

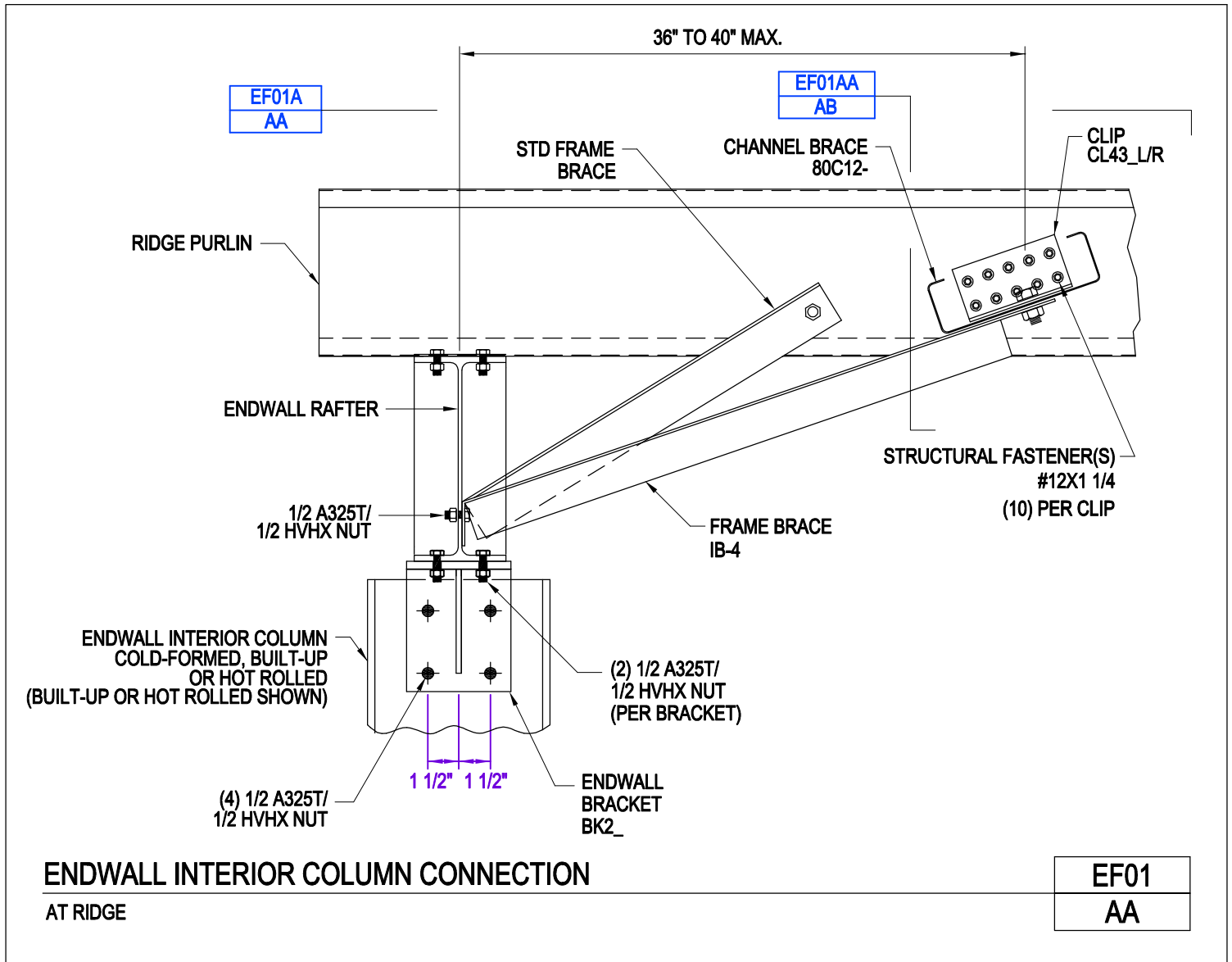
Index

EF01/AA, Endwall Interior Column Connection, At Ridge
EF01A/AA, Endwall Interior Column Connection, At Ridge Top View
EF01AA/AB, Endwall Interior Connection Detail, Channel Brace at Ridge
EF01B/AA, Endwall Interior Column Connection Detail (Cold Formed), Cee Endwall Interior Column to Cee Rafter Connection
EF01C/AA, Endwall Interior Column Connection Detail (Cold Formed), At Ridge Section View
EF01CA/AA, Endwall Interior Column Connection Detail (Cold Formed), At Ridge Top View
EF01CB/AA, Endwall Interior Column Connection Detail (Cold Formed), Channel Brace at Ridge
EF11/AA, Endwall Interior Column Connection Detail (Cold Formed), Cee Endwall Interior Column and Channel Brace Top View
EF11/AB, Endwall Interior Jamb Column (Cold Formed), Cee Endwall Interior Jamb Column and Channel Brace Top View
EF11B/AA, Endwall Interior Column (Cold Formed), Cee Endwall Interior Column to Cee Rafter and Channel Brace Connection
EF11B/AB, Endwall Interior Jamb Column (Cold Formed), Cee EW Interior Jamb column to Cee Rafter and Channel Brace
EF11BB/AA, Endwall Interior Column (Cold Formed), Cee Endwall Interior Column to Cee Rafter and Channel Brace
EF11BB/AB, Endwall Interior Column Connection (Cold Formed), Cee Endwall Interior Column to Cee Rafter and Channel Brace
EF12/AA, Corner Column Connection at Bldg Eave, Column to Rafter Connection
EF12A/AA, Corner to Column Conn. at Bldg Eave - Bearing Frame, Column to Rafter Connection 1/2" Bolts
EF12B/AA, Endwall Corner Column Conneciton Detail at Lowside, Cee Endwall Corner Column to Cee Rafter
EF12X/AA, Corner Column Conn. at Bldg Eave - Bearing Frame, Column to Rafter Connection - 3/4" Bolts
EF12Y/AA, Corner Column Conn at Bldg Eave - Bearing Frame, Column w/ Wtiffener to Rafter Connection - 1/2" Bolts
EF12Z/AA, Corner Column Conn. at Bldg Eave - Bearing Frame, Blocked Column w/ Stiffeners to Rafter Connection - 3/4" Bolts
EF13A/AA, Corner Column Conn Detail at Bldg Eave - Bearing Frame, Column to Rafter Connection - 1/2" Bolts
EF13X/AA, Corner Column Conn Detail at Bldg Eave - Bearing Frame, Column to Rafter Connection - 3/4" Bolts
EF14/AA, Corner Connection Detail at Highside Eave, Column to Rafter Connection
EF14A/AA, Corner Column Conn Detail at Highside Eave - Bearing Frame, Column to Rafter Connection - 1/2" Bolts
EF14B/AA, Endwall Corner Column Conneciton Detail at Highside, Cee Endwall Corner Column to Cee Rafter Connection
EF14X/AA, Corner Column Conn Detail at Highside Eave - Bearing Frame, Column to Rafter Connection - 3/4" Bolts
EF14Y/AA, Corner Column Conn at Highside Eave - Bearing Frame, Column w/ Stiffeners to Rafter Connection - 1/2" Bolts
EF14Z/AA, Corner Column Conn at Highside - Bearing Frame, Blocked Column w/ Stiffeners to Rafter Connection - 3/4" Bolts
EF16A/AA, Corner Column Conn at Highside Eave - Bearing Frame, Column to Rafter Conneciton - 1/2" Bolts
EF16X/AA, Corner Column Conn at Highside Eave - Bearing Frame, Column to Rafter Connection - 3/4" Bolts
EF17/AA, Rotated Corner Column Connection to Rafter at Low Side, Beam & Column Endwall
EF18/AA, Rotated Corner Column Connection to Rafter at Highside Eave, Beam & Column EW w/ Column Extended Above Rafter
EF18A/AA, Rotated Corner Column to Rafter w/ Highside Purlin, Beam & Column, Open SW w/ Column Cutback for Purlin Clear
EF20/AA, Corner Column Connection to Rafter (Flush/Inset Girts), Beam & Column Endwall w/ Rafter Extended Above Column
EF20R/AA, Corner Column Connection to Rafter (Bypass Girts), Beam & Column Endwall w/ Rafter Extended Above Column
EF21/AA, Rotated Corner Column Conn. to Rafter (Flush/Inset Girts), Beam & Column Endwall w/ Rafter Extended Above Column
EF21R/AA, Rotated Corner Column Conn. to Rafter (Bypass Girts), Beam & Column Endwall w/ Rafter Extended Above Column

Index

EF22/AA, Endwall Rafter Splice Detail, Rafter to Rafter Connection
EF23/AA, Endwall Rafter Ridge Detail (Hot Rolled and Built Up), rafter w/ Ridge Splice Plate
EF23A/AA, Endwall Rafter Ridge Detail (Cold Formed), Rafter w/ Ridge Splice Plate
EF24Y/AA, Endwall Interior Column Connection (Hot Rolled or Built Up), At Ridge
EF25/AA, Endwall Rafter Splice Detail (Cold Formed), Rafter w/ Intermediate Splice Plate
EF26/AA, Ridge Column Connection to Rafter
EF26W/AA, Endwall Interior Column Connection Detail, Column to Rafter Connection
EF26WA/AA, Purlin Clip Attachment at Endwall (Cold Formed), 8" 9 1/2" or 12" Purlins
EF26Y/AA, Endwall Interior Column Bracket Connection, At Ridge
EF26YA/AA, Endwall Interior Column Connection (Cold Formed), At Ridge
EF27/AA, Endwall Interior Column Connection at Special Setback
EF28/AA, Interior Column Connection, Rigid Frame Endwall
EF28A/AA, Interior Column Connection w/ Welded Clip, Rigid Frame Type V Endwall Interior Column
EF28BB/AA, Interior Column Connection w/ Welded Clip, Rigid Frame Endwall
EF29/AA, Rigid Frame Endwall w/ Center Column, Column to Rafter Connection using CL20_(L/R)
EF30/AA, Endwall Interior Column Connection to Welded Stiffener, Rigid Frame Endwall M- Column Location
EF31/AA, Section at Column w/ Strut Channel, Endwall Rafter
EF32/AA, Section at Endwall Column w/ Pipe Strut
EF33/AA, Type 'C', Endwall Rafter
EF33A/AA, Type 'CS' Endwall Rafter
EF34/AA, Type 'N', Endwall Rafter
EF35/AA, Type 'P', Endwall Rafter
EF36/AA, Type 'S', Endwall Rafter

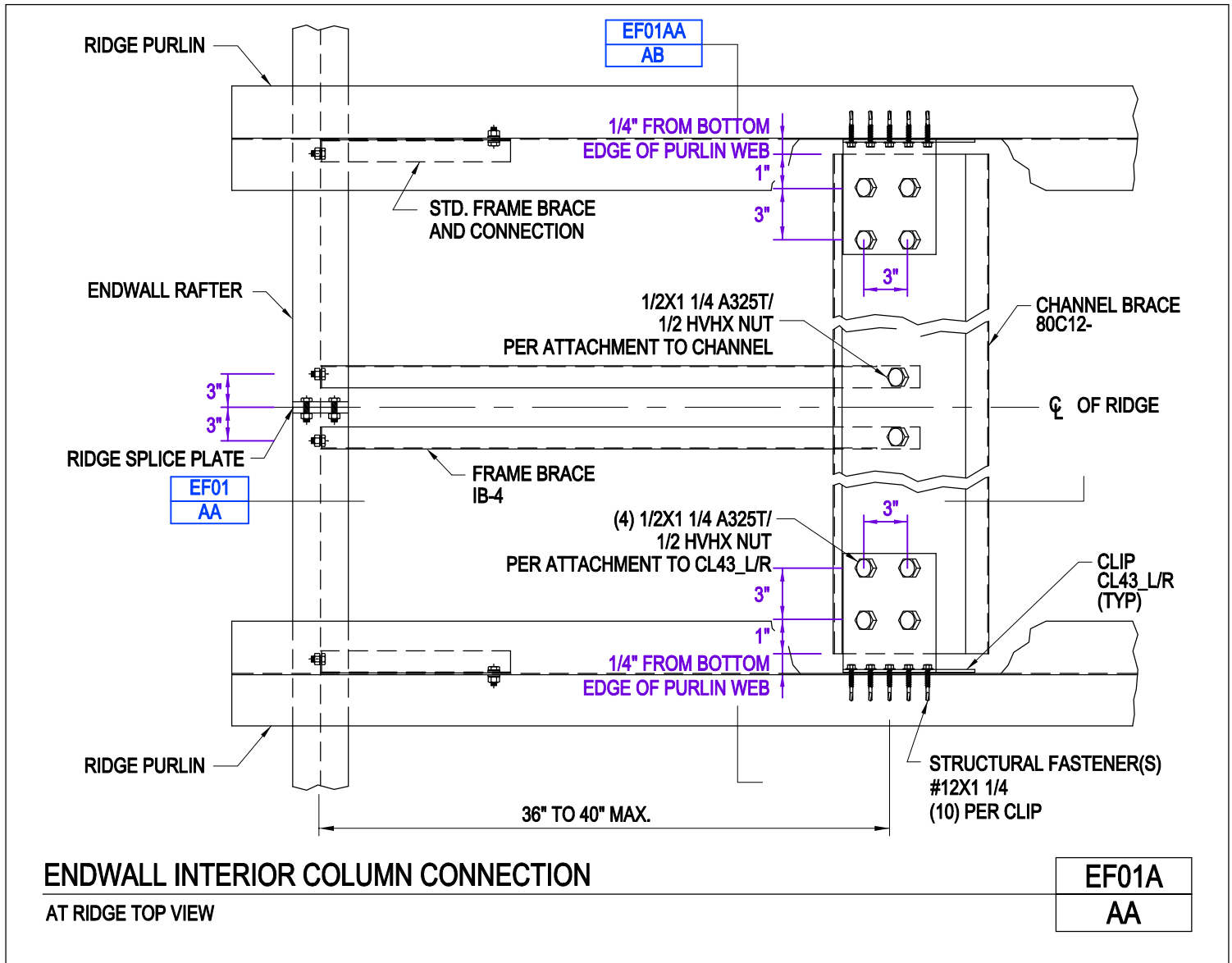
Endwall Interior Column Connection
At Ridge
EF01/AA



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[To Section Index](#)

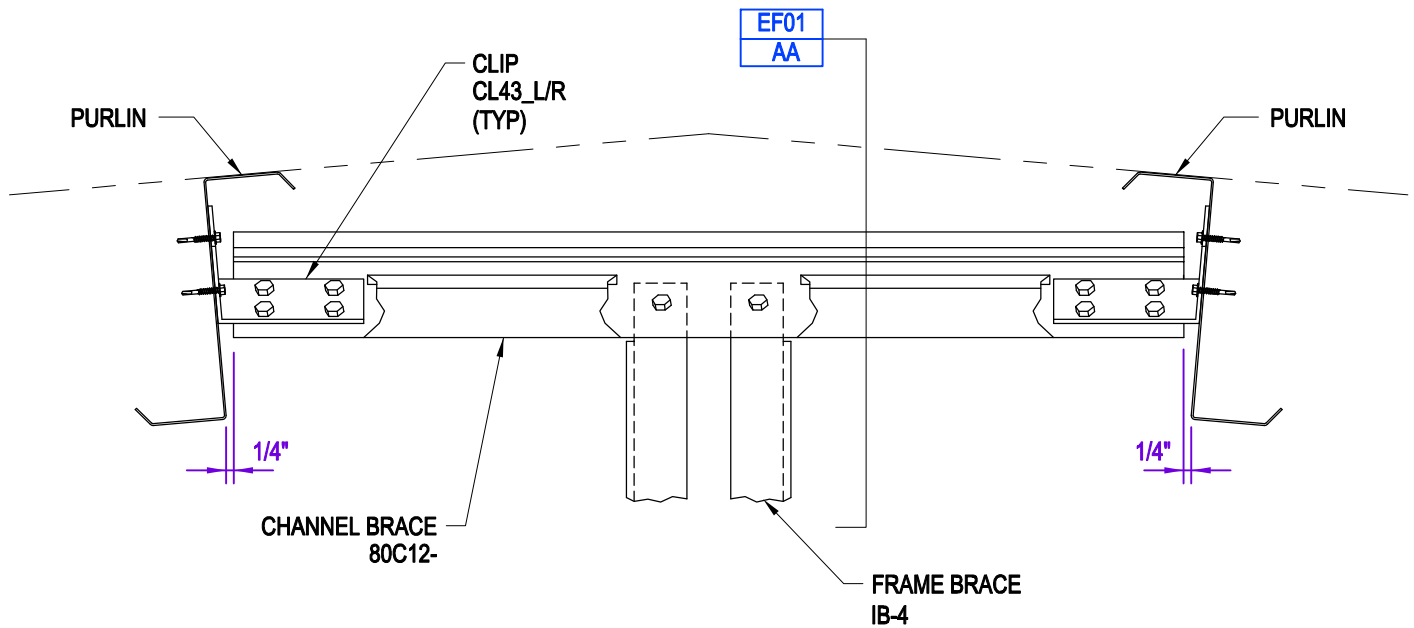
Endwall Interior Column Connection
At Ridge Top View
EF01A/AA



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[To Section Index](#)

Endwall Interior Connection Detail
Channel Brace at Ridge
EF01AA/AB



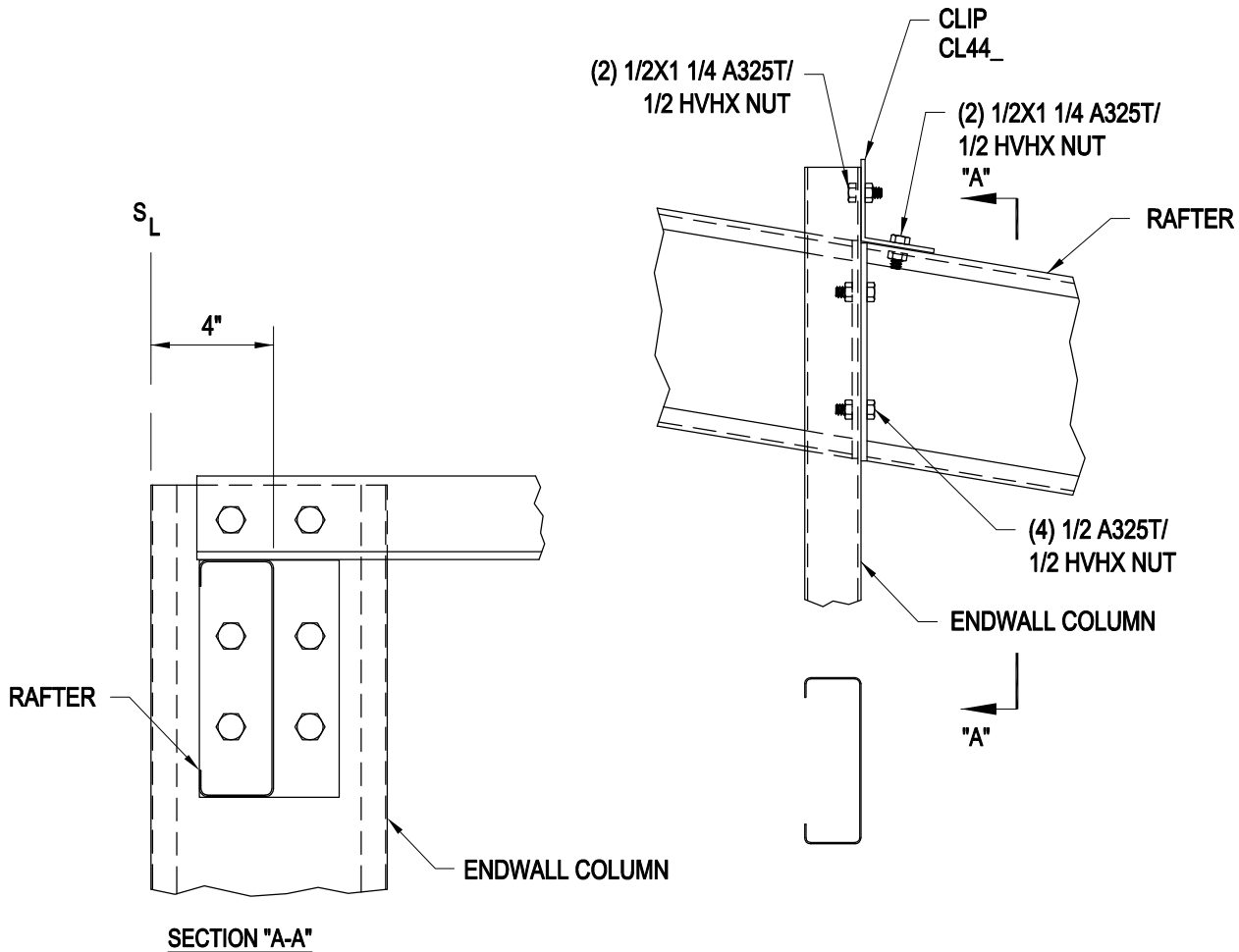
ENDWALL INTERIOR COLUMN CONNECTION DETAIL
CHANNEL BRACE AT RIDGE

EF01AA
AB

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[To Section Index](#)

Endwall Interior Column Connection Detail (Cold Formed)
Cee Endwall Interior Column to Cee Rafter Connection
EF01B/AA



ENDWALL INTERIOR COLUMN CONNECTION DETAIL (COLD FORMED)

CEE ENDWALL INTERIOR COLUMN TO CEE RAFTER CONNECTION

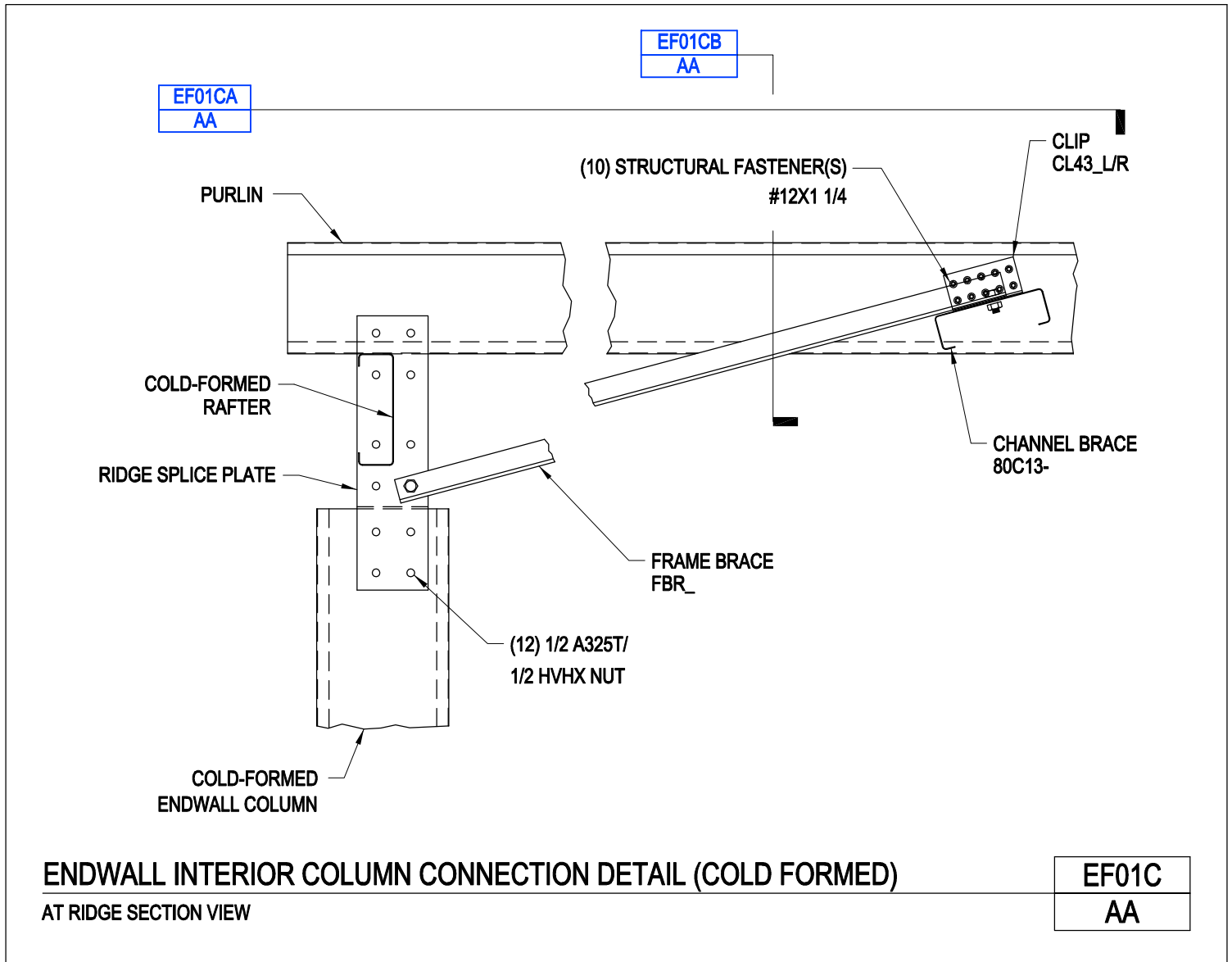
EF01B

AA

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[To Section Index](#)

