



SERIES FF 451 OFFSET / FLUSH OUT / EXTERIOR GLAZING

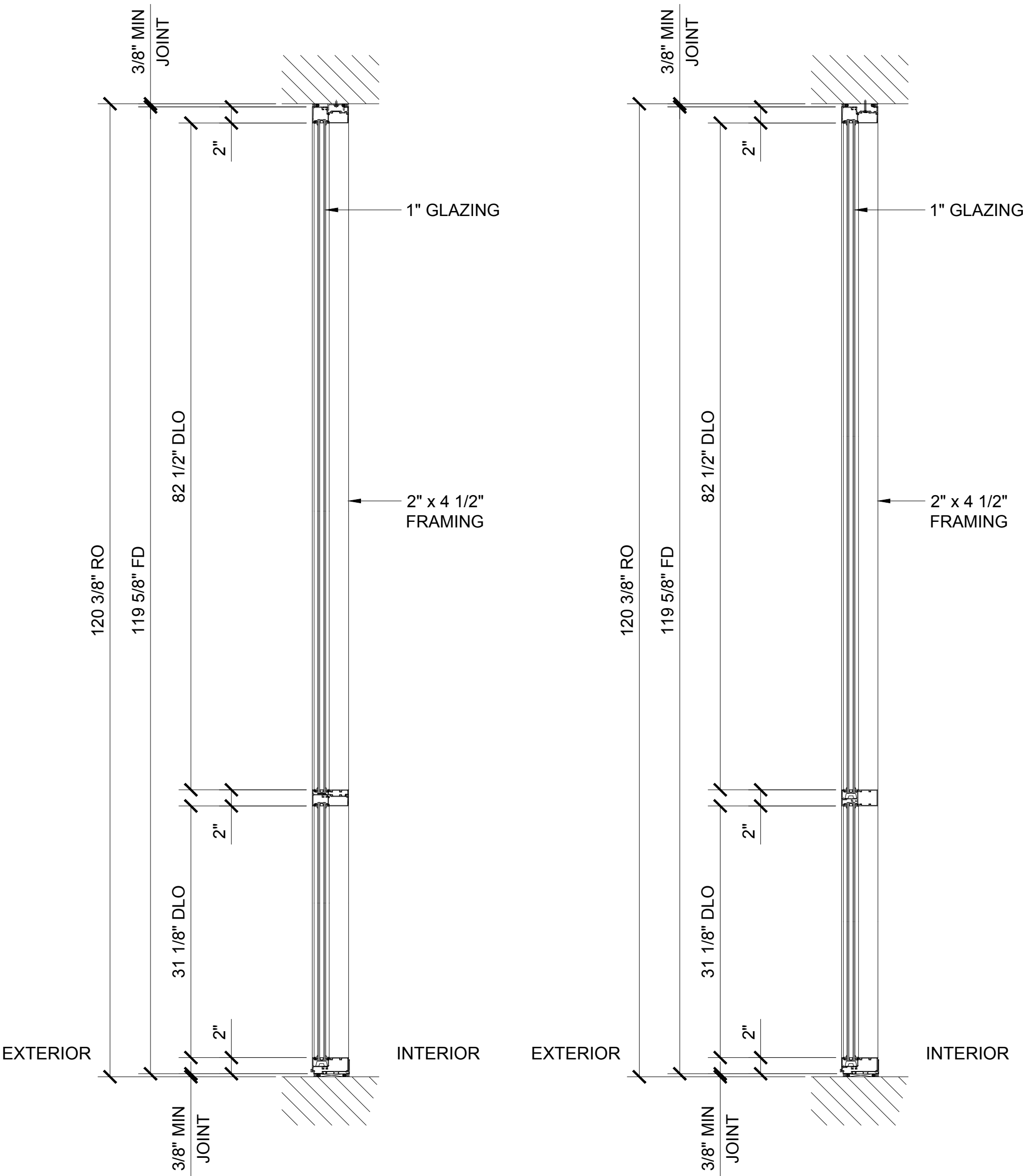
FF 451 SERIES SPECIFICATIONS

Flush Front System allow the plane of the glass to be reversed from exterior to interior or any combination to give these standard system a custom look.

Flush Front is ideal for use in storefront and punched opening or ribbon window applications.

2" x 4 1/2" frame
Full range of accessory components
Available in an array of architectural coatings and anodized finishes
Interior or Exterior Glazed

GLASS SIZING NOTE:
REFERENCE U.S. ALUMINUM
CATALOGS AND WEBSITE'S
LOAD CHARTS FOR SIZING
GUIDELINES.



STANDARD ABBREVIATIONS

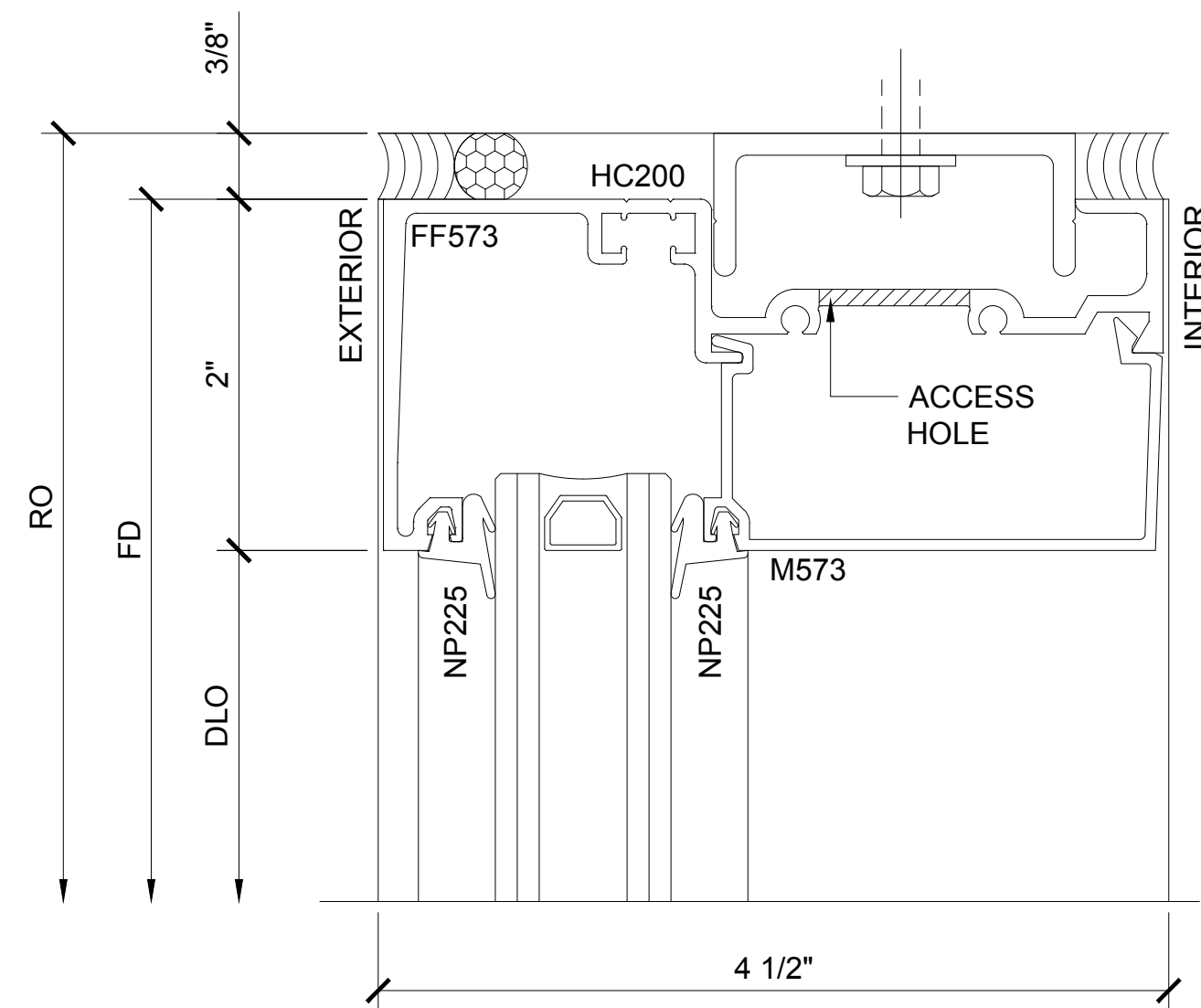
RO	ROUGH OPENING
FD	FRAME DIMENSION
DLO	DAYLIGHT OPENING
DO	DOOR OPENING
DD	DOOR DIMENSION
SMC	SURFACE MOUNTED CLOSER
OHCC	OVERHEAD CONCEALED CLOSER

Revisions By:



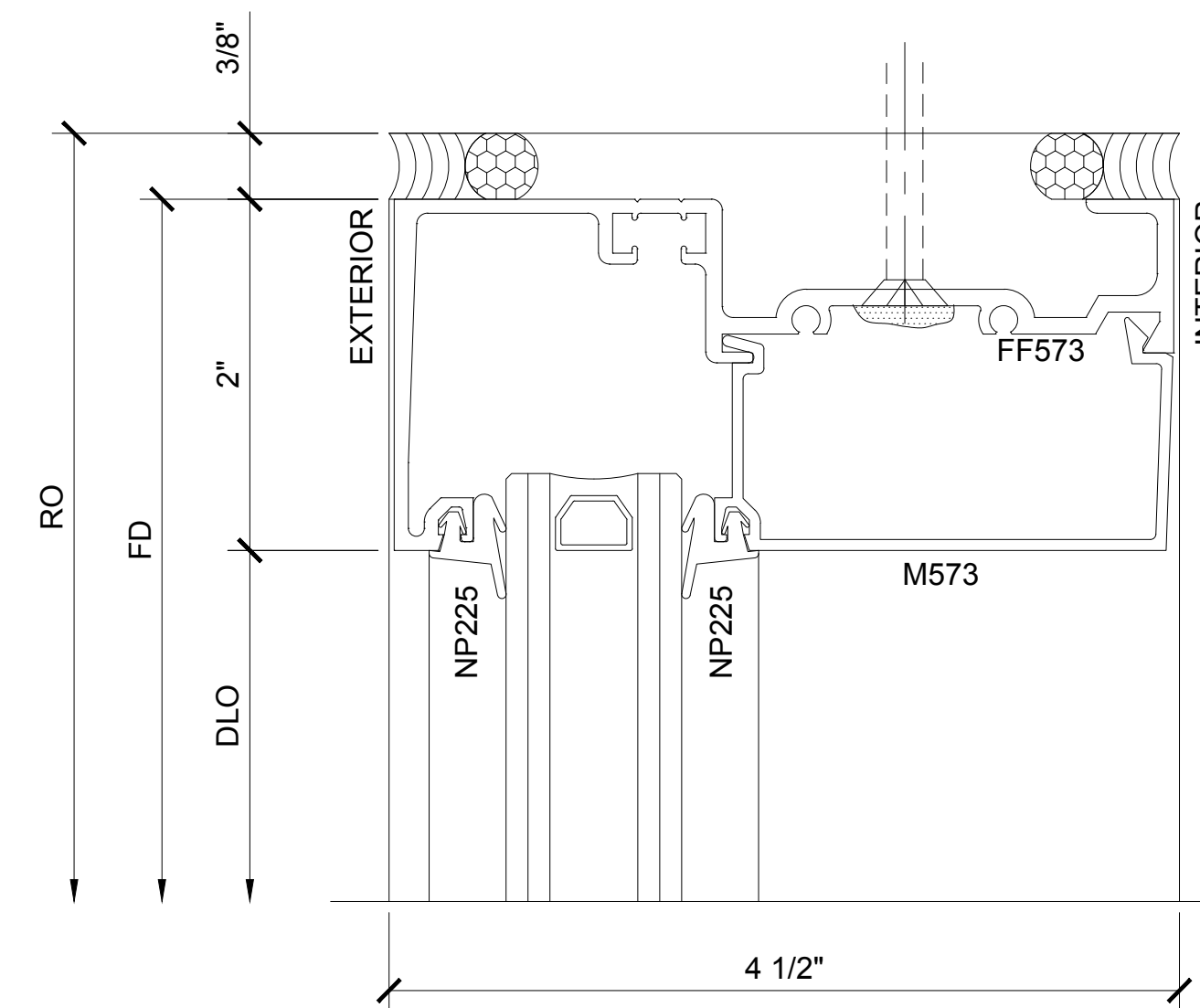
Discription: U.S. ALUMINUM
SERIES FF 451
STOREFRONT SYSTEM

Drawn By:	RP
Date:	10/30/14
Scale:	AS NOTED
File Name:	FF451 SF.dwg
Sheet	



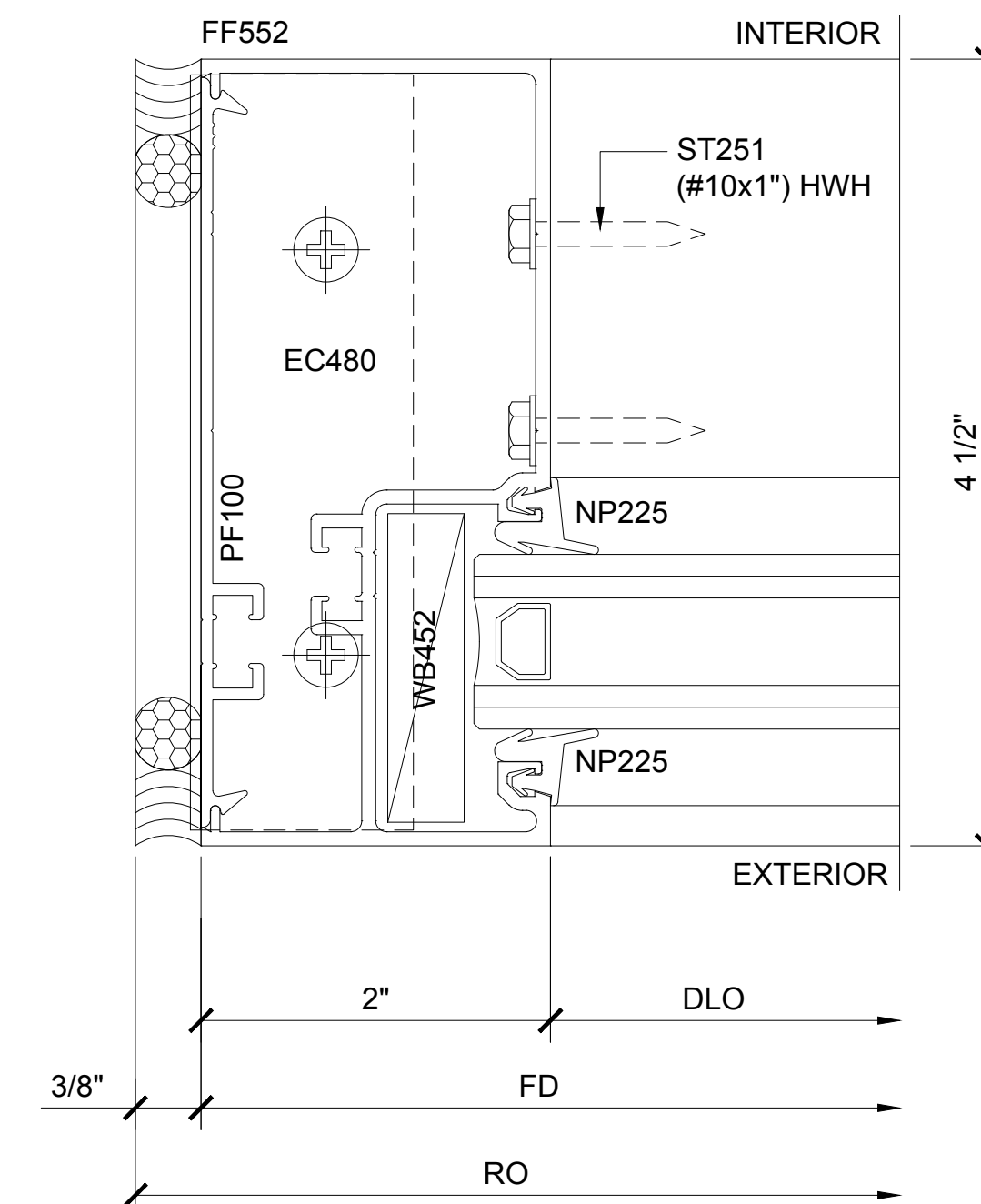
SECTION DETAIL AT HEAD

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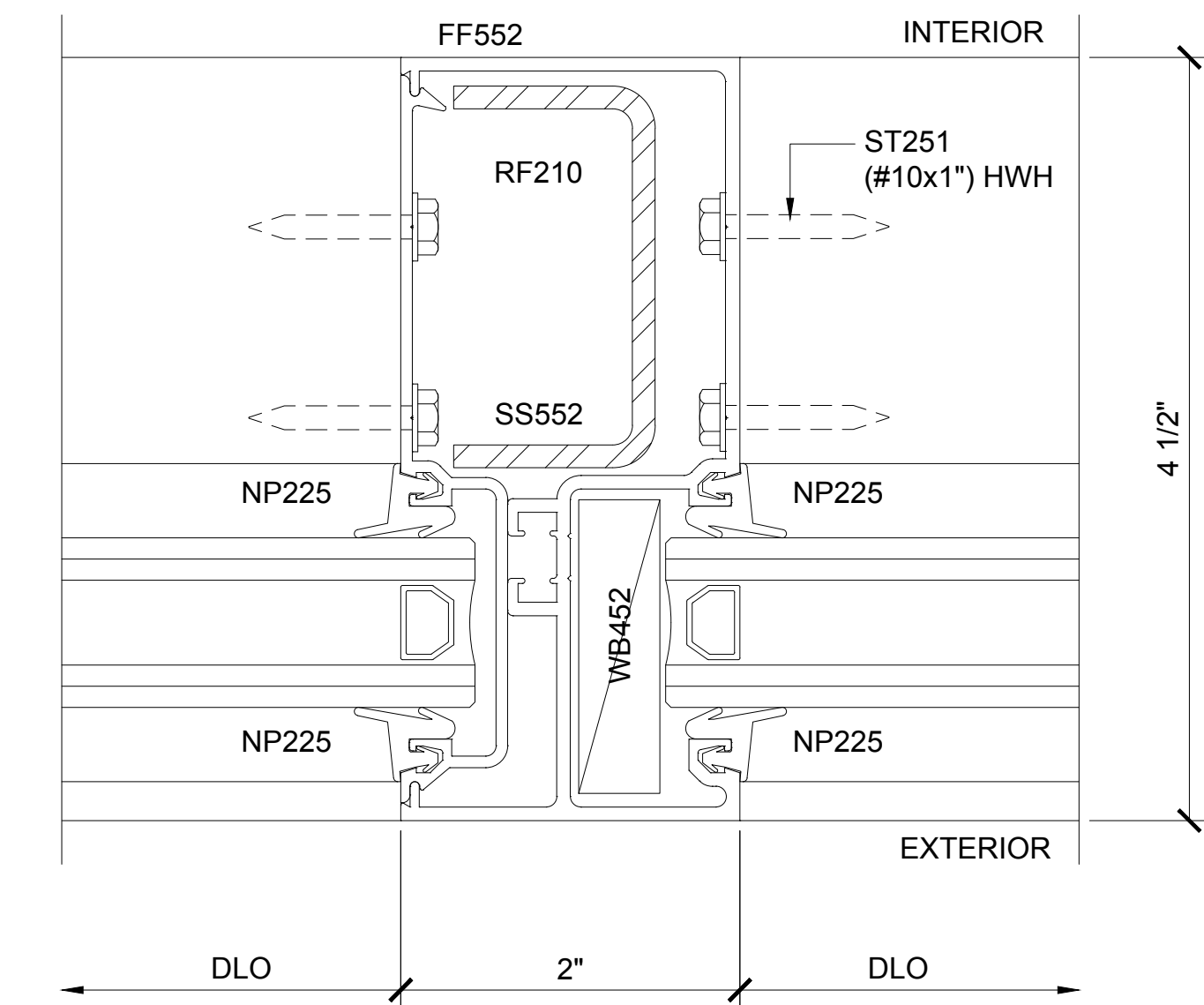
SECTION DETAIL AT HEAD
W/ HEAD ANCHOR

4



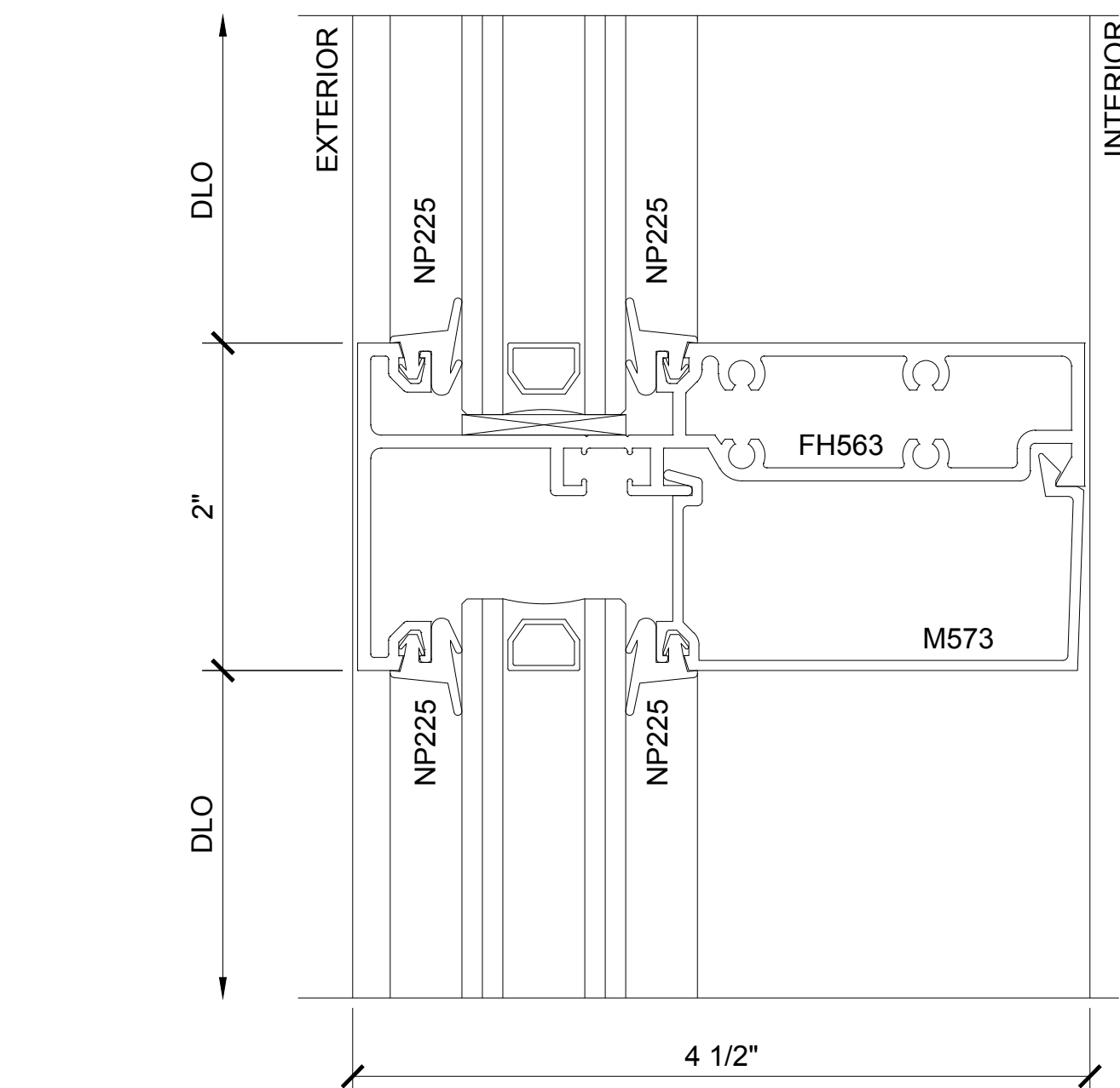
SECTION DETAIL AT JAMB

7



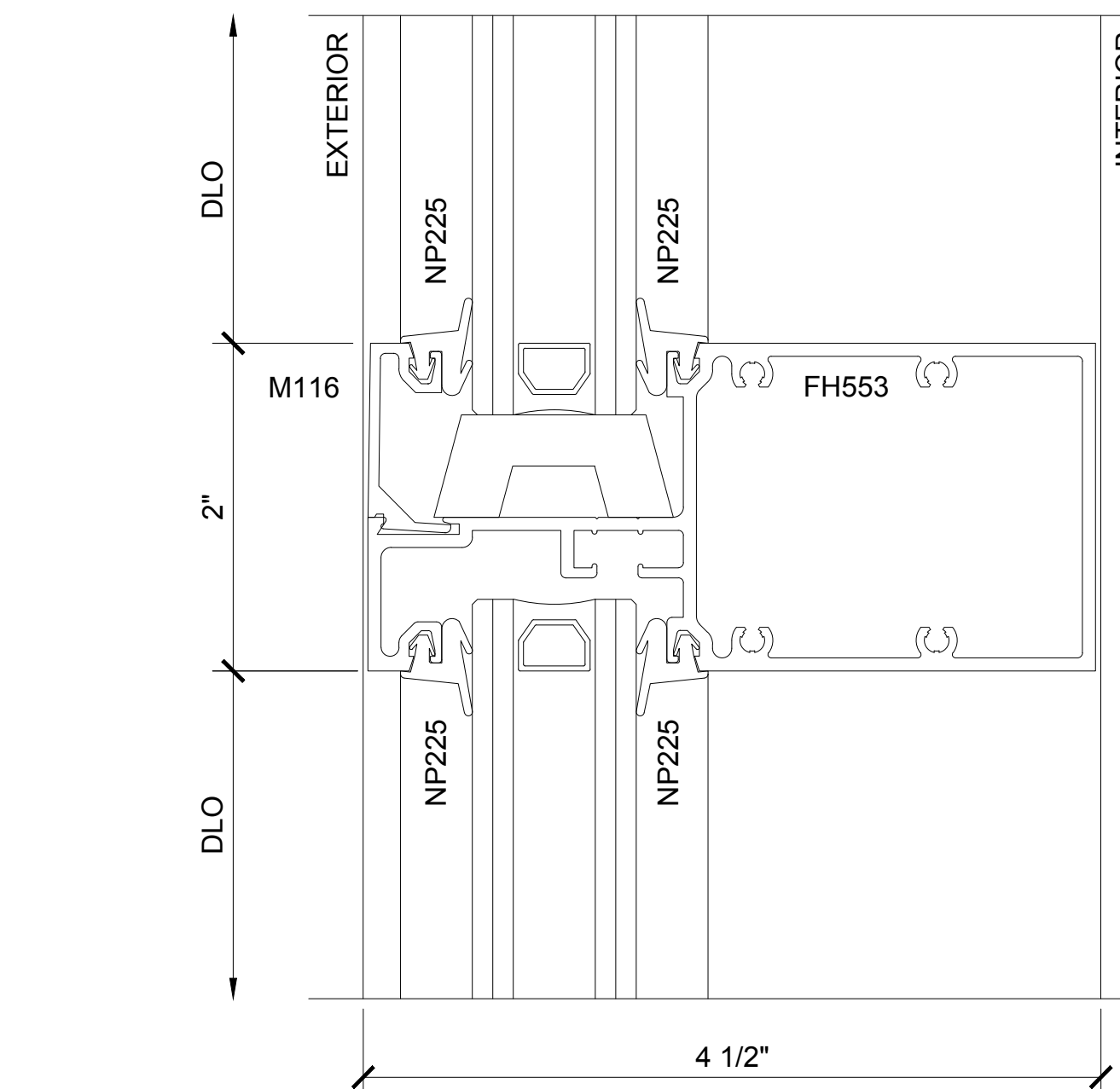
SECTION DETAIL AT HOLLOW
INTERMEDIATE VERTICAL

8



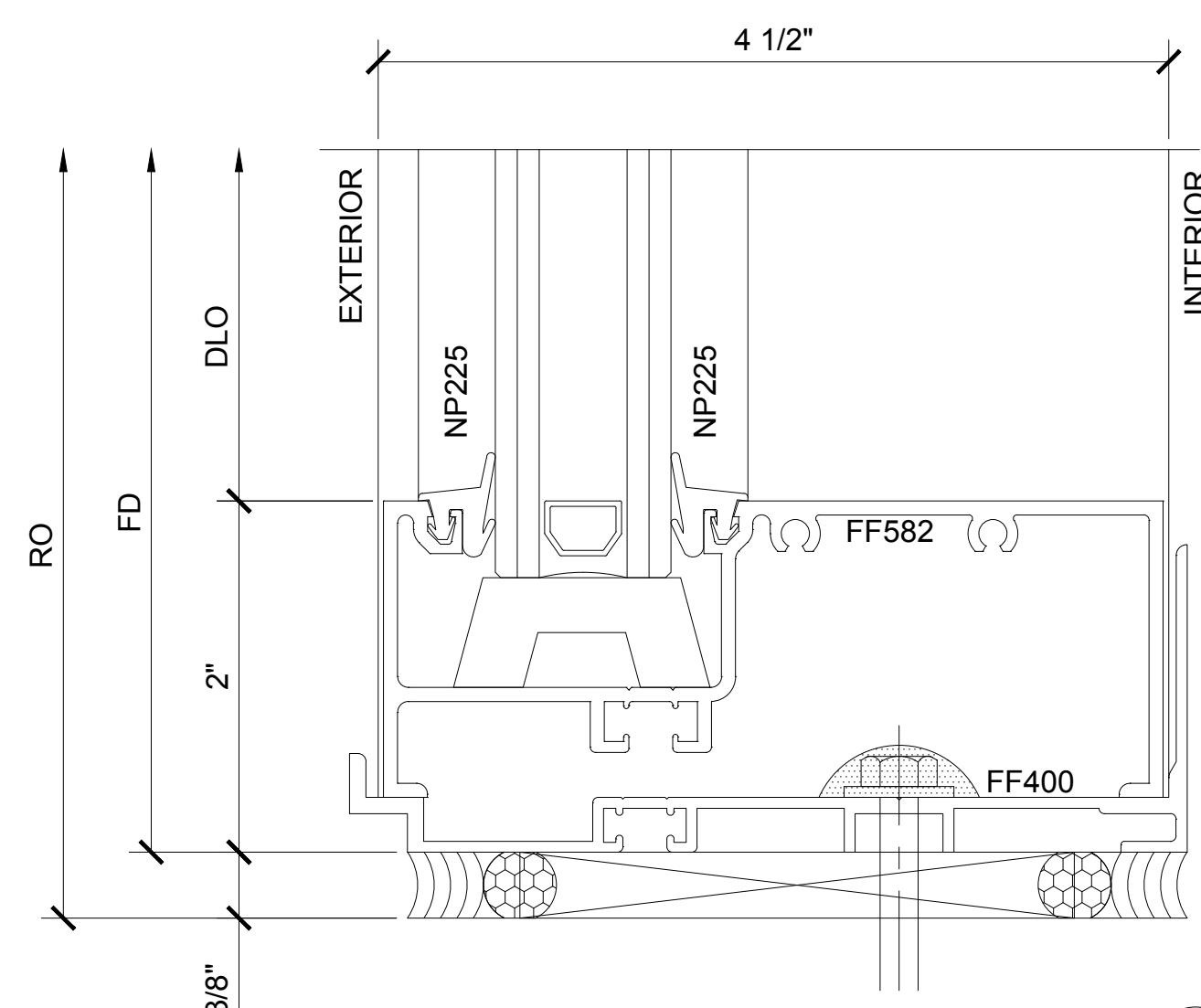
SECTION DETAIL AT
INTERMEDIATE HORIZONTAL

2



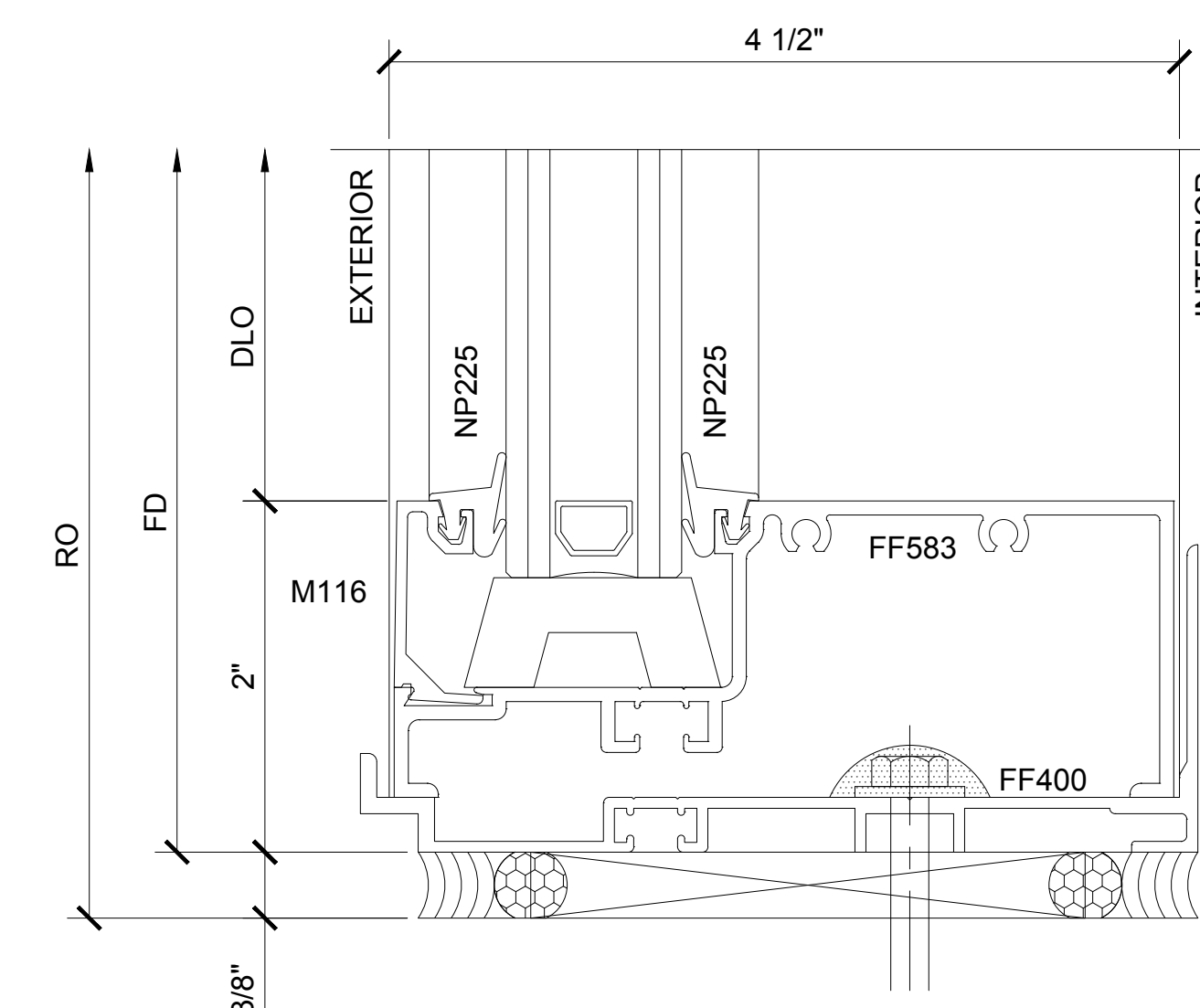
SECTION DETAIL AT
INTERMEDIATE HORIZONTAL

