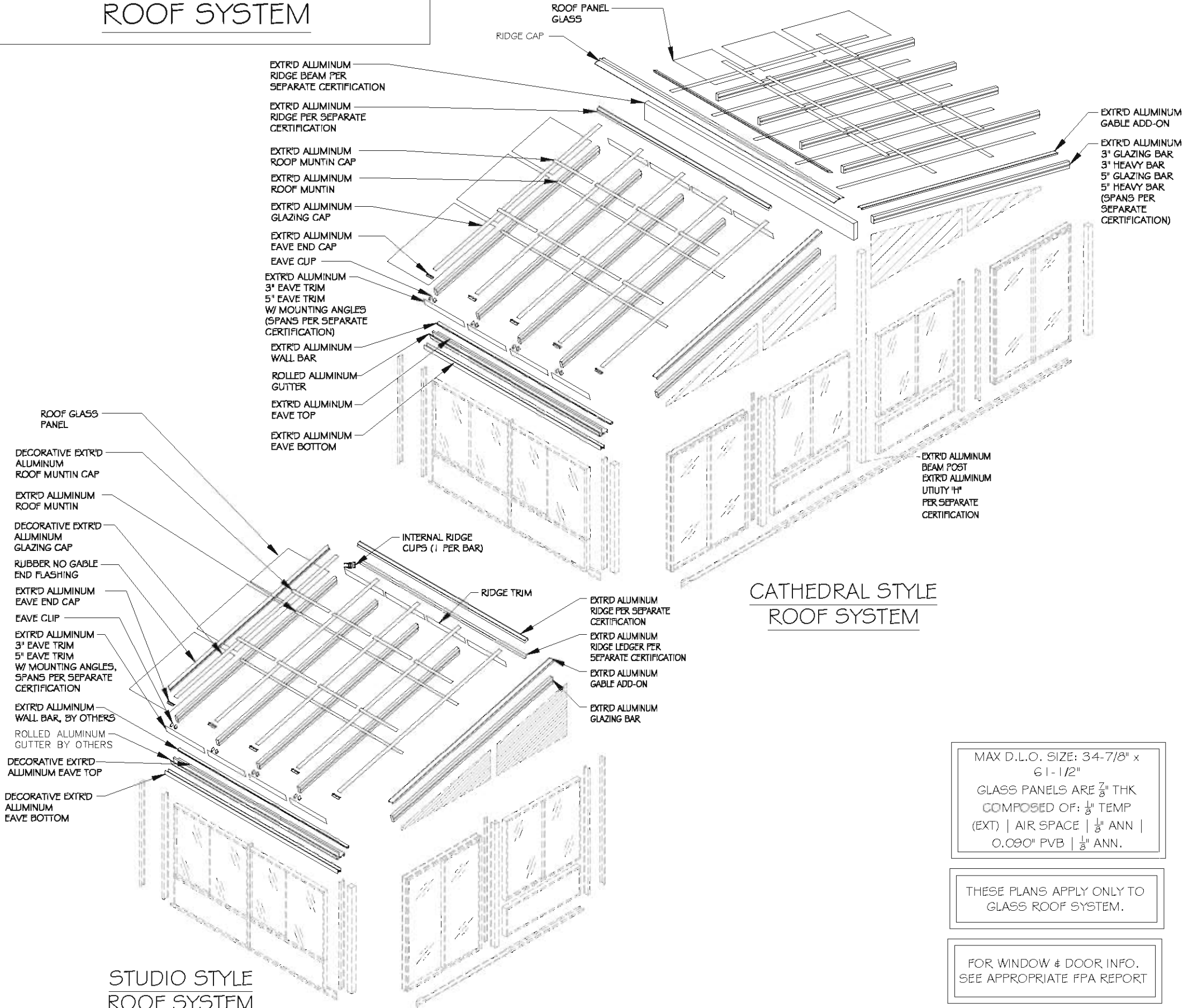


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SERIES 230 SUN & STARS
ROOF SYSTEM



MAXIMUM ALLOWABLE
DESIGN PRESSURES:

+70 PSF / -70 PSF ASD

DESIGN NOTES:

POSITIVE AND NEGATIVE DESIGN PRESSURES CALCULATED FOR USE WITH THIS SYSTEM SHALL BE DETERMINED BY OTHERS ON A JOB-SPECIFIC BASIS IN ACCORDANCE WITH THE GOVERNING CODE. SITE-SPECIFIC PRESSURE REQUIREMENTS AS DETERMINED IN ACCORDANCE WITH ASCE 7 AND CHAPTER 1609 OF THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) SHALL BE LESS THAN OR EQUAL TO THE POSITIVE OR NEGATIVE DESIGN PRESSURE CAPACITY VALUES LISTED HEREIN FOR ANY ASSEMBLY AS SHOWN.

GENERAL NOTES:

1. THIS SPECIFICATION HAS BEEN DESIGNED AND SHALL BE FABRICATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE SEVENTH EDITION (2020) FOR USE WITHIN AND OUTSIDE THE HVHZ. CONTRACTOR SHALL INVESTIGATE AND CONFORM TO ALL LOCAL BUILDING CODE AMENDMENTS WHICH MAY APPLY. DESIGN CRITERIA BEYOND AS STATED HEREIN MAY REQUIRE ADDITIONAL SITE-SPECIFIC SEALED ENGINEERING.
2. NO 33-1/3% INCREASE IN ALLOWABLE STRESS HAS BEEN USED IN THE DESIGN OF THIS SYSTEM.
3. THE ARCHITECT/ENGINEER OF RECORD FOR THE PROJECT SUPERSTRUCTURE WITH WHICH THIS DESIGN IS USED SHALL BE RESPONSIBLE FOR THE INTEGRITY OF ALL SUPPORTING SURFACES TO THIS DESIGN WHICH SHALL BE COORDINATED BY THE PERMITTING CONTRACTOR.
4. SEPARATE 'SITE-SPECIFIC' SEALED ENGINEERING SHALL BE REQUIRED IN ORDER TO DEVIATE FROM LOADS, DEFLECTIONS, OR SPANS CONTAINED HEREIN. CONTACT THIS ENGINEER FOR ALTERNATE SPAN CALCULATIONS AS MAY BE REQUIRED.
5. THE SYSTEM DETAILED HEREIN IS GENERIC AND DOES NOT PROVIDE INFORMATION FOR A SPECIFIC SITE. FOR SITE CONDITIONS DIFFERENT FROM THE CONDITIONS DETAILED HEREIN, A LICENSED ENGINEER OR REGISTERED ARCHITECT SHALL PREPARE SITE SPECIFIC DOCUMENTS FOR USE IN CONJUNCTION WITH THIS DOCUMENT.
6. THE CONTRACTOR SHALL CAREFULLY CONSIDER POSSIBLE IMPOSING LOADS ON ROOF, INCLUDING BUT NOT LIMITED TO ANY CONCENTRATED LOADS WHICH MAY JUSTIFY GREATER DESIGN CRITERIA. THIS ADDITIONAL ROOF LOAD CRITERIA SHALL BE PROPERLY ANALYZED BY A LICENSED ENGINEER OR REGISTERED ARCHITECT.
7. THE CONTRACTOR IS RESPONSIBLE TO INSULATE OR PROTECT ALL MEMBERS FROM DISSIMILAR MATERIALS TO PREVENT ELECTROLYSIS.
8. ENGINEER SEAL AFFIXED HERE TO VALIDATES STRUCTURAL DESIGN AS SHOWN ONLY. USE OF THIS SPECIFICATION BY CONTRACTOR, et. al. INDEMNIFIES & SAVES HARMLESS THIS ENGINEER FOR ALL COST & DAMAGES INCLUDING LEGAL FEES & APPELLATE FEES RESULTING FROM MATERIAL FABRICATION, SYSTEM ERECTION, & CONSTRUCTION PRACTICES BEYOND THAT WHICH IS CALLED FOR BY LOCAL, STATE, & FEDERAL CODES & FROM DEVIATIONS OF THIS PLAN.
9. EXCEPT AS EXPRESSLY PROVIDED HEREIN, NO ADDITIONAL CERTIFICATIONS OR AFFIRMATIONS ARE INTENDED.
10. ALTERATIONS, ADDITIONS, HIGHLIGHTING, OR OTHER MARKINGS TO THIS DOCUMENT ARE NOT PERMITTED AND INVALIDATE THIS CERTIFICATION.

SYSTEM PERFORMANCE
DERIVATIONS:

1. SYSTEM PERFORMANCE DERIVED FROM CERTIFIED TEST REPORTS Nos. ETC-08-1014-21317.0 AND ETC-08-1014-21649.0 BY ETC LABORATORIES.

VISIT [ECALC.IO/29440](https://ecalculator.com/29440)

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

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



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SERIES 230 SUN AND STARS ROOF SYSTEM

FLORIDA BUILDING CODE

FL12163.1

REMARKS	DATE	DRWN	CHKD
INITIALS	08/17/17	JAC	FLB
2020 FBC	7/26/20	CCB	RWN

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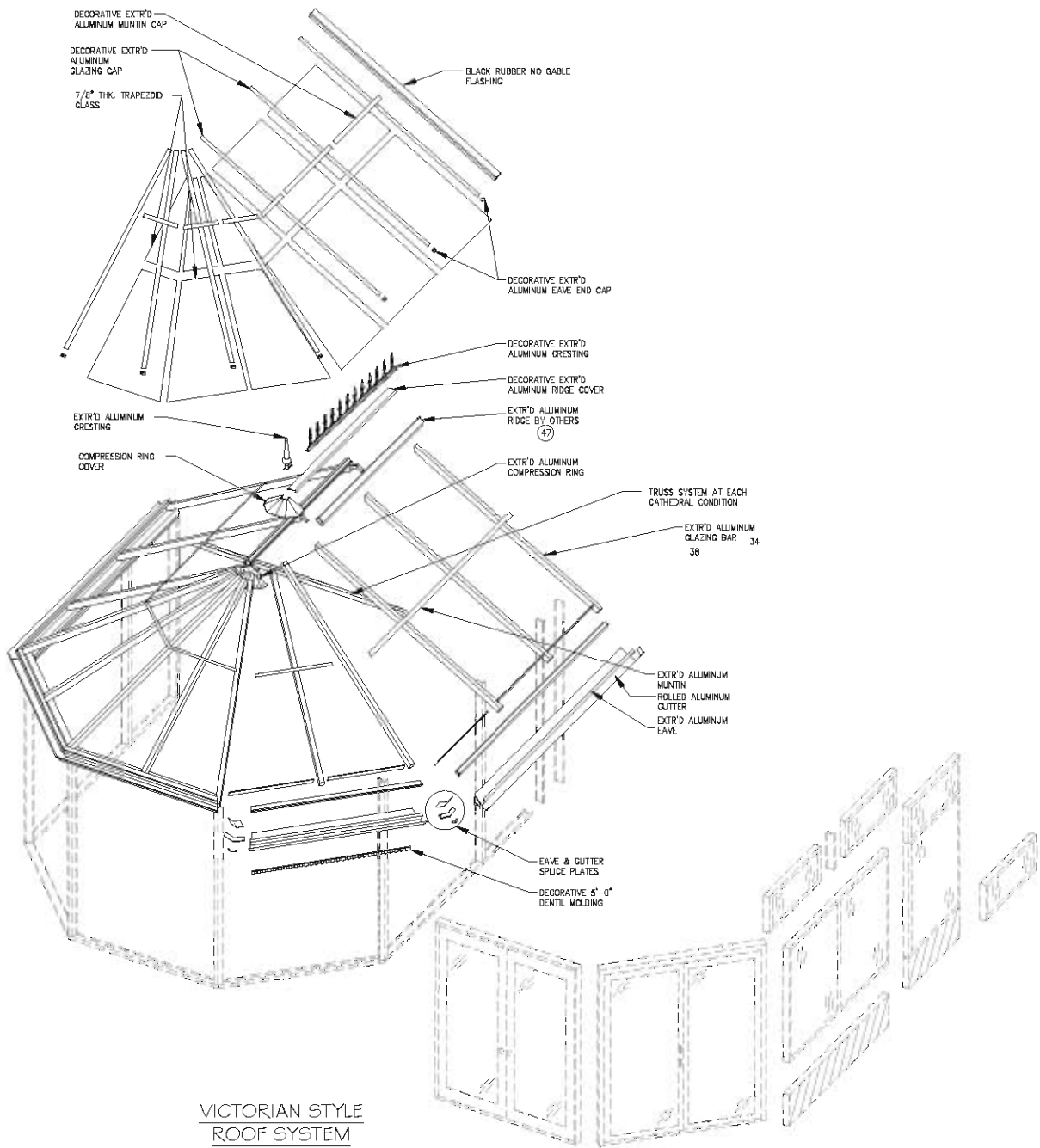
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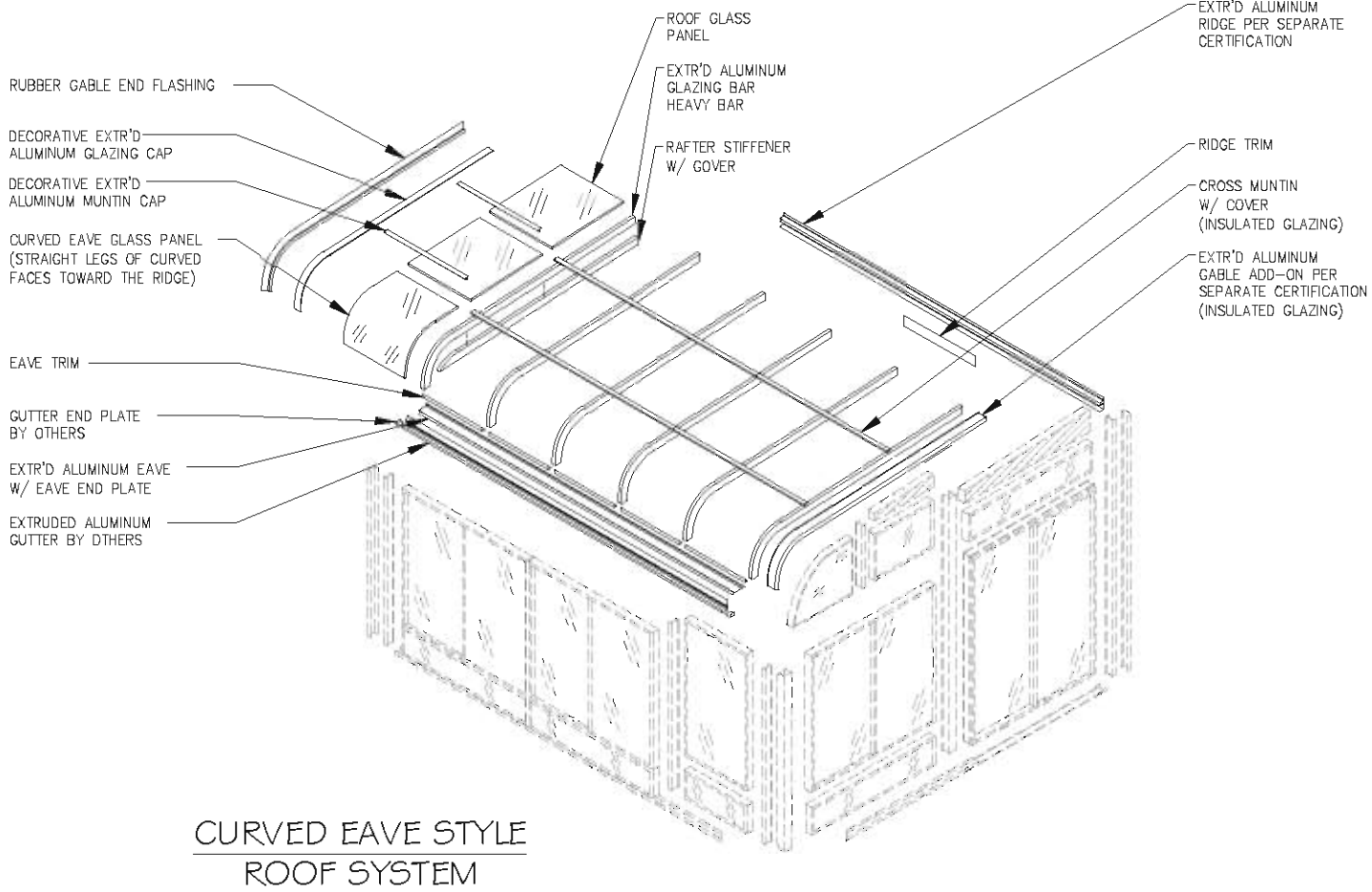
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SERIES 230 SUN & STARS
ROOF SYSTEM



VICTORIAN STYLE
ROOF SYSTEM



CURVED EAVE STYLE
ROOF SYSTEM

THESE PLANS APPLY ONLY TO
GLASS ROOF SYSTEM.

