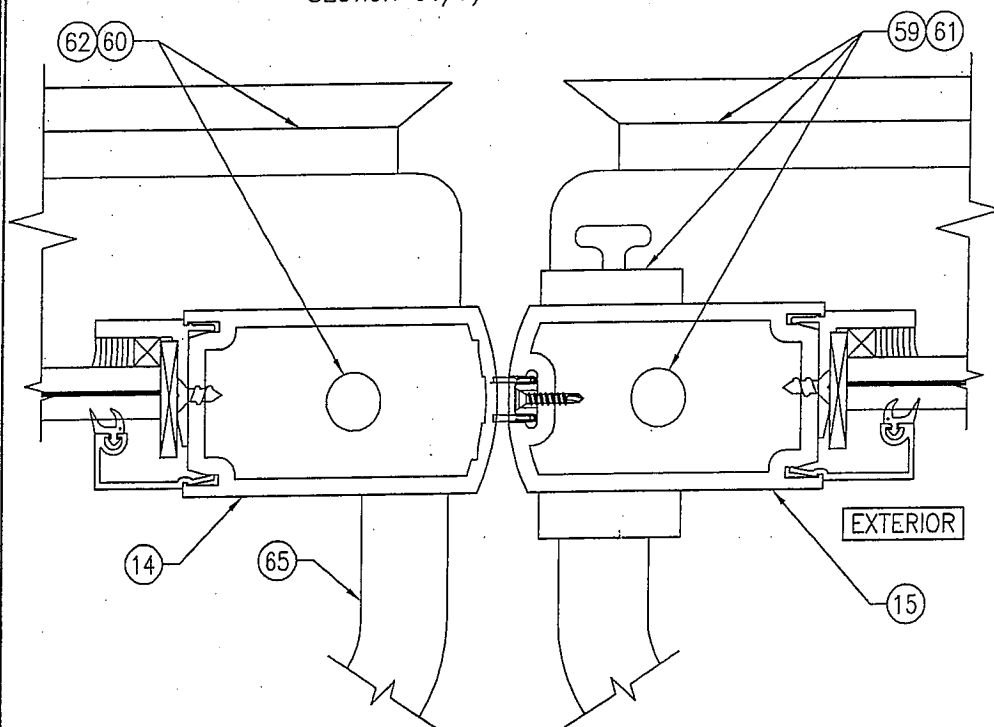
(CONTINUOUS HINGE CONDITION)

(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION C1/7)



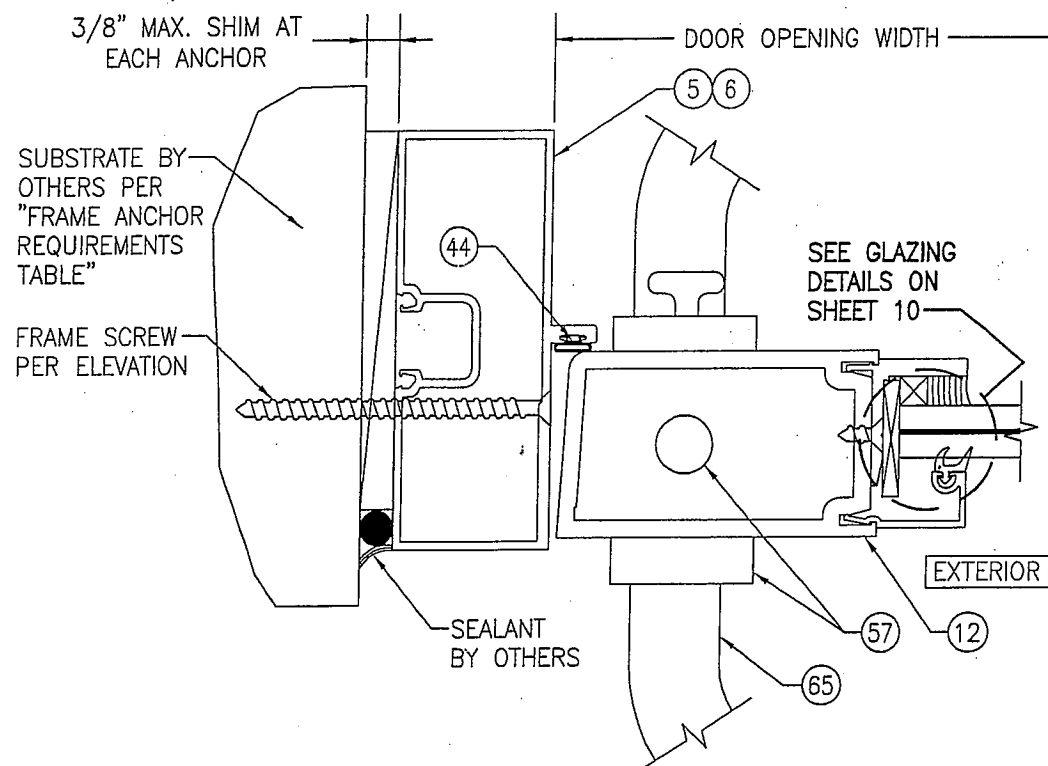
### SECTION

SCALE: 1/2 FULL (D1/8)  
(DOOR WITH LOCK OPTION 1)



### SECTION

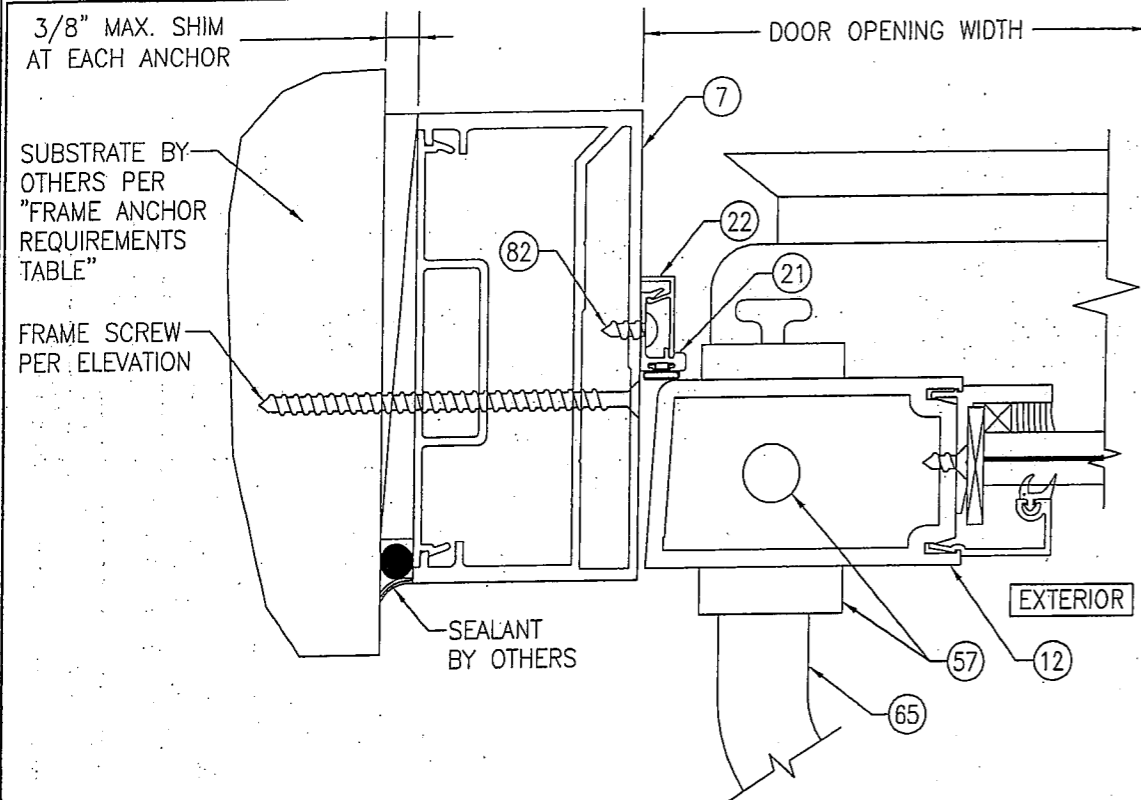
SCALE: 1/2 FULL (D2/8)  
(DOOR WITH LOCK OPTIONS 2 & 3)  
(FOR DETAIL NOT SHOWN, SEE SECTION D1/8)



### SECTION

SCALE: 1/2 FULL (E1/8)  
(DOOR WITH TRIFAB 450 OR 451 FRAME & LOCK OPTION 1. FOR LOCK OPTIONS 2 & 3 SEE ALTERNATE LOCK SECTION ON SHEET 9)

|               |   |       |  |  |  |                       |  |
|---------------|---|-------|--|--|--|-----------------------|--|
| DRAWING TITLE | IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS                               |       |  | DRAWN BY:<br>W.R.M.  |  | CHECKED BY:<br>W.W.S. |  |
|               |   |       |  | PLOT:<br>1=2   |  | DATE:<br>03/19/13     |  |
|               |   |       |  | NO.  |  | REVISION DESCRIPTION  |  |
|               |   |       |  | DATE   |  | BY                    |  |
| CONSULTANTS   | W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)              |       |  | JOB INFORMATION:   |  |                       |  |
|               | 7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |       |  | KAWNEER COMPANY, INC.<br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |  |                       |  |
|               |   |       |  |  |  |                       |  |
|               |   |       |  |  |  |                       |  |
| CERTIFICATION | MAR 20 2013   |       |  | WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |  |                       |  |
|               |   |       |  |  |  |                       |  |
|               |   |       |  |  |  |                       |  |
|               |   |       |  |  |  |                       |  |
| DRAWING NO.   |   | 1821T |  | REV.   |  |                       |  |
| SHEET NO.     |   | 8     |  | OF   |  | 12                    |  |

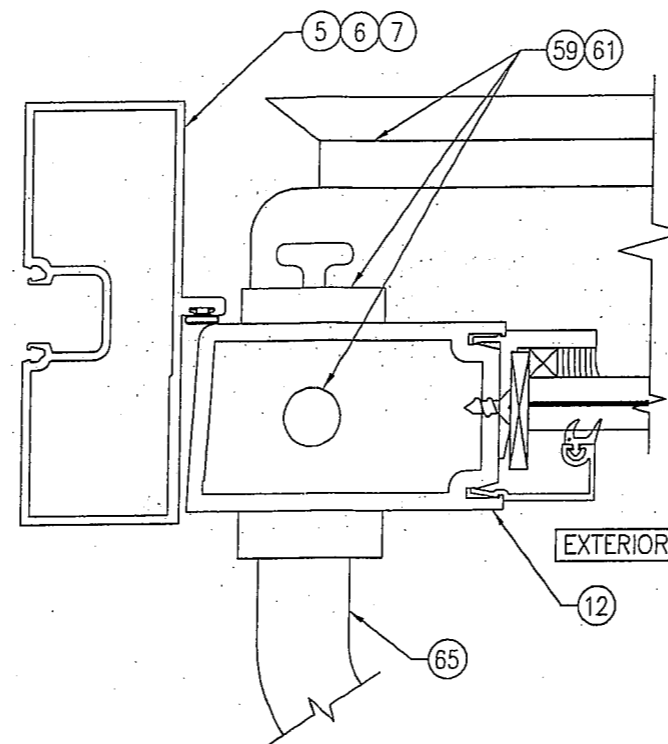


SECTION

$$\frac{E2}{9}$$

SCALE: 1/2 FULL

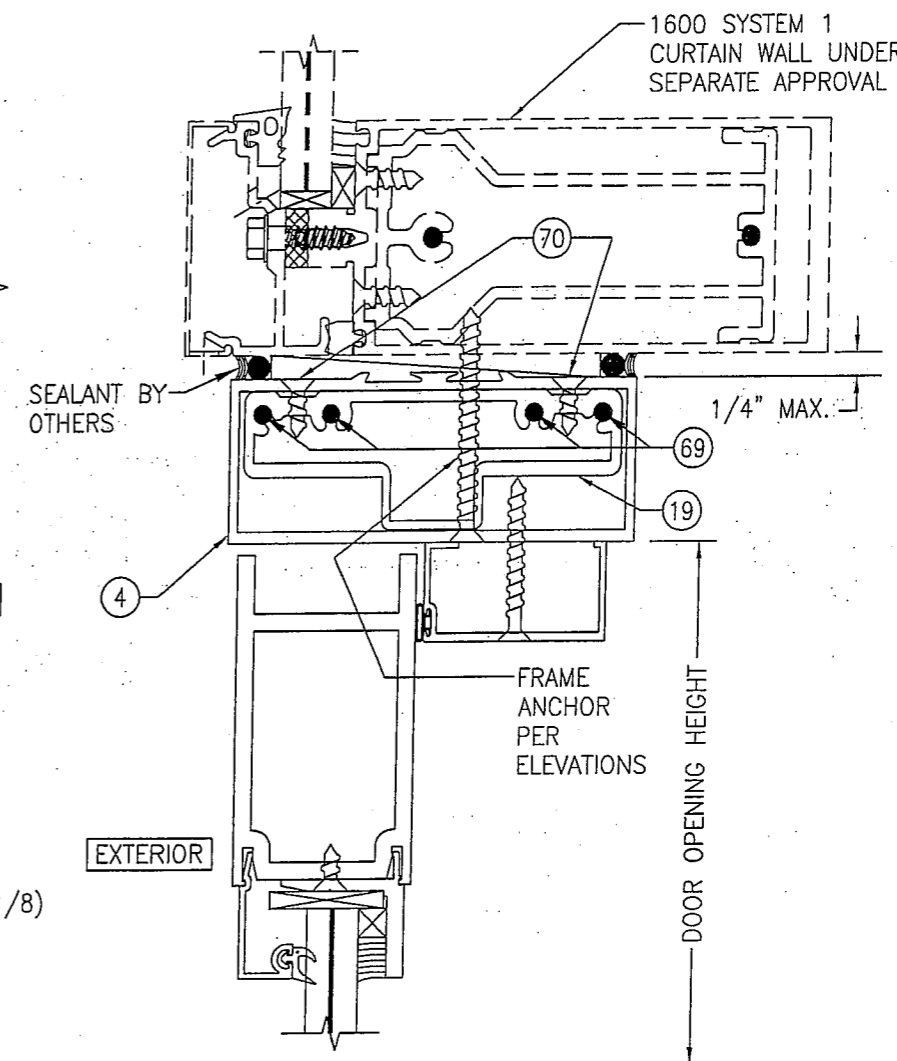
(DOOR WITH IR500/501 FRAME & LOCK OPTION 1. FOR LOCK  
OPTIONS 2 & 3 SEE ALTERNATE LOCK SECTION ON THIS SHEET)  
(FOR DETAIL NOT SHOWN, SEE SECTION E1/8)



ALTERNATE LOCK SECTION

(LOCK OPTIONS 2 & 3)

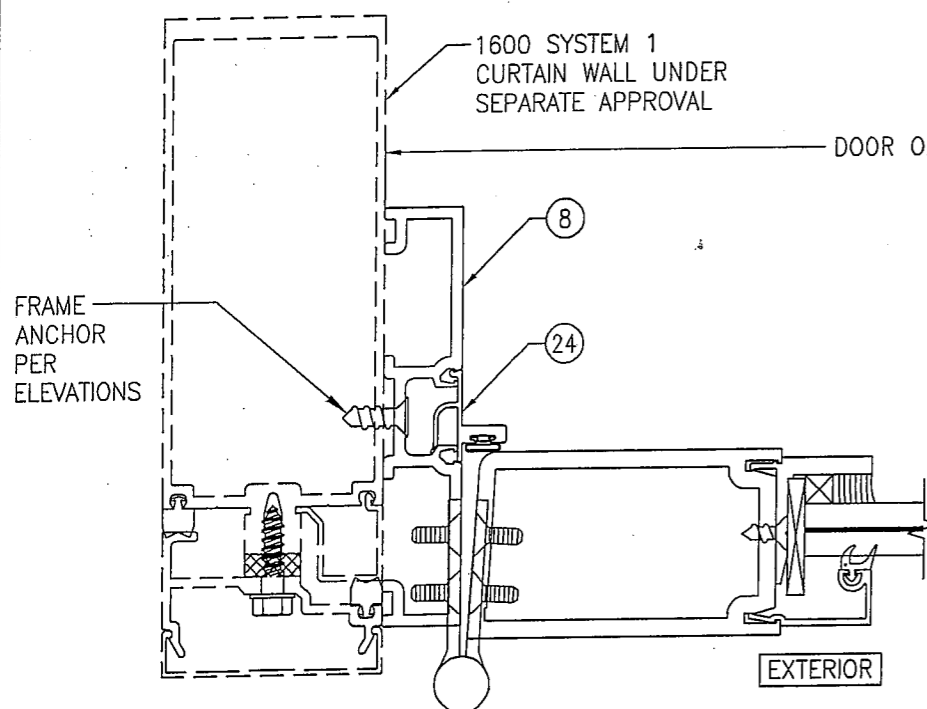
(FOR DETAIL AND INSTALLATION NOT SHOWN, SEE SECTION E1/8)



SECTION

SCALE: 1/2 FULL

(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)

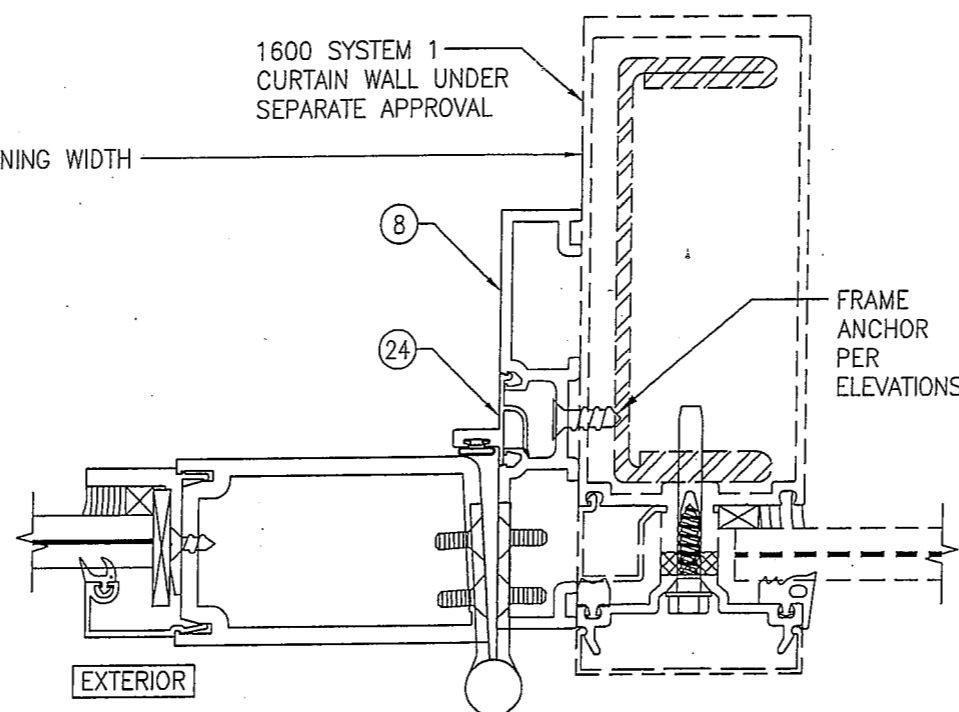


SECTION

$$\frac{6}{9}$$

SCALE: 1/2 FULL

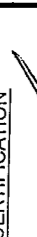
(BUTT HINGE CONDITION SHOWN. PIVOT AND CONTINUOUS HINGE  
CONDITIONS ALSO APPLY)  
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)



SECTION

SCALE: 1/2 FULL

(BUTT HINGE CONDITION SHOWN. PIVOT AND CONTINUOUS HINGE  
CONDITIONS ALSO APPLY)  
(FOR DETAIL NOT SHOWN, SEE OTHER SECTIONS)

|   |      |  |  |                       |  |
|---|------|--|--|-----------------------|--|
| DRAWING NO.<br><b>1821T</b>   | REV. | DRAWN BY:<br>W.R.M.  |  | CHECKED BY:<br>W.W.S. |  |
|   |      | PLOT:<br>1=2   |  | DATE:<br>03/19/13     |  |
| SHEET NO.<br><b>9</b> OF <b>12</b>  |      |  |  |                       |  |
| CERTIFICATION   |      |  |  |                       |  |
| <br><b>MAR 20 2013</b><br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497                  |      | DRAWING TITLE<br><b>IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS</b>  |  |                       |  |
| CONSULTANTS<br><b>W. W. SCHAEFER ENGINEERING &amp; CONSULTING, P.A. (REG. NO. F-14980)</b><br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |      | JOB INFORMATION:<br><b>KAWNEER COMPANY, INC.</b><br><b>555 GUTHRIDGE COURT</b><br><b>NORCROSS, GA 30092</b><br><b>770-449-5555</b> |  |                       |  |
| NO.<br>REVISION DESCRIPTION<br>BY<br>DATE   |      |  |  |                       |  |

GLASS OPTION: (WET GLAZED)  
OPTION 1: 9/16" THICK LAMINATED  
 GLASS (1/4" HT. ST./0.090" DUPONT  
 SG/1/4" HT. ST.)