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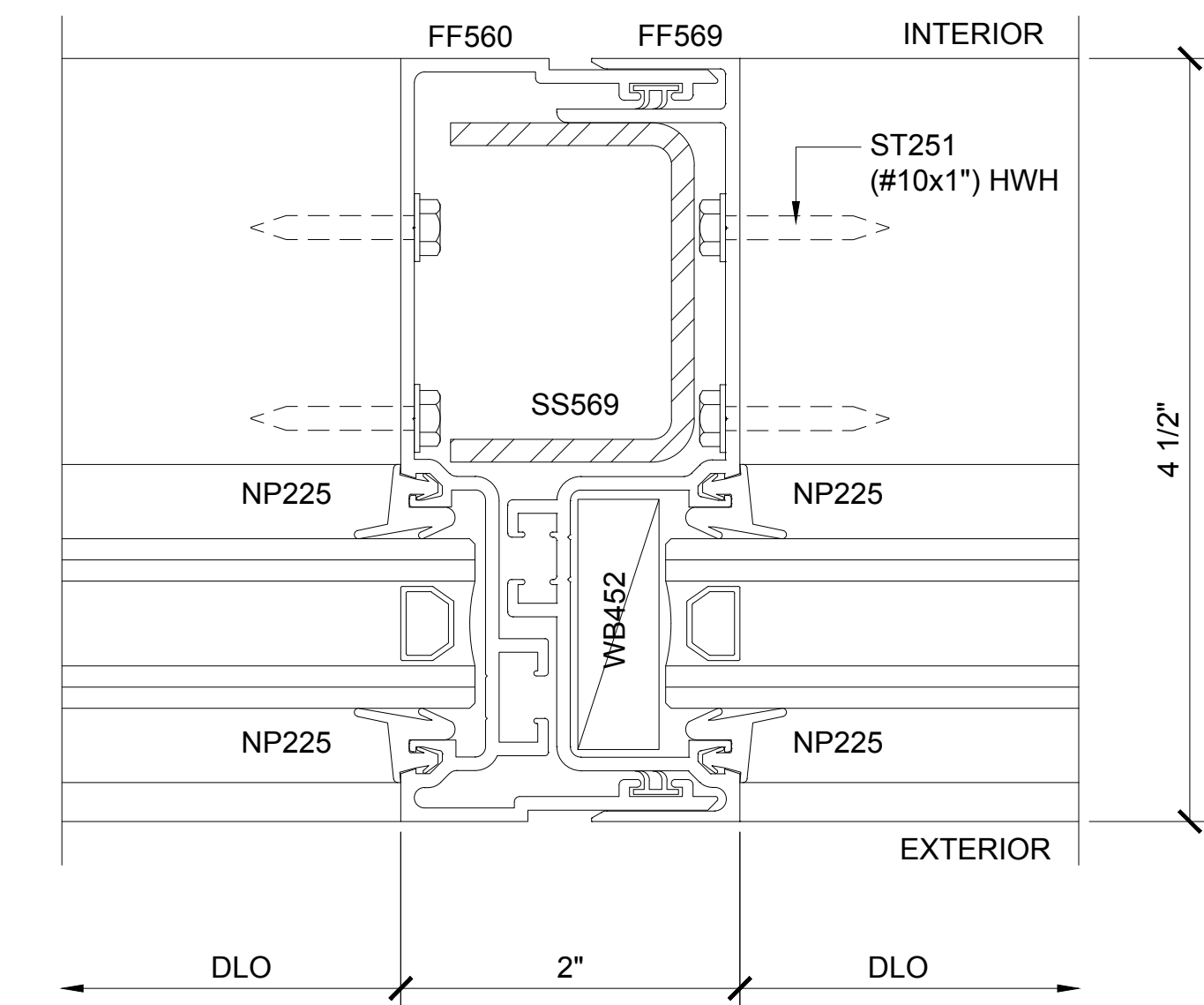
SECTION DETAIL AT SILL

3



SECTION DETAIL AT SILL

6



SECTION DETAIL AT
EXPANSION VERTICAL

8

SERIES FF451 OFFSET / FLUSH OUT / EXTERIOR GLAZING

1'-0" = 1'-0"

Revisions By:



C.R. LAURENCE CO. - ARCHITECTURAL PRODUCTS
2533 E. Vernon Avenue, Los Angeles, CA 90058-1897
PH: (800)-421-6144 FX: 800-587-7501 www.crlaurence.com

Discription: U.S. ALUMINUM
SERIES FF 451
STOREFRONT SYSTEM

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1.2

SERIES FF 451 OFFSET / FLUSH IN / EXTERIOR GLAZING

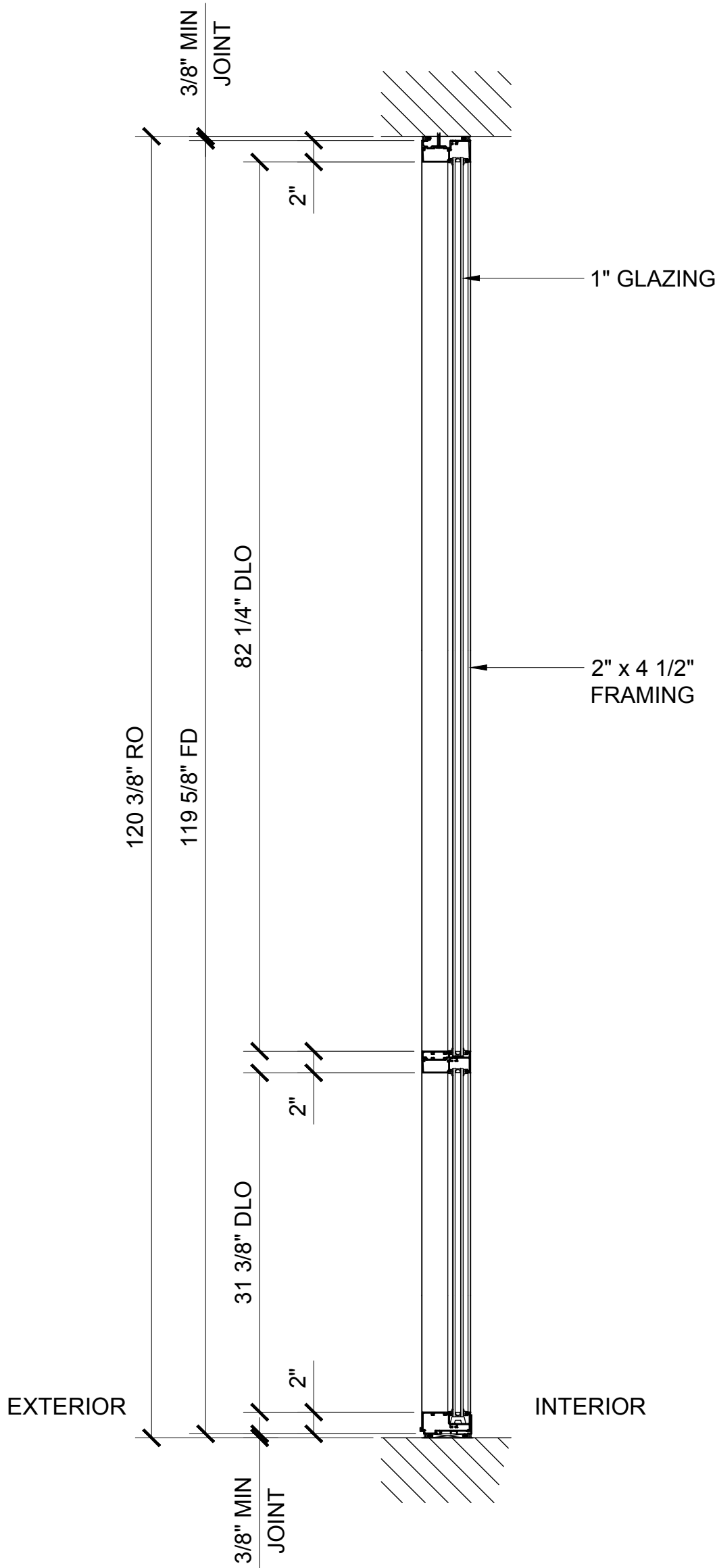
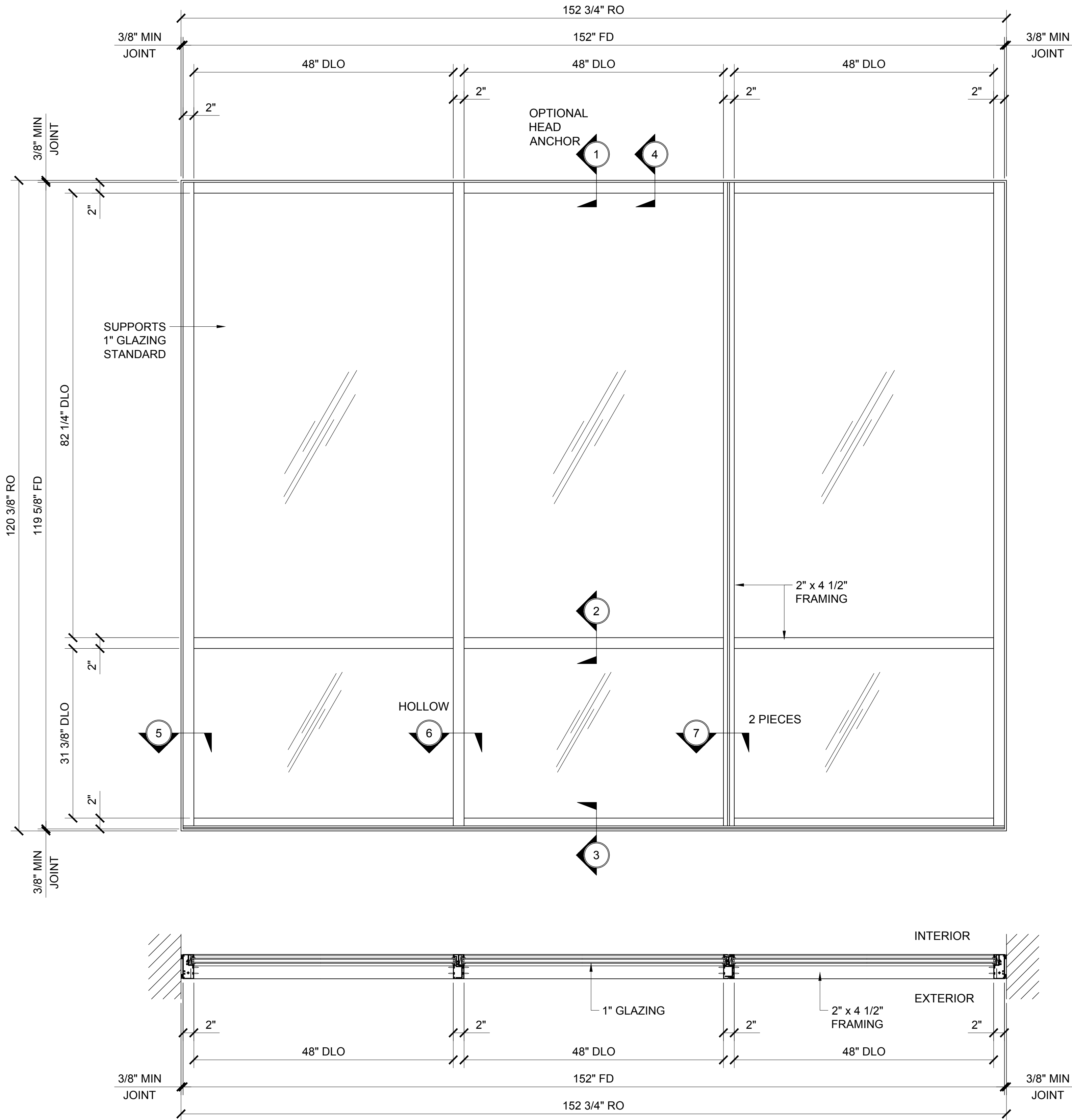
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Interior or Exterior Glazed

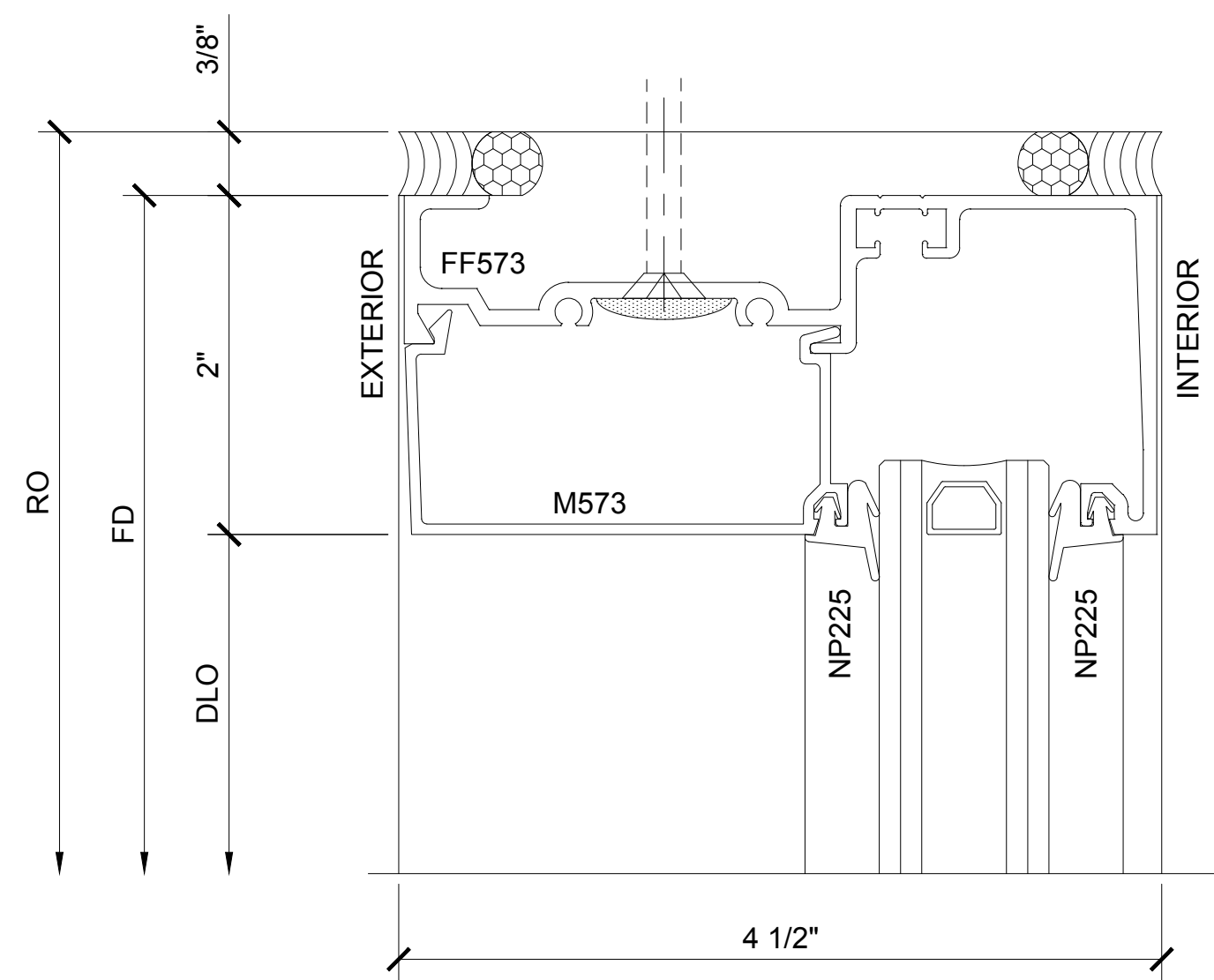
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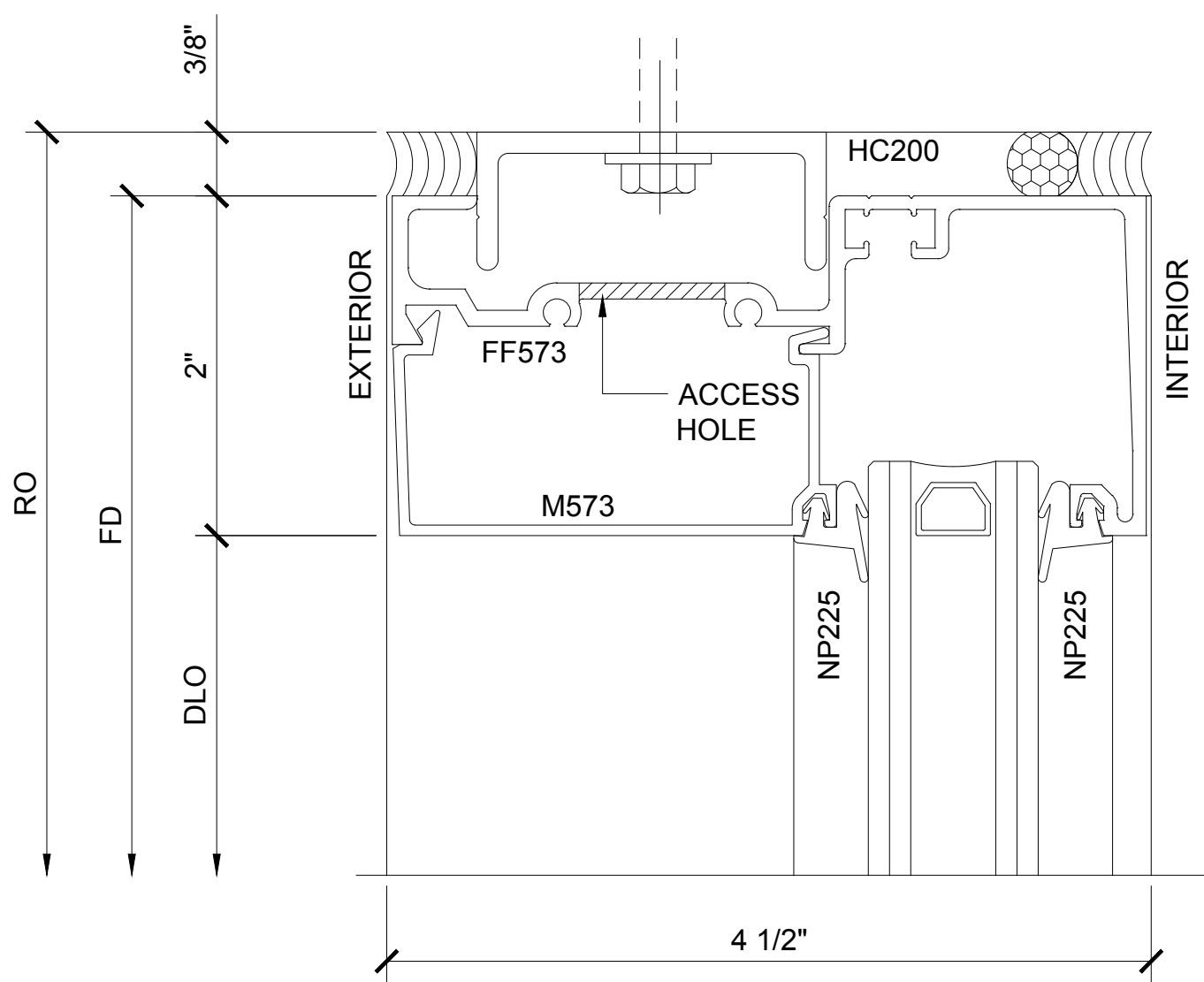
STANDARD ABBREVIATIONS

- | | |
|------|---------------------------|
| RO | ROUGH OPENING |
| FD | FRAME DIMENSION |
| DLO | DAYLIGHT OPENING |
| DO | DOOR OPENING |
| DD | DOOR DIMENSION |
| SMC | SURFACE MOUNTED CLOSER |
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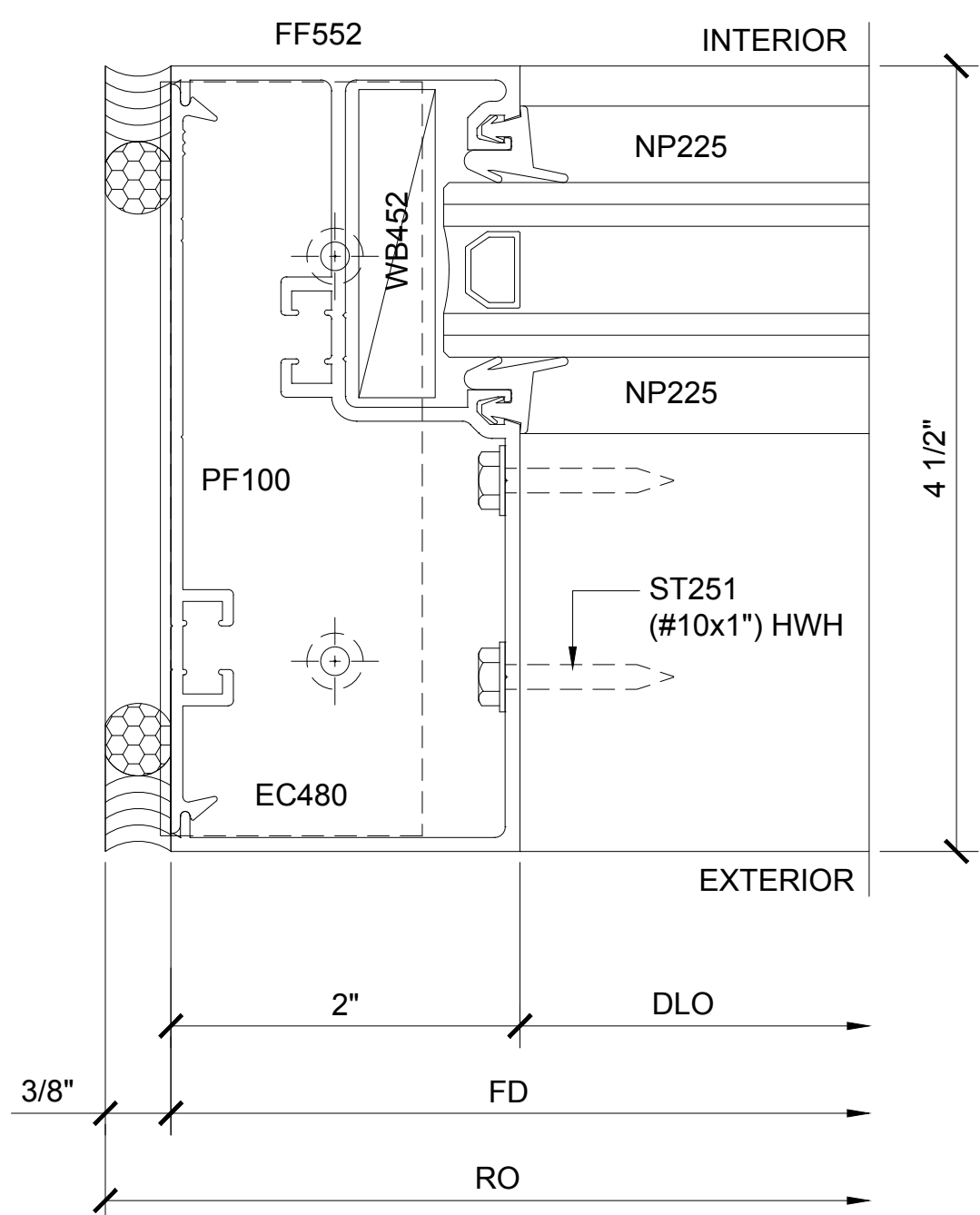
Revisions By:



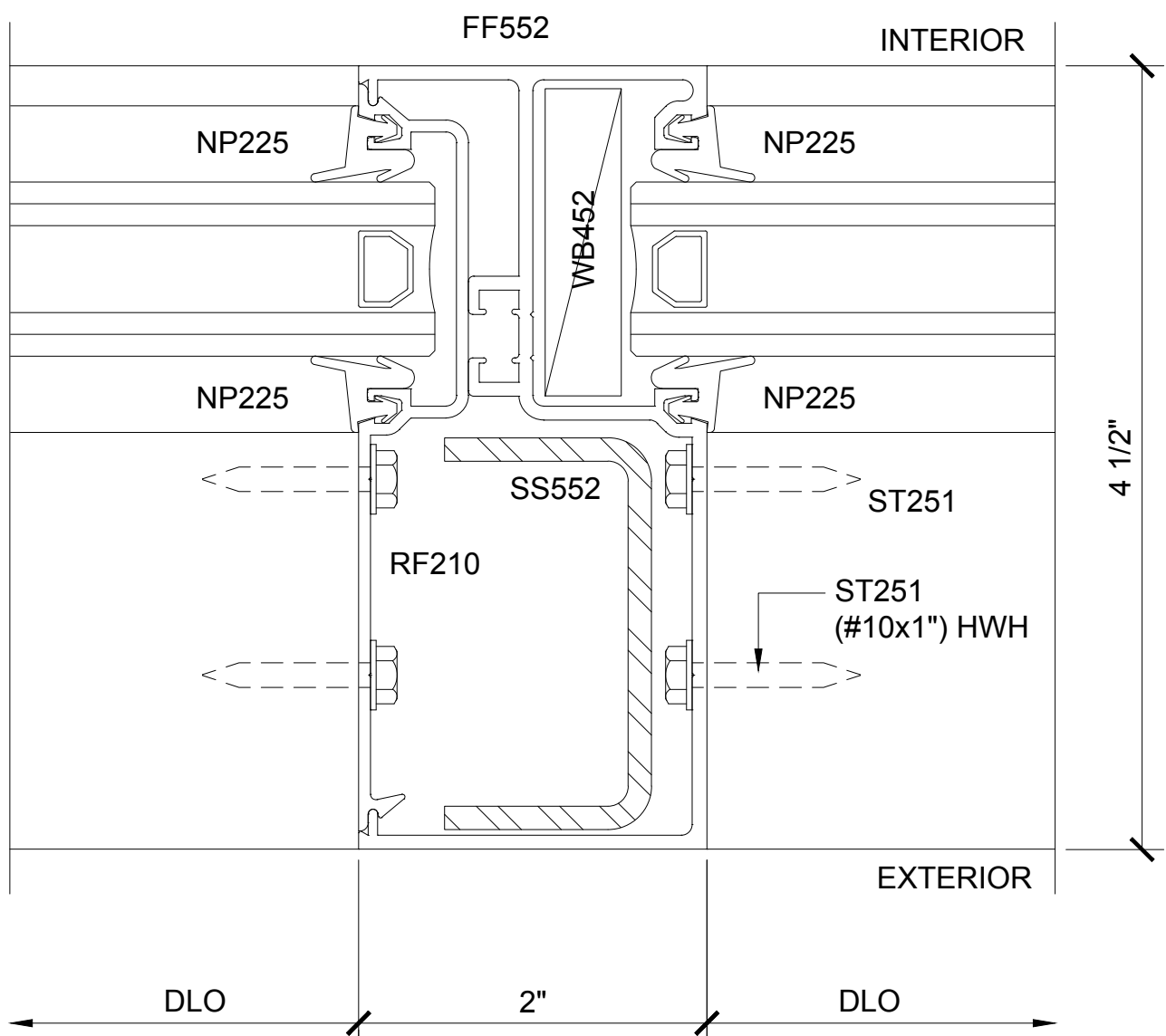
SECTION DETAIL AT HEAD 1



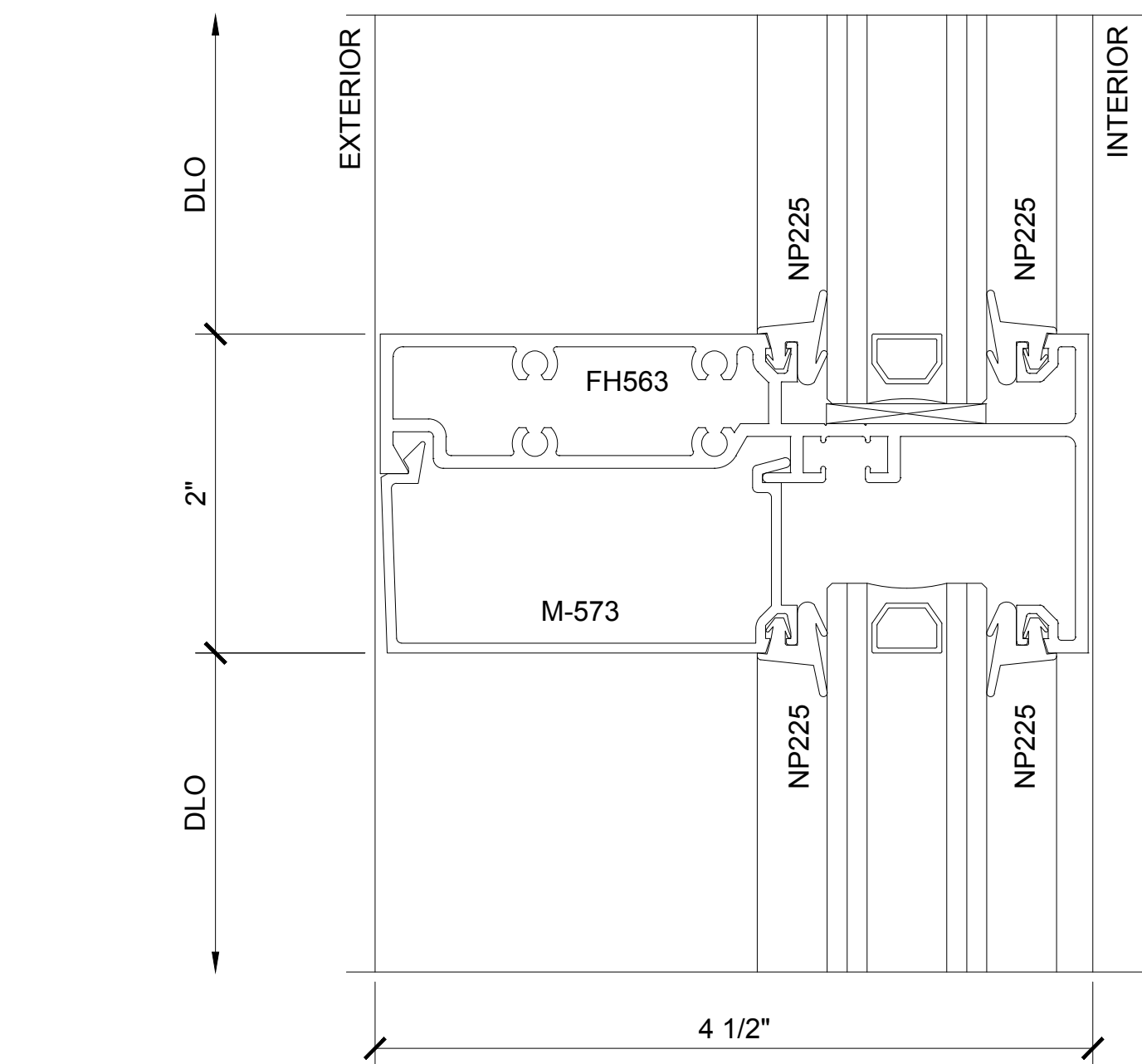
SECTION DETAIL AT HEAD W/ HEAD ANCHOR 4



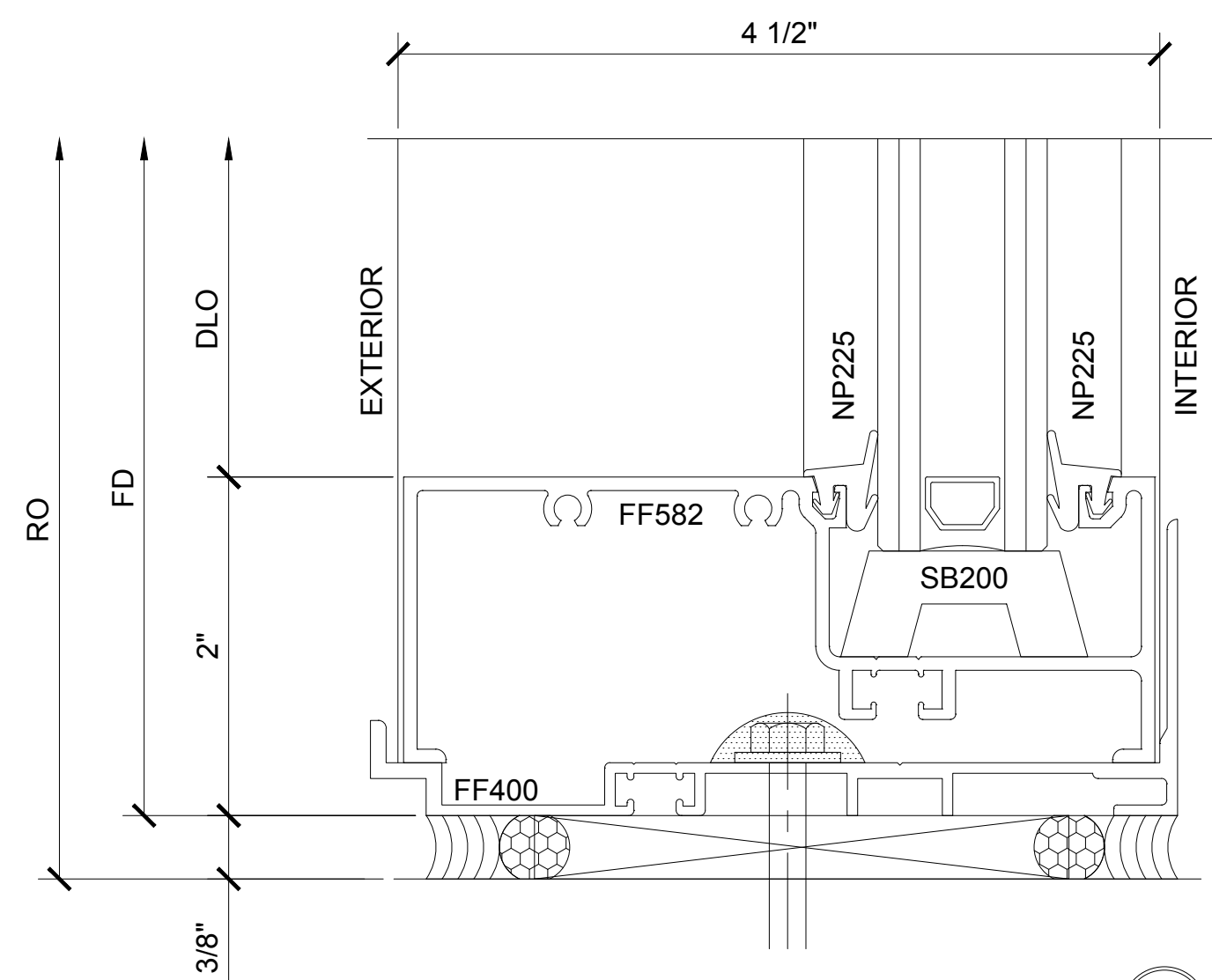
SECTION DETAIL AT JAMB 5



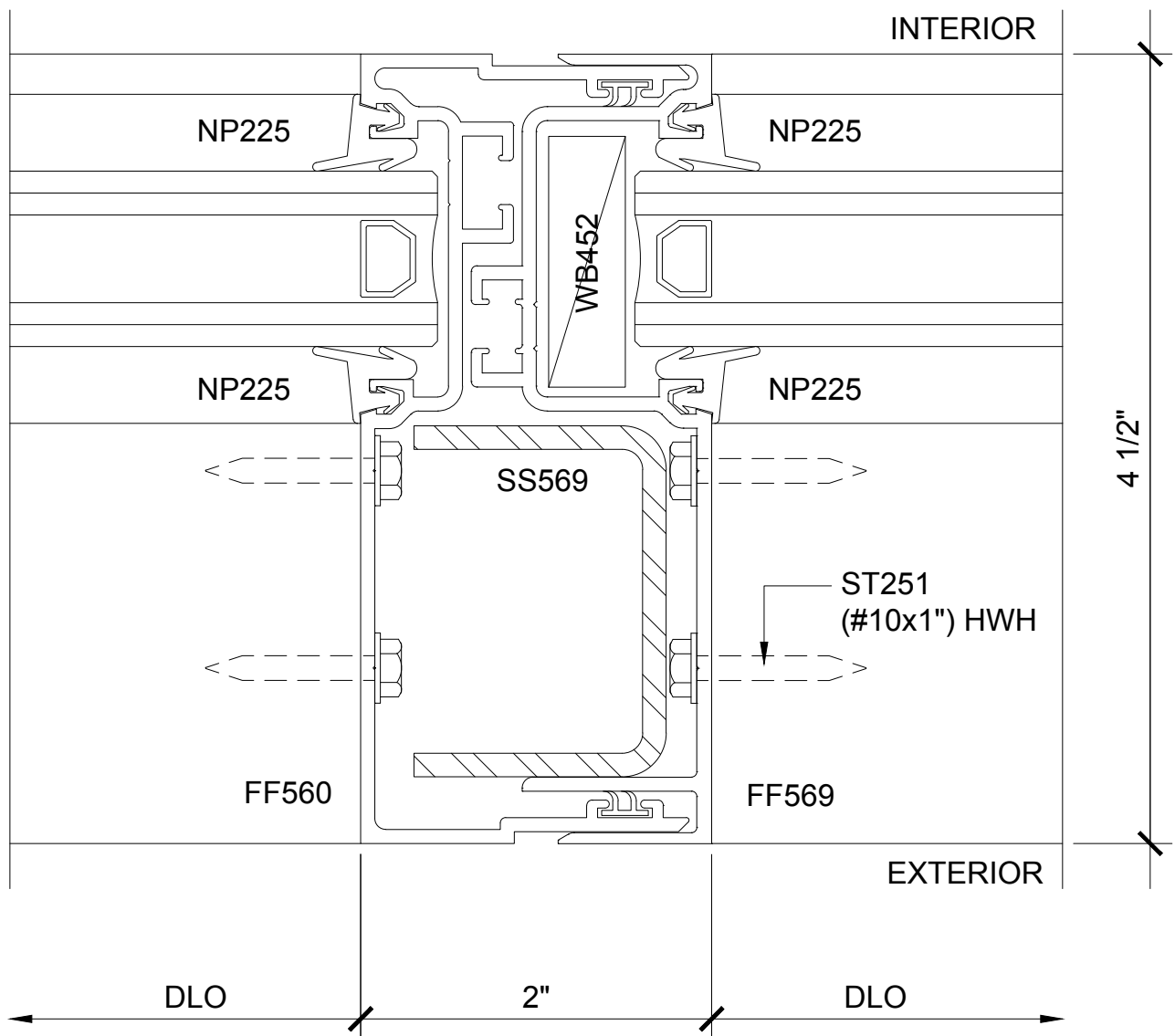
SECTION DETAIL AT HOLLOW INTERMEDIATE VERTICAL 6



SECTION DETAIL AT INTERMEDIATE HORIZONTAL 2



SECTION DETAIL AT SILL 3



SECTION DETAIL AT EXPANSION VERTICAL 7

SERIES FF451 OFFSET / FLUSH IN / INTERIOR GLAZING

1'-0" = 1'-0"

Revisions By:

C.R. LAURENCE CO. ARCHITECTURAL PRODUCTS
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Discription:

U.S. ALUMINUM
SERIES FF 451
STOREFRONT SYSTEM

Drawn By: RP
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2.2

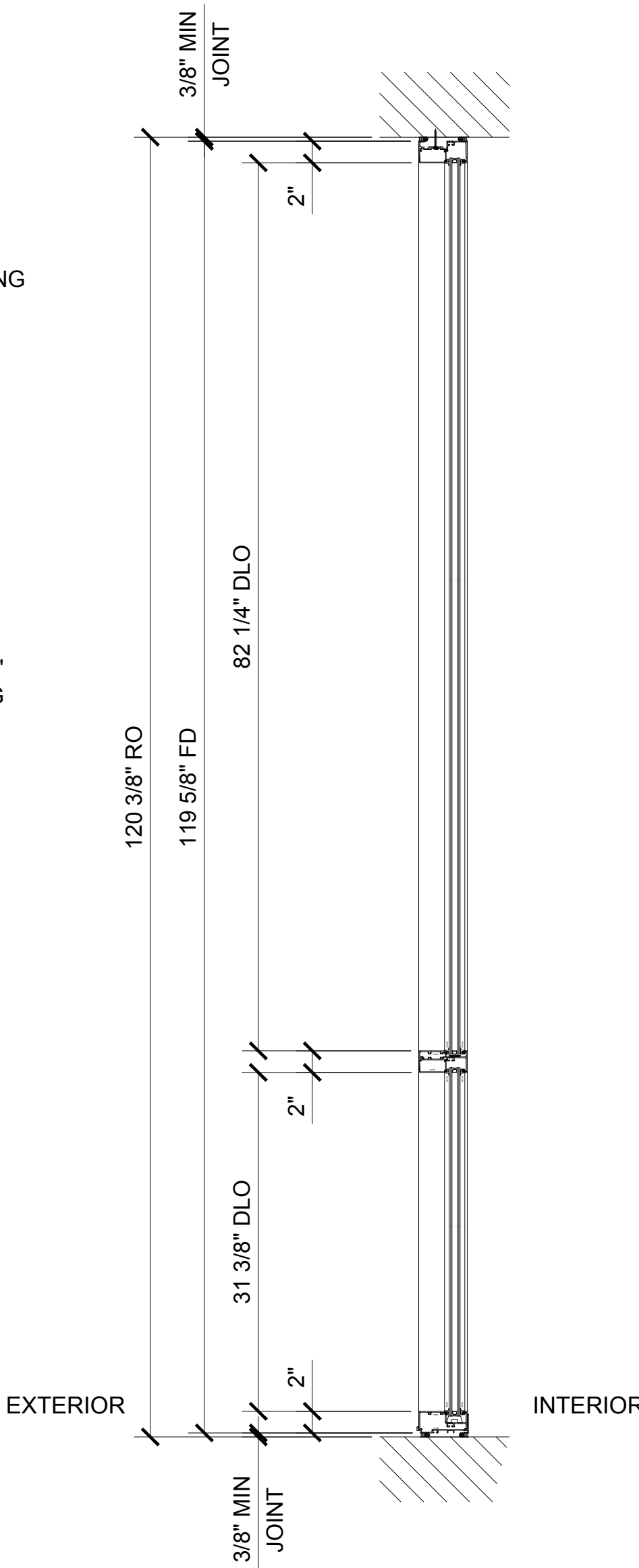
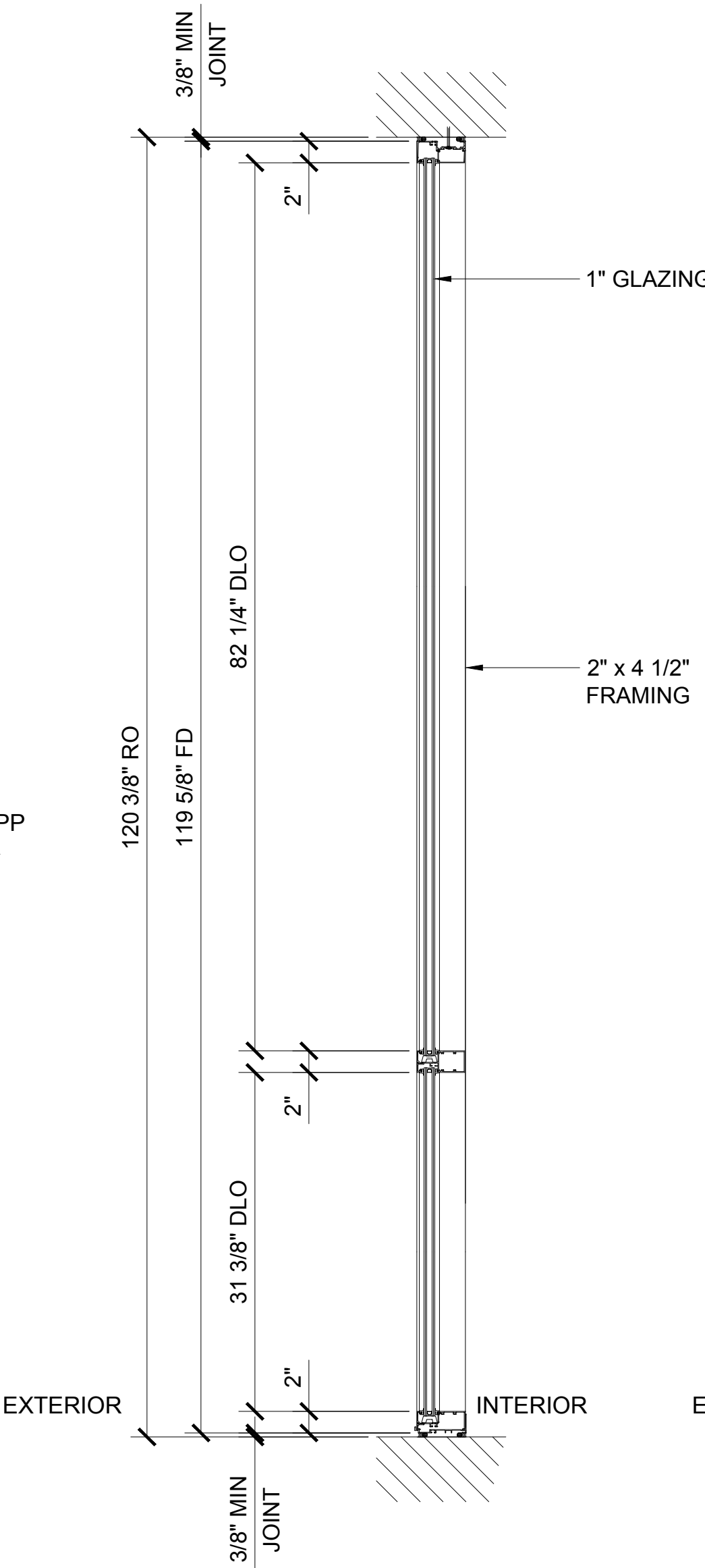

$$1'' = 1' - 0''$$

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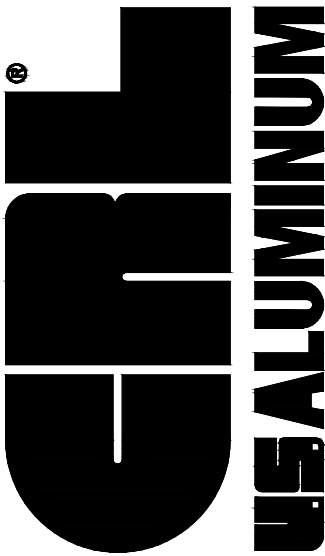
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DLO	DAYLIGHT OPENING
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STOREFRONT SYSTEM

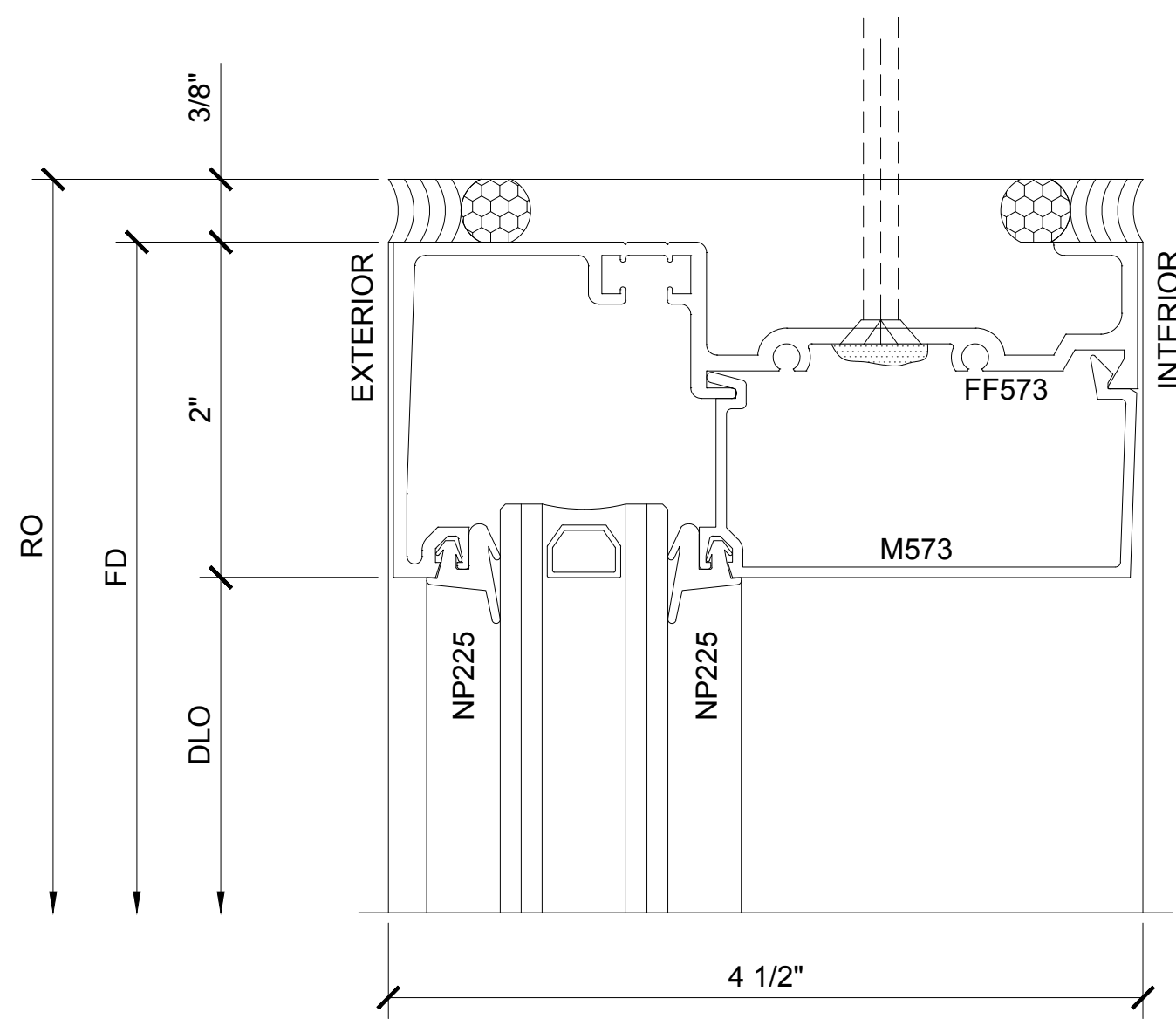
Drawn By: RF

Date: 10/30/14

Scale: AS NOTED

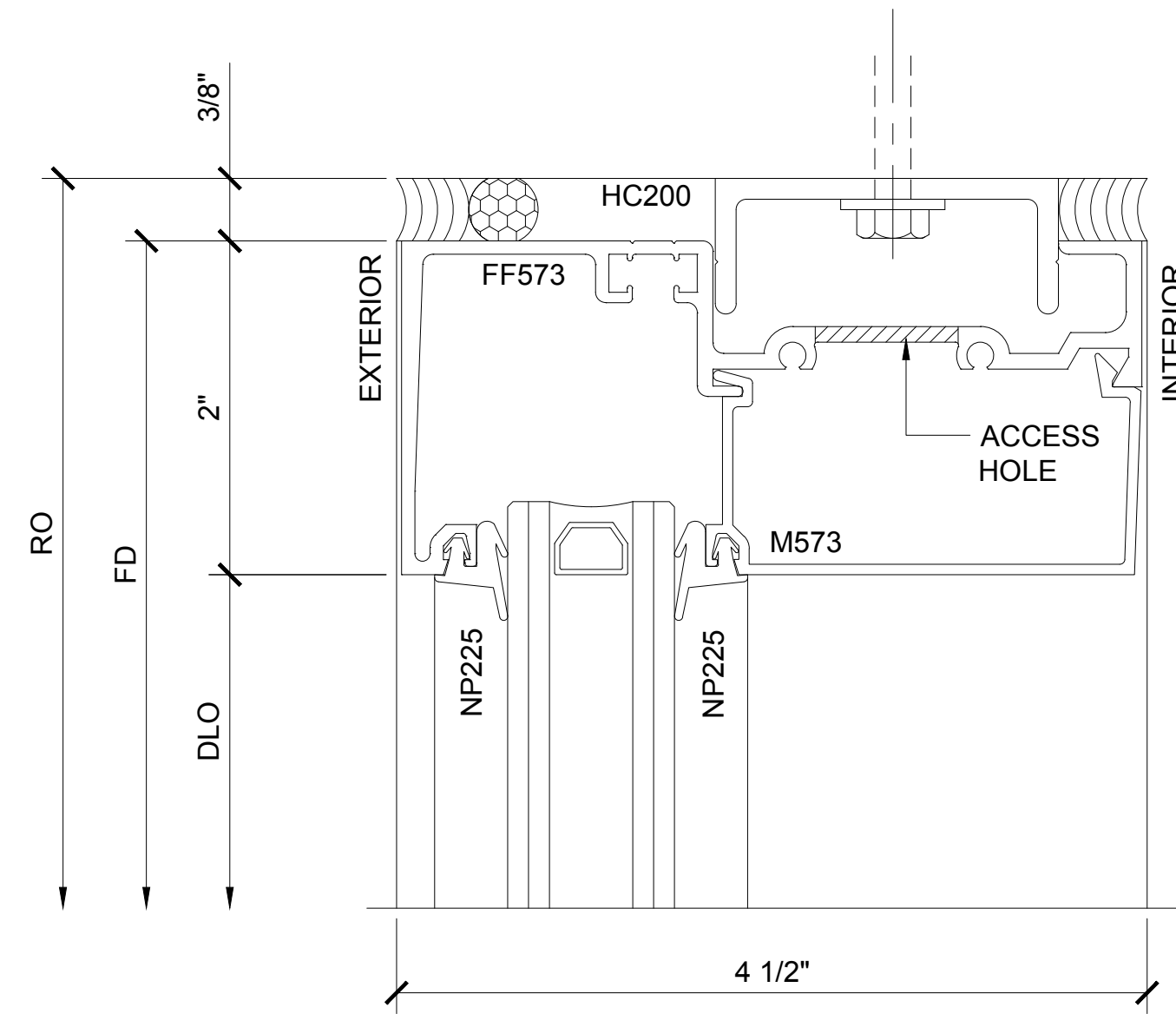
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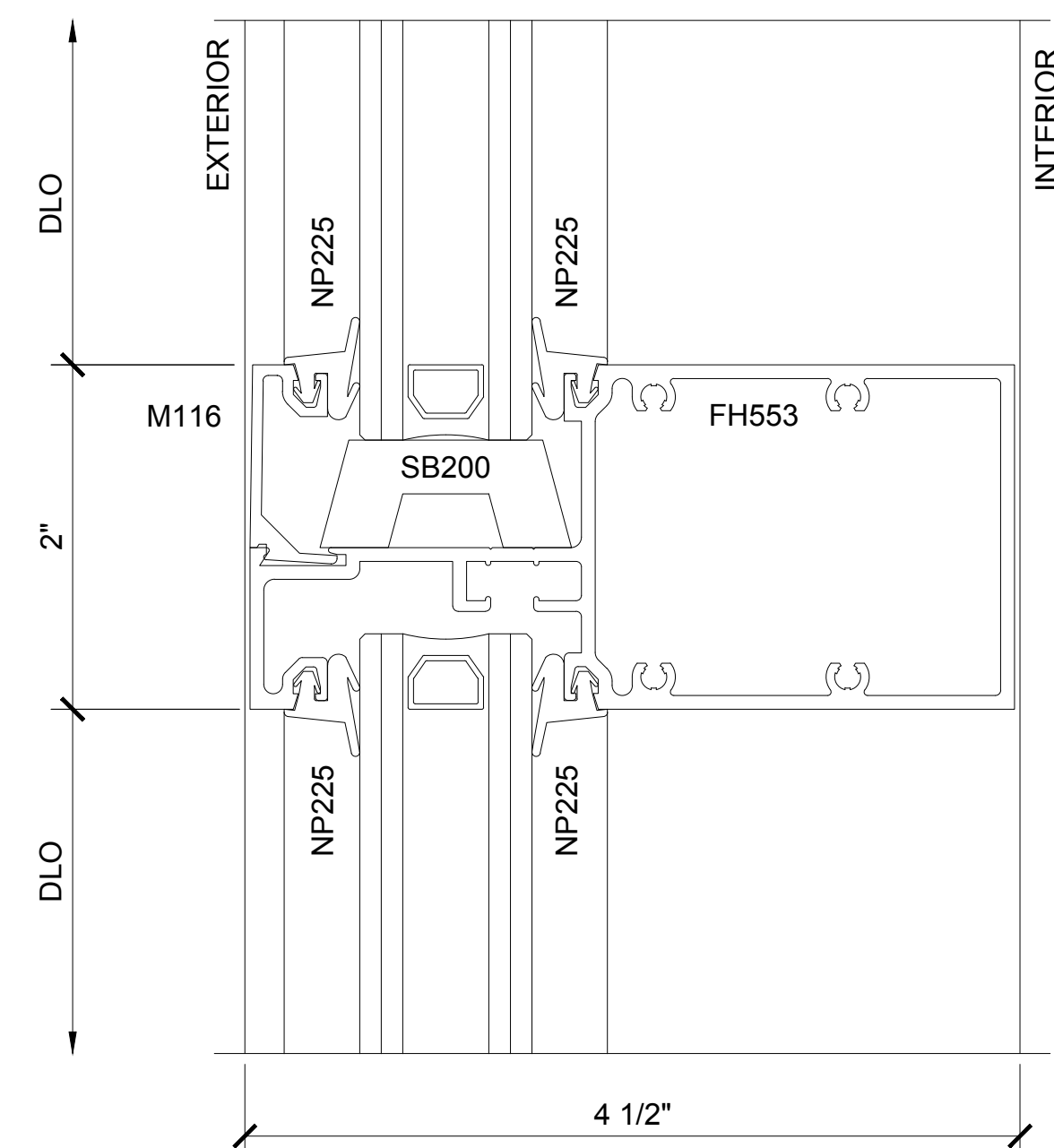
SECTION DETAIL AT HEAD

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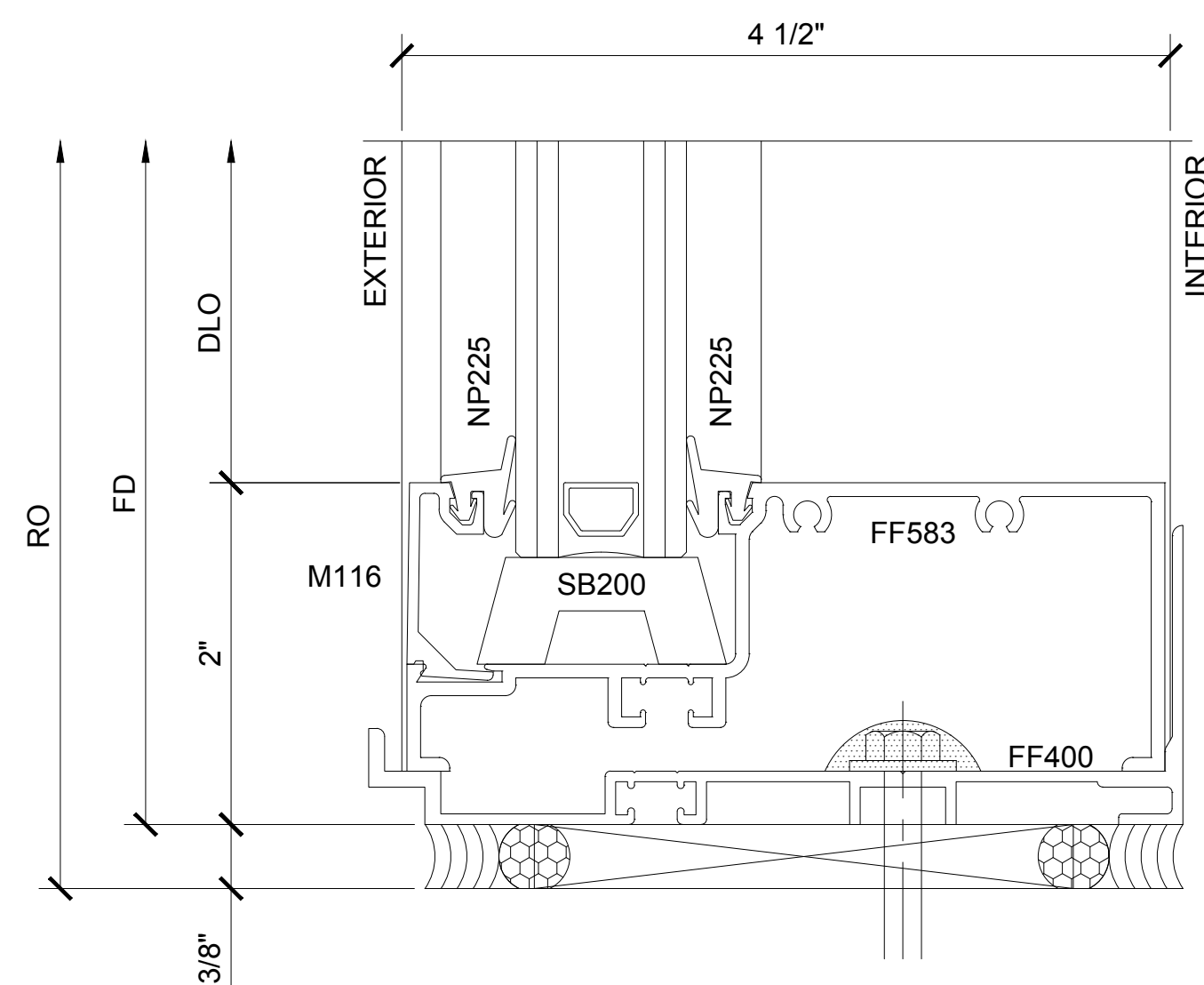
SECTION DETAIL AT HEAD
W/ HEAD ANCHOR

4



SECTION DETAIL AT
INTERMEDIATE HORIZONTAL

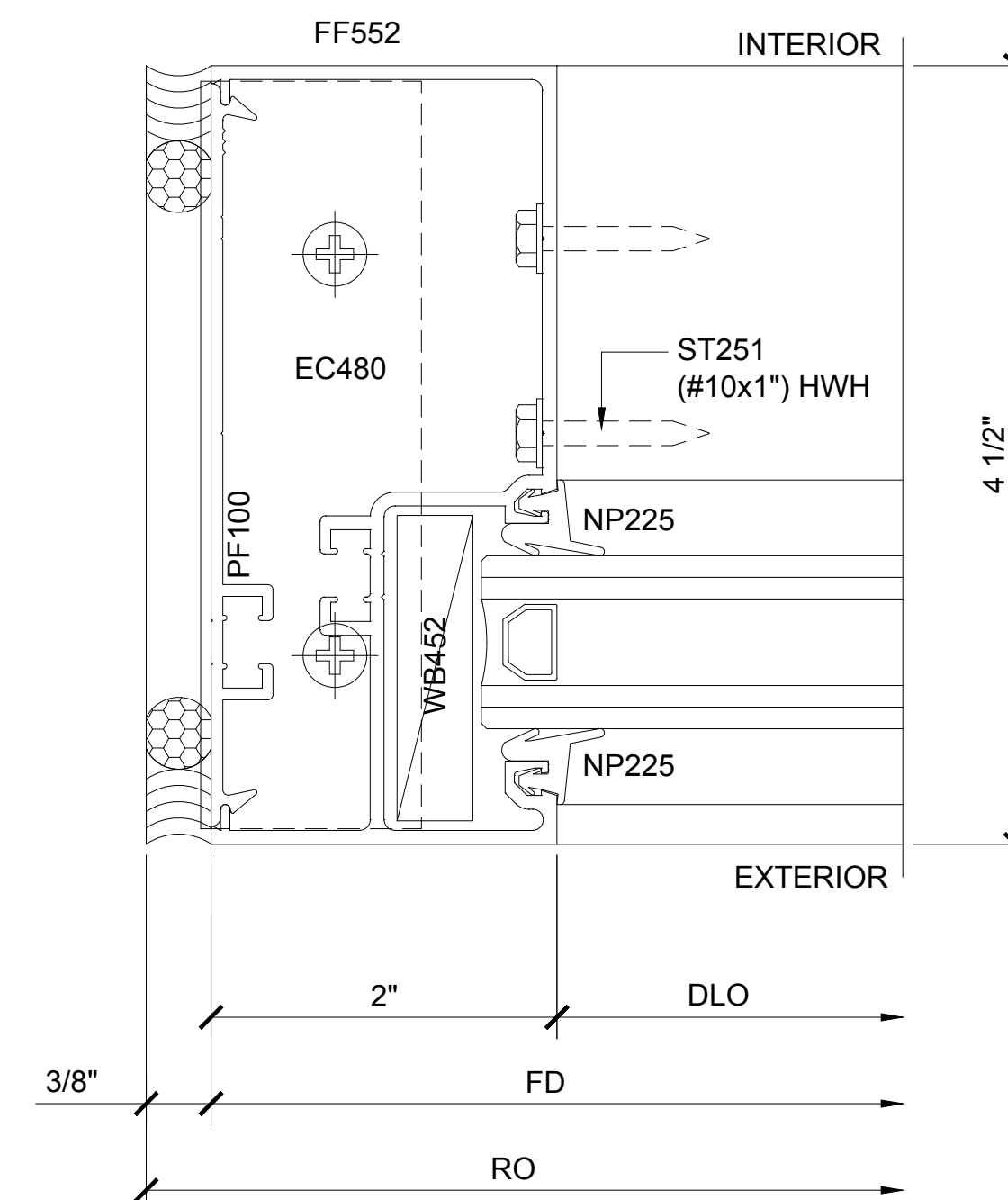
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SECTION DETAIL AT SILL

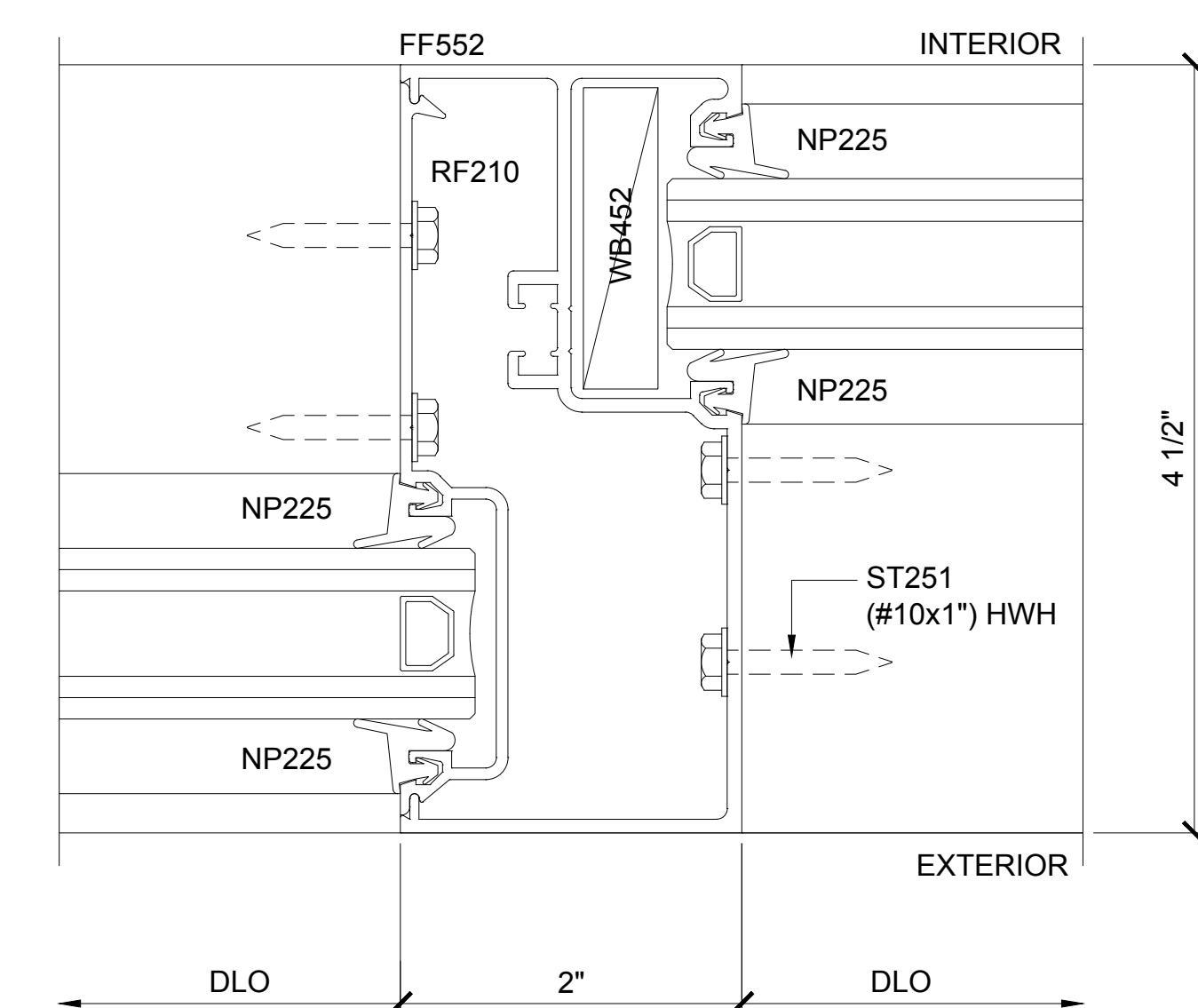
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SERIES FF451 OFFSET / FLUSH OUT-IN / EXTERIOR GLAZING