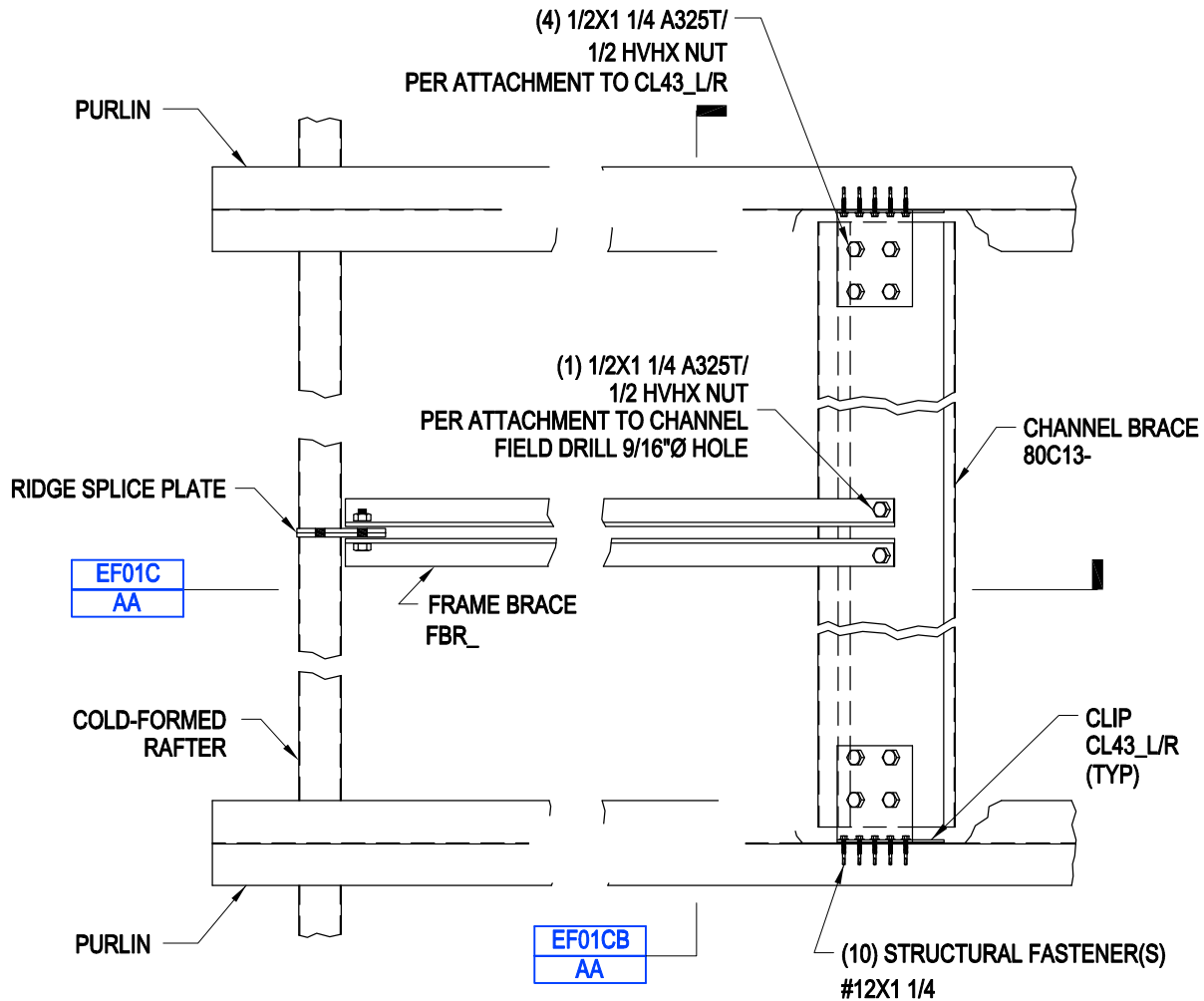
Endwall Interior Column Connection Detail (Cold Formed)
At Ridge Section View
EF01C/AA



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[To Section Index](#)

Endwall Interior Column Connection Detail (Cold Formed)
At Ridge Top View
EF01CA/AA



ENDWALL INTERIOR COLUMN CONNECTION DETAIL (COLD FORMED)

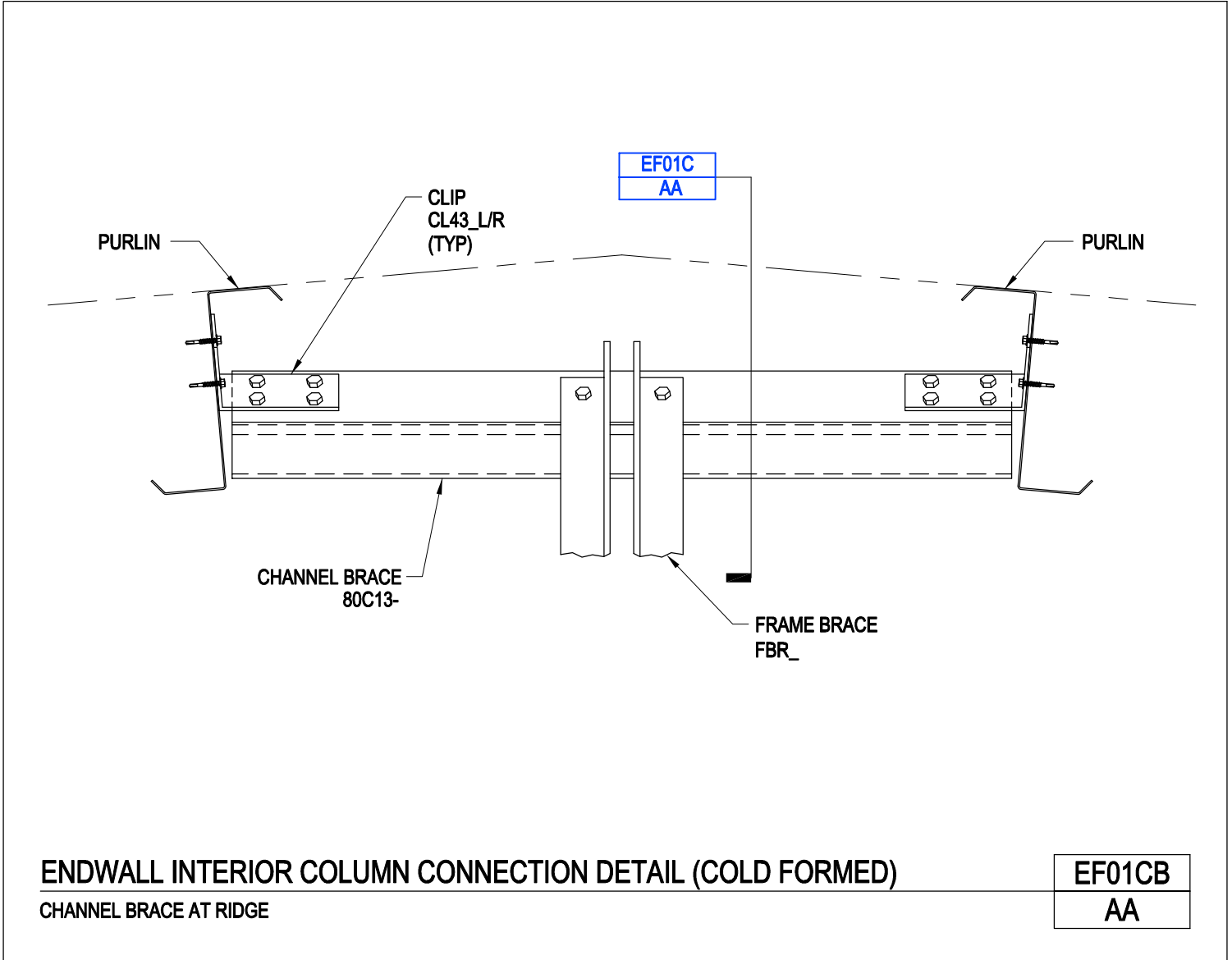
AT RIDGE TOP VIEW

EF01CA
AA

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[To Section Index](#)

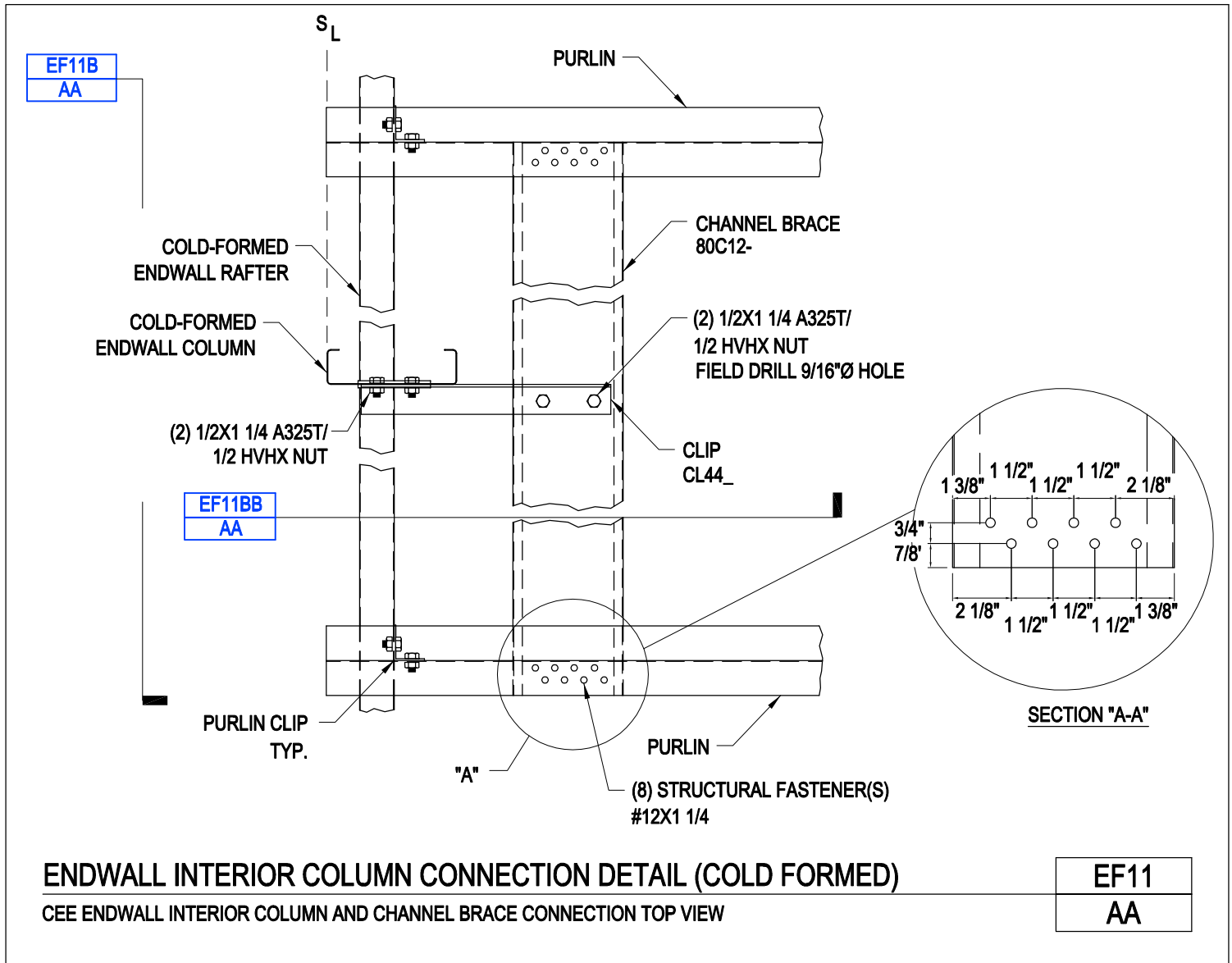
Endwall Interior Column Connection Detail (Cold Formed)
Channel Brace at Ridge
EF01CB/AA



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[To Section Index](#)

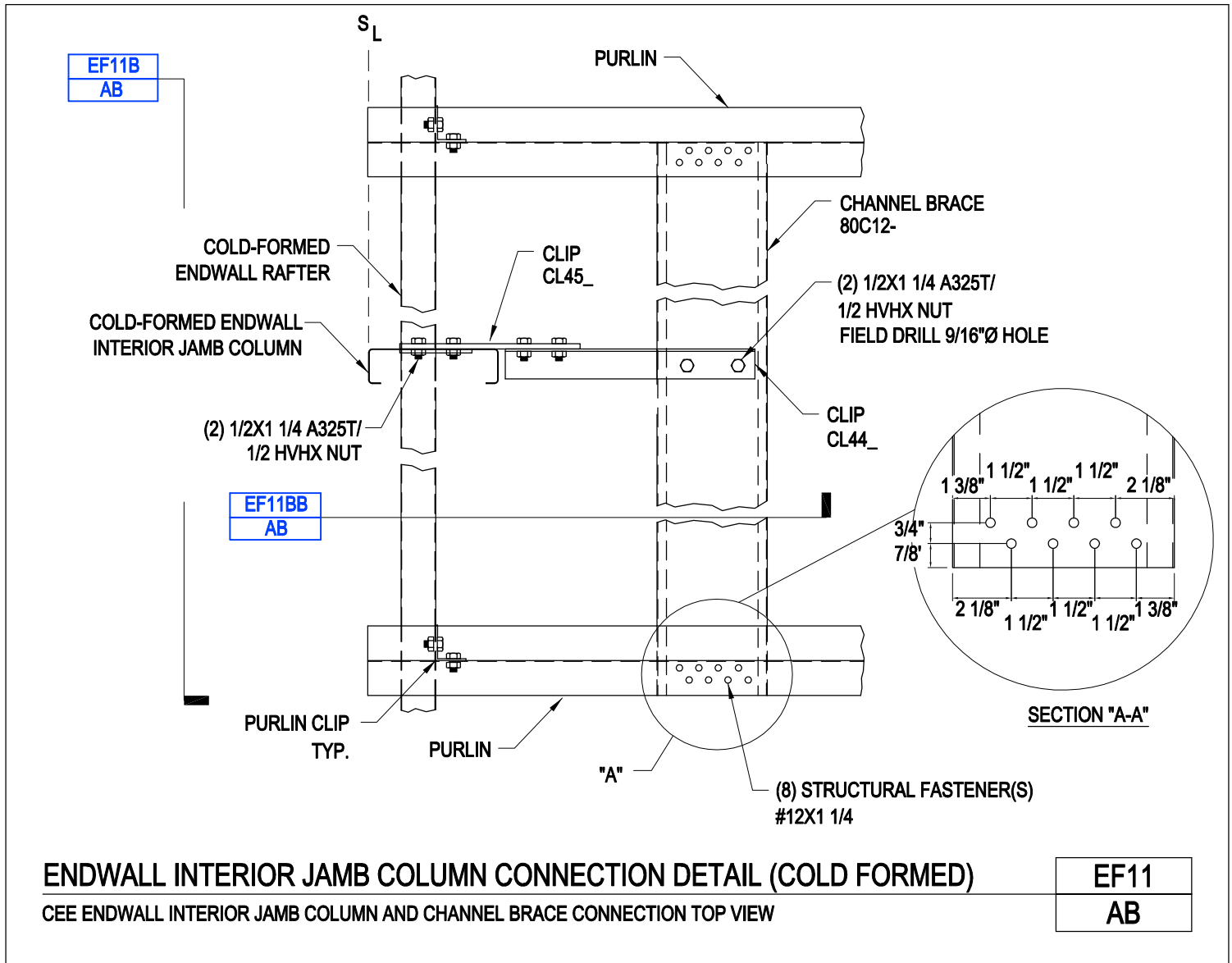
Endwall Interior Column Connection Detail (Cold Formed)
Cee Endwall Interior Column and Channel Brace Connection Top View
EF11/AA



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[To Section Index](#)

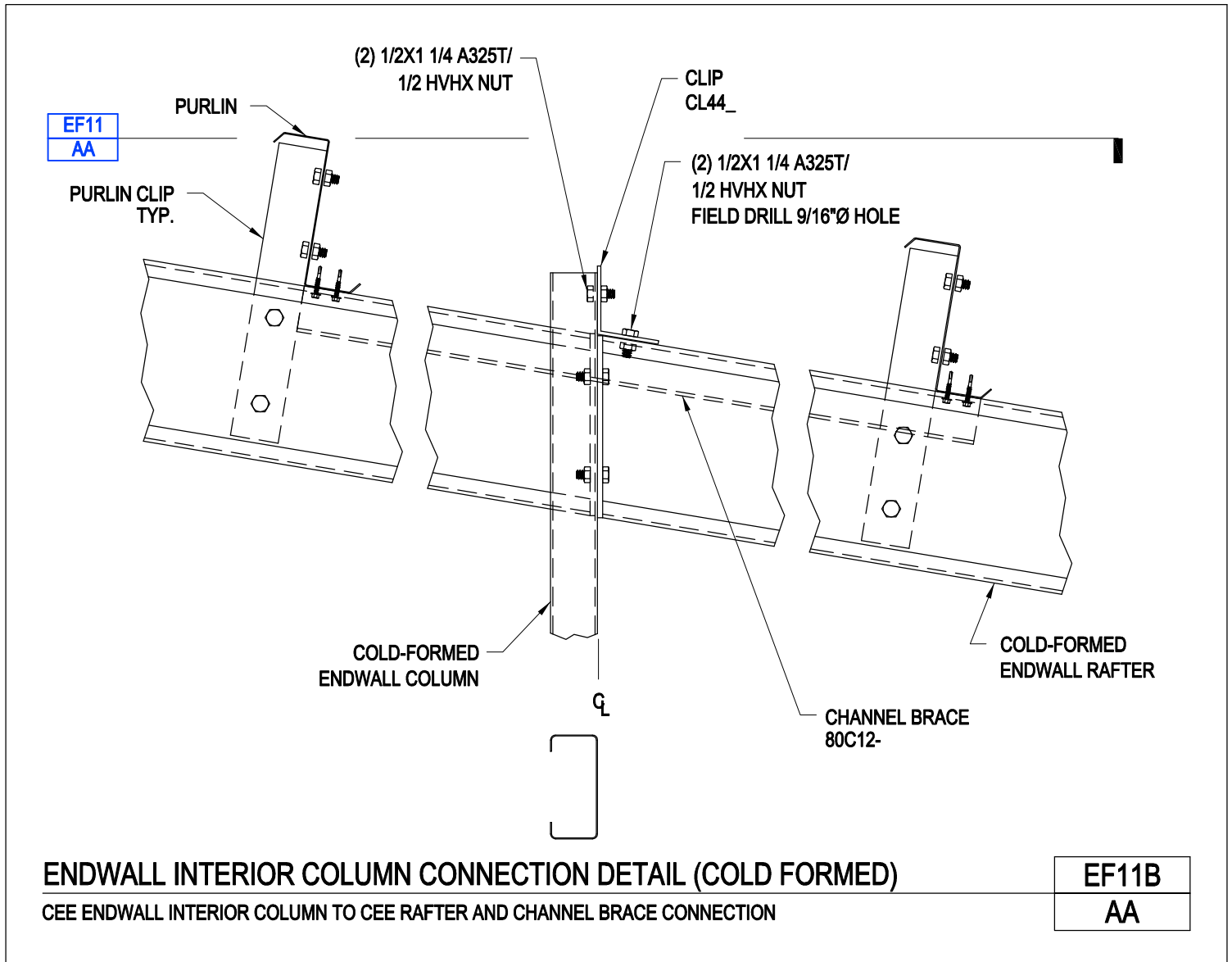
Endwall Interior Jamb Column Connection Detail (Cold Formed)
Cee Endwall Interior Jamb Column and Channel Brace Connection Top View
EF11/AB



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[To Section Index](#)

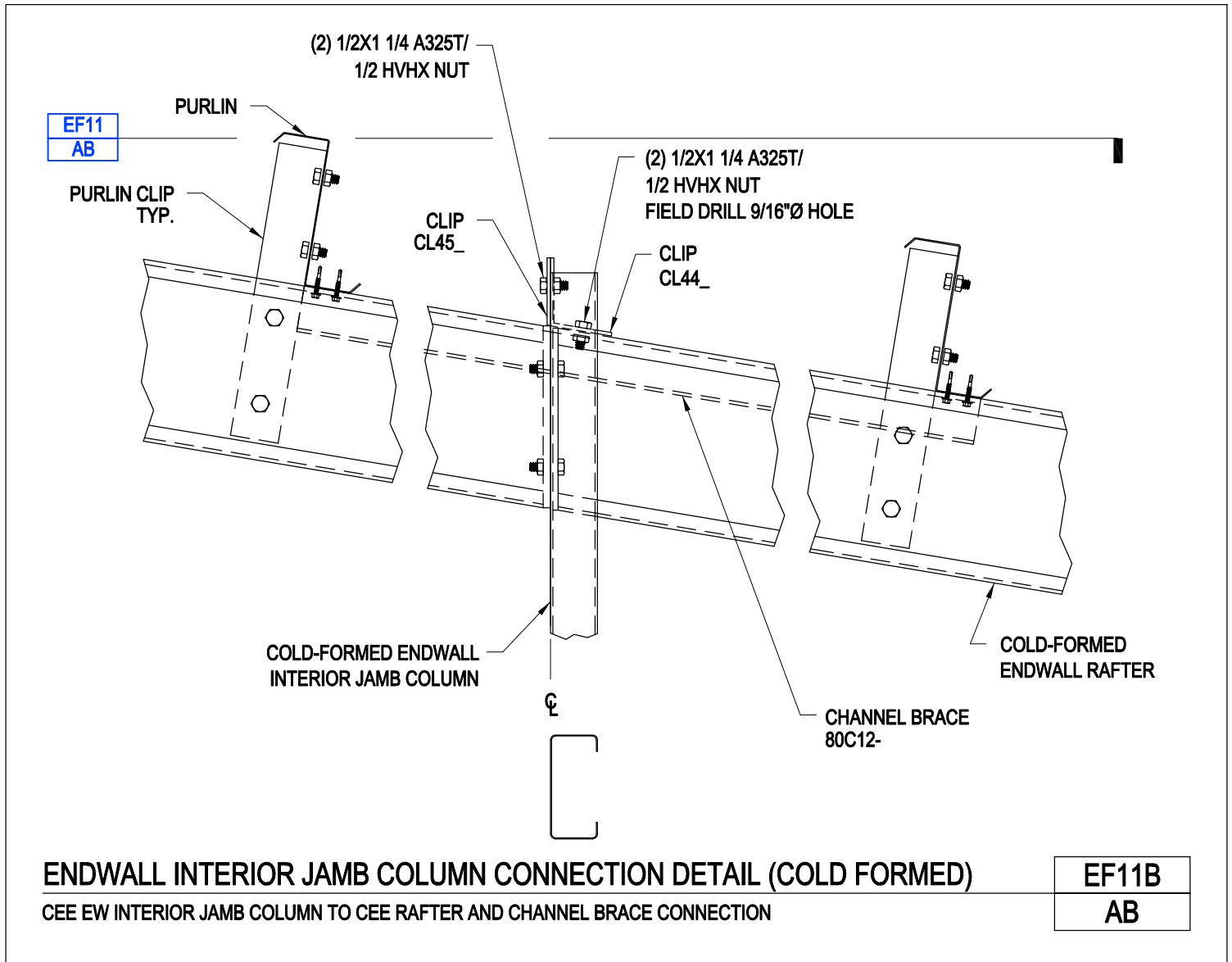
Endwall Interior Column Connection Detail (Cold Formed)
Cee Endwall Interior Column to Cee Rafter and Channel Brace Connection
EF11B/AA



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[To Section Index](#)

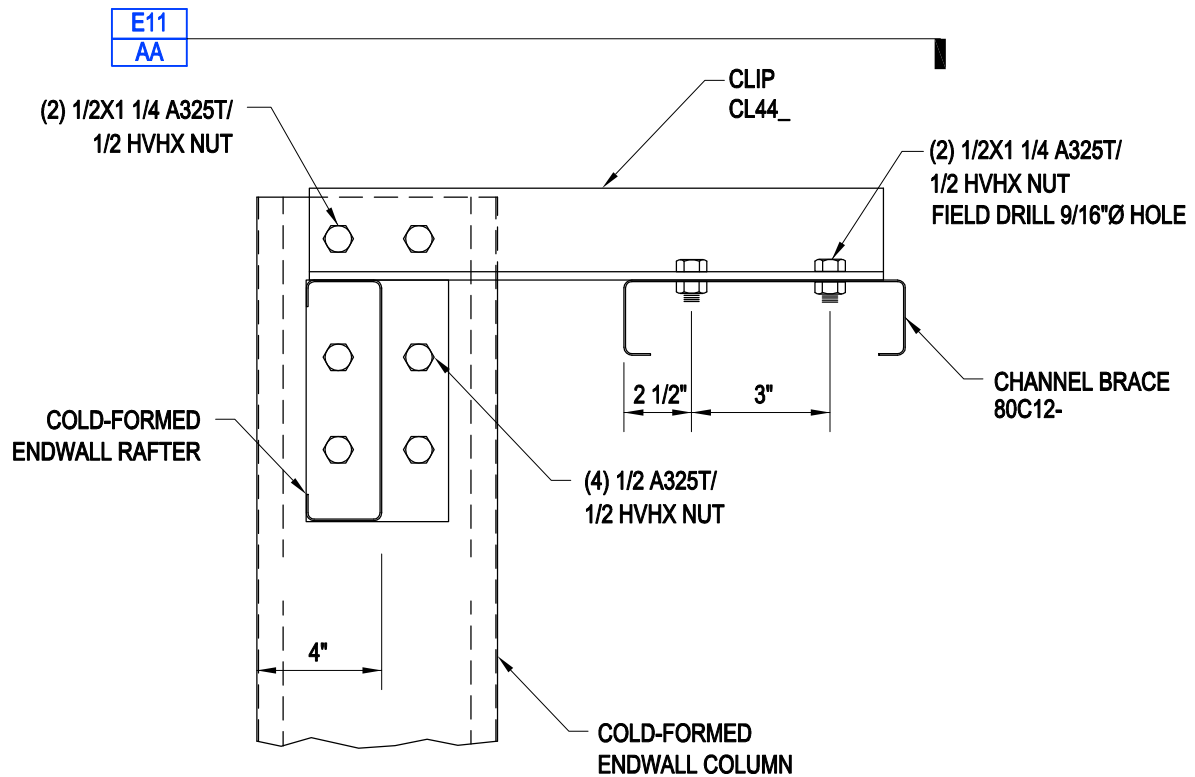
Endwall Interior Jamb Column Connection Detail (Cold Formed)
Cee EW Interior Jamb Column to Cee Rafter and Channel Brace Connection
EF11B/AB



