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- AH1201 - BEAM TO BRACKET STD. CONNECTION (BEAM BY NBG)
- AH1202 - BEAM TO BRACKET HEAVY CONNECTION (BEAM BY NBG)
- AH1203 - BEAM TO BRACKET (BEAM NOT BY NBG)
- AH1210 - BEAM BRACING WITH NO BRACE STRUT (BEAM BY NBG)
- AH1211 - BEAM BRACING WITH NO BRACE STRUT (BEAM NOT BY NBG)
- AH1220 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)
- AH1221 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)
- AH1230 - BEAM BRACING WITH PIPE STRUT (BEAM BY NBG)
- AH1231 - BEAM BRACING WITH PIPE STRUT (BEAM NOT BY NBG)

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- AH1301 - BEAM TO AUXILIARY COLUMN STD. CONNECTION (BEAM BY NBG)
 - AH1302 - BEAM TO AUXILIARY COLUMN HEAVY CONNECTION (BEAM BY NBG)
 - AH1303 - BEAM TO AUXILIARY COLUMN (BEAM NOT BY NBG)
 - AH1310 - COLUMN TO AUXILIARY COLUMN CONNECTION
 - AH1320 - BEAM BRACING NO BRACE STRUT (BEAM BY NBG)
 - AH1321 - BEAM BRACING NO BRACE STRUT (BEAM NOT BY NBG)
 - AH1330 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)
 - AH1331 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)
-

DOUBLE AUXILIARY CRANE COLUMN DETAILS

- AH1401 - BEAM TO AUXILIARY COLUMN STD. CONNECTION (BEAM BY NBG)
- AH1402 - BEAM TO AUXILIARY COLUMN HEAVY CONNECTION (BEAM BY NBG)
- AH1403 - BEAM TO AUXILIARY COLUMN (BEAM NOT BY NBG)
- AH1410 - COLUMN TO AUXILIARY COLUMN CONNECTION
- AH1420 - BEAM BRACING NO BRACE STRUT (BEAM BY NBG)
- AH1421 - BEAM BRACING NO BRACE STRUT (BEAM NOT BY NBG)
- AH1430 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)
- AH1431 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)

SINGLE STEPPED COLUMN DETAILS

- AH1501 - BEAM TO STEPPED COLUMN STD. CONNECTION (BEAM BY NBG)
- AH1502 - BEAM TO STEPPED COLUMN HEAVY CONNECTION (BEAM BY NBG)
- AH1503 - BEAM TO STEPPED COLUMN (BEAM NOT BY NBG)

DOUBLE STEPPED COLUMN DETAILS

- AH1511 - BEAM TO STEPPED COLUMN STD. CONNECTION (BEAM BY NBG)
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- AH1601 - CRANE STOP DETAIL (WITH CBC01)
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- AH1620 - RAIL TO RUNWAY HOOK BOLT
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- AH1700 - UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT (BY NBG)
- AH1710 - TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT (BY NBG)
- AH1720 - UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT (BY NBG)
- AH1730 - TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT (BY NBG)

AH1000 - CRANE BRACE NOTE

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ERECTOR NOTE:

THE CBA- ANGLE BRACES MUST BE INSTALLED ON THE FRAME COLUMNS AND ATTACHED TO THE CRANE SYSTEM AT THE TIME OF BUILDING ERECTION. THE BUILDING RELIES ON THE CRANE SYSTEM FOR STABILITY. WITHOUT THE CRANE SYSTEM AND THE CBA- ANGLE BRACES INSTALLED, THE BUILDING IS UNSTABLE. THIS APPLIES ONLY TO CRANE SYSTEMS SUPPLIED WITH THIS BUILDING AND DOES NOT APPLY TO FUTURE CRANE SYSTEMS.

Detailer Notes:

1) THIS DETAIL NEEDS TO GO ON ALL CRANE PLANS EXCEPT FOR FUTURE CRANES.

AH1010 - CRANE SYSTEM GENERAL NOTES

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1) COORDINATION OF OTHER TRADES: SUPPORTS AND BRACING FOR THE CRANE SYSTEM SHALL BE PROVIDED AND ARE REQUIRED AS SHOWN IN THE SECTIONS AND AS NOTED IN THESE GENERAL NOTES. NECESSARY CLEARANCE DIMENSIONS FOR PROPER ELEVATIONS RELATIVE TO THE CRANE SYSTEMS HAVE BEEN SHOWN. THE BUYER SHALL BE RESPONSIBLE FOR COORDINATING THESE DIMENSIONAL REQUIREMENTS WITH OTHER TRADES ASSOCIATED WITH THE BUILDING SYSTEM.

2) FOR TOP RUNNING CRANE SYSTEMS, CRANE RAIL SPLICES MUST BE ARRANGED SO THAT JOINTS ON OPPOSITE RUNWAY BEAMS FOR THE CRANE AISLE ARE STAGGERED WITH RESPECT TO THE WHEEL BASE OF THE CRANE. REFER TO CMAA OR AISC GUIDELINES FOR FURTHER INSTALLATION REQUIREMENTS.

3) PERIODIC MAINTENANCE IS REQUIRED. DUE TO THE NATURE OF THE CRANE SYSTEM, MAINTENANCE INCLUDING BUT NOT LIMITED TO, TIGHTENING OF BOLTS AND NUTS MUST BE DONE AS REQUIRED BY BUILDER OR THE BUILDING OWNER TO ENSURE THAT THE CRANE SYSTEM REMAINS IN SAFE, OPERATING CONDITION. REFER TO CMAA OR AISC GUIDELINES FOR PERIODIC MAINTENANCE REQUIREMENTS.

4) SEE RAIL TO RUNWAY BEAM CONNECTION DETAILS FOR HOOK BOLT OR SLIDING CLAMP REQUIREMENTS.

CRANE SYSTEM GENERAL NOTES

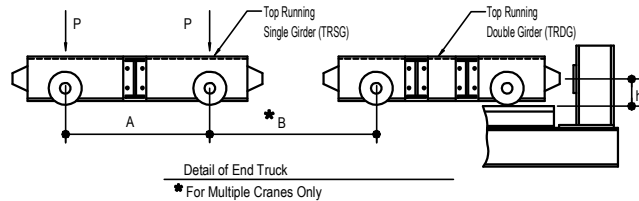
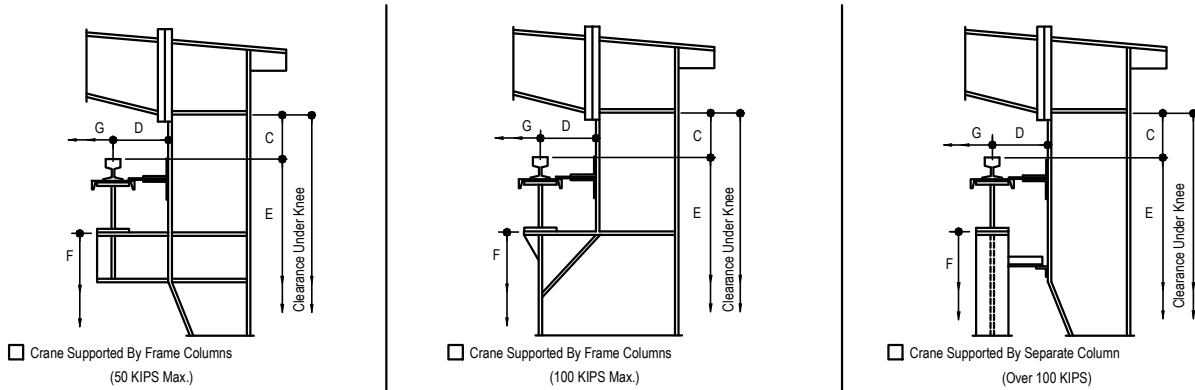
AH1010

Detailer Notes:

- 1) THIS NOTE IS REQUIRED ON EVERY CRANE JOB.