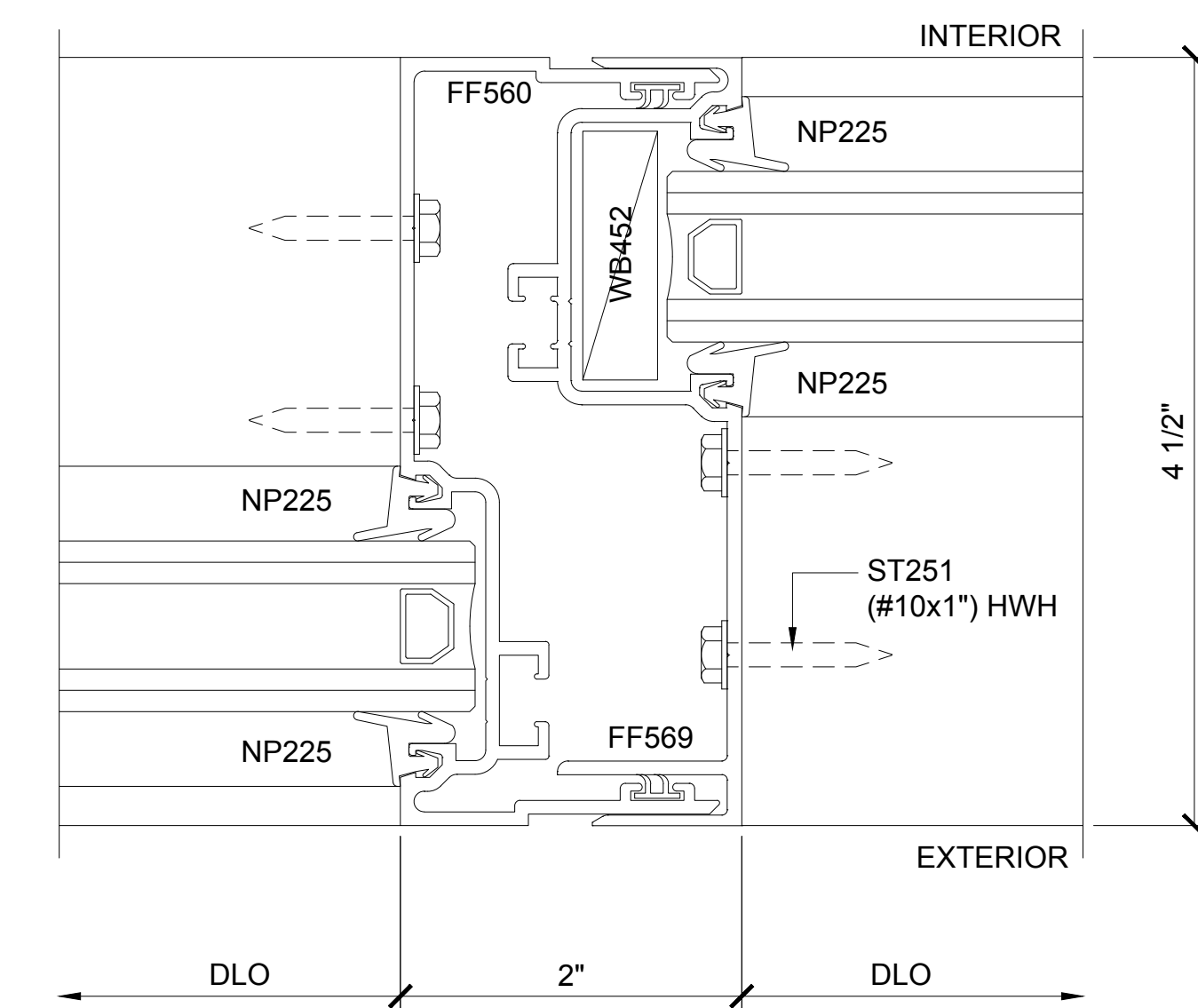
SECTION DETAIL AT JAMB

5



SECTION DETAIL AT HOLLOW
INTERMEDIATE VERTICAL

6



SECTION DETAIL AT
EXPANSION VERTICAL

7

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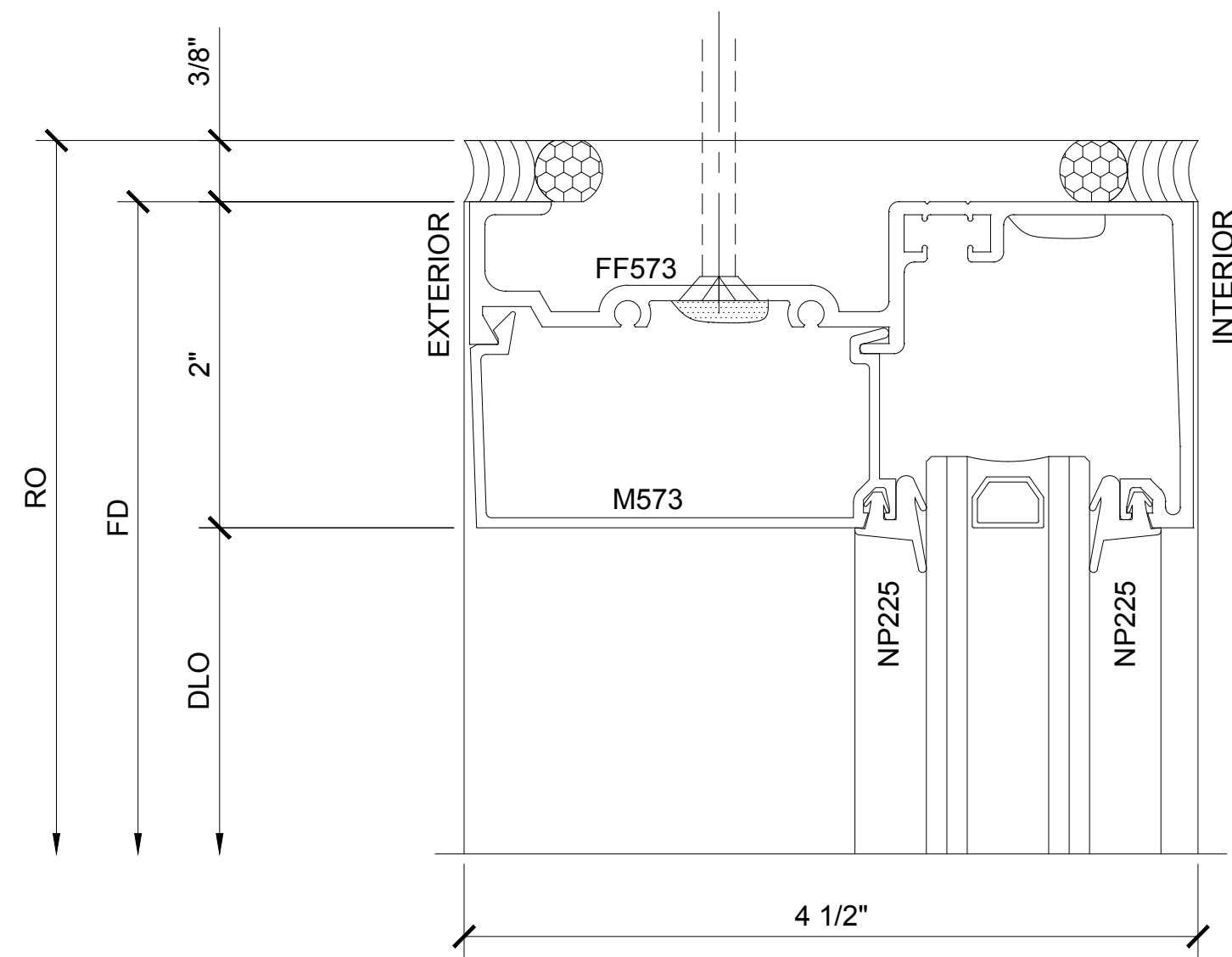
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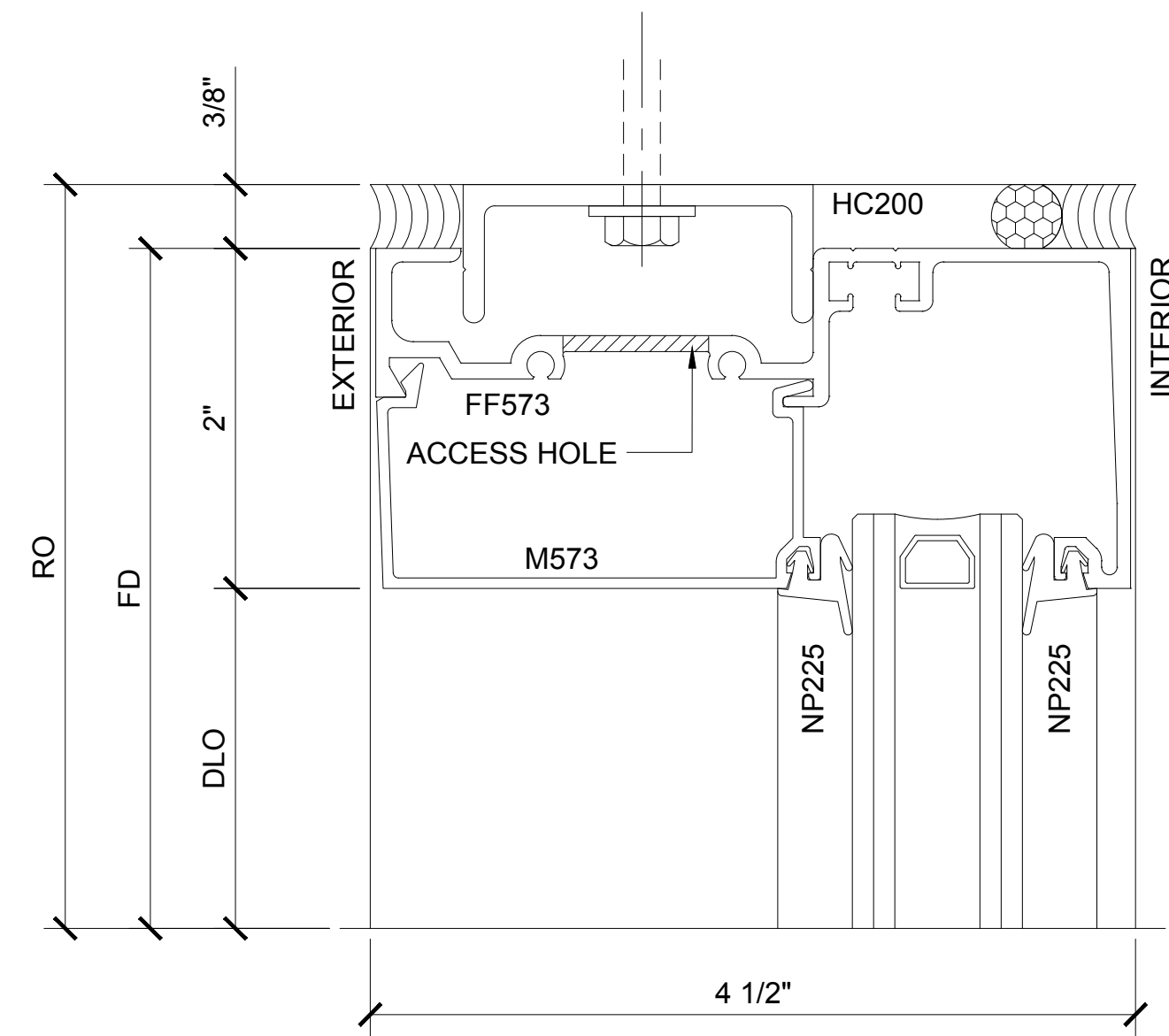
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1'-0" = 1'-0"



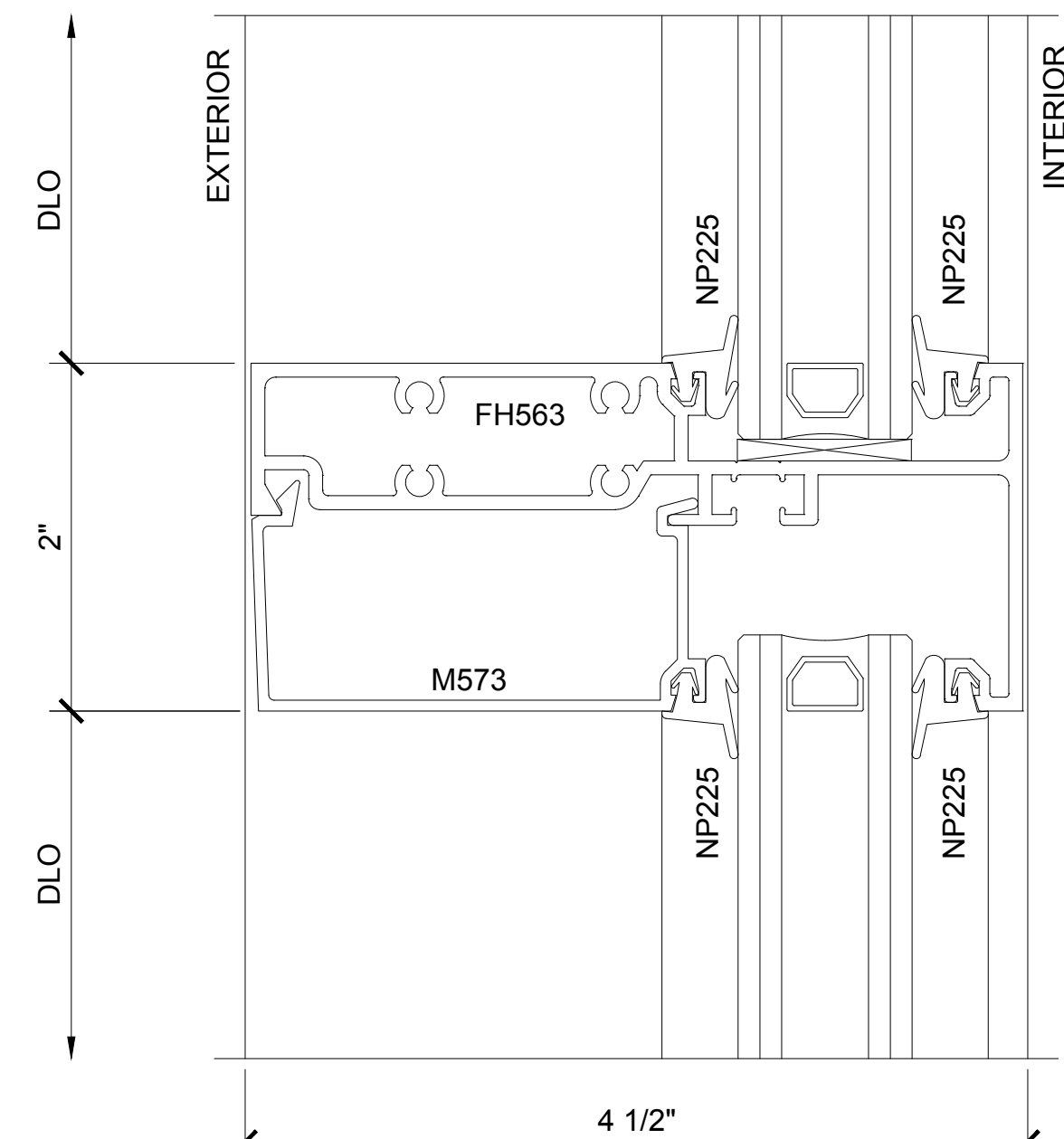
SECTION DETAIL AT HEAD

8



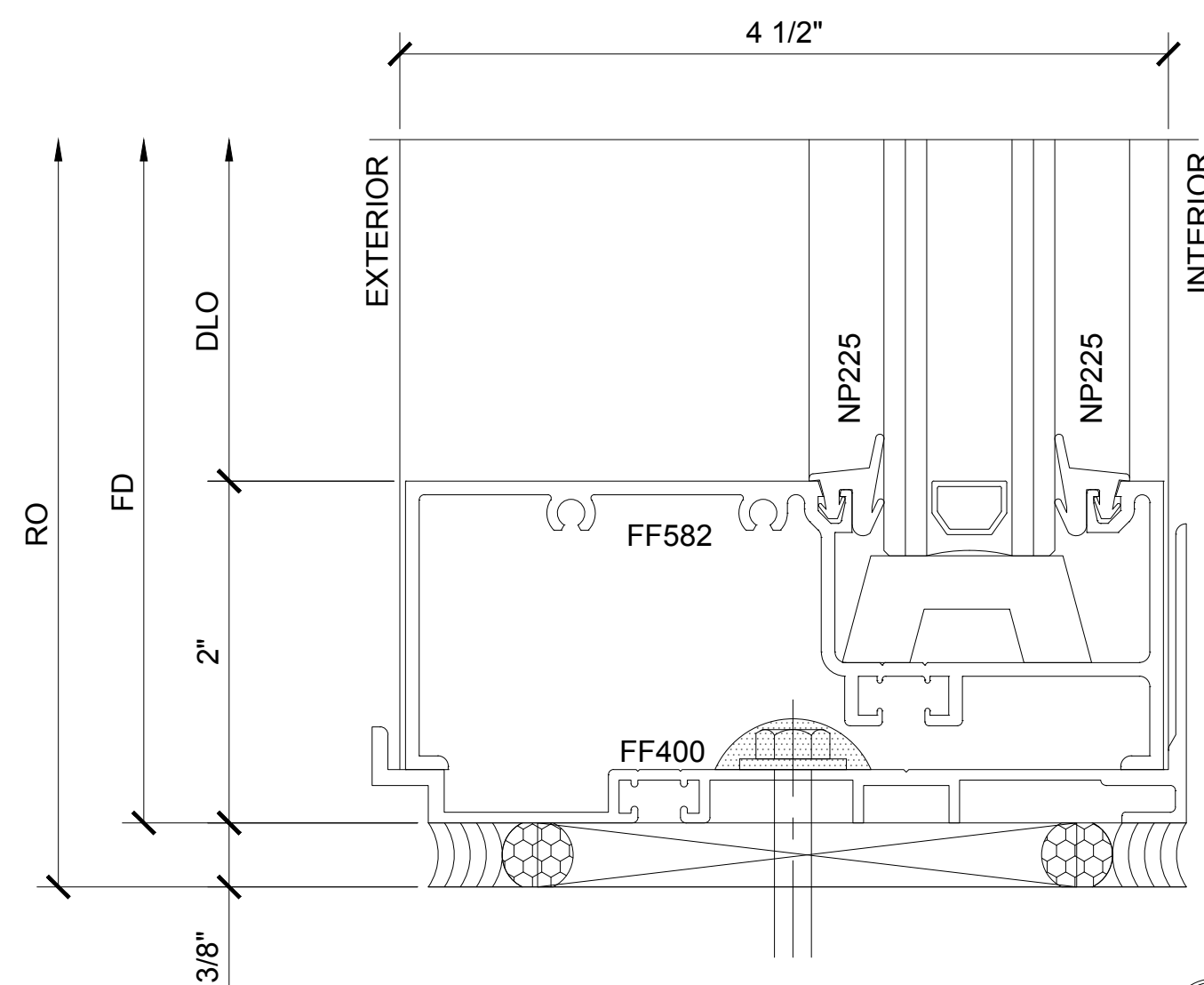
SECTION DETAIL AT HEAD
W/ HEAD ANCHOR

11



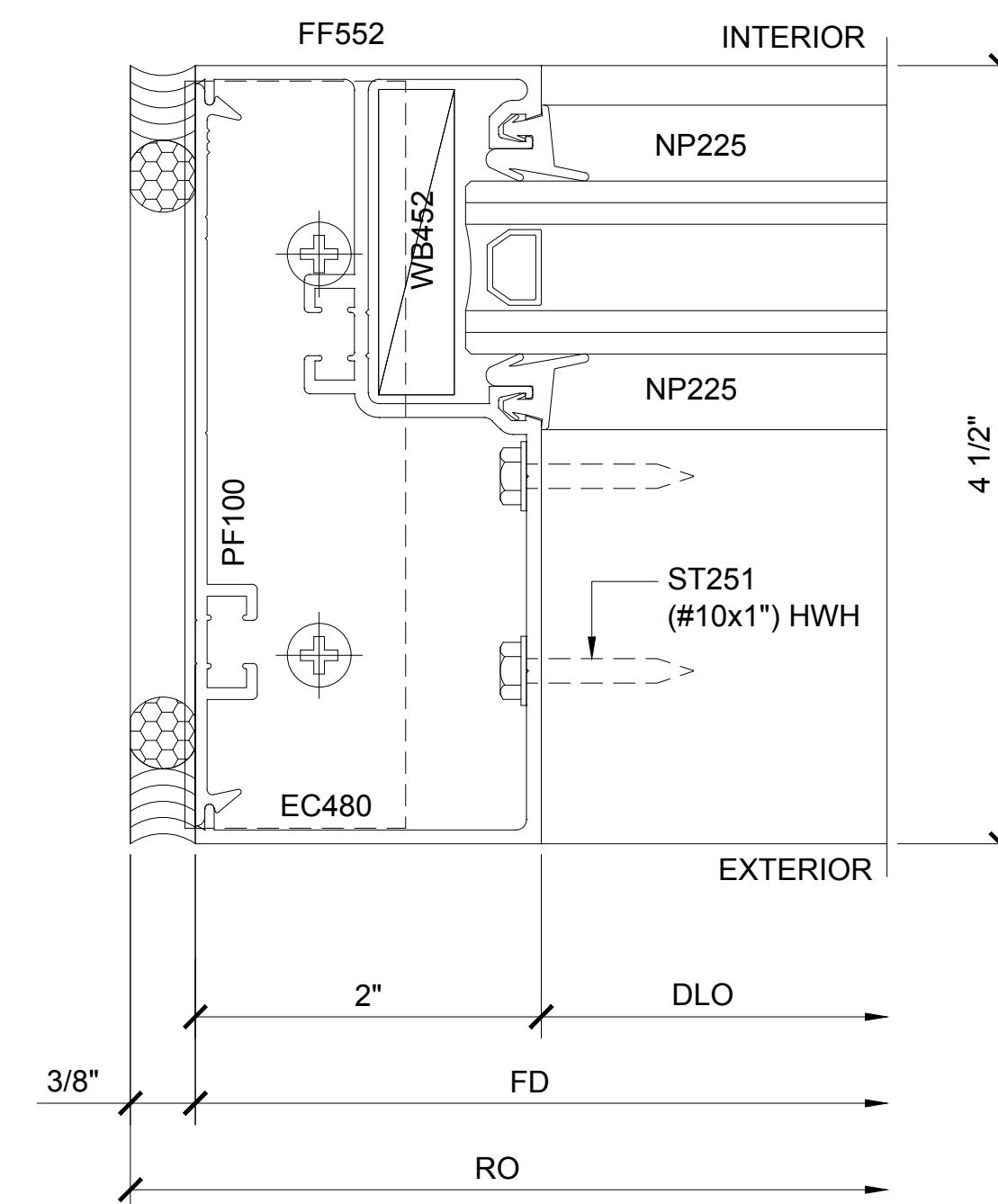
SECTION DETAIL AT
INTERMEDIATE HORIZONTAL

9



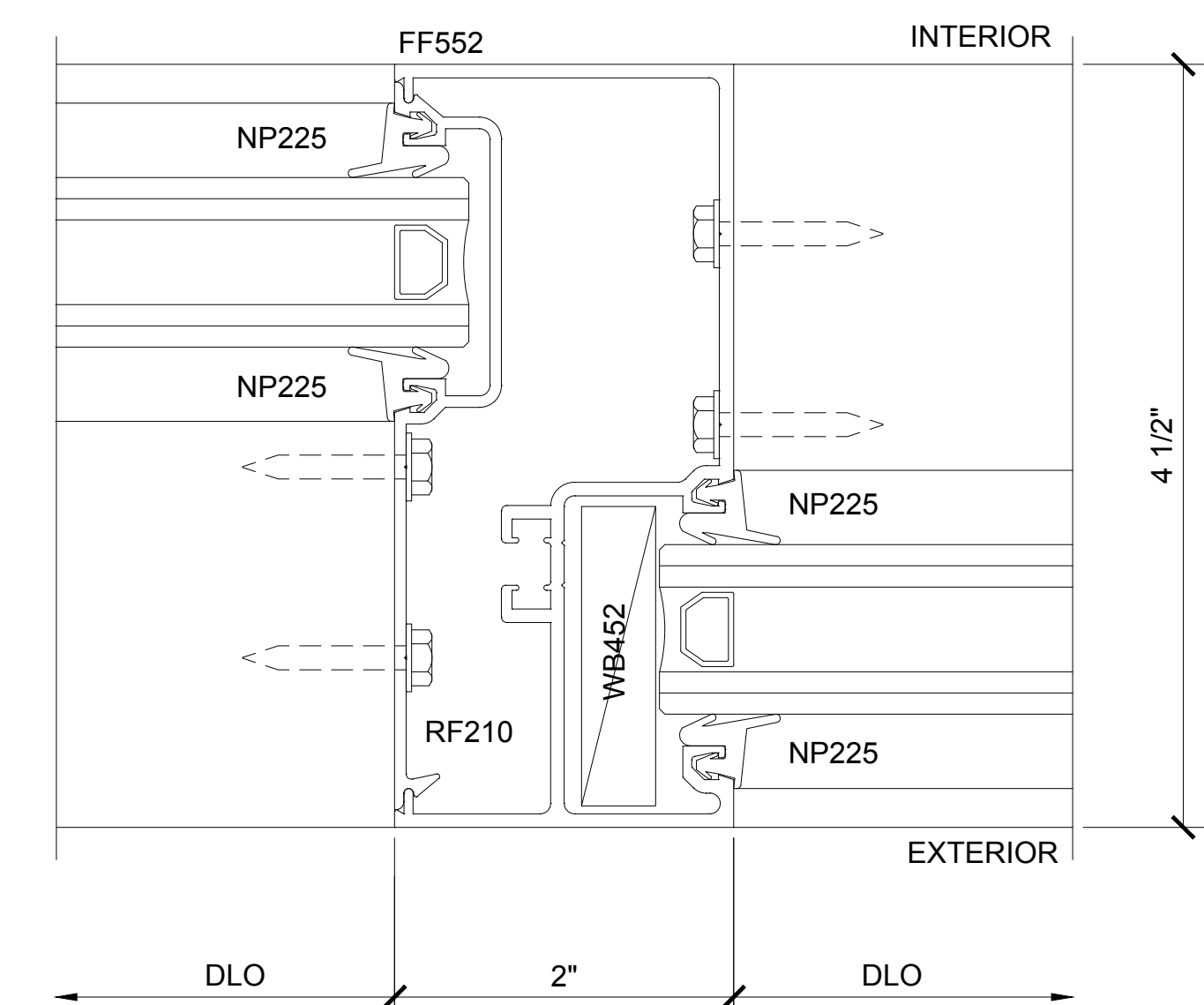
SECTION DETAIL AT SILL

10



SECTION DETAIL AT JAMB

12



SECTION DETAIL AT HOLLOW
INTERMEDIATE VERTICAL

13

SERIES FF451 OFFSET / FLUSH OUT-IN / EXTERIOR GLAZING

1'-0" = 1'-0"

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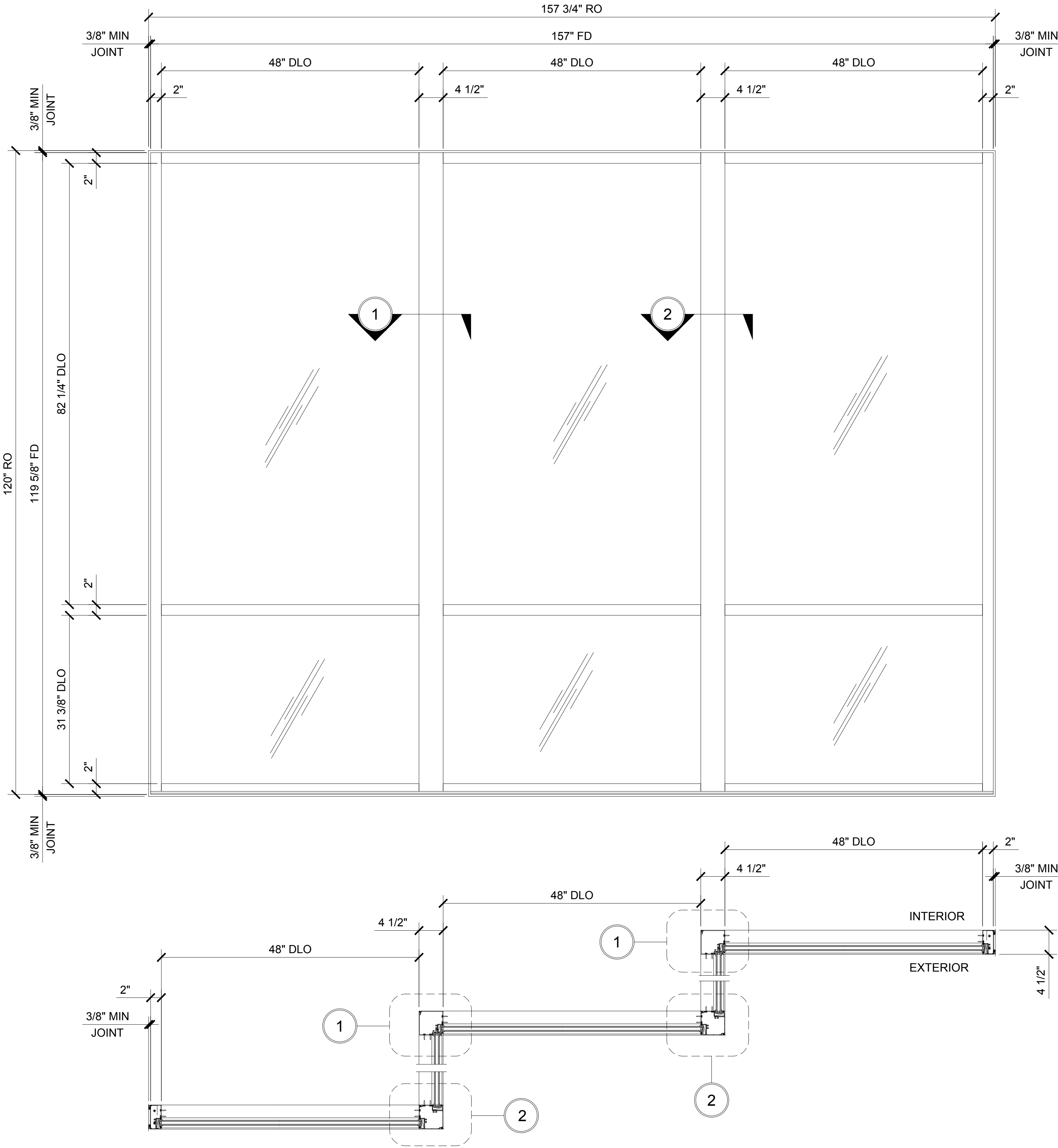
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Date: 10/30/14
Scale: AS NOTED
File Name: FF451 SF.dwg

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3.3

SERIES FF 451 OFFSET / CORNER CONDITION / 90°

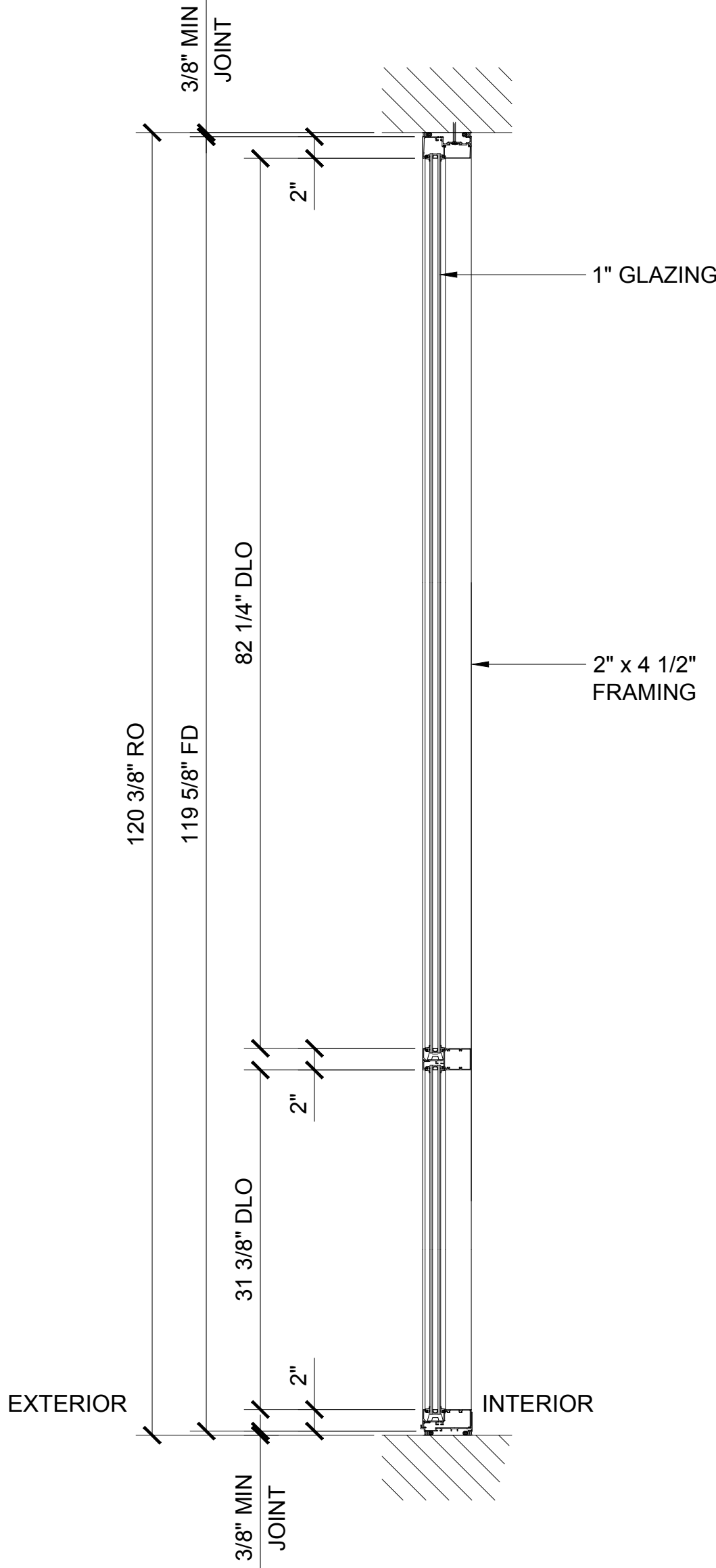
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STANDARD ABBREVIATIONS