GLASS OPTIONS: (WET GLAZED)  
OPTION 2: 1" THICK I.G LAMINATED GLASS (1/4"  
 TEMP EXTERIOR; 1/2" AIR SPACE; 1/8" HT.  
 ST./0.090" DUPONT SG/1/8" HT. ST. INTERIOR)  
OPTION 5: 1" THICK I.G LAMINATED GLASS (1/4"  
 TEMP EXTERIOR; 1/4" AIR SPACE; 3/16" HT.  
 ST./0.180" DUPONT SG/3/16" HT. ST. INTERIOR)

(TAPE GLAZED)

GLASS OPTIONS:

OPTION 3 9/16" THICK LAMINATED GLASS (1/4" HT. ST./0.090" DUPONT BUTACITE PVB/1/4" HT. ST.)

GLASS OPTIONS: (TAPE GLAZED)  
OPTION 4: 1" THICK I.G LAMINATED GLASS (1/4"  
 TEMP EXTERIOR; 1/2" AIR SPACE; 1/8" HT.  
 ST./0.090" DUPONT BUTACITE PVB/1/8" HT. ST.  
 INTERIOR)

① TRIFAB 450 HEAD FRAMING

TRIFAB 451 HEAD FRAMING (2)

③ IR500/501 HEAD FRAMING

④ HEAD FRAME WITHIN CURTAIN  
WALL

⑤ TRIFAB 450 JAMB FRAMING

⑥ TRIFAB 451 JAMB FRAMING

⑦ IR500/501 JAMB FRAMING

⑧ DOOR ADAPTOR WITHIN  
CURTAIN WALL SYSTEM

⑨ THRESHOLD

(10) TOP RAIL

(11) BOTTOM RAIL

⑫ JAMB STILE USED WITH BUTT OR PIVOT HINGES

|                              |  |      |  |
|------------------------------|--|------|--|
| DRAWING NO.<br><b>1821T</b>  |  | REV. |  |
| SHEET NO.<br><b>10 OF 12</b> |  |      |  |

**MAR 20 2013**

WARREN W. SCHAEFER, P.E.  
P.E. NO. 113497

CONSULTANTS  
**W. W. SCHAEFER ENGINEERING &  
CONSULTING, P.A. (REG. NO. F-14980)**

7480 150TH COURT NORTH  
PALM BEACH GARDENS, FL 33418  
PHONE: 561-744-3424

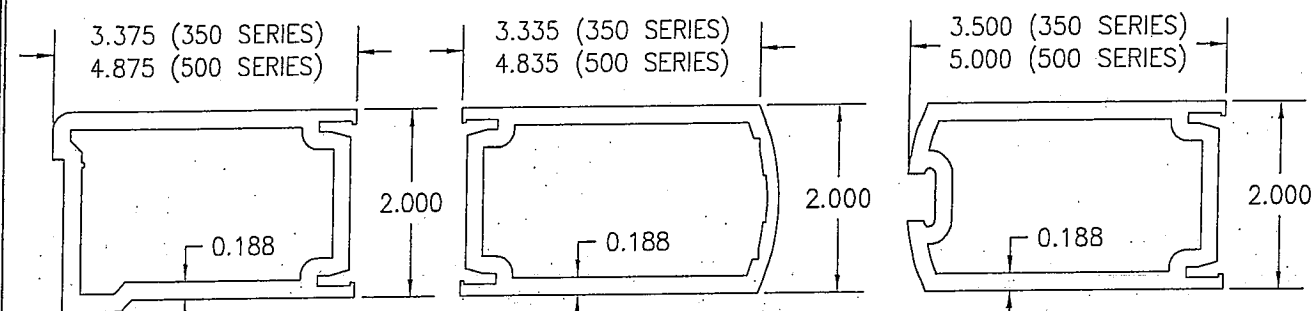
JOB INFORMATION:

**KAWNEER COMPANY, INC.  
555 GUTHRIDGE COURT  
NORCROSS, GA 30092  
770-449-5555**

IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS

| NO. | REVISION DESCRIPTION | BY | DATE |
|-----|----------------------|----|------|
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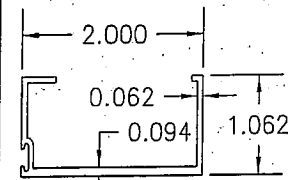
|                     |                       |
|---------------------|-----------------------|
| DRAWN BY:<br>W.R.M. | CHECKED BY:<br>W.W.S. |
| PLOT:<br>1=2        | DATE:<br>03/19/13     |



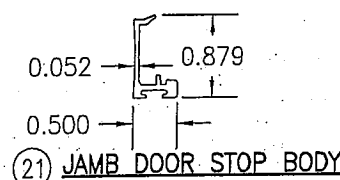
⑬ JAMB STILE USED WITH CONTINUOUS HINGES

⑭ INACTIVE MEETING STILE

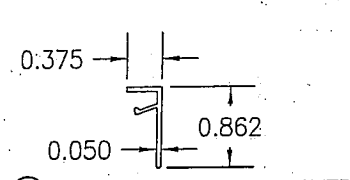
⑮ ACTIVE MEETING STILE



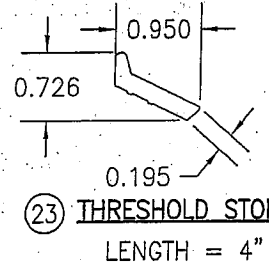
⑳ TOP DOOR STOP



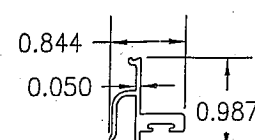
㉑ JAMB DOOR STOP BODY



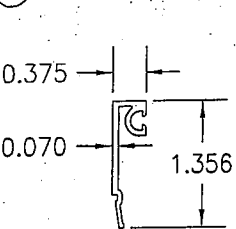
㉒ JAMB DOOR STOP COVER



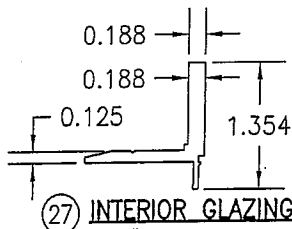
㉓ THRESHOLD STOP



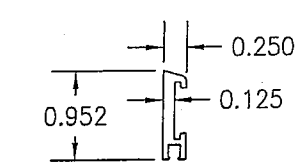
㉔ JAMB DOOR STOP



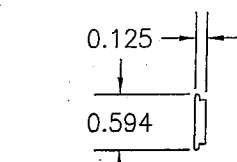
㉔B EXTERIOR I.G. GLAZING BEAD (TAPE GLAZED)



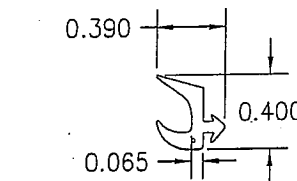
㉕ INTERIOR GLAZING BEAD



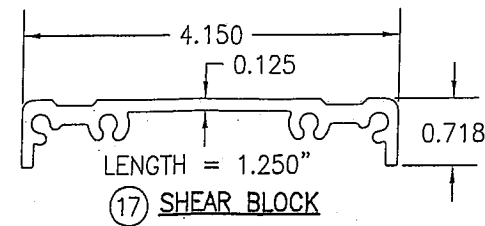
㉖ DOOR BOTTOM WEATHER SWEEP BODY



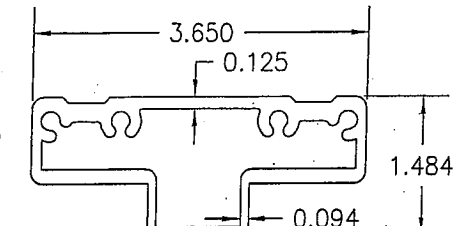
㉗ DOOR BOTTOM WEATHER SWEEP SCREW COVER



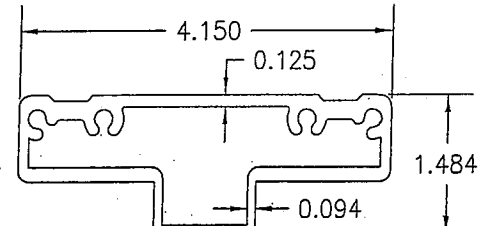
㉘ EXTERIOR GLAZING GASKET



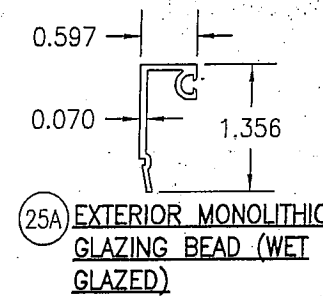
㉙ SHEAR BLOCK



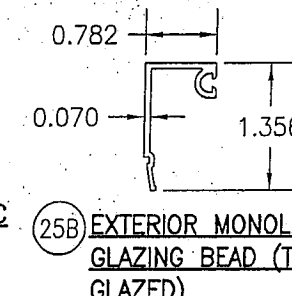
㉚ SHEAR BLOCK



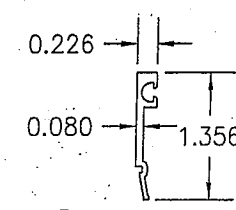
㉛ SHEAR BLOCK



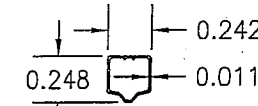
㉜A EXTERIOR MONOLITHIC GLAZING BEAD (WET GLAZED)



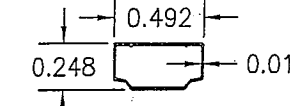
㉜B EXTERIOR MONOLITHIC GLAZING BEAD (TAPE GLAZED)



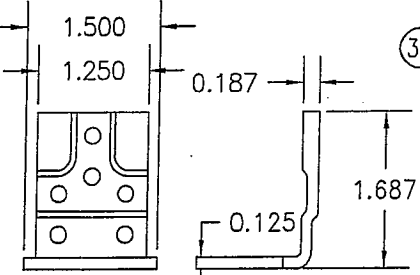
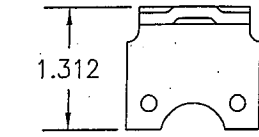
㉜C EXTERIOR I.G. GLAZING BEAD (WET GLAZED)



㉝ 1/4" I.G. GLASS SPACER



㉞ 1/2" I.G. GLASS SPACER



㉟ THRESHOLD CLIP

|  |    |  |     |
|--|----|--|-----|
| DRAWN BY: W.R.M.   |    | CHECKED BY: W.W.S.   |     |
| PLOT: 1=2  |    | DATE: 03/19/13   |     |
| DATE   | BY | REVISION DESCRIPTION   | NO. |
|  |    |  |     |
|  |    |  |     |
|  |    |  |     |
|  |    |  |     |
| DRAWING TITLE<br>IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS   |    | JOB INFORMATION:<br>KAWNEER COMPANY, INC.<br>555 GUTHRIE COURT<br>NORCROSS, GA 30092<br>770-449-5555 |     |
| CONSULTANTS<br>W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |    |  |     |
| CERTIFICATION<br>MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |    |  |     |
| DRAWING NO.<br>1821T   |    | REV.   |     |
| SHEET NO.<br>11 OF 12  |    |  |     |

| ITEM #           |  |  | ITEM DESCRIPTION |  |  | MANUFACTURER/NOTES                           |  |  |
|------------------|--|--|------------------|--|--|--|--|--|
| PARTS            |  |  |                  |  |  |  |  |  |
| 1                | TRIFAB 450 HEAD FRAMING                        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 2                | TRIFAB 451 HEAD FRAMING                        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 3                | IR500/501 HEAD FRAMING                         |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 4                | HEAD FRAME WITHIN CURTAIN WALL SYSTEM          |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 5                | TRIFAB 450 JAMB FRAMING                        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 6                | TRIFAB 451 JAMB FRAMING                        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 7                | IR500/501 JAMB FRAMING                         |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 8                | DOOR ADAPTOR WITHIN CURTAIN WALL SYSTEM        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 9                | THRESHOLD                                      |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 10               | TOP RAIL                                       |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 11               | BOTTOM RAIL                                    |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 12               | JAMB STILE USED WITH BUTT OR PIVOT HINGES      |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 13               | JAMB STILE USED WITH CONTINUOUS HINGES         |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 14               | INACTIVE MEETING STILE                         |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 15               | ACTIVE MEETING STILE                           |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 17               | SHEAR BLOCK                                    |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 18               | SHEAR BLOCK                                    |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 19               | SHEAR BLOCK                                    |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 20               | TOP DOOR STOP                                  |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 21               | JAMB DOOR STOP BODY                            |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 22               | JAMB DOOR STOP COVER                           |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 23               | THRESHOLD STOP                                 |  |                  |  |  | 6063-T6 ALUMINUM (PLACED @ MID-SPAN OF SILL) |  |  |
| 24               | JAMB DOOR STOP                                 |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 25A              | EXTERIOR MONOLITHIC GLAZING BEAD (WET GLAZED)  |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 25B              | EXTERIOR MONOLITHIC GLAZING BEAD (TAPE GLAZED) |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 26A              | EXTERIOR I.G. GLAZING BEAD (WET GLAZED)        |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 26B              | EXTERIOR I.G. GLAZING BEAD (TAPE GLAZED)       |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 27               | INTERIOR GLAZING BEAD                          |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 28               | DOOR BOTTOM WEATHER SWEEP BODY                 |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 29               | DOOR BOTTOM WEATHER SWEEP SCREW COVER          |  |                  |  |  | 6063-T6 ALUMINUM                             |  |  |
| 30               | THRESHOLD CLIP                                 |  |                  |  |  | 1010-1020 H.R. STEEL                         |  |  |
| 37               | 1/4" I.G. GLASS SPACER                         |  |                  |  |  | 3005 OR 3105 ALUMINUM                        |  |  |
| 38               | 1/2" I.G. GLASS SPACER                         |  |                  |  |  | 3005 OR 3105 ALUMINUM                        |  |  |
| SEALS & SEALANTS |  |  |                  |  |  |  |  |  |
| 44               | DOOR BULB WEATHERING                           |  |                  |  |  | ALCRYN DUROMETER 70 +/-5 & RIGID PVC         |  |  |
| 45               | DOOR SWEEP                                     |  |                  |  |  | NEOPRENE                                     |  |  |
| 46               | EXTERIOR GLAZING GASKET                        |  |                  |  |  | TREMCO TR-13536E EPDM DUROMETER 70 +/-5      |  |  |
| 47               | 5/16" X 5/16" GLAZING TAPE                     |  |                  |  |  | POLYURETHANE FAOM DUROMETER 30 +/-5          |  |  |
| 48               | 1/4" X 1/4" GLAZING TAPE                       |  |                  |  |  | POLYURETHANE FAOM DUROMETER 30 +/-5          |  |  |
| 49               | ADJUSTABLE ASTRAGAL WEATHERING                 |  |                  |  |  | 5052-H32 ALUMINUM/NYLON/POLYURETHANE/EPDM    |  |  |
| 50               | 0.090" X 0.875" GLAZING TAPE                   |  |                  |  |  | 3M CONFORMABLE ACRYLIC FOAM                  |  |  |
| HARDWARE         |  |  |                  |  |  |  |  |  |
| 54               | BUTT HINGE                                     |  |                  |  |  | HAGER 037-264                                |  |  |
| 55               | TOP OFFSET PIVOT HINGE                         |  |                  |  |  | KAWNEER NO. 050-322                          |  |  |
|                  | INTERMEDIATE PIVOT HINGE                       |  |                  |  |  | KAWNEER NO. 037-233/037-234                  |  |  |
|                  | BOTTOM OFFSET PIVOT HINGE                      |  |                  |  |  | KAWNEER NO. 050-326/050-327                  |  |  |
| 56               | CONTINUOUS HINGE                               |  |                  |  |  | HAGER/ROTON 050-820                          |  |  |

| ITEM #             |   |  | ITEM DESCRIPTION |  |  | MANUFACTURER/NOTES  |  |  |
|--------------------|---|--|------------------|--|--|---|--|--|
| HARDWARE CONTINUED |   |  |                  |  |  |   |  |  |
| 57                 | ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 1)   |  |                  |  |  | ADAMS-RITE 1850 3-POINT LOCK SYSTEM WITH KAWNEER'S CYLINDER, THUMBTURN & PUSH PACKAGE   |  |  |
| 58                 | INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 1) |  |                  |  |  | ADAMS-RITE FLUSH BLOTS<br>50-079 TOP FLUSH BOLT<br>50-075 BOTTOM FLUSH BOLT   |  |  |
| 59                 | ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 2)   |  |                  |  |  | KAWNEER 1686 PANIC DEVICE SYSTEM WITH KAWNEER'S DEADBOLT (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)  |  |  |
| 60                 | INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 2) |  |                  |  |  | KAWNEER 1686 PANIC DEVICE (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)   |  |  |
| 61                 | ACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 3)   |  |                  |  |  | FALCON HH 1690 OR VON DUPRIN HH9947<br>CONSEALED VERTICAL ROD PANIC DEVICE SYSTEM WITH SCHLAGE'S DEADBOLT (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS) |  |  |
| 62                 | INACTIVE DOOR LOCK ASSEMBLY (LOCK OPTION 3) |  |                  |  |  | FALCON HH 1690 OR VON DUPRIN HH9947<br>CONSEALED VERTICAL ROD PANIC DEVICE SYSTEM (PANIC DEVICE ACTUATES TOP & BOTTOM SHOOTBOLTS)                         |  |  |
| 65                 | PUSH-PULL HANDLE                            |  |                  |  |  | AS REQ'D  |  |  |
| FASTENERS          |   |  |                  |  |  |   |  |  |
| 69                 | NO. 10 X 1 19/32" PHTF SCREW                |  |                  |  |  | 4 PER SHEAR BLOCK   |  |  |
| 70                 | NO. 10 X 9/16" FHTF SCREW                   |  |                  |  |  | 2 PER SHEAR BLOCK   |  |  |
| 71                 | NO. 6 X 3/8" FHTF SCREW                     |  |                  |  |  | WITHIN 2" FROM ENDS & 10" MAX. O.C.   |  |  |
| 74                 | NO. 12 X 1 7/8" FHTF SCREW                  |  |                  |  |  | 4 PER SHEAR BLOCK   |  |  |
| 75                 | NO. 12 X 1" PHTF SCREW                      |  |                  |  |  | 3 PER HORIZONTAL  |  |  |
| 76                 | NO. 8 X 3/8" PHTF SCREW                     |  |                  |  |  | WITHIN 1" FROM ENDS & 16" MAX. O.C.   |  |  |
| 77                 | NO. 12-24 X 9/16" SCREW                     |  |                  |  |  | 8 PER HINGE   |  |  |
| 78                 | 5/16"-18 X 5/8" SCREW                       |  |                  |  |  | 2 PER TOP PIVOT HINGE   |  |  |
| 79                 | NO. 12-24 X 9/16" SCREW                     |  |                  |  |  | 2 PER INTERMEDIATE PIVOT HINGE  |  |  |
| 80                 | 1/4-20 X 3/8" SCREW                         |  |                  |  |  | 3 PER BOTTOM PIVOT HINGE  |  |  |
| 81                 | NO. 12-24 X 13/32" SCREW                    |  |                  |  |  | 2 9/16" FROM ENDS & 5 1/8" MAX. O.C.  |  |  |
| 82                 | NO. 8 X 3/8" FHTF SCREW                     |  |                  |  |  | WITHIN 1" FROM ENDS & 9" MAX. O.C.  |  |  |
| 83                 | NO. 6-18 FHTF SCREW                         |  |                  |  |  | 10 PER LEAF   |  |  |
| 84                 | NO. 10 X 1/2" FHTF SCREW                    |  |                  |  |  | WITHIN 3" FROM ENDS & 11 1/8" MAX. O.C.   |  |  |

Provide info for submitted system and stamp of Louisiana engineer  
JHC 02/06/2017

STATE OF TEXAS  
WARREN W. SCHAEFER  
113497  
LICENSED PROFESSIONAL ENGINEER

|               |  |   |  |
|---------------|--|---|--|
| DRAWING TITLE |  | IR350/500 HW WIND ZONE 4 L.M.I. OUT-SWING DOORS   |  |
| CONSULTANTS   |  | KAWNEER COMPANY, INC.<br>555 GUTHRIDGE COURT<br>NORCROSS, GA 30092<br>770-449-5555  |  |
| CONSULTANTS   |  | W. W. SCHAEFER ENGINEERING & CONSULTING, P.A. (REG. NO. F-14980)<br>7480 150TH COURT NORTH<br>PALM BEACH GARDENS, FL 33418<br>PHONE: 561-744-3424 |  |
| CERTIFICATION |  | MAR 20 2013<br>WARREN W. SCHAEFER, P.E.<br>P.E. NO. 113497  |  |
| DRAWING NO.   |  | REV.  |  |
| 1821T         |  |   |  |
| SHEET NO.     |  |   |  |
| 12            |  | OF 12   |  |

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GLASS PERFORMANCE DATA FOLLOWS



STAR GLASS INC.  
1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:  


PROJECT NUMBER:  
\*\*

DRAWN BY:  
P.S.

SHEET

000

**Aura at College Park**  
Toronto, ON  
Architect: Graziani + Corazza

spandrel glass



**Oldcastle BuildingEnvelope®**

*Engineering your creativity™*

Offered monolithically, in insulating glass units or as laminated glass, spandrel glass is typically specified for a building's non-vision areas to mask construction materials. New, and even retrofit buildings, can be constructed entirely of glass by using a combination of vision and spandrel glass. Typical color samples are shown below. Black is also available, as well as an array of standard and custom colors.



Due to the limitations of the printing process, colors above may vary. Consult factory for actual color samples.