FOR WINDOW & DOOR INFO.
SEE APPROPRIATE FPA REPORT



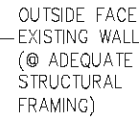
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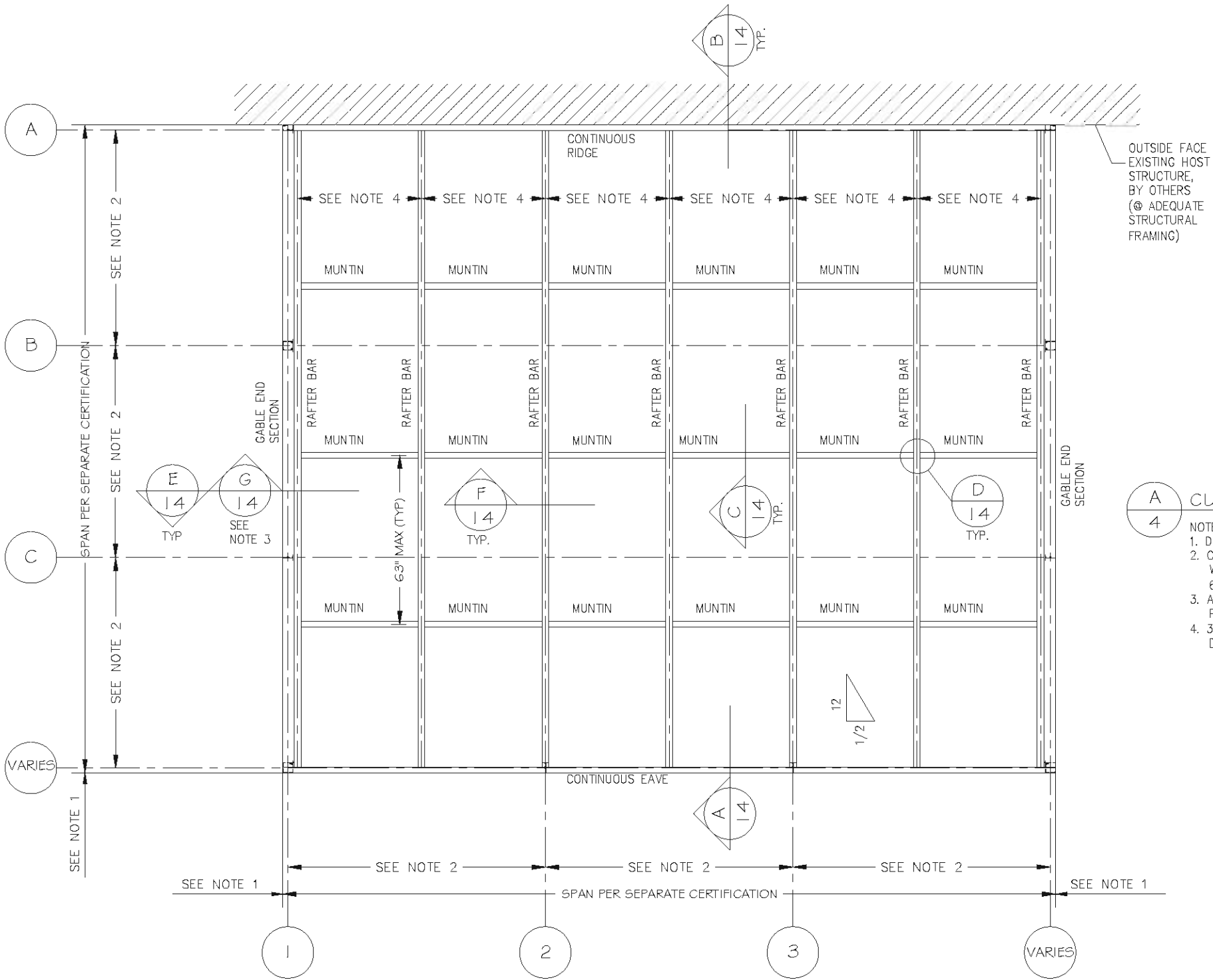
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SCALE: N.T.S.
2 OF 20



NOTE:

1. DIM. TO OUTSIDE FACE OF WALL.
2. COLUMN SPACING VARIES DEPENDING UPON WINDOW & DOOR SIZES & CONFIGURATION. 6'-1 1/2" MAX. ON CENTER SPACING.
3. 30 5/8" & 36 5/8" BAY SPACING VARIES DEPENDING ON ROOM MODEL.
4. ALL ROOF SECTION REFERENCE DETAILS WITH 3" GLAZING BARS. FOR 5" GLAZING BARS SEE SHEET 14.

FOR WINDOW & DOOR INFO.
SEE APPROPRIATE FPA REPORT



A
4 CURVED EAVE ROOF FRAMING PLAN SCALE=3/8"=1'-0"

NOTE:
1. DIM. TO OUTSIDE FACE OF WALL.
2. COLUMN SPACING VARIES DEPENDING UPON WINDOW & DOOR SIZES & CONFIGURATION. 6'-1 1/2" MAX. ON CENTER SPACING.
3. APPLIES ONLY WHEN AN EXISTING WALL IS PRESENT.
4. 30 5/8" & 36 5/8" BAY SPACING VARIES DEPENDING ON ROOM MODEL.

THESE PLANS APPLY ONLY TO GLASS ROOF SYSTEM.

FOR USE IN HVHZ SEE INFO ON SHEETS 19 & 20

FOR WINDOW & DOOR INFO, SEE APPROPRIATE FPA REPORT

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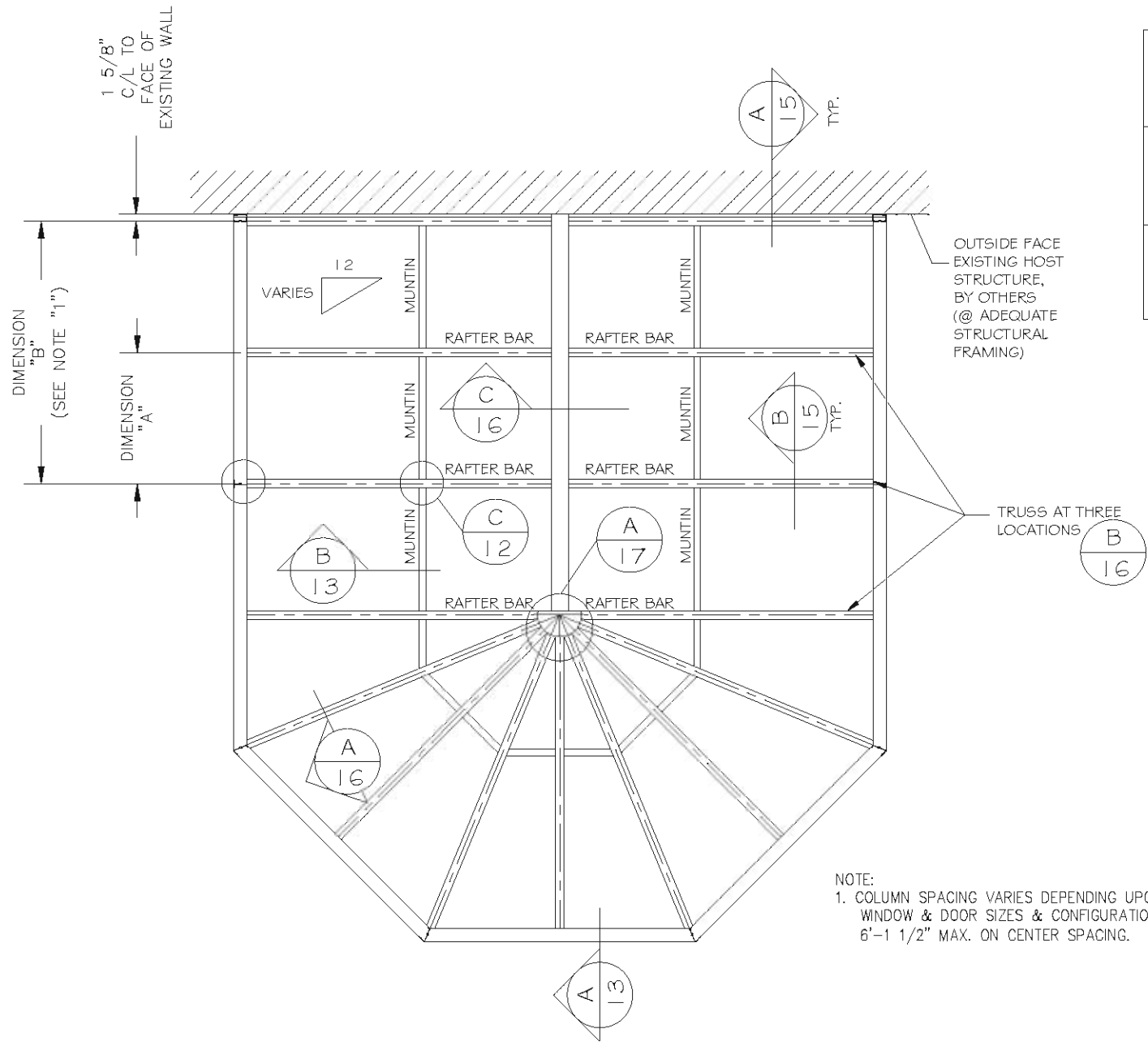
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4

OF 20



B ROOF PLAN
SCALE: 3/8"=1'-0"

SERIES 230 SUN & STARS VICTORIAN ROOF MODEL CONFIGURATION		
MODEL #	DIMENSION "A" Rafter Bar O.C. Spacing	DIMENSION "B" Wall "H" Post Spacing
C4**13***	30 5/8"	61 1/4"
C4**15***	36 5/8"	73 1/4"

FOR USE IN HVHZ SEE INFO ON SHEETS 19 & 20

THESE PLANS APPLY ONLY TO GLASS ROOF SYSTEM.

FOR WINDOW & DOOR INFO. SEE APPROPRIATE FPA REPORT

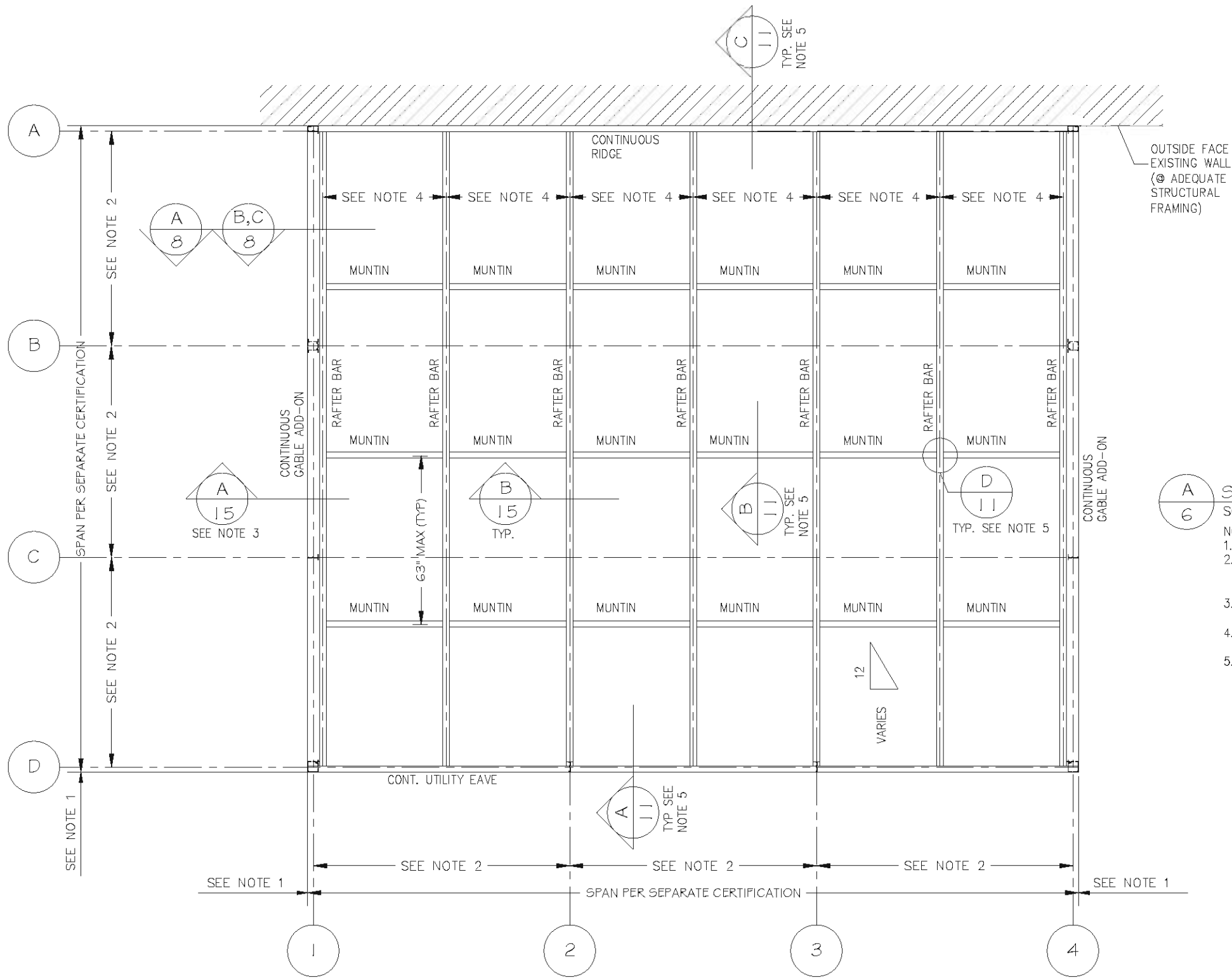


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A
6

STRAIGHT EAVE ROOF FRAMING PLAN
SCALE=3/8"=1'-0"

NOTE:
1. DIM. TO OUTSIDE FACE OF WALL.
2. COLUMN SPACING VARIES DEPENDING UPON WINDOW & DOOR SIZES & CONFIGURATION. 6'-1 1/2" MAX. ON CENTER SPACING.
3. APPLIES ONLY WHEN AN EXISTING WALL IS PRESENT.
4. 30 5/8" & 36 5/8" BAY SPACING VARIES DEPENDING ON ROOM MODEL.
5. ALL ROOF SECTION REFERENCE DETAILS WITH 3" GLAZING BARS. FOR 5" GLAZING BARS SEE SHEET 14.

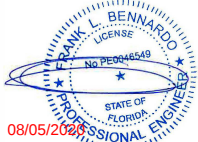
B **ROOF PLAN**
SCALE: 3/8"=1'-0"

THESE PLANS APPLY ONLY TO GLASS ROOF SYSTEM.