- | | |
|------|---------------------------|
| RO | ROUGH OPENING |
| FD | FRAME DIMENSION |
| DLO | DAYLIGHT OPENING |
| DO | DOOR OPENING |
| DD | DOOR DIMENSION |
| SMC | SURFACE MOUNTED CLOSER |
| OHCC | OVERHEAD CONCEALED CLOSER |

Revisions By:

CRL
U.S. ALUMINUM
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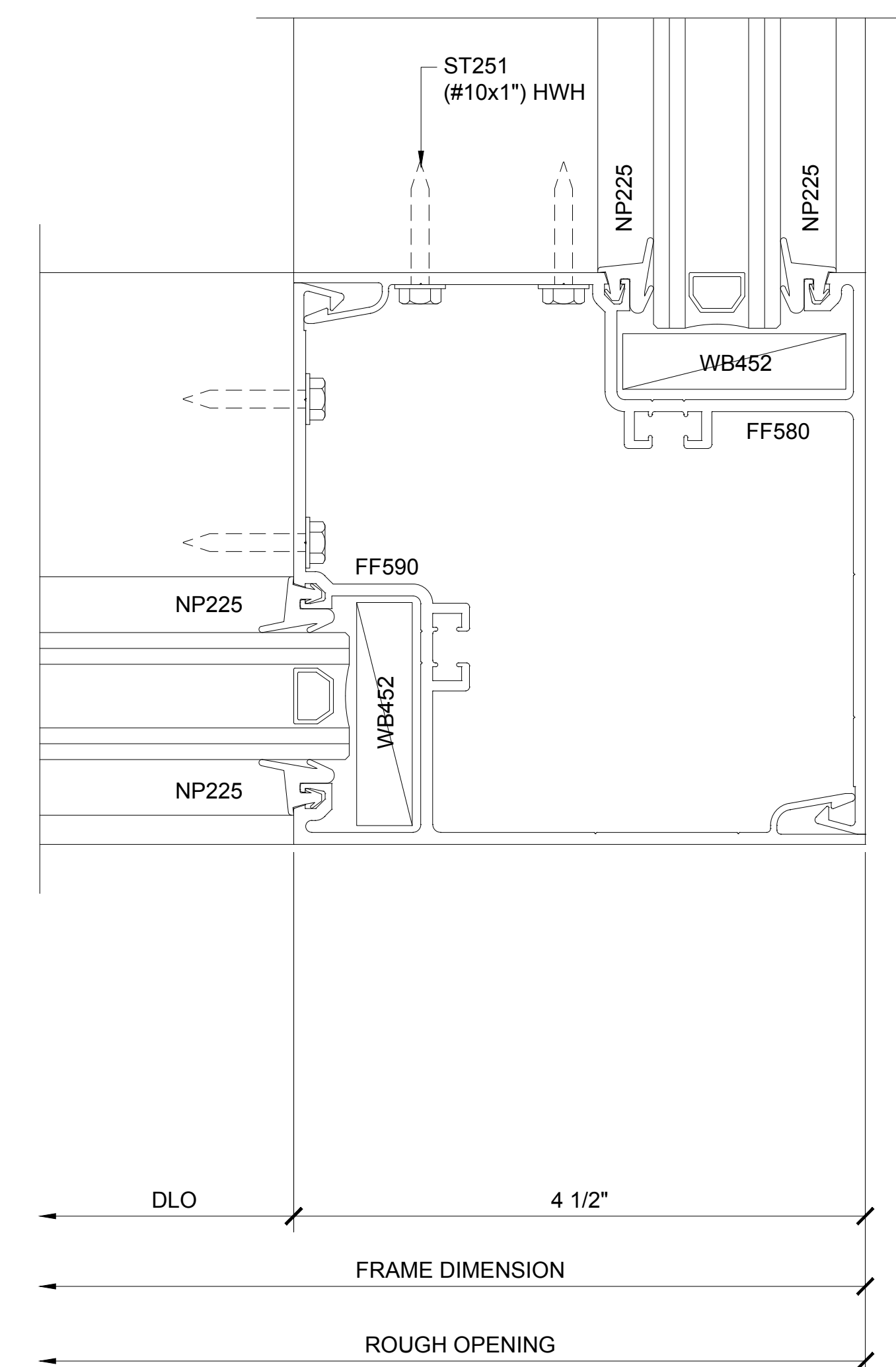
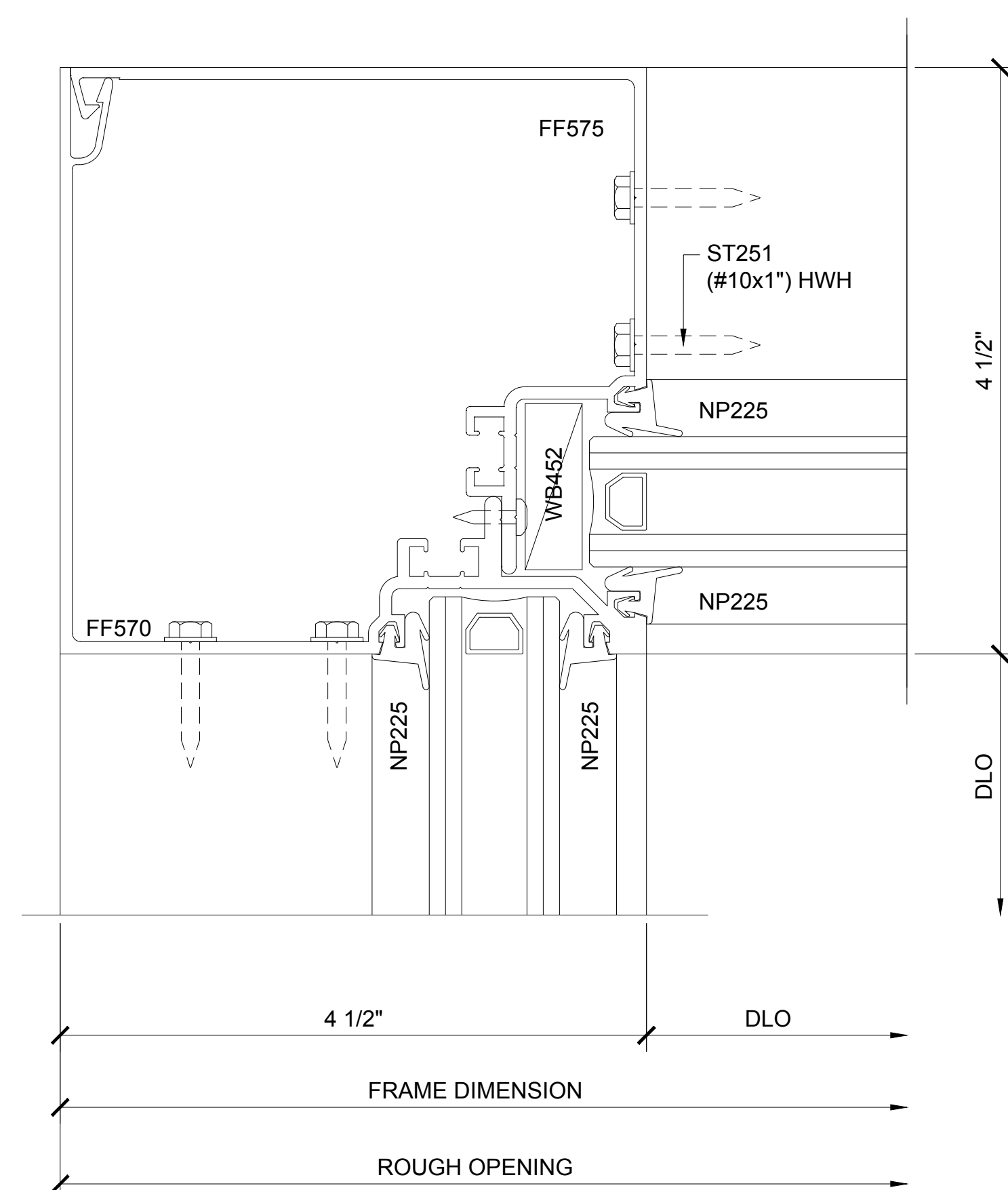
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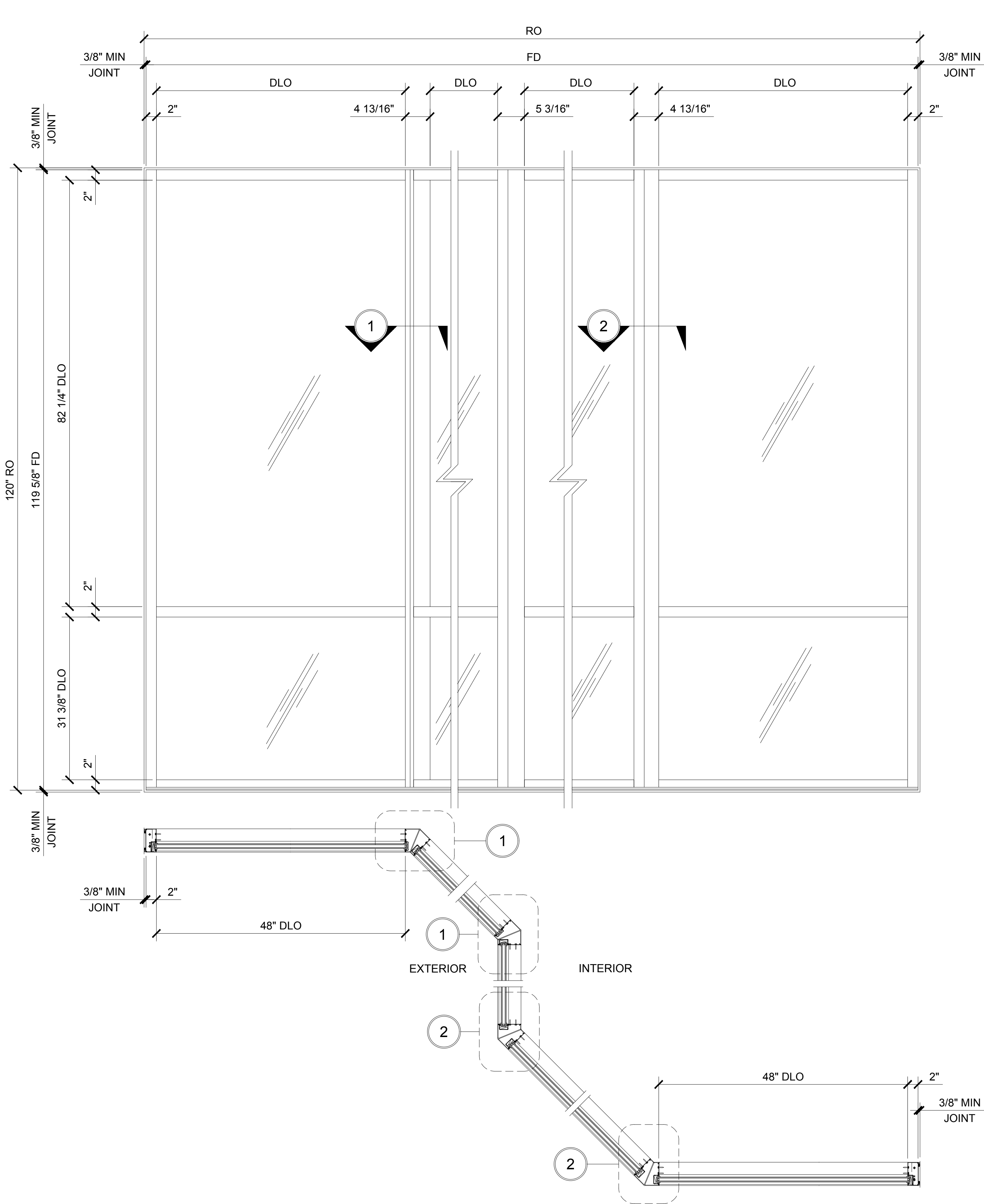


Revisions By:



STOREFRONTS

SERIES FF 451 OFFSET / CORNER CONDITION / 135°

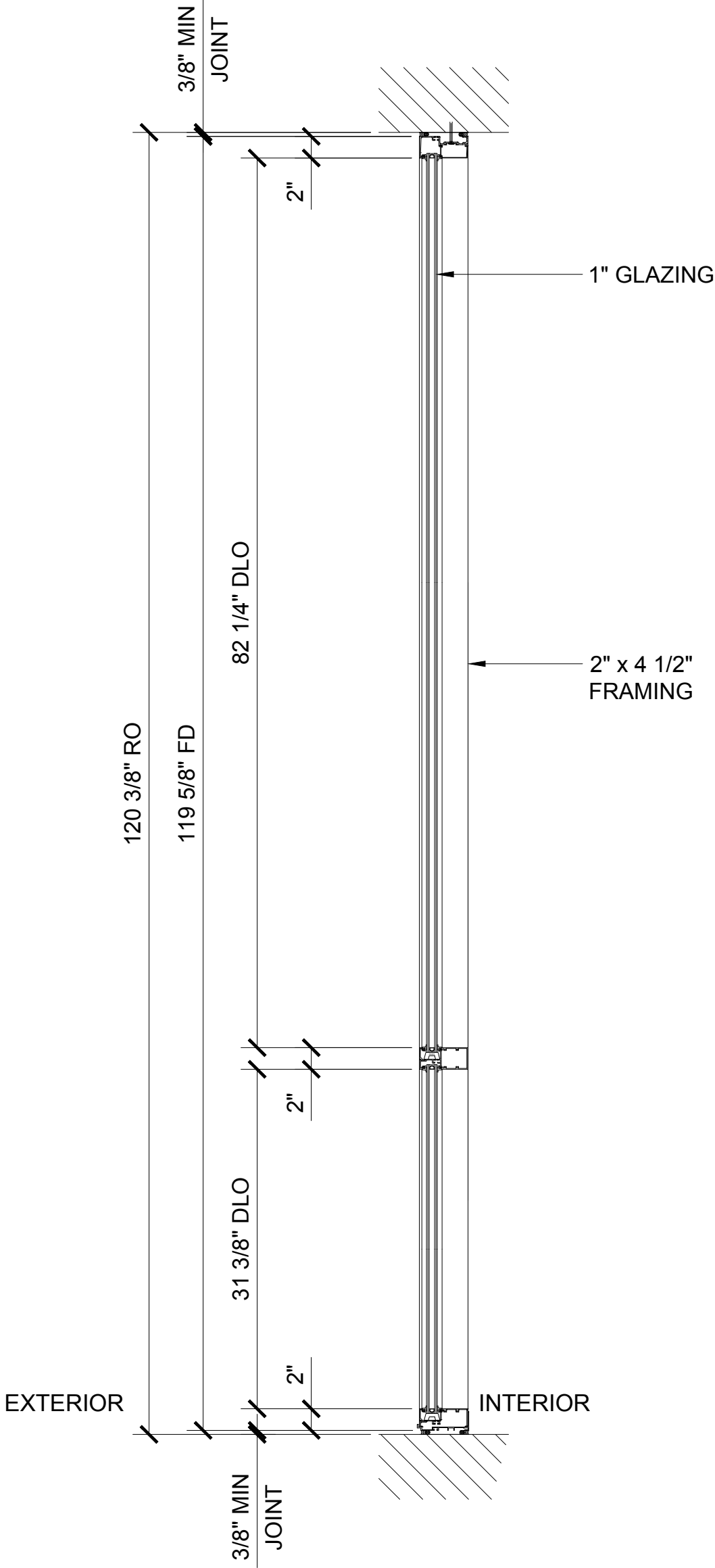


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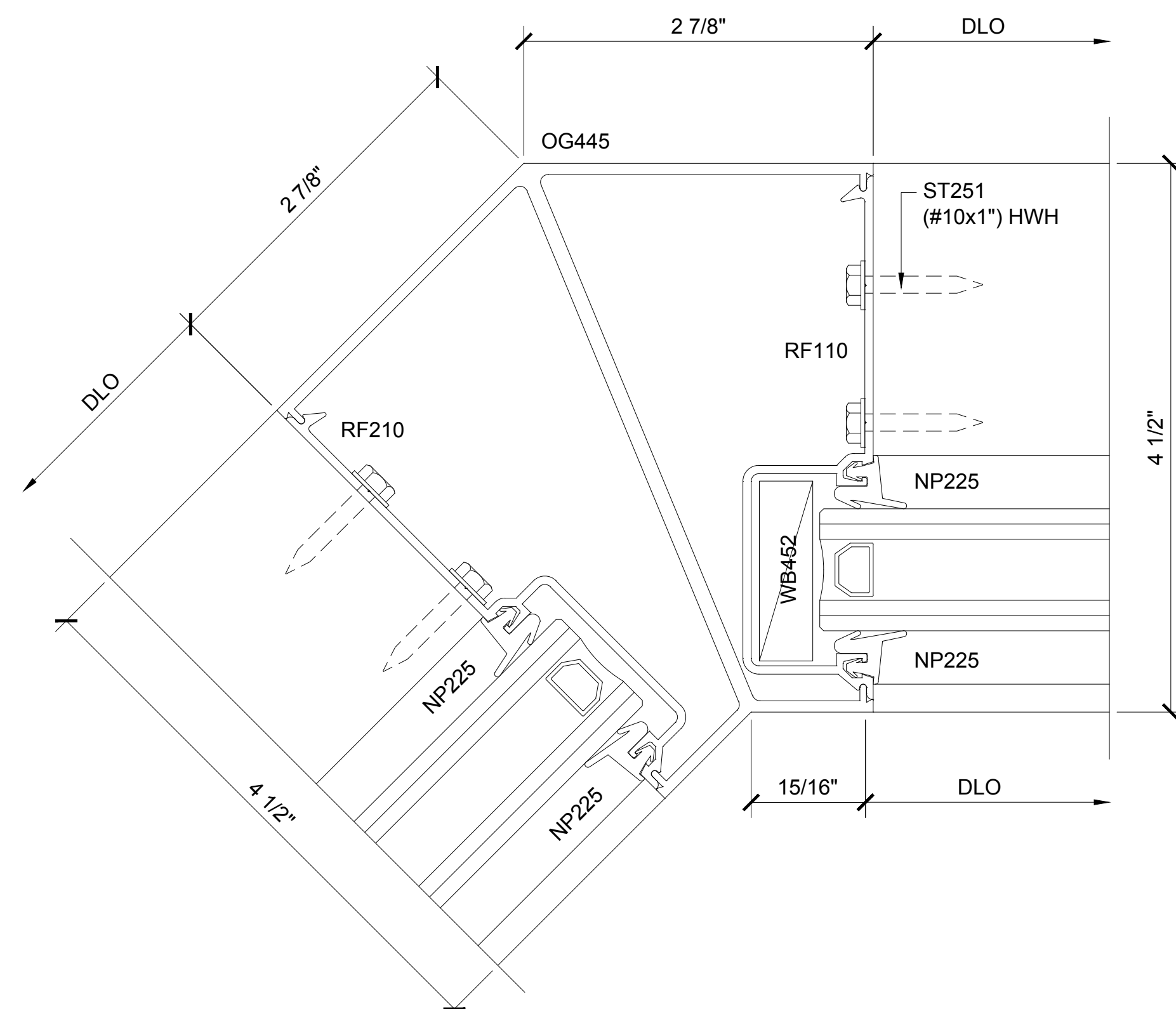
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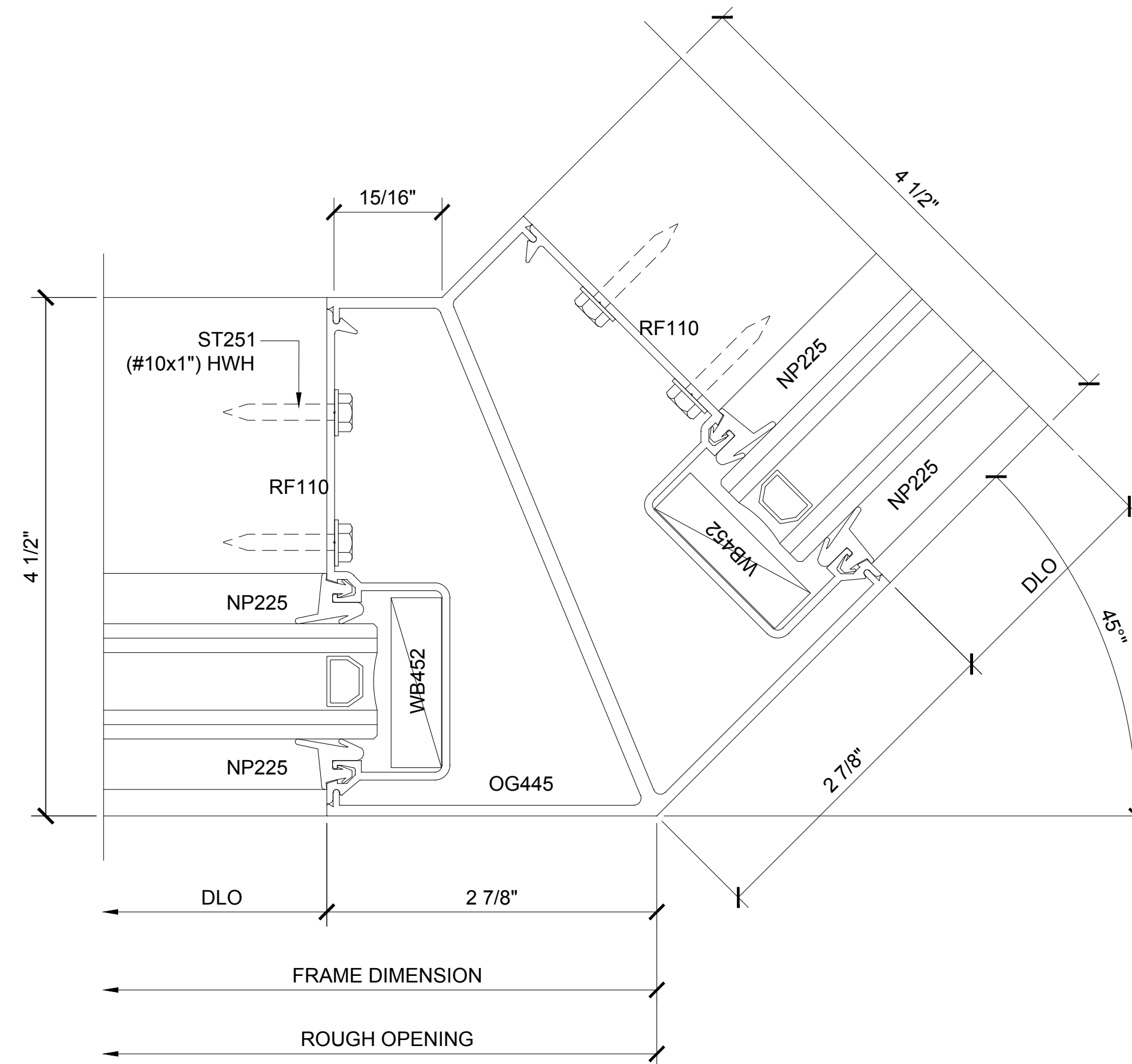
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SECTION DETAIL @ JAMB - 135° ①



SECTION DETAIL @ JAMB - 135° ②

SERIES FF 451 OFFSET / CORNER CONDITION

1'-0" = 1'-0"

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5.2

SERIES FF451 / DOOR FRAMING / CENTER

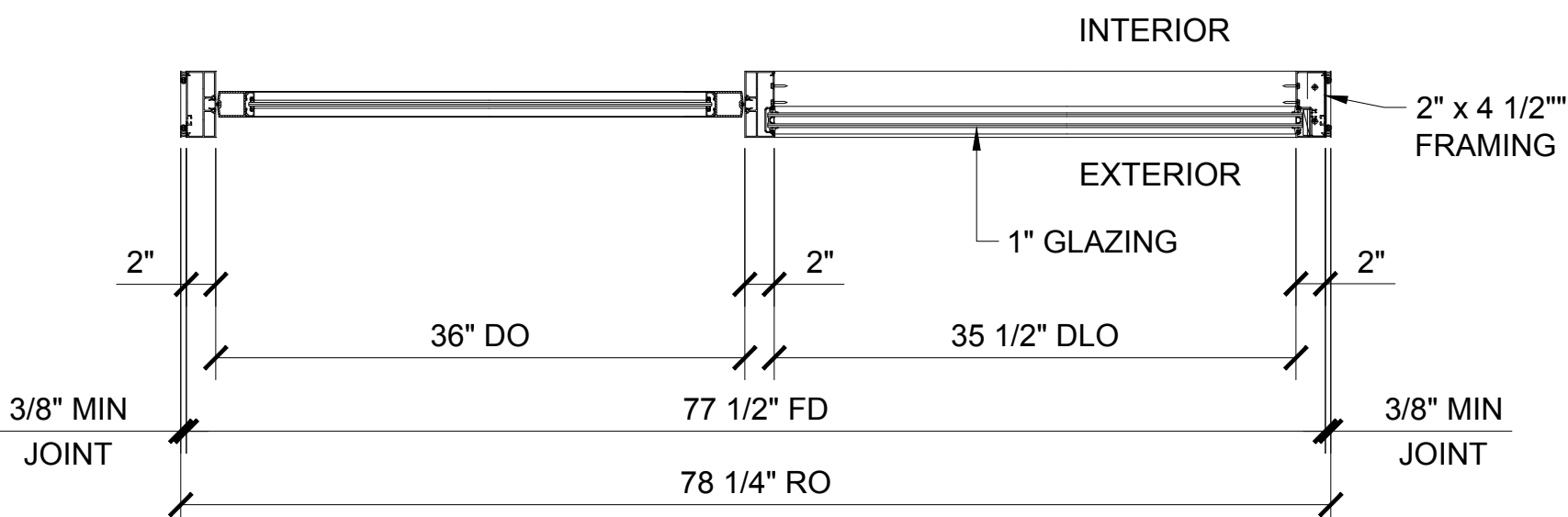
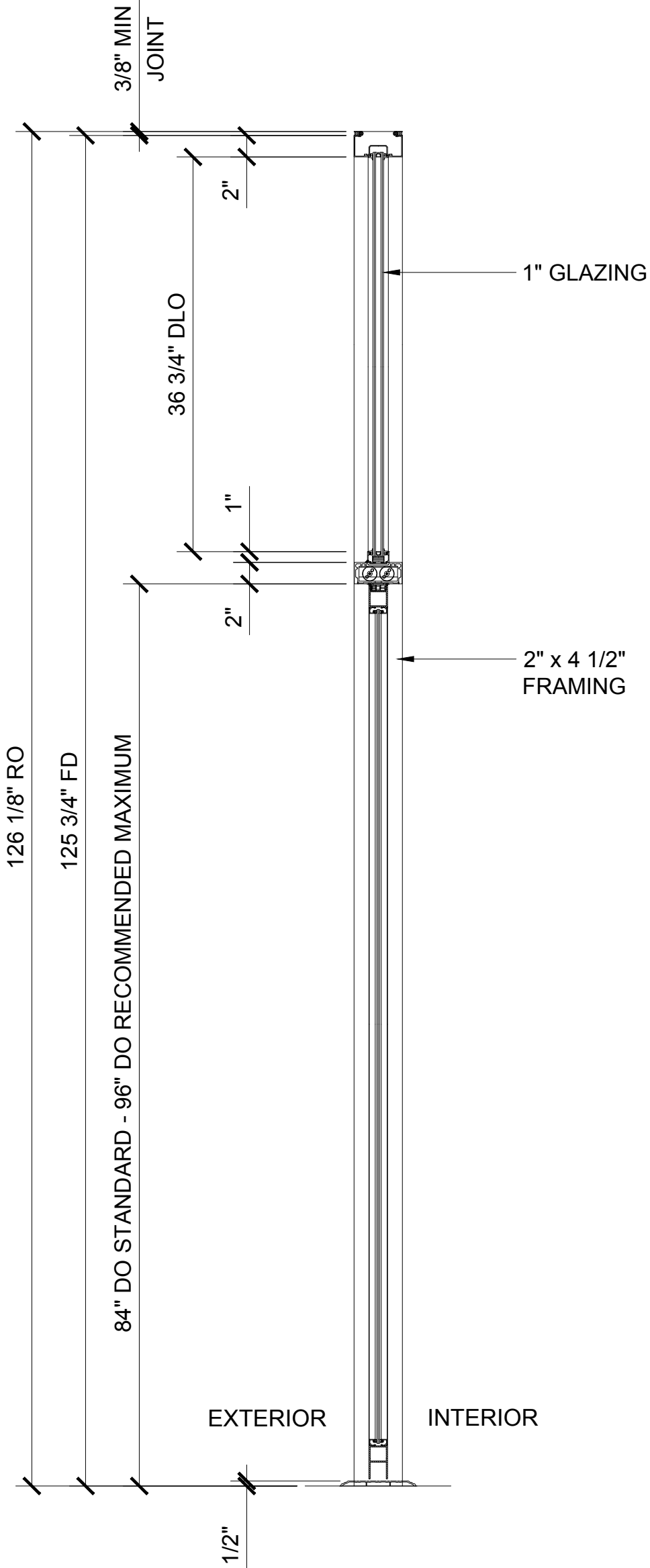
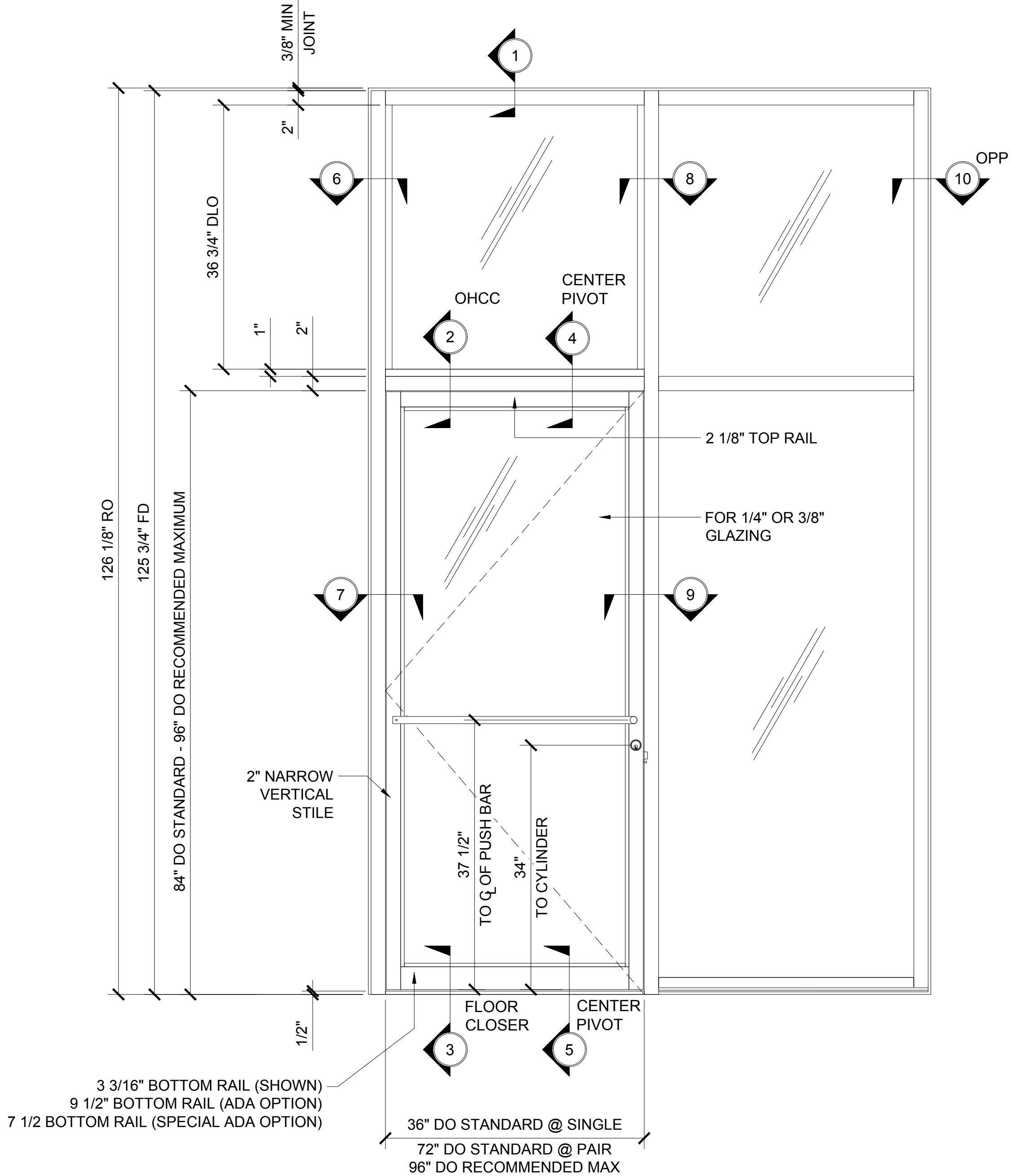
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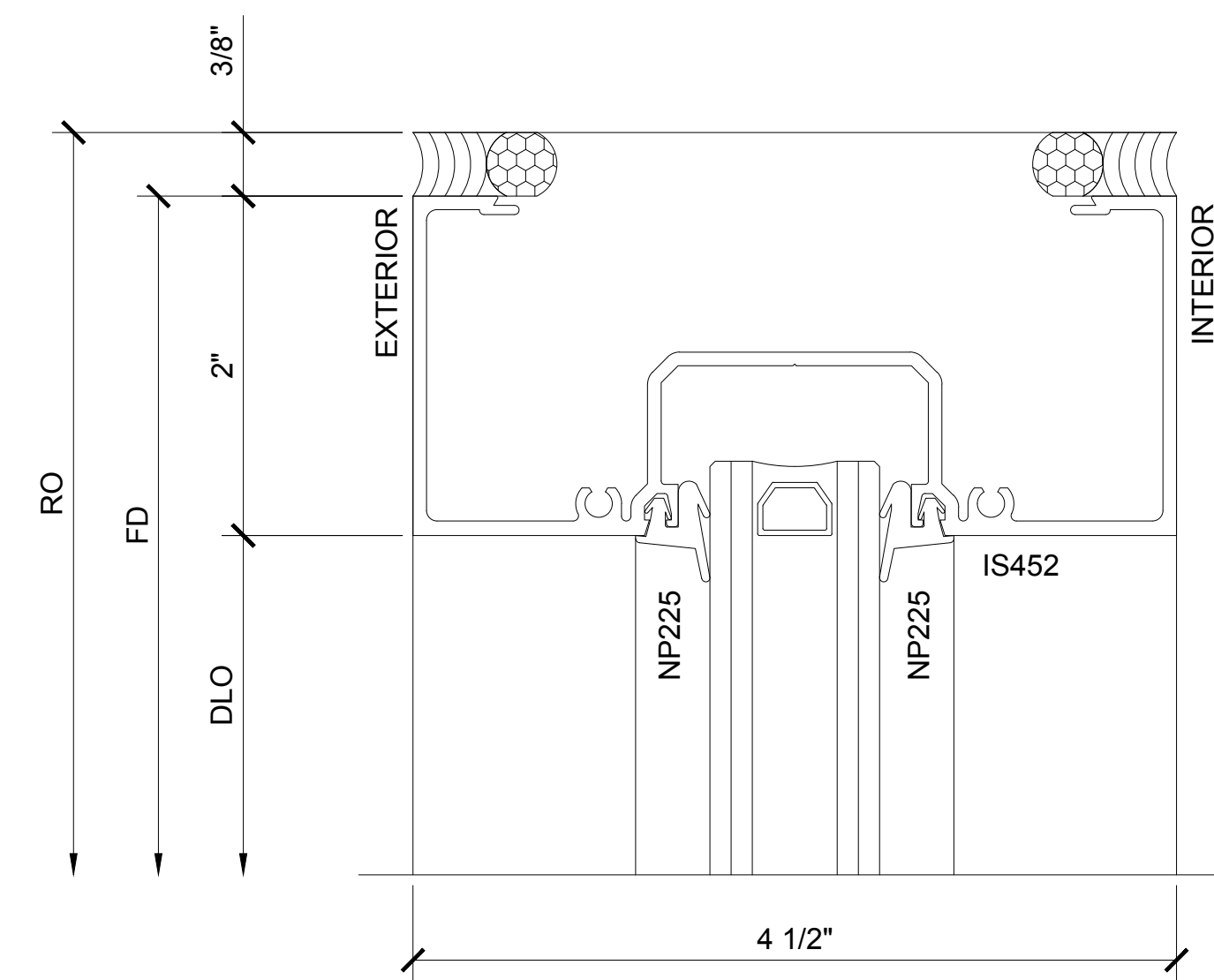
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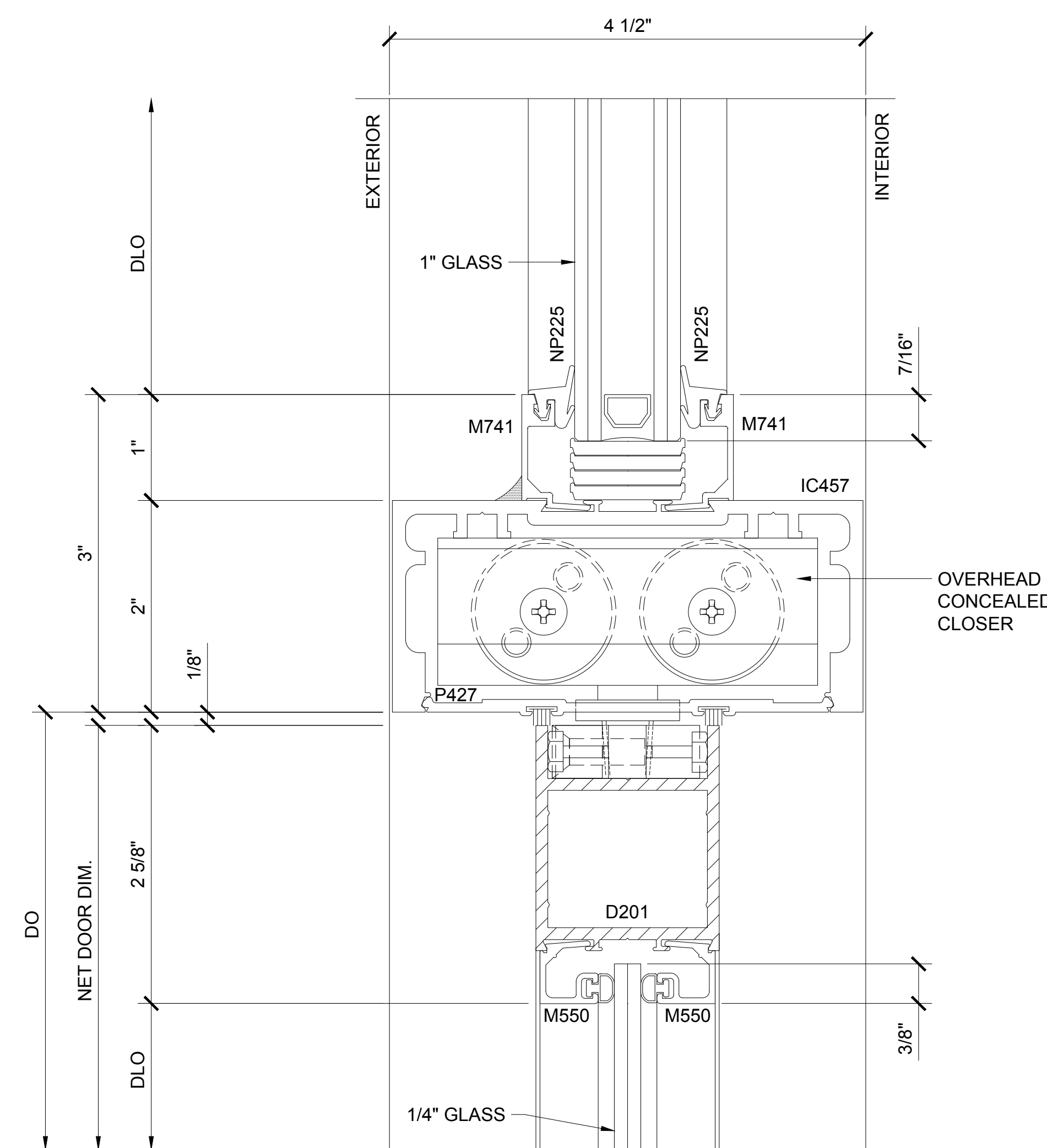
RO ROUGH OPENING
FD FRAME DIMENSION
DLO DAYLIGHT OPENING
DO DOOR OPENING
DD DOOR DIMENSION
SMC SURFACE MOUNTED CLOSER
OHCC OVERHEAD CONCEALED CLOSER