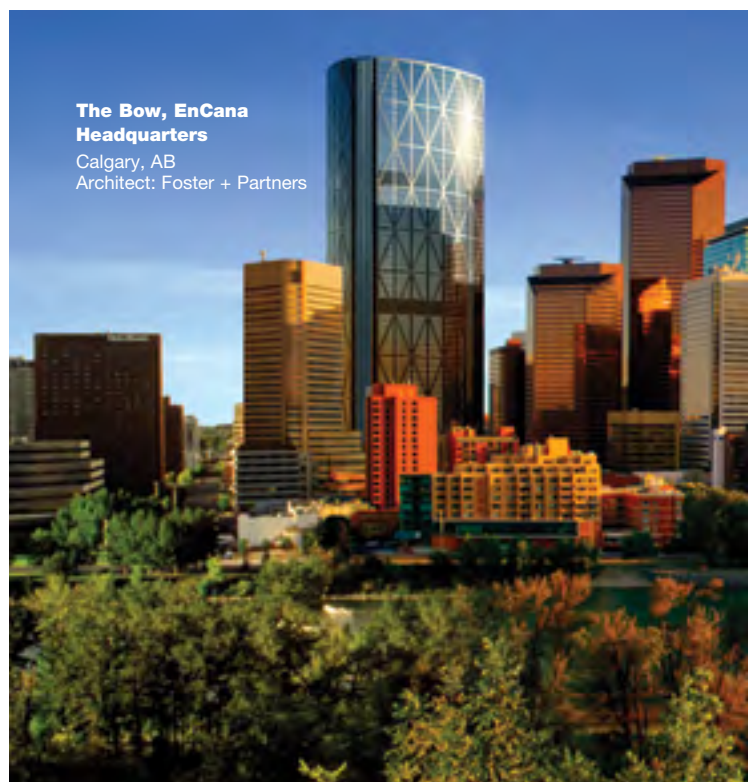
Provide samples for selection  
JHC 02/06/2017

### Spandrel Applications

**Spandrel glass applications range from functional to decorative:\***

- Masking structural components while maintaining a consistent glass look
- Custom Color Applications
- Non-vision Areas
- Curtain Walls
- Storefronts
- Wall Cladding

\* Spandrel glass is not intended for use in vision applications.



**The Bow, EnCana  
Headquarters**  
Calgary, AB  
Architect: Foster + Partners



**Oldcastle BuildingEnvelope®**

2425 Olympic Boulevard ▪ Suite 525-East ▪ Santa Monica, CA 90404  
1-866-OLDCASTLE (653-2278) ▪ oldcastlebe.com

Note to Specifiers:

The specifications below are suggested as desirable inclusions in glass and glazing specifications (section 08 81 00), but are not intended to be complete. An appropriate and qualified Architect or Engineer must verify suitability of a particular product for use in a particular application as well as review final specifications. Oldcastle BuildingEnvelope® assumes no responsibility or liability for the information included or not included in these specifications.

PRODUCTS

|                           |  |
|---------------------------|--|
| Approved Glass Fabricator | Oldcastle BuildingEnvelope®  |
| Glass Description         | FLOAT GLASS  |
|                           | 1. USA - Annealed float glass shall comply with ASTM C1036, Type I, Class 1 (clear), Class 2 (tinted), Quality-Q3. Canada - Annealed float glass shall comply with CAN/CGSB-12.3-M, Quality-Glazing.   |
|                           | 2. USA- Heat-strengthened float glass shall comply with ASTM C1048, Type I, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind HS. Canada - Heat-strengthened float glass shall comply with CAN/CGSB-12.9-M, Type 2-Heat-Strengthened Glass, Class A-Float Glass. |
|                           | 3. USA - Tempered float glass shall comply with ASTM C1048, Type I, Class 1 (clear), Class 2 (tinted), Quality Q3, Kind FT. Canada - Tempered float glass shall comply with CAN/CGSB-12.1-M, Type 2-Tempered Glass, Class B-Float Glass.                           |
|                           | 4. USA - Laminated glass to comply with ASTM C1172. Canada - Laminated glass to comply with CAN/CGSB-12.1-M, Type 1-Laminated Glass, Class B-Float Glass.  |
|                           | 5. Glass shall be annealed, heat-strengthened or tempered as required by codes, or as required to meet thermal stress and wind loads.  |

|                                       |   |
|---------------------------------------|---|
| Monolithic Laminated Glass (Vertical) | GENERAL   |
|                                       | 1. Laminated glass products to be fabricated in autoclave with heat, plus pressure, free of foreign substances and air pockets. |
|                                       | 2. Interlayer material: Extruded sheet interlayer.  |

LAMINATED VISION LITE PERFORMANCE CHARACTERISTICS

|   |      |                                      |     |
|---|------|--------------------------------------|-----|
| 1. Laminated Lite   |      |                                      |     |
| 19/32" Laminate - 1/4" Clear - 0.030" Vanceva® Arctic Snow (2165) PVB - 0.060" Clear PVB - 1/4" Clear |      |                                      |     |
| 2. Performance Characteristics  |      |                                      |     |
| Thermal   |      | Optical                              |     |
| Winter U-factor/U-value:  | 0.93 | Visible Light Transmittance:         | 62% |
| Summer U-factor/U-value:  | 0.85 | Visible Light Reflectance (outside): | 7%  |
| Solar Heat Gain Coefficient:  | 0.60 | Visible Light Reflectance (inside):  | 7%  |
| Shading Coefficient:  | 0.69 | Total Solar Transmittance:           | 44% |
| Relative Heat Gain (Btu/hr-ft²):  | 150  | Total Solar Reflectance (outside):   | 5%  |
| Light to Solar Gain:  | 1.03 | Ultraviolet Transmittance:           | <1% |

Contact Oldcastle BuildingEnvelope® at 866-Oldcastle (653-2278) for samples or additional information concerning performance, strength, deflection, thermal stress or application guidelines. GlasSelect® calculates center of glass performance data using the Lawrence Berkeley National Laboratory (LBNL) Window 6.3 program (version 6.3.74.0) with Environmental Conditions set at NFRC 100-2010. Gas Library ID#1 (Air) is used for Insulating Glass units with air. Gas Library ID#9 (10% Air/90% Argon) is used for Insulating Glass units with argon. Monolithic glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 44.0; 2. Vendor supplied spectral data files. Laminated glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 44.0; 2. LBNL Optics 6 (version 6.0 Maintenance Pack 1); 3. Vendor supplied spectral data files; 4. Vendor supplied data. 5. Based on vendor testing, clear acid-etched glass performance data is estimated using regular clear glass of equivalent thickness. Thermal values are in Imperial units.

Provide samples for selection  
JHC 02/06/2017

Note to Specifiers:

The specifications below are suggested as desirable inclusions in glass and glazing specifications (section 08 81 00), but are not intended to be complete. An appropriate and qualified Architect or Engineer must verify suitability of a particular product for use in a particular application as well as review final specifications. Oldcastle BuildingEnvelope® assumes no responsibility or liability for the information included or not included in these specifications.

PRODUCTS

|                           |  |
|---------------------------|--|
| Approved Glass Fabricator | Oldcastle BuildingEnvelope®  |
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|                           | 4. USA - Laminated glass to comply with ASTM C1172. Canada - Laminated glass to comply with CAN/CGSB-12.1-M, Type 1-Laminated Glass, Class B-Float Glass.  |
|                           | 5. Glass shall be annealed, heat-strengthened or tempered as required by codes, or as required to meet thermal stress and wind loads.  |

|                                       |   |
|---------------------------------------|---|
| Monolithic Laminated Glass (Vertical) | GENERAL   |
|                                       | 1. Laminated glass products to be fabricated in autoclave with heat, plus pressure, free of foreign substances and air pockets. |
|                                       | 2. Interlayer material: Extruded sheet interlayer.  |

LAMINATED VISION LITE PERFORMANCE CHARACTERISTICS

|  |      |                                      |     |
|--|------|--------------------------------------|-----|
| 1. Laminated Lite  |      |                                      |     |
| 19/32" Laminate - 1/4" Clear - 0.090" Clear PVB - 1/4" Clear |      |                                      |     |
| 2. Performance Characteristics                               |      |                                      |     |
| Thermal  |      | Optical                              |     |
| Winter U-factor/U-value:                                     | 0.92 | Visible Light Transmittance:         | 86% |
| Summer U-factor/U-value:                                     | 0.84 | Visible Light Reflectance (outside): | 8%  |
| Solar Heat Gain Coefficient:                                 | 0.73 | Visible Light Reflectance (inside):  | 8%  |
| Shading Coefficient:   | 0.84 | Total Solar Transmittance:           | 64% |
| Relative Heat Gain (Btu/hr-ft²):                             | 181  | Total Solar Reflectance (outside):   | 6%  |
| Light to Solar Gain:   | 1.18 | Ultraviolet Transmittance:           | <1% |

Contact Oldcastle BuildingEnvelope® at 866-Oldcastle (653-2278) for samples or additional information concerning performance, strength, deflection, thermal stress or application guidelines. GlasSelect® calculates center of glass performance data using the Lawrence Berkeley National Laboratory (LBNL) Window 6.3 program (version 6.3.74.0) with Environmental Conditions set at NFRC 100-2010. Gas Library ID#1 (Air) is used for Insulating Glass units with air. Gas Library ID#9 (10% Air/90% Argon) is used for Insulating Glass units with argon. Monolithic glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 44.0; 2. Vendor supplied spectral data files. Laminated glass data is from the following sources: 1. LBNL International Glazing Database (IGDB) version 44.0; 2. LBNL Optics 6 (version 6.0 Maintenance Pack 1); 3. Vendor supplied spectral data files; 4. Vendor supplied data. 5. Based on vendor testing, clear acid-etched glass performance data is estimated using regular clear glass of equivalent thickness. Thermal values are in Imperial units.

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GLASS PERFORMANCE DATA FOLLOWS




STAR GLASS INC.

1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:  


PROJECT NUMBER:  
\*\*

DRAWN BY:  
P.S.

SHEET  
000

# MAPES-R™

Summit Building in St. Joseph, Missouri



## THE "GREEN" SOLUTION FOR GLAZING APPLICATIONS

With insulation values up to  $R=27.9$ , Mapes-R panels offer a wide variety of solutions to improve the thermal efficiency of window, spandrel, curtain wall and glazing applications. Mapes-R panels can be manufactured to match any architectural finish including Kynar, anodized, porcelain, and baked enamel. In addition to thermal improvement, Mapes-R panels can meet local building codes for sound, fire and impact resistance.

## APPLICATIONS

- Passive Solar Control
- Window Replacement
- Metal Spandrel Panel
- Insulated Spandrel Glass
- Curtain Wall
- Transoms
- Door Sidelights

## FEATURES

- High Thermal Values—  
R up to 27.9
- Increased Energy  
Efficiency
- More Design Options  
(vs. Glass)
  - Impact Resistant
  - Fire Resistant
  - Graffiti Proof
- 25 Year Lamination  
Warranty
- Lower Heating/  
Cooling Costs
- Custom Colors



For more details, please visit [mapespanels.com](http://mapespanels.com)

# MAPES-R™

## TECHNICAL DATA

### LEED CONTRIBUTIONS

#### Energy & Atmosphere

1-10 points-Two {2} points mandatory

#### EA Credit 1.1 Optimize Energy Performance

Achieving increasing levels of energy performance above the prerequisite standard to reduce environmental impacts associated with excessive energy use.

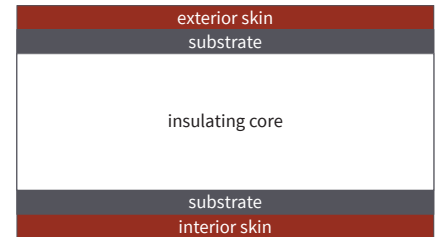
#### Indoor Environmental Quality

One {1} Point

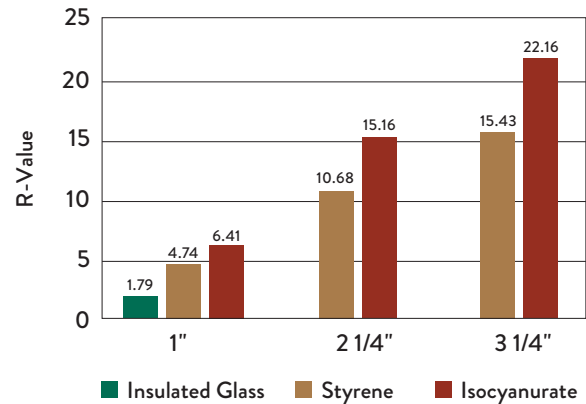
#### EQ Credit Thermal Comfort, Design

Provide for a comfortable thermal environment that supports the productivity and well-being of the building occupants

### TYPICAL CROSS SECTION



### MAPES PANELS VS. INSULATED GLASS



### SELECTION GUIDE

| SKINS                       | THICKNESS     | TEXTURE |        | STANDARD COLORS | CUSTOM COLORS | AVAILABLE WIDTHS |     | FINISH WARRANTY |
|-----------------------------|---------------|---------|--------|-----------------|---------------|------------------|-----|-----------------|
|                             |               | EMBOSS  | SMOOTH |                 |               | 48"              | 60" |                 |
| Porcelain on Steel          | 0.014         |         | •      | 8               | •             | •                | •   | 20              |
| Standard .032 Kynar         | 0.032         | •       | •      | 18              |               | •                |     | 20              |
| Custom Kynar                | 0.036 - 0.125 | •       | •      |                 | •             | •                | •   | 10              |
| Spandrel Glass              | 0.25          |         | •      | 8               | •             | •                | •   | 5               |
| Colorlume E                 | 0.012         | •       |        | 6               |               | •                | •   | 5               |
| Colorlume S                 | 0.022         |         | •      | 2               |               | •                | •   | 5               |
| .025 Clear Anodized (Coil)  | 0.025         |         | •      | 1               |               | •                |     | N/A             |
| .025 Bronze Anodized (Coil) | 0.025         |         | •      | 1               |               | •                |     | N/A             |
| Class 1 Anodized            | 0.036 - 0.125 | •       | •      |                 | •             | •                | •   |                 |

#### SUBSTRATES

#### LAMINATION WARRANTY

|                     |               |                        |  |   |   |    |
|---------------------|---------------|------------------------|--|---|---|----|
| 1/8" Hardboard      | 0.125         | MOST ECONOMICAL        |  | • | • | 25 |
| 3/16" Hardboard     | 0.187         | MOST ECONOMICAL        |  | • | • | 25 |
| 1/2" Gypsum         | 0.5           | FIRE RESISTANT         |  | • |   | 25 |
| Cement Board        | 4mm           | WATER/IMPACT RESISTANT |  | • |   | 25 |
| Corelite (H.D.P.E.) | 4mm           | WATER RESISTANT        |  | • | • | 10 |
| Solid Plastic (SPS) | 0.125 & 0.187 | WATER/IMPACT RESISTANT |  | • | • | 5  |

#### CORES

|                        |  |  |  |  |  |  |
|------------------------|--|--|--|--|--|--|
| 2# Density Polystyrene | most cost effective per R-Value (4.74 - 20.31 R-Value) |  |  |  |  |  |
| Isocyanurate           | most insulation per inch (6.41 - 27.79 R-Value)        |  |  |  |  |  |
| Micore                 | Class A Fire Rated (3.05 - 15.50 R-Value)              |  |  |  |  |  |

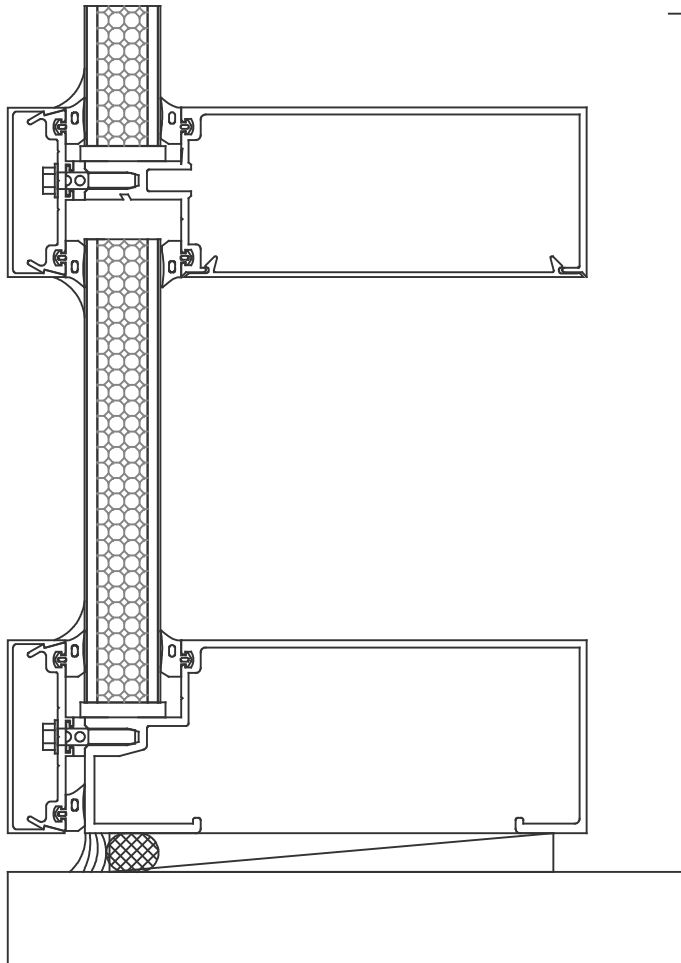


**mapes**  
ARCHITECTURAL PANELS

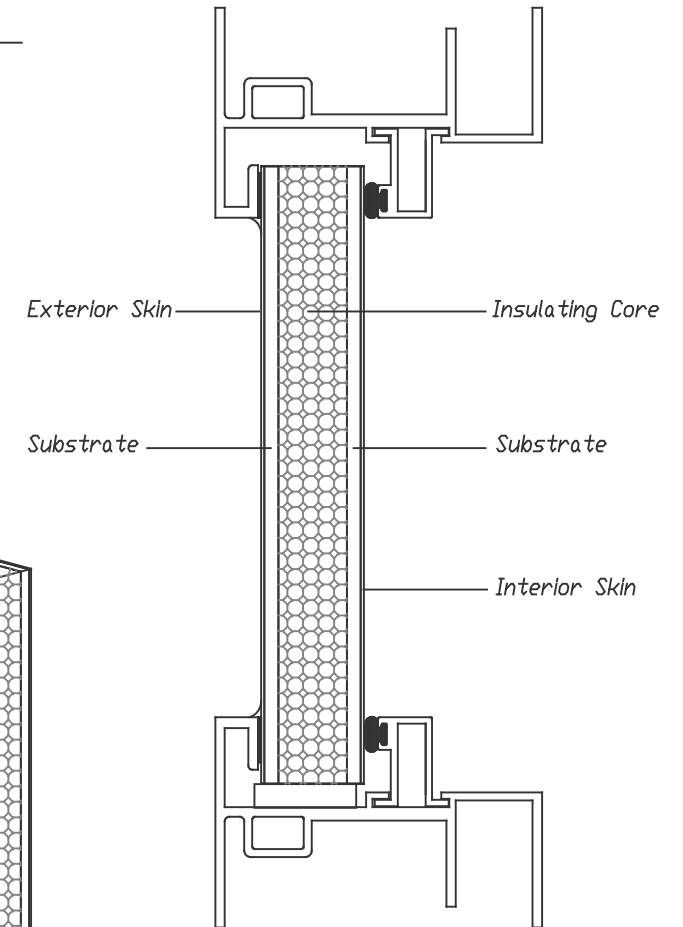
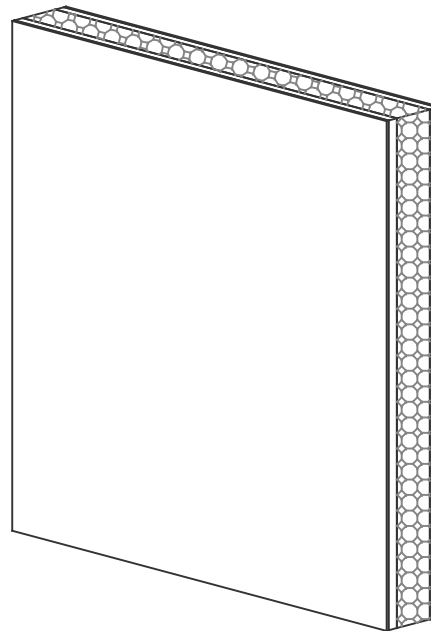
Mapes Panels, LLC  
2929 Cornhusker Hwy / Lincoln, NE 68504  
800-228-2391 / 800-737-6756 fax  
[panels@mapes.com](mailto:panels@mapes.com) / [www.mapespanels.com](http://www.mapespanels.com)

For more details, please visit [mapespanels.com](http://mapespanels.com)

## Mapes-R Infill Panel



CURTAIN WALL



WINDOW FRAME

*Details shown are typical, the framing systems are for presentation only.*

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SAMPLE WARRANTY FOLLOWS




STAR GLASS INC.

1000 WESTBANK EXPY.  
GRETNA, LA 70053  
P(504) 368-8826  
F(504) 367-5802

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:  


PROJECT NUMBER:  
\*\*

DRAWN BY:  
P.S.