FOR USE IN HVHZ SEE INFO ON SHEETS 19 & 20

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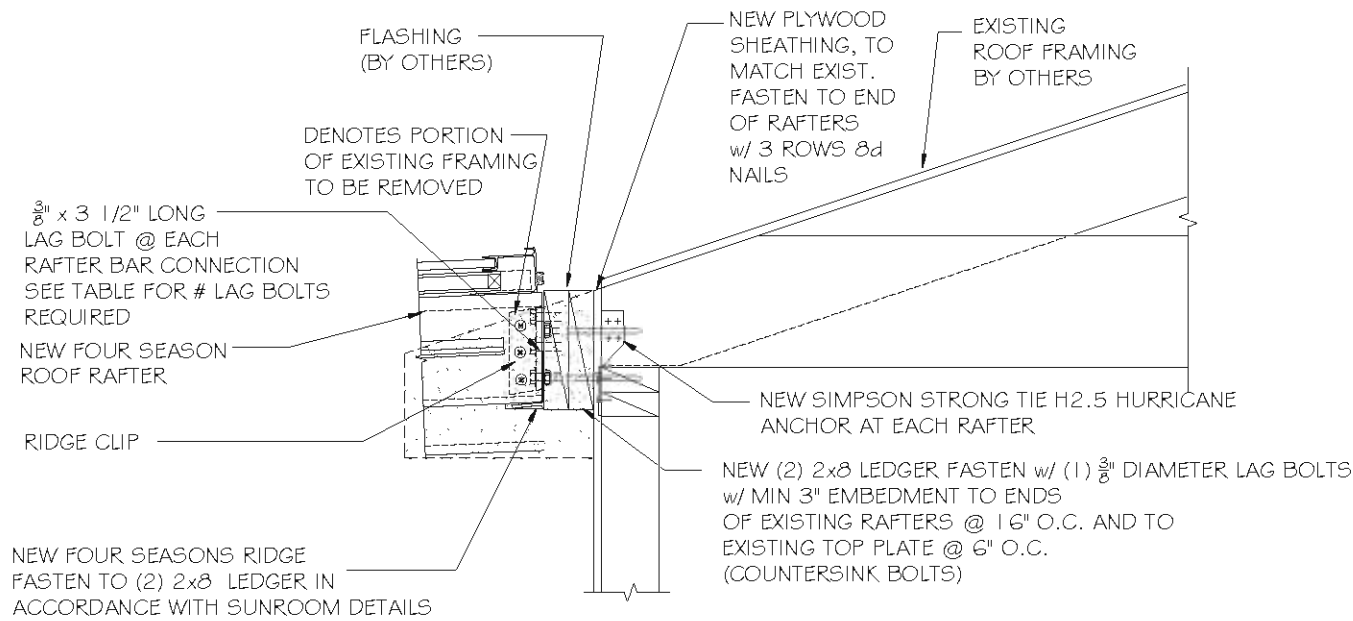
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OF
20



A
7 TYP SUN & STARS STRAIGHT EAVE CONNECTION DETAIL AT EXIST STRUCTURE
NOT TO SCALE

- NOTE:
1. WHEN FASTENING TO MASONRY OR CONCRETE, FASTEN SUNROOM RIDGE DIRECTLY TO MASONRY WITH (3) 3/8" DIAMETER x 3" LONG HILTI METAL HIT ANCHOR (2 1/2" MINIMUM EMBEDMENT)
 2. DO NOT FASTEN RAFTERS DIRECTLY TO MASONRY VENEERS.

WIND SPEED (MPH)	MAX. ALLOW. SPAN		MIN No.LAG BOLTS PER RAFTER BAR
	2.5' BAYS	3' BAYS	
85 EXP B	24'-0"	23'-0"	2
90 EXP B	24'-0"	21'-0"	2
100 EXP B	20'-0"	17'-0"	2
105 EXP B	19'-0"	15'-0"	2
110 EXP C	20'-0"	17'-0"	3
120 EXP C	18'-0"	14'-0"	3
125 EXP C	16'-0"	13'-0"	3
130 EXP C	15'-0"	12'-0"	3
140 EXP C	13'-0"	10'-0"	3
145 EXP C	12'-0"	10'-0"	3
150 EXP C	10'-0"	8'-0"	3

NOTE: MAX ALLOWABLE SPANS SHOWN BASED ON CONNECTION CAPACITY OF DETAIL A7 ONLY. ACTUAL ROOM SPAN MUST BE DETERMINED UTILIZING INFORMATION SHOWN ON EVALUATION REPORT

THESE PLANS APPLY ONLY TO GLASS ROOF SYSTEM.

FOR WINDOW & DOOR INFO. SEE APPROPRIATE FPA REPORT

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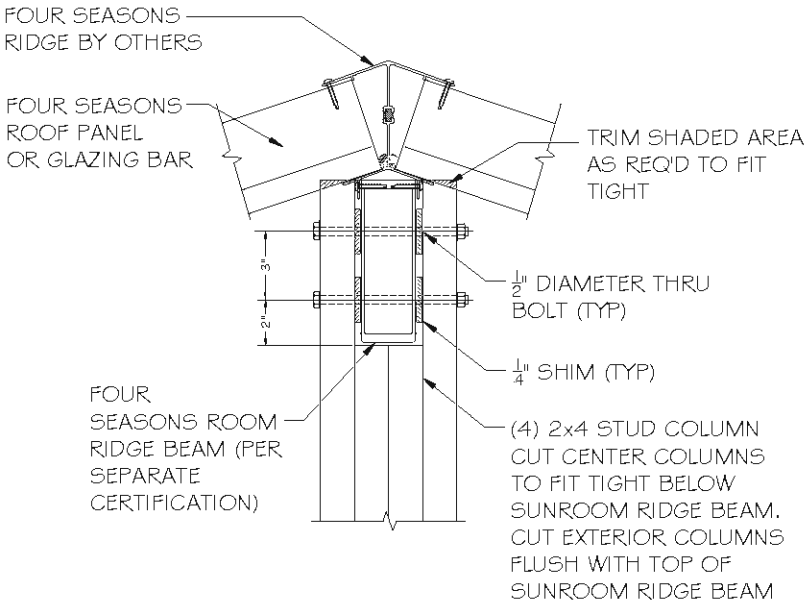
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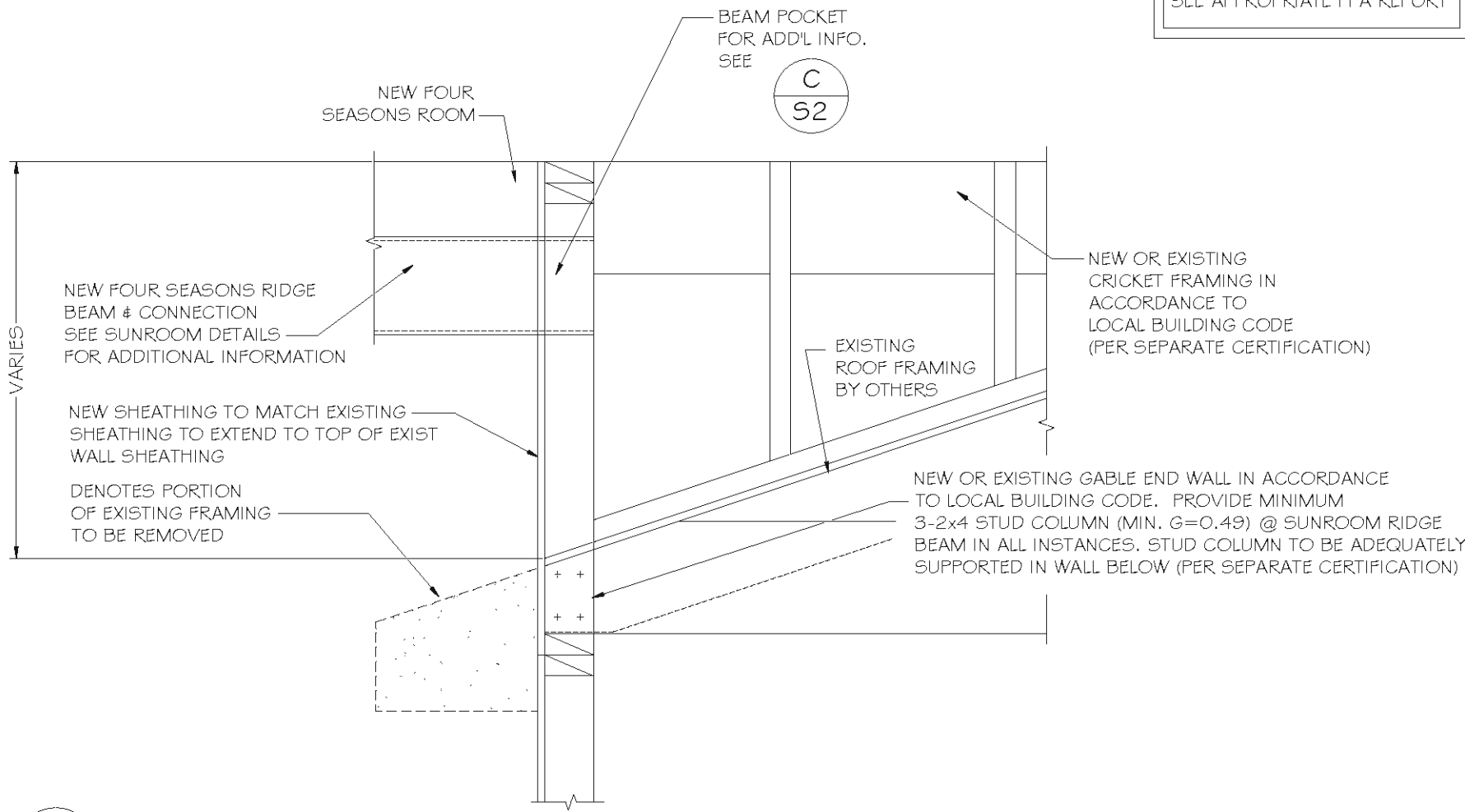
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B
7A
SUNROOM RIDGE BEAM SUPPORT
NOT TO SCALE



A
7A
TYP SUN & SHADE/STARS CATHEDRAL MODEL CONNECTION AT EXIST STRUCTURE
NOT TO SCALE

THESE PLANS APPLY ONLY TO
GLASS ROOF SYSTEM.

FOR WINDOW & DOOR INFO.
SEE APPROPRIATE FPA REPORT

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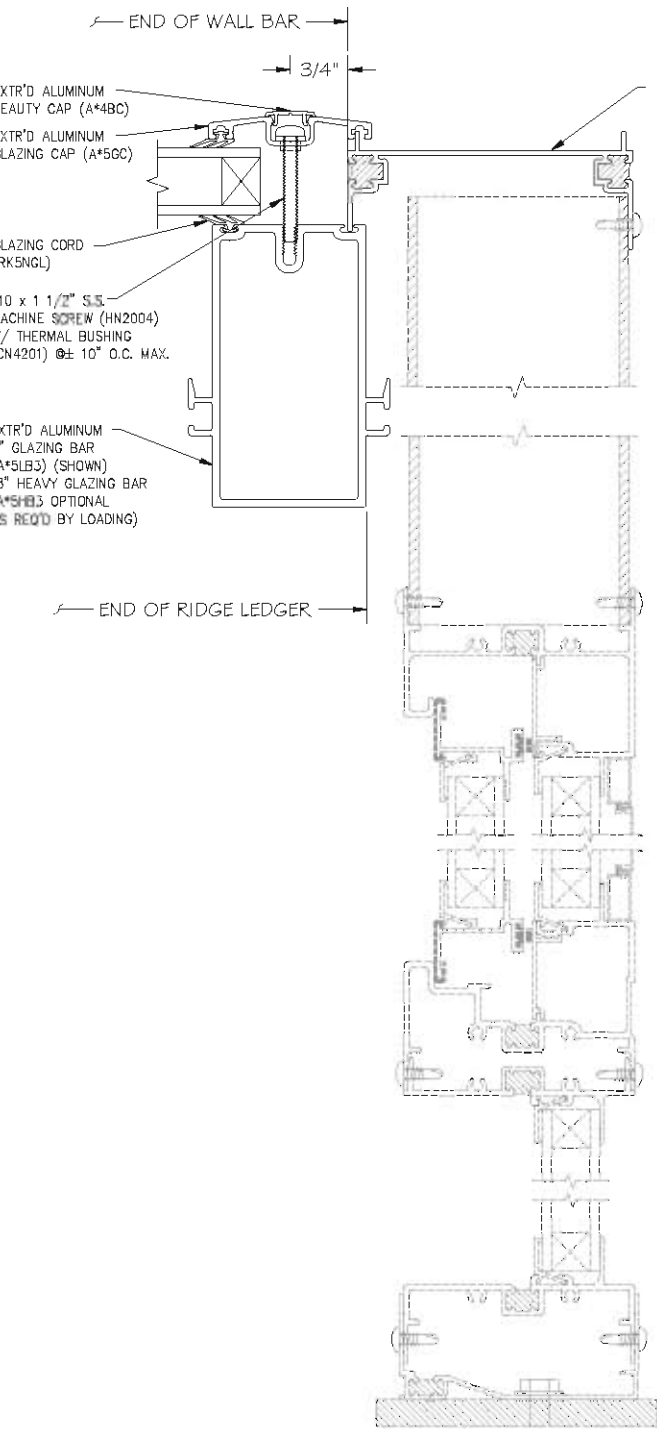
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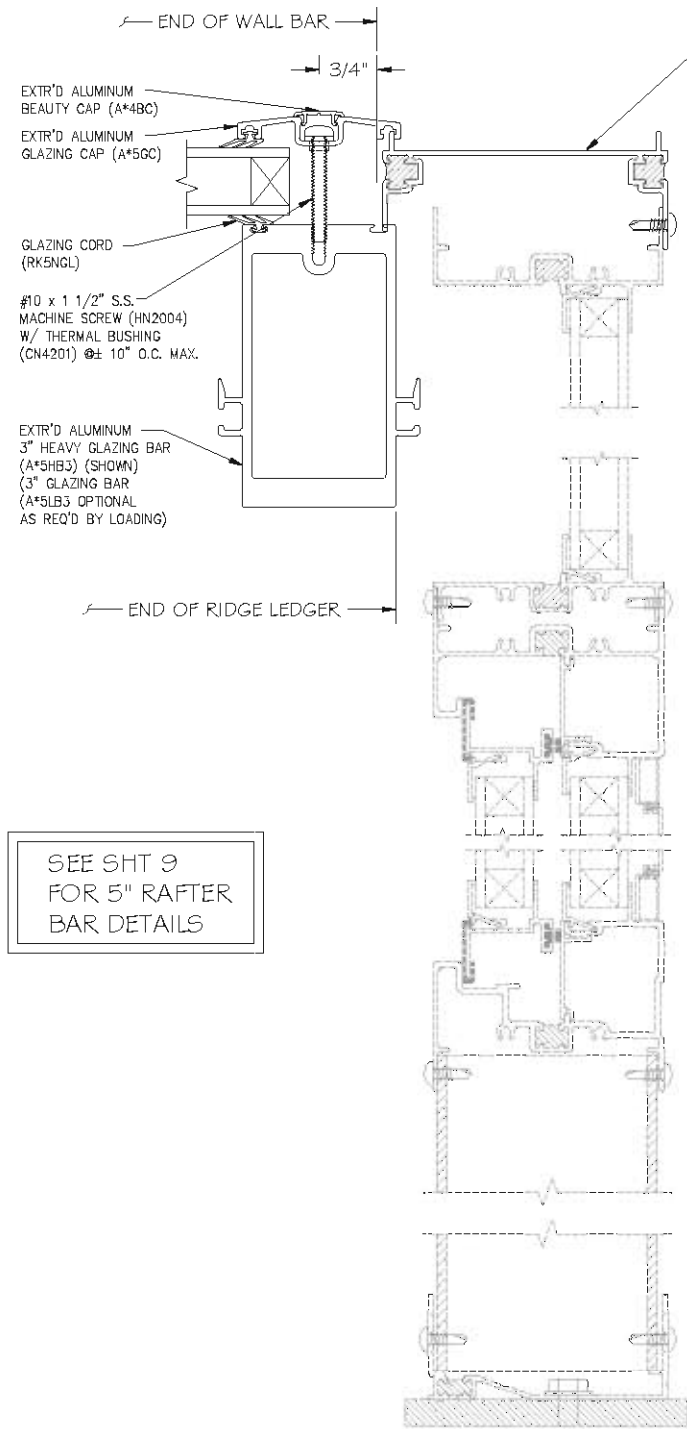
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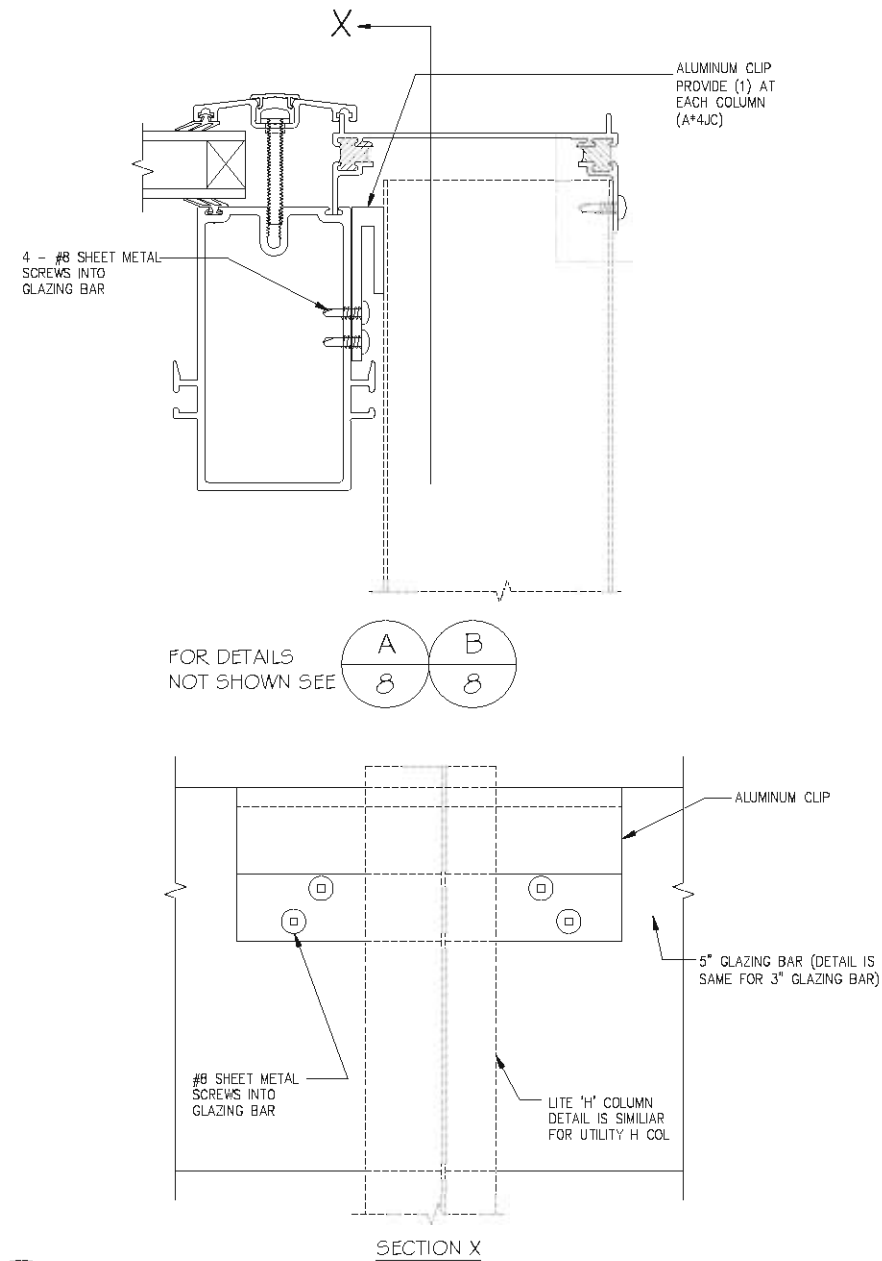
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A
8 GABLE END WALL SECTION w/ SOLID TRAP
NOT TO SCALE