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[To Section Index](#)

Endwall Interior Column Connection Detail (Cold Formed)
Cee Endwall Interior Column to Cee Rafter and Channel Brace Connection
EF11BB/AA



ENDWALL INTERIOR COLUMN CONNECTION DETAIL (COLD FORMED)

CEE ENDWALL INTERIOR COLUMN TO CEE RAFTER AND CHANNEL BRACE CONNECTION

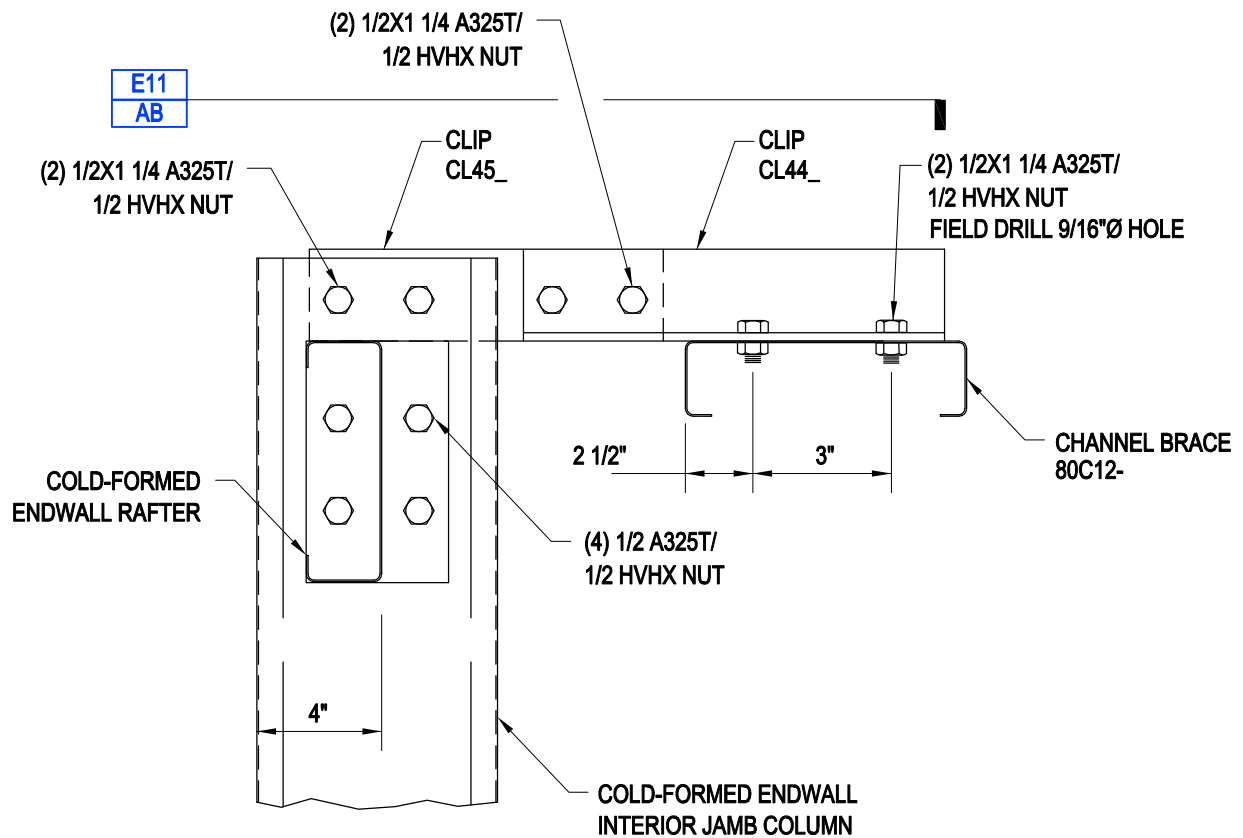
EF11BB

AA

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[To Section Index](#)

Endwall Interior Column Connection Detail (Cold Formed)
Cee Endwall Interior Column to Cee Rafter and Channel Brace Connection
EF11BB/AB



ENDWALL INTERIOR COLUMN CONNECTION DETAIL (COLD FORMED)

CEE ENDWALL INTERIOR COLUMN TO CEE RAFTER AND CHANNEL BRACE CONNECTION

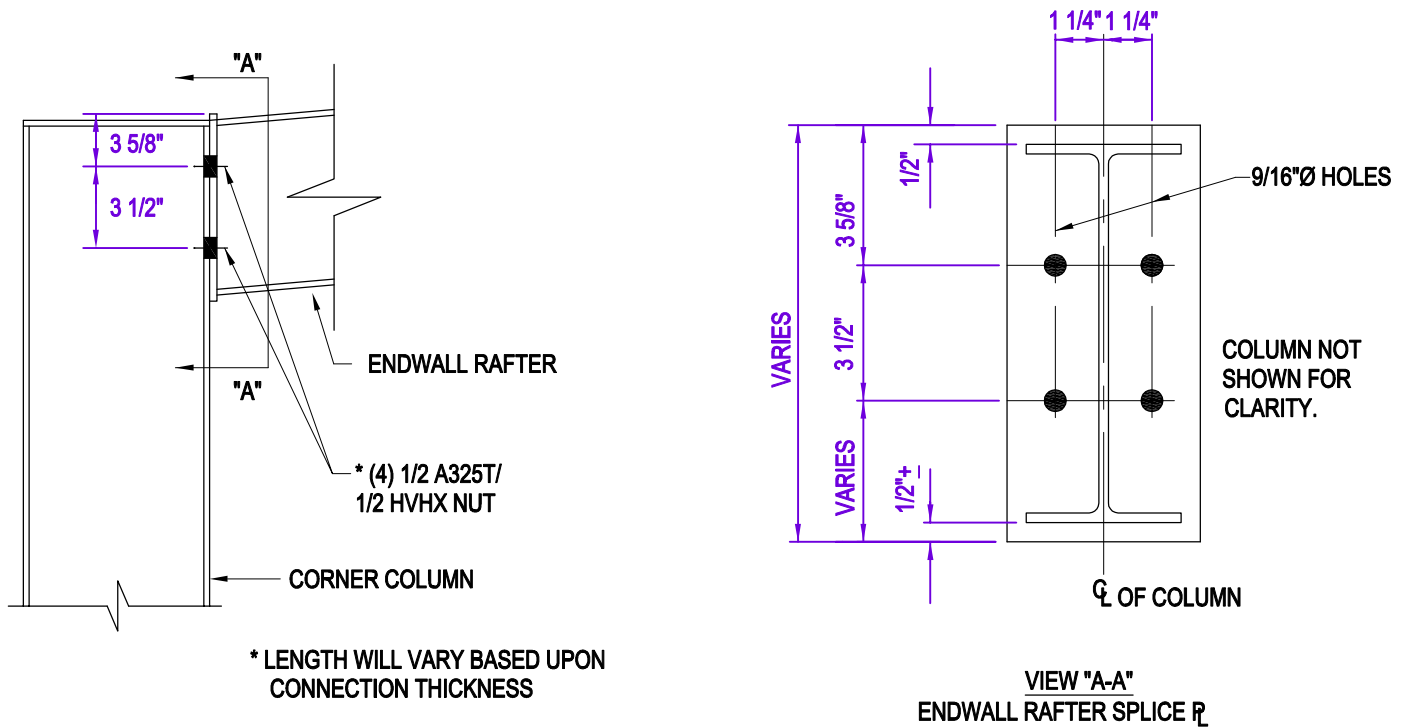
EF11BB

AB

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[To Section Index](#)

Corner Column Connection Detail at Bldg. Eave
Column to Rafter Connection
EF12/AA



SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.

CORNER COLUMN CONNECTION DETAIL AT BLDG. EAVE
COLUMN TO RAFTER CONNECTION

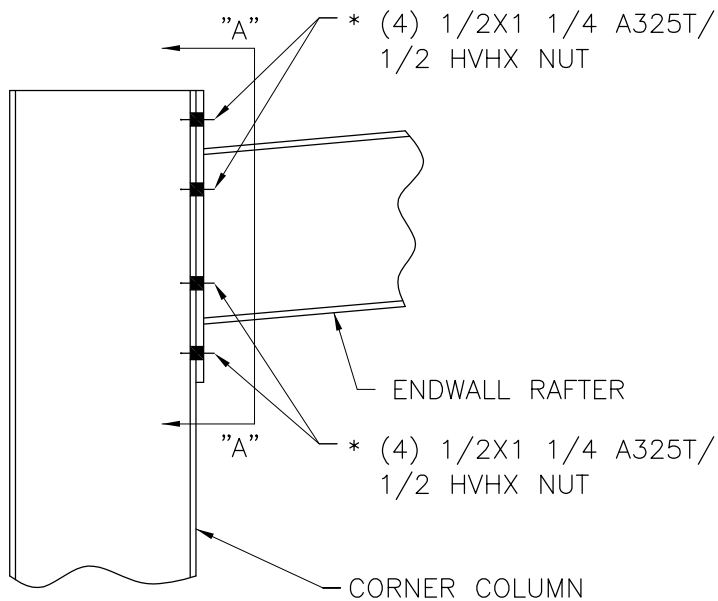
EF12
AA

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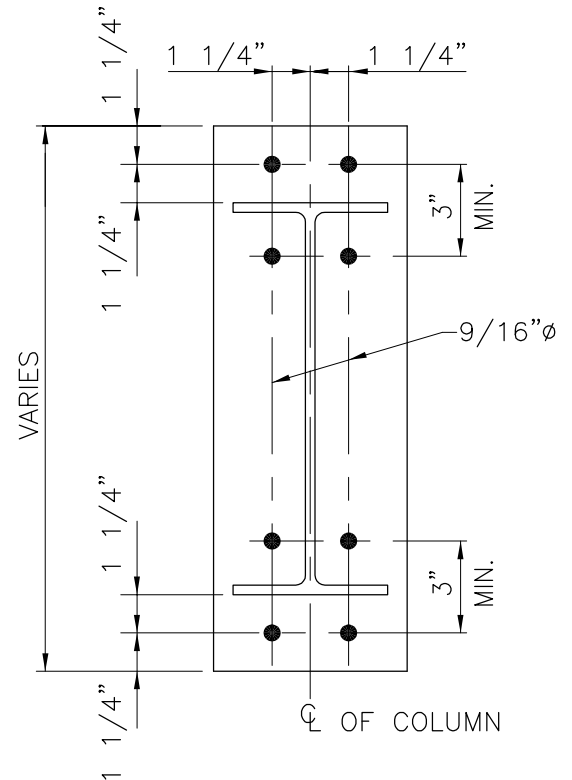
[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Column to Rafter Connection 1/2" Bolts
EF12A/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS



VIEW "A-A"
ENDWALL RAFTER SPLICE R

CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 1/2"Ø BOLTS

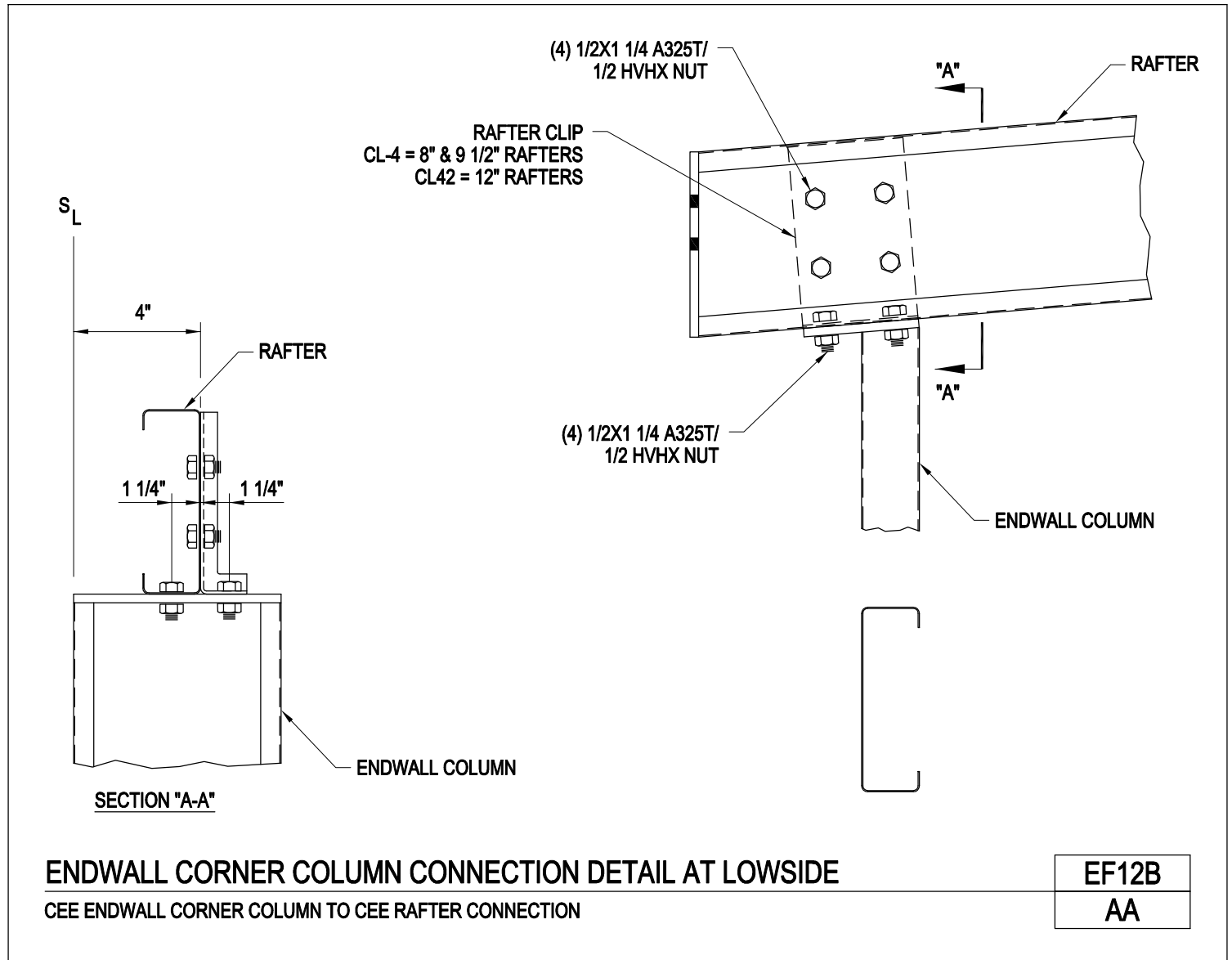
EF12A

AA

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[To Section Index](#)

Endwall Corner Column Connection Detail at Lowside
Cee Endwall Corner Column to Cee Rafter Connection
EF12B/AA

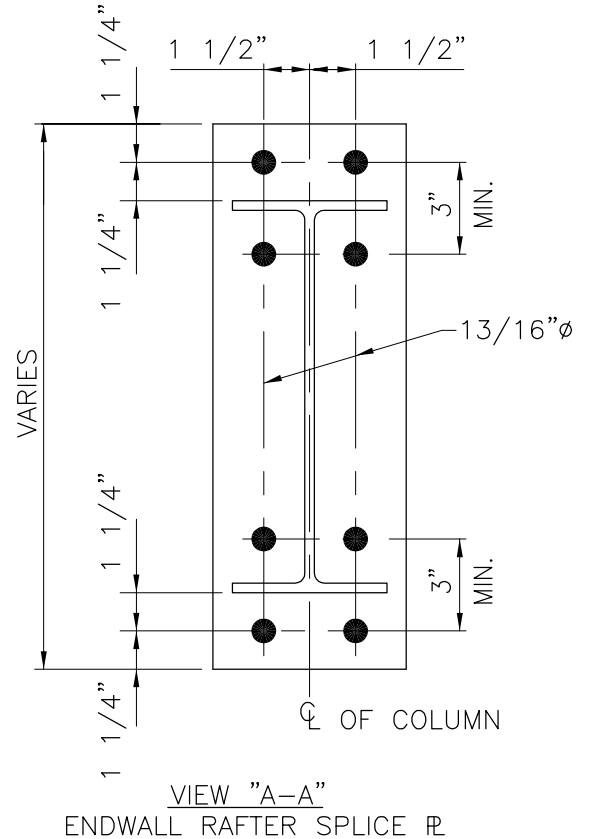
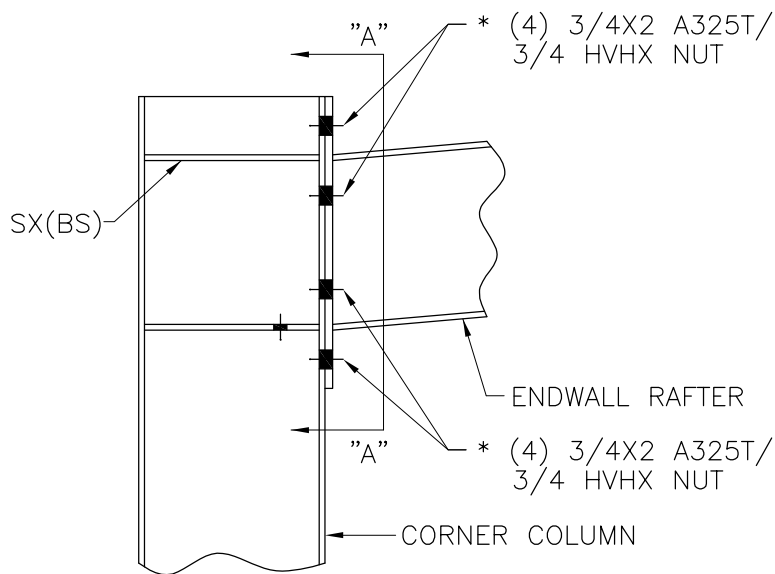


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[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Column to Rafter Connection - 3/4" Bolts
EF12X/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 3/4" ϕ BOLTS

EF12X

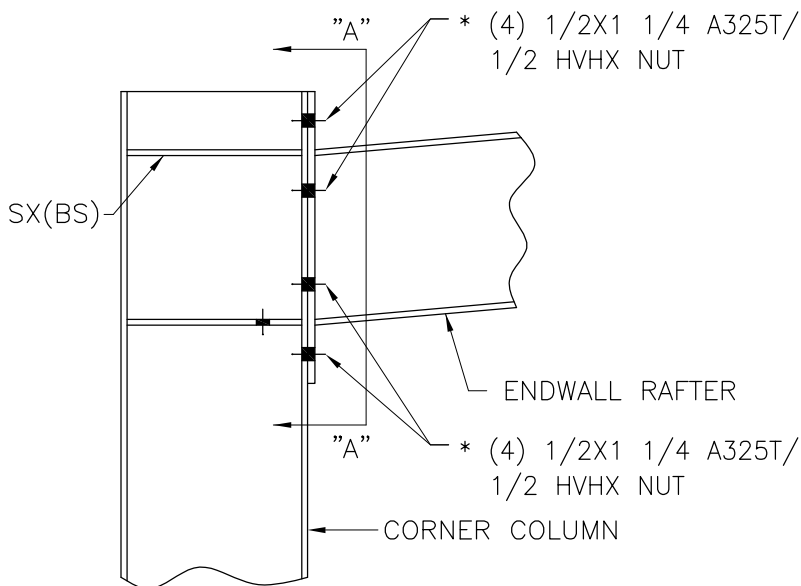
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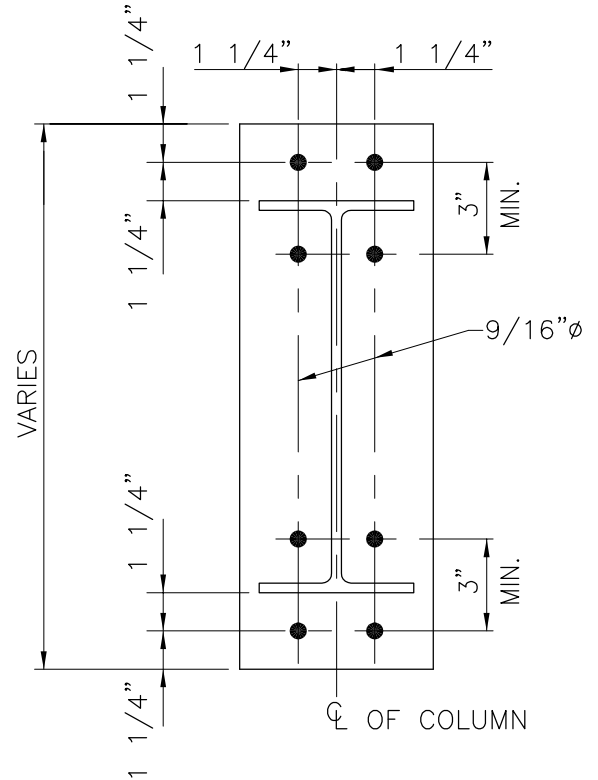
[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Column w/ Stiffener to Rafter Connection - 1/2" Bolts
EF12Y/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS



VIEW "A-A"
ENDWALL RAFTER SPLICE PL

CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
COLUMN W/STIFFENERS TO RAFTER CONNECTION - 1/2"Ø BOLTS

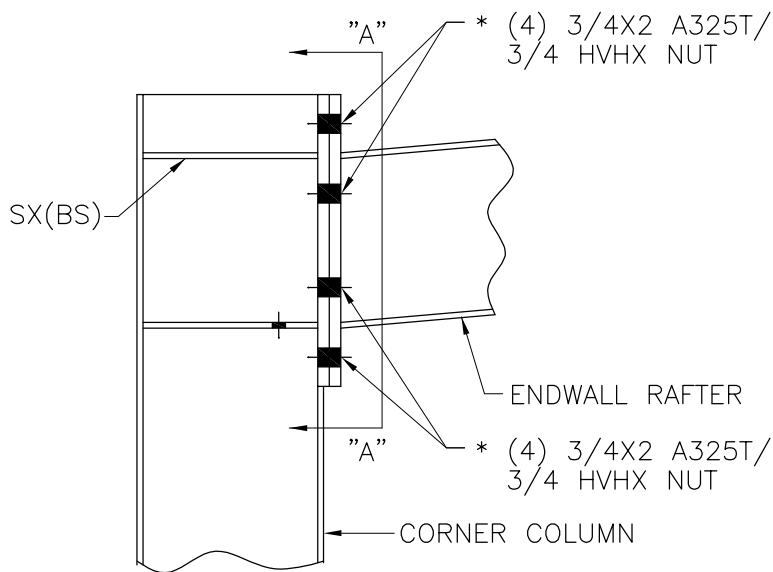
EF12Y
AA

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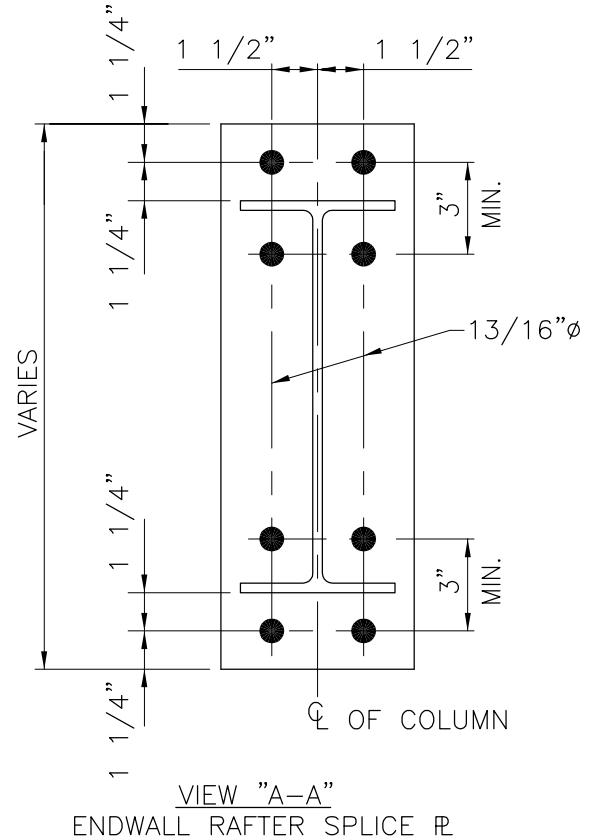
[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Blocked Column w/ Stiffeners to Rafter Connection - 3/4" Bolts
EF12Z/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS



CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
BLOCKED COLUMN W/STIFFENERS TO RAFTER CONNECTION - 3/4" ϕ BOLTS

EF12Z

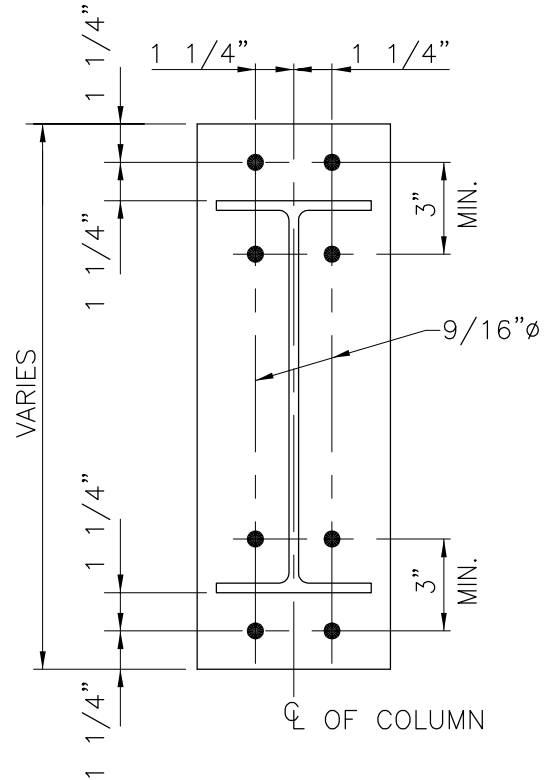
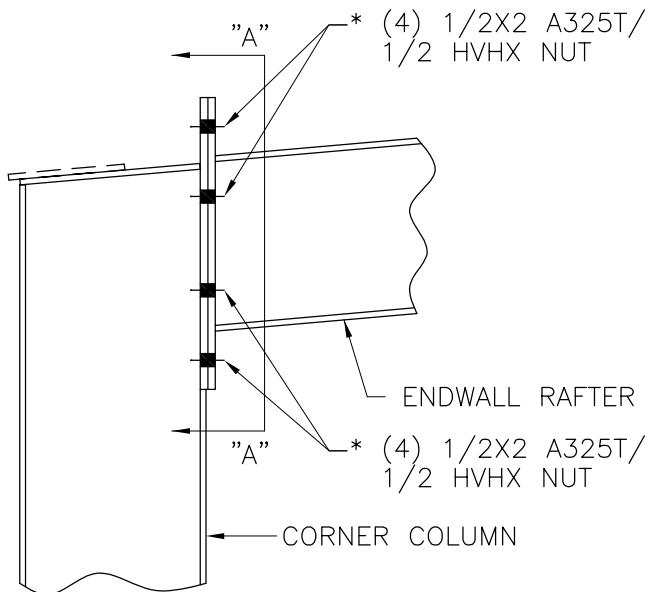
AA

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[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Column to Rafter Connection - 1/2" Bolts
EF13A/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



VIEW "A-A"
ENDWALL RAFTER SPLICE &

* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS

CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 1/2"Ø BOLTS

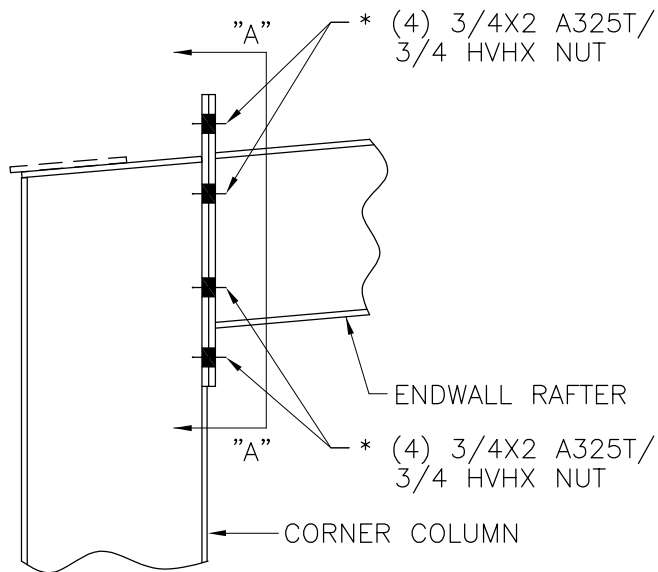
EF13A
AA

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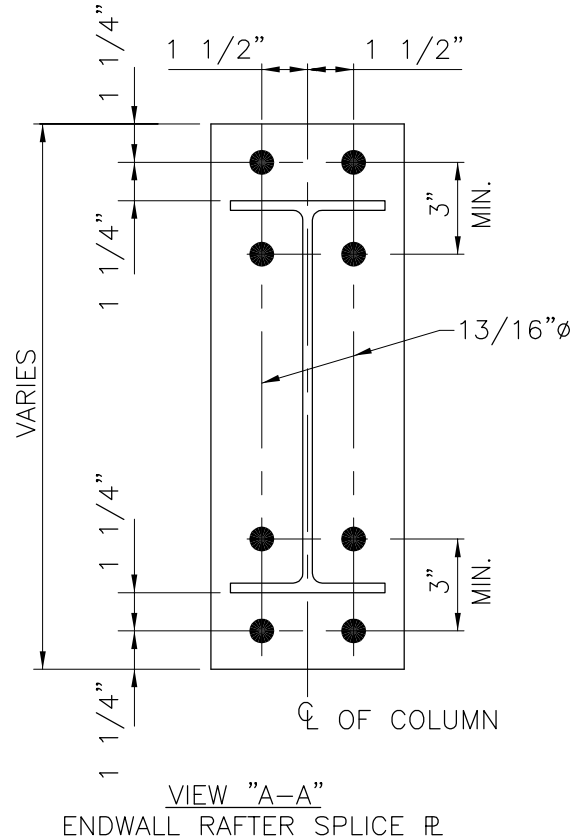
[To Section Index](#)

Corner Column Conn. Detail at Bldg. Eave - Bearing Frame
Column to Rafter Connection - 3/4" Bolts
EF13X/AA

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.



* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS



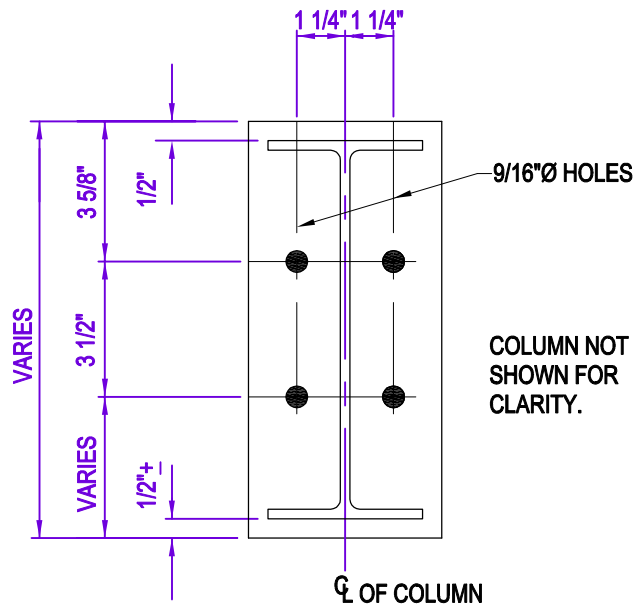
CORNER COLUMN CONN. DETAIL AT BLDG. EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 3/4"Ø BOLTS

EF13X
AA

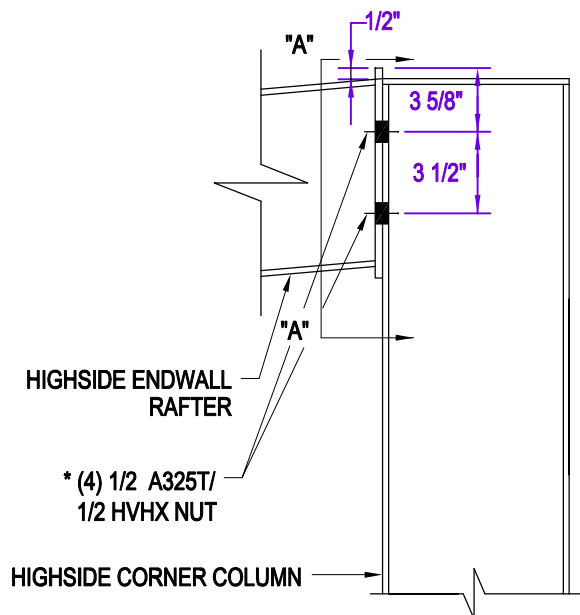
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[To Section Index](#)

Corner Connection Detail at Highside Eave
Column to Rafter Connection
EF14/AA



VIEW "A-A"
ENDWALL RAFTER SPLICE R_L



* LENGTH WILL VARY BASED ON
CONNECTION THICKNESS

SAFETY PRECAUTION:
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BEING MOVED BY ANY TYPE LIFTING
DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.

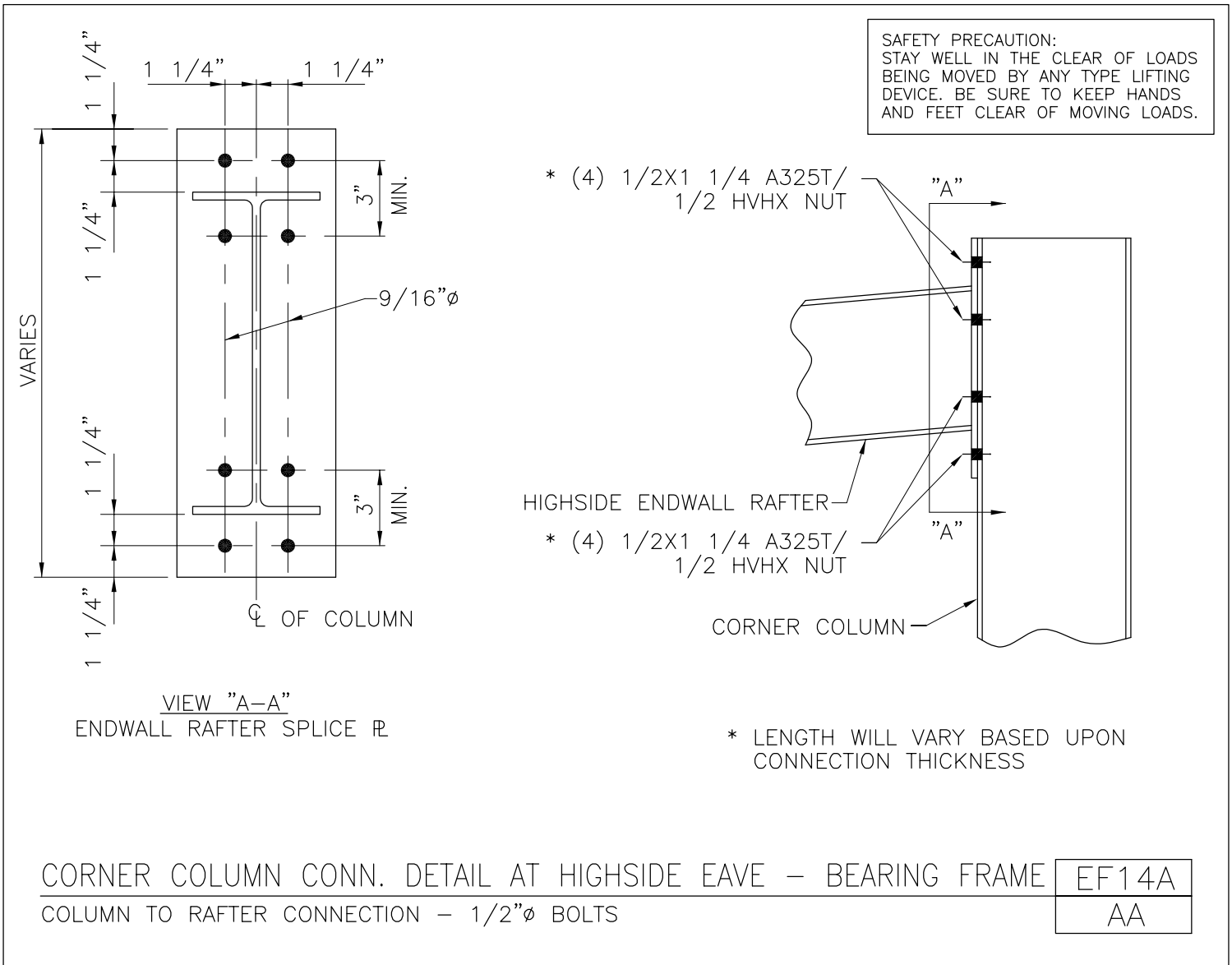
CORNER COLUMN CONNECTION DETAIL AT HIGHSIDE EAVE
COLUMN TO RAFTER CONNECTION

EF14
AA

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[To Section Index](#)

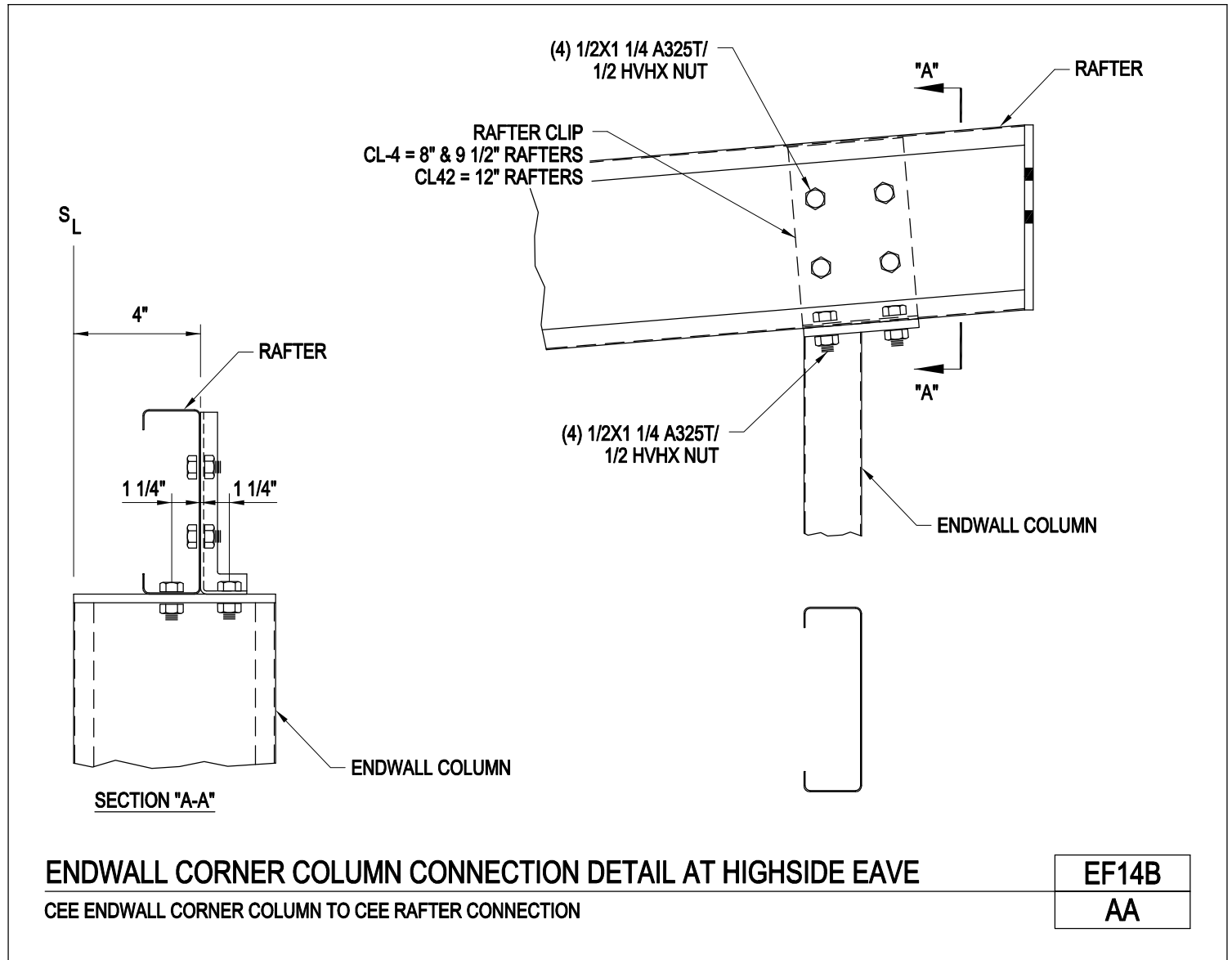
Corner Column Conn. Detail at Highside Eave - Bearing Frame
Column to Rafter Connection - 1/2" Bolts
EF14A/AA



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[To Section Index](#)

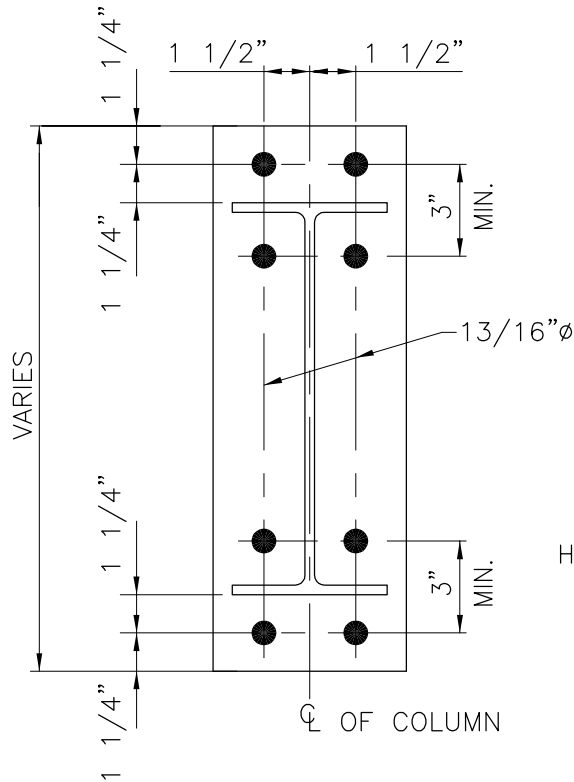
Endwall Corner Column Connection Detail at Highside Eave
Cee Endwall Corner Column to Cee Rafter Connection
EF14B/AA



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[To Section Index](#)

Corner Column Conn. Detail at Highside Eave - Bearing Frame
Column to Rafter Connection - 3/4" Bolts
EF14X/AA



VIEW "A-A"
ENDWALL RAFTER SPLICE R

* (4) 3/4X2 A325T/
3/4 HVHX NUT

HIGHSIDE ENDWALL RAFTER
* (4) 3/4X2 A325T/
3/4 HVHX NUT

CORNER COLUMN

SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS
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DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.

* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS

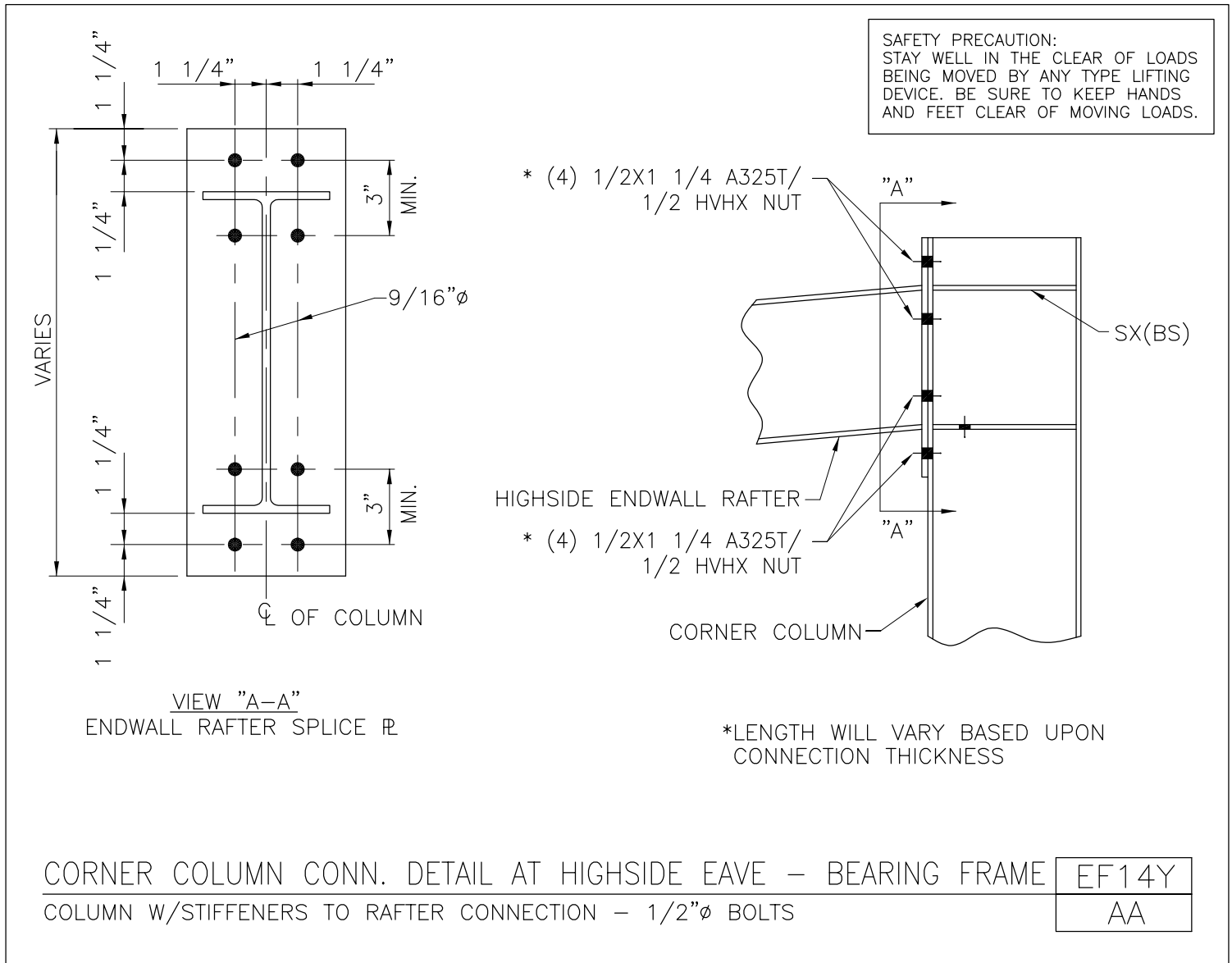
CORNER COLUMN CONN. DETAIL AT HIGHSIDE EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 3/4"φ BOLTS

EF14X
AA

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[To Section Index](#)

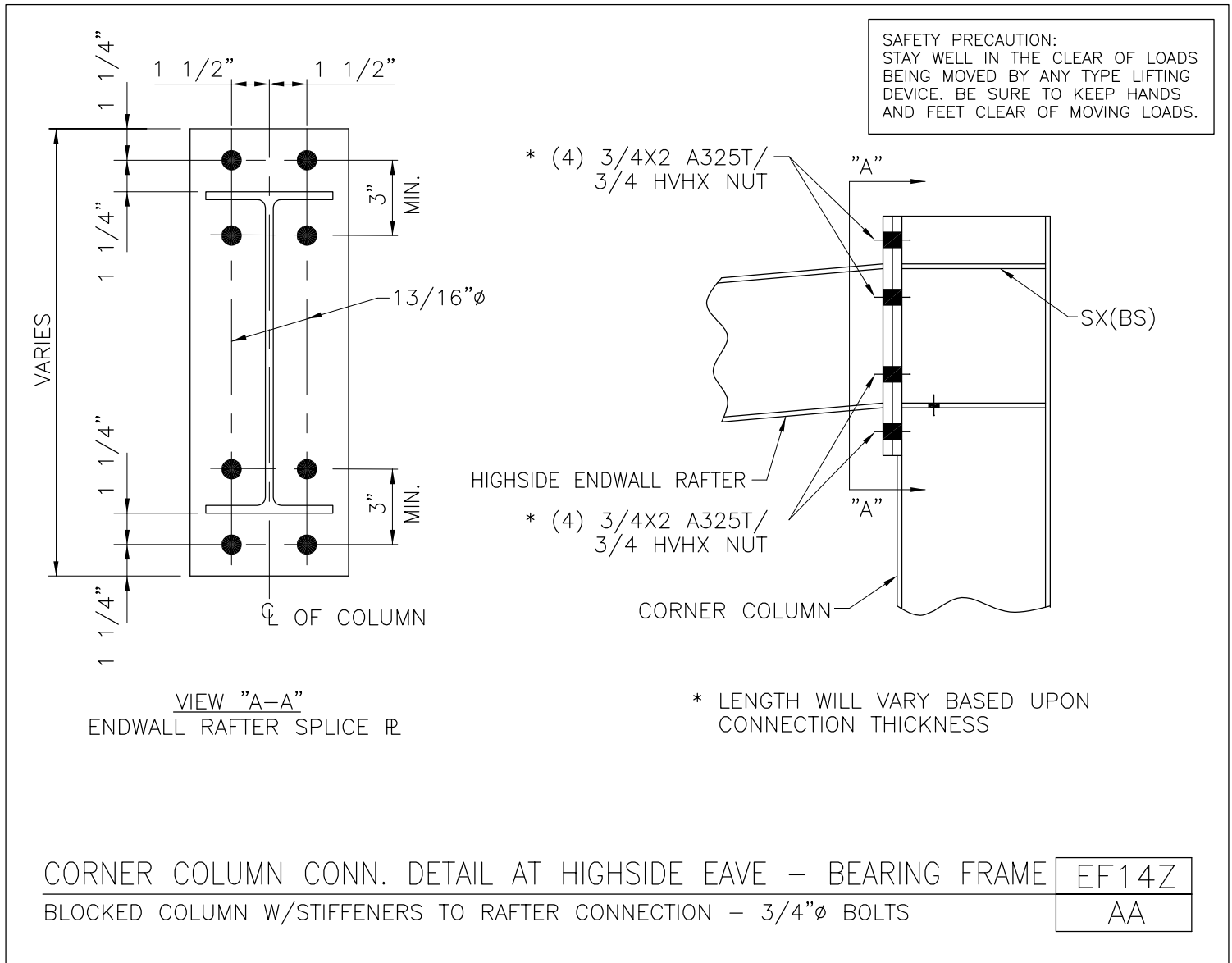
Corner Column Conn. Detail at Highside Eave - Bearing Frame
Column w/ Stiffeners to Rafter Connection - 1/2" Bolts
EF14Y/AA



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[To Section Index](#)

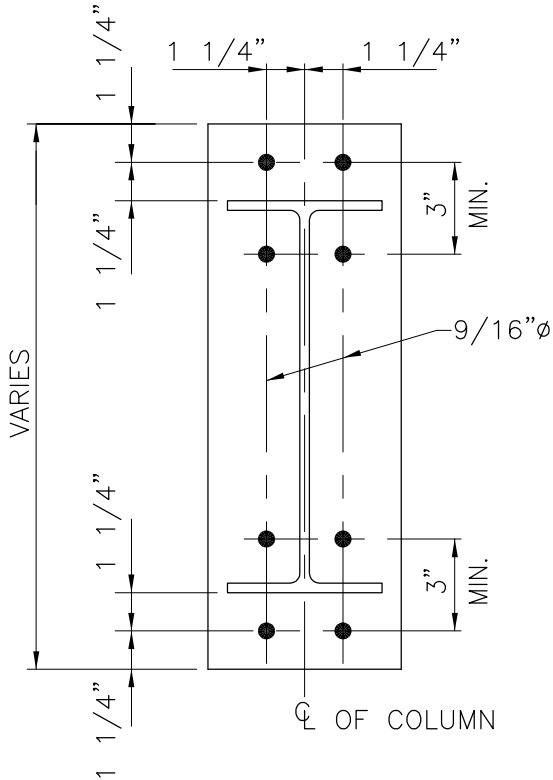
Corner Column Conn. Detail at Highside - Bearing Frame
Blocked Column w/ Stiffeners to Rafter Connection - 3/4" Bolts
EF14Z/AA



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[To Section Index](#)

Corner Column Conn. Detail at Highside Eave - Bearing Frame
Column to Rafter Connection - 1/2" Bolts
EF16A/AA



VIEW "A-A"
ENDWALL RAFTER SPLICE R

* (4) 1/2X1 1/4 A325T/
1/2 HVHX NUT

HIGHSIDE ENDWALL RAFTER
* (4) 1/2X1 1/4 A325T/
1/2 HVHX NUT

CORNER COLUMN

SAFETY PRECAUTION:
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DEVICE. BE SURE TO KEEP HANDS
AND FEET CLEAR OF MOVING LOADS.