AH1020 - TOP RUNNING CRANE DESIGN INFORMATION

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



Crane I.D. (A, B, C...)

Information Provided/Confirmed By Customer

Quantity of Cranes: _____	h1 Top of Rail to Center of Stop: _____ ft.-in.
Crane Type (TRSG/TRDG): _____	Length of Runway: _____ ft.
Rated Capacity: _____ tons	No. of Wheels Per Endtruck: _____
CMAA Service Duty Class: _____	Adjacent Crane ID: _____
Operation Control Type: _____	Crane Rail Size (ASCE): _____ lbs/yd
Hoist and Trolley Weight: _____ lbs.	A Wheel Spacing: _____ ft.-in.
Bridge Weight: _____ lbs.	B Center to Center of Adj. Crane Wheels: _____ ft.-in.
P Max. Wheel Load w/o Impact: _____ lbs.	C Minimum Clear Dist from Top of Rail: _____ ft.-in.
Bumper Type: _____	D Minimum Side Clear Distance: _____ ft.-in.
Bumper Stroke: _____ in.	E Top of Rail to Finished Floor: _____ ft.-in.
Bridge Travel Speed: _____ fpm	F Top of Bracket to Finished Floor: _____ ft.-in.
Crane End Stop Force: _____ lbs.	G Center To Center of Rail: _____ ft.-in.

**MATERIALS PROVIDED BY
METAL BUILDING SUPPLIER**

Y	N	
<input type="checkbox"/>	<input type="checkbox"/>	Design For Crane Loads Only
<input type="checkbox"/>	<input type="checkbox"/>	Brackets or Auxiliary Columns
<input type="checkbox"/>	<input type="checkbox"/>	Runway Beam or Runway Beam & Channel
<input type="checkbox"/>	<input type="checkbox"/>	Crane Rail & Method of Attachment
<input type="checkbox"/>	<input type="checkbox"/>	Crane Stops

NOTES:

TOP RUNNING CRANE DESIGN INFORMATION DETAIL

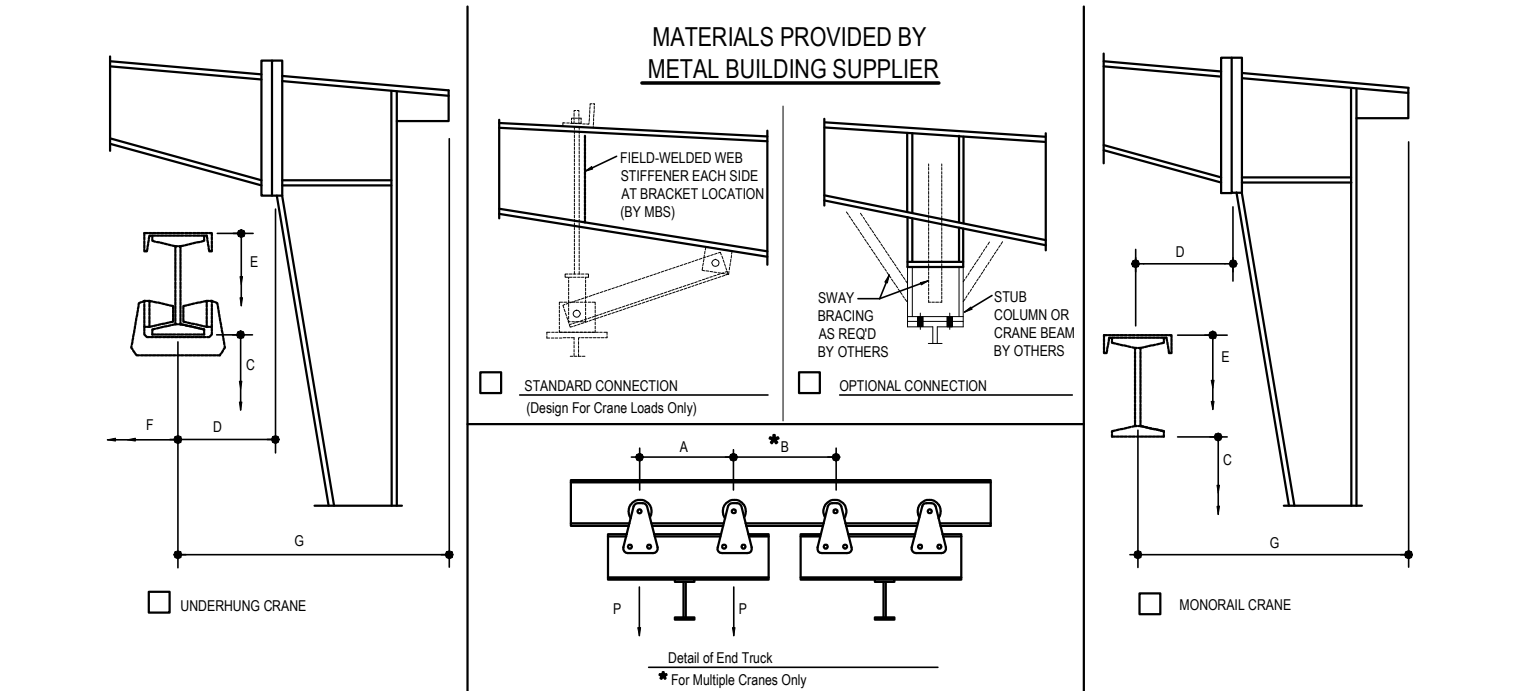
AH1020

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1030 - UNDERHUNG OR MONORAIL CRANE DESIGN INFORMATION

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



Crane I.D. (A, B, C...) _____

Information Provided/Confirmed By Customer _____

Quantity of Cranes: _____	No. of Wheels Per End Truck (2,4): _____
Crane Type (UHDG, UHSG, MONO): _____	Adjacent Crane ID: _____
Rated Capacity: _____ tons	A Wheel Spacing: _____ ft.-in.
CMAA Service Duty Class: _____	B Center to Center of Adj. Crane Wheels: _____ ft.-in.
Operation Control Type: _____	C Min. Clear from Bottom of Beam: _____ ft.-in.
Length of Runway: _____ ft.	D Minimum Side Clear Distance: _____ ft.-in.
Crane End Stop Force: _____ lbs.	E Clear From Bottom of Bracket: _____ ft.-in.
Hoist and Trolley Weight: _____ lbs.	F Center to Center of Beam: _____ ft.-in.
Bridge Weight: _____ lbs.	G Center of Beam to Steel Line: _____ ft.-in.
P Max. Wheel Load w/o Impact: _____ lbs.	Runway Beam Weight: _____ lbs/ft
	Crane Beam by NBS (Y/N): _____
	Sway Bracing by NBS (Y/N): _____

NOTES:

UNDERHUNG OR MONORAIL CRANE DESIGN INFORMATION

AH1030

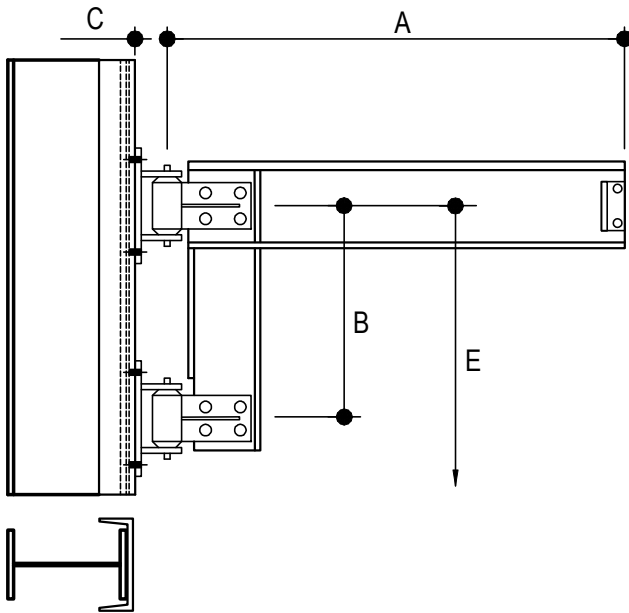
Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