SHEET

000



**Oldcastle** BuildingEnvelope®

**LAMINATED GLASS LIMITED WARRANTY  
MADE WITH POLYVINYL BUTYRAL (PVB)**

Customer: \_\_\_\_\_

Plant Location: \_\_\_\_\_

Address: \_\_\_\_\_

Project Name: \_\_\_\_\_

\_\_\_\_\_

Project Location: \_\_\_\_\_

Invoice Date(s): \_\_\_\_\_

Invoice Number(s): \_\_\_\_\_

The one quarter inch (1/4") or thicker Laminated Glass product containing polyvinyl butyral (PVB) (the "Product") sold by the company named above (the "Company") under the invoice referenced above is warranted (1) to meet, in the United States, the quality and strength requirements of ASTM C 1172 and the safety criteria of CPSC 16 CFR 1201, (categories I and II), and, in Canada, the quality and strength requirements and the safety criteria of CAN/CGSB-12.1-M and (2) for five (5) years from the date of manufacture, under normal conditions of use, to suffer no material edge separation or obstruction of vision through the product as a result of delamination which is caused by defects in materials or workmanship.

**The express limited warranty stated herein is exclusive and is in lieu of and replaces any and all other warranties, representations or conditions of any kind, whether written, oral or implied (including, without limitation, any implied warranties, representations or conditions of merchantability or fitness for a particular purpose, statutory or otherwise), and supersedes any oral or written warranties, representations or conditions made, asserted or implied by any distributor, agent, representative or employee or contained in any manual, brochure, literature, advertising or other materials. No distributor, agent, representative or employee has the authority to change, alter, amend or otherwise modify this limited warranty.**

**SEE OTHER LIMITATIONS, EXCLUSIONS AND EXCEPTIONS ON REVERSE.**

#### LIMITATIONS, EXCLUSIONS AND EXCEPTIONS/LAMINATED GLASS LIMITED WARRANTY

All claims pursuant to this Limited Warranty must be presented in writing by the Purchaser of the Product (the "Purchaser") to the plant referenced on the reverse (the "Plant") within thirty (30) days of the Purchaser learning the facts upon which the claim is based. No warranty claim may be made after the passage of the applicable warranty period. Any legal action in respect of any claim under this Limited Warranty shall accrue on the date the Purchaser discovers or should have discovered with reasonable diligence the facts forming the basis for such claim. Notice of any claim under this Limited Warranty shall not be considered given unless it includes a copy of the Invoice referenced on the reverse; the date and place of purchase of the Product; the name, address and telephone number of the installer of the Product; and the name, address and telephone number of the Purchaser. **No claim under this limited warranty shall be available without proof of purchase of the applicable product by the Purchaser making the claim. Limited warranty claims made prior to payment in full by purchaser for the Product shall not be honored. Failure to make payment in full for the Product on or prior to the date payment is due therefore shall void this limited warranty.** Upon validation by the Company of any Limited Warranty claim, the Company, at its sole option, shall either (a) furnish the Purchaser with a replacement Product or, if the Product is no longer made, a substitute product which, in the sole discretion of the Company, is comparable to the original Product, F.O.B. the Plant, freight collect, or (b) refund the original purchase price which the Purchaser paid for the failed portion of the Product (less freight and other charges). **A comparable substitute product, whether fabricated by the Company or by a party chosen by the Company in its sole discretion, may have characteristics including, but not limited to, color, shading coefficient, U-value and/or surface appearance which vary from the original product but shall nonetheless satisfy the Company's obligation to replace the Product.** If the Company elects to supply a replacement or substitute product, the Limited Warranty on the replacement or substitute product shall extend only for the balance of the original Limited Warranty period of the failed Product. In no event shall the Company be responsible for any costs attendant to replacing nonconforming or defective Products (including, but not limited to, labor costs), other than as specified in this paragraph. At the Company's request, all defective Product which is replaced or substituted for pursuant to this Limited Warranty shall be returned to the Company, at the Purchaser's expense, within thirty (30) days after such replacement or substitution.

**This limited warranty is not applicable to security glass (glass and polycarbonate laminates).**

The heat treated laminated product must not be modified or fabricated (e.g., ground, drilled, sand blasted or otherwise) as this can weaken the glass and/or impair its safety characteristics. Any modification or fabrication of the Product voids this limited warranty.

The Company specifically disclaims responsibility for any damage to any product caused by, or which results from improper installation, including any installation not performed in a good and workmanlike manner in accordance with industry standards, including guidelines issued by the Laminating Division of GANA and applicable shop drawings, ordinances and safety codes; provided that, in addition, such installation shall be performed at any higher standards as shall be set forth in any glazing or installation instructions provided by the Company; improper maintenance; storage in other than a good and workmanlike manner; abuse; damage or breakage caused by person other than employees or agents of the Company while being handled, installed, shipped, glazed or used; damage or breakage caused by improper building design or construction; thermal breakage; building or foundation movement; use upon the Product of any cleansing or treating agents; atmospheric pollutants or contaminants, or runoff; leachate from building component, use of the Product with incompatible glazing or other materials; installed in any high moisture, heat, vibration or other unusual stress environment; if films other than clear, non solar absorbing and reflecting films are used on the surface of the product; or use of the Product for purposes not considered suitable therefore by the glass industry or, in its sole discretion, by the Company. No warranty is provided in respect of any damage to or failure caused by any of the foregoing. Any product shipped outside the United States and Canada is not warranted by Oldcastle BuildingEnvelope®, Inc.

For the purposes of this limited warranty, de-lamination shall be defined as any edge defect in the form of clear bubble shaped areas emanating from the edge that extend beyond a 5mm (3/16") perimeter of the laminate. No warranty shall be provided on any installation using non-standard glazing methods including but not limited to bolted connections, inserts and clips and other minimally supported systems unless written approval has been given by the company following a detailed project review.

The remedies provided herein and in the Company's invoice for the Products constitute the Purchaser's sole and exclusive remedy under any claim or theory of liability in respect of the Company's manufacture, sale or provision of the Product or any warranty in connection therewith, including, without limitation, claims based upon failure of, or defect in, the Product, whether a claim, however instituted, is based upon contract, indemnity, breach of warranty, tort (including negligence and/or strict liability) or otherwise. The Company shall not be liable for consequential, indirect, incidental, punitive, exemplary or special damages, claims or costs of any nature including, without limitation, labor costs of any kind relating to the removal of failed products and/or reinstallation of replacement products therefore, or damages, claims or costs otherwise arising from, or in connection with, alleged breach of any limited warranty or negligence on the part of the Company.

If Purchaser is sued by any third party for Product failure under warranty or any other theory, Purchaser shall provide the Company at its Plant at its address above with written notice thereof with a copy of any and all pleadings served upon Purchaser within ten (10) days of such service and provide the Company with an opportunity to inspect the allegedly defective Product. Failure to comply with the foregoing shall void this Limited Warranty.

Products not expressly warranted by the Company are sold "as is, with all faults" and product failures expressly excluded from this Limited Warranty (including for example, but not limited to, glass breakage) are not covered by any other warranty, representation or condition, express or implied, statutory or otherwise. The Company offers no warranty, express, implied or otherwise for annealed glass, products containing a film opacifier, or any coated glass provided as part of its products. For the sole convenience of the Customer, the Company will facilitate resolution of warranty issues which may occur between the customer and the coater. To the extent assignable, the Company assigns to the Purchaser any warranty on the Product provided by third parties, including any warranty by a third party glass coater. These assigned warranties will generally be limited and subject to exclusions and exceptions. The Purchaser is advised to apprise itself of such limitations, exclusions and exceptions, and the Company shall have no obligation to so apprise the Purchaser. (In general the limited warranty provided by glass coaters may be void if the coated glass is installed contrary to the Company's or the respective coater's instructions, damaged by improper handling or installation, or if damaged because of scratches or abrasions which may be caused by abrasive cleaners used on the coated surface.)

Any waiver by the Company of a deviation from any of the terms or conditions in this Limited Warranty shall only be for the specific deviation so waived and shall not be construed as a waiver of any other term or condition nor a continuing waiver of the term or condition so waived.

The Company reserves the absolute right to inspect in the field or at the Plant, any Product that is alleged by the Purchaser to be defective. Failure to afford the Company the right to inspect allegedly defective Product promptly upon the Purchaser becoming aware of any defect therein voids this Limited Warranty.

The Purchaser is solely responsible for all determinations of the compatibility of any glazing or other materials (e.g., sealants, gaskets, tapes, setting blocks, metal or finishes) with the Product. The Purchaser is advised that annealed, heat strengthened or wired glass does not meet the requirements of CPSC 16 CFR 1201 for safety glazing and should not be glazed in hazardous locations, including those defined by applicable codes and law. Hazardous locations should be glazed with approved safety glass.

It is the express wish of the parties that this limited warranty and any related documents be drawn up and executed in English only. Il est la volonté expresse des parties que cette garantie limitée et tous les documents s'y rattachant soient rédigés et signés en Anglais seulement. This limited warranty and any related documents are in the English language and shall be interpreted in accordance with the meanings or the words and phrases used herein as understood in the state or province of seller's plant indicated on the face of this limited warranty. This limited warranty shall be governed by, and construed and interpreted in accordance with, the laws of the state or province in which the Plant is located, without regard to principles of conflicts of laws. Any suit, action or proceeding arising out of or relating to this limited warranty shall be instituted in any court sitting in such province or, in the case of a state, in the county of the location of the Plant and any objection which may now or hereafter exist to the laying of the venue or to the jurisdiction of any such suit, action or proceeding in such province or county is waived. The bringing of any suit, action or proceeding by the Purchaser which is not in compliance with the foregoing shall void this limited warranty.

This limited warranty; the credit application, if any, completed by Purchaser; the Company's glazing instructions, if any; and the invoice for the purchase of the Product constitute the complete and exclusive statement of the terms of the agreement between the Company and Purchaser with respect to the subject matter hereof and supersede any other writing, document or agreement. This limited warranty may not be modified, including pursuant to any order made by Purchaser or in any other document, unless such modification is made in writing and executed on behalf of seller by its President.

This limited warranty is extended to the Purchaser of the Product only and any claim hereunder must be made solely by the Purchaser. This limited warranty is not transferable without the prior written consent of the Company, which may be withheld entirely in its discretion, and any attempted assignment without such prior written consent shall void this limited warranty.

## LIMITED WARRANTY AND REMEDY

This is to certify that Kawneer Company, Inc. or its applicable affiliate or subsidiary selling the product ("Seller") warrants to its Customers and all subsequent purchasers and owners of the project incorporating Seller products (hereinafter "Customer(s)"), subject to every term, condition and limitation stated herein, that the products supplied by Seller shall be free from material defects, in material and workmanship, for a period of two (2) years from the date of substantial completion of the project, provided however, that the Limited Warranty shall begin in no event later than six (6) months from the date of shipment by Seller for the start of the warranty period hereunder.

This limited warranty ("Limited Warranty") applies only if Seller's products are installed and maintained according to Seller's recommended practices and installation instructions, and only to defects appearing within two (2) years from substantial completion of the project and only if Seller is notified in writing within sixty (60) days after such defects either (i) appears or (ii) should have been discovered after the exercise of reasonable diligence. Failure of the claiming party to notify Seller within such period shall automatically relieve Seller of any and all responsibility and/or liability under this Limited Warranty.

**THE WARRANTIES SET FORTH IN THIS LIMITED WARRANTY AND REMEDY ARE IN LIEU OF ALL OTHER REPRESENTATIONS, WARRANTIES OR OTHER AGREEMENTS EXPRESS OR IMPLIED, STATUTORY OR OTHERWISE, WHICH ARE HEREBY DISCLAIMED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

In addition to Seller's standard Limited Warranty and Remedy, and applying solely and exclusively to Kawneer doors with welded, corner construction, the corner construction joinery of these doors shall be free from material defects in workmanship and material for the normal, useful life of the door.

In addition to Seller's standard Limited Warranty and Remedy, and applying solely and exclusively to Kawneer Flushline doors, the corner construction joinery, core and laminate shall be free from material defects in workmanship and material for the normal, useful life of the door.

This Limited Warranty does not cover, and Seller hereby disclaims all liability for, the installation of Seller products, any particular application or selection of the product for any particular project or design, any parts, gaskets, glazing materials, components or sealants of other manufacturers used with Seller products, or any lack of performance of Seller products attributable to such items. SELLER PRODUCTS ARE PRODUCED FOR COMMERCIAL APPLICATIONS. THIS WARRANTY DOES NOT COVER, AND SELLER HEREBY DISCLAIMS ALL LIABILITY FOR, ANY PRODUCTS USED IN RESIDENTIAL INDIVIDUAL DETACHED SINGLE FAMILY DWELLINGS, ANY PRODUCTS WHICH HAVE BEEN SUBJECT TO ABUSE, ALTERATION, NEGLIGENCE, MISUSE, ABNORMAL USE, ACCIDENT, FIRE, WAR, FLOOD, EARTHQUAKES, ACTS OF GOD, OR TO WHICH PARTS, NOT SUPPLIED BY SELLER HAVE BEEN ADDED, OR TO DEFECTS CAUSED BY DEPRECIATION OR NORMAL WEAR. All decisions regarding the existence of defects in material and workmanship and the occurrence of any of the matters described in the preceding paragraphs or affecting this Limited Warranty shall be made by Seller and shall be final and binding upon all parties.

The sole and exclusive remedy with respect to this Limited Warranty or with respect to any other claim relating to defects or any other condition or use of the products supplied by Seller, however caused, and whether such claim is based upon breach of representation, warranty, condition, contract (fundamental or otherwise), tort (including negligence), strict liability, or any other theory is limited to, at Seller's option, repair or replacement of such products or repayment by Seller of the purchase price paid for it. The remedy with respect to claims made relating to Seller doors excludes the replacement of glass, gaskets, hardware, immediate framing, temporary enclosures or any related labor or installation costs. In no event does Seller's warranty cover the cost of labor or sundry materials required to remove and/or replace any defective product.

The products repaired, replaced, or otherwise restored shall be warranted to the same extent and to the expiration date from the original date of shipment, and this Limited Warranty shall not be deemed to have been extended from the date of such warranty work. At no time does this Limited Warranty confer upon the claiming party or any other party the right to proceed with repair, replacement, or restoration, without written notice and agreement by a duly authorized officer of Seller. Any such work undertaken by the claiming party or any other party shall be for the claiming party's own account and shall result in this Limited Warranty becoming null and void.

SELLER'S AGGREGATE TOTAL CUMULATIVE LIABILITY UNDER THIS LIMITED WARRANTY IS LIMITED TO THE DOLLAR AMOUNT OF THE PURCHASER'S ORIGINAL PAYMENT MADE TO SELLER FOR PRODUCT FURNISHED BY SELLER ONLY. IN CONSIDERATION OF THIS LIMITED WARRANTY, SELLER SHALL NOT BE LIABLE FOR SPECIAL, DIRECT, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING BUT NOT LIMITED TO LOSS OF USE, LOSS OF PROFITS OR GOODWILL, DAMAGES FOR NEGLIGENCE IN THE MANUFACTURE, DESIGN, OR INSTALLATION OF THE PRODUCTS, OR OTHER COMMERCIAL LOSS OR INJURY.

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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This is the only warranty made in the connection with the sale and distribution of the Seller Products. No representative or any other person is authorized to make or makes any warranty, representation, or promise with respect to the Seller Products. No terms or conditions other than those stated herein, and no agreement or understanding, oral or written, in any way purporting to modify this warranty shall be binding on Seller unless made in writing and signed by a duly authorized officer of Seller.

Laws and building and safety codes governing the design and use of glazed entrance, windows, and curtain wall products vary widely. Seller does not control the selection of product configurations, operating hardware, or glazing materials and assumes no responsibility therefore.

All notices given under or pursuant to this Limited Warranty shall be in writing and sent by registered mail, postage paid, and with return receipt request, to the party to whom such notices is to be given. All such notices as set forth above shall be considered served when received.

### **SALES TERMS AND CONDITIONS**

These Sales Terms and Conditions shall be the sole terms and conditions governing the sale of goods by Kawneer Company, Inc. or any of its subsidiaries and affiliates ("Seller") selling Products to a purchaser ("Customer"). The identity of Customer, the identity of the goods being purchased (the "Products"), the quantity of Products being purchased, the destination for delivery of the Products, and other material information concerning Customer's order shall be set forth in Customer's purchase order (the "Purchase Order") and provided to Seller. These Terms and Conditions are hereby incorporated into and made a part of each such Purchase Order.

All orders are subject to approval and acceptance by a duly authorized representative of Seller. Upon the earlier of Seller's written acceptance of the Purchase Order or acceptance by Customer of Products furnished by Seller in response to such Purchase Order, the Purchase Order, the written acceptance, if any, and these Terms and Conditions shall be the complete and final agreement (the "Agreement") between Seller and Customer with respect to the purchase and sale of Products identified in the Purchase Order, provided, however, that any pre-printed or form language appearing in Customer's Purchase Order shall not become a part of the Agreement. SELLER'S ACCEPTANCE OF ANY CUSTOMER PURCHASE ORDER IS EXPRESSLY MADE CONDITIONAL UPON CUSTOMER'S ACCEPTANCE OF THESE TERMS AND CONDITIONS, AND SELLER OBJECTS TO ANY ADDITIONAL OR DIFFERENT TERMS AND CONDITIONS, WHETHER CONTAINED IN CUSTOMER'S PURCHASE ORDER OR OTHERWISE. SELLER WILL NOT BE DEEMED TO HAVE WAIVED THESE TERMS AND CONDITIONS OF SALE IF SELLER FAILS TO OBJECT TO PROVISIONS CONTAINED IN CUSTOMER'S PURCHASE ORDER, OTHER FORMS OR OTHERWISE. It is Customer's obligation to sign this sales agreement but Customer's acceptance of the product will constitute Agreement to these terms whether Customer has signed sales Agreement or not.

**DETERMINATION OF PRICE** – Prices given herein are list prices, unless otherwise specified, and are subject to discounts prevailing at the time the order is received. Prices shown do not include Provincial Sales Tax or Goods & Services Tax or any other tax or government charge upon the production, sale or shipment of material which is effective within the life of the sales contract, all of which will be paid by the Customer. All prices are subject to change without notice, and are not guaranteed against change. Inventory adjustments will not be made. Stenographic and clerical errors made by Seller on an acknowledgement or invoice shall be subject to correction.

**NOTE:** In the event that a discrepancy arises between the index and the body of the price catalog, the information contained in the body of the catalog will take precedence.

**PRICE PROTECTION** – In the event of a price decrease, unshipped orders, with the exception of special sales contracts covered by a lot or job estimates, will be invoiced at the new and lower prices. In the event of a price increase, orders on hand will be invoiced at the prices in effect when the orders were received, provided, however, those shipments are made at Seller's convenience thereafter. Seller quotations on specific jobs made in writing by Seller are valid (or firm) for sixty (60) days.

**ACCEPTANCE OF ORDERS** – The acceptance of orders constitutes a complete and binding contract which cannot be modified or canceled without written consent of Seller, except that all orders are accepted subject to delays caused by strikes, fires or any other causes (including those set out in the section "Force Majeure" below) beyond the control of Seller. All orders are accepted subject to governmental regulation on material usage, whenever applicable.

**MINIMUM ORDER SIZE** – Orders of less than \$100.00 list price will be billed at list price with no discount. All painted orders will be invoiced at a minimum of \$500.00 net per paint color.

**PAYMENT** – Seller stated payment terms are Net 30 day from date of invoice, unless otherwise approved in writing by a duly authorized representative of Seller. Early payment discounts are available. Please contact the Seller Credit Department for additional information. Receipt of payment by the purchaser is not a condition of payment to Seller. Purchaser's unsatisfactory credit status shall be cause for cessation of deliveries.

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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**CREDIT CARD PAYMENT (U.S. Customers Only)** – Seller will accept credit card payments. Credit Card invoices are paid immediately upon shipment. No early payment discounts are available with credit card payments. Please contact the Seller Credit Department for additional information.

**FREIGHT CHARGES AND RISK OF LOSS** – Unless stated otherwise, all items are shipped F.O.B. Seller manufacturing facility or service center.

**CLAIMS** – No claims due to errors, shortages or rejection because of defects or defective materials ascertainable on visual inspection will be considered unless reported to Seller within ten (10) days after receipt of shipment. Claims for damages resulting from delays or use of defective materials will not be honored.

**DELIVERY** – Orders should include complete shipping instructions. Seller reserves the right to ship as it deems advisable unless specific instructions are given. Seller will use reasonable efforts to meet delivery dates but such dates are deemed approximate and Seller shall be allowed a reasonable variance from all such dates. In no event is Seller subject to any charges, penalties, liquidated damages, back charges, penalties or liability of any kind for delayed delivery. Seller shall not be liable for damages caused by delays in delivery by carriers. Customer will file claims with carrier for all shortages, damages or delays delivered by common carriers.

**FORCE MAJEURE** – Seller shall not be liable for delays or inability to perform due to strikes, labor disputes, lockouts, fire, flood, war, declared or undeclared, insurrections, riots, acts of God, embargoes by foreign nations, inability to obtain or unusual delay in obtaining materials, shortages of power needed to operate Seller facilities, governmental regulations or priorities, or any other cause beyond the control of Seller. In case of any delays in receipt or shortages of materials or shortages of power needed to operate Seller facilities, Seller reserves the right in its sole discretion to determine the assignment of materials, and the order of priority in filling orders. Seller also reserves the right in its sole discretion to cancel order by written notice in the event Seller believes that by reason of the foregoing it will not be able to meet the scheduled completion date.

**INDEMNIFICATION** – Customer is solely responsible for proper selection and installation of Seller products as well as the incorporation of Seller products into other products (if this is applicable). Customer agrees that it will use Seller products only for their intended uses and according to specifications and limitations established by Seller from time to time. Customer acknowledges and agrees that Seller Products are to be used for commercial applications and not intended for residential individual single family dwellings. Customer shall indemnify, defend and hold Seller harmless from and against any and all damages arising out of or relating to use in residential individual single family dwellings, improper product selection, application, use, misuse, neglect, abuse of products or incorporation of products.