Revisions By:



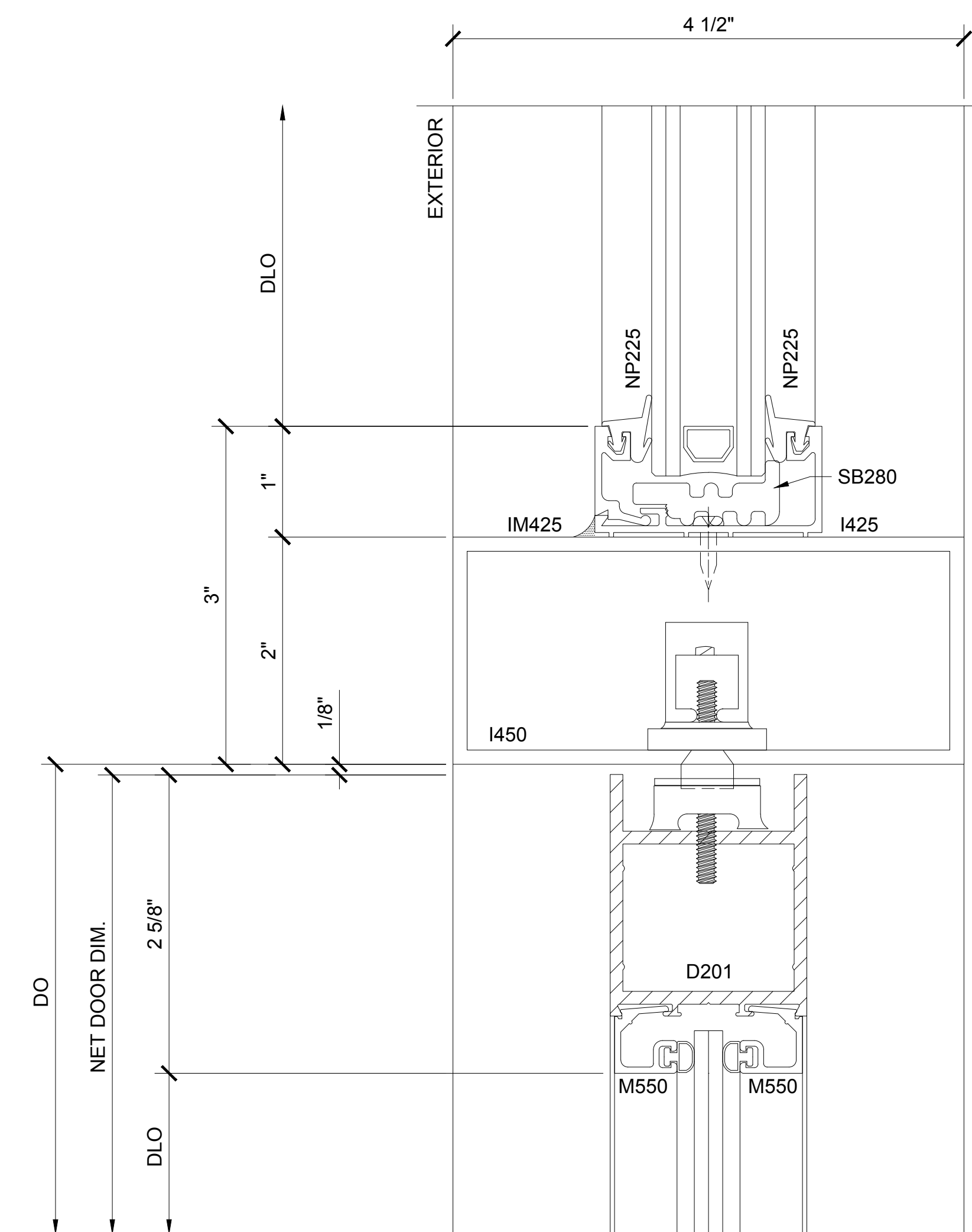
SECTION DETAIL AT HEAD

1



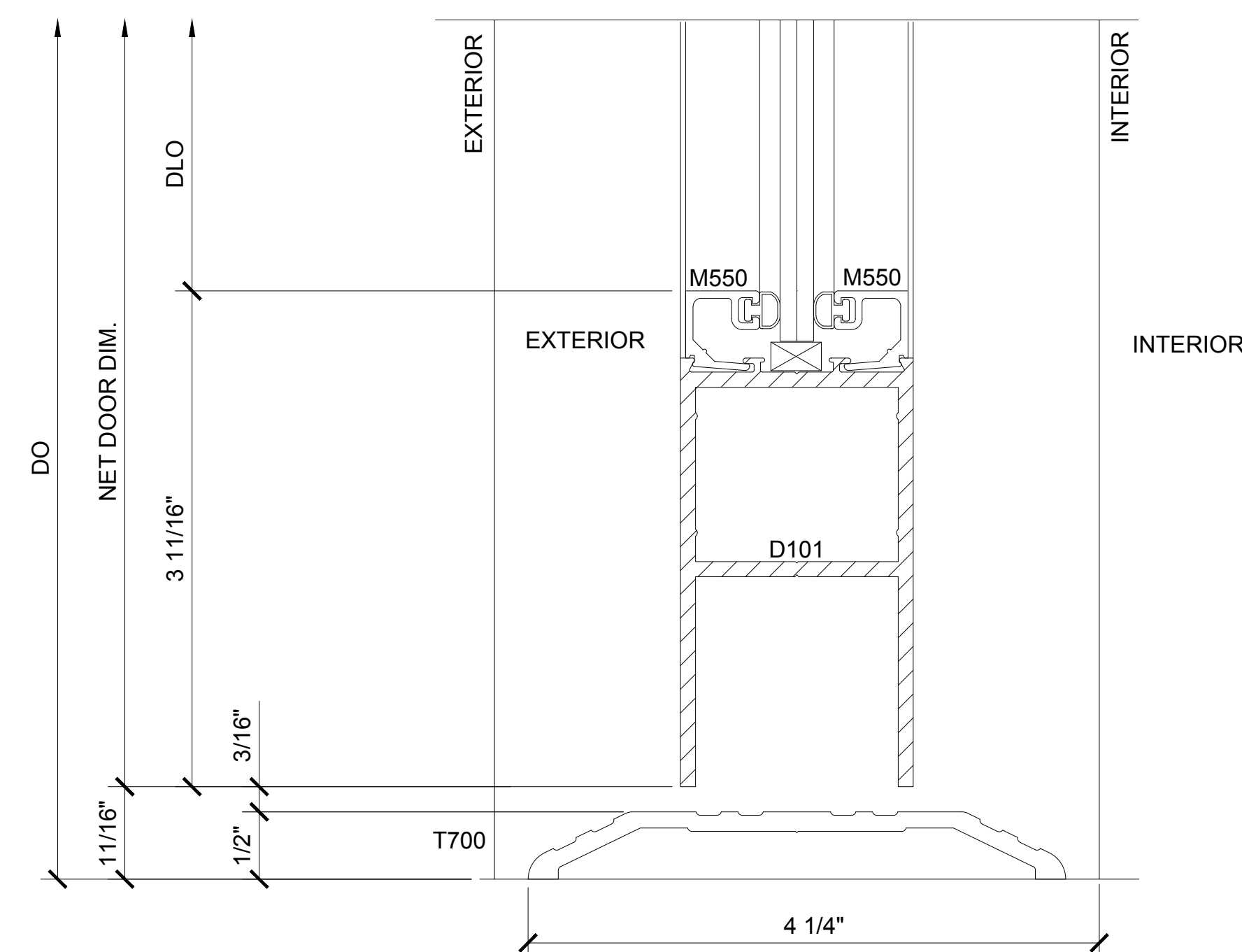
SECTION DETAIL AT
DOOR HEAD WITH OHCC

2



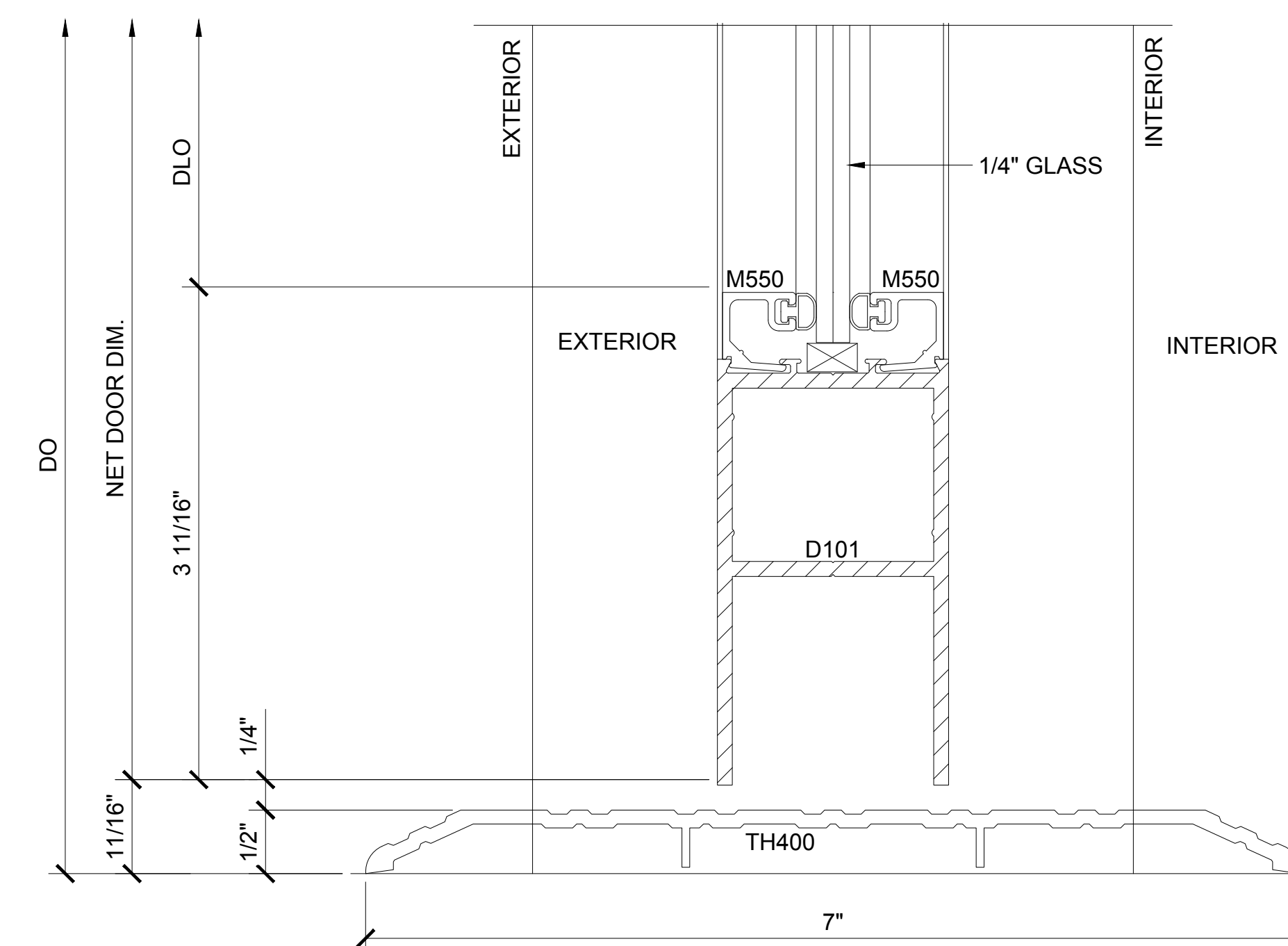
SECTION DETAIL AT
DOOR HEAD WITH PIVOT

4



SECTION DETAIL AT BOTTOM RAIL

3



SECTION DETAIL AT BOTTOM RAIL

5

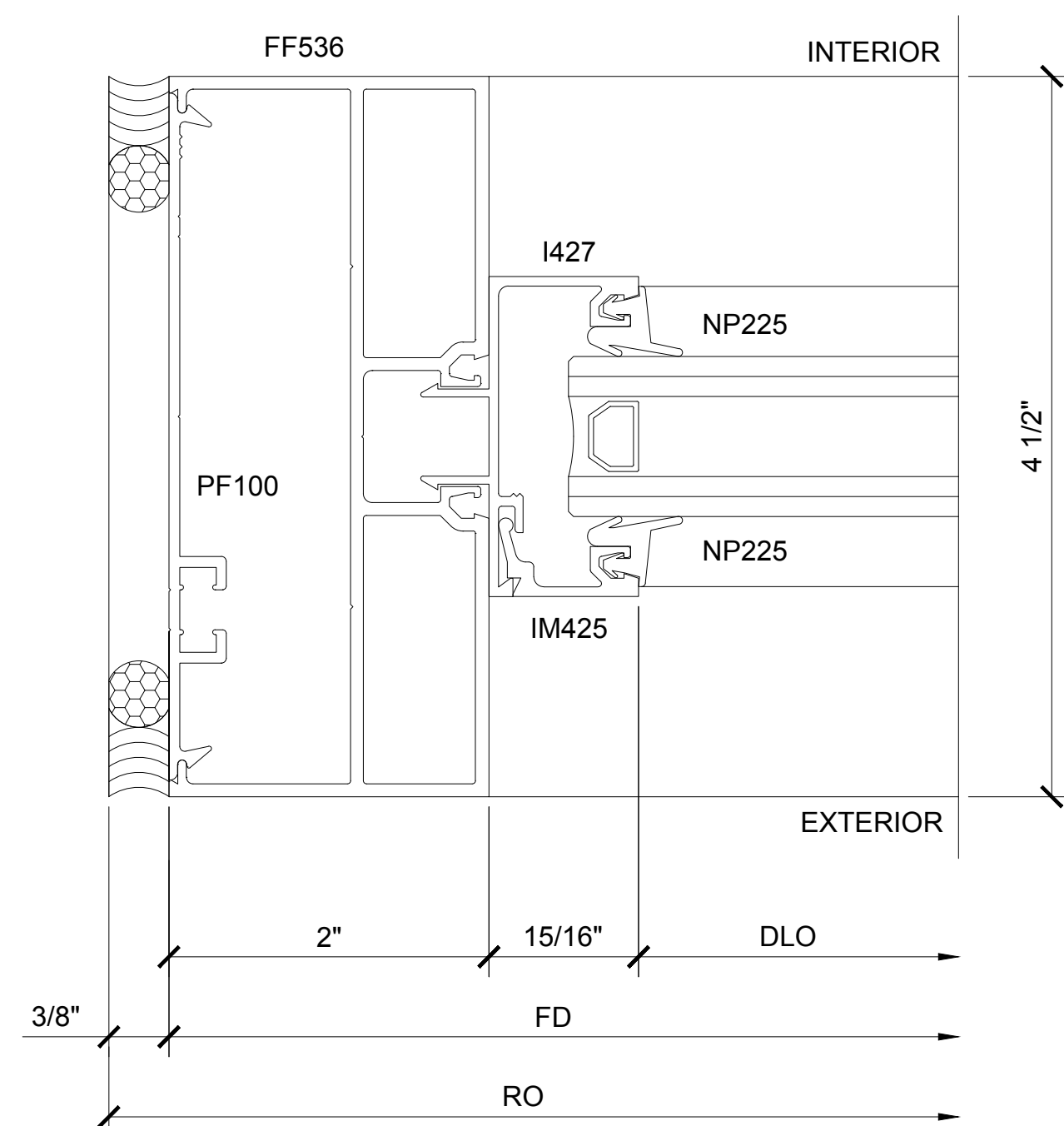
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Description:
U.S. ALUMINUM
SERIES FF 451
STOREFRONT SYSTEM

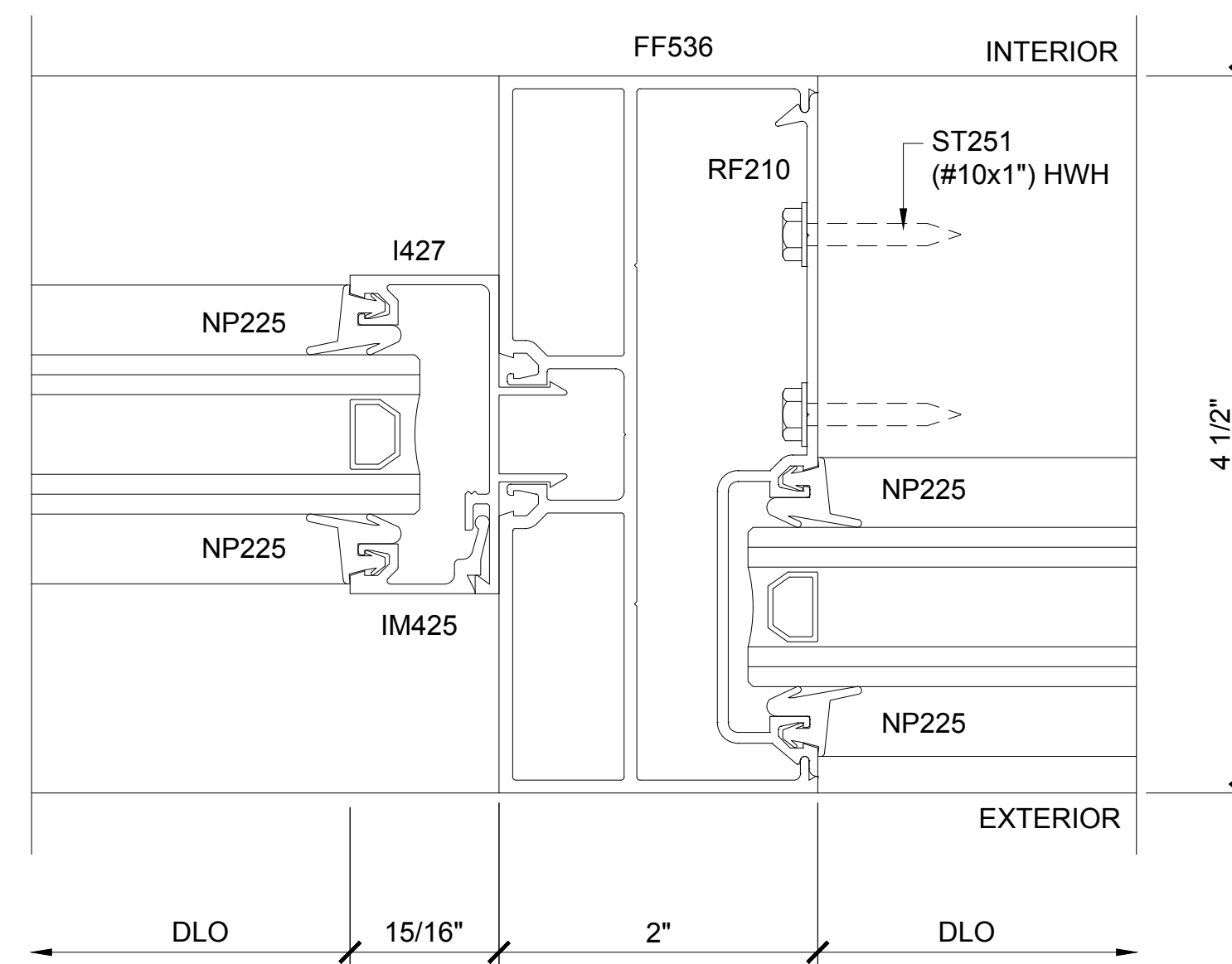
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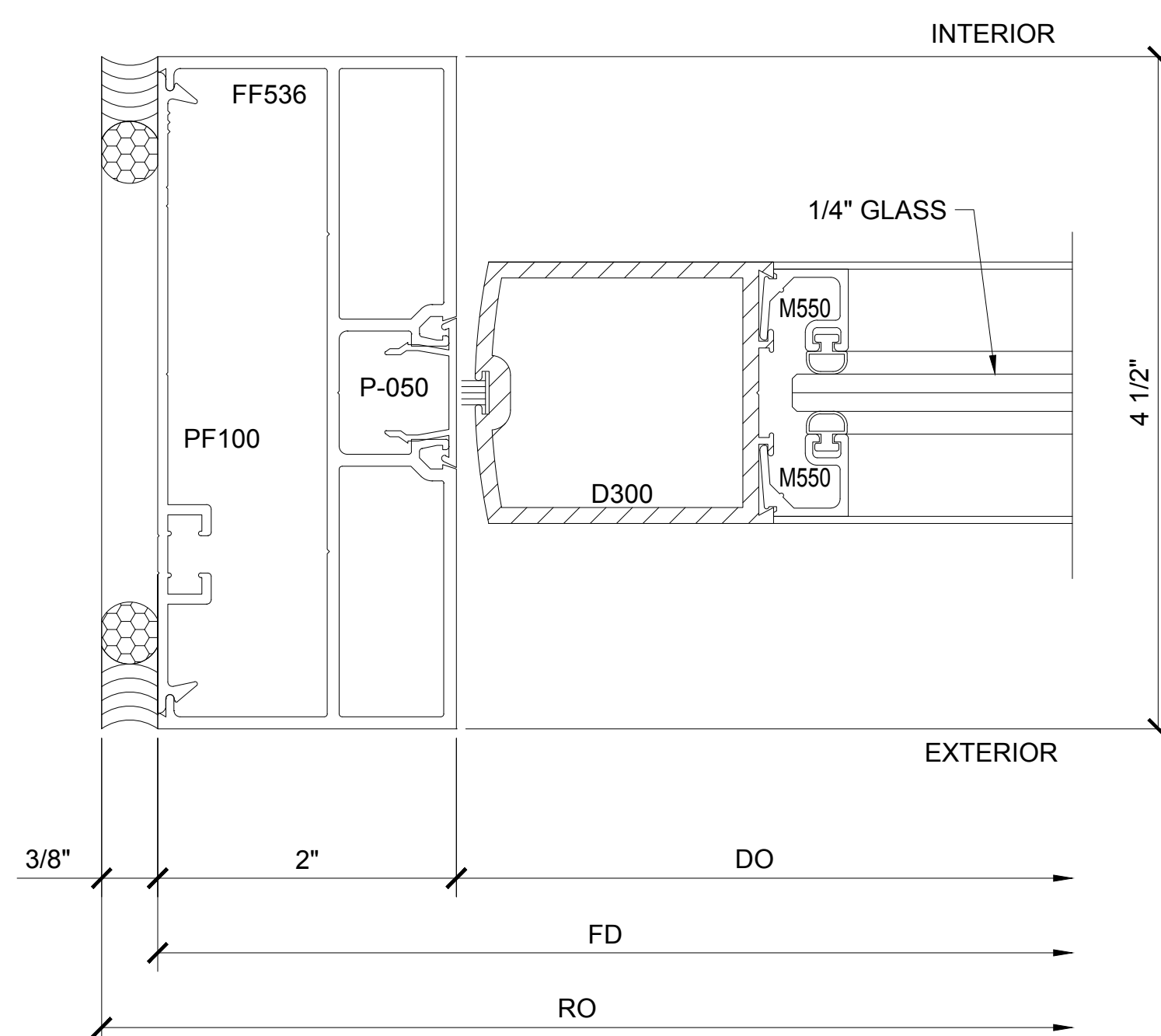
SECTION DETAIL AT JAMB

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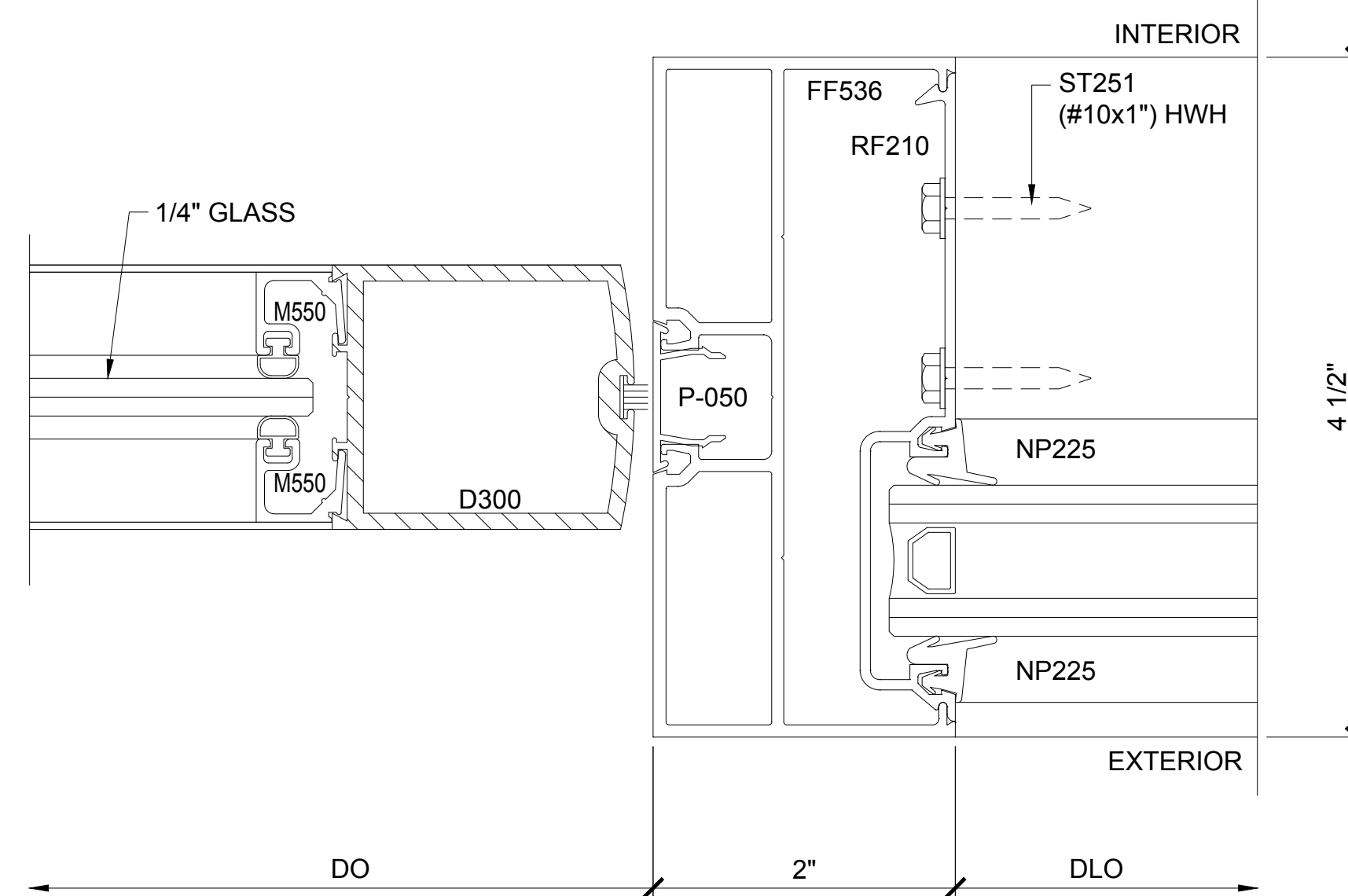
**SECTION DETAIL AT
INTERMEDIATE VERTICAL**