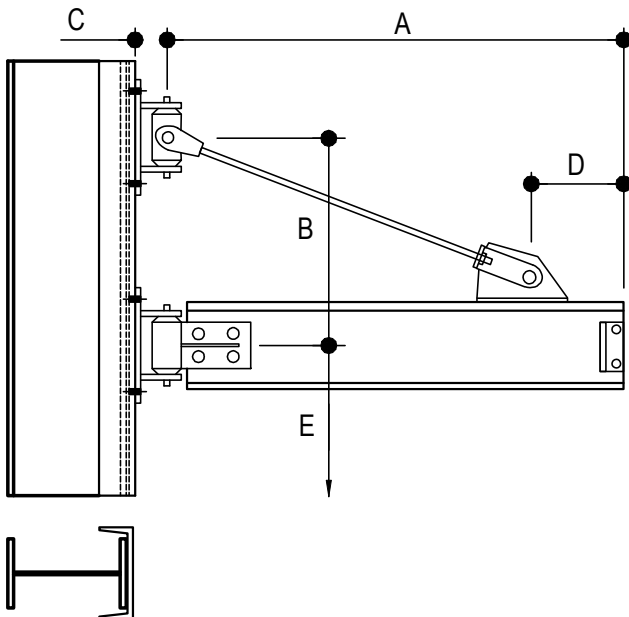
AH1040 - JIB CRANE DESIGN INFORMATION

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

CANTILEVERED BOOM



SUSPENDED BOOM



CRANE I.D. (A, B, C...) _____

Information Provided/Confirmed By Customer

Quantity of Cranes: _____

Crane Type: _____

Rated Capacity: _____ TONS

CMAA Service Duty Class: _____

Hoist and Trolley Weight: _____

Boom Weight: _____

Impact Factor: _____

Boom Rotation: _____ (DEG)

A Boom Length: _____ (FT-IN)

B Bracket Spacing: _____ (FT-IN)

C Pivot Center to Column Face: _____ (FT-IN)

D Dist from Boom End to Support: _____ (FT-IN)

E Dist from Center of Boom to F.F.: _____ (FT-IN)

JIB CRANE INFO

AH1040

DESIGN FOR CRANE LOADS ONLY.

COLUMN CHANNEL (IF REQUIRED BY DESIGN) BY MBS.

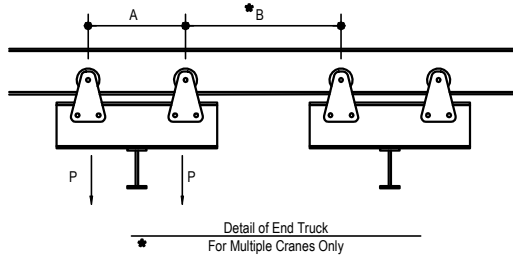
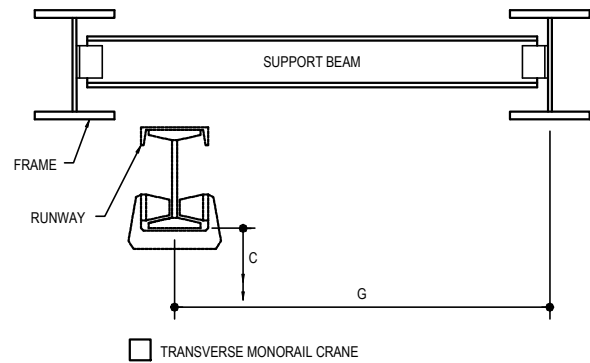
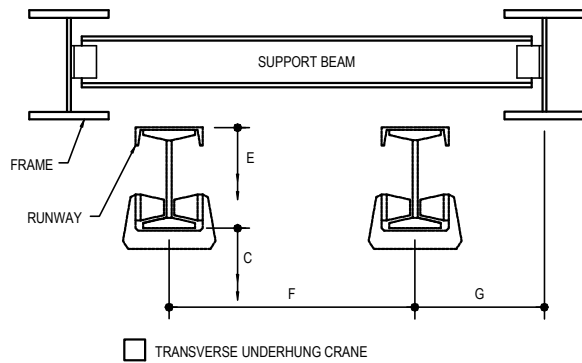
CRANE ATTACHMENT TO MBS STRUCTURE WILL BE BY OTHERS. FIELD WORK WILL BE REQUIRED.

Detailer Notes:

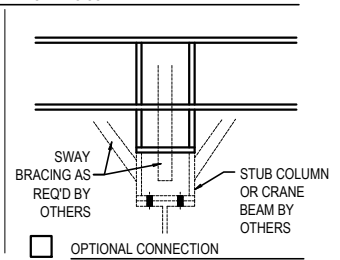
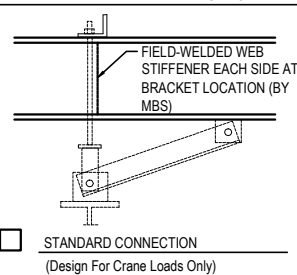
1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1050 - TRANSVERSE UNDERHUNG CRANE DESIGN INFORMATION

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MATERIALS PROVIDED BY METAL BUILDING SUPPLIER



Crane I.D. (A, B, C...)___

Information Provided/Confirmed By Customer

Quantity of Cranes: _____

Crane Type (UHDG, UHSG, MONO): _____

Rated Capacity: _____ tons

CMAA Service Duty Class: _____

Operation Control Type: _____

Length of Runway: _____ ft.-in.

Crane End Stop Force: _____ lbs.

Hoist and Trolley Weight: _____ lbs.

Bridge Weight: _____ lbs.

P Max. Wheel Load w/o Impact: _____ lbs.

No of Wheels Per End Truck (2,4): _____

Adjacent Crane ID: _____

A Wheel Spacing: _____ ft.-in.

B Center to Center of Adj. Crane Wheels: _____ ft.-in.

C Min Clear Dist. from Bot. of Beam: _____ ft.-in.

Max. Support Beam Spacing: _____ ft.-in.

E Clear from Bottom of Bracket: _____ ft.-in.

F Center to Center of Beam: _____ ft.-in.

G Center of Beam to Frame Line: _____ ft.-in.

Runway beam Weight: _____ lbs/ft

Crane Beam by NBS (Y,N): _____

Sway Bracing by NBS (Y,N): _____

Support Beam by NBS (Y,N): _____

NOTES:

TRANSVERSE UNDERHUNG/MONORAIL CRANE DESIGN INFORMATION

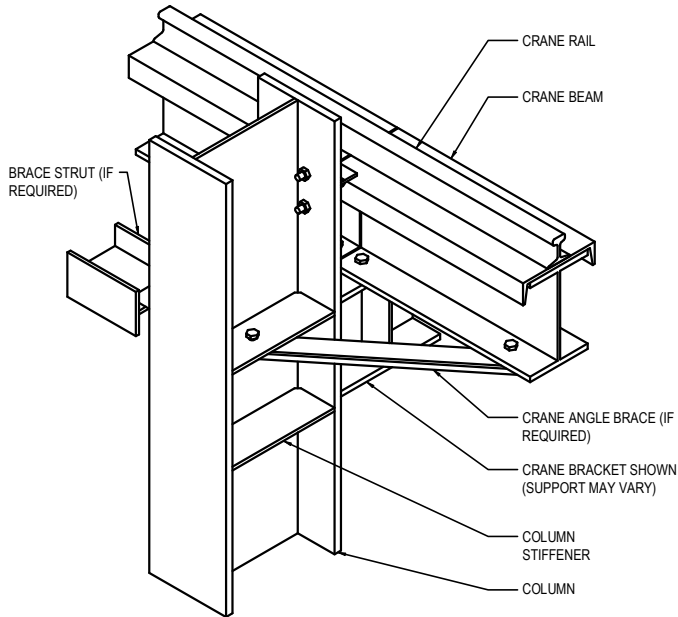
AH1050

Detailer Notes:

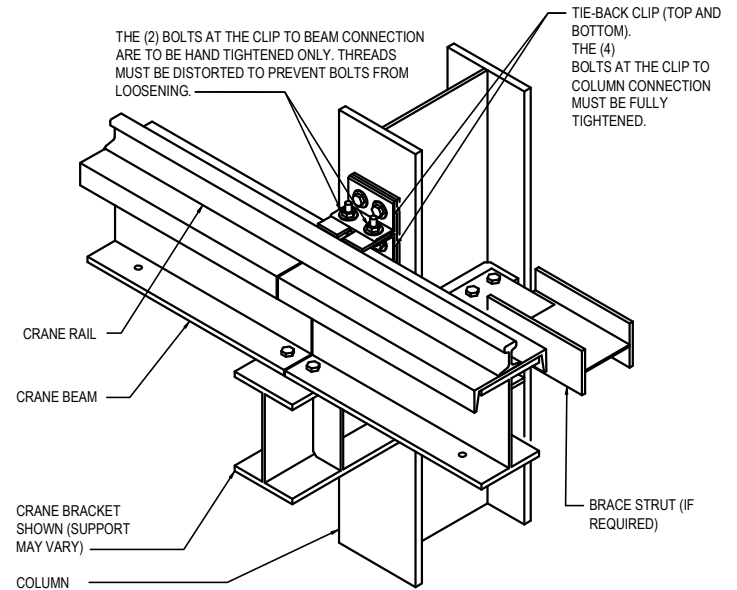
1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1060 - CRANE COLUMN TIE-BACK

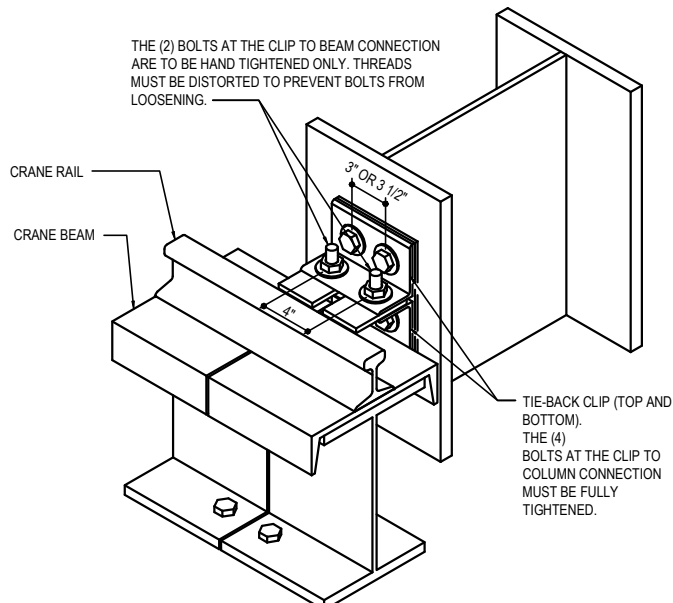
[Download the DWG file by clicking here.](#)



VIEW A



VIEW B



VIEW C

GENERAL NOTES

THE INTENTION OF THIS DETAIL IS TO MORE COMPLETELY SHOW THE FINISHED ASSEMBLY OF CRANE BEAM TO COLUMN CONNECTIONS. REFER TO THE CRANE PLAN AND/OR STRUCTURAL ELEVATIONS FOR LOCATIONS OF ANGLE BRACING AND BRACE STRUTS, AS WELL AS PART NUMBERS.

VIEW A SHOWS THE ANGLE BRACE CONNECTION FROM THE COLUMN STIFFENER TO THE CRANE BEAM.

VIEW B SHOWS THE TIE-BACK CLIP CONNECTION FROM THE CRANE BEAM TO THE COLUMN.

VIEW C IS AN ENLARGED VIEW OF THE TIE-BACK CLIP CONNECTION.

SEE THE RAIL TO RUNWAY BEAM CONNECTION DETAILS (EITHER HOOK BOLT OR FLOATING CLAMP DETAIL) FOR ADDITIONAL CONNECTION REQUIREMENTS.

SEE THE ADDITIONAL CRANE DETAILS, PLANS, OR FRAME CROSS SECTIONS FOR MATERIAL SIZES, CRITICAL DIMENSIONS, AND LOAD INFORMATION.

IMPORTANT NOTE: FIELD SLOTTING OF LATERAL TIE BACK PLATE OR ANGLES IS NOT PERMITTED. FIELD MODIFICATION OF THIS CONNECTION WILL ADVERSELY AFFECT THE STRUCTURAL PERFORMANCE AND INTEGRITY OF THE CRANE RUNWAY SYSTEM.

CRANE BEAM SYSTEM IS SHOWN WITH RUNWAY BEAM & CHANNEL, CONCEPTUAL ONLY. ACTUAL CRANE BEAM SYSTEM WILL BE RUNWAY BEAM OR RUNWAY BEAM & CHANNEL

TOP-RUNNING BRIDGE CRANE ASSEMBLY DETAILS

(RUNWAY BEAM CONNECTION, SUPPORT VARIES, BRACKET SHOWN)