* LENGTH WILL VARY BASED UPON
CONNECTION THICKNESS

CORNER COLUMN CONN. DETAIL AT HIGHSIDE EAVE - BEARING FRAME
COLUMN TO RAFTER CONNECTION - 1/2"φ BOLTS

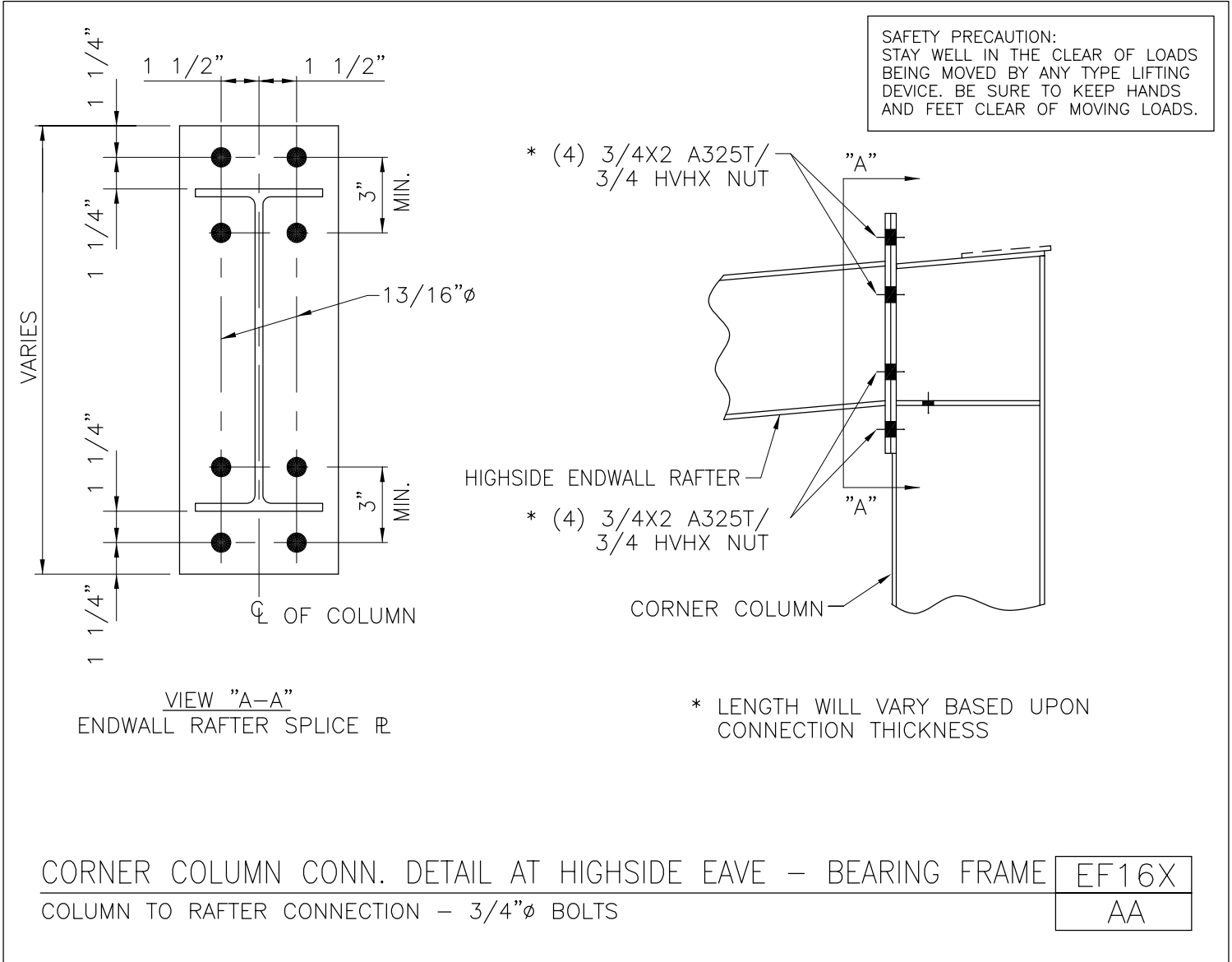
EF16A

AA

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[To Section Index](#)

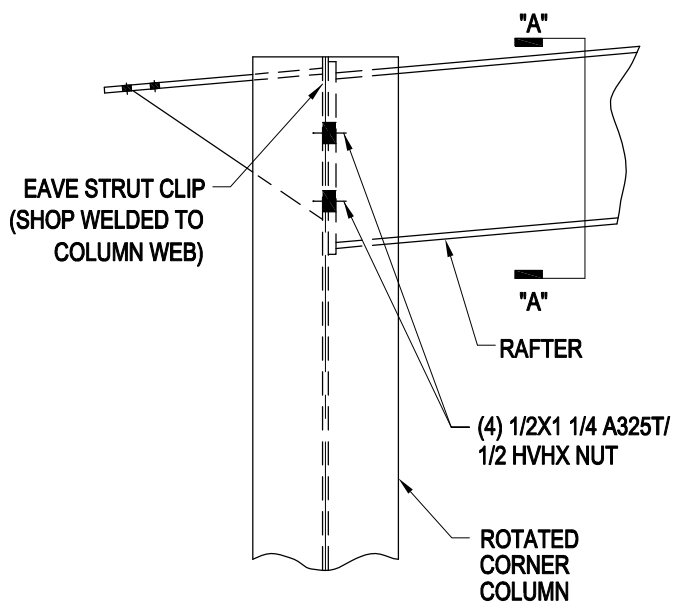
Corner Column Conn. Detail at Highside Eave - Bearing Frame
Column to Rafter Connection - 3/4" Bolts
EF16X/AA



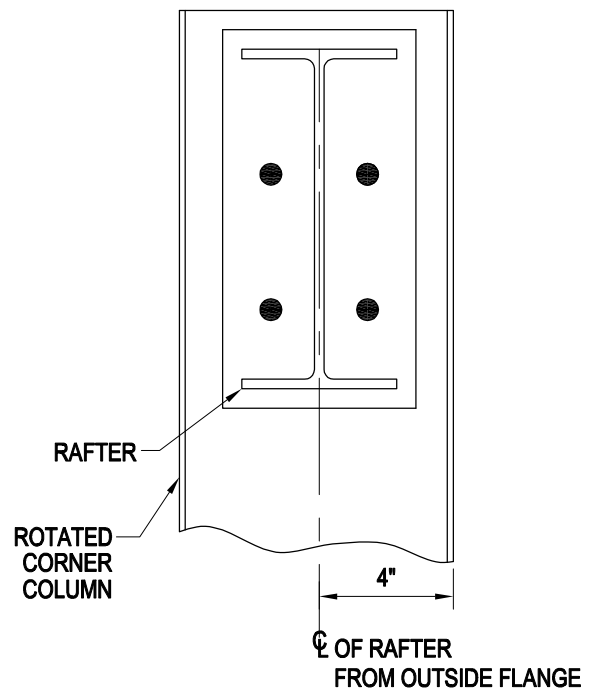
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[To Section Index](#)

Rotated Corner Column Connection to Rafter at Low Side Eave
Beam & Column Endwall
EF17/AA



SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS BEING
MOVED BY ANY TYPE LIFTING DEVICE.
BE SURE TO KEEP HANDS AND FEET CLEAR
OF MOVING LOADS.



VIEW "A"-"A"
ENDWALL RAFTER SPLICE

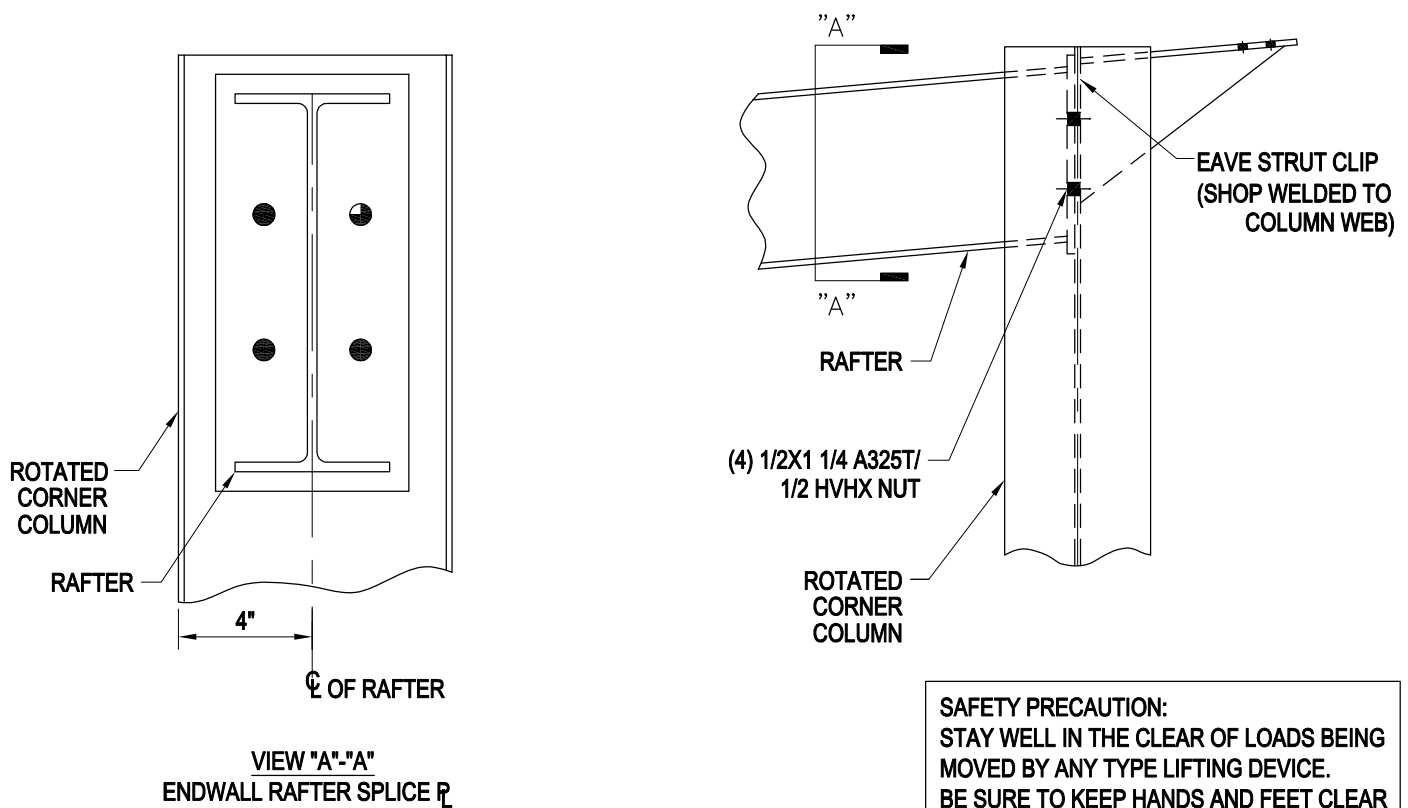
ROTATED CORNER COLUMN CONNECTION TO RAFTER AT LOW SIDE EAVE
BEAM & COLUMN ENDWALL

EF17
AA

[Download the DWG file by clicking here.](#)

[To Section Index](#)

Rotated Corner Column Connection to Rafter at High Side Eave
Beam & Column Endwall with Column Extended Above Rafter for Eave Strut Bracket Attachment
EF18/AA



SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS BEING
MOVED BY ANY TYPE LIFTING DEVICE.
BE SURE TO KEEP HANDS AND FEET CLEAR
OF MOVING LOADS.

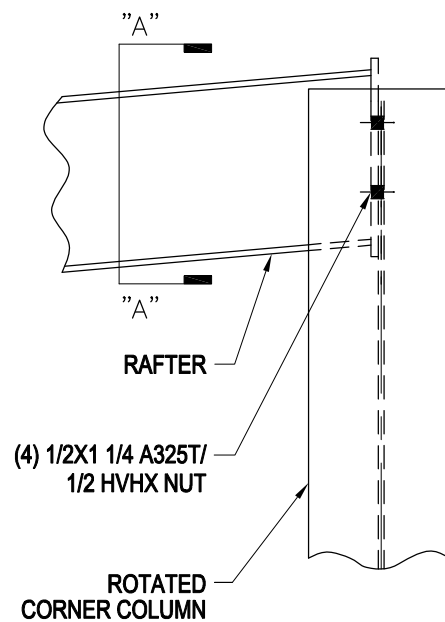
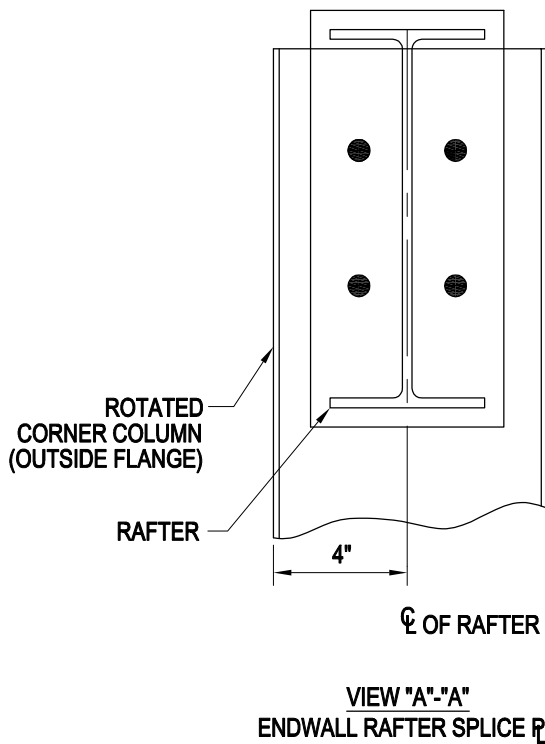
ROTATED CORNER COLUMN CONNECTION TO RAFTER AT HIGH SIDE EAVE
BEAM & COLUMN ENDWALL WITH COLUMN EXTENDED ABOVE RAFTER FOR EAVE STRUT BRACKET ATTACHMENT

EF18
AA

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[To Section Index](#)

Rotated Corner Column Connection to Rafter with High Side Purlin
Beam & Column and Open SW with Column Cutback for Purlin Clearance
EF18A/AA



SAFETY PRECAUTION:
STAY WELL IN THE CLEAR OF LOADS BEING
MOVED BY ANY TYPE LIFTING DEVICE.
BE SURE TO KEEP HANDS AND FEET CLEAR
OF MOVING LOADS.

ROTATED CORNER COLUMN CONNECTION TO RAFTER WITH HIGH SIDE PURLIN
BEAM & COLUMN EW AND OPEN SW WITH COLUMN CUTBACK FOR PURLIN CLEARANCE

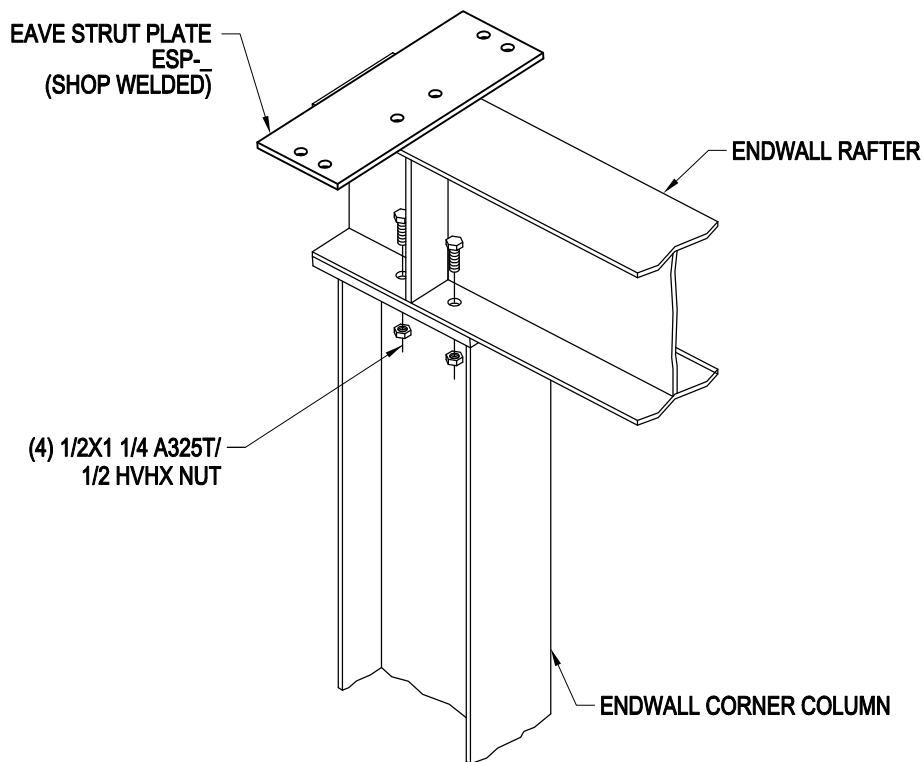
EF18A
AA

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[To Section Index](#)

Corner Column Connection to Rafter (Flush or Inset Girts)
Beam & Column Endwall with Rafter Extended Above Column
EF20/AA

NOTE:
LOW SIDE SHOWN, HIGH SIDE SIMILAR



CORNER COLUMN CONNECTION TO RAFTER (FLUSH or INSET GIRTS)
BEAM & COLUMN ENDWALL WITH RAFTER EXTENDED ABOVE COLUMN

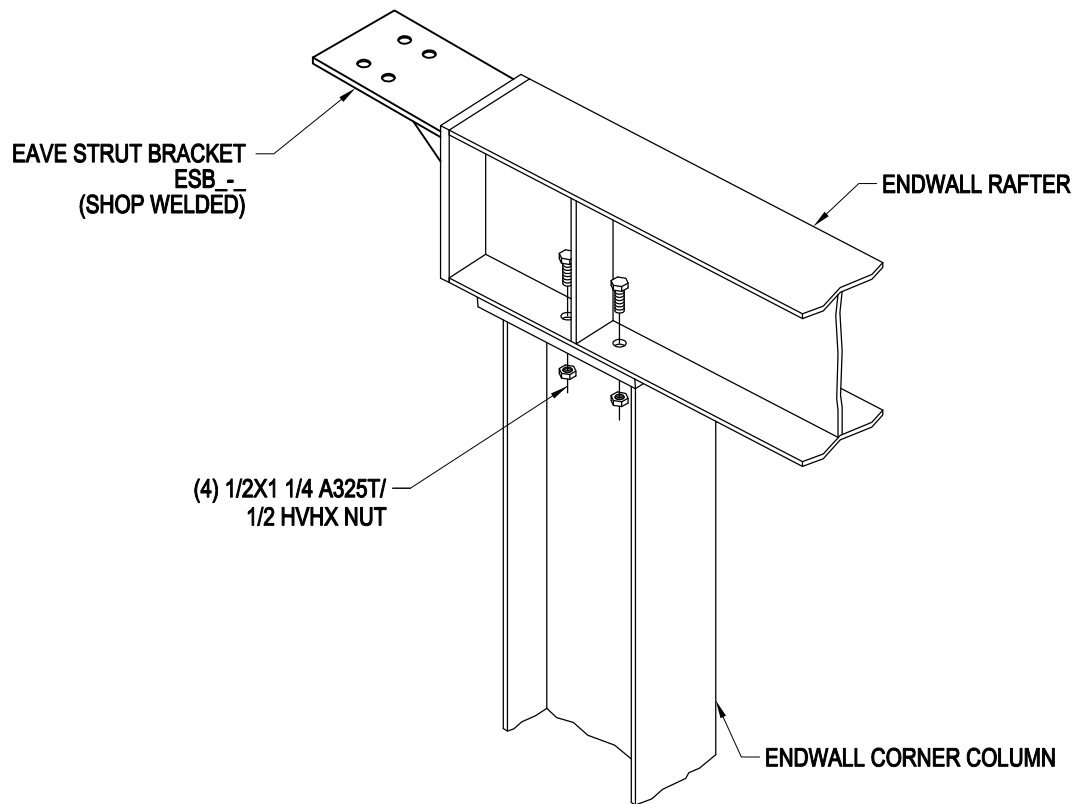
EF20
AA

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[To Section Index](#)

Corner Column Connection to Rafter (Bypass Girts)
Beam & Column Endwall with Rafter Extended Above Column
EF20R/AA

NOTE:
LOW SIDE SHOWN, HIGH SIDE SIMILAR



CORNER COLUMN CONNECTION TO RAFTER (BYPASS GIRTS)
BEAM & COLUMN ENDWALL WITH RAFTER EXTENDED ABOVE COLUMN

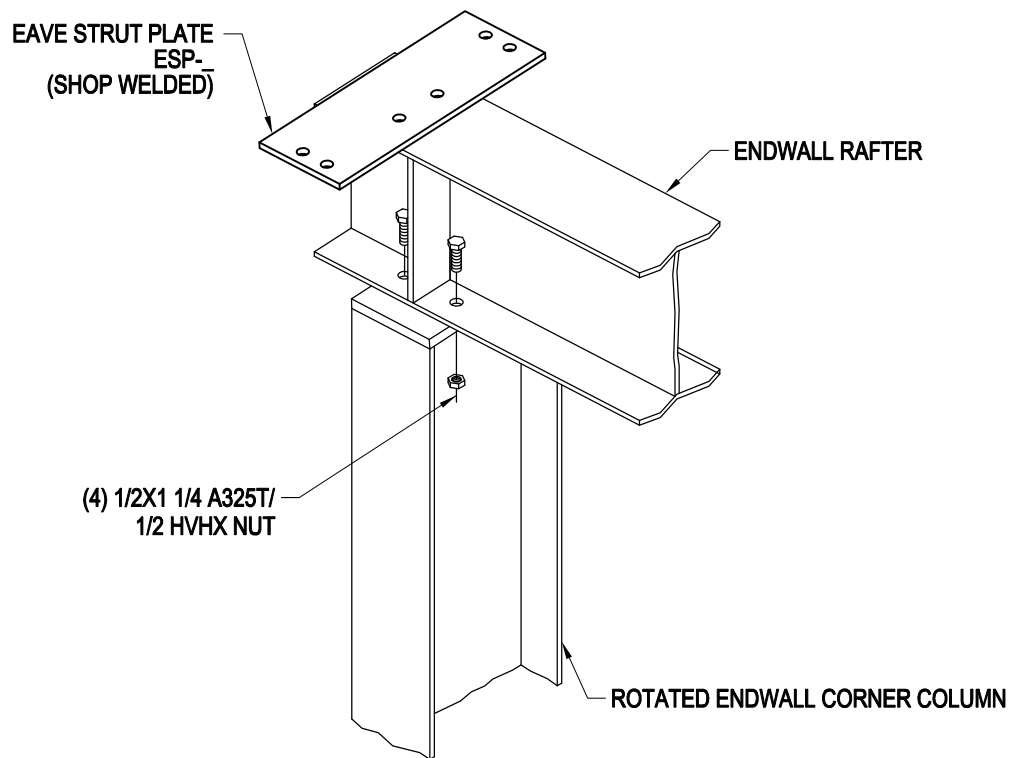
EF20R
AA

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[To Section Index](#)