**NO LIABILITY FOR LOCAL LAWS OR CODES** – Laws and building and safety codes governing the design and use of glazed entrance, window and curtain wall products vary widely. Seller does not control the selection of product configurations, operating hardware or glazing materials, and assumes no responsibility therefore.

It is the responsibility of the Customer to determine at the time of order entry or revision, whether Seller material and products meet any federal, state, provincial and /or local law interpretation and regulations, including those relating to building construction, safety and to the Americans with Disabilities Act of 1990 and any other similar federal, state, provincial or local statutes.

**ORDER CANCELLATION AND CHANGE CHARGES** – In the event a Customer changes an order or cancels or partially cancels an order that has already been accepted by Seller, Seller may assess a charge to the Customer for costs incurred in performance of that portion of the order that has been changed or cancelled up to and until the time Seller receives notice of the change or cancellation. Customer orders for special materials (those not described in the effective price book), or for products fabricated specifically to Customer's dimensions or other specifications, or where special materials or services are procured by Seller for use on Customer's order, or where drafting or take-off services have been performed, will be subject to charges for cancellation or change for those costs incurred in performance of that portion of the order that has been cancelled or changed up to and until the time Seller receives notice of the change or cancellation.

**SECURED CREDIT TERMS** – No cash discount is allowed on merchandise delivered by truck, C.O.D. (including Parcel Post and Rail Express), and sight draft bill of lading on a net basis.

**BALANCE DUE MATERIALS** – Any portion of an order not included in an original shipment because of shortage of stock or other cause beyond Seller's control will be invoiced at the same price and on the same terms as if included in the original shipment. If the balance due shipment weighs 100 pounds or more, the transportation charge will be based on the combined weight of the original and balance due shipments. If the balance due shipment weighs less than 100 pounds, Seller will prepay and absorb the freight on that portion of the order.

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.  
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**RETURNED MATERIAL** – Seller will not accept any material returned for credit unless such return has been previously authorized in writing by Seller. Returns must be requested by Customer within thirty (30) days of receipt of material. Customer must return material within thirty (30) days of receipt of written authorization from Seller. Material returned under such an authorization will be subject to regular inspection by Seller. If found saleable without requiring reconditioning or further work, credit will be issued in the amount invoiced less a handling charge of 15% returned material charge or \$100.00 net, whichever is greater. No credit will be issued for goods produced to order, not meeting inspection requirements or for goods received more than thirty (30) days after authorization to return. All shipping charges for returns are the responsibility of the Customer.

**INSTALLATION** – Seller hereby disclaims all liability for, and is not responsible or liable for, any damages or costs that may result from improper installation of its products. It is the responsibility of the Customer purchasing a Seller product to ensure that the Seller product is installed properly and in accordance with Seller's printed instructions. This responsibility is retained by Customer even though the product may be resold for installation by a third party. Seller will not be liable for damages and costs that result from improper installation of Seller products, regardless of who actually performs the installation.

**RESIDENTIAL USE** - Seller hereby disclaims all liability for, and is not responsible or liable for, any damages or costs that may result herein from use of its products in residential individual detached single family dwellings.

**ENTIRE AGREEMENT** – The Limited Warranty and Remedy and Other Terms and Conditions set forth the entire agreement between the Customer and Seller relating to the sale of Seller's products to Customer. Any additional or different terms in the Customer's forms are hereby deemed to be material alterations and notice of objection to them and rejection of them is hereby given.

**GOVERNING LAW AND VENUE** – The sale of Seller products hereunder with shipping addresses located in the United States shall be governed by the laws of the Commonwealth of Pennsylvania, excluding its laws related to choice or conflicts of law. The sale of Seller products hereunder with shipping addresses located in Canada shall be governed by the laws of Ontario and the federal laws of Canada applicable therein. The United Nations Convention on Contracts for the International Sale of Goods is expressly disclaimed and does not apply to the sale of Seller products. Any and all disputes between the parties that may arise pursuant to this order will be heard and determined before an appropriate arbitrator, federal, or state court located in Pittsburgh, Pennsylvania. The Customer hereto acknowledges that such court has the jurisdiction to interpret and enforce the provisions herein and/or an arbitrator's judgment, and the Customer waives any and all objections that they may have as to personal jurisdiction or venue in any of the above courts.

**ATTORNEY'S FEES** – If any action or proceeding is commenced to enforce or interpret any of the provisions of this agreement, and Seller is the prevailing party in any such action or proceeding, then Seller shall be entitled to recover its reasonable attorneys' fees, expert witness fees, costs of suit and expenses, in addition to any other relief to which Seller may be entitled. As used herein, Seller is a "prevailing party" when, including but without limitation, a party dismisses an action against Seller for recovery hereunder in exchange for payment of the sums allegedly due, performance of covenants allegedly breached, or consideration substantially equal to the relief sought in the action brought by such party.

**MISCELLANEOUS** – (a) Headings used herein are for convenience only and shall not be used for interpretive purpose. (b) A party's failure to act with respect to another party's breach of any provision contained herein does not constitute a waiver. (c) If any provision herein is held to be invalid or unenforceable, such provision shall be narrowly construed, if possible, or otherwise deemed ineffective and the remaining provisions shall not be affected. (d) These terms and conditions will survive the fulfillment of any purchase order.

**TOOLS AND DIES** – Charges made for dies and tools do not convey to the Customer title or the right to remove them from the Seller facility.

**SAMPLES** – Standard samples are available at cost (net). Standard samples are shipped from the Seller Marketing Communications Department in Norcross, Georgia. Custom samples are not available through the Marketing Communications Department and must be ordered on a standard order form.

**SPECIAL LENGTH CHARGES:**

For special length painted material requirements, consult with a Seller Customer Service Coordinator for pricing.

For special length anodized material requirements, the following charges apply:

1-25 stock lengths:            Use part number 036426,  
\$200.00 net set up charge per shape.

More than 25 stock lengths:    No set up charge.

**CUT-TO-SIZE ORDERS** – Orders for materials cut-to-size will be billed at the Customer's CMP price per foot. In addition, a \$35 net price per cut piece charge will be applied to the invoice under part number 036425 and cut offs will not be shipped.

**SHOP DRAWINGS** – Seller products may be detailed by Seller to confirm specifications. In such cases, drawings will be submitted to the Customer for approval. Seller will fabricate in accordance with dimensions and specifications shown on the Customer approved drawings but will take no responsibility for failure of the Customer to check drawings against job site conditions or for any other purpose. Special entrances cannot be scheduled for production until the approved detail, with the Customer's signature, has been received, and all special hardware is in Seller's possession. Changes made to any drawing after approval of details by Customer may involve additional charges on the order.

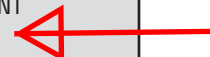
**DOUBLE BOX CHARGE** – Seller offers a double box option for additional protection of your material during shipment. Use part number 036598 at \$20.00 list. The charge will be applied per box.

**ILLUSTRATIONS** – The illustrations within this catalog are for part identification only, and do not indicate size or proportions by comparison.

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

## FINISH GROUPS

| GROUP NO. DESIGNATION | FINISHES INCLUDED   |
|-----------------------|---|
| #17 GRP               | #17 CLEAR   |
| #40 GRP               | #40 BRONZE<br>#22 STD. PAINT<br>#14 CLEAR                           |
| #29 GRP               | #29 BLACK<br>#18 CHAMPAGNE<br>#26 LIGHT BRONZE<br>#28 MEDIUM BRONZE |



Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.  
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**CORRECTIVE FIELD REPAIRS**

All corrective field labor and repairs are subject to the limitations set forth in the Limited Warranty and Remedy. In cases where a material defect covered under Seller's Limited Warranty and Remedy is detected after a product has been installed such that corrective field labor is required, the following procedure must be followed in order for any adjustment to be applied to the Customer's account:

A. When Anticipated Labor Is Eight (8) Hours or Less – No preauthorization by Seller is required however, the Customer must submit detailed information to the Seller Credit Department, including details of the defect covered under the applicable Seller warranty and a description of the required corrective field labor, in order for any adjustment to be applied to the Customer's account.

B. When Anticipated Labor Is More Than Eight (8) Hours – A Seller Customer Service Coordinator must be contacted prior to the performance of any corrective field labor.

Step 1 – On page 12 is a checklist of information that must be provided to the Customer Service Coordinator. Please have this information available prior to calling.

Step 2 – The Customer Service Coordinator will evaluate the anticipated corrective action as well as related costs and alternatives to rework and will determine which of the following procedures will be followed:

- a. If it is determined that the Customer should perform the rework, the Customer will be authorized by the Customer Service Coordinator. Written confirmation will follow immediately.
- b. If it is determined that Seller will do the rework, the Customer will be notified accordingly and a schedule determined.

The Customer's cooperation in following these procedures will assist Seller in reducing the time required to accomplish corrective measures and make it possible for proper reimbursement to be applied.

SELLER INVOICES SHALL NOT BE ADJUSTED BY CUSTOMER AND PAYMENT IN FULL IS DUE AS SET FORTH UNDER THESE TERMS AND CONDITIONS. WHEN CORRECTIVE FIELD LABOR IS REQUIRED, SELLER AGREES TO MAKE APPROPRIATE CREDITS OR OTHER ADJUSTMENTS TO INVOICES, PROVIDED THE PROCEDURE DESCRIBED ABOVE IS FOLLOWED BY THE CUSTOMER. SHOULD THIS PROCEDURE NOT BE FOLLOWED, CREDIT OR REIMBURSEMENT WILL NOT BE MADE BY SELLER, NOR WILL ANY CLAIM FOR SUCH BE CONSIDERED VALID. (see Step 2.a.)

**CORRECTIVE FIELD REPAIRS — PRE AUTHORIZATION FORM**

CUSTOMER NAME: \_\_\_\_\_

NAME OF PERSON CALLING AND PHONE NUMBER: \_\_\_\_\_

JOB NAME: \_\_\_\_\_

S.O. NUMBER: \_\_\_\_\_

PRODUCT(S): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**FAX INFORMATION**

Phone No.: \_\_\_\_\_

No. of Pages: \_\_\_\_\_

To: \_\_\_\_\_

Co.: \_\_\_\_\_

Dept.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

From: \_\_\_\_\_

Co.: \_\_\_\_\_

Phone No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

ELEVATION, DOOR NUMBER OR UNIT MARK: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

EXACTLY WHAT IS WRONG (I.E., MULLION IS 120" AND SHOULD BE 118". NOT, MULLION IS TOO LONG): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

IF HARDWARE: NATURE OF PROBLEM -- IF MISLOCATED, WHERE? MEASURE AND FURNISH EXACT DIMENSIONS. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

CAN IT BE CORRECTED IN THE FIELD? IF SO, YOUR RECOMMENDATION, ESTIMATED HOURS AND HOURLY RATE TO REPAIR.

FIELD CORRECTION ☐ YES ☐ NO

EST. HOURS: \_\_\_\_\_

HOURLY RATES: \_\_\_\_\_

WHEN DO YOU NEED TO START THE REWORK? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.  
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HARDWARE FOLLOWS

Laurel School Refurbishment  
820 Jackson Ave New Orleans, LA  
70130 RSD Project No.  
2011-0891-0001

DATE DRAWN:  
11-21-2016

REVISION DATE:



PROJECT NUMBER:  
\*\*

DRAWN BY:  
P.S.

## 98/99 Rim exit device



The 299 Strike ships standard, optional strikes available

**98 and 99 Rim exit devices** for all types of single and double doors with mullion, UL listed for panic exit hardware. Devices are ANSI A156.3 – 2008 Grade 1. The 98 device has a smooth mechanism case and the 99 device has a grooved case. The rim device is non-handed except when the following device options are used: SD (special dogging), -2 (double cylinder) or SS (signal switch). See Opposite page for available outside trim and device functions. Covers stock hollow metal doors with 86 or 161 cutouts on single doors (may cover cutouts on pairs – consult template).

**Finishes** – US3, US3A, US4, US4A, US10, US26, US26D, US26D-AM Antimicrobial, US28, 313, 315 & 643E. US15 and US32D available with 98 Series only.

Hex key dogging comes standard on 98/99 Rim exit devices



### Specifications

|                                       |   |   |
|---------------------------------------|---|---|
| Device functions                      | Device ships EO/DT/NL. Field selectable. For TP, K or L remove NL drive screw from device.  |   |
| Device lengths                        | 3'  | 2'4" to 3' (711mm to 914 mm) Door size    |
|                                       | 4'  | 2'10" to 4' (864 mm to 1219 mm) Door size |
| Device centerline from finished floor | 39 <sup>13</sup> / <sub>16</sub> " (1011 mm)<br>39 <sup>11</sup> / <sub>16</sub> " (1008 mm) with mullion   |   |
| Center case dimensions                | 8" x 2 <sup>3</sup> / <sub>4</sub> " x 2 <sup>3</sup> / <sub>8</sub> " (203mm x 70mm x 60mm)  |   |
| Mechanism case dimensions             | 2 <sup>1</sup> / <sub>4</sub> " x 2 <sup>1</sup> / <sub>4</sub> " (57mm x 57mm)   |   |
| Projection                            | Pushbar neutral – 3 <sup>13</sup> / <sub>16</sub> " (97 mm)<br>Pushbar depressed – 3 <sup>1</sup> / <sub>16</sub> " (78 mm)   |   |
| Latch bolt                            | Deadlocking, <sup>3</sup> / <sub>4</sub> " (19mm) throw   |   |
| Fasteners & sex bolts (SNB)           | Includes screw pack for 1 <sup>3</sup> / <sub>4</sub> " (44mm) and 2 <sup>1</sup> / <sub>4</sub> " (57mm) thick metal or wood doors. Optional 425 SNB available, see page 9 for quantities. |   |
| Electric options                      | <b>LX</b>   | Latchbolt monitor switch                  |
|                                       | <b>RX</b>   | Pushpad monitor switch                    |
|                                       | <b>RX2</b>  | Double pushpad monitor switch             |
|                                       | <b>E</b>  | Electric locking & unlocking trim         |
|                                       | <b>EL</b>   | Electric latch retraction                 |
|                                       | <b>QEL</b>  | Quiet electric latch retraction           |
|                                       | <b>SS</b>   | Signal switch                             |
|                                       | <b>CX</b>   | Chexit delayed exit                       |
|                                       | <b>ALK</b>  | Alarm exit kit                            |
|                                       | <b>WP-RX</b>  | Waterproof request to exit                |
|                                       | <b>CON</b>  | Allegion Connect                          |
| Mechanical options                    | <b>-2</b>   | Double cylinder                           |
|                                       | <b>AX</b>   | Accessible device                         |
|                                       | <b>GBK</b>  | Glass bead kit                            |
|                                       | <b>PN</b>   | Pneumatic latch retraction                |
|                                       | <b>XP</b>   | Extra protection                          |
|                                       | <b>SNB</b>  | Sex bolts                                 |
|                                       | <b>SEC</b>  | Security screws                           |
| Dogging feature                       | Hex key dogging standard  |   |
| Dogging options                       | <b>CD</b>   | Cylinder dogging                          |
|                                       | <b>SD</b>   | Special center case dogging               |
|                                       | <b>LD</b>   | Less dogging                              |
|                                       | <b>DI</b>   | Dogging indicator                         |
|                                       | <b>CI</b>   | Cylinder dogging indicator                |
| Strikes                               | <b>299</b> – Dull black   |   |

#### XP

##### Extra protection

- 90° latch-to-strike contact
- Force resistance of 2,000+ lbs.

#### CD

##### Cylinder dogging

- Replaces hex key dogging
- Requires 1<sup>1</sup>/<sub>4</sub>" mortise cylinder with inverted cam

#### QEL

##### Quiet electric latch retraction

- Bolt retraction via switch
- Converts exit door to push-pull operation

#### RX

##### Pushpad monitor switch

- Signals use of an opening
- SPDT switch to monitor pushpad

#### CX

##### Chexit delayed exit

- Meets NFPA 101 requirements
- Self-contained controls, locking, alarm

#### AX

##### Accessible device

- UL certified to meet new 5 lb. maximum operating force requirement
- Exceeds ANSI/BHMA requirements

#### EL

##### Electric latch retraction

- Enables remote unlatching
- Alternative to manual dogging

#### ALK

##### Alarm exit kit

- Unauthorized opening triggers 85-decibel horn
- Set in armed or disarmed mode by key

#### PN

##### Pneumatic latch retraction

- For areas where electrical devices banned
- Special linkage for mechanical or pneumatic dogging

#### CON

##### Allegion Connectors

- Common connectors to connect various door hardware all the way to the power supply

## 9827/9927 Surface mounted vertical rod device



**9827/9927 Surface mounted vertical rod device** for all types of single or double doors, UL listed for panic exit hardware. Devices are ANSI A156.3 – 2008 Grade 1. Covers stock hollow metal doors with 86 or 161 cutouts. The 9827 device has a smooth mechanism case and the 9927 device has a grooved case. The surface vertical rod device is non-handed except when the following device options are used: SD (special dogging), SS (signal switch) or WS (Tornado/Hurricane). See opposite page for available outside trim and functions. Vertical rod and latch guards are available to protect the bottom rod of the exit device from damage by impacts of carts or gurneys passing through doors.

**Finishes** – US3, US3A, US4, US4A, US10, US26, US26D, US26D-AM Antimicrobial, US28, 313, 315 & 643E. US15 and US32D available with 98 Series only.

### Specifications

|                                       |  |   |
|---------------------------------------|--|---|
| Device functions                      | Device ships EO/DT/NL. Field selectable. For TP, K or L remove NL drive screw from device.   |   |
| Device lengths                        | 2'   | 2' (610 mm) Door size                     |
|                                       | 3'   | 2'4" to 3' (711mm to 914 mm) Door size    |
|                                       | 4'   | 2'10" to 4' (864 mm to 1219 mm) Door size |
| Device centerline from finished floor | 39 <sup>5</sup> / <sub>8</sub> " (1006 mm)   |   |
| Center case dimensions                | 8" x 2 <sup>3</sup> / <sub>4</sub> " x 2 <sup>3</sup> / <sub>8</sub> " (203mm x 70mm x 60mm)   |   |
| Mechanism case dimensions             | 2 <sup>1</sup> / <sub>4</sub> " x 2 <sup>1</sup> / <sub>4</sub> " (57mm x 57mm)  |   |
| Projection                            | Pushbar neutral – 3 <sup>13</sup> / <sub>16</sub> " (97 mm)<br>Pushbar depressed – 3 <sup>1</sup> / <sub>16</sub> " (78 mm)  |   |
| Latch bolt                            | Deadlocking anti-friction top & bottom bolt, <sup>5</sup> / <sub>8</sub> " (16mm) throw  |   |
| Door undercut                         | 1/4" (7mm) recommended   |   |
| Top & bottom Latch case               | 4 1/2" x 2 1/8" x 1 1/2" (114mm x 54mm x 38mm)   |   |
| Vertical rods                         | 1/2" square tubing, standard rods accommodate 7' (2134mm) doors. Top rod length: 34 <sup>15</sup> / <sub>16</sub> " (887mm); Bottom rod length: 31 1/2" (794mm) Extension rods available in 1' (205mm) or 3' (914mm) for doors over 7'. One piece top rod is available for 8' (2438mm) and 10' (3048mm) doors.   |   |
| Fasteners & sex bolts (SNB)           | Includes screw pack for 1 <sup>3</sup> / <sub>4</sub> " (44mm) to 2 1/4" (57mm) thick metal or wood doors, and 325 SNB for top and bottom latch. Optional 425 SNB available.   |   |
| Electric options                      | <b>LX</b> Latchbolt monitor switch<br><b>RX</b> Pushpad monitor switch<br><b>RX2</b> Double pushpad monitor switch<br><b>EL</b> Electric latch retraction<br><b>QEL</b> Quiet electric latch retraction<br><b>SS</b> Signal switch<br><b>CX</b> Chexit delayed exit<br><b>ALK</b> Alarm exit kit<br><b>PN</b> Pneumatic latch retraction<br><b>LBR</b> Less bottom rod<br><b>WP-RX</b> Waterproof request to exit<br><b>CON</b> Allegion Connect |   |
| Mechanical options                    | <b>GBK</b> Glass bead kit<br><b>PL</b> Pullman latch<br><b>WS</b> Tornado and hurricane tested<br><b>SNB</b> Sex bolts<br><b>SEC</b> Security screws   |   |
| Dogging feature                       | Hex key dogging standard   |   |
| Dogging option                        | <b>CD</b> Cylinder dogging<br><b>SD</b> Special center case dogging<br><b>LD</b> Less dogging<br><b>DI</b> Dogging indicator<br><b>CI</b> Cylinder dogging indicator   |   |
| Strikes                               | Top - 299 – Dull black, Bottom – 248L4 & 304L – Unfinished   |   |



Hex key dogging comes standard on 9827/9927

#### WS

##### Windstorm

- Severe weather certified/tested
- FEMA and ICC compliant
- Tornado & hurricane tested

#### RX

##### Pushpad monitor switch

- Signals use of an opening
- SPDT switch to monitor pushpad

#### QEL

##### Quiet electric latch retraction

- Bolt retraction via switch
- Converts exit door to push-pull operation

#### CON

##### Allegion Connectors

- Common connectors to connect various door hardware all the way to the power supply