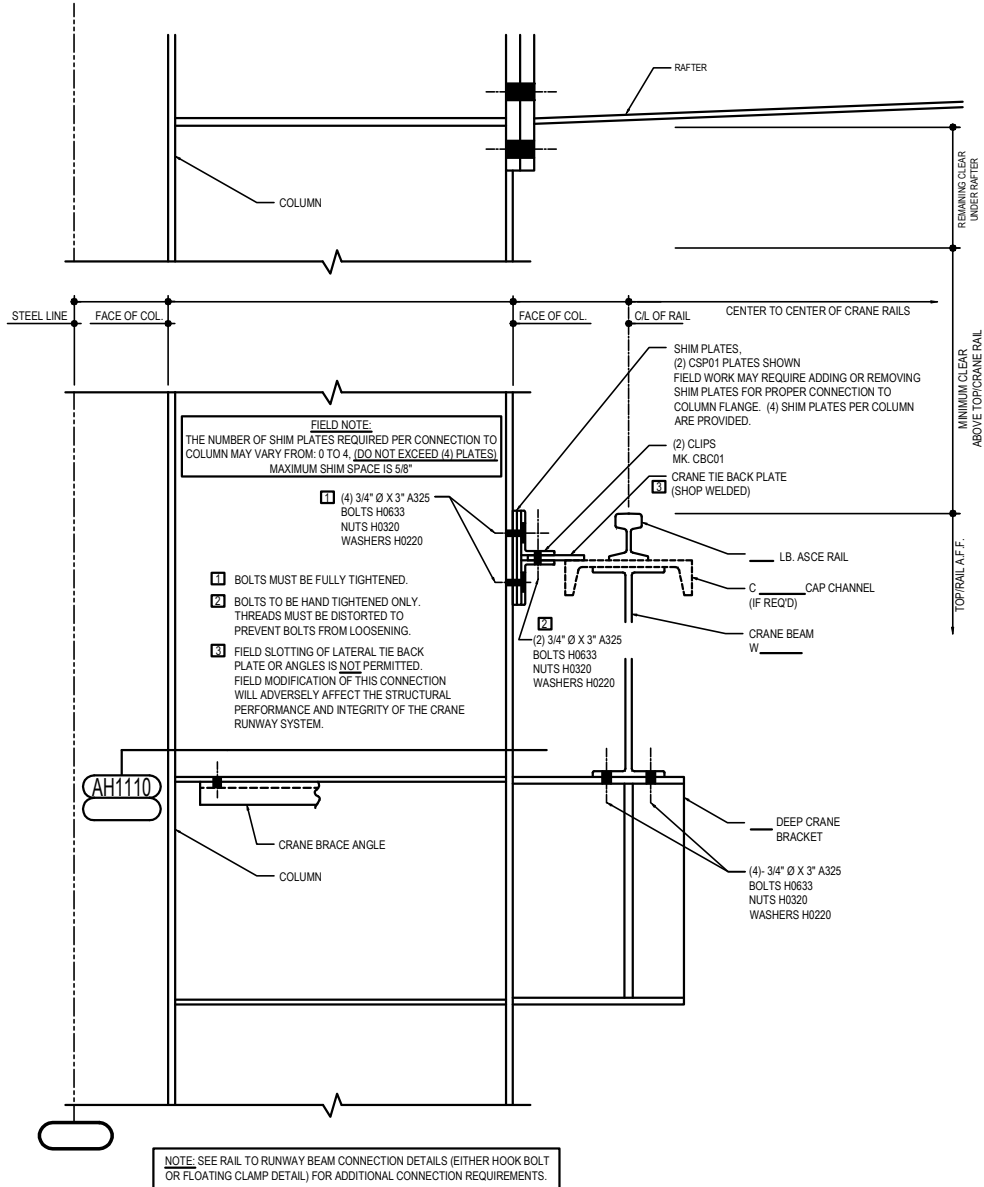
AH1060

Detailer Notes:

- 1) THIS DETAIL IS TO BE USED IN ADDITION TO THE STANDARD DETAILS THAT YOU WOULD NORMALLY USE. IT IS INTENDED TO HELP THE ERECTOR INSTALL THIS CONNECTION.

AH1101 - BEAM TO BRACKET STD. CONNECTION (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

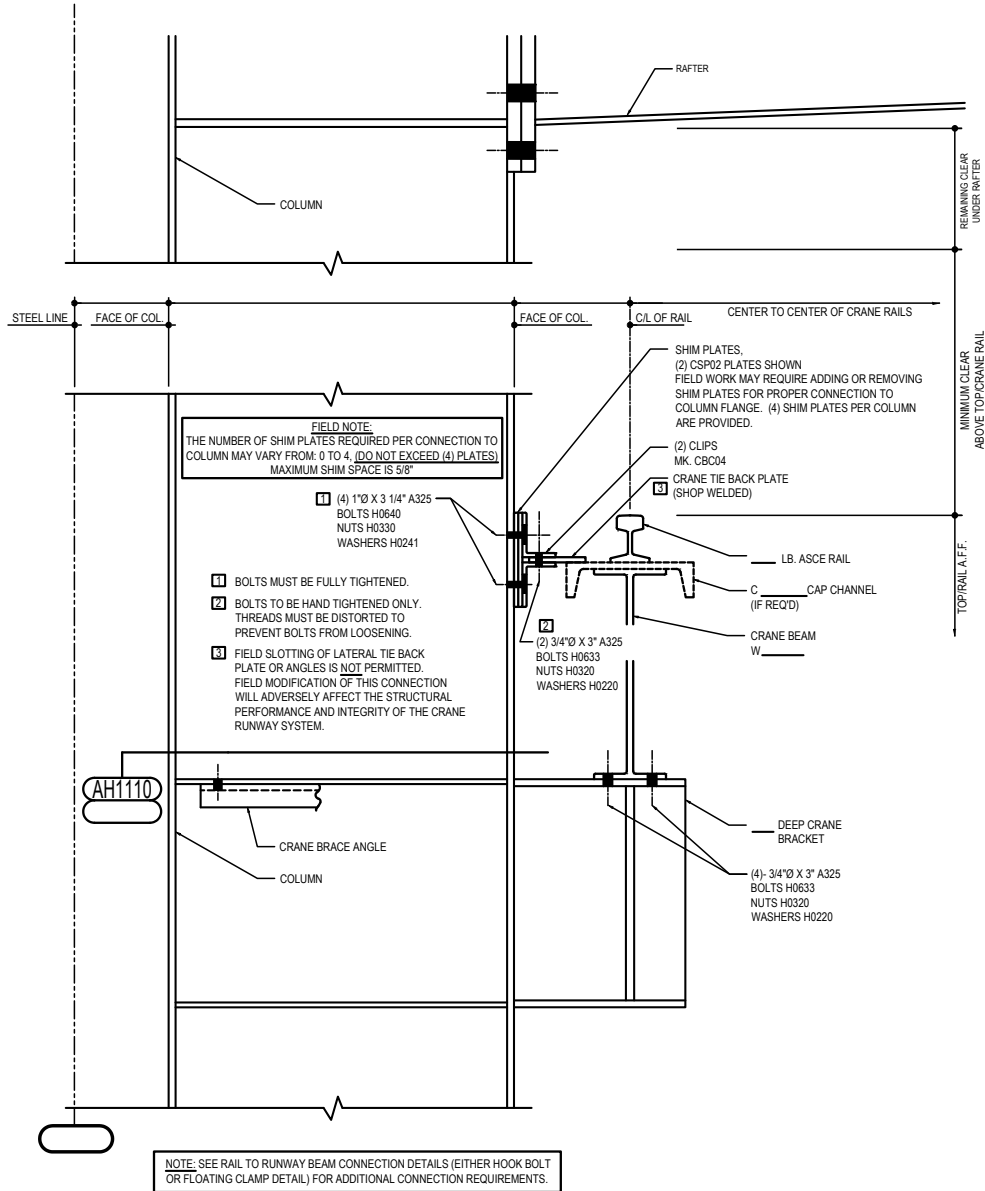
AH1101

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1102 - BEAM TO BRACKET HEAVY CONNECTION (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