Rotated Corner Column Connection to Rafter (Flush or Inset Girts)
Beam & Column Endwall with Rafter Extended Above Column
EF21/AA

NOTE:
LOW SIDE SHOWN, HIGH SIDE SIMILAR



ROTATED CORNER COLUMN CONNECTION TO RAFTER (FLUSH or INSET GIRTS)
BEAM & COLUMN ENDWALL WITH RAFTER EXTENDED ABOVE COLUMN

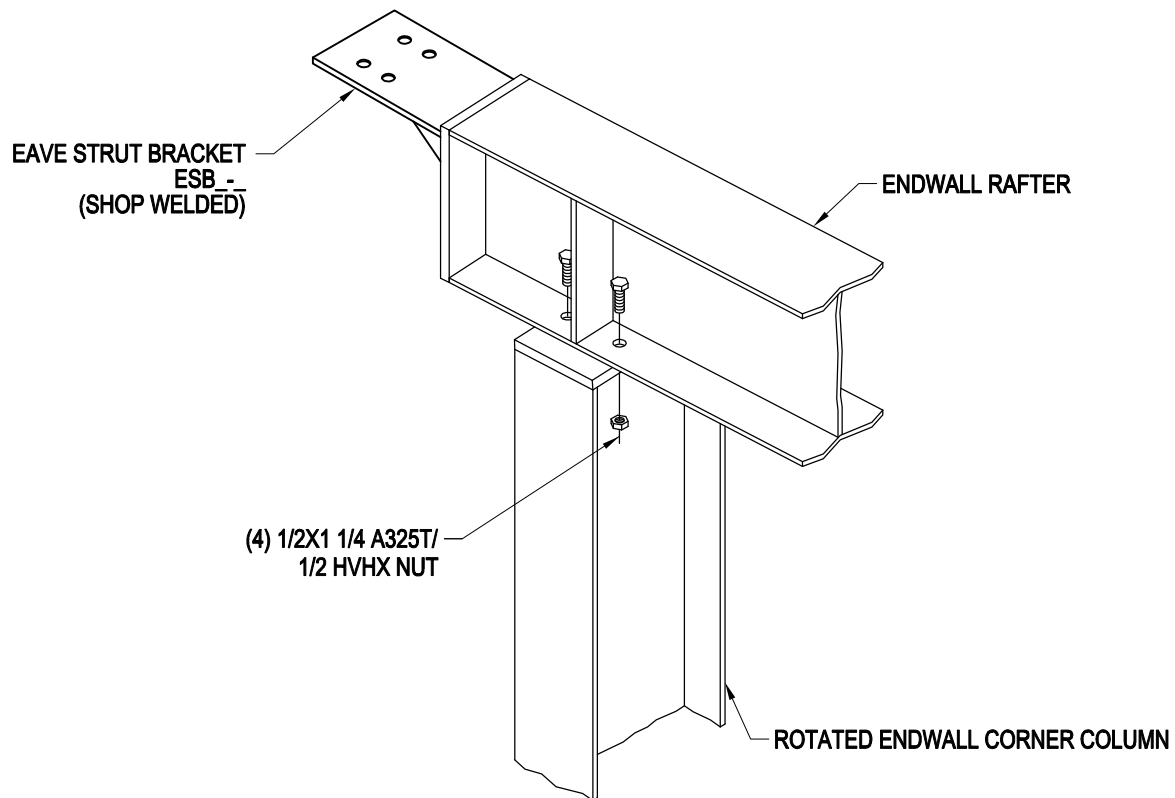
EF21
AA

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[To Section Index](#)

Rotated Corner Column Connection to Rafter (Bypass Girts)
Beam & Column Endwall with Rafter Extended Above Column
EF21R/AA

NOTE:
LOW SIDE SHOWN, HIGH SIDE SIMILAR



ROTATED CORNER COLUMN CONNECTION TO RAFTER (BYPASS GIRTS)
BEAM & COLUMN ENDWALL WITH RAFTER EXTENDED ABOVE COLUMN

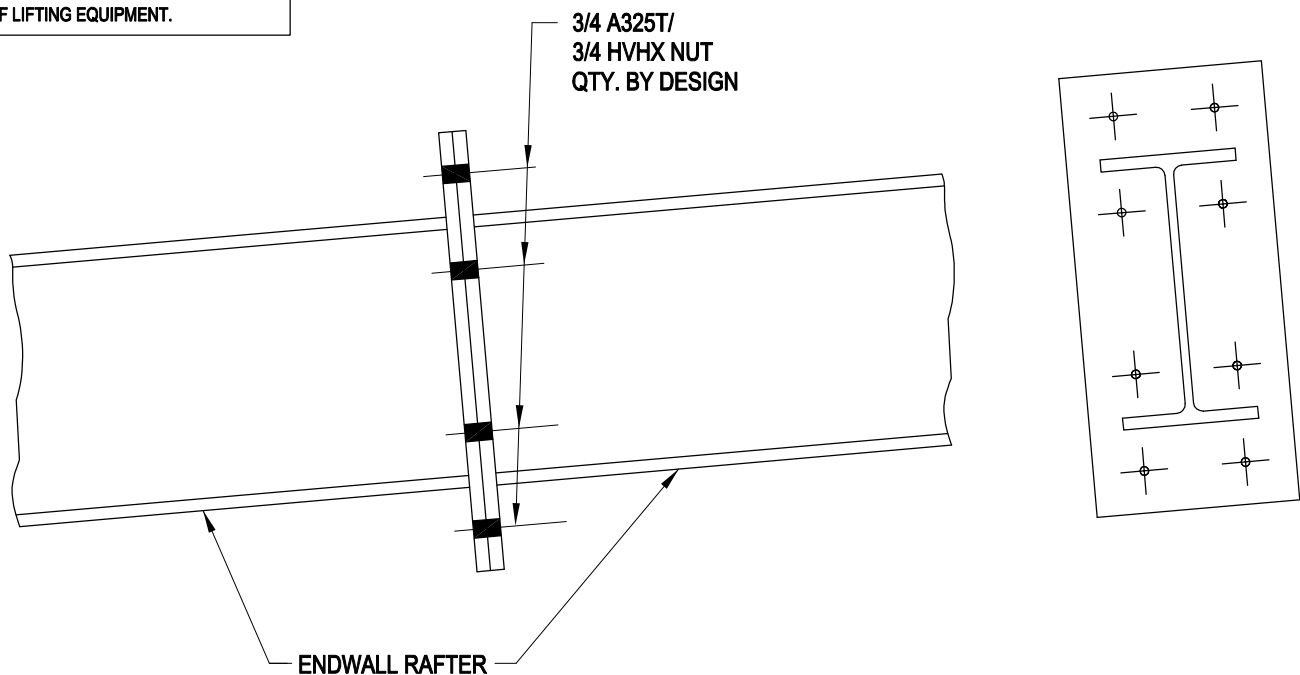
EF21R
AA

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[To Section Index](#)

Endwall Rafter Splice Detail
Rafter to Rafter Connection
EF22/AA

SAFETY PRECAUTION:
WORKERS SHOULD BE TRAINED IN
THE CORRECT AND SAFE OPERATION
OF LIFTING EQUIPMENT.



ENDWALL RAFTER SPLICE DETAIL
RAFTER TO RAFTER CONNECTION

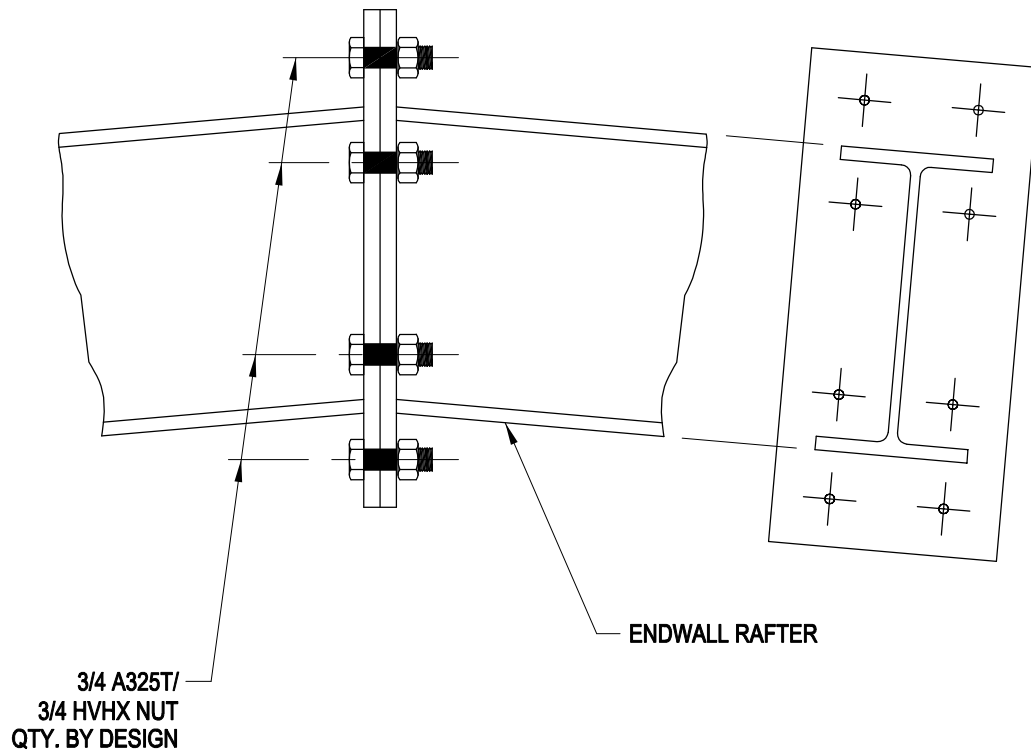
EF22
AA

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[To Section Index](#)

Endwall Rafter Ridge Detail (Hot Rolled and Built-Up)
Rafter w/ Ridge Splice Plate
EF23/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



ENDWALL RAFTER RIDGE DETAIL (HOT ROLLED AND BUILT-UP)
RAFTER W/RIDGE SPLICE PLATE

EF23
AA

[Download the DWG file by clicking here.](#)

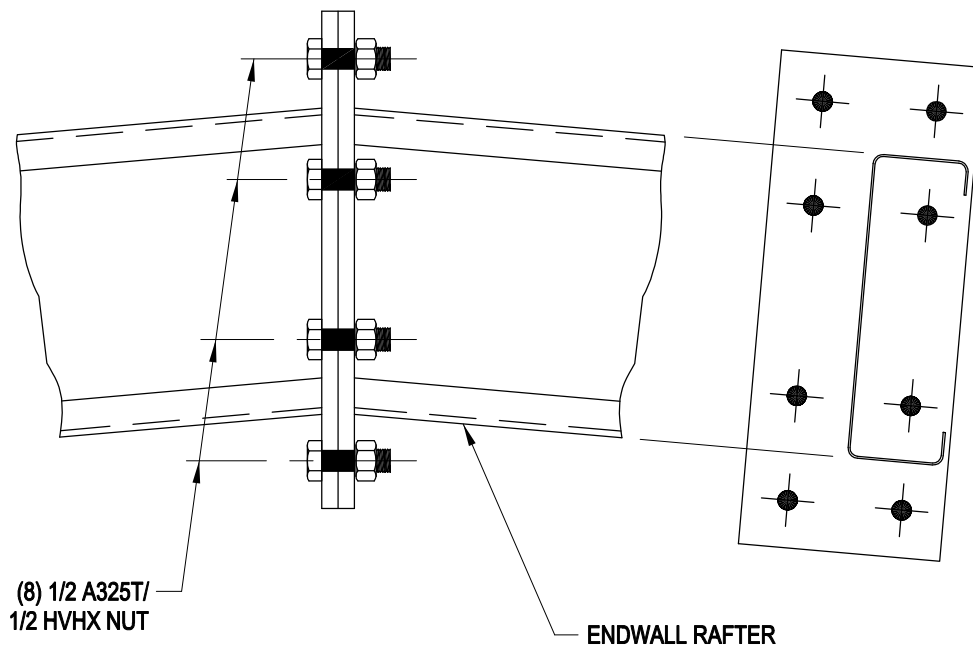
[To Section Index](#)

Endwall Rafter Ridge Detail (Cold Formed)

Rafter w/ Ridge Splice Plate

EF23A/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



ENDWALL RAFTER RIDGE DETAIL (COLD FORMED)

RAFTER W/RIDGE SPLICE PLATE

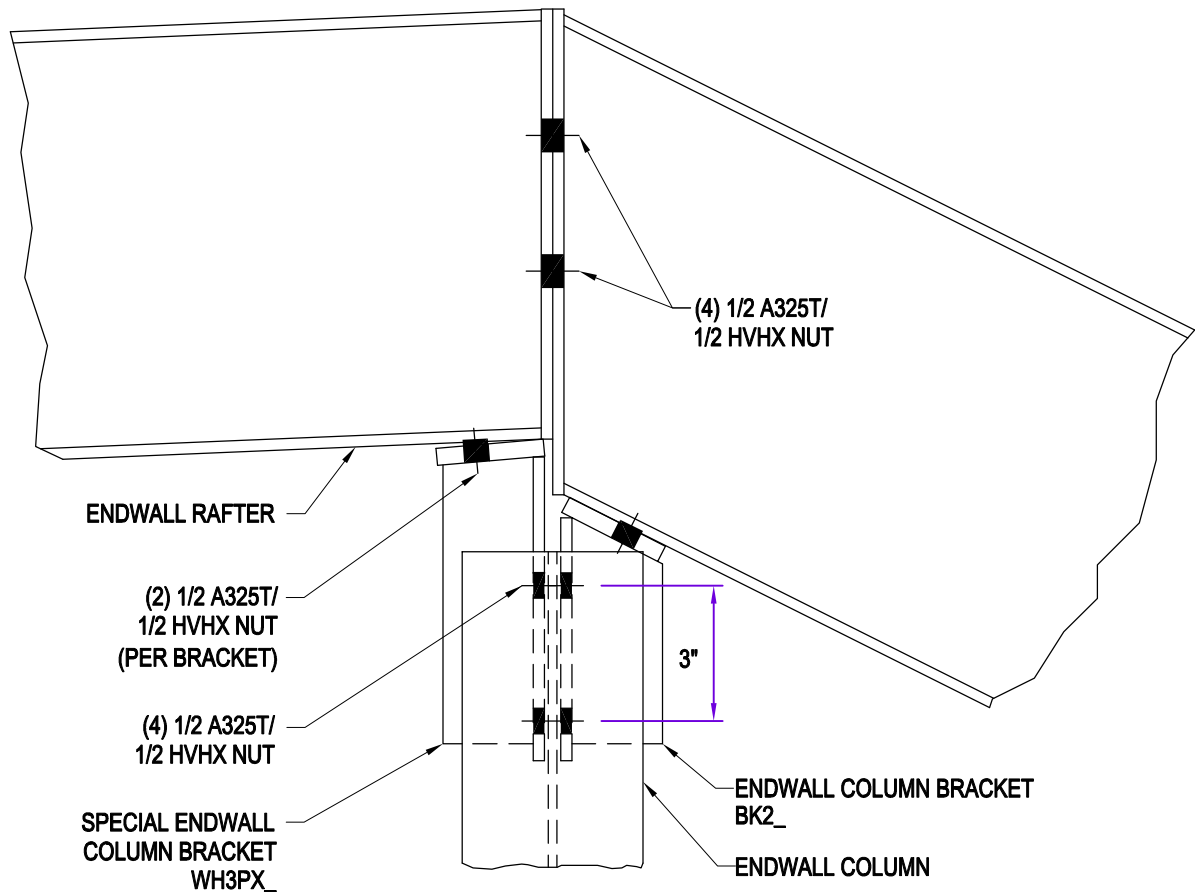
EF23A

AA

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[To Section Index](#)

Endwall Interior Column Connection (Hot Rolled or Built-Up)
At Ridge
EF24Y/AA



ENDWALL INTERIOR COLUMN CONNECTION (HOT ROLLED OR BUILT-UP)

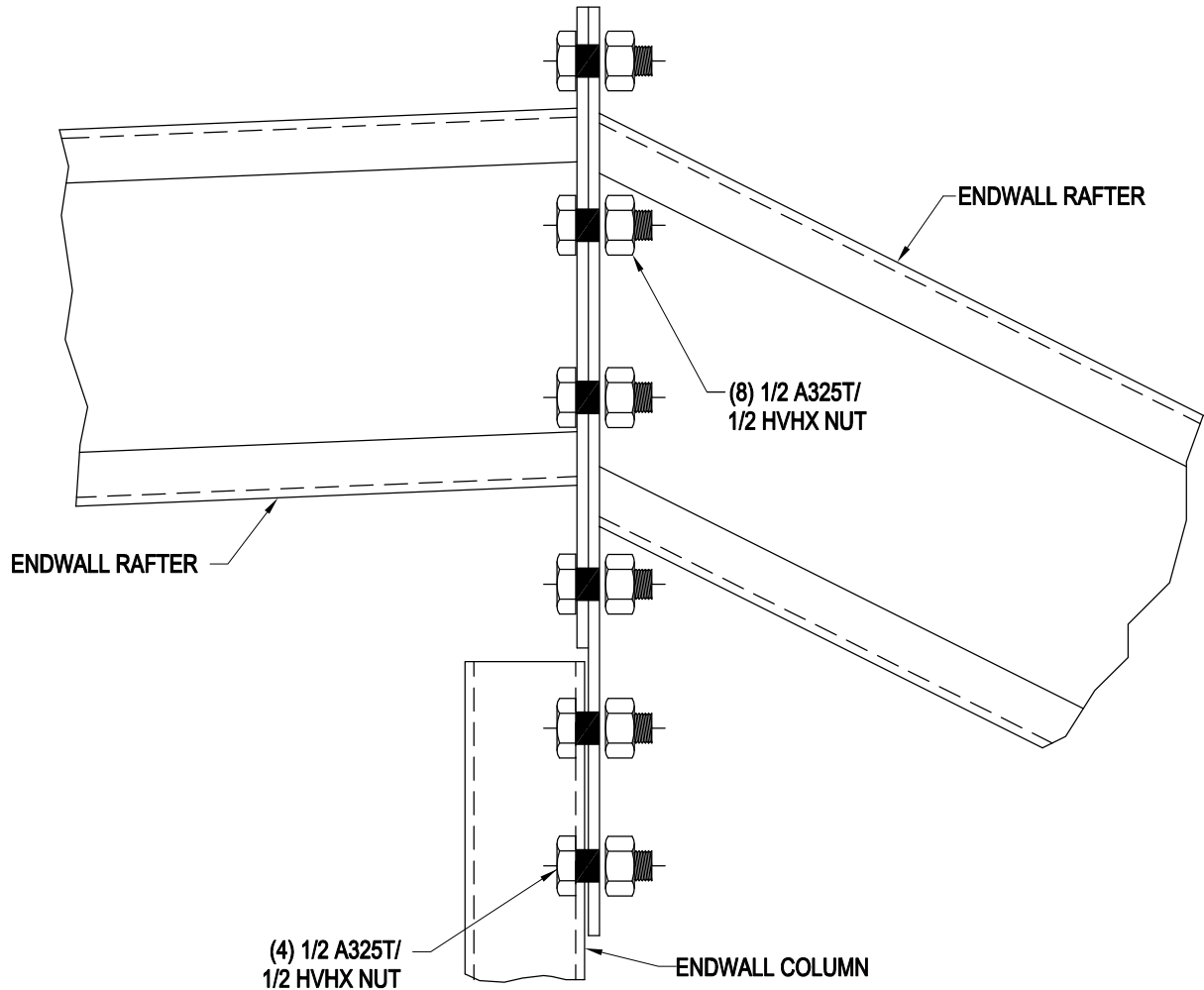
AT RIDGE

EF24Y
AA

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[To Section Index](#)

Endwall Interior Column Connection (Cold Formed)
At Unsymmetrical Ridge
EF24YA/AA



ENDWALL INTERIOR COLUMN CONNECTION (COLD FORMED)
AT UNSYMMETRICAL RIDGE

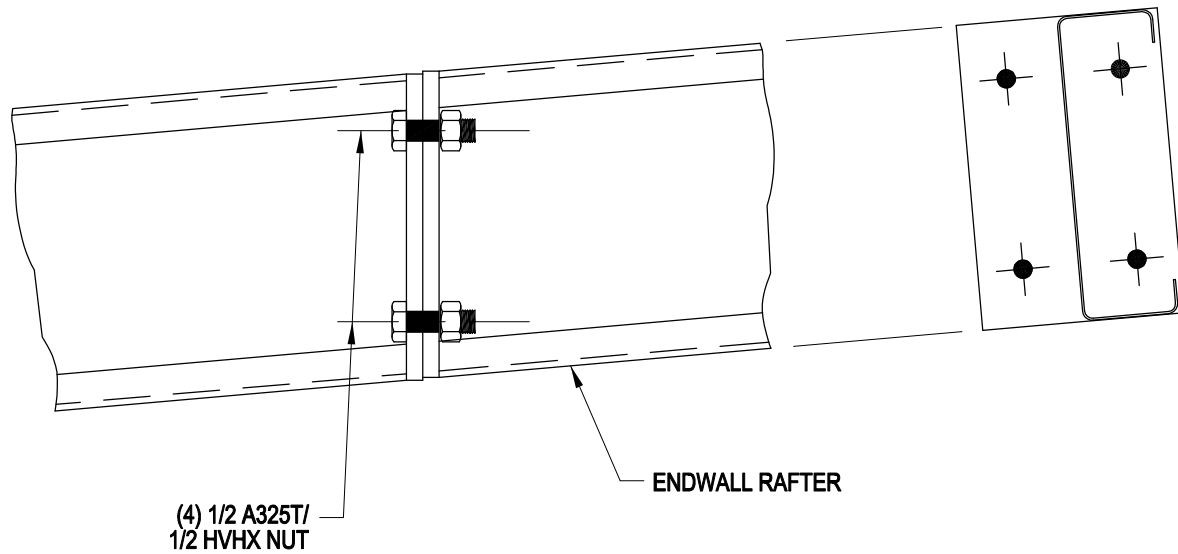
EF24YA
AA

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[To Section Index](#)

Endwall Rafter Splice Detail (Cold Formed)
Rafter w/ Intermediate Splice Plate
EF25/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



ENDWALL RAFTER SPLICE DETAIL (COLD FORMED)

RAFTER w/INTERMEDIATE SPLICE PLATE

EF25

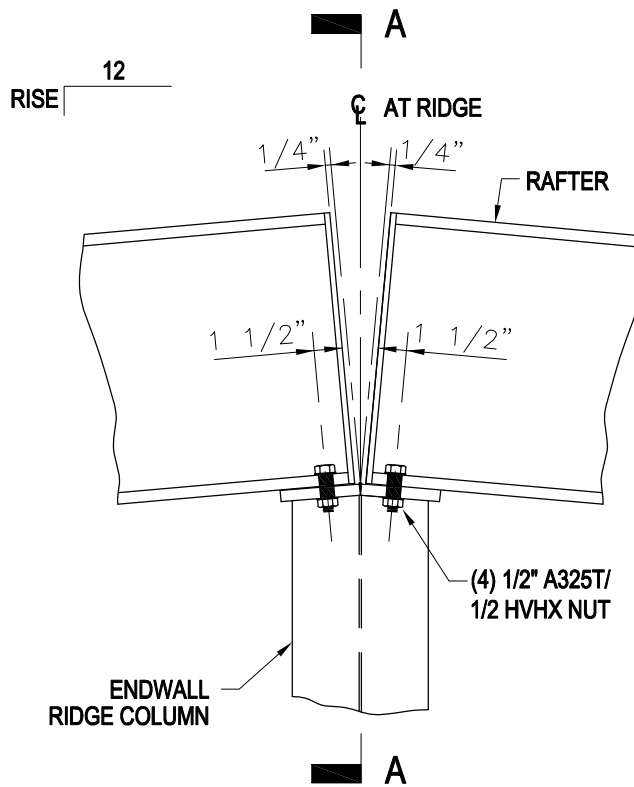
AA

[Download the DWG file by clicking here.](#)

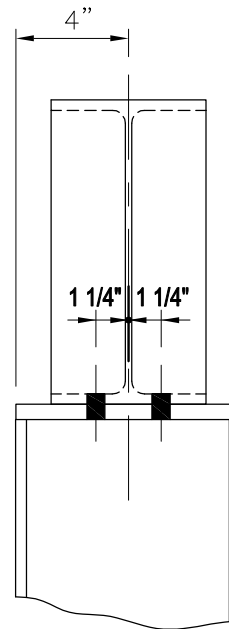
[To Section Index](#)

Ridge Column Connection to Rafter

EF26/AA



SAFETY PRECAUTION:
STAY CLEAR OF ANY MOVING LOAD.
MAKE CERTAIN ALL FRAMING IS PROPERLY
BRACED OR GUYED BEFORE LIFTING LINES
ARE REMOVED.