B
8 GABLE END WALL SECTION w/ STD. OR CUSTOM GLASS TRAP
NOT TO SCALE

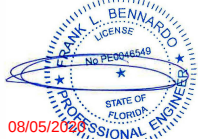


C
8 STRAIGHT EAVE GABLE WALL SECTION @ COLUMN CONNECTION
NOT TO SCALE

THESE PLANS APPLY ONLY TO
GLASS ROOF SYSTEM.

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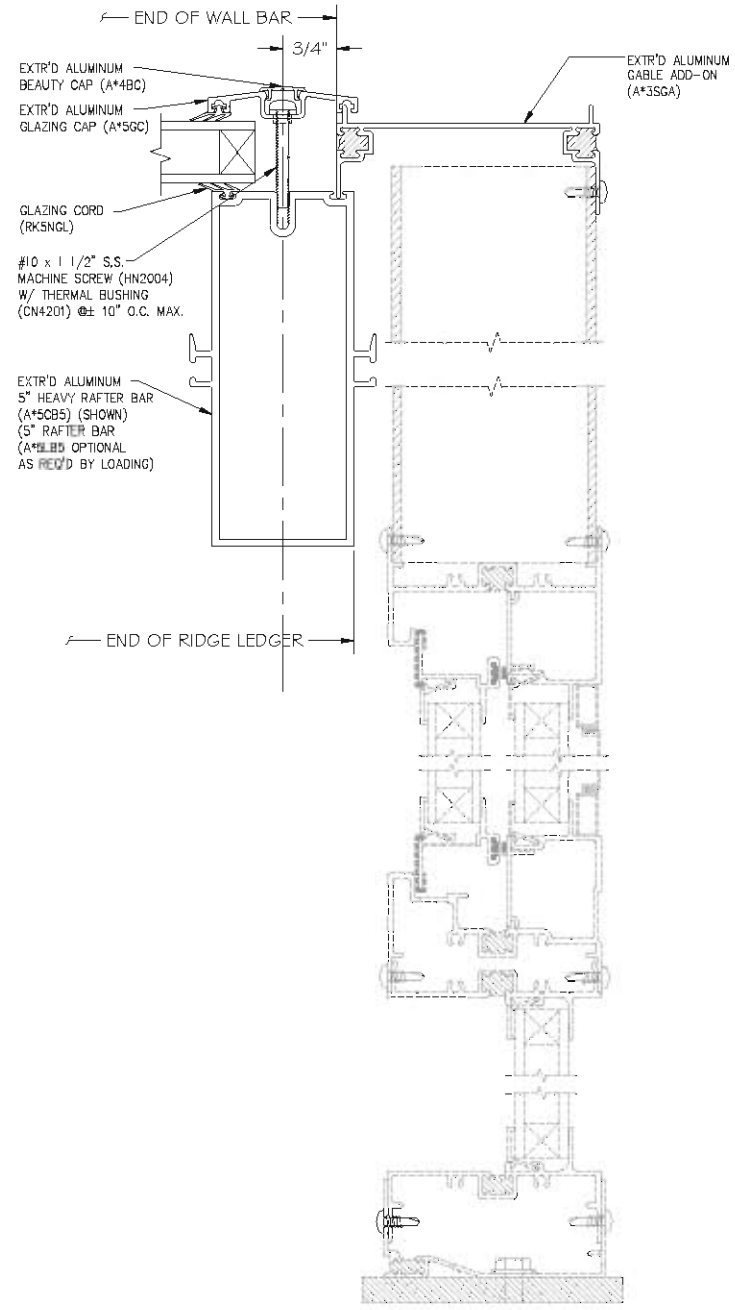
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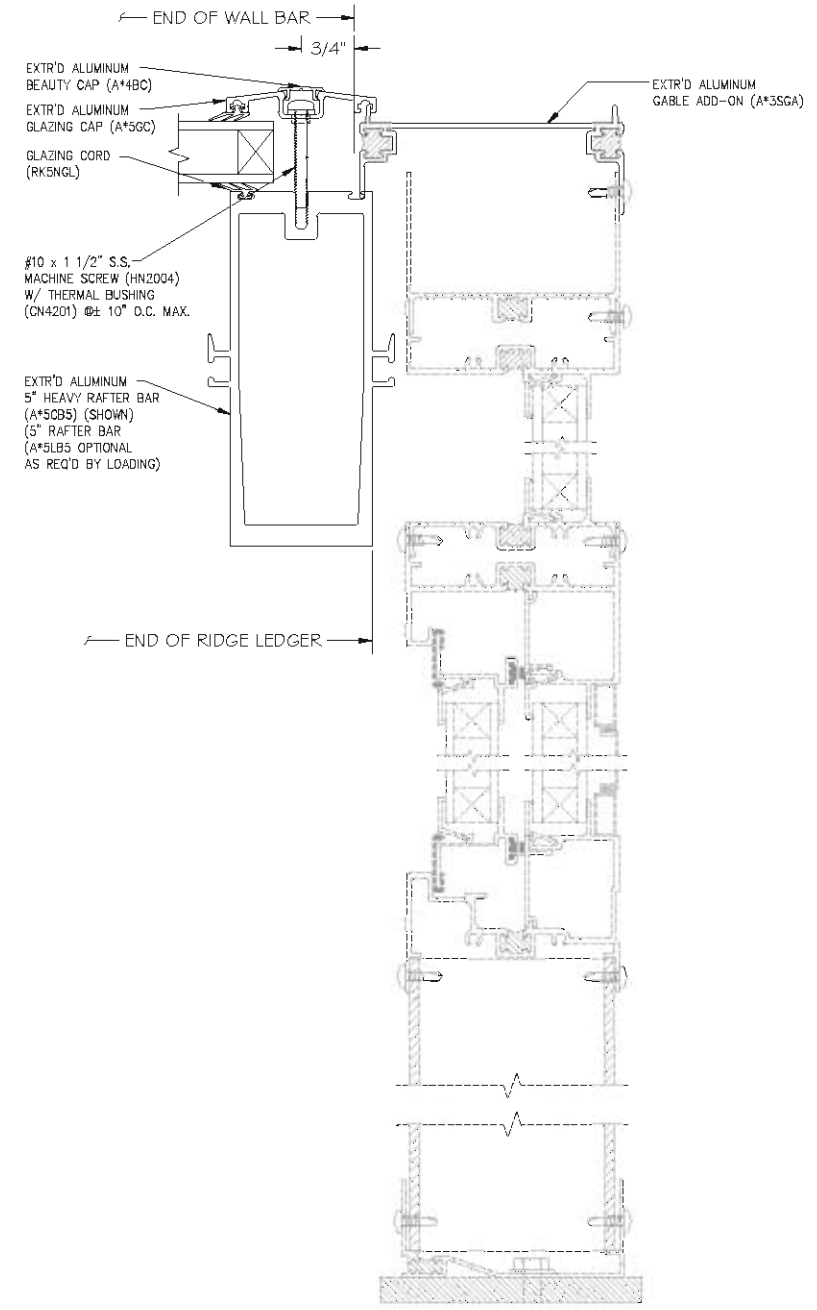
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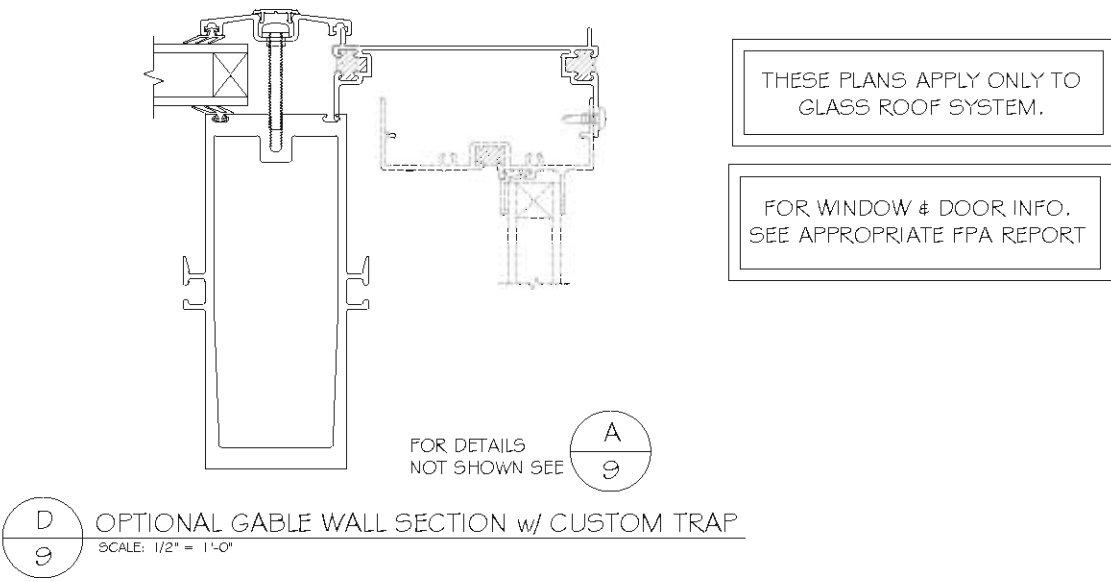
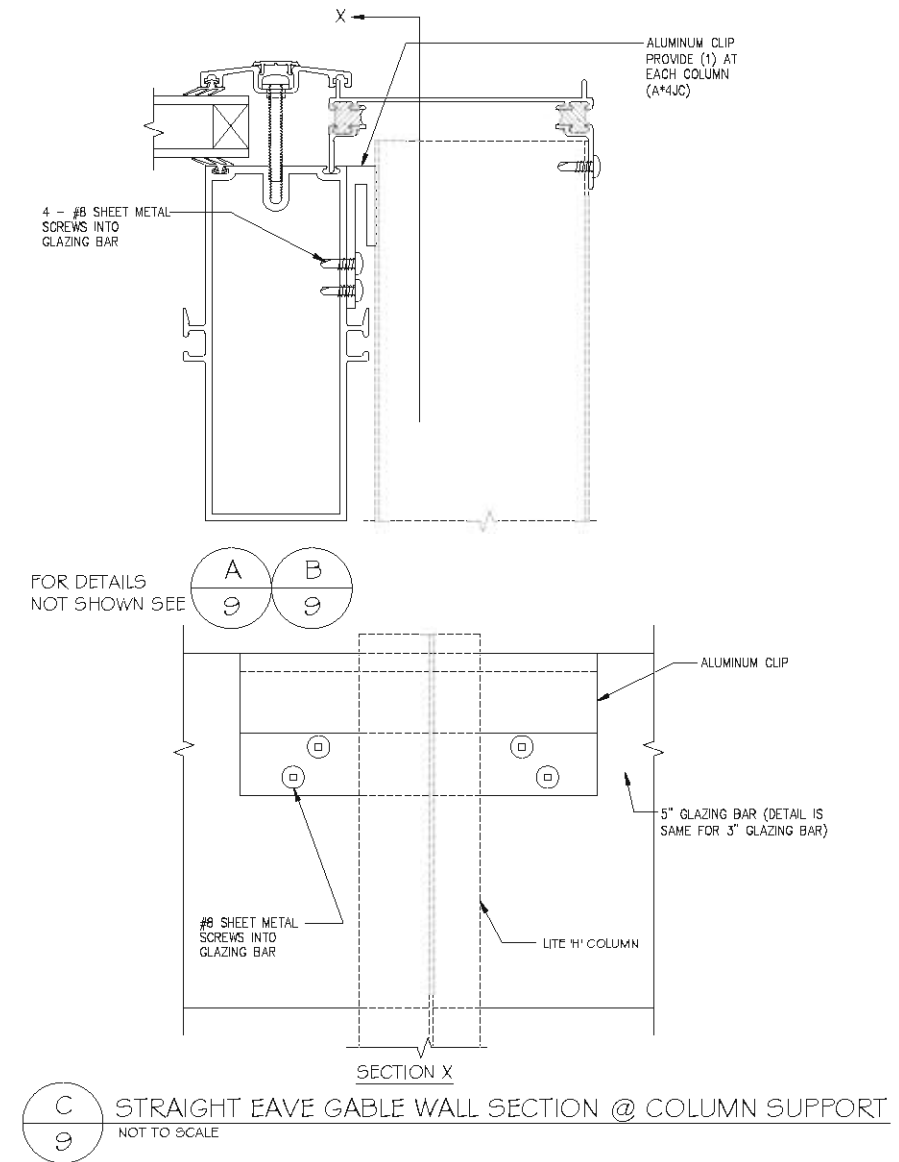
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A
9 GABLE WALL SECTION w/ SOLID TRAP
SCALE: 1/2" = 1'-0"



B
9 STD. GABLE WALL SECTION w/ STD. OR CUSTOM GLASS TRAP
SCALE: 1/2" = 1'-0"



FOR WINDOW & DOOR INFO.
SEE APPROPRIATE FPA REPORT

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08/05/2020
PROFESSIONAL ENGINEER
STATE OF FLORIDA