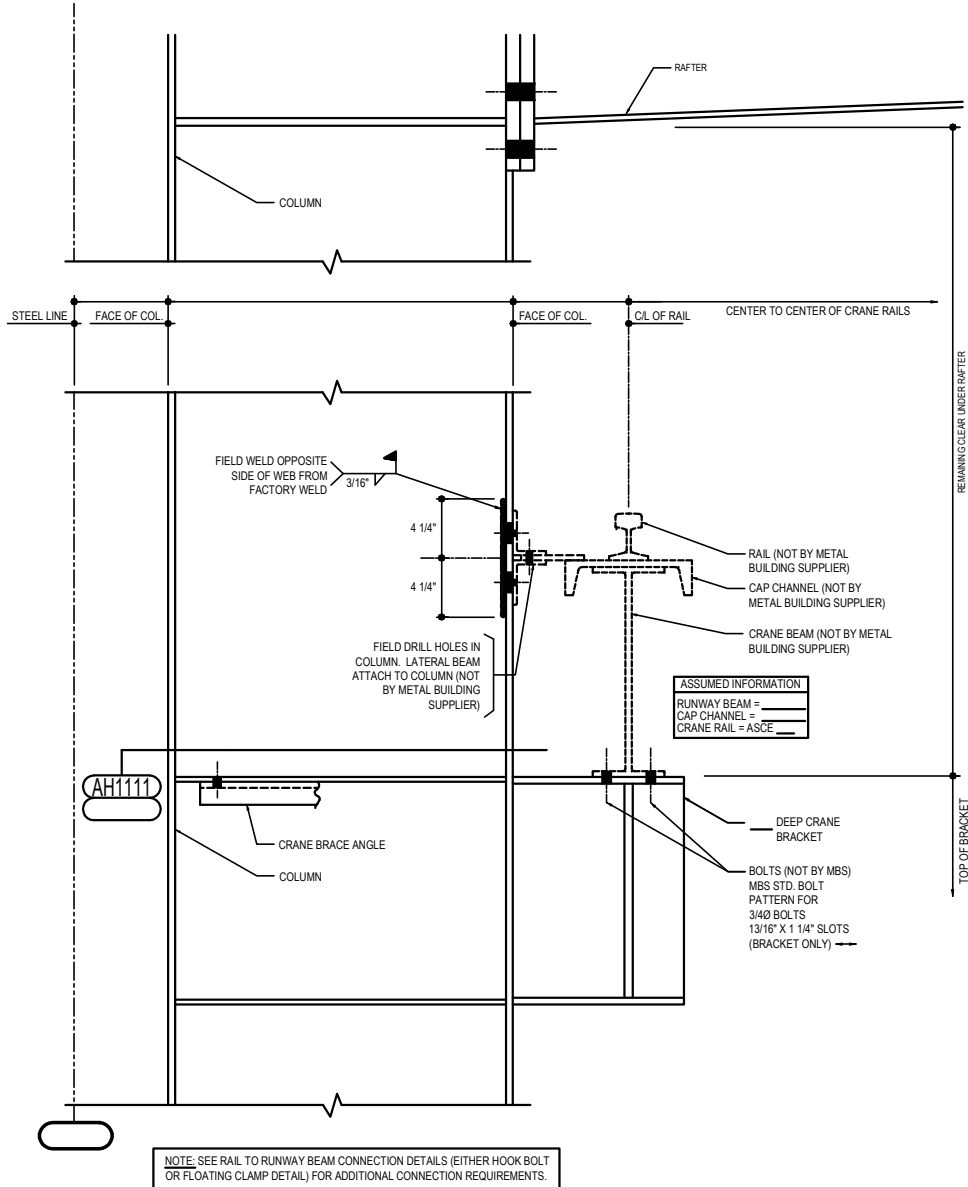
AH1102

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1103 - BEAM TO BRACKET (BEAM NOT BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
 RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

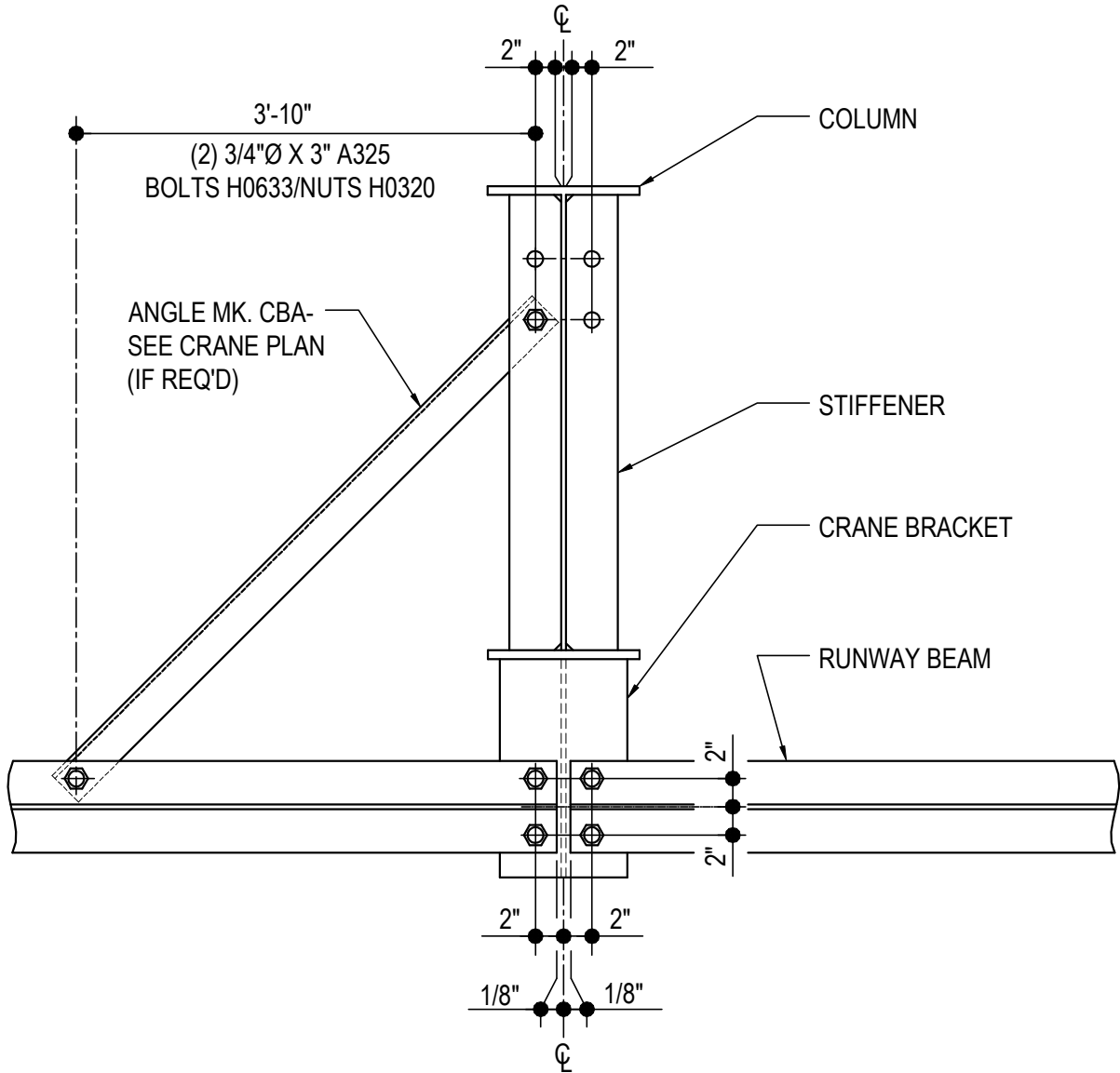
AH1103

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1110 - BEAM BRACING WITH NO BRACE STRUT (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