#### EL

##### Electric latch retraction

- Enables remote unlatching
- Alternative to manual dogging

#### ALK

##### Alarm exit kit

- Unauthorized opening triggers 85-decibel horn
- Set in armed or disarmed mode by key

#### E (E996L)

##### Electrified breakaway lever

- Electrified remote locking/unlocking
- Standard in fail safe condition

#### CX

##### Chexit delayed exit

- Meets NFPA 101 requirements
- Self-contained controls, locking, alarm

#### PN

##### Pneumatic latch retraction

- For areas where electrical devices banned
- Special linkage for mechanical or pneumatic dogging

#### SS

##### Signal switch

- Signals unauthorized use of an opening
- Switch makes latch bolt tamper-resistant

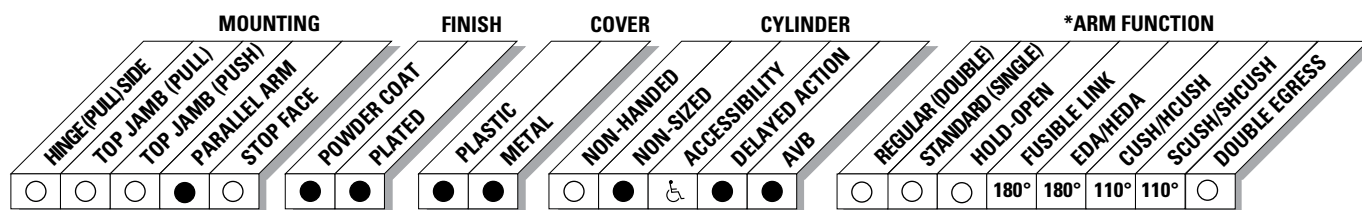


The 4110 is LCN's best performing heavy duty closer designed specifically for institutional and other rugged high traffic applications.

|                          |   |   |  |
|--------------------------|---|---|--|
| <b>Certifications</b>    | Grade 1 - ANSI A156.4, UL 10C, ADA, 100 Hour Salt Spray, Meets BAA - Buy American Act   | <b>Cover</b>                            | <ul style="list-style-type: none"> <li>■ Plastic, Standard</li> <li>■ Metal, Optional</li> </ul>   |
| <b>Body Construction</b> | <ul style="list-style-type: none"> <li>■ Cast Iron Body</li> <li>■ Full Complement Bearing</li> <li>■ 1-1/2" Diameter Piston</li> <li>■ 11/16" Diameter Double Heat Treated Pinion Journal</li> </ul> | <b>Fasteners</b>                        | Self Reaming and Tapping Screws (SRT)  |
| <b>Fluid</b>             | All Weather Fluid   | <b>Mounting</b>                         | Parallel Arm (Push Side)   |
| <b>Handing</b>           | Handed  | <b>Arms</b>                             | Extra-Duty arm   |
| <b>Templating</b>        | Peel-n-Stick templates - 2-1/2" x 6" Mounting Hole Pattern  | <b>Finishes/Colors/<br/>Powder Coat</b> | <ul style="list-style-type: none"> <li>■ Aluminum (689)</li> <li>■ Statuary Bronze (690)</li> <li>■ Light Bronze (691)</li> <li>■ Black (693)</li> <li>■ Dark Bronze (695)</li> <li>■ Brass (696)</li> <li>■ Custom colors optional</li> </ul> |
| <b>Size</b>              | Adjustable Spring Size 1-5, or Sized 6, Includes Patented Green Dial  |   | <ul style="list-style-type: none"> <li>■ Optional SRI primer - powder coat only</li> <li>■ Optional plated finishes</li> </ul>   |
| <b>Warranty</b>          | 30 years  |   |  |

### Special Templates

Customized installation templates or products may be available to solve unusual applications. Contact LCN Product Support for assistance.

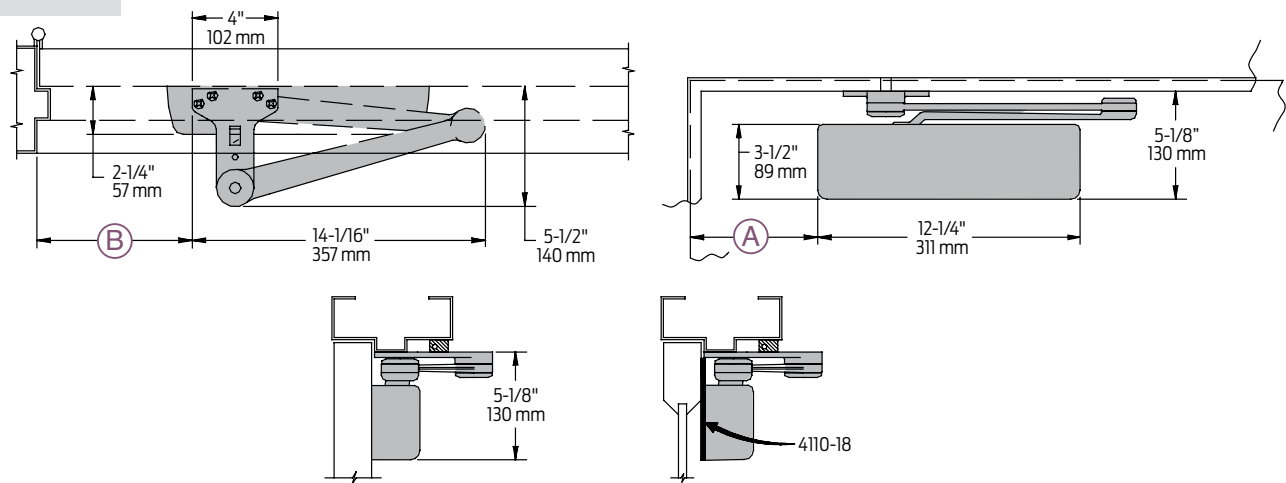


● AVAILABLE  
○ NOT AVAILABLE

○ Closer available with less than 5.0 lbs. opening force on 36" door.  
\* Maximum opening/hold-open point with standard template.

Mounting details

Parallel Arm (Push  
Side) Mounting



|  |  |  |
|--|--|--|
| <b>Butt Hinges</b>   | Should not exceed 5" (127 mm) in width   |  |
| <b>Auxiliary Stop</b>  | Recommended at hold-open point, where a door cannot swing 180°, or where CUSH-N-STOP arm is not used   |  |
| <b>Clearance</b>   | EDA, or CUSH shoe is 5-1/2" (140 mm) from door face  |  |
| <b>Top Rail</b>  | <ul style="list-style-type: none"><li>■ Less than 5-1/8" (130 mm) measured from stop requires PLATE, 4110-18</li><li>■ Plate requires 2" (51 mm) minimum measured from the stop</li></ul>  |  |
| <b>Stop Width</b>  | Minimum 1" (25 mm)   |  |
| <b>Head Frame</b>  | Flush or rabbeted requires CUSH FLUSH PANEL ADAPTER, 4110-419  |  |
| <b>Reveal</b>  | Less than 2-3/4" (70 mm), use CUSH SHOE SUPPORT, 4110-30 with CUSH arms  |  |
| <b>Blade Stop Spacer</b>   | 4110-61 required to clear 1/2" (13 mm) blade stop  |  |
| <b>Crush Arm</b>   | Requires CUSH SHOE SUPPORT, 4110-30 for fifth screw anchorage with CUSH arms   |  |
| <b>Delayed Action</b>  | <ul style="list-style-type: none"><li>■ Add suffix "DEL" to selected cylinder (eg. 4111 DEL)</li><li>■ Not available with 4116 cylinder. Delays closing from maximum opening to approximately 70°</li><li>■ Delay time adjustable up to approximately 1 minute</li></ul> |  |
| <b>Advanced Variable Backcheck</b>   | <ul style="list-style-type: none"><li>■ Cylinder starts backcheck at approximately 45° instead of the normal 75°</li><li>■ Add suffix "AVB" to selected cylinder</li></ul>   |  |
| <b>Maximum opening</b>   | EDA or Fusible Link arm can be templated for 100°<br>A = 5-15/16" (151 mm)<br>B = 7-1/4" (184 mm)  | CUSH arm can be templated for maximum opening at 85°<br>A = 8-5/16" (211 mm)<br>B = 9-5/8" (244 mm)  |
|  | 140°<br>A = 4-7/16" (113 mm)<br>B = 5-3/4" (146 mm)  | 90°<br>A = 7-11/16" (195 mm)<br>B = 9" (229 mm)  |
|  | or 180°<br>A = 2-15/16" (75 mm)<br>B = 2-15/16" (75 mm)  | or 110°<br>A = 5-9/16" (141 mm)<br>B = 6-7/8" (175 mm)   |
| <ul style="list-style-type: none"><li>■ Hold-open points up to maximum opening with HEDA or Fusible Link arm</li></ul> |  | <ul style="list-style-type: none"><li>■ Hold-open point at maximum opening with HCUSH arm</li><li>■ Spring Cush hold-open points are approximately 5° less than templated stop point</li></ul> |

### Cylinder



**4111(6)-3071**  
Cast Iron Cylinder Assembly

- Handed
- Standard

### Covers



**4110-72**  
Plastic Cover

- Non-handed
- Standard



Left hand shown

**4110-72MC**  
Metal Cover

- Handed
- Required for plated finishes and custom powder coat finishes
- Optional

### Arms



**4110-3049EDA**  
Hold-Open Arm

- Handed
- Optional
- Provides hold-open function, adjustable at shoe



**4110-3049FL**  
Fusible Link Arm

- Handed
- Releases hold-open function adjustable at shoe when exposed to temperatures above 165° F
- Optional

*NOTE: Check local codes before specifying FL arms. NOT A life safety product!*



**4110-3077CNS**  
Cush-N-Stop Arm

- Non-handed
- Features solid forged steel main arm and forearm with built-in stop in soffit shoe



**4110-3077EDA**  
Extra Duty Arm

- Non-handed
- Features forged, solid steel main and forearm for potentially abusive installations



**4110-3077EDA/ 62G**  
Extra Duty Arm

- Non-handed
- Features forged, solid steel main and forearm for potentially abusive installations
- Optional 4110-62G thick hub shoe for blade stop clearance

### Arms



**4110-3049CNS**  
HCUSH Arm

- Non-handed
- Provides hold-open function with templated stop/ hold-open points.
- Handle controls hold-open function



**4110-3077SCNS**  
Spring CUSH Arm

- Non-handed
- For abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe
- Optional



**4110-3049SCNS**  
Spring HCUSH Arm

- Non-handed
- For abusive applications features solid forged steel main arm and forearm with spring loaded stop in the soffit shoe
- Handle controls hold-open function
- Optional

### Installation Accessories



**4110-18**  
Plate

- Required for push side mount where top rail is less than 5-1/8" (130 mm), measured from the stop
- Requires minimum 2" (51 mm) minimum top rail



**4110-30**  
CUSH Shoe Support

- Provides anchorage for fifth screw used with CUSH arm, where reveal is less than 3-1/16" (78 mm)



**4110-61**  
Blade Stop Spacer

- Lowers parallel arm shoe to clear 1/2" (13 mm) blade stop



**4110-419**  
PA Flush Panel Adapter

- Provides horizontal mounting surface for CUSH shoe on single rabbetted or flush frame

**How-to-order 4110 Series closers****1. Specify cylinder size**

- ☐ 4111 (adjustable from size 1 to 5)  
☐ 4116 (DEL, SHCUSH or HCUSH arm not available)

**2. Specify hand**

- ☐ RH  
☐ LH

**3. Select finish**

- ☐ Standard Powder Coat \_\_\_\_\_  
 Aluminum, Dark Bronze, Statuary, Light Bronze, Black, Brass

**Closer will be shipped with:**

- Standard cylinder
- Standard cover
- Extra duty arm
- Self-reaming and tapping screws  
unless options listed below are selected.

**Closer options****Cylinder**

- ☐ Delayed Action (DEL) (not available with 4116)  
☐ Advanced Variable Backcheck (AVB)

**Cover**

- ☐ Metal (MC)

**Finish**

- ☐ Custom Powder Coat (RAL) \_\_\_\_\_  
 (handed metal cover required)  
☐ Plated Finish, US \_\_\_\_\_  
 (handed metal cover required)  
☐ SRI primer (use with powder coat finishes only)

**Specify Arm**

- ☐ Hold-Open Extra Duty (HEDA)  
☐ Fusible Link, 165° F (FL)  
☐ Cush-N-Stop (CUSH)  
☐ H-Cush-N-Stop (n/a with 4116 cylinder)  
 (HCUSH)  
☐ Spring Cush (SCUSH)  
☐ Spring H-Cush (n/a with 4116 cylinder)  
 (SHCUSH)  
☐ Extra Duty (EDA)  
☐ H-Extra Duty (HEDA)

**Screw Packs**

- ☐ TB\* Self-Reaming & Tapping (TBSRT)  
☐ Wood & Machine Screw (WMS)  
☐ TB\* Wood & Machine Screw (TBWMS)  
☐ TORX Machine Screw (TORX)  
☐ TB\* & TORX Machine Screw (TBTRX)  
 \* Specify door thickness if other than 1-3/4".

**Installation Accessories**

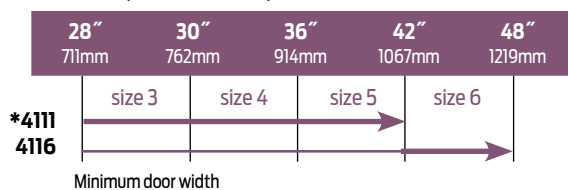
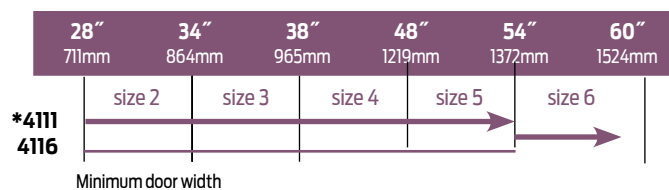
- ☐ Plate, 4110-18  
☐ CUSH Shoe Support, 4110-30  
☐ Blade Stop Spacer, 4110-61  
☐ PA Flush Panel Adapter, 4110-419

**Special Template**

- ☐ ST- \_\_\_\_\_

**Table of sizes**

- Select closer based on width of door.
- The spring power of non-sized 4111 cylinder is adjustable from size 1 through size 5 and is shipped set to size 3.
- Sized 4116 series cylinders 6.
- Delayed action not available with 4116 cylinder
- H - CUSH and SPRING H-CUSH arm not available with 4116 cylinder.

**Exterior (and vestibule) door width****Interior door width**

Indicates recommended range of door width for closer size. \* Adjustable Size 1 thru 5.

**Reduced opening force 4110 Series closers**

**CAUTION!** Any manual door closer, including those certified by BHMA to conform to ANSI Standard A156.4, that is selected, installed and adjusted based on ADA or other reduced opening force requirements may not provide sufficient power to reliably close and latch a door.

Refer to AUTOMATIC OPERATORS section for information on systems that meet reduced opening force requirements without effecting closing power.

|  | DOOR WIDTH | 36"  | 42"  | 48"  |
|--|------------|------|------|------|
|  | 8.5* lbs.  | 4111 | 4111 | 4111 |
|  | 5.0* lbs.  | 4111 | 4111 | 4111 |

\* Maximum opening force.



### 112HD Full Mortise Aluminum Geared Continuous Hinge

- Non Handed
- Flush Mounted, No Inset
- 48" Maximum Door Width
- Beveled or Square Edge Doors

For Doors Weighing up to 450 pounds without reinforcing,  
600 pounds with reinforcing

Standard lengths 83", 85", 95", 120"

#### Standard Mounting Hardware

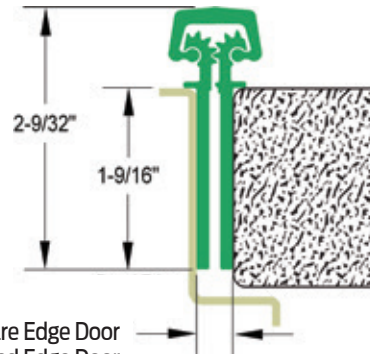
12-24 X 3/4" Steel Self Drilling, Self Tapping Screws

Optional WD - Wood Screws or SEC - Security Fasteners Available

#### Finishes

Clear (CL), Dark Bronze (DB)

Custom Anodizing and Painting are available, consult factory.



5/16" Clearance for Square Edge Door  
1/32" Clearance For Beveled Edge Door

### Electrical Cutouts

Ives Aluminum Geared Continuous Hinges are available with factory modified cutouts to accommodate most electrical frame to door requirements. Special templates are required.

When ordering indicate the following:

1. Opening size.
2. Handing. LH, RH, RHR or LHR.
3. Manufacturer and model number of the electrical product being used. Example; Von Duprin EPT2

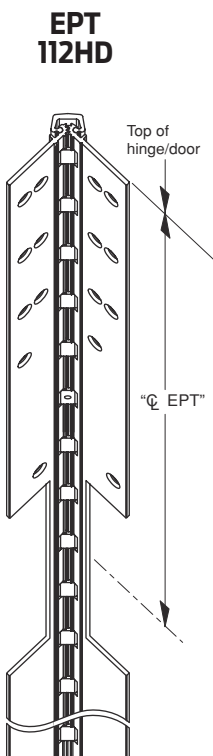
Because clearances may vary between door and frame manufacturer, and locations can be influenced by the door hardware it is always recommend contacting Ives Customer Technical for specific template information.

For your general information below are standard locations for Von Duprin EPT2 or EPT10, and monitor switch.

From Top Edge of Door to Center Line of Cut-Out

| Standard Length | 112HD EPT | 224HD EPT | 112HD/224HD TW |
|-----------------|-----------|-----------|----------------|
| 83"             | 30"       | 30"       | 41-1/2"        |
| 85"             | 32"       | 32"       | 42-1/2"        |
| 95"             | 42"       | 42"       | 57-3/4"        |
| 120"            | 67"       | 67"       | 81-25/32"      |

TWP option centered in hinge.



Note: See ordering guide in price book for proper placement.



ALLEGION™



# Cylinders and key blanks

Quick reference guide



# The height of security.

Introducing a whole new look for high-security key systems. With a new undercut design and patent protection until 2029, the all-new Everest 29™ key system delivers unparalleled security that can't be duplicated. Available in full size and SFIC cylinder formats, Everest 29 is backward compatible with current Everest B, C and D keyways, making migration of an existing key system less complex.

## Schlage has reinvented high security key systems.

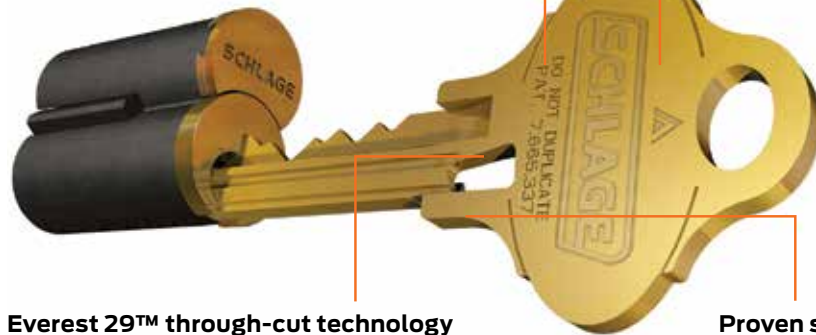
In settings like schools, hospitals and universities, key systems are the foundation of a comprehensive, multi-level security management system. Everest 29 delivers a higher level of security because it cannot be duplicated without authorization. Its distinctive design is based on creating a key like no other.

### Patent protection until 2029

thanks to a new undercut design that provides patent protection for Everest 29 keys until 2029.

### Distinctive bow

a larger, rounded key bow creates quick visual differentiation between Everest and Everest 29.



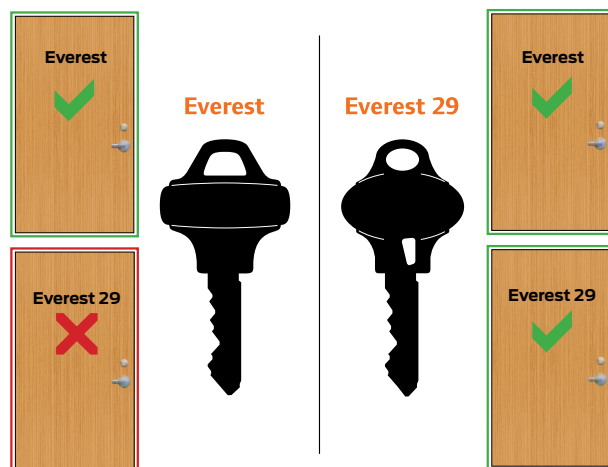
### Everest 29™ through-cut technology

utilizes a unique process to create the patented Everest 29 undercut design.

### Proven strength

shear-strength tested to perform with the same toughness and reliability the Everest family is known for.