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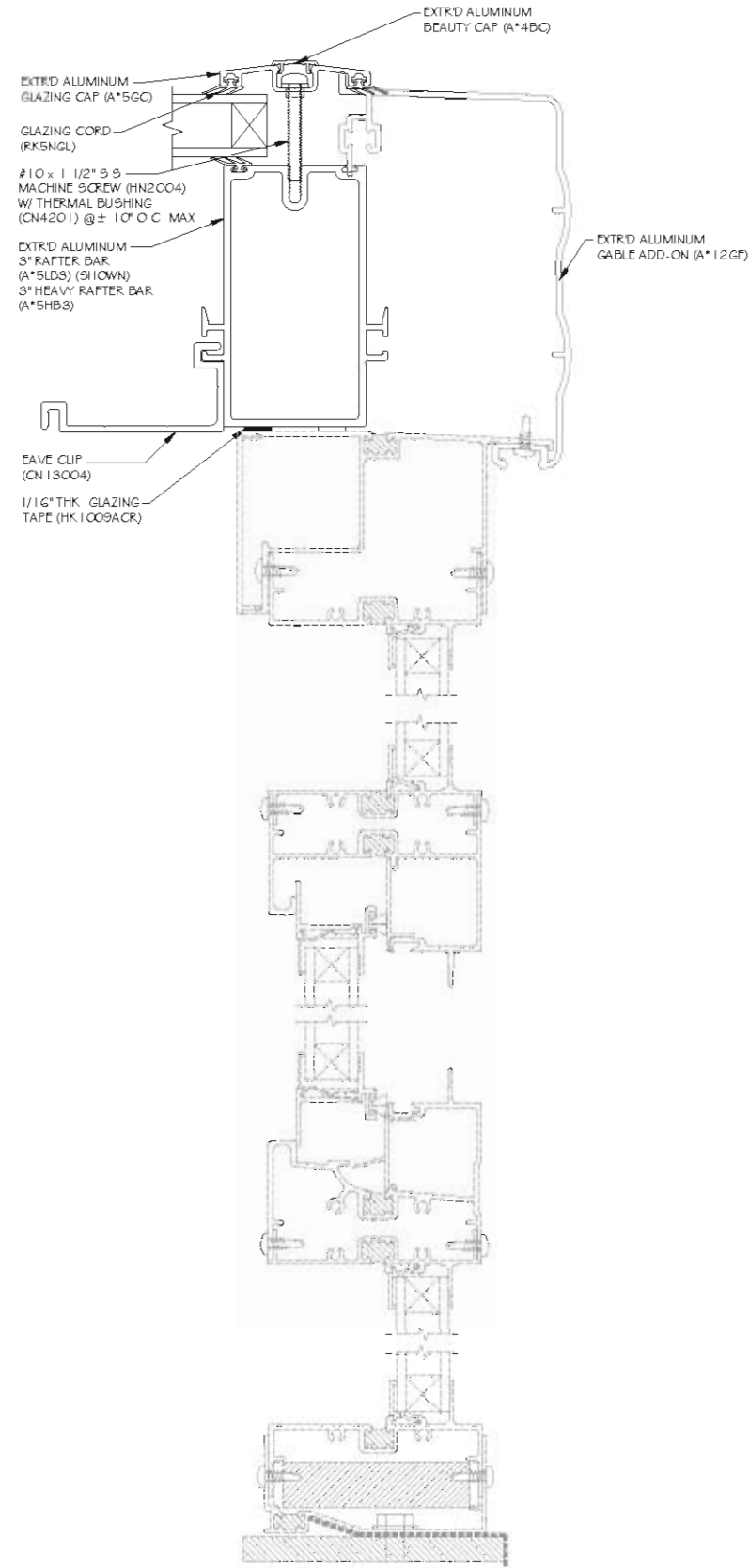
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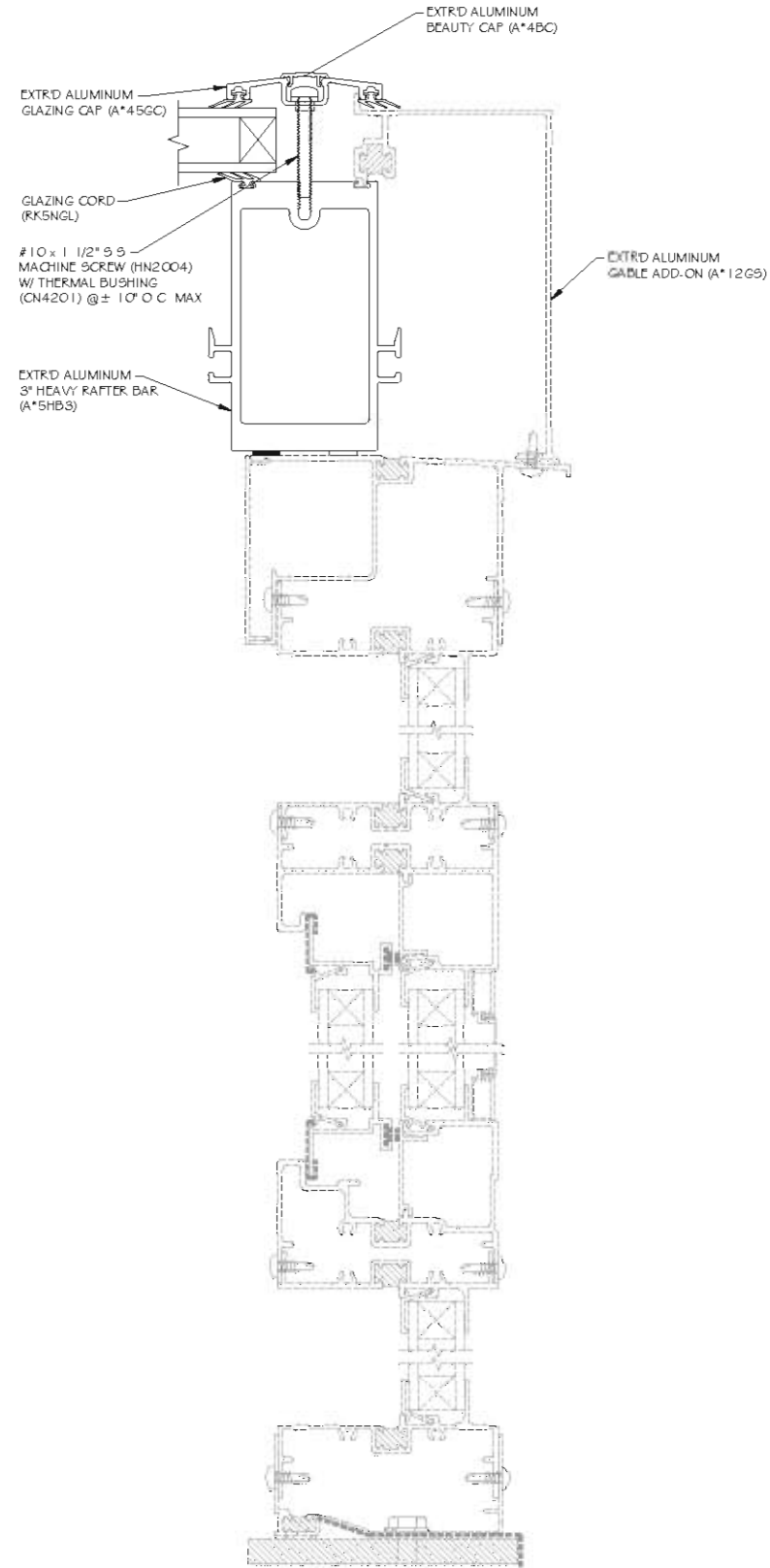
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A
10
GABLE END WALL SECTION
NOT TO SCALE

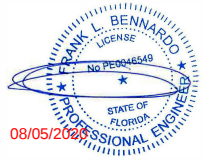


B
10
GABLE END WALL SECTION w/ STD. OR CUSTOM GLASS TRAP
NOT TO SCALE

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PE# 0046549 CA# 9885



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FOUR SEASONS SOLAR PRODUCTS LLC
5005 VETERANS MEMORIAL HWY
HOLBROOK, NY
(631) 563-4000
SERIES 230 SUN AND STARS ROOF SYSTEM
FLORIDA BUILDING CODE
FL12163.1

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	JAC	FLB	08/17/17
2020 FBC	CCB	RWN	7/28/20

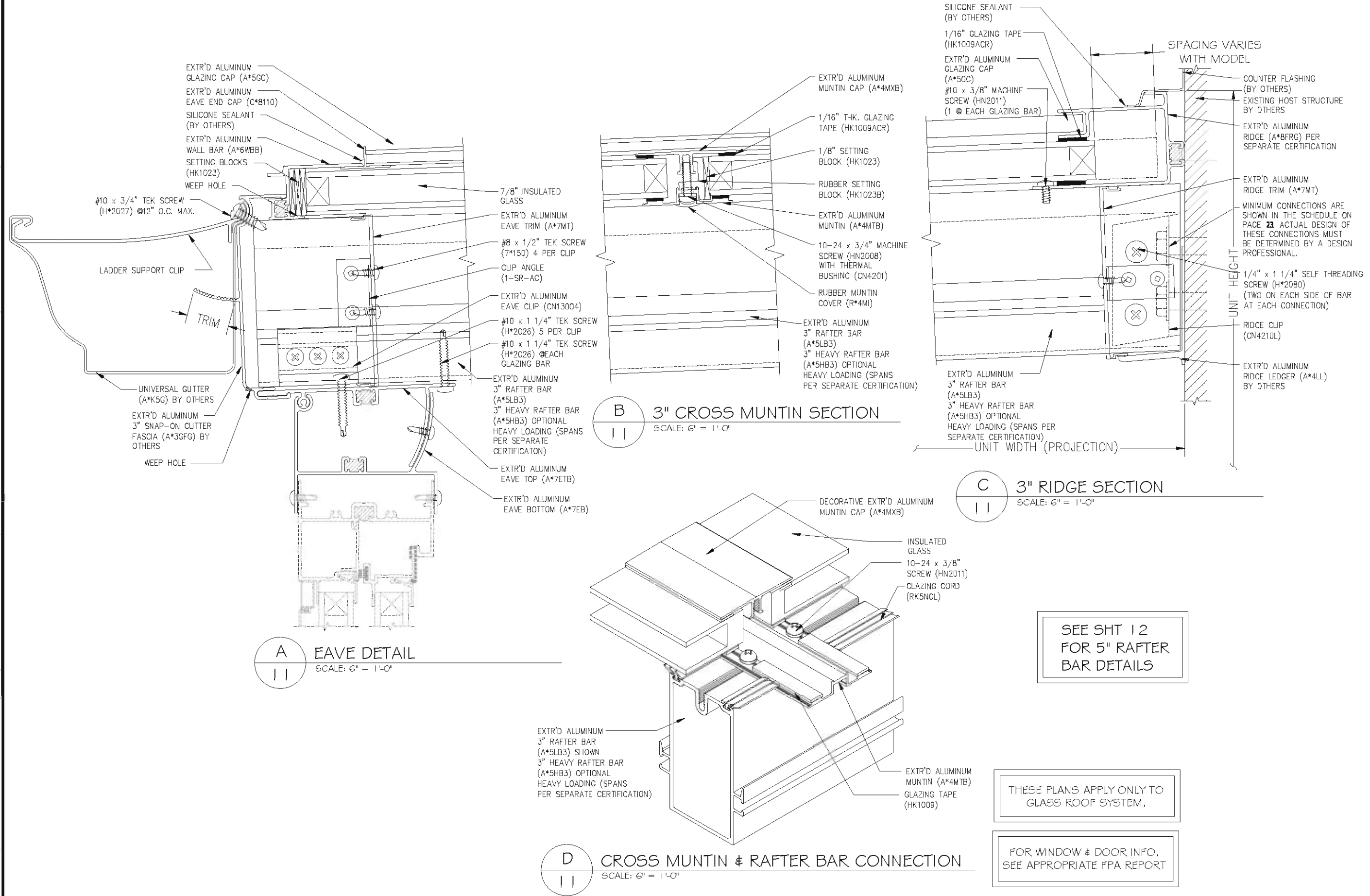
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20-29440

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10
OF 20

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FRANK BENNARDO, PE
PE# 0046549 CA# 9885

FRANK L. BENNARDO
STATE OF FLORIDA
PROFESSIONAL ENGINEER
08/05/2025

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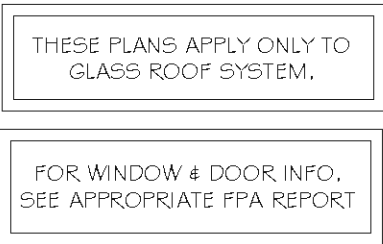
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INIT ISSUE	JAC	FLB	08/17/17
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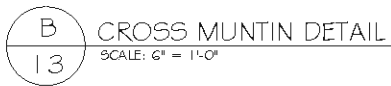
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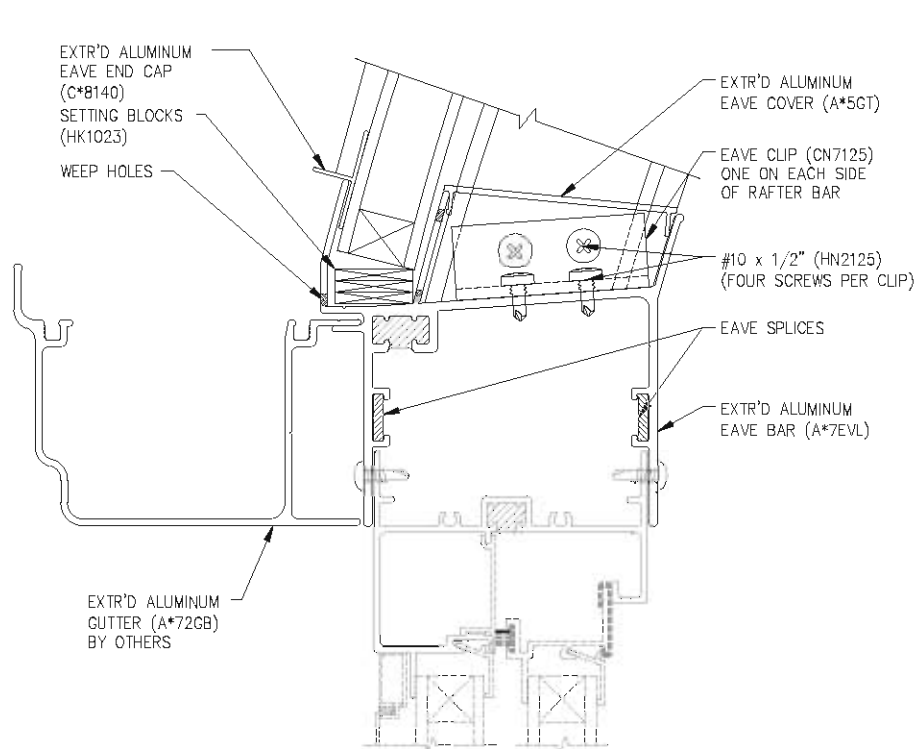
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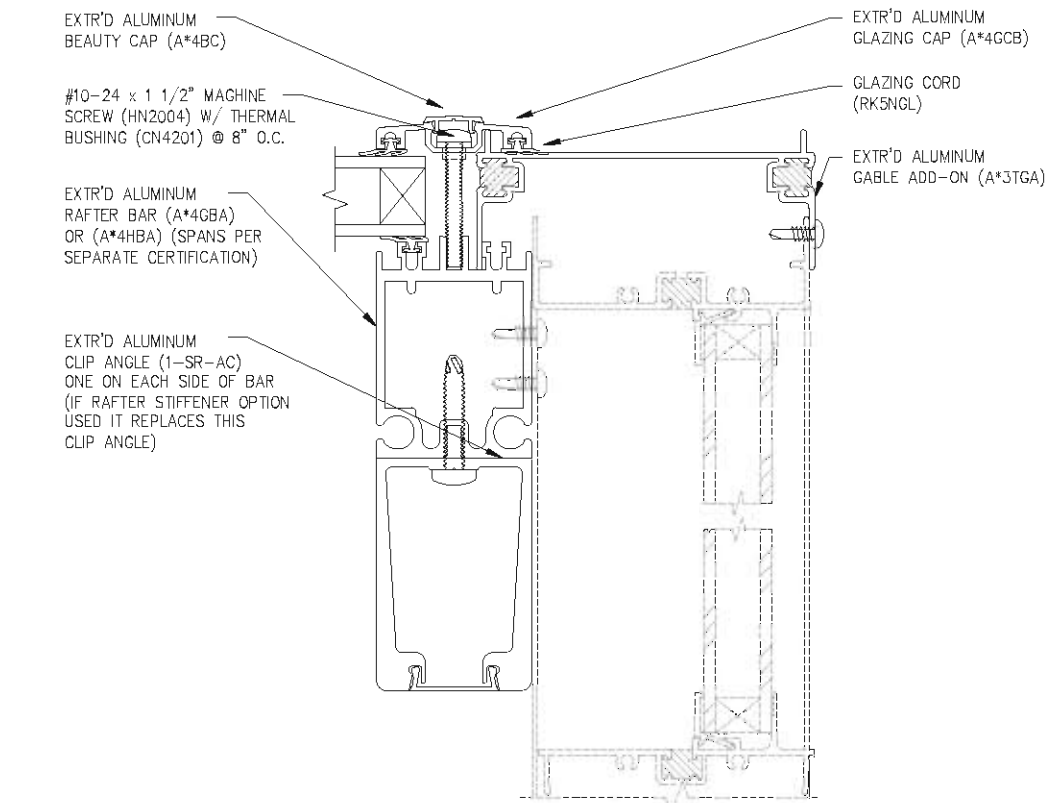