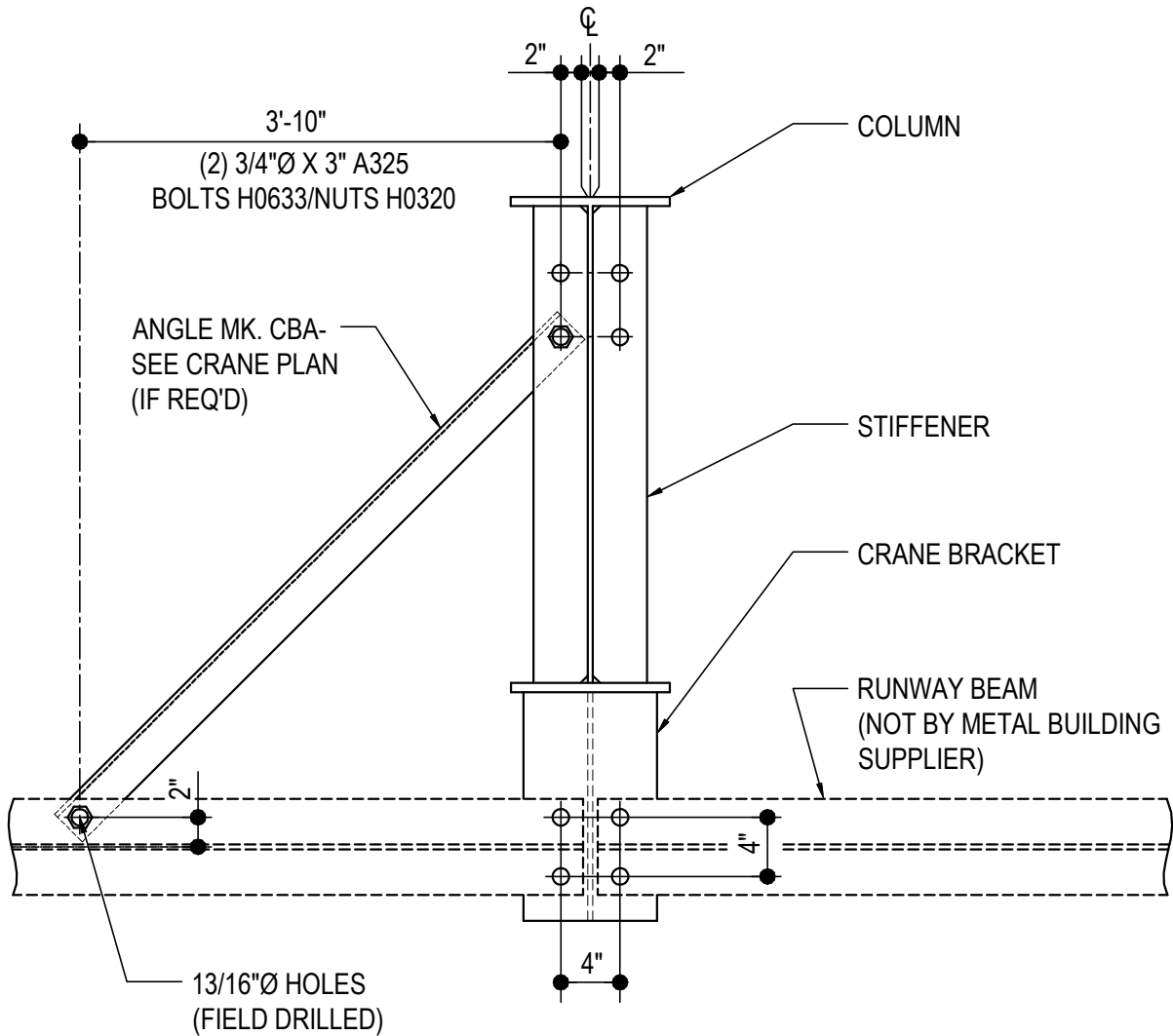
AH1110

Detailer Notes:

1)

AH1111 - BEAM BRACING WITH NO BRACE STRUT (BEAM NOT BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

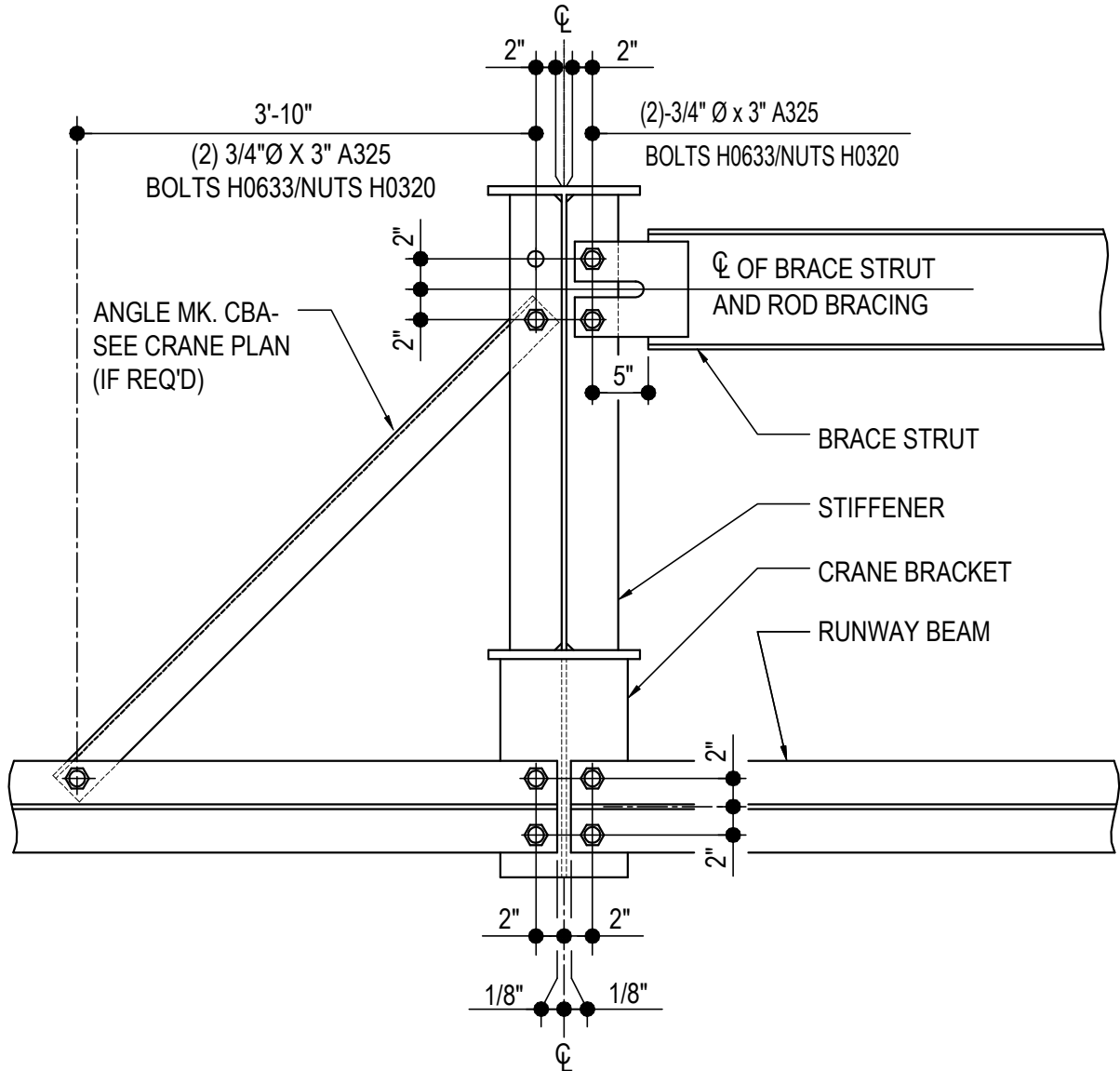
AH1111

Detailer Notes:

1)