8



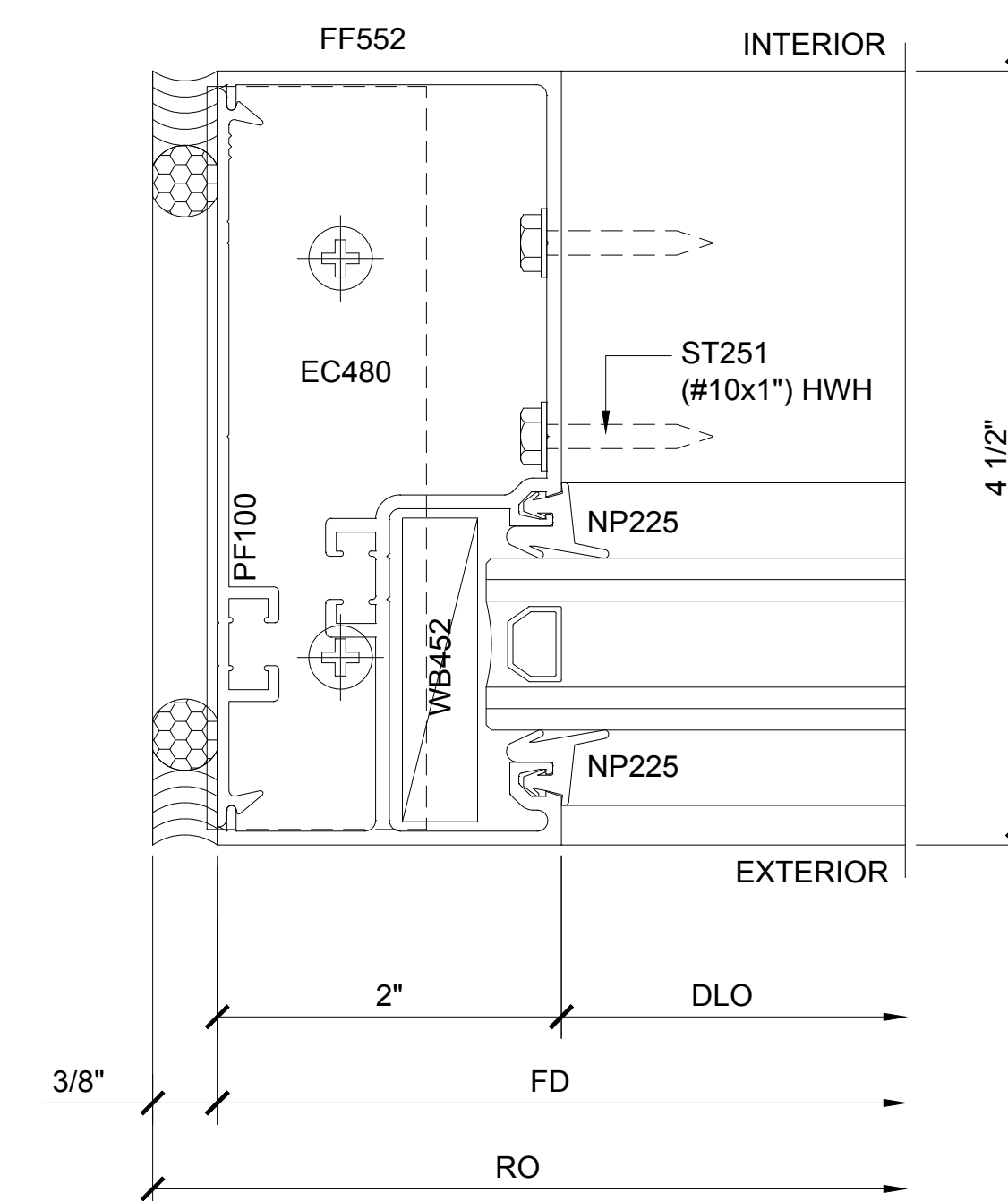
SECTION DETAIL AT DOOR JAMB

7



**SECTION DETAIL AT
INTERMEDIATE VERTICAL**

9



SECTION DETAIL AT JAMB

10

Revisions By:

U.S. ALUMINUM
C.R. LAURENCE CO. - ARCHITECTURAL PRODUCTS
2533 E. Vernon Avenue, Los Angeles, CA 90058-1897
PH (800) 421-6144 FX 800-587-7501 www.crlaurence.com

Discription:
**U.S. ALUMINUM
SERIES FF 451
STOREFRONT SYSTEM**

Drawn By: RP
Date: 10/30/14
Scale: AS NOTED
File Name: FF451 SF.dwg
Sheet



STOREFRONTS

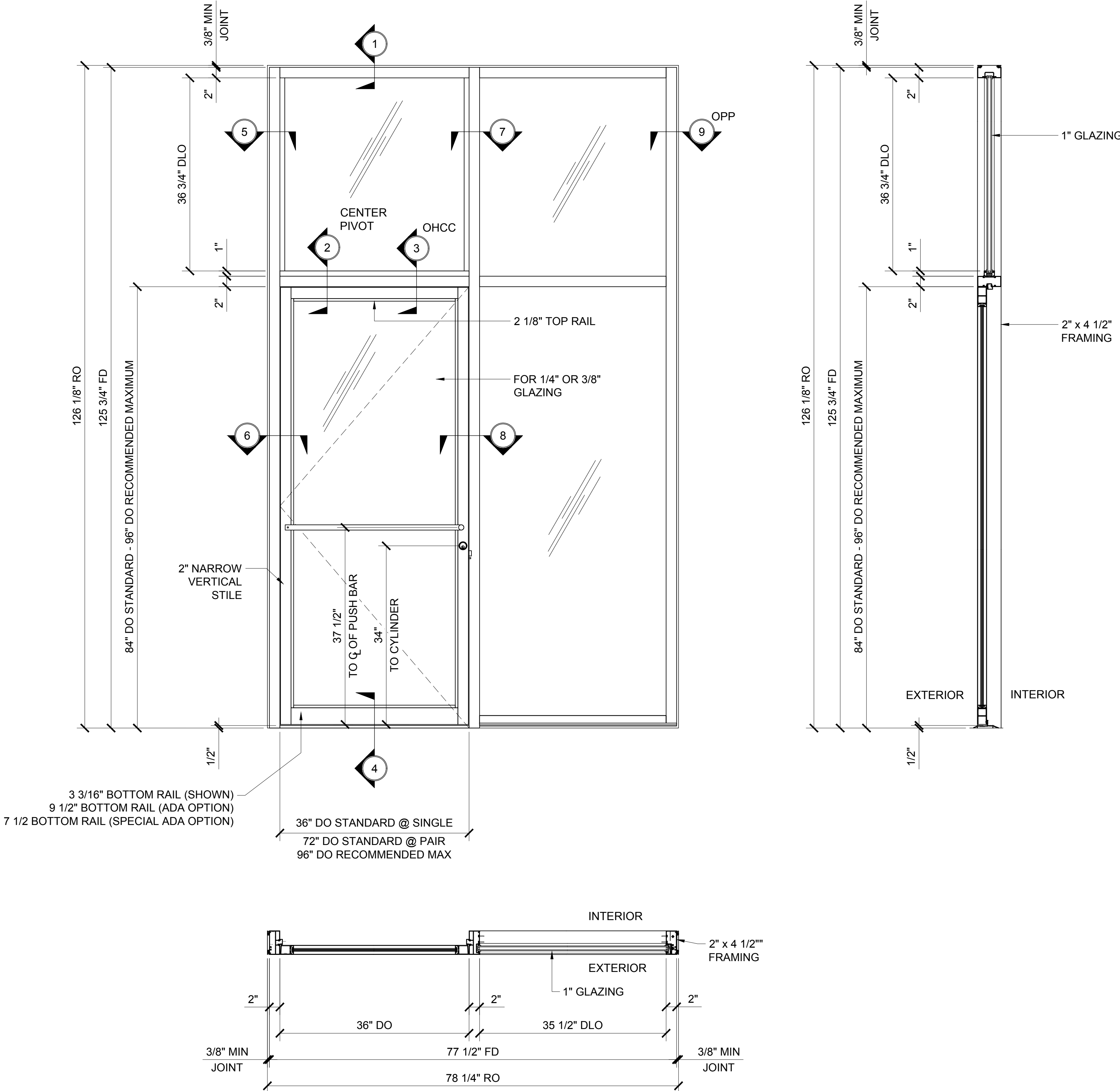
SERIES FF451 / DOOR FRAMING / OFFSET

FF 451 SERIES SPECIFICATIONS

Flush Front System allow the plane of the glass to be reversed from exterior to interior or any combination to give these standard system a custom look.
Flush Front is ideal for use in storefront and punched opening or ribbon window applications.

2" x 4 1/2" frame
Full range of accessory components
Available in an array of architectural coatings and anodized finishes
Interior or Exterior Glazed

GLASS SIZING NOTE:
REFERENCE U.S. ALUMINUM
CATALOGS AND WEBSITE'S
LOAD CHARTS FOR SIZING
GUIDELINES.



STANDARD ABBREVIATIONS

RO	ROUGH OPENING
FD	FRAME DIMENSION
DLO	DAYLIGHT OPENING
DO	DOOR OPENING
DD	DOOR DIMENSION
SMC	SURFACE MOUNTED CLOSER
OHCC	OVERHEAD CONCEALED CLOSER

Revisions By:



Discription:

U.S. ALUMINUM
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STOREFRONT SYSTEM

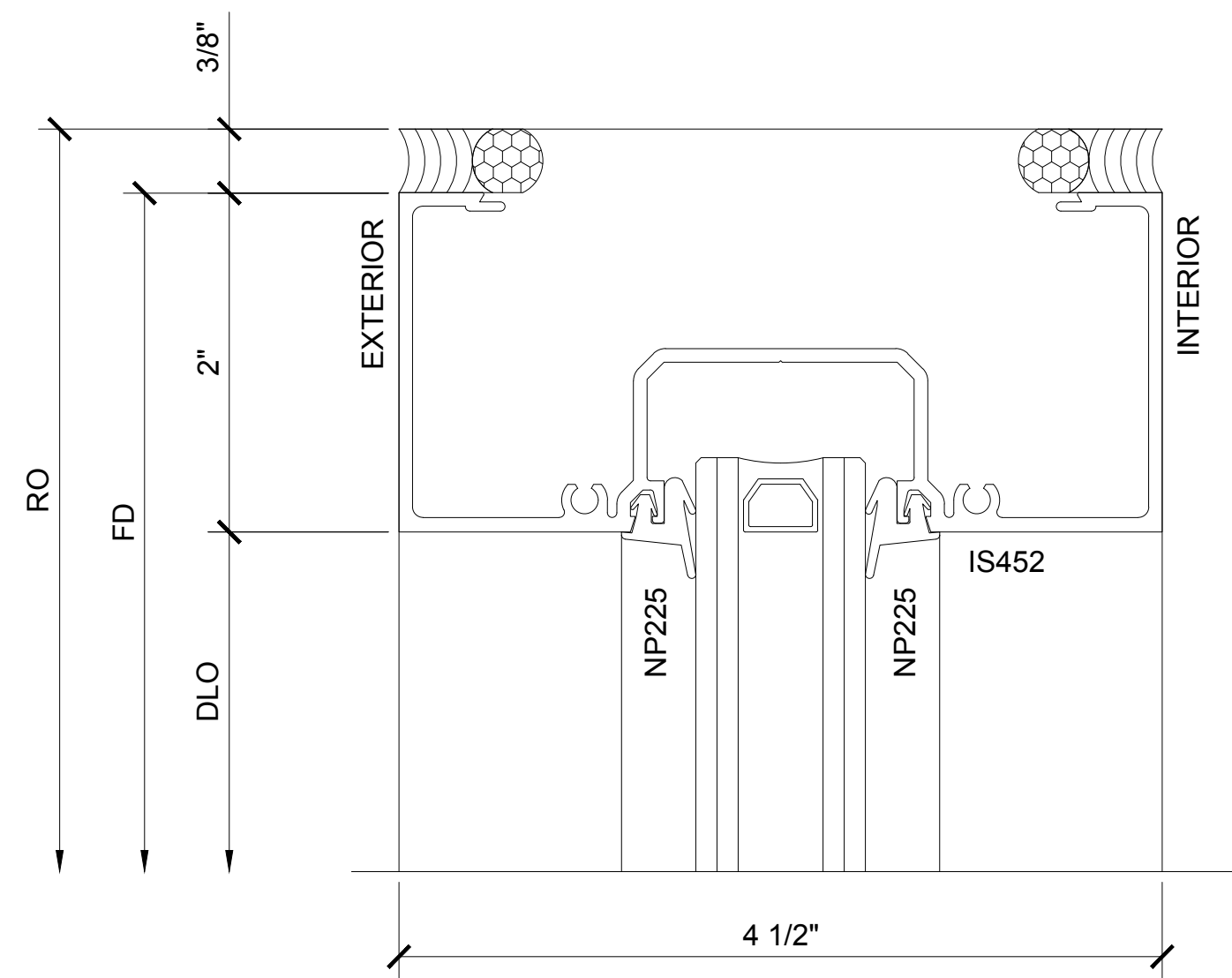
Drawn By: RP

Date: 10/30/14

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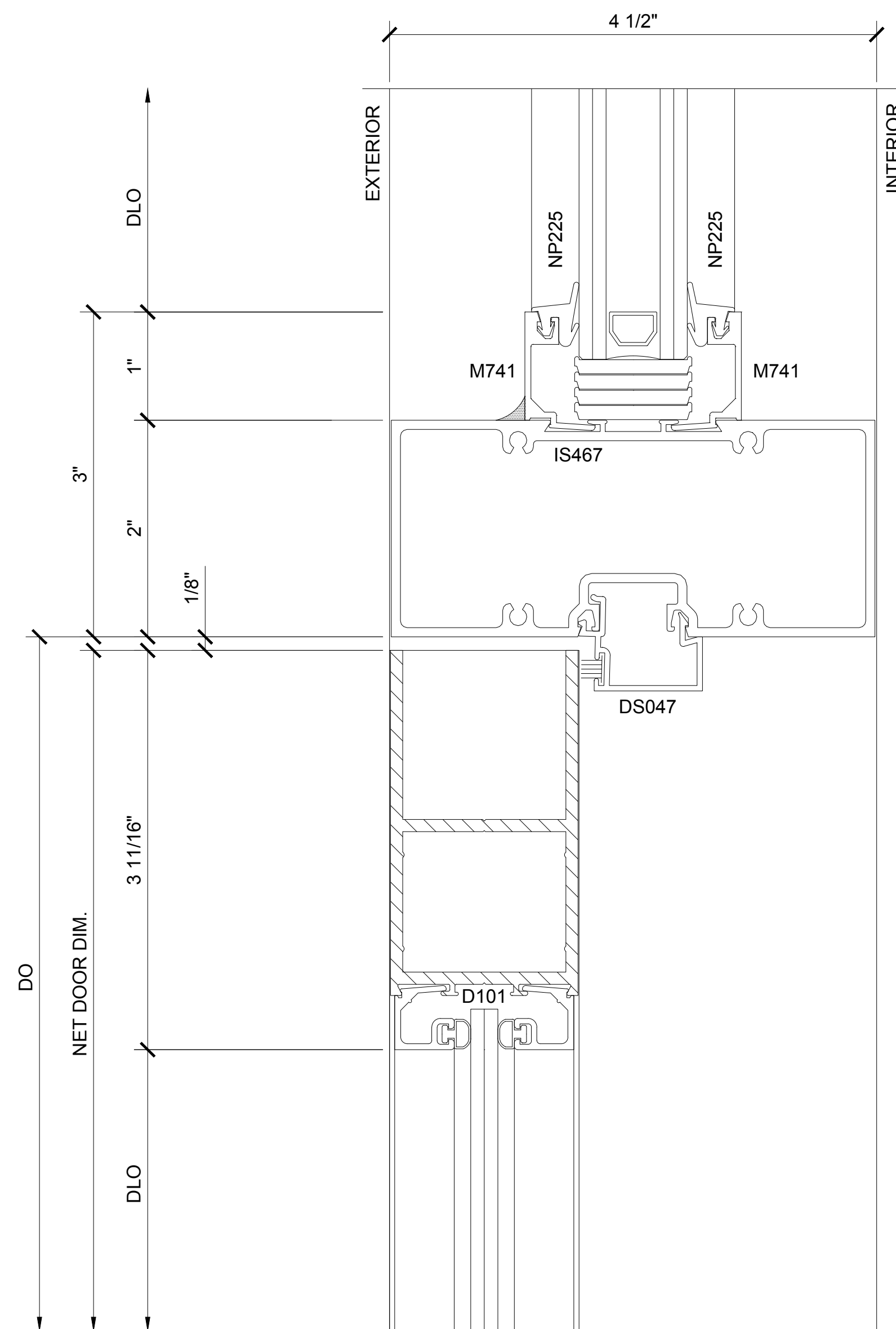
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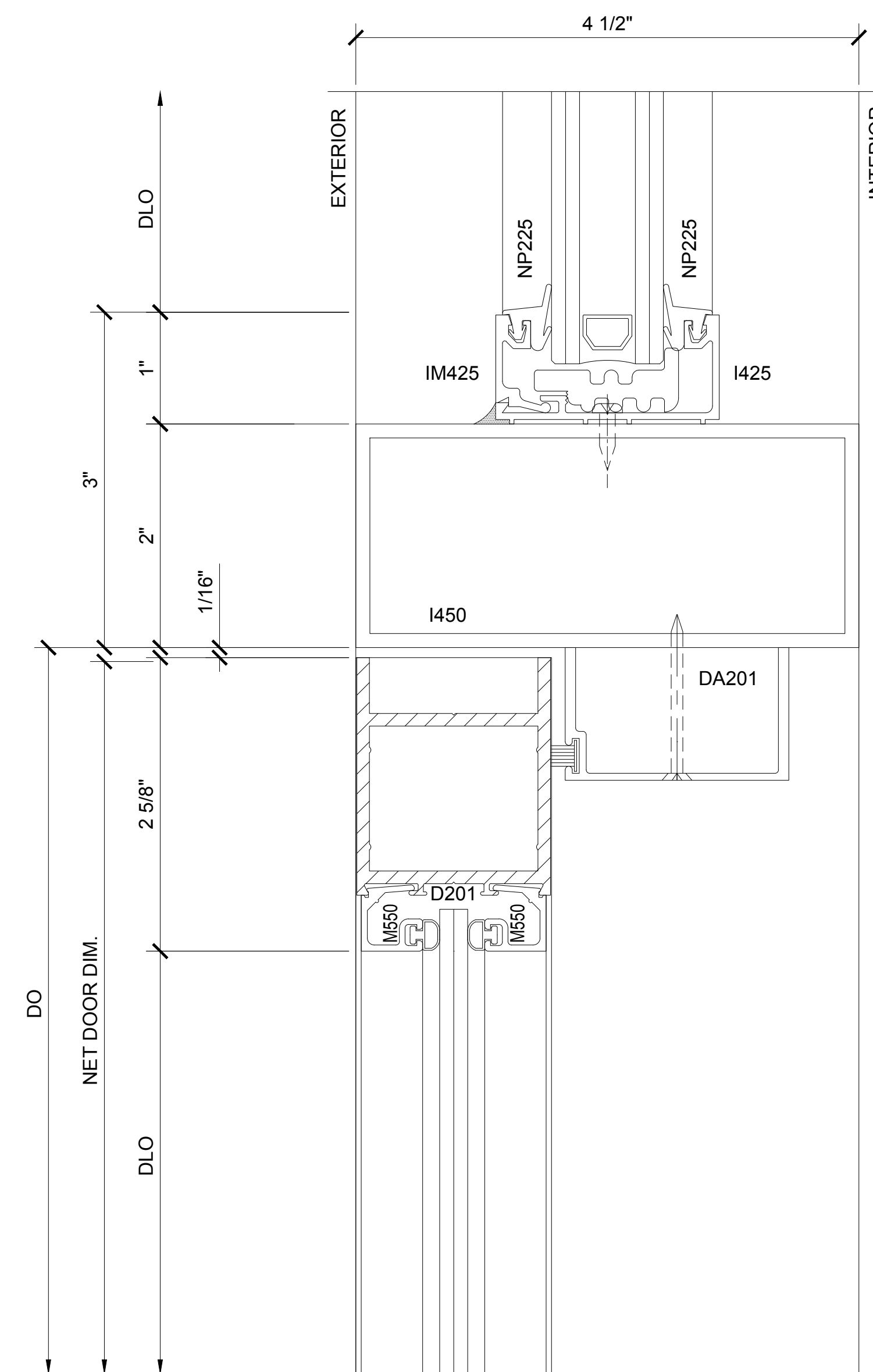
SECTION DETAIL AT HEAD

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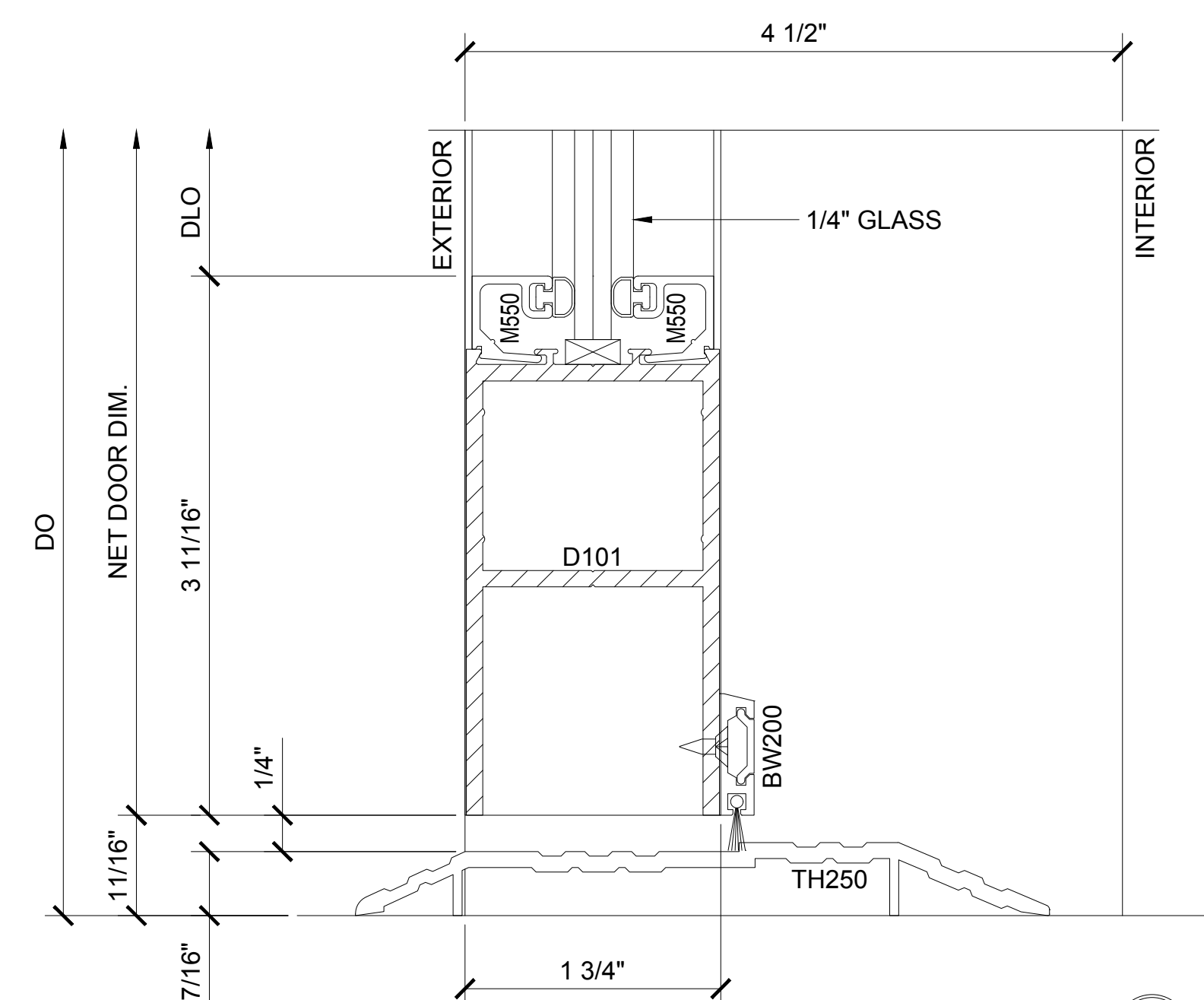
SECTION DETAIL AT
DOOR HEAD

2



SECTION DETAIL AT
DOOR HEAD

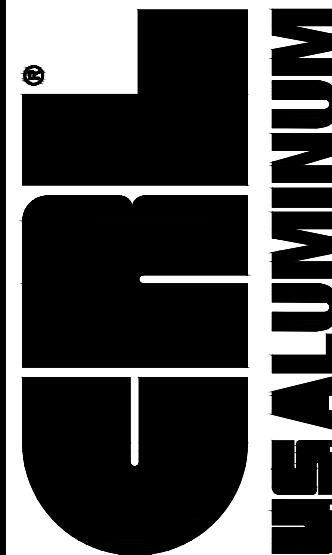
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SECTION DETAIL AT BOTTOM RAIL

4

Revisions By:



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Description:

U.S. ALUMINUM

SERIES FF 451

STOREFRONT SYSTEM

Drawn By: RP

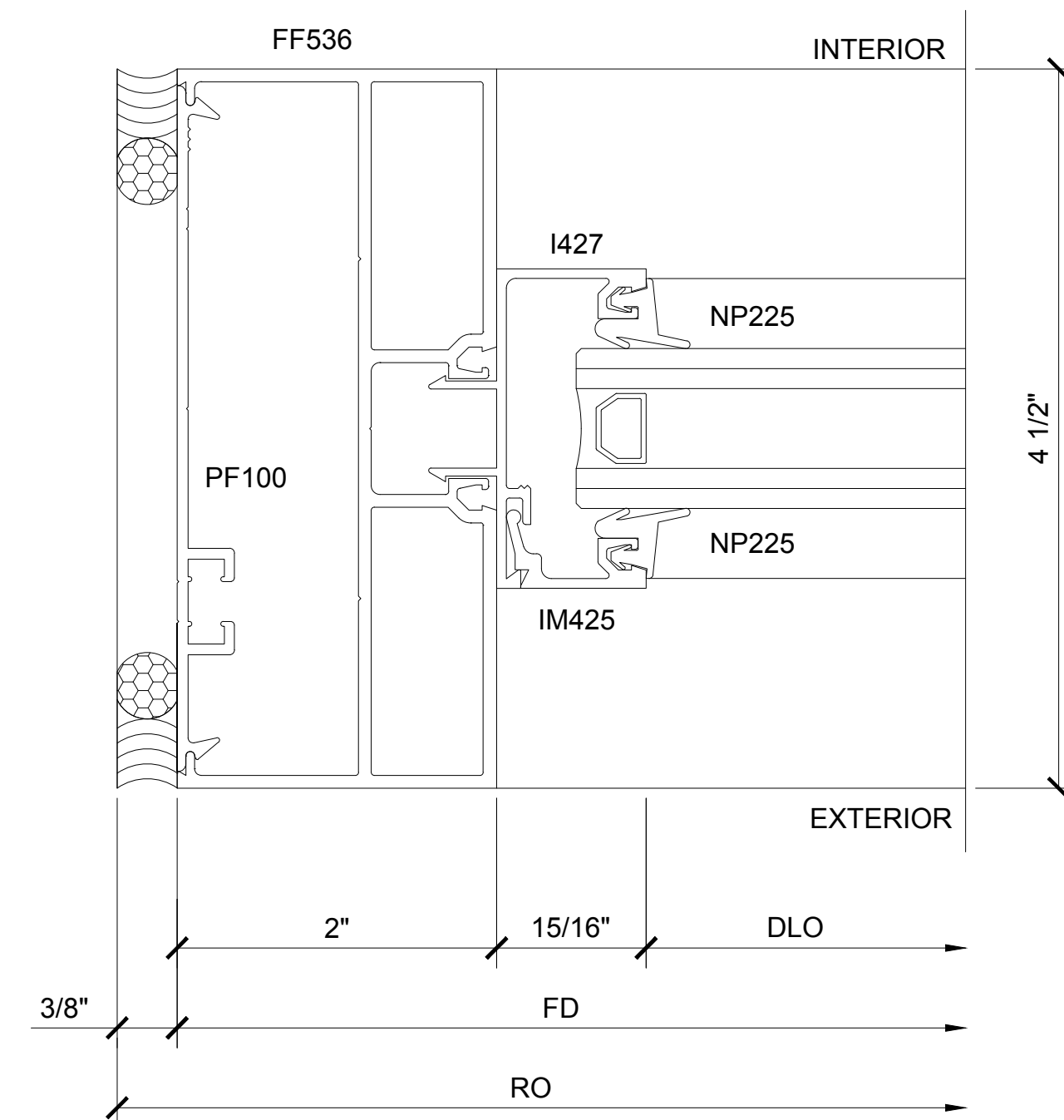
Date: 10/30/14

Scale: AS NOTED

File Name: FF451 SF.dwg

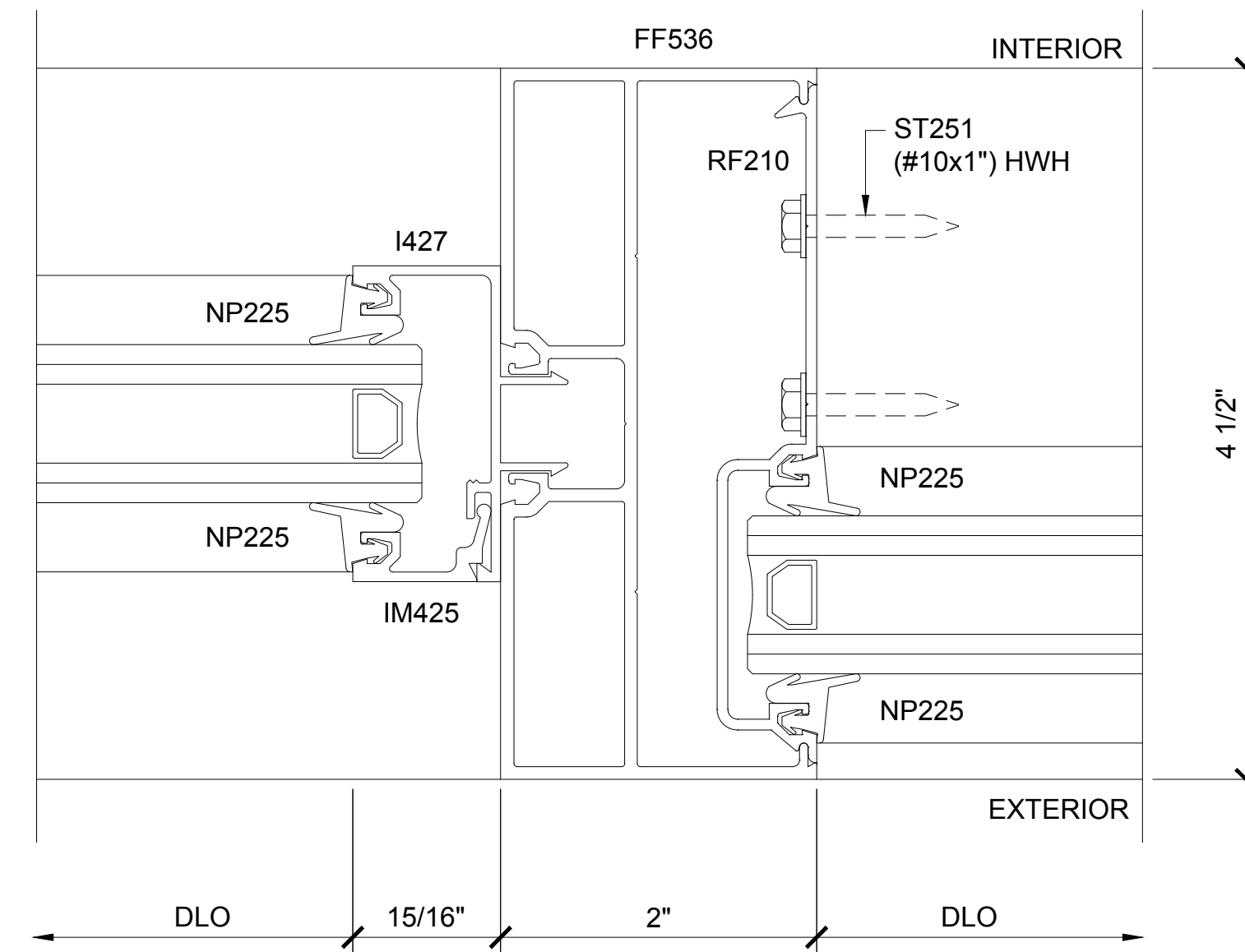
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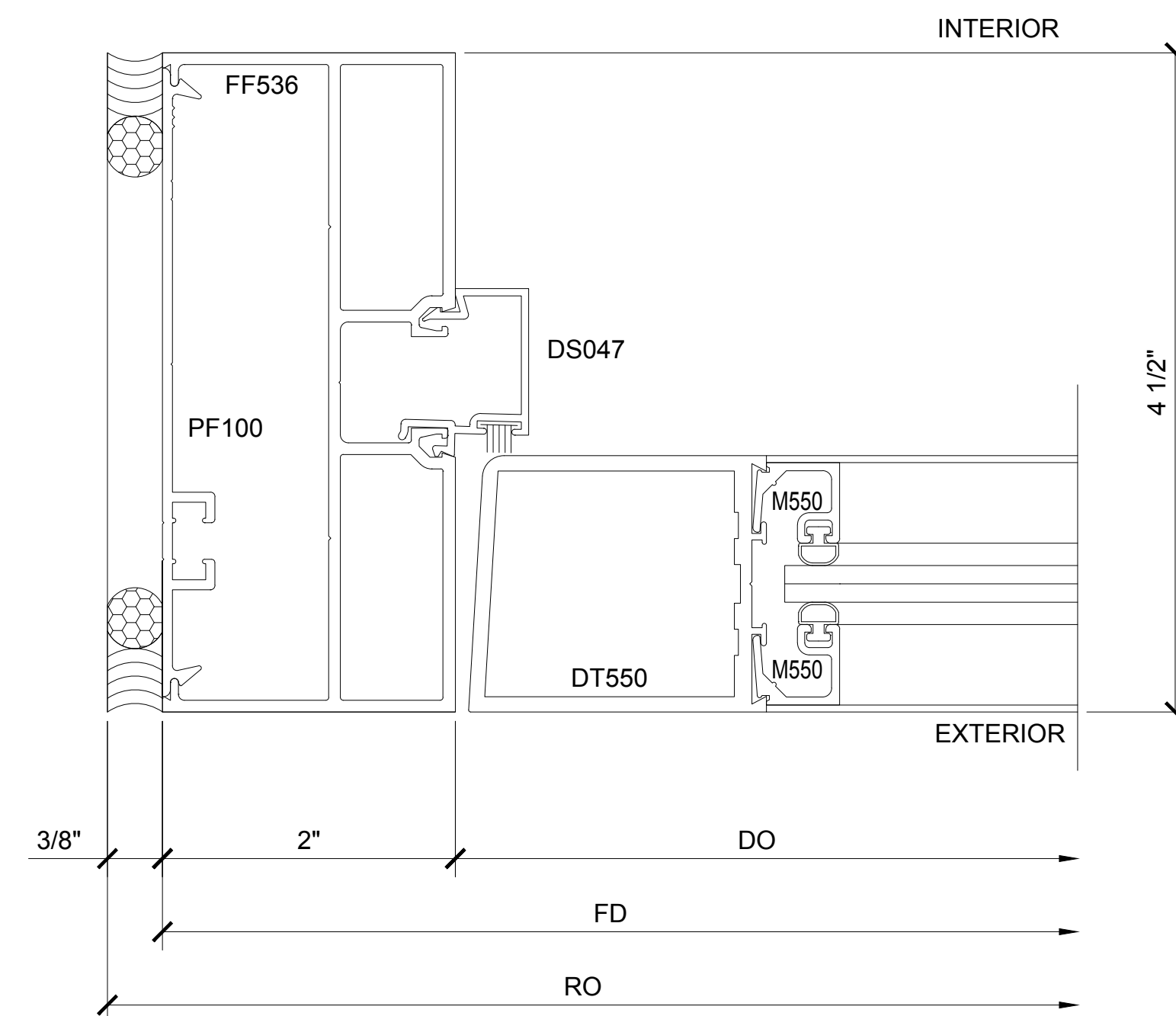
SECTION DETAIL AT JAMB