FOR WINDOW & DOOR INFO.
SEE APPROPRIATE FPA REPORT

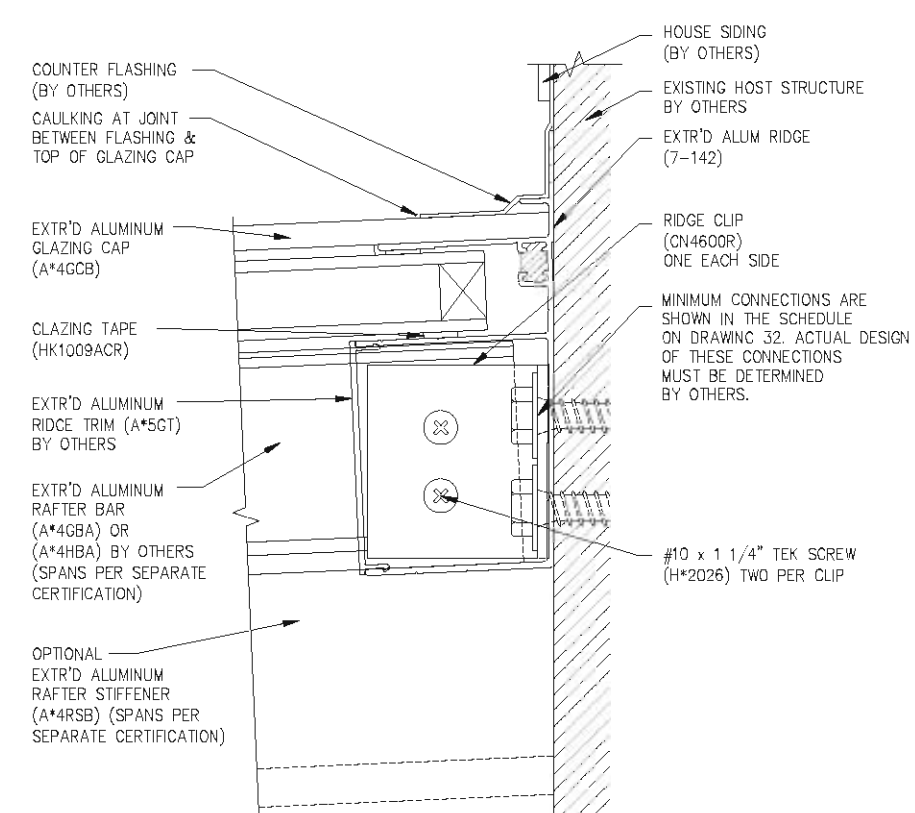
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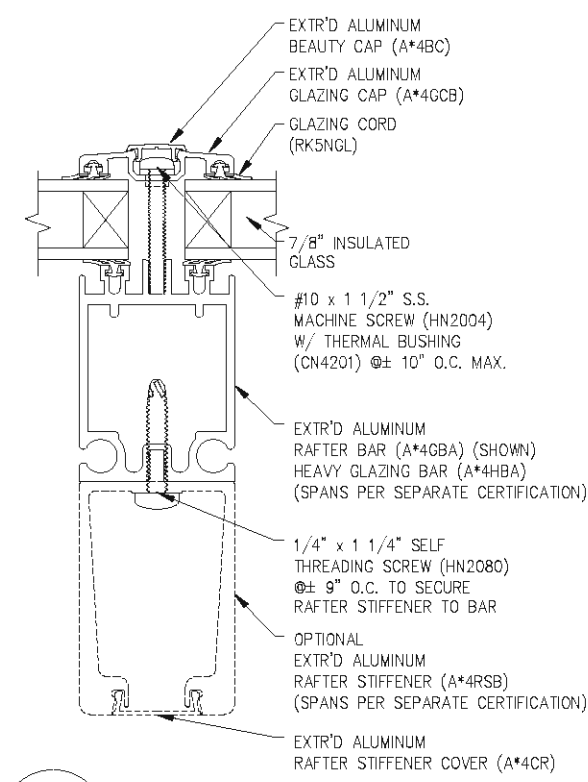
A
14
EAVE SECTION
SCALE: 1/2" = 1'-0"



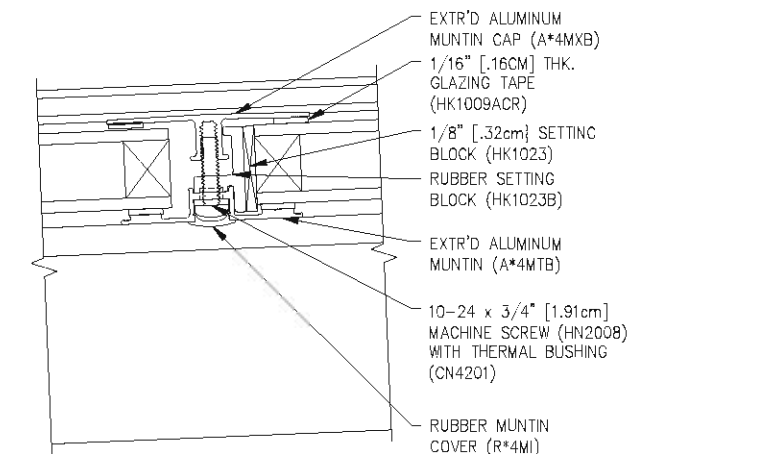
E
14
GABLE END SECTION
SCALE: 1/2" = 1'-0"



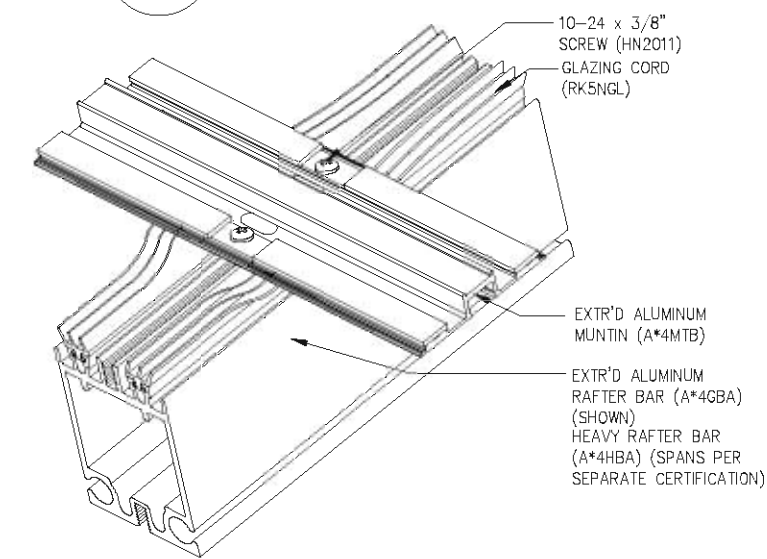
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14
RIDGE SECTION
SCALE: 1/2" = 1'-0"



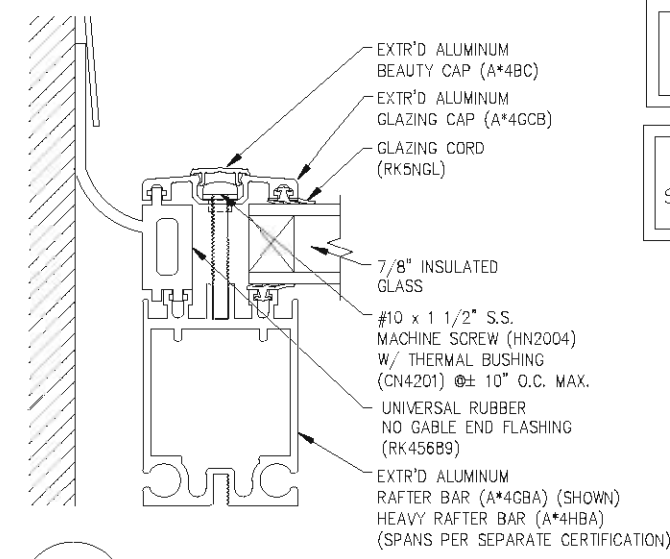
F
14
RAFTER BAR DETAIL
SCALE: 1/2" = 1'-0"



C
14
CROSS MUNTIN SECTION
SCALE: 1/2" = 1'-0"



D
13
CROSS MUNTIN & RAFTER BAR CONNECTION
SCALE: 1/2" = 1'-0"



G
14
RAFTER BAR (NO GABLE END)
SCALE: 1/2" = 1'-0"

THESE PLANS APPLY ONLY TO GLASS ROOF SYSTEM.

FOR WINDOW & DOOR INFO, SEE APPROPRIATE FPA REPORT

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SERIES 230 SUN AND STARS ROOF SYSTEM
FLORIDA BUILDING CODE
FL12163.1

REMARKS	DRWN	CHKD	DATE
INIT ISSUE	JAC	FLB	08/17/17
2020 FBC	CCB	RWN	7/26/20

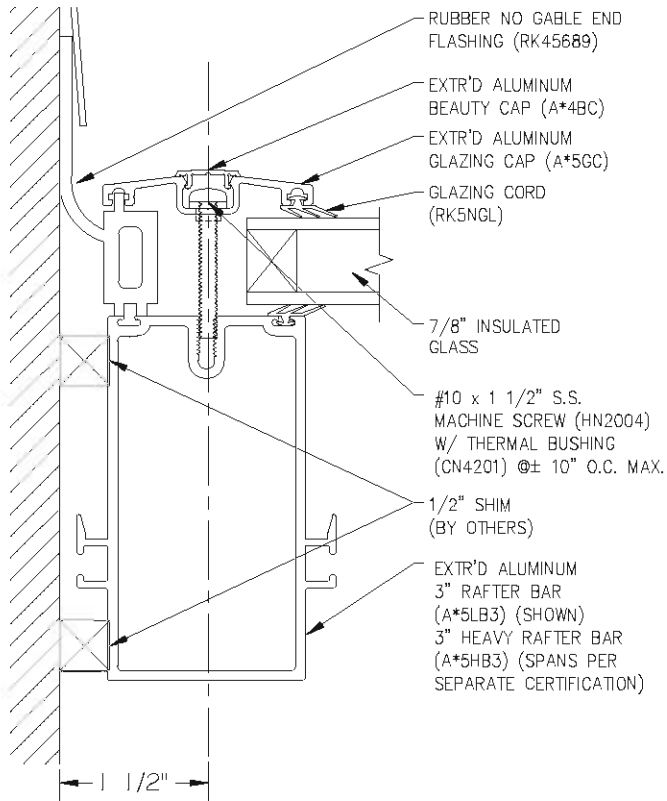
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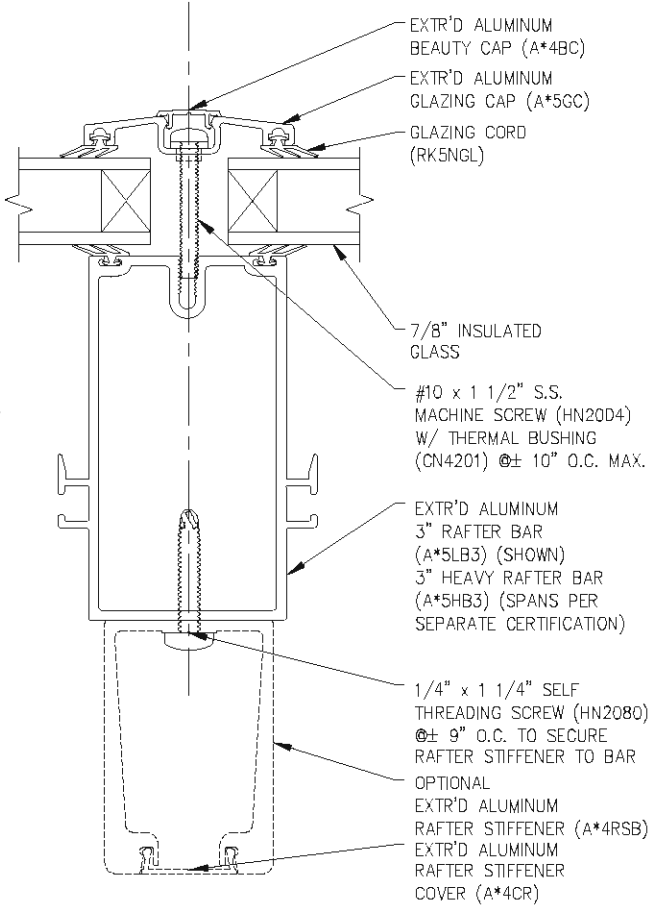
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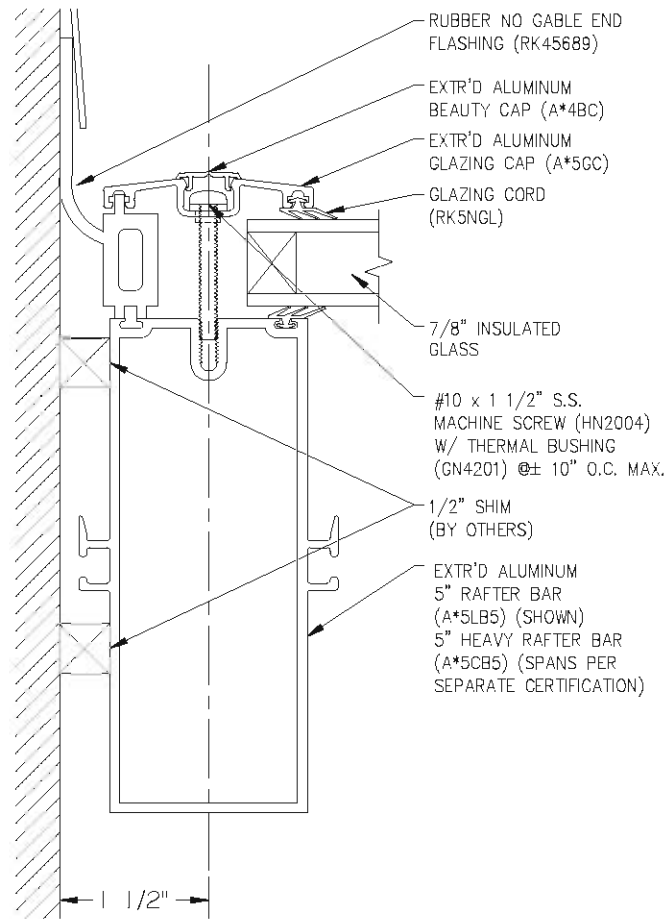
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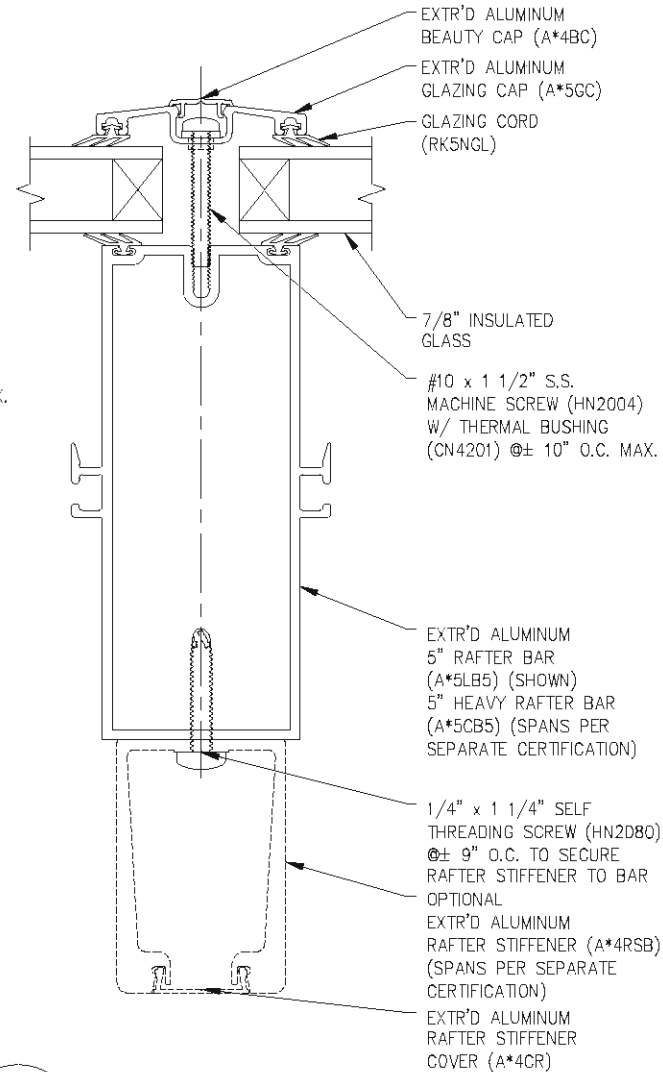
A
15 NO GABLE END SECTION
SCALE: 6" = 1'-0"



B
15 3" RAFTER BAR SECTION
SCALE: 6" = 1'-0"



A
15 NO GABLE END SECTION
SCALE: 6" = 1'-0"



A
15 5" RAFTER BAR SECTION
SCALE: 6" = 1'-0"