SECTION A-A

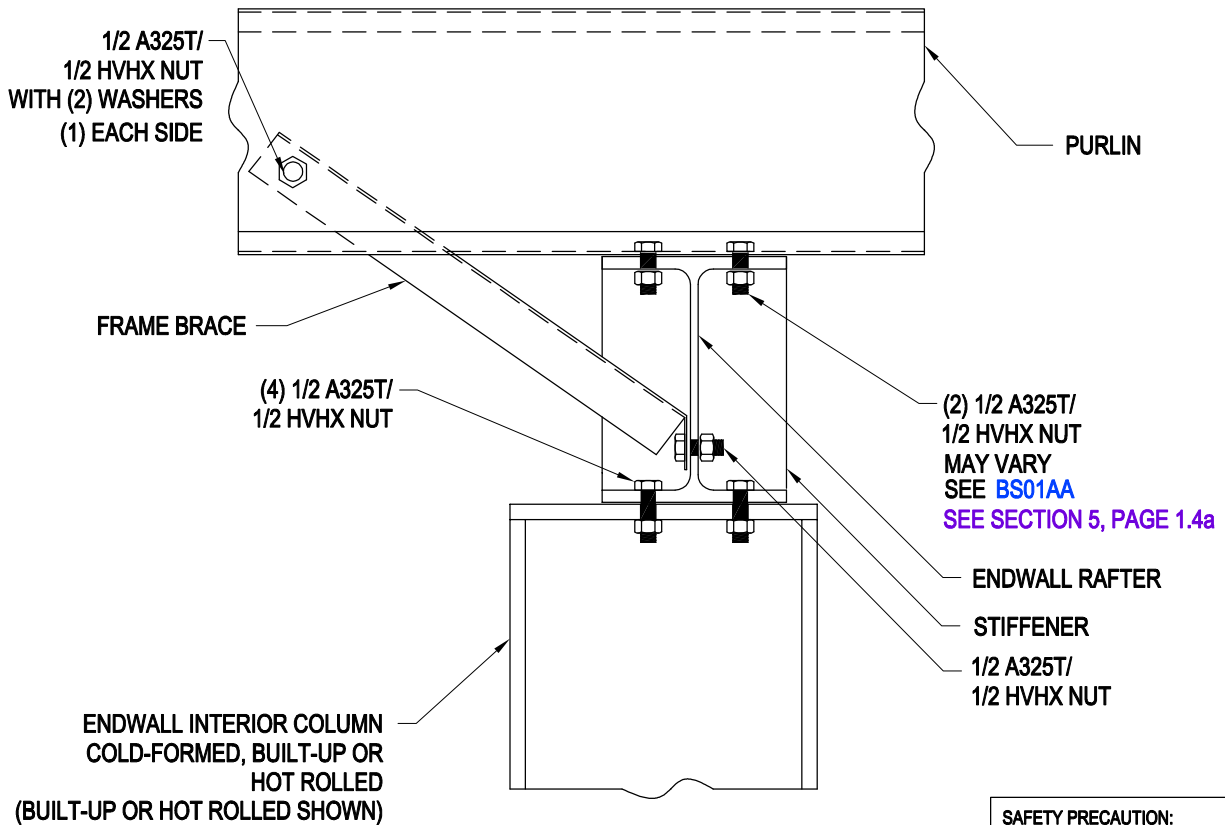
RIDGE COLUMN CONNECTION TO RAFTER

EF26
AA

[Download the DWG file by clicking here.](#)

[To Section Index](#)

Endwall Interior Column Connection Detail
Column to Rafter Connection
EF26W/AA



SAFETY PRECAUTION:
WORKERS SHOULD BE TRAINED IN
THE PROPER ERECTION PROCEDURES
FOR ALL JOBS.

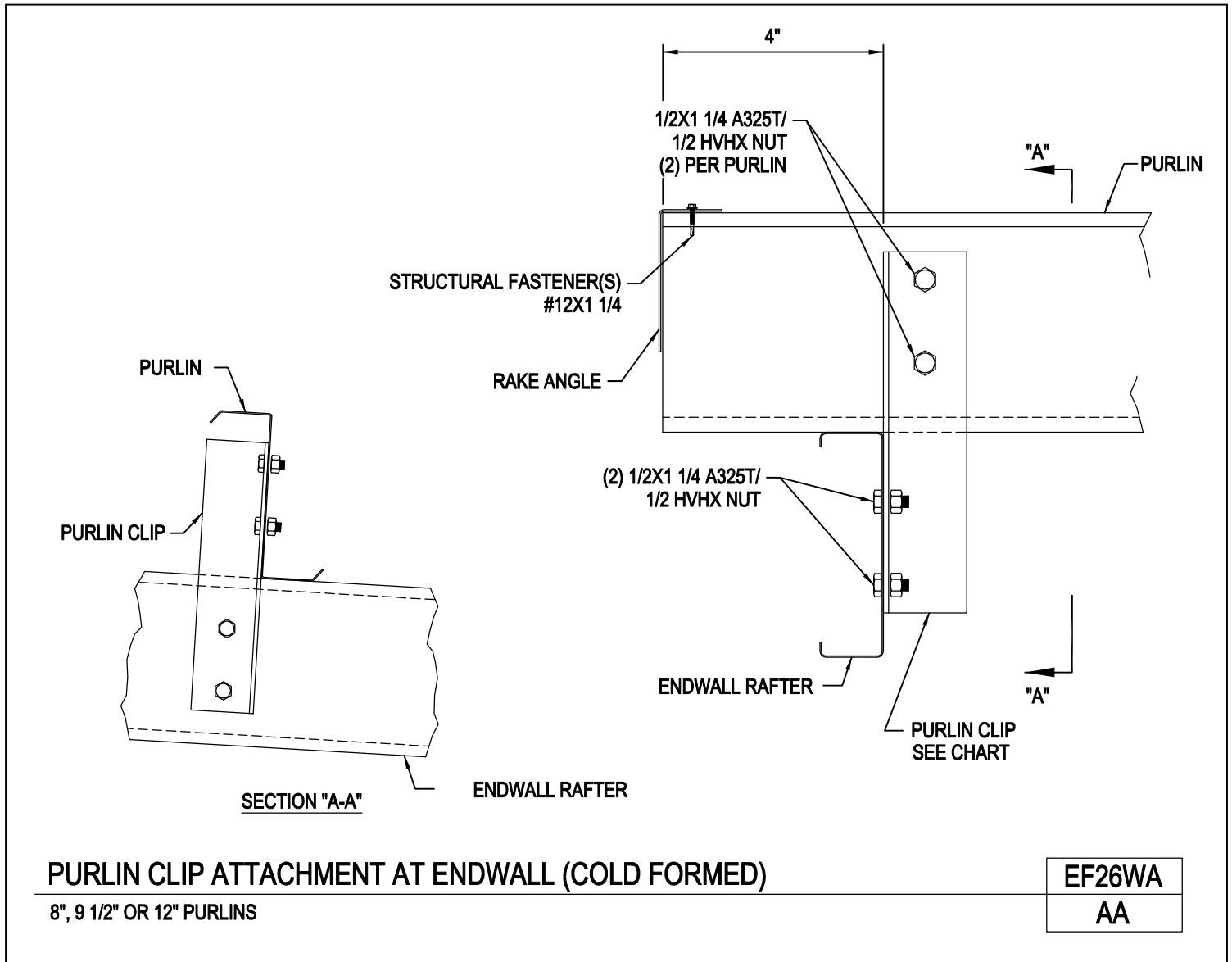
ENDWALL INTERIOR COLUMN CONNECTION DETAIL
COLUMN TO RAFTER CONNECTION

EF26W
AA

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[To Section Index](#)

Purlin Clip Attachment at Endwall (Cold Formed)
8", 9 1/2" or 12" Purlins
EF26WA/AA



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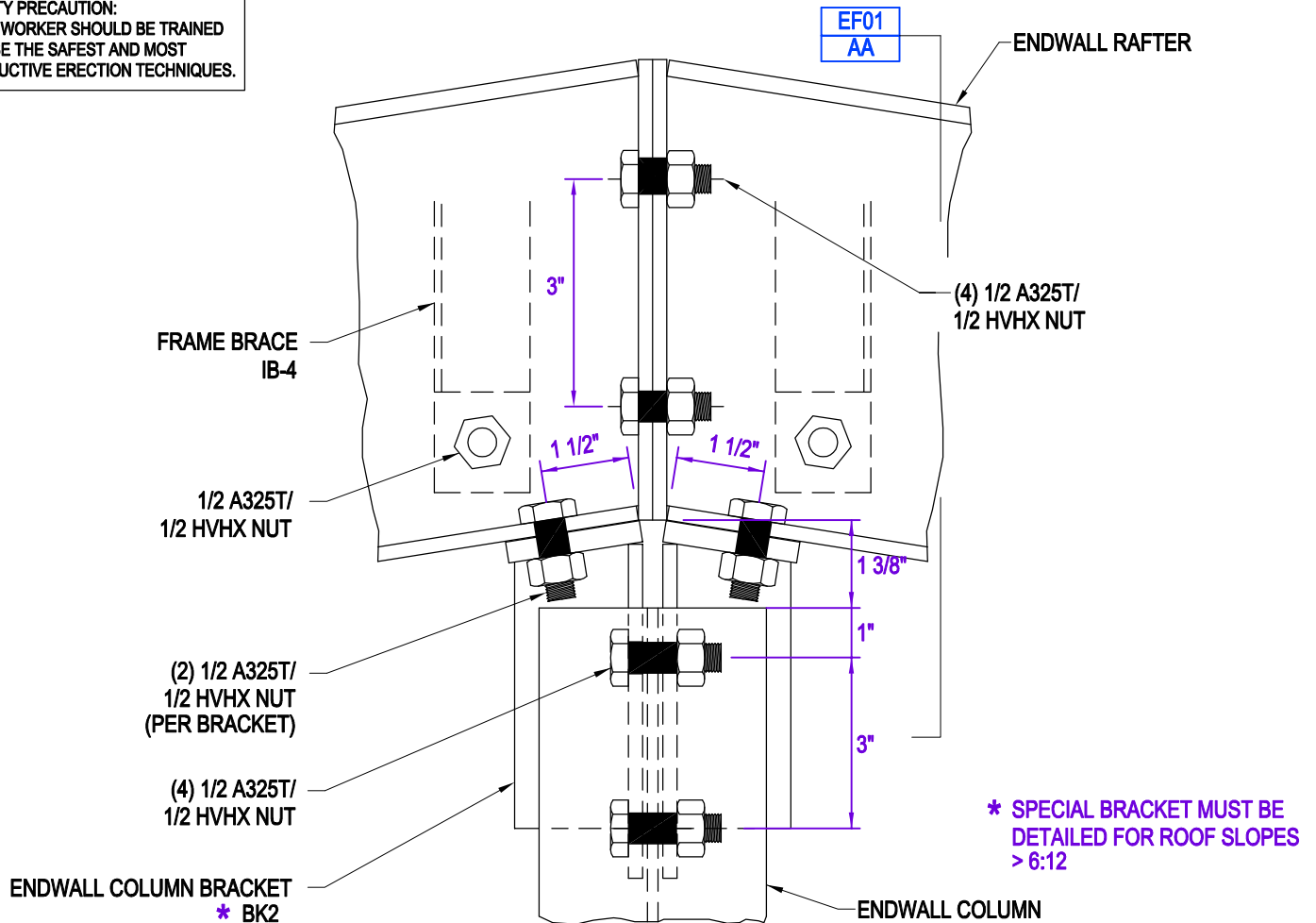
[To Section Index](#)

Endwall Interior Column Bracket Connection

At Ridge

EF26Y/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



ENDWALL INTERIOR COLUMN BRACKET CONNECTION

AT RIDGE

EF26Y

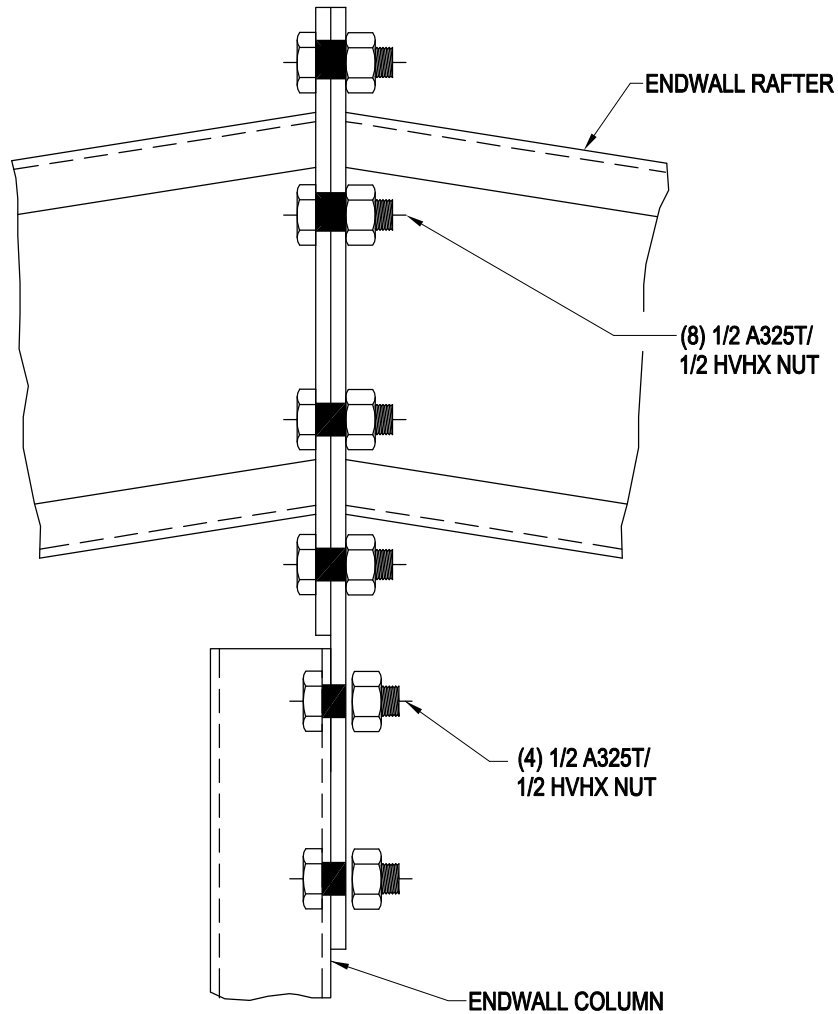
AA

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[To Section Index](#)

Endwall Interior Column Connection (Cold Formed)
At Ridge
EF26YA/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



ENDWALL INTERIOR COLUMN CONNECTION (COLD FORMED)

AT RIDGE

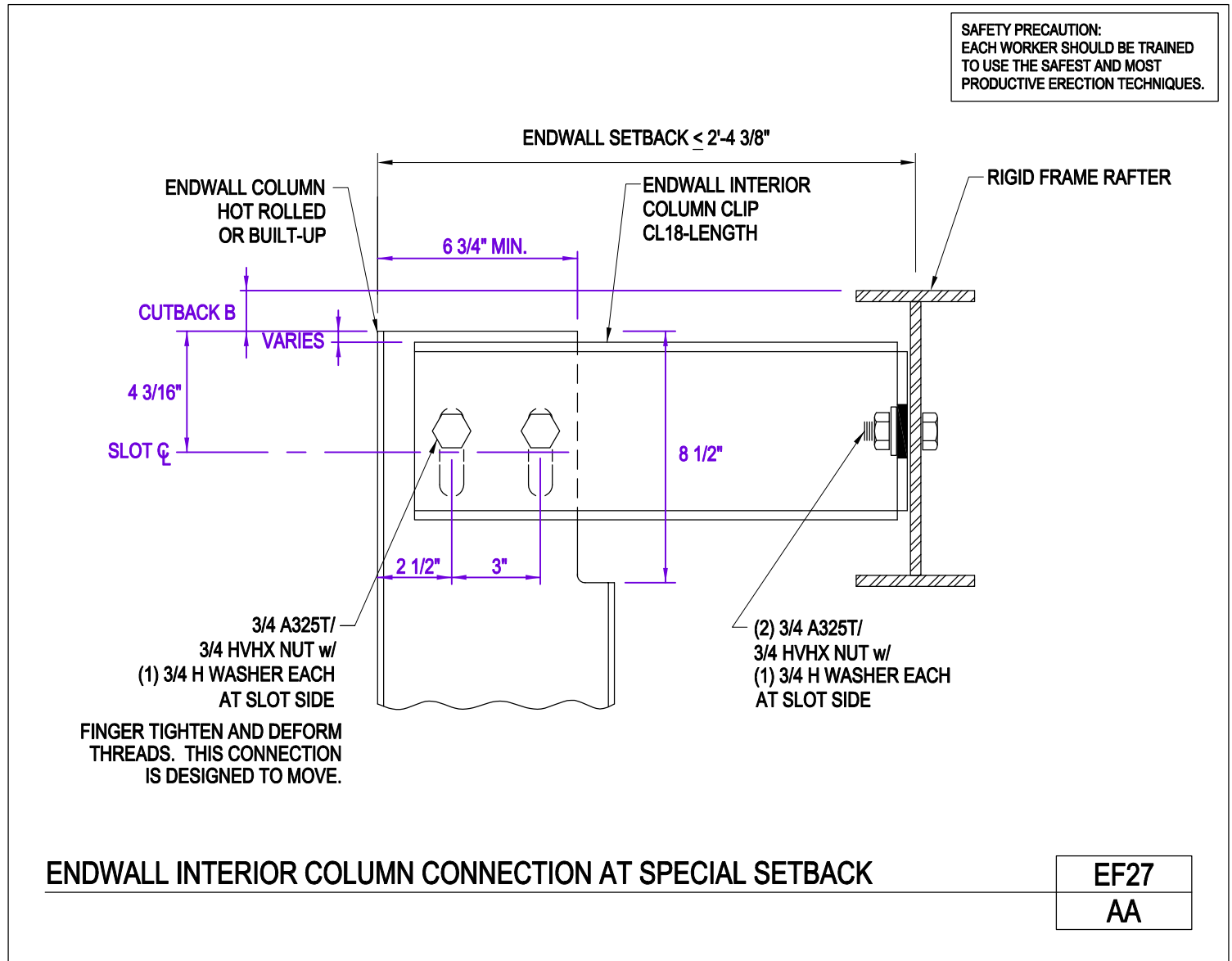
EF26YA
AA

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[To Section Index](#)

Endwall Interior Column Connection at Special Setback

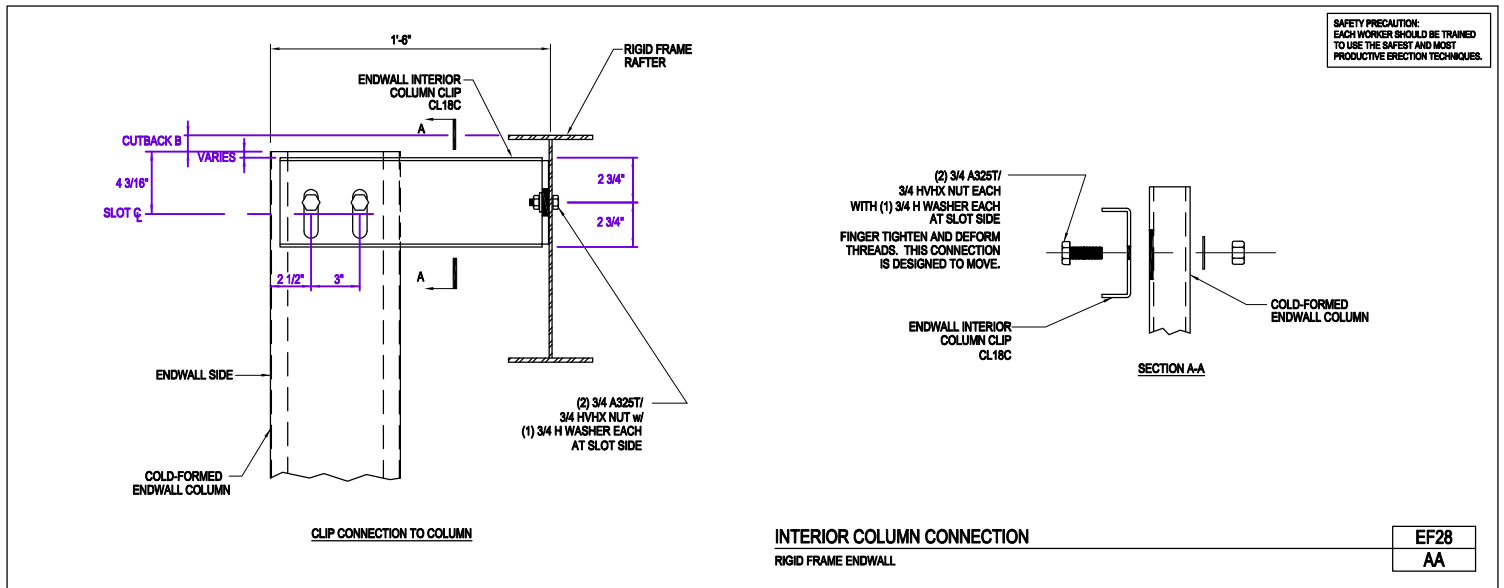
EF27/AA



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[To Section Index](#)

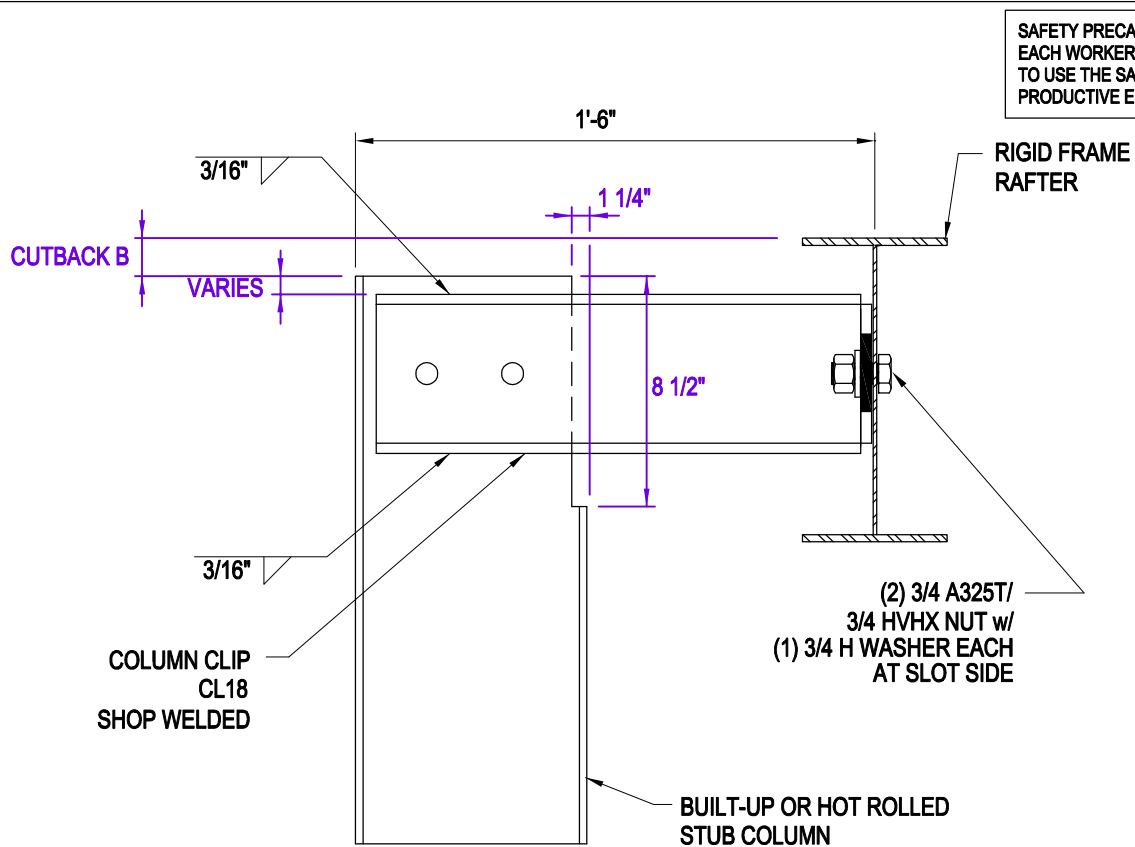
Interior Column Connection
Rigid Frame Endwall
EF28/AA



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[To Section Index](#)

Interior Column Connection w/ Welded Clip
Rigid Frame Type V Endwall Interior Column
EF28A/AA



SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.