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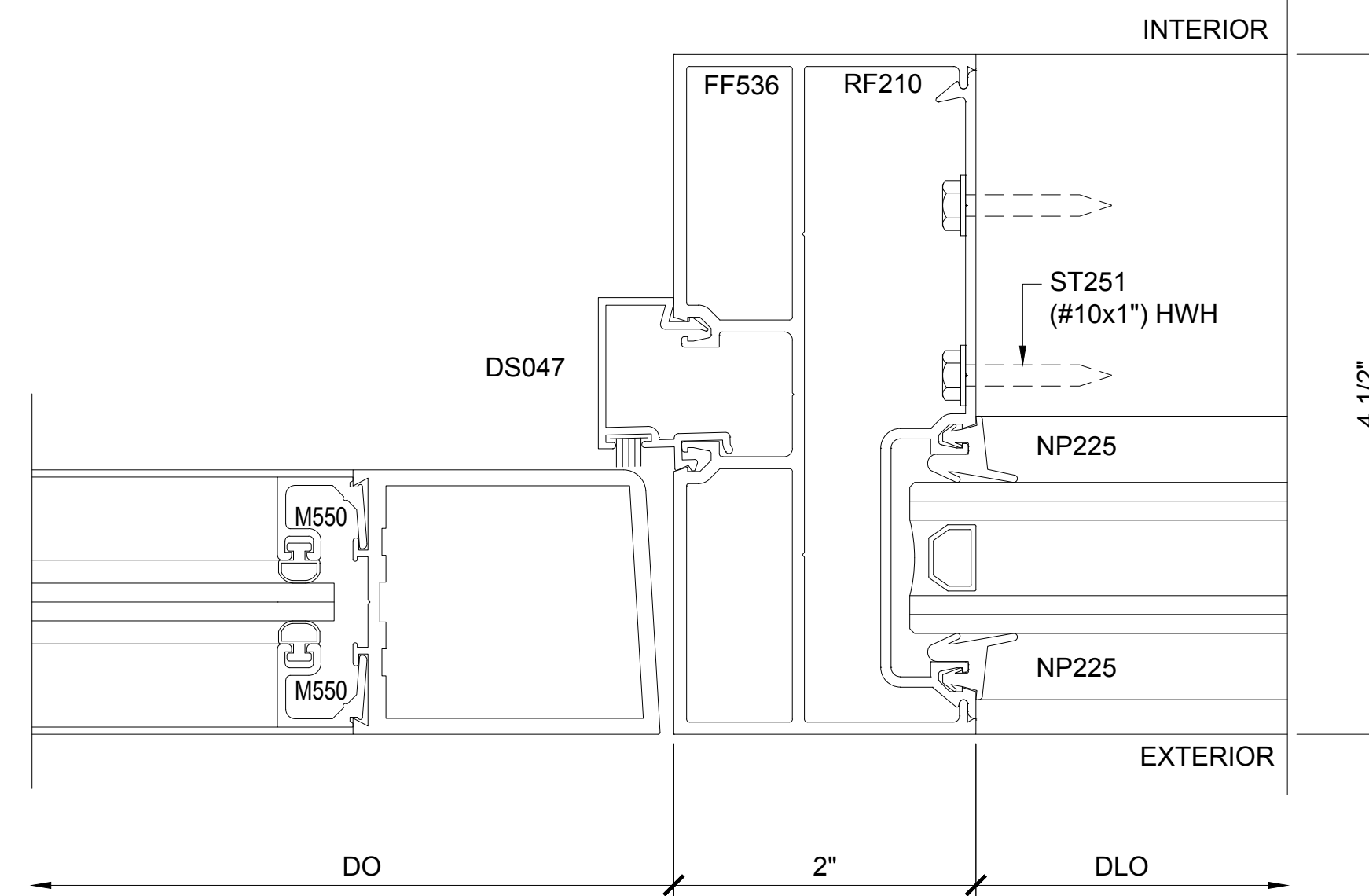
SECTION DETAIL AT
INTERMEDIATE VERTICAL

7



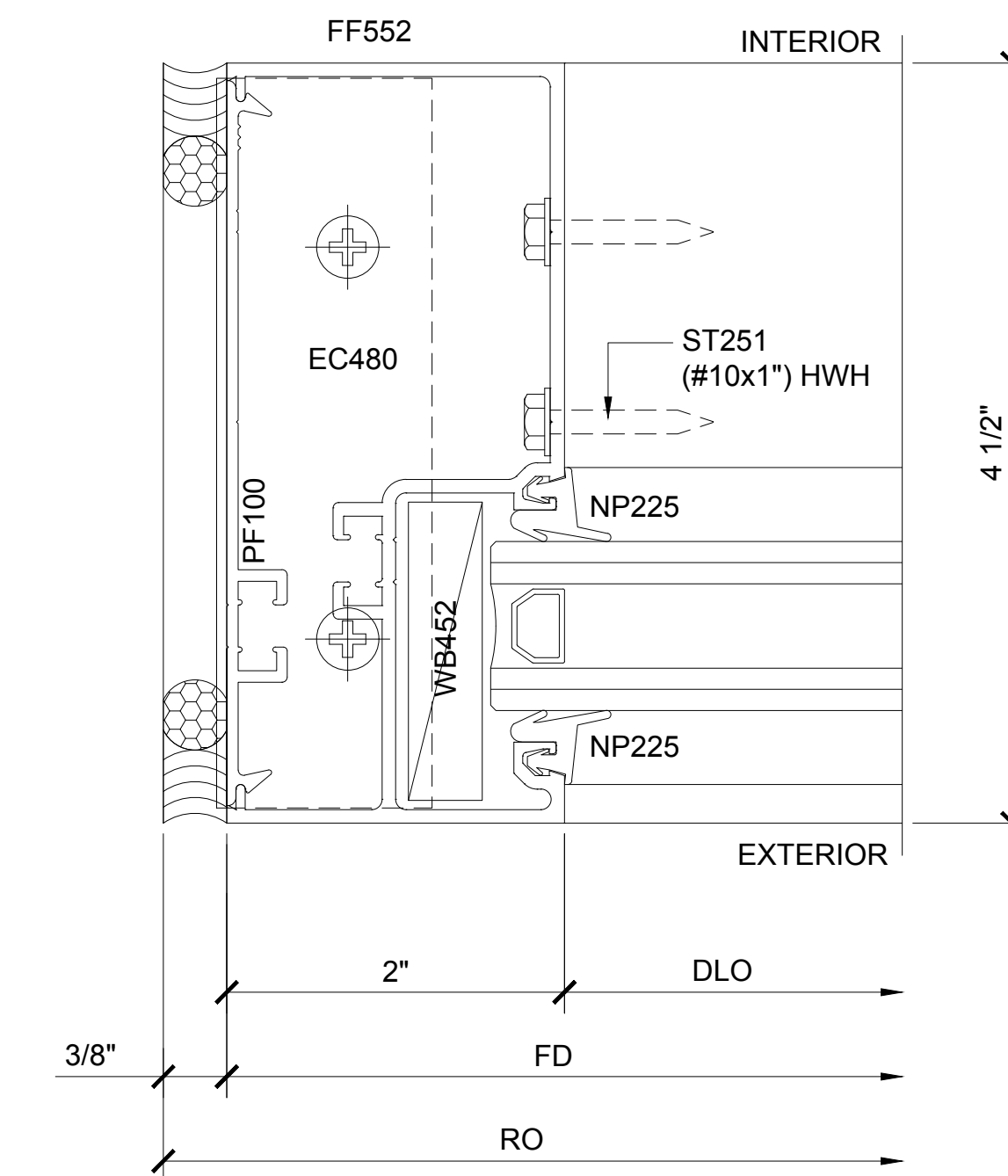
SECTION DETAIL AT DOOR JAMB

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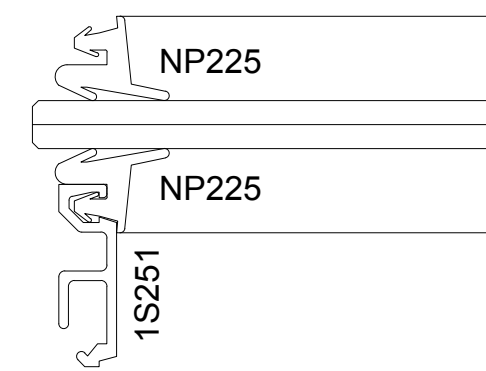
SECTION DETAIL AT
INTERMEDIATE VERTICAL

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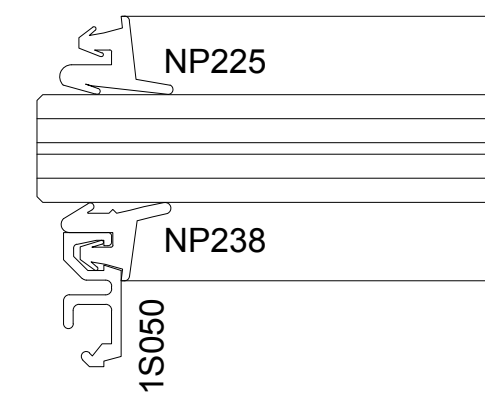


SECTION DETAIL AT JAMB

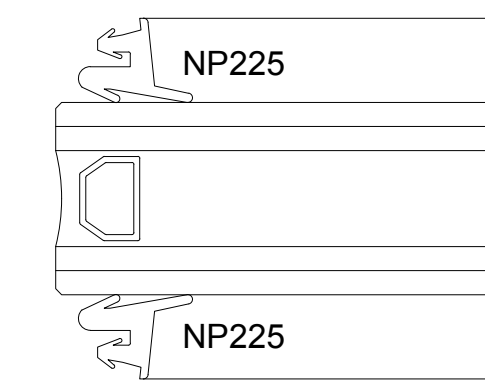
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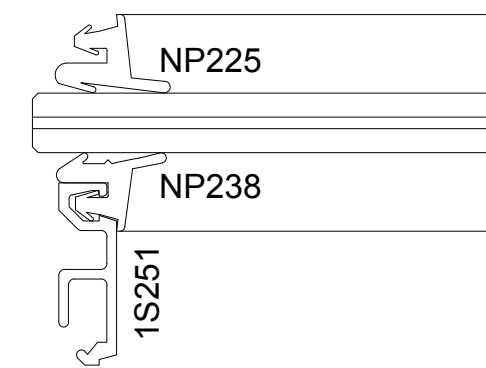
SECTION DETAIL AT FF451 - 1/4" GLASS



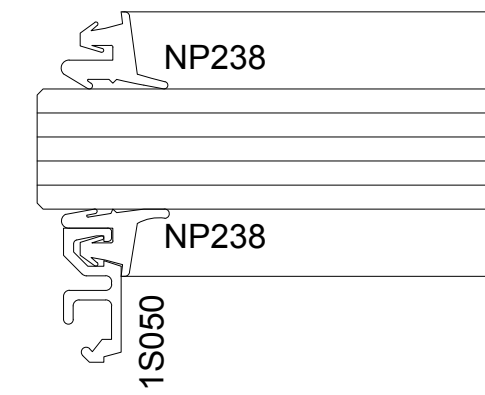
SECTION DETAIL AT FF451 - 9/16" GLASS (5)



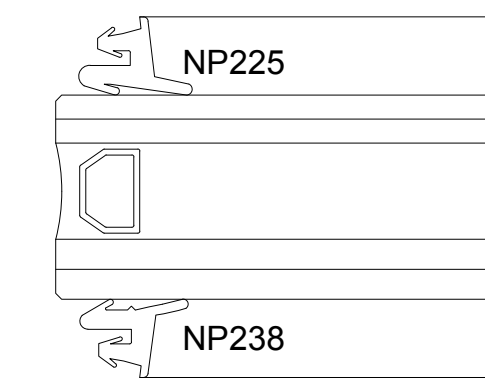
SECTION DETAIL AT FF451 - 1" GLASS 9



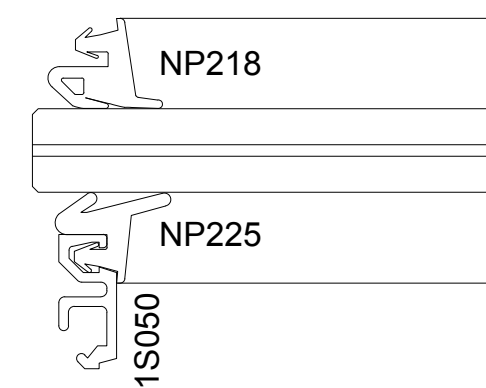
SECTION DETAIL AT FF451 - 5/16" GLASS (2)



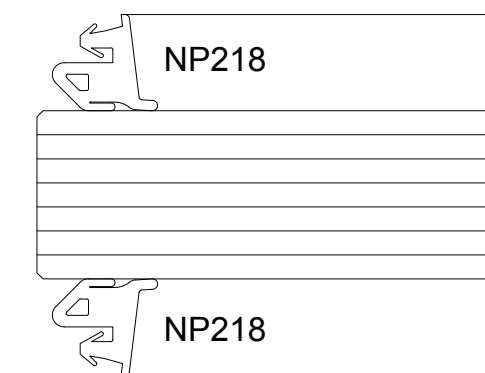
SECTION DETAIL AT FF451 - 5/8" GLASS 6



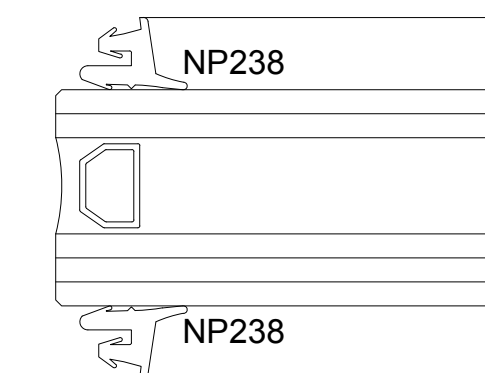
SECTION DETAIL AT FF451 - 1-5/16" GLASS (10)



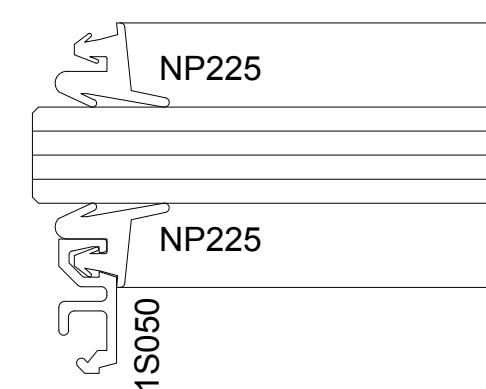
SECTION DETAIL AT FF451 - 7/16" GLASS (3)



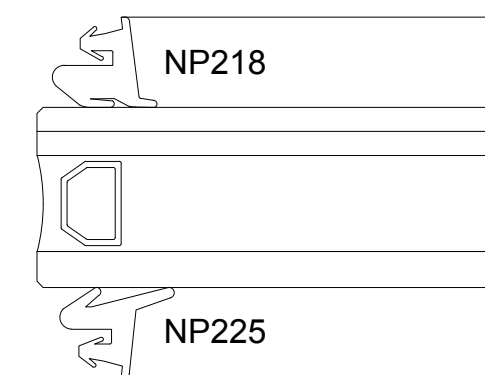
SECTION DETAIL AT FF451 - 7/8" GLASS (7)



SECTION DETAIL AT FF451 - 1-1/8" GLASS (11)



SECTION DETAIL AT FF451 - 1/2" GLASS 4



SECTION DETAIL AT FF451 - 15/16" GLASS

SERIES FF 451 - GLAZING OPTIONS

$$1'-0''=1'-0''$$

Revisions By:

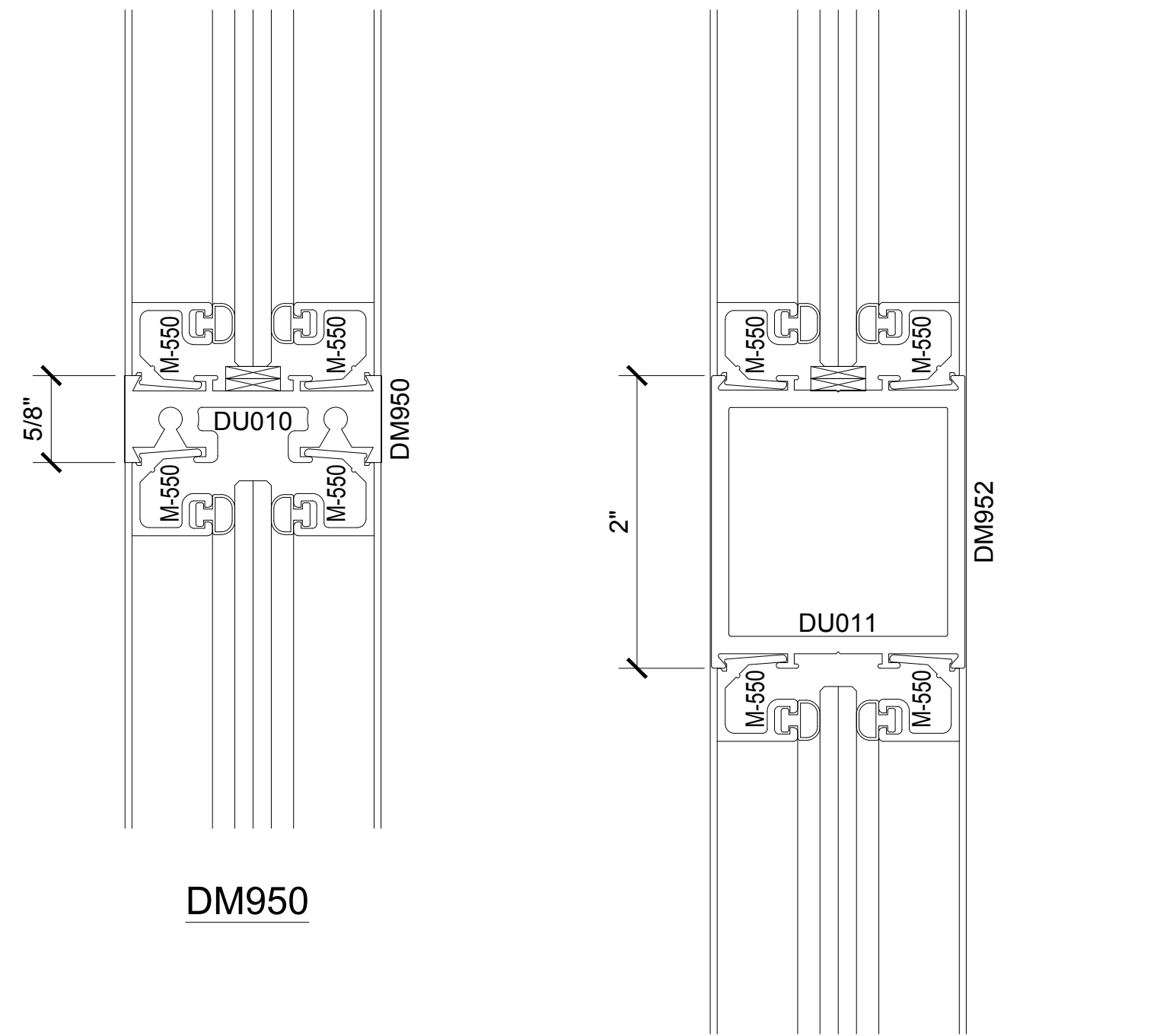


Description:
U.S. ALUMINUM
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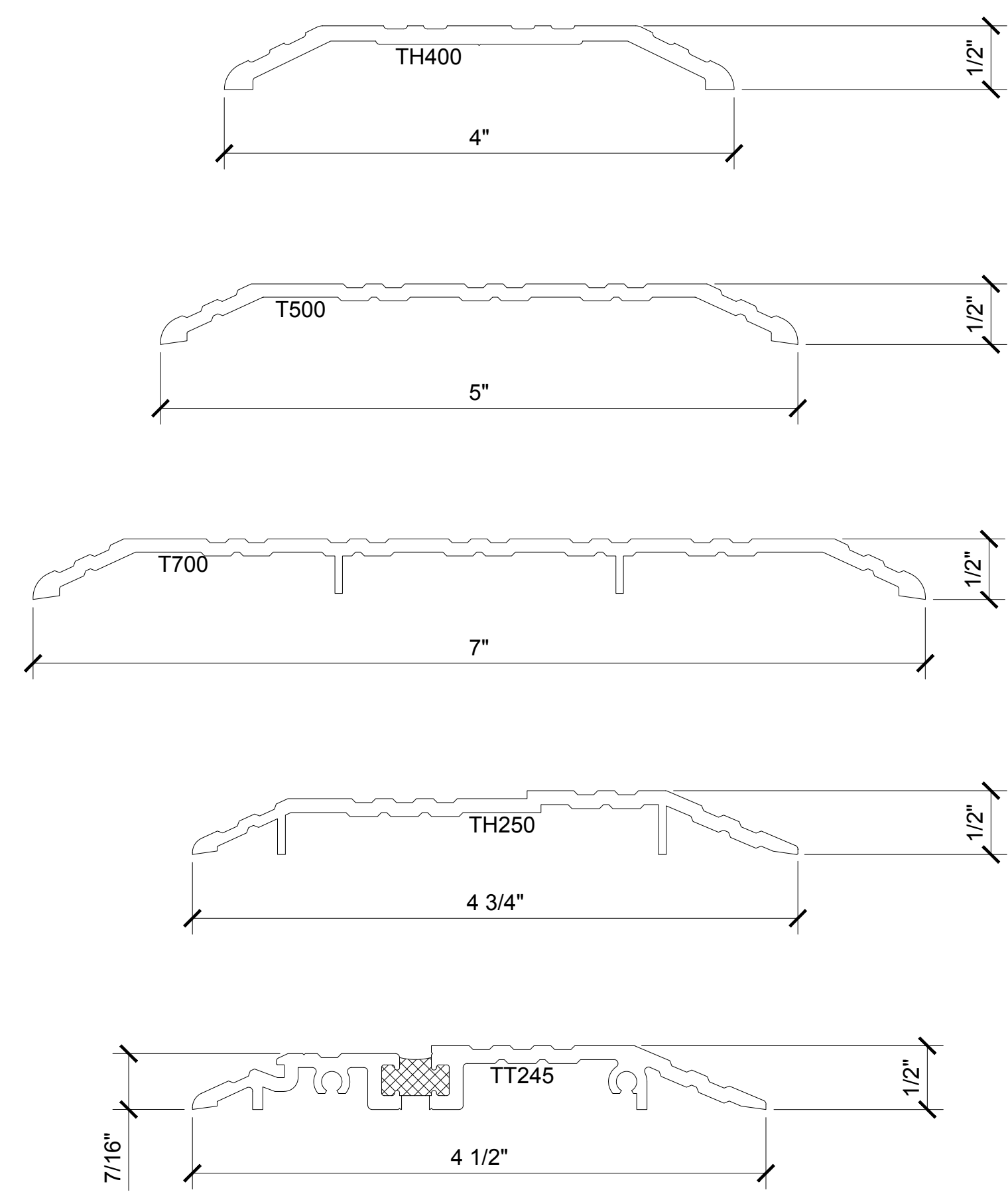
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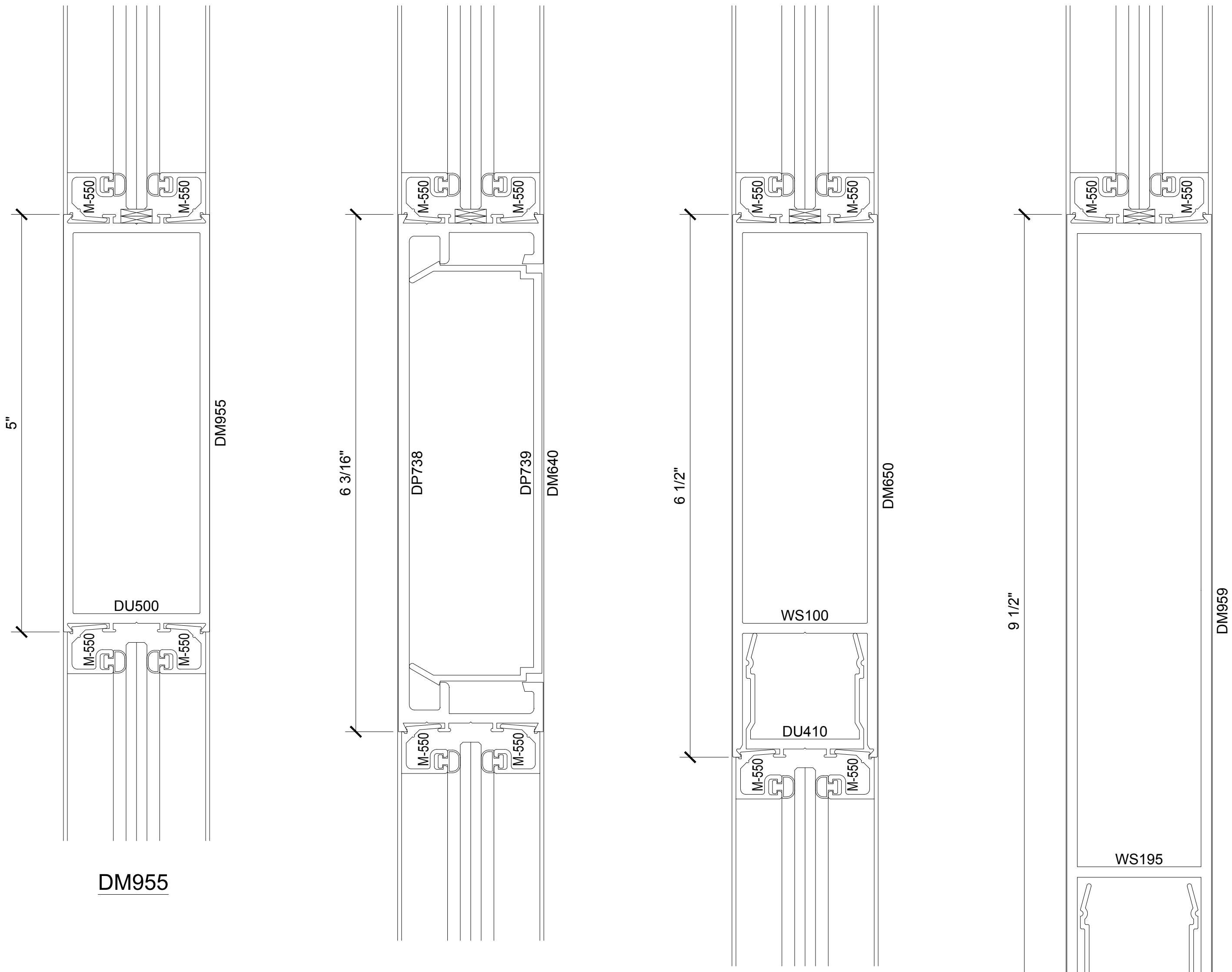


DM950

DM952



THRESHOLDS



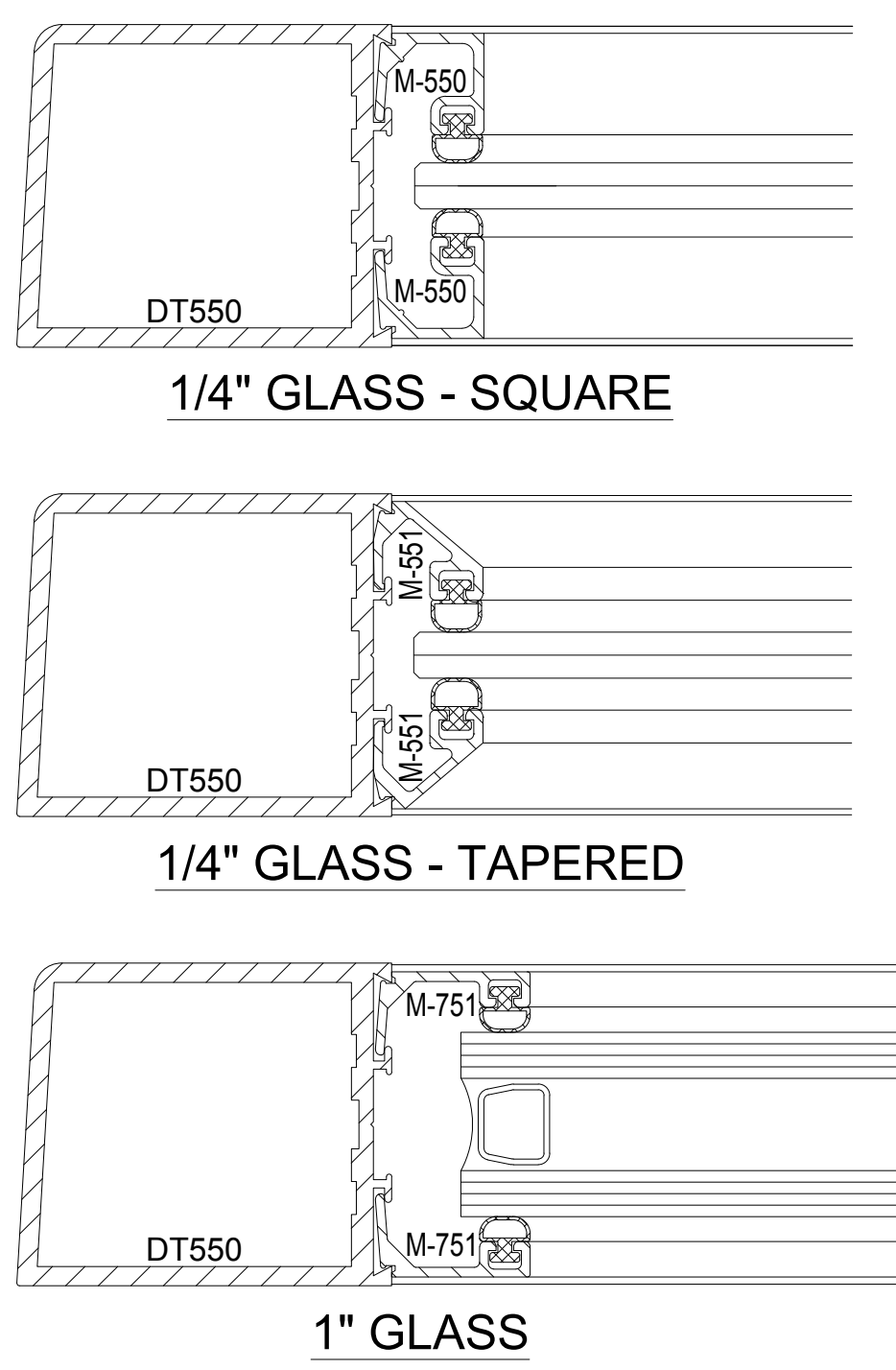
DM955

DM640

DM950

DM959

DOOR MUNTINS



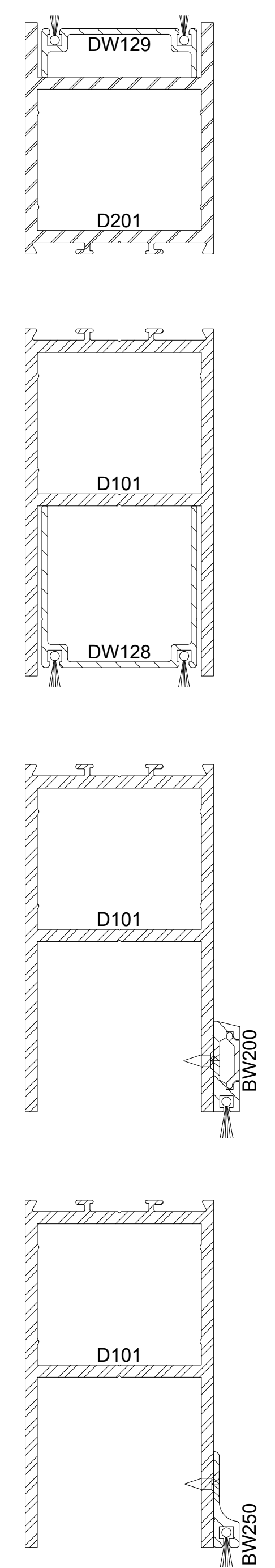
1/4" GLASS - SQUARE

1/4" GLASS - TAPERED

1" GLASS

GLAZING OPTIONS

DOOR MUNTIN DM959



TOP AND BOTTOM
WEATHERSTRIPPING