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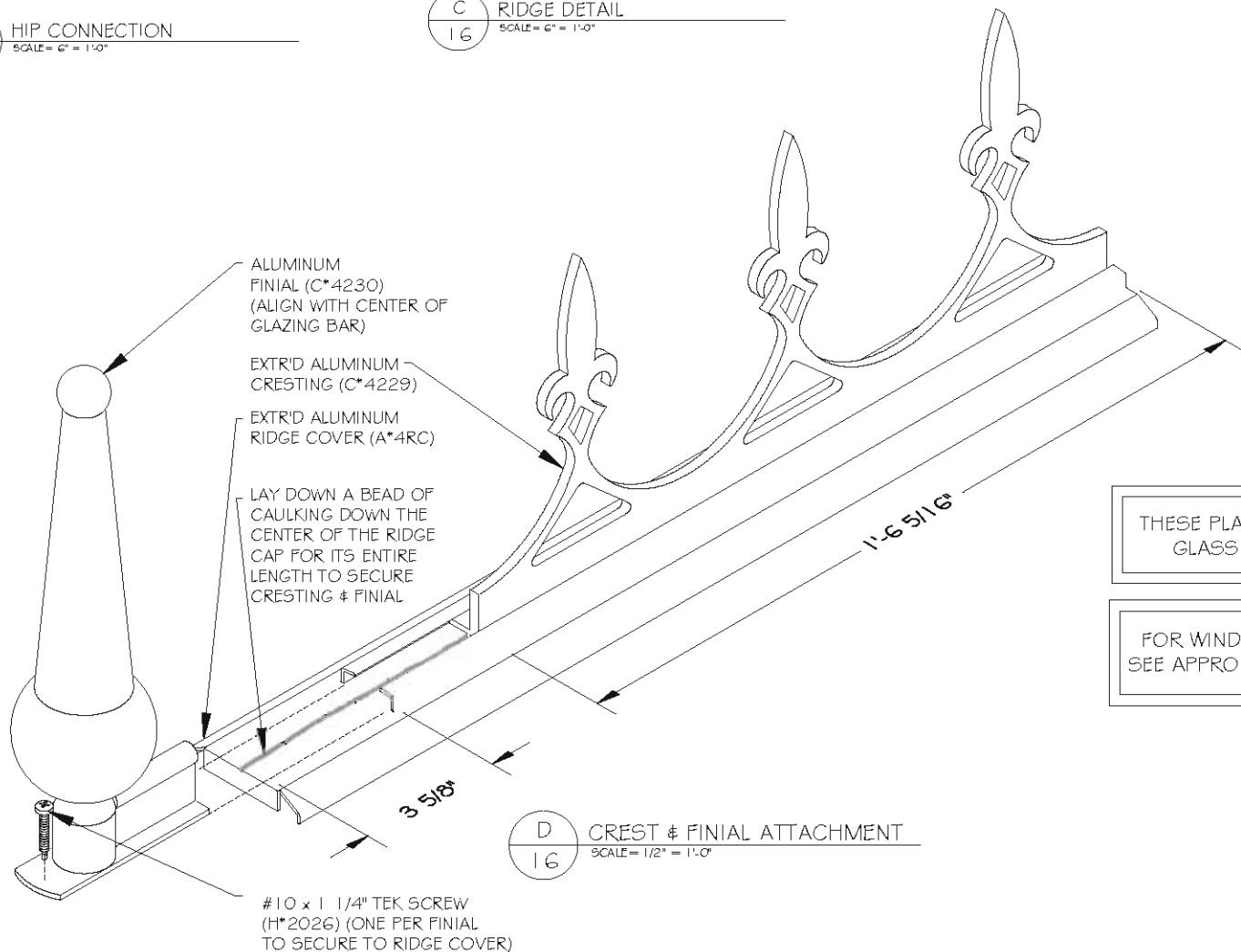
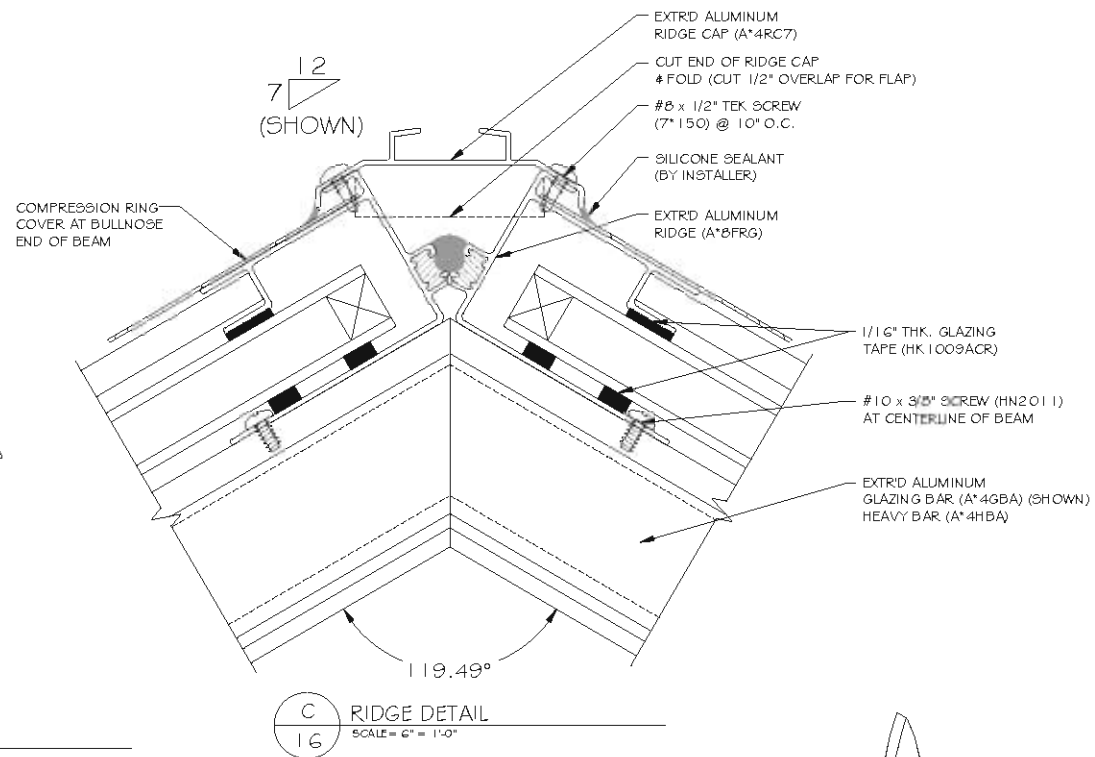
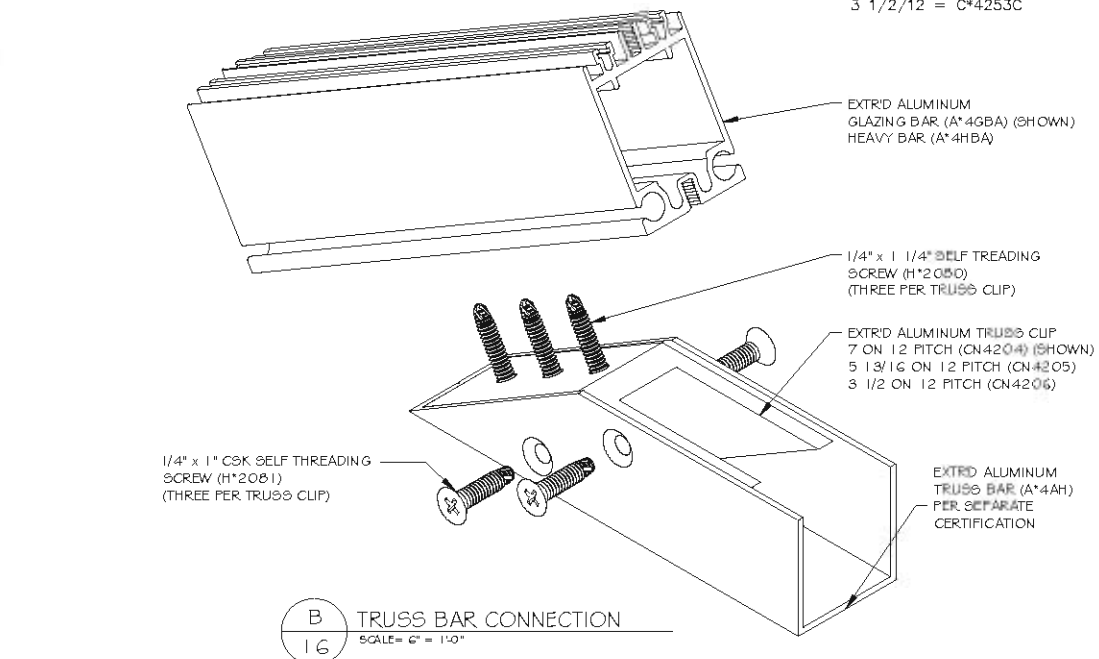
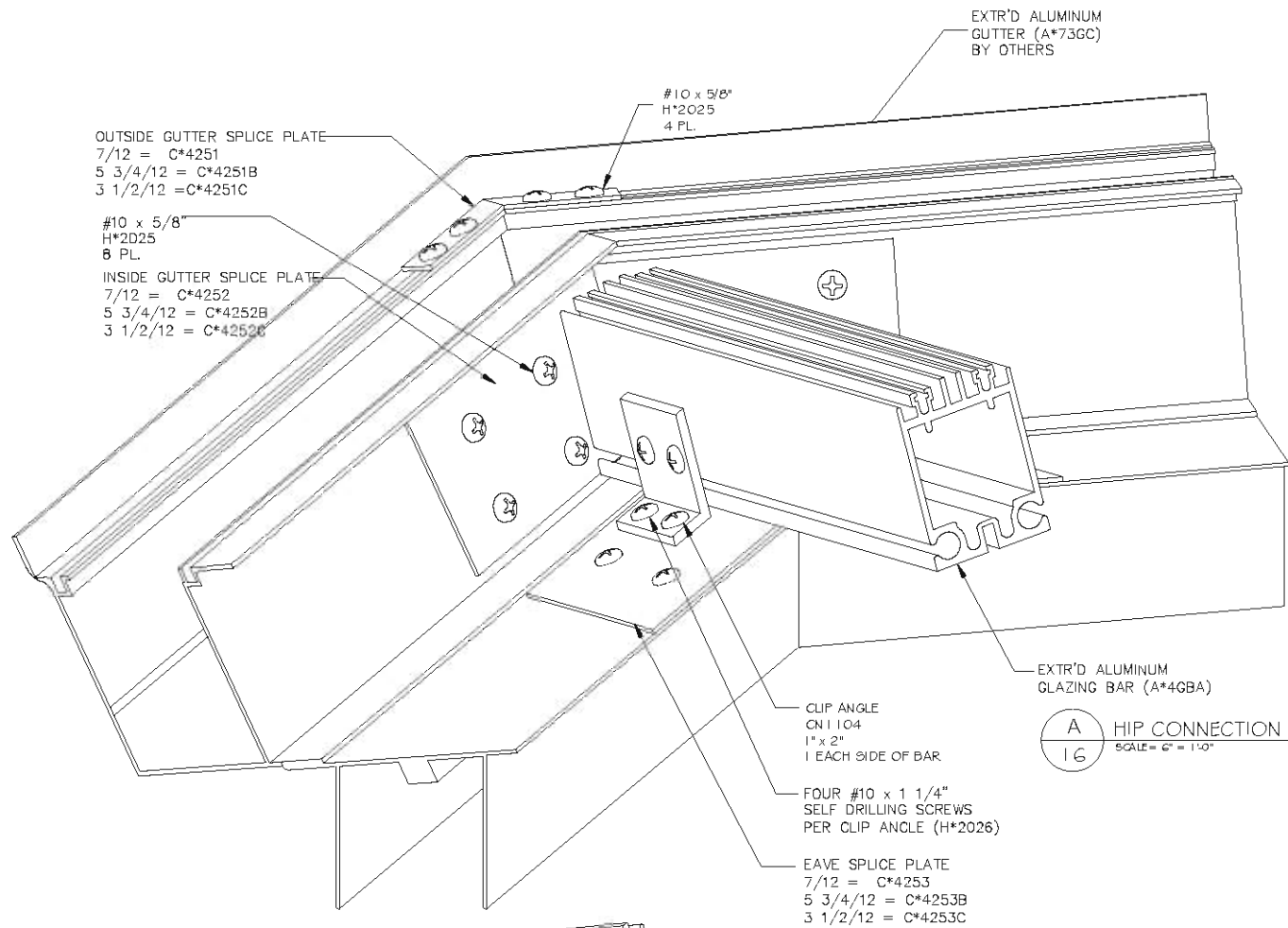
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OF 20

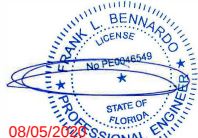
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REMARKS
INITIALS
DATE
JAC
CCB
RWV
2020 FBC

DATE
08/17/17
7/26/20

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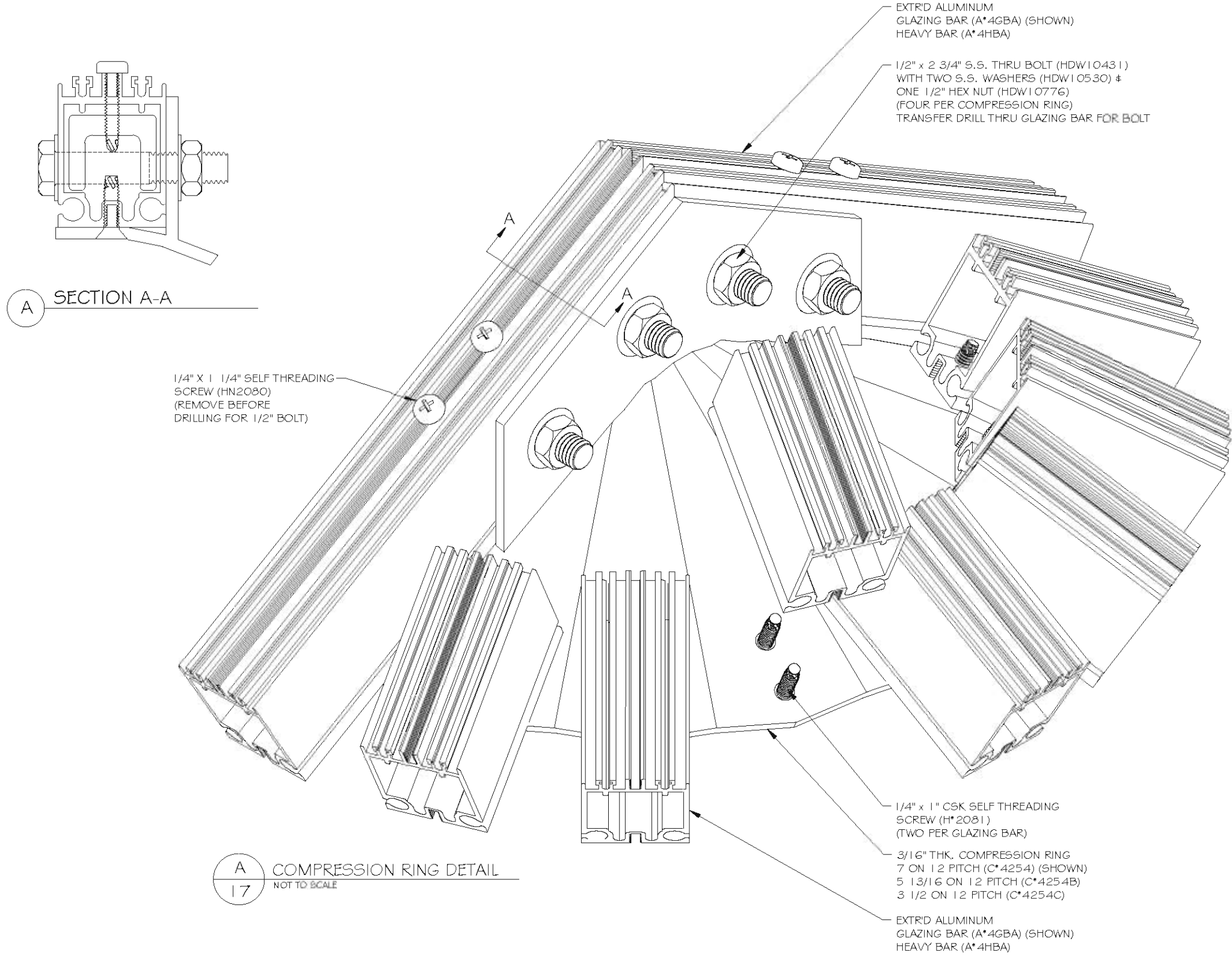
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OF 20