## Backward compatibility makes it simple to migrate your key system to Everest 29.

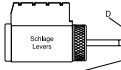
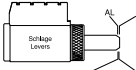
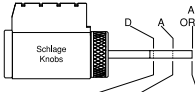
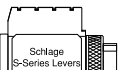

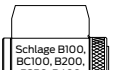
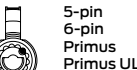
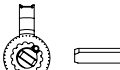
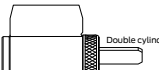



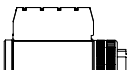
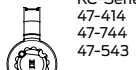





| Everest | Everest 29 |   |
|---------|------------|---|
| B       | R          | - SFIC<br>- Restricted distribution by required authorization letters                               |
| C       | S          | - Full size; open keyway<br>- Restricted by channel only to commercial sale<br>- Primus & Primus XP |
| D       | T          | - Full size<br>- Restricted distribution by required authorization letters<br>- Primus & Primus XP  |

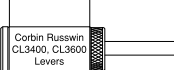
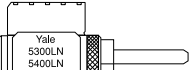
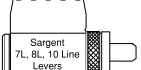
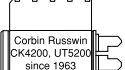
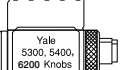
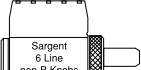
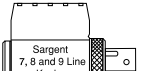
Everest 29 S123 are the default keyways for Schlage locks  
Everest 29 S145 are the default keyway for new master key systems  
Legacy Everest keyways are still available to order

# Cylinders & key blanks

## Cylinders for Schlage locks











|  |   |  |  |  |  |  |   |  |
|--|---|--|--|--|--|--|---|--|
|  |  | <b>Conventional</b> 23-013<br><b>Primus</b> 20-750<br><b>Primus UL</b> 20-550<br><b>Primus XP</b> 20-750-XP<br><b>Primus XP UL</b> 20-550-XP | <b>21-013</b> 20-728<br><b>20-728</b> 20-765<br><b>20-528</b> 20-565<br><b>20-728-XP</b> 20-765-XP<br><b>20-528-XP</b> 20-565-XP |    | <b>Conventional</b> 23-001<br><b>Primus</b> 20-748<br><b>Primus UL</b> 20-548<br><b>Primus XP</b> 20-748-XP<br><b>Primus XP UL</b> 20-548-XP                 | <b>21-002</b> 20-724<br><b>20-724</b> 20-524<br><b>20-524</b> 20-524-122<br><b>20-724-XP</b> 20-724-122-XP<br><b>20-524-XP</b> 20-524-122-XP                             | <b>21-002-122</b> 20-724-122<br><b>20-524-122</b> 20-724-122-XP<br><b>20-724-122-XP</b> 20-524-122-XP   |  |
|  |  | <b>Conventional</b> 21-059<br><b>Primus</b> 20-752<br><b>Primus UL</b> 20-552<br><b>Primus XP</b> 20-752-XP<br><b>Primus XP UL</b> 20-552-XP |   |   | <b>5-pin</b> 22-001<br><b>6-pin</b> 22-002<br><b>Primus</b> 20-729<br><b>Primus UL</b> 20-529<br><b>Primus XP</b> 20-729-XP<br><b>Primus XP UL</b> 20-529-XP |   | <b>Conventional</b> 22-003<br><b>Primus</b> 20-188<br><b>Primus UL</b> 20-190<br><b>Primus XP</b> 20-188-XP<br><b>Primus XP UL</b> 20-190-XP<br>*1 3/8" listed only |  |
| See literature for B-Series lazy tailpieces.                                     |   |  |  |  |  |  |   |  |
|  |  | <b>B600</b><br><b>Conventional</b> 22-642<br>22-643<br>22-644<br>22-645<br>22-646  | <b>B700</b><br><b>Primus/</b><br><b>Primus XP</b> 22-645<br>22-646<br>22-742<br>22-744   | <b>B800</b> <b>Primus/</b><br><b>Primus XP UL</b> 22-542<br>22-543<br>22-544<br>22-545<br>22-546   |   | <b>PL-Series padlock</b><br><b>Conventional</b> 47-410<br><b>Primus</b> 47-740<br><b>Primus UL</b> 47-540<br><b>Primus XP</b> 47-740-XP<br><b>Primus XP UL</b> 47-540-XP |    | <b>KS-Series padlock</b><br><b>Conventional</b> 47-410<br><b>Primus</b> 47-740<br><b>Primus UL</b> 47-540<br><b>Primus XP</b> 47-740-XP<br><b>Primus XP UL</b> 47-540-XP |
|  |  | <b>KC-Series cable</b><br>47-414<br>47-744<br>47-543   |   | <b>CL-Series cabinet</b><br>20-172<br><b>Primus</b> 20-772<br><b>Primus UL</b> 20-572<br><b>Primus XP</b> 20-772-XP<br><b>Primus XP UL</b> 47-572-XP |   | <b>CL-Series drawer</b><br>20-174<br><b>Primus</b> 20-774<br><b>Primus UL</b> 20-574<br><b>Primus XP</b> 20-774-XP<br><b>Primus XP UL</b> 47-574-XP                      |    | <b>BEL, GEO, PLY, SIE</b> 29-016 (shown)<br><b>ORB</b> 29-017<br><b>ACC, FLA, AVA</b> 29-018   |

## Cylinders for other brands of locks

|   |   |   |   |   |   |
|---|---|---|---|---|---|
|  | <b>Conventional</b> 24-139<br><b>24-139</b> Primus 20-739<br><b>20-739</b> Primus UL 20-539<br><b>20-539</b> Primus XP 20-739-XP<br><b>20-739-XP</b> Primus XP UL 20-539-XP |  | <b>Conventional</b> 24-147<br><b>24-147</b> Primus 20-747<br><b>20-747</b> Primus UL 20-547<br><b>20-547</b> Primus XP 20-747-XP<br><b>20-747-XP</b> Primus XP UL 20-547-XP |  | <b>Conventional</b> 24-119<br><b>24-119</b> Primus 20-719<br><b>20-719</b> Primus UL 20-519<br><b>20-519</b> Primus XP 20-719-XP<br><b>20-719-XP</b> Primus XP UL 20-519-XP |
|  | <b>Conventional</b> 24-127<br><b>24-127</b> Primus 20-727<br><b>20-727</b> Primus UL 20-527<br><b>20-527</b> Primus XP 20-727-XP<br><b>20-727-XP</b> Primus XP UL 20-527-XP |  | <b>Conventional</b> 24-123<br><b>24-123</b> Primus 20-723<br><b>20-723</b> Primus UL 20-523<br><b>20-523</b> Primus XP 20-723-XP<br><b>20-723-XP</b> Primus XP UL 20-523-XP |  | <b>Conventional</b> 24-126<br><b>24-126</b> Primus 20-726<br><b>20-726</b> Primus UL 20-526<br><b>20-526</b> Primus XP 20-726-XP<br><b>20-726-XP</b> Primus XP UL 20-526-XP |
| Note: Sargent and Yale require special plug with smaller head.                      |   |   |   |   |   |
|   |   |   |   |  | <b>Conventional</b> 24-120<br><b>24-120</b> Primus 20-720<br><b>20-720</b> Primus UL 20-520<br><b>20-520</b> Primus XP 20-720-XP<br><b>20-720-XP</b> Primus XP UL 20-520-XP |

## Mortise cylinders

Consult product literature for hotel function cylinders and variations with collars.

|  |   |   |   |   |   |  |   |                              |
|--|---|---|---|---|---|--|---|------------------------------|
| Standard                                       |  |  | Conventional<br>Primus<br>Primus UL       | <br>30-021<br>20-793<br>20-593 | <br>26-021<br>20-701<br>20-501 | <br>20-013*<br>20-706*<br>20-506* | <br>26-073<br>20-708<br>20-508 |                              |
|  |   |   |   |   |   |  |   |                              |
| Full size interchangeable core                 |  |  | Less core<br>Standard core<br>Primus core | 30-016<br>30-008*<br>20-798*  | L9060 only<br>30-032<br>30-030*<br>20-782   | Other applications<br>20-059<br>26-091*<br>20-763  | 26-060<br>20-062*<br>20-766*  | 20-090<br>20-091*<br>20-722* |
|  |   |   |   |   |   |  |   |                              |
| Small format interchangeable core (best style) |  |  | Less core<br>Everest core                 | 80-108<br>80-308  | L9060 only<br>80-104<br>80-304  | Other applications<br>80-102<br>80-302   | 80-103<br>80-303  | 80-105<br>80-305             |

\* Designates numbers which include collars. See price book for additional cam and collar variations.

# EVEREST 29™

## Conventional



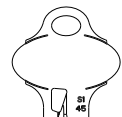
Standard for all control keys and all T Family keys. Optional for S Family 35-268 operating 35-269 control



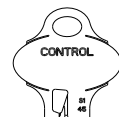
Standard front for S Family 35-270



Plain both sides 35-272



Back of all except 35-272



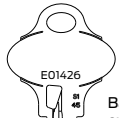
Back of 35-269

## Primus®XP

All Primus XP blanks require proper authorization.



Standard Front 35-199-XP Operating 35-273-XP Control



Back of all except 35-215-XP 35-138-XP



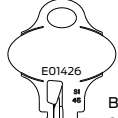
Plain both sides 35-138-XP control 35-215-XP operating

## PRIMUS

All Primus blanks require proper authorization.



Standard front 35-199 operating 35-273 control



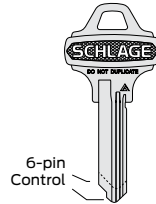
Back of all except 35-215 35-138



Plain both sides 35-138 control 35-215 operating

# EVEREST®

## Conventional



6-pin Control



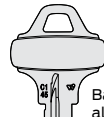
Standard for all control keys and all D Family keys. Optional for C Family 35-002 operating 35-003 control



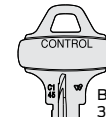
Standard front For C Family 35-009



Plain both sides 35-015



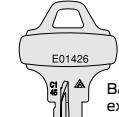
Back of all except 35-015



Back of 35-003



Standard front 35-004-XP operating 35-005-XP control



Back of all except 35-012-XP 35-013-XP



Plain both sides 35-013-XP control 35-012-XP operating

## Interchangeable cores

### Full size



Conventional 23-030  
Primus 20-740  
Primus XP 20-740-XP

### Small format



Everest restricted uncombined 80-036  
Everest restricted combined 80-037  
Generic 7-pin uncombined 80-033  
Generic 6-pin uncombined 80-043

## Pins & springs

### For full size cylinders

|   |        |
|---|--------|
| 0 | 34-300 |
| 1 | 34-301 |
| 2 | 34-302 |
| 3 | 34-303 |
| 4 | 34-304 |
| 5 | 34-305 |
| 6 | 34-306 |
| 7 | 34-307 |
| 8 | 34-308 |
| 9 | 34-309 |

|   |        |
|---|--------|
| 2 | 34-202 |
| 3 | 34-203 |
| 4 | 34-204 |
| 5 | 34-205 |
| 6 | 34-206 |
| 7 | 34-207 |
| 8 | 34-208 |
| 9 | 34-209 |

|   |        |
|---|--------|
| 1 | 34-101 |
| 2 | 34-102 |
| 3 | 34-103 |

"T" F506-451

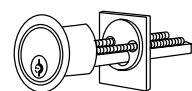
Std. C503-113  
"T" F506-453  
Top pin springs

C603-951  
Check pin spring

34-007  
Everest check pin

C603-827 IC Cap pin

## Rim cylinders



### Standard (shown)

Conventional 20-022  
Primus 20-710  
Primus UL 20-510

### Full size IC

Less core 20-079  
Conventional core 20-057  
Primus core 20-757

### Small format IC

Less core 80-129  
Everest core 80-329

## Mortise cylinder cams

Schlage L Series Modular cylinder cams most functions



L583-475 For cyl. length 1 1/4", 1 1/2", 1 3/4"



L583-474 For cyl. length 1 1/8", 1 3/8", 1 5/8"

### Schlage L Series (Legacy) cams most functions



L582-254 Classic conv. hole pattern



L583-153 Everest & Primus hole pattern



L583-255 Interchangeable core hole pattern



XL11-895 Corbin Russwin IC



L583-198 Corbin Russwin non-IC



L583-197 Sargent & Yale non-IC

Schlage L9060 and non-deadbolt functions of many other brands. Also most old cast iron locks



B502-191 B502-948 K510-680 K510-730 L583-476 L583-477 Classic conventional Everest 29 & Primus XP Schlage IC & SFIC, L9060 outside only Schlage IC & SFIC, other applications Modular 1/8", 3/8", 5/8 Modular 1/4", 1/2", 3/4

Adams Rite® MS and 4700 Series Lori 4500 deadlock CR DL3000 deadlock



L583-446 L583-447 B502-292 B502-944 K510-711 Modular 1/8", 3/8", 5/8 Modular 1/4", 1/2", 3/4 Classic conventional Everest 29 & Primus XP Schlage IC & SFIC

Most Corbin Russwin® and Best® functions



B520-233 B520-309 B520-253 Classic conventional Everest 29 & Primus XP Schlage IC

Sargent® & Yale®



B520-256 B520-329 B520-296 Classic conventional Everest 29 & Primus XP Schlage IC

Corbin Russwin DL4000 Series deadlock



B520-295 B520-366 B520-254 Classic conventional Everest 29 & Primus XP Schlage IC

Adams Rite® 4070



B502-380 B502-945 B520-378 Classic conventional Everest 29 & Primus XP Schlage IC & SFIC

For other cams, consult the latest Schlage price book.



B502-468 Classic conventional  
B502-942 Everest 29 & Primus XP  
L583-200 Full size IC  
B520-484 Small format IC



B520-692 1"  
B520-691 3/4"  
B520-690 1/2"

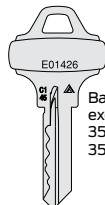
# CLASSIC

## Primus

All Primus blanks require proper authorization.



Standard front  
35-004 operating  
35-005 control

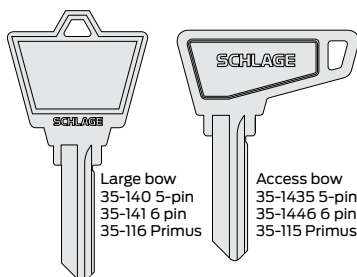


Back of all  
except  
35-012  
35-013



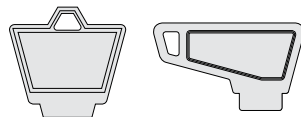
Plain both sides  
35-013 control  
35-012 operating

## Classic



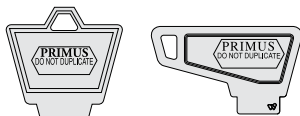
Large bow  
35-140 5-pin  
35-141 6 pin  
35-116 Primus

Access bow  
35-1435 5-pin  
35-1446 6 pin  
35-115 Primus



Conventional back

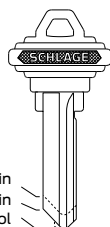
Conventional back



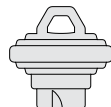
Primus back

Primus back

## Conventional



5-pin  
6-pin  
Control



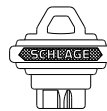
Standard  
front and back  
35-100 5-pin  
35-101 6 pin  
35-056 control



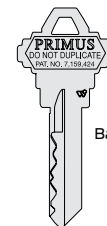
Plain both sides  
35-130 5-pin  
35-131 6 pin  
35-076 control

## Primus®XP

All Primus XP blanks require proper authorization.



Standard front  
35-157-XP operating  
35-158-XP control



Back of all



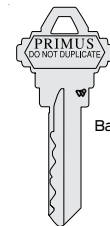
Plain front  
35-053-XP operating  
35-052-XP control

## Primus

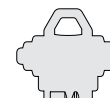
All Primus blanks require proper authorization.



Standard front  
35-157 operating  
35-158 control



Back of all



Plain front  
35-053 operating  
35-052 control

# SFIC

## Small format IC

Everest B Family  
restricted keyways

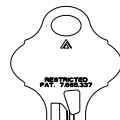


35-401  
Front and  
back  
35-021  
Plain both  
sides

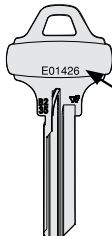
End user and  
dealer keyways  
all require proper  
authorization



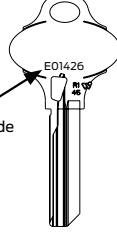
35-400  
Standard  
front and  
back



Plain both sides  
35-264

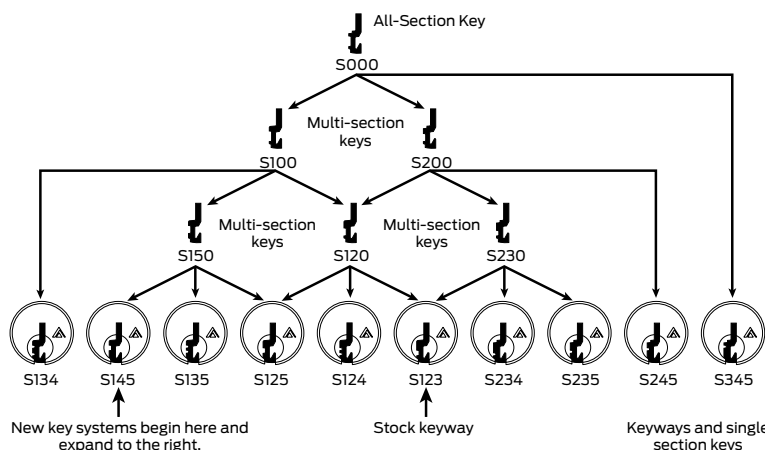


Everest  
facility code

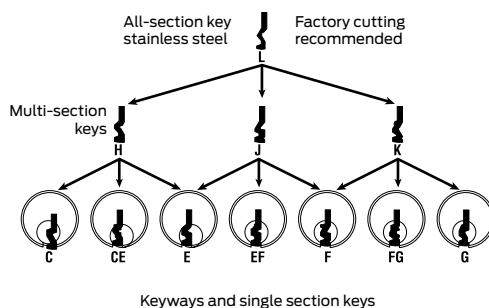


## S Family Open Keyway

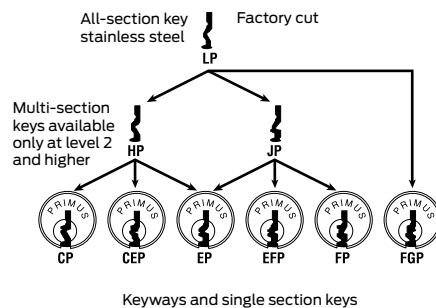
Same for Conventional and Primus



## Conventional obverse keyways



## Primus obverse keyways



## About Allegion

Allegion (NYSE: ALLE) creates peace of mind by pioneering safety and security. As a \$2 billion provider of security solutions for homes and businesses, Allegion employs more than 8,000 people and sells products in more than 120 countries across the world. Allegion comprises more than 25 global brands, including strategic brands CISA®, Interflex®, LCN®, Schlage® and Von Duprin®.

For more, visit [www.allegion.com](http://www.allegion.com)

*aptiQ* ■ LCN ■ **SCHLAGE** ■ STEELCRAFT ■ VON DUPRIN



# VON DUPRIN®

## Installation Instructions

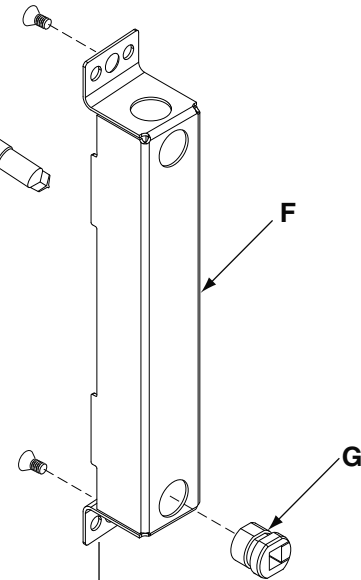
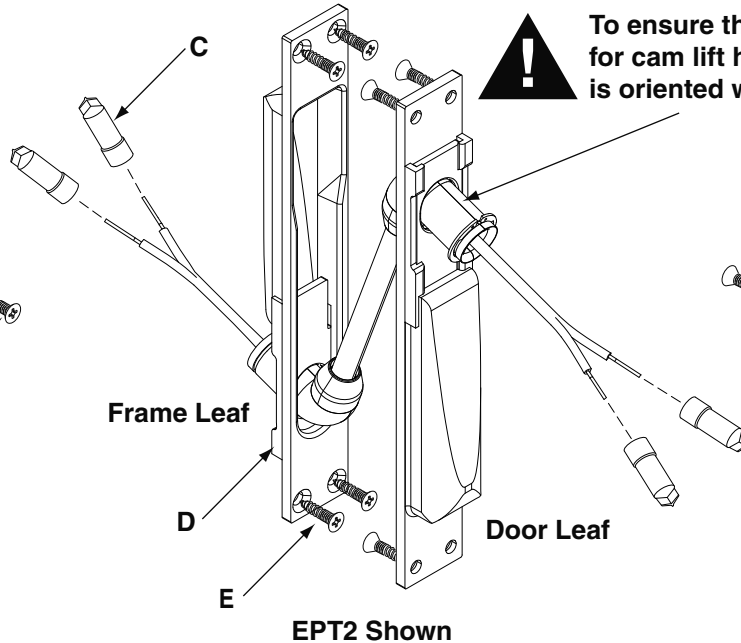
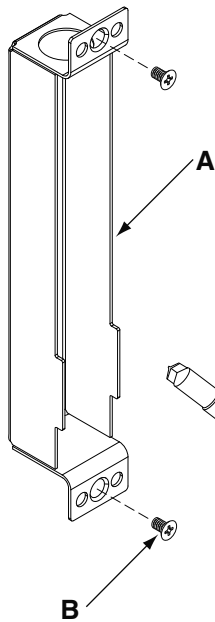
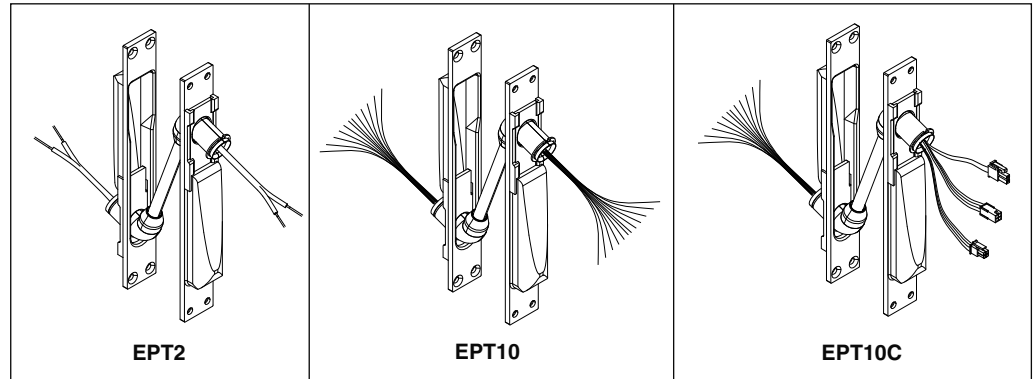
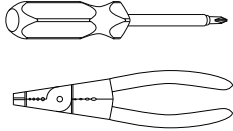
EPT2, EPT10, & EPT10C Electric Power Transfer (EPT)



941071-00

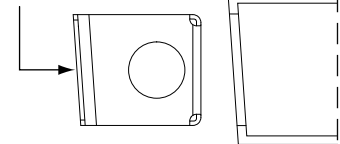
### Read all Warnings Before Starting Installation!