OVERALL LENGTH NOT TO EXCEED 2'-3 1/2"
WITHOUT DESIGN APPROVAL

SEE GABLE KNEE BRACE DETAILS FOR
FRAME BRACE/"KICKER" REQUIREMENTS.
BY DESIGN.

INTERIOR COLUMN CONNECTION w/WELDED CLIP

RIGID FRAME TYPE V ENDWALL INTERIOR COLUMN

EF28A

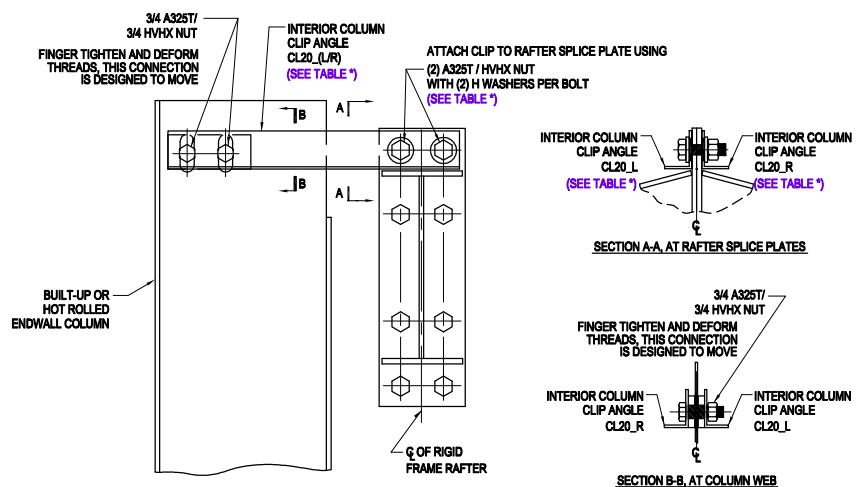
AA

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[To Section Index](#)

Rigid Frame Endwall with Center Column
Column to Rafter Connection using CL20_(L/R)
EF29/AA

SAFETY PRECAUTION:
EACH WORKER SHOULD BE TRAINED
TO USE THE SAFEST AND MOST
PRODUCTIVE ERECTION TECHNIQUES.



CLIP ANGLE	A325T BOLTS	HVHX NUT	WASHER
(1) EACH L/R	(2) PER SPLICE PLATE	(1) PER BOLT	(2) PER BOLT
CL20AL CL20AR	3/4 A325T	3/4 HVHX NUT	3/4 WASHERS
CL20BL CL20BR	7/8 A325T	7/8 HVHX NUT	7/8 WASHERS
CL20CL CL20CR	1 A325T	1 HVHX NUT	1 WASHERS

RIGID FRAME ENDWALL WITH CENTER COLUMN

COLUMN TO RAFTER CONNECTION USING CL20_(L/R)

EF29

AA

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[To Section Index](#)



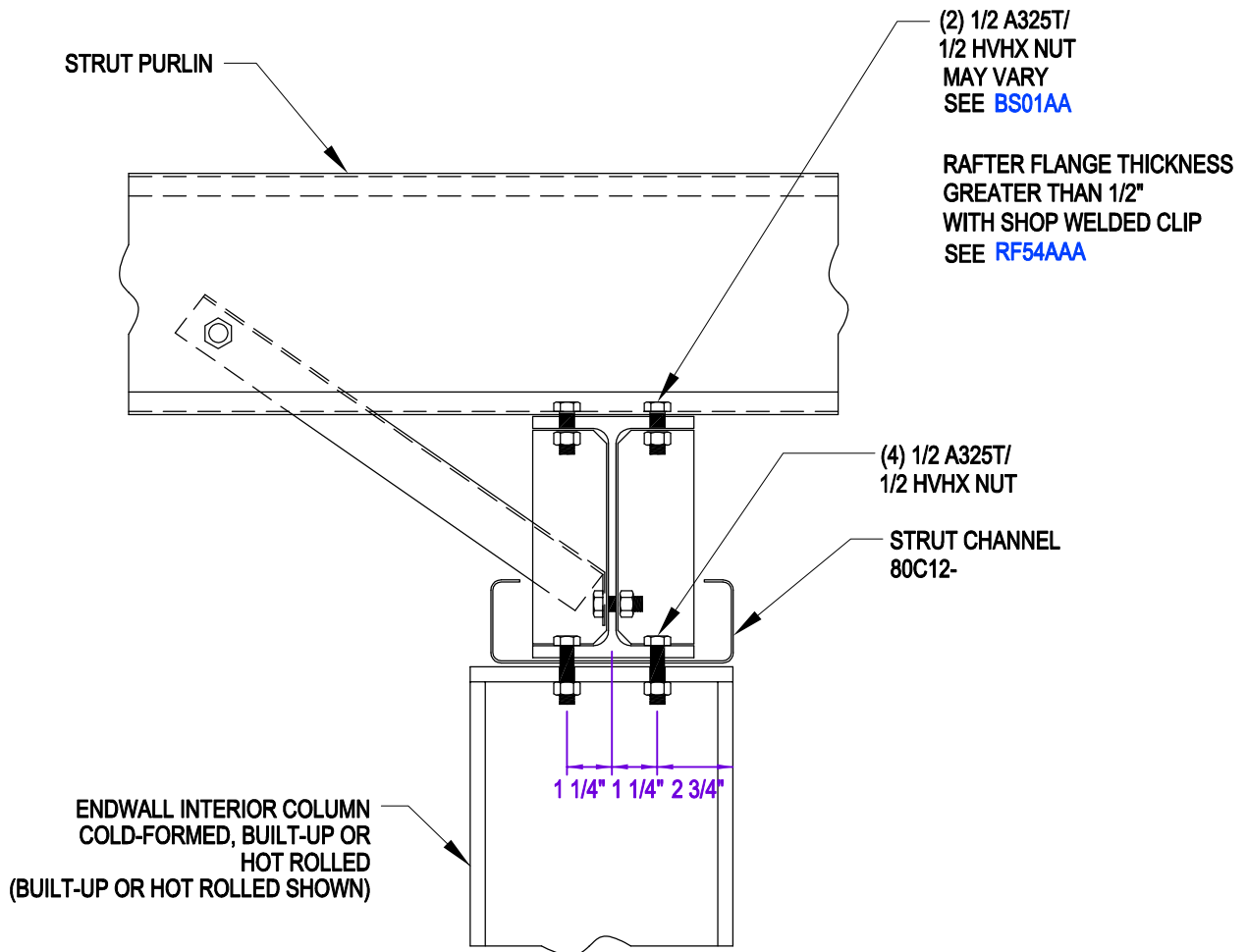
PRIMARY FRAMING

EF30/AA



Issued 9/28/2016

Section at Column w/ Strut Channel
Endwall Rafter
EF31/AA



SECTION AT COLUMN w/ STRUT CHANNEL

ENDWALL RAFTER

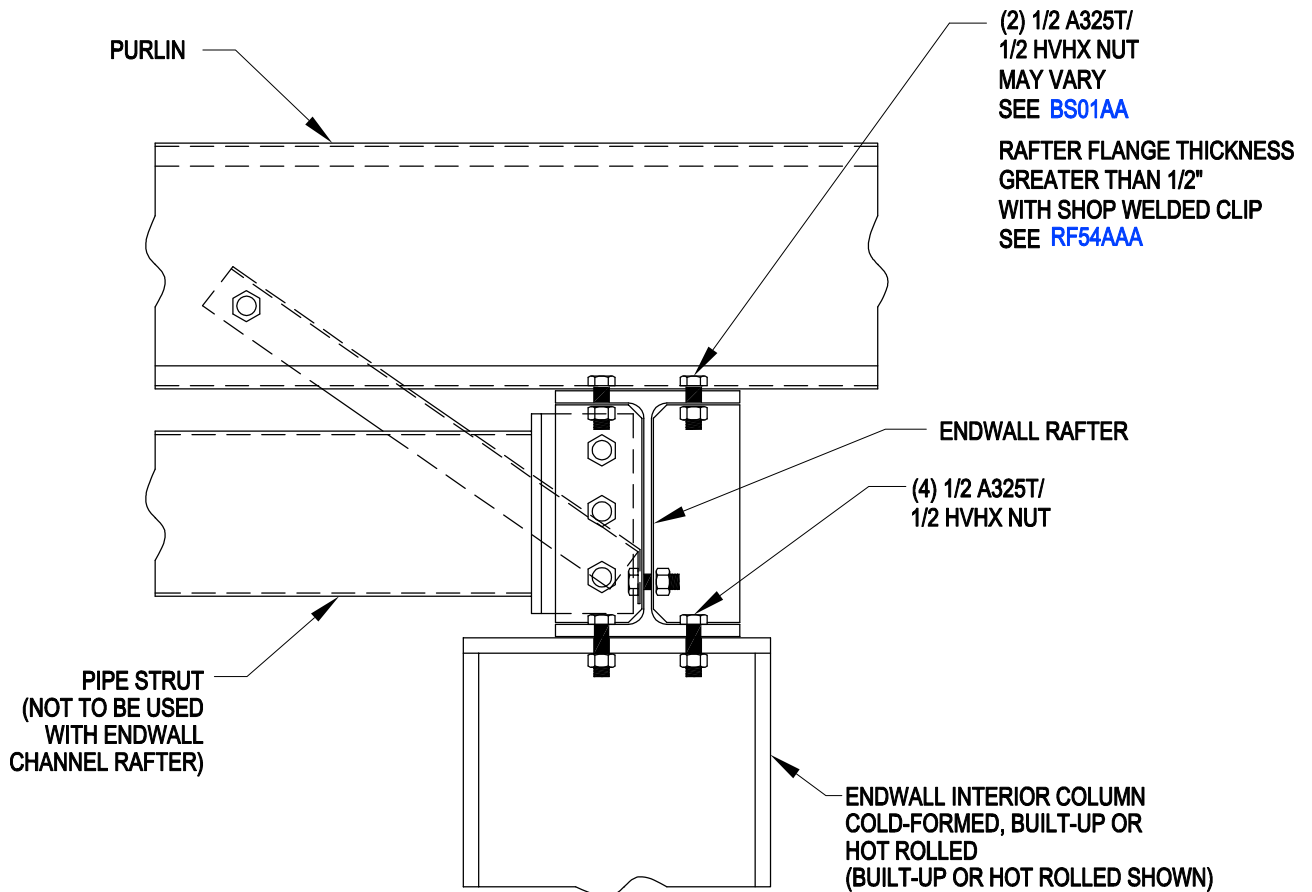
EF31
AA

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[To Section Index](#)

Section at Endwall Column w/ Pipe Strut

EF32/AA



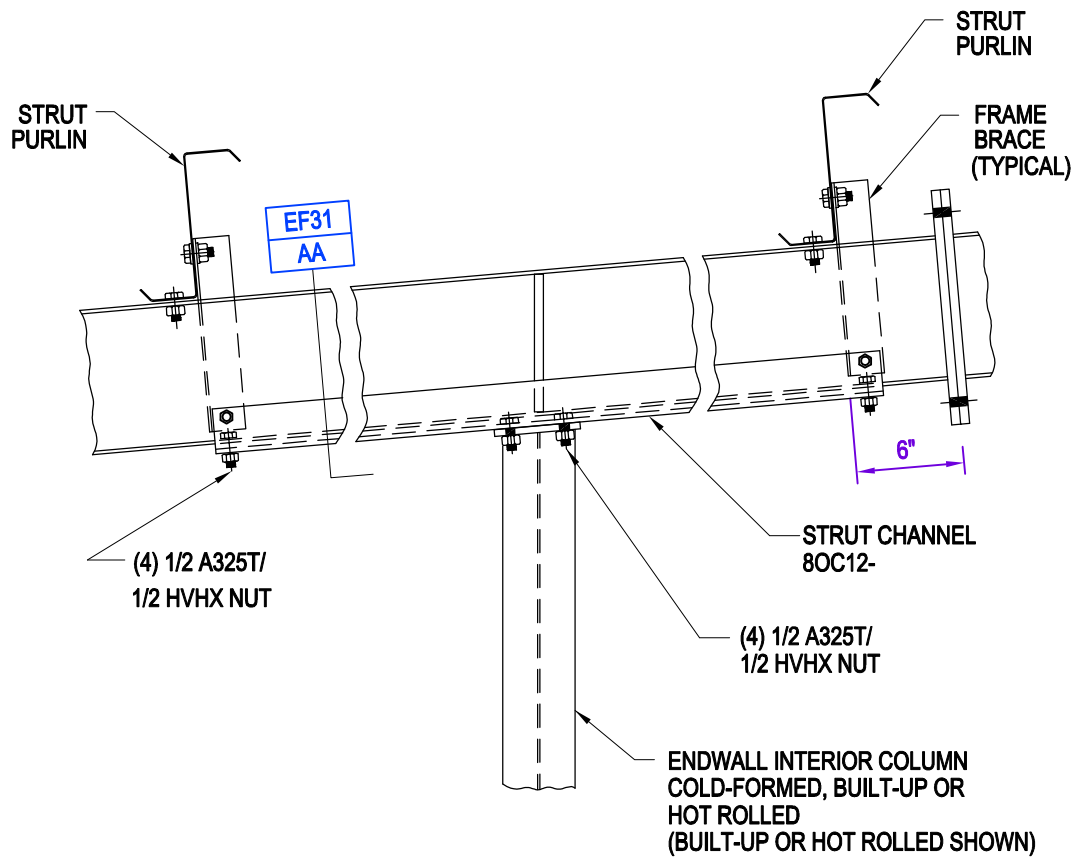
SECTION AT ENDWALL COLUMN w/ PIPE STRUT

EF32
AA

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[To Section Index](#)

Type 'C'
Endwall Rafter
EF33/AA



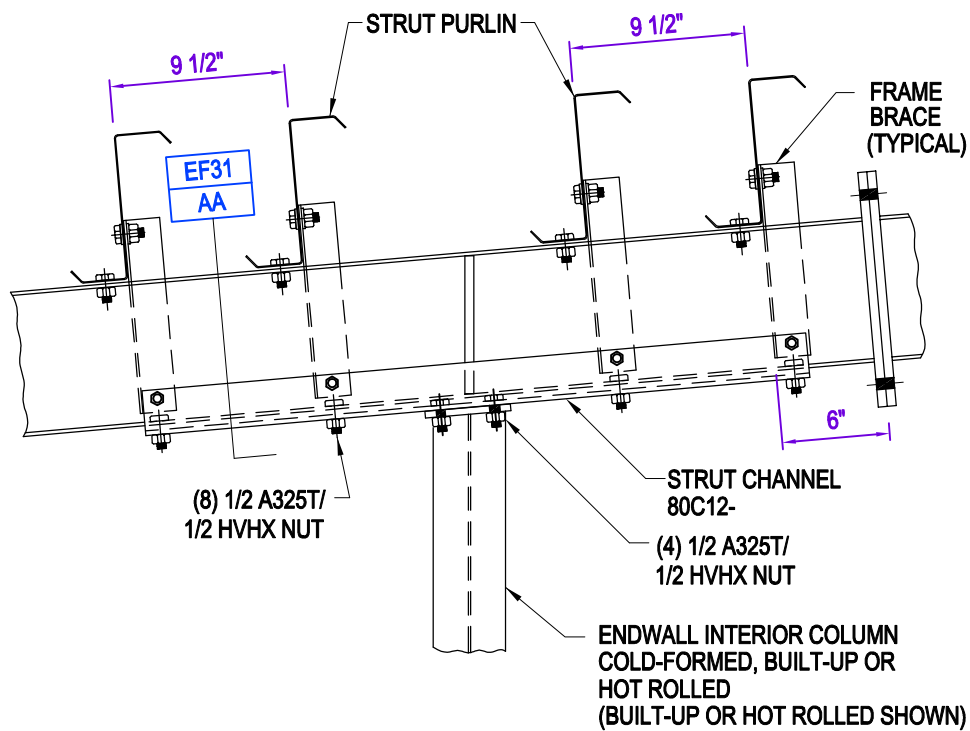
TYPE 'C'
ENDWALL RAFTER

EF33
AA

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[To Section Index](#)

Type 'CS'
Endwall Rafter
EF33A/AA



SEE BR09AA or BA
PURLIN BRACE (IF REQUIRED) NOT SHOWN FOR CLARITY

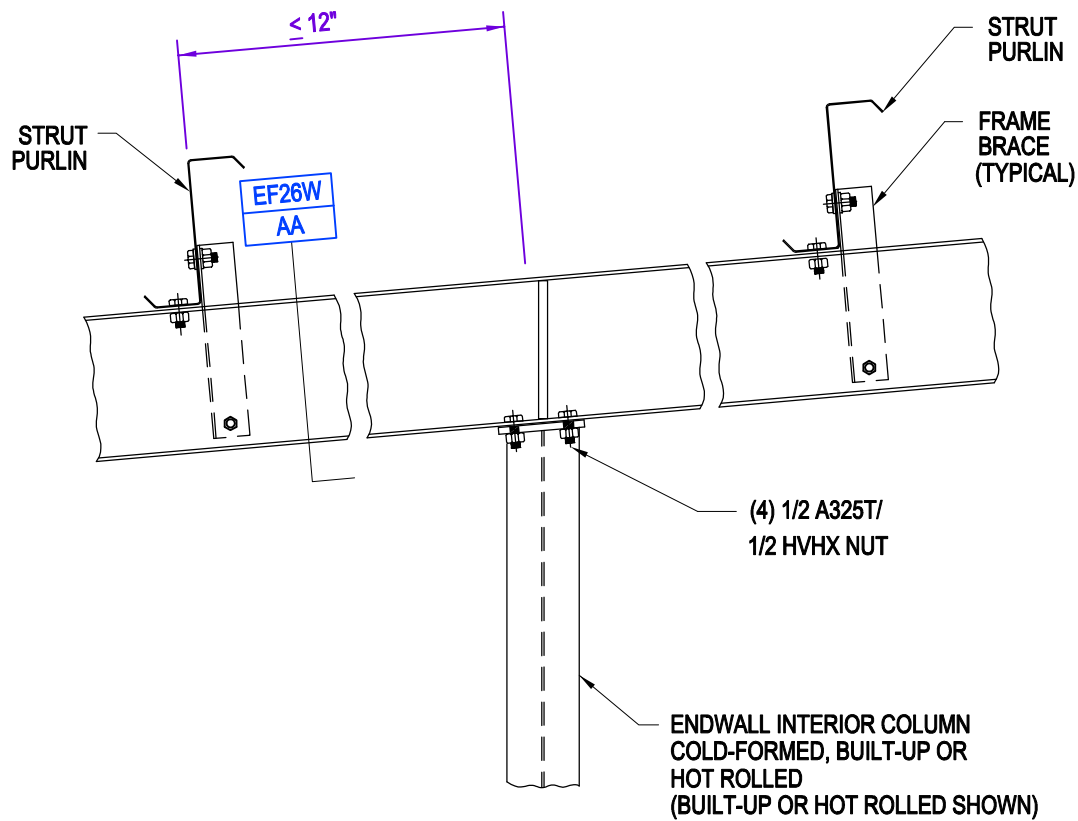
TYPE 'CS'
ENDWALL RAFTER

EF33A
AA

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[To Section Index](#)

Type 'N'
Endwall Rafter
EF34/AA



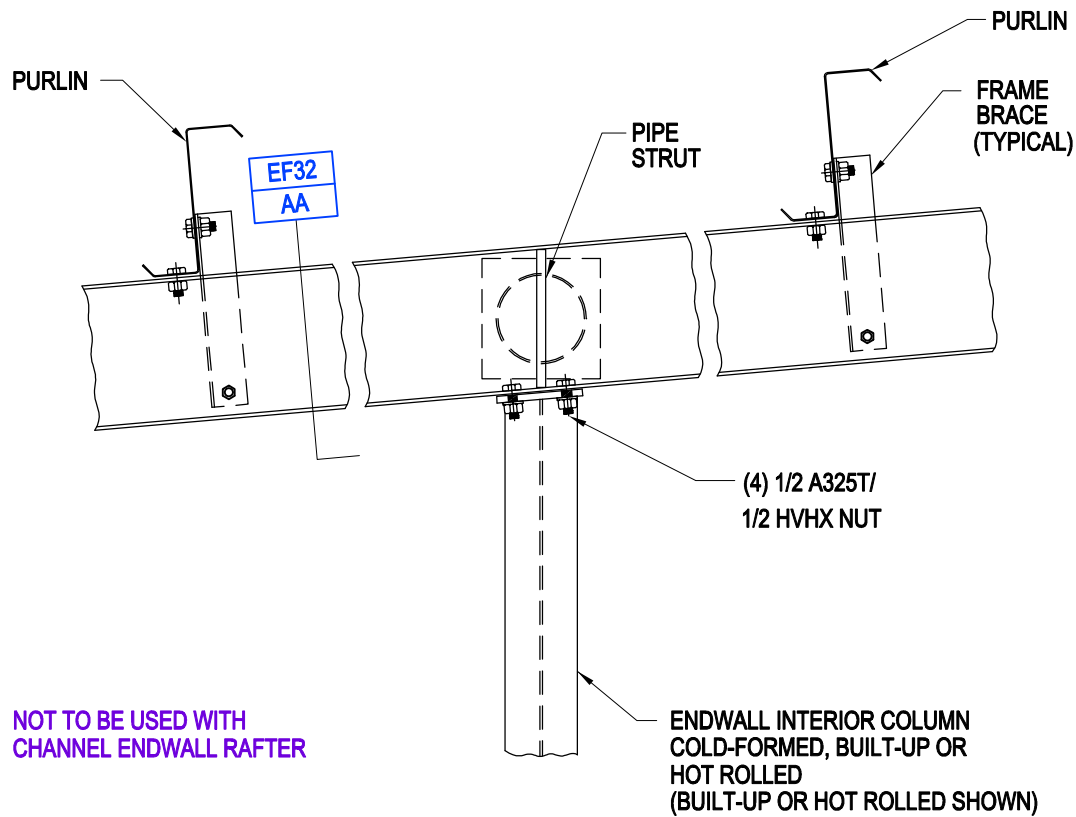
TYPE 'N'
ENDWALL RAFTER

EF34
AA

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[To Section Index](#)

Type 'P'
Endwall Rafter
EF35/AA



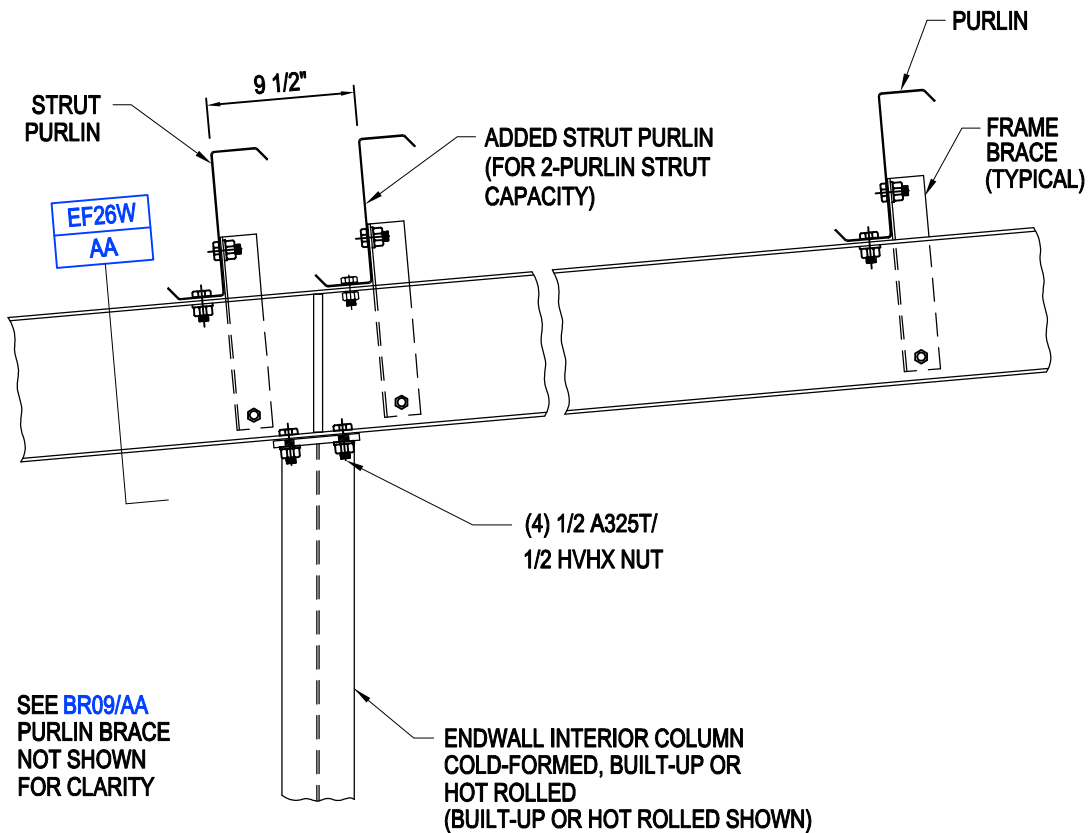
TYPE 'P'
ENDWALL RAFTER

EF35
AA

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[To Section Index](#)

Type 'S'
Endwall Rafter
EF36/AA



TYPE 'S'
ENDWALL RAFTER

EF36
AA

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[To Section Index](#)