16

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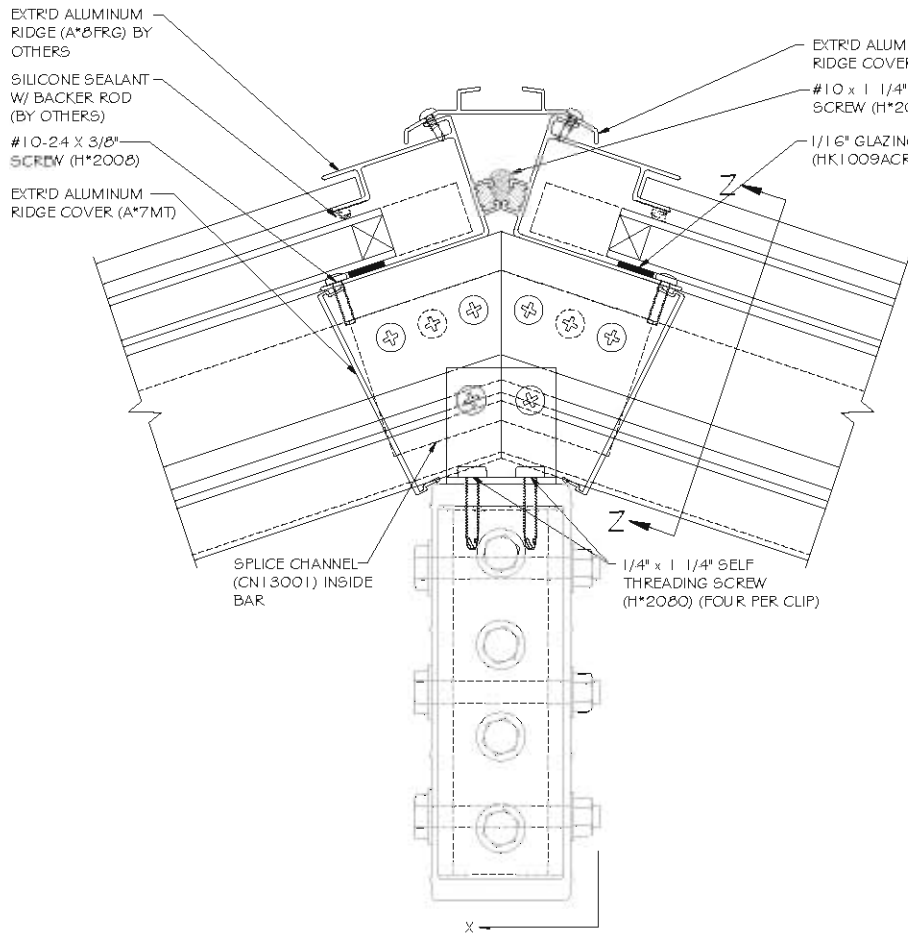
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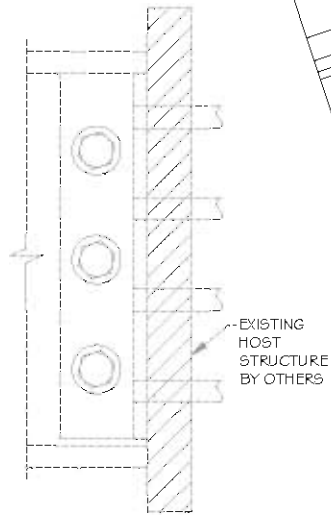
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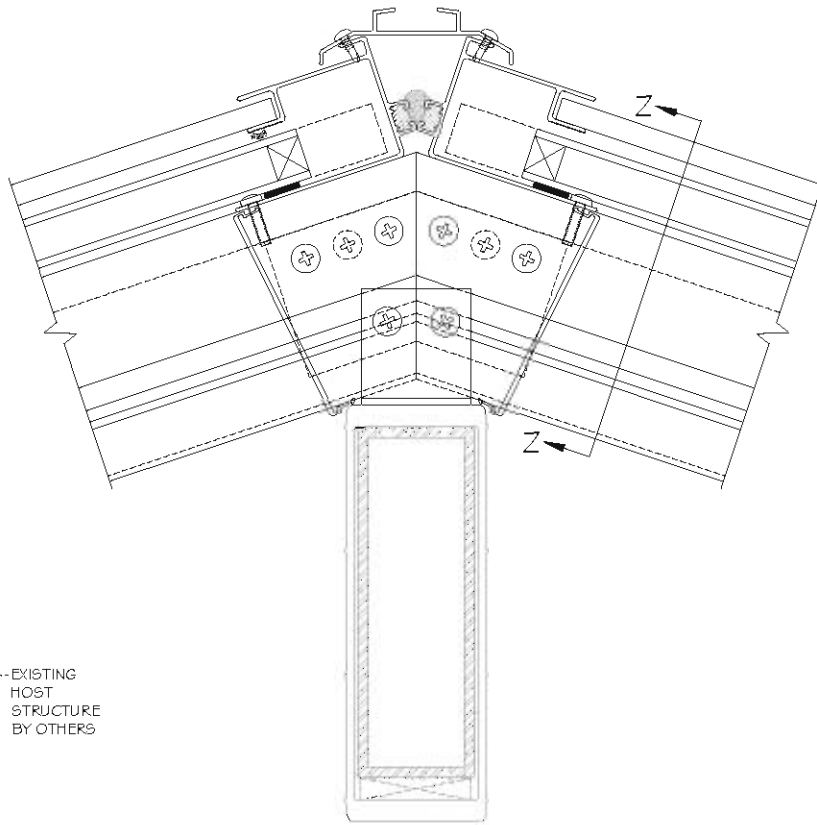
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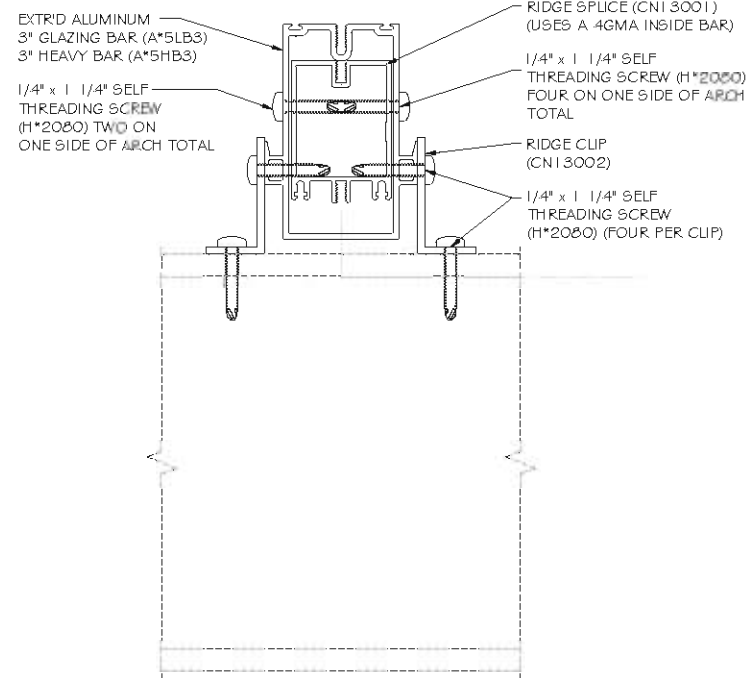
A
18
7" RIDGE BEAM @ EXISTING STRUCTURE
NOT TO SCALE



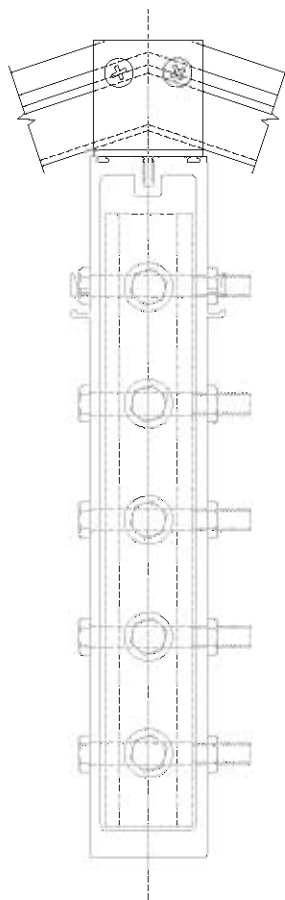
X
SECTION "X"



C
18
7" RIDGE BEAM w/STEEL INSERT
NOT TO SCALE



Z
SECTION "Z-Z"

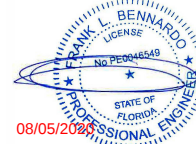


B
18
12" RIDGE BEAM
NOT TO SCALE

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SERIES 230 SUN AND STARS ROOF SYSTEM

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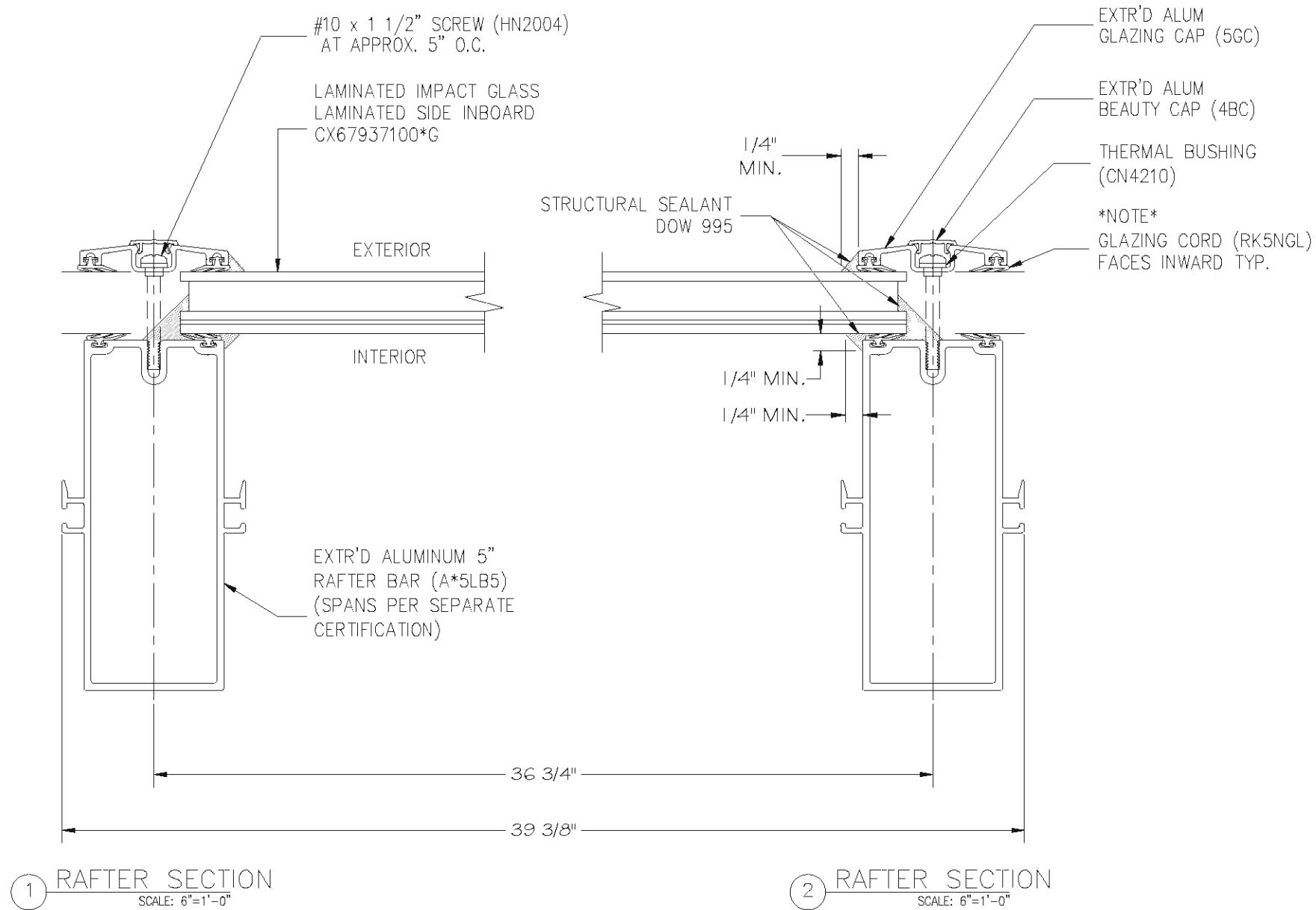
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18

OF
20

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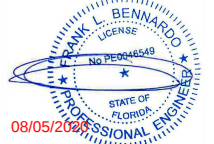


UTILIZE THIS SHEET
FOR USE IN HVHZ AREAS

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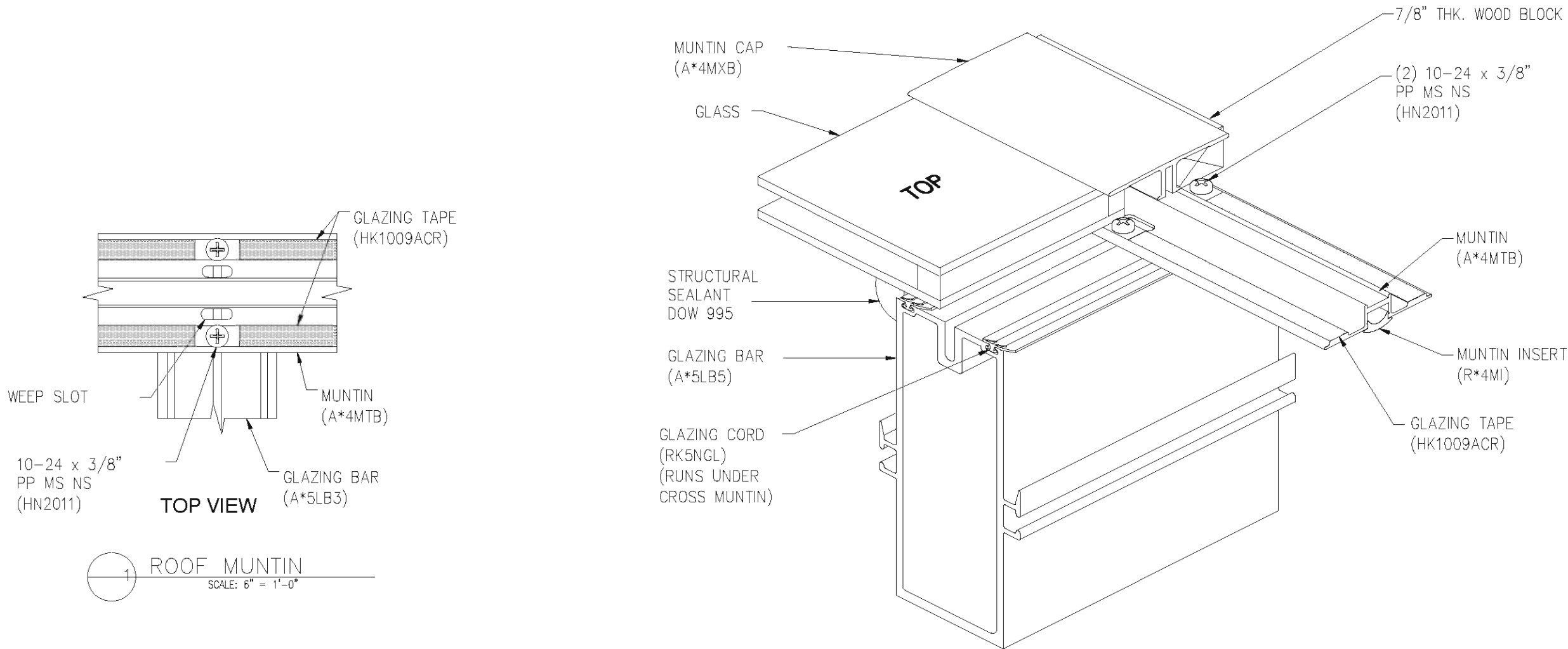
20-29440

SCALE: N.T.S.

19

OF
20

08/04/2020 - 9:33pm nckn C:\Users\Inckn\Engineering Express\Production - Documents\Projects\20-29440 - FL12163.1 - Series 230 Sun and Stars Roof System\WP\2020 FBC\20-29440b - FL12163.1 - DWG.dwg



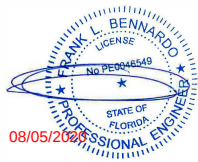
1 ROOF MUNTIN
SCALE: 6" = 1'-0"

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