#### Tools for Install



- A. Frame Backbox
- B. Metal - #10-24 x 3/8" Flat Phillips Head Machine Screw (4)  
Wood - #10 x 3/4" Flat Phillips Head Wood Screw (4)
- C. EPT2 - Wire Connectors 12 Gauge Yellow (4)  
EPT10 - Wire Connectors 18 Gauge Violet (20)  
EPT10C - Wire Connectors 18 Gauge Violet (20)
- D. EPT Assembly
- E. Metal - #10-24 x 3/4" Flat Phillips Head Machine Screw (8)  
Wood - #10 x 3/4" Flat Phillips Head Wood Screw (8)
- F. Door Backbox
- G. Strain Relief

Note: Door backbox is beveled to match door



## General Information

An electric power transfer (EPT) provides a wiring path from the door to the frame.

These instructions assume that a factory-prepped door and frame are being used. If the door and frame have not been factory-prepped, see the included dimensioned template.

Before beginning the installation, review “Specifications” and “Warnings”.

## Specifications

### Applications

EPT **can** be used for:

- Door Thickness - 1-3/4” minimum
- ***Note: The following specifications apply to a 1-3/4” thick door.***
- 0 - 180° opening with up to 5” butt hinges
- 0 - 180° opening with up to 3/4” offset pivots
- 0 - 130° opening with 5-1/2” butt hinges
- 0 - 110° opening with 6” butt hinges

EPT **cannot** be used for:

- 1-1/2” offset pivots
- larger than 6” butt hinges
- pocket pivots
- swing clear hinges
- center hung door (center pivot)
- balanced door

### Electrical Ratings

EPT2

- Two 18AWG wires
- Max. Rating: 24VDC, 5A or 120VAC NEC Class 3

EPT10 & EPT10C

- Ten 24AWG wires
- Max Rating: 24VDC, 1A

## Read all Warnings Before Starting Installation!



**CAUTION**

Do not exceed rated specifications (shown above).



**CAUTION**

EPT must be installed in accordance with these instructions by a qualified electrician.



**CAUTION**

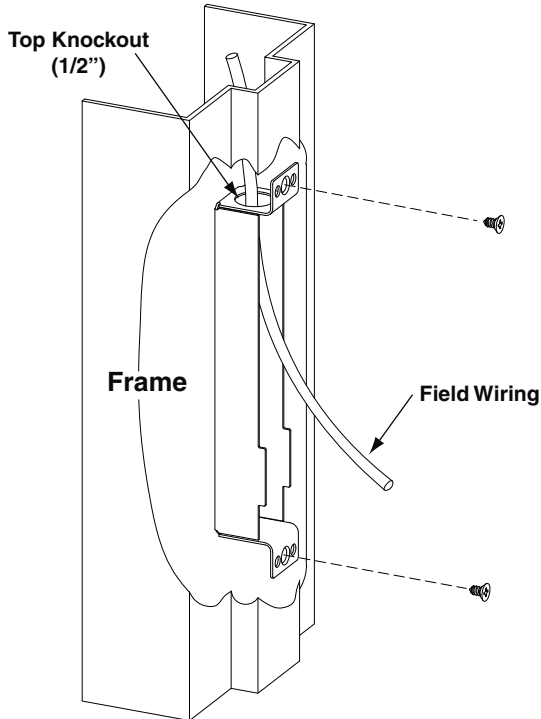
Wiring must be in accordance with all local codes and regulations.

# Installation

## 1 Use Template from Back Page to Verify Preparation

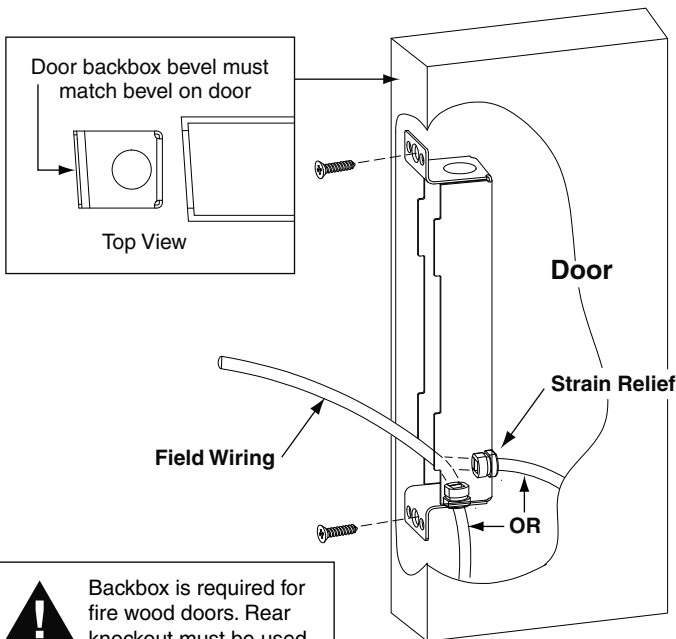
## 2 Mount Frame Backbox

- Remove knockout from top
- Install 1/2" conduit, if used
- Pull 5" of field wiring through knockout

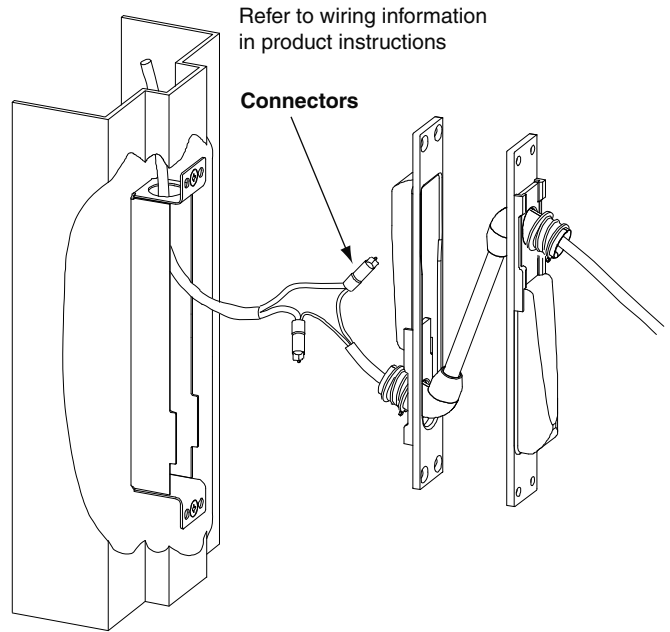


## 3 Mount Door Backbox

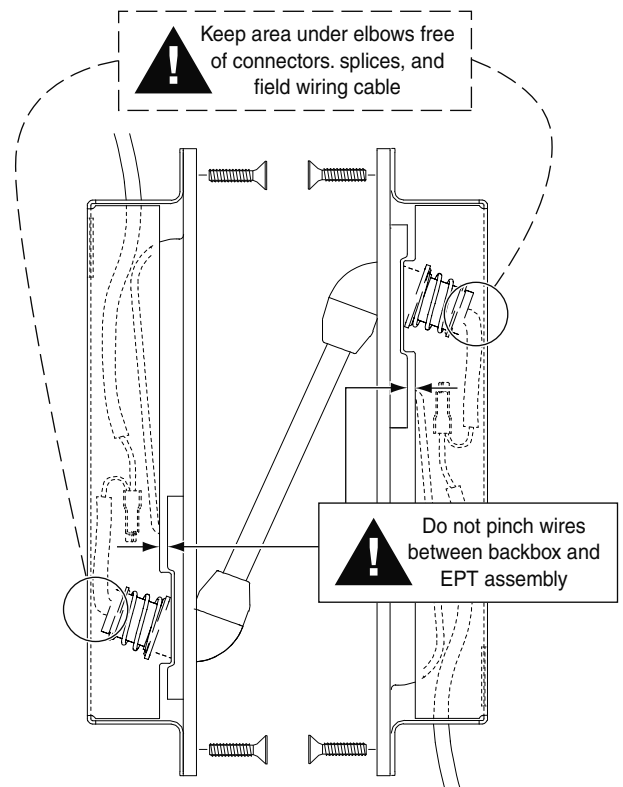
- Ensure backbox bevel matches door bevel
- Remove knockout:
  - from bottom for **metal** doors
  - from back for **wood** doors
- Pull 5" of field wiring through knockout
- Install strain relief



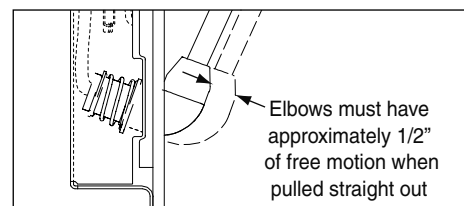
## 4 Connect Wires



## 5 Mount EPT Assembly

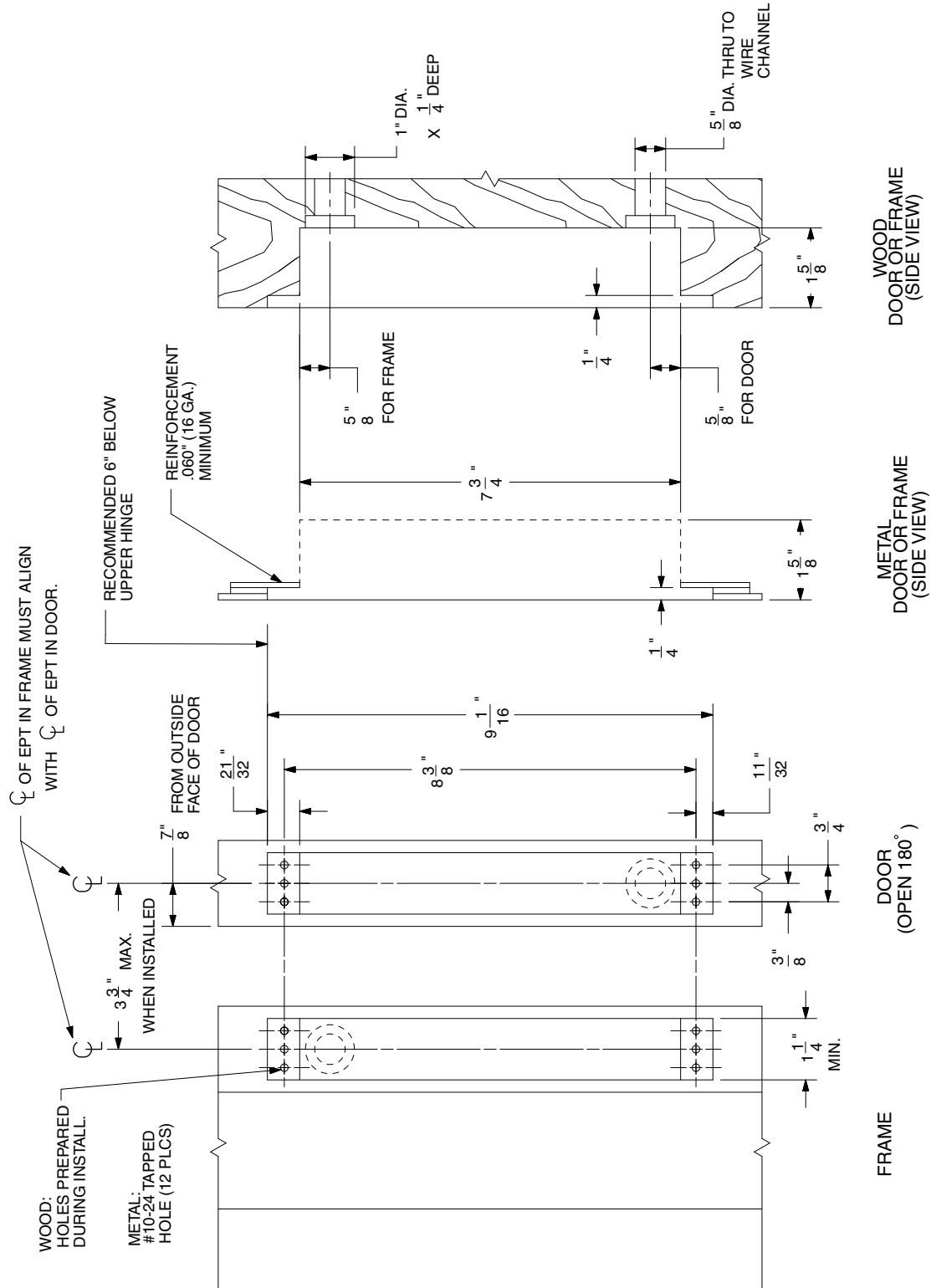


## 6 Verify that door opens and closes properly without binding and that electrical components function

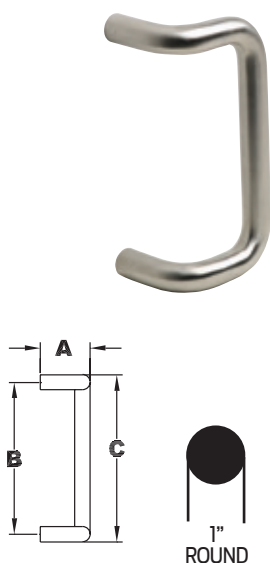


# Template

**Note:** This drawing is not to scale



\*ALL DIMENSIONS ARE TYPICAL



### 8190HD 90° Offset Door Pull

Available mounting – with heavy duty 3/8-16" mounting screws, standard H-I-L, N or O see page B15 and B17

#### Available Sizes

8", 10", 12", 18"

| Product No. | Projection<br>"A" | Clearance | Center to Center<br>"B" | Overall Length<br>"C" |
|-------------|-------------------|-----------|-------------------------|-----------------------|
| 8190-8      | 3-1/4"            | 2-1/4"    | 8"                      | 9"                    |
| 8190-0      | 3-1/4"            | 2-1/4"    | 10"                     | 11"                   |
| 8190-2      | 3-1/4"            | 2-1/4"    | 12"                     | 13"                   |
| 8190-18     | 3-1/4"            | 2-1/4"    | 18"                     | 19"                   |

#### Finishes brass

| US Number | US3 | US4 | US10 | US10B | US15 | US26 | US26D* |
|-----------|-----|-----|------|-------|------|------|--------|
| BHMA      | 605 | 606 | 612  | 613   | 619  | 625  | 626    |

#### Finishes stainless steel

| US Number | US32 | US32D* |
|-----------|------|--------|
| BHMA      | 629  | 630    |

\* Available with Antimicrobial Coating, use suffix AM

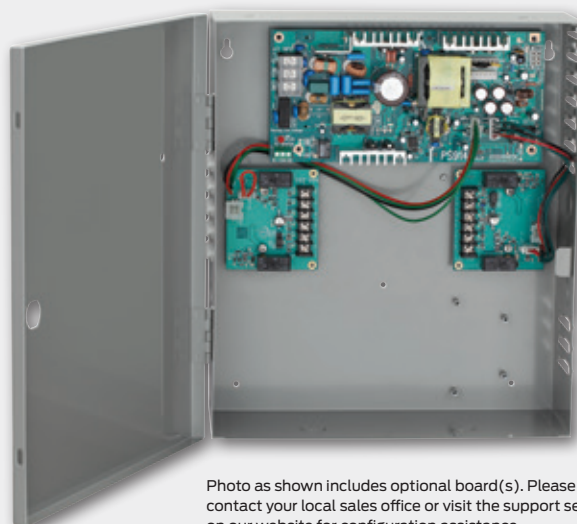
**VON DUPRIN®****PS914****4 amp high in rush  
power supply**

Photo as shown includes optional board(s). Please contact your local sales office or visit the support section on our website for configuration assistance.

## Overview

Von Duprin power supply and option board products were designed to meet the specific requirements of electrified fire exit devices.

Installation is simplified by utilizing a flat mounting design and polarized locking connectors for option boards. This design eliminates the need for racks and side connectors. The flat mounting of the option boards also provides for easier access to the terminal blocks for connection of electrified devices (such as electrified panic devices, strikes, card readers, etc.).

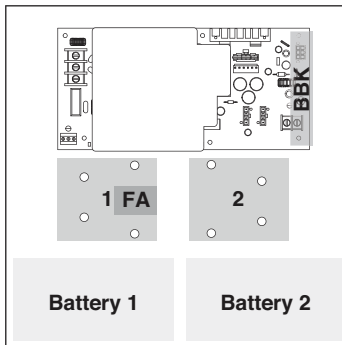
Common to the line of PS900 Series power supplies is a constant output rating at both 12v and 24v settings, universal 120 VAC to 240 VAC input, and polarized option board connectors. New fire alarm interface board mounting allows outputs to be configured as switched (power cut) or unswitched (power continues) when signal is provided.

## Features and benefits

- 4A @ 12/24 VDC constant output, field selectable with jumper
- Designed for use with electrified panic devices requiring high in rush current
- Provides low-voltage, Class 2, filtered and regulated power
- Universal 120-240 VAC, fused primary input
- Two polarized option board connectors
- AC input and DC output monitoring circuit with LED indicators
- Externally visible AC input indicator with isolated SPDT contacts
- High-voltage protective cover for AC circuitry (not shown)
- Battery back-up board auto-selects voltage
- Optional Fire Alarm plug-in board available
- UL 294, ULC-S318, RoHS, and FCC Part 15 certified

## Configuration options

Available option board, fire alarm and battery backup connection locations:



### Exit device support

|                |                        |
|----------------|------------------------|
| Von Duprin QEL | Up to 8 <sup>1</sup>   |
| Von Duprin EL  | Up to 8 <sup>1,2</sup> |
| Falcon EL      | Up to 8 <sup>1,2</sup> |

1. Requires the use of two 900-4RL option boards

2. Distance from power supply may be limited with multiple EL applications - consult technical support for wire run lengths

## PS914 power supply specifications

| Specification                             | Description   |
|---|---|
| Input voltage                             | 120/240 VAC, 50/60 Hz, universal input  |
| Output voltage                            | 4A @ 12 or 24 VDC<br>Field selectable with jumper<br>Switching supply, 5% regulation, 360mVpp max ripple  |
| Enclosure                                 | Grey/baked enamel<br>14" x 12" x 4" (H x W x D)<br>Eight 1/2" x 3/4" knockouts<br>Hinged cover with lock down screws  |
| Operating temperature                     | 32° - 120°F (0° - 49°C)   |
| Certifications                            | ANSI/UL 294<br>ULC-S318<br>RoHS<br>FCC Part 15<br>Class 2   |
| Battery backup<br>(install on main board) | 900-BB: Battery backup board only<br>900-BBK: Battery backup kit (backup board plus battery pack)   |
| Available option boards                   | 900-FA: Plug-in fire alarm (must be installed on option board)<br>900-2RS*: 2 Relay option board capable of individual or sequential operation for single and pair door applications<br>900-4R*: 4 Relay option board<br>900-4RL*: 4 Relay option board with integrated logic and individual or sequential operation capability for controlling security interlocks, auto operators and time delay function<br>900-8F*: Fused, 8 zone option board<br>900-8P*: PTC, 8 zone option board |
| AC primary fuse size                      | 6.3A, 250v, 5 x 20mm  |
| Battery fuse size                         | 7.5A 32v ATO blade style  |
| DC output protection                      | Overload protection - current limited foldback circuit  |
| Indicators                                | LED indicators:<br>- AC input (visible on outside of enclosure)<br>- DC output<br>Isolated SPDT contacts to monitor AC power status   |
| Weight (power supply)                     | Approx. 9.0 lbs   |
| Weight (each battery)                     | 4.0 lbs   |
| AC input termination                      | 3 position terminal block with protective cover<br>Wire capacity: 10 AWG max.   |
| DC output termination                     | 2 position terminal block<br>Wire capacity: 12 AWG max.   |
| Option board connectors                   | 2   |
| Fire alarm board connector                | Yes (requires connection on option board)   |
| Keylock                                   | Optional  |
| Accessories                               | 900-BAT: Backup battery pack  |

\* Compatible with plug-in fire alarm board (900-FA)

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## About Allegion

Allegion (NYSE: ALLE) is a global pioneer in safety and security, with leading brands like CISA®, Interflex®, LCN®, Schlage® and Von Duprin®. Focusing on security around the door and adjacent areas, Allegion produces a range of solutions for homes, businesses, schools and other institutions. Allegion is a \$2 billion company, with products sold in almost 130 countries. For more, visit [www.allegion.com](http://www.allegion.com).