AH1120 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

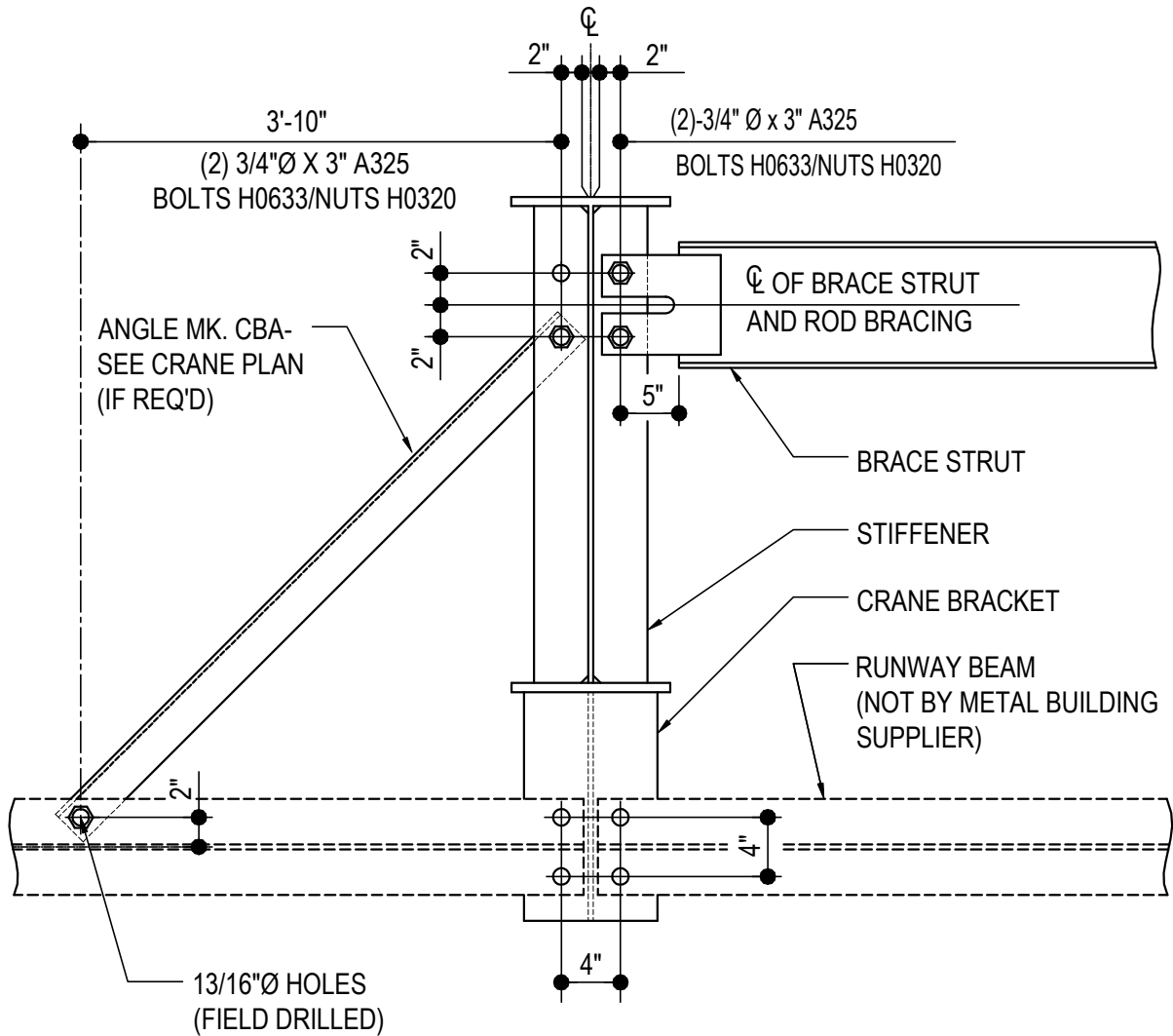
AH1120

Detailer Notes:

1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE FACE OF THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1121 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

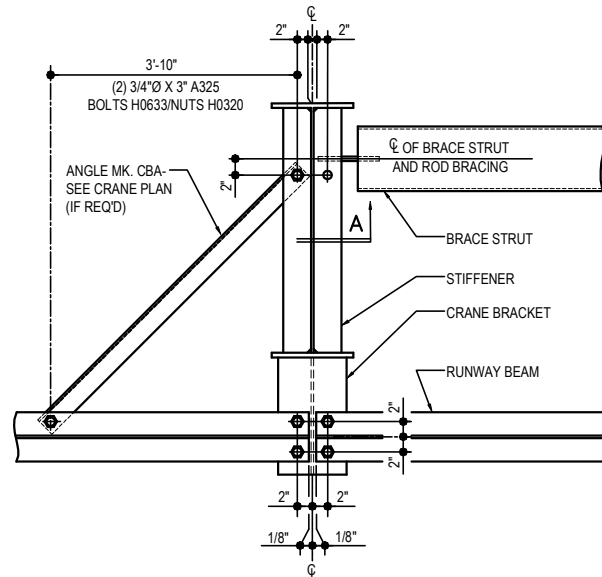
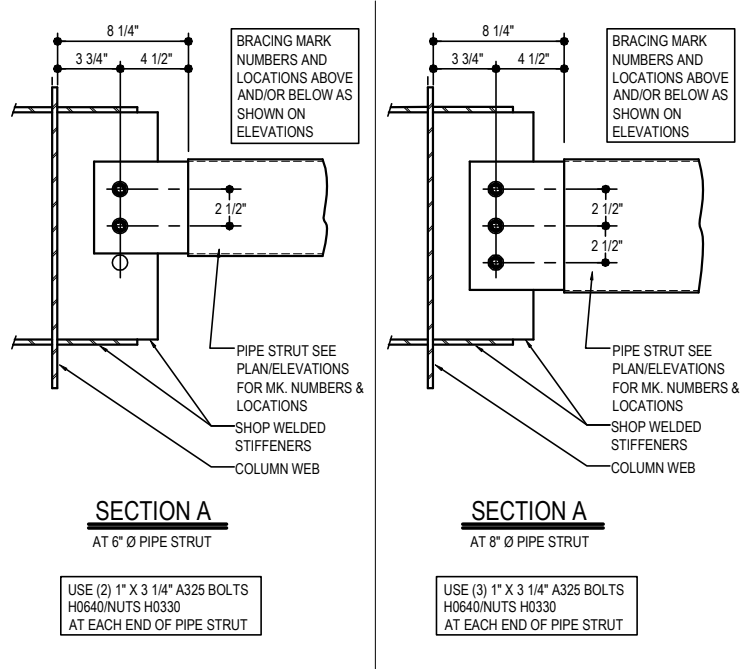
AH1121

Detailer Notes:

1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE FACE OF THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1130 - BEAM BRACING WITH PIPE BRACE (BEAM BY NBG)

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TOP RUNNING BRIDGE
CRANE DETAIL
RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

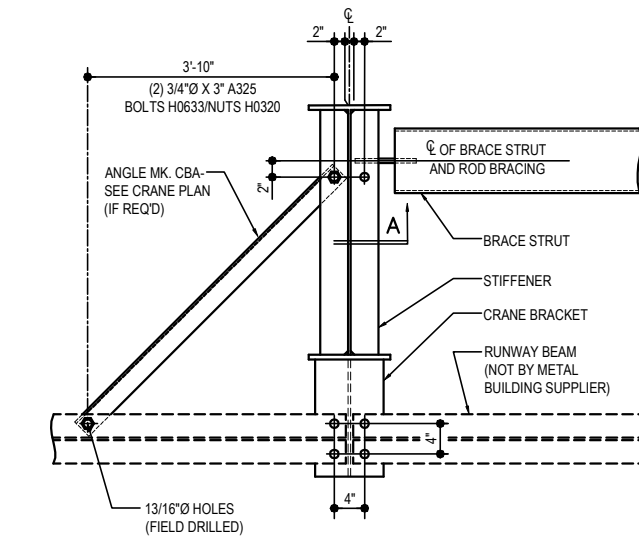
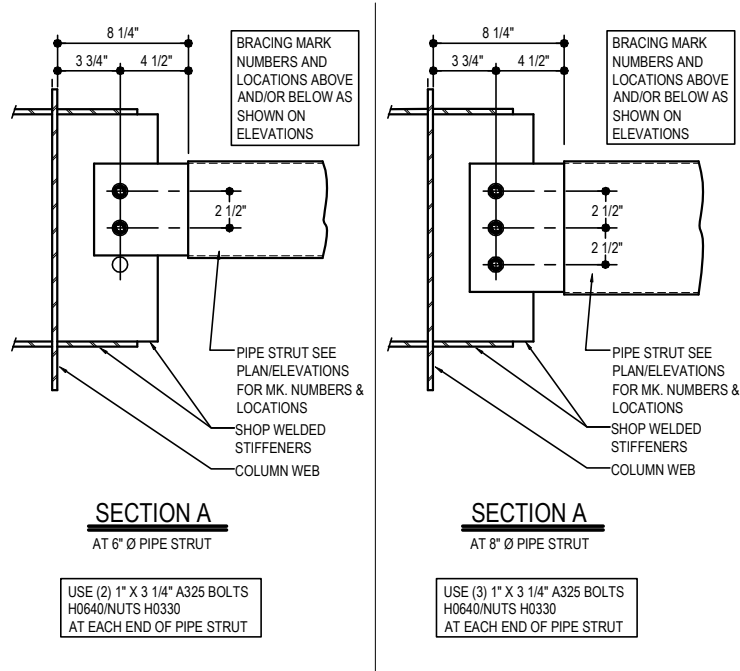
AH1130

Detailer Notes:

- 1) SHOP WELDED STIFFENER: PSC19 AT BU2447 W/ DOUBLE ROD, PSC67 AT BU1663, PSC69 AT BU2447. IF THE BRACKET IS A CUSTOM SIZE THE STIFFENER WILL BE A NON STANDARD SIZE.

AH1131 - BEAM BRACING WITH PIPE BRACE (BEAM NOT BY NBG)

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TOP RUNNING BRIDGE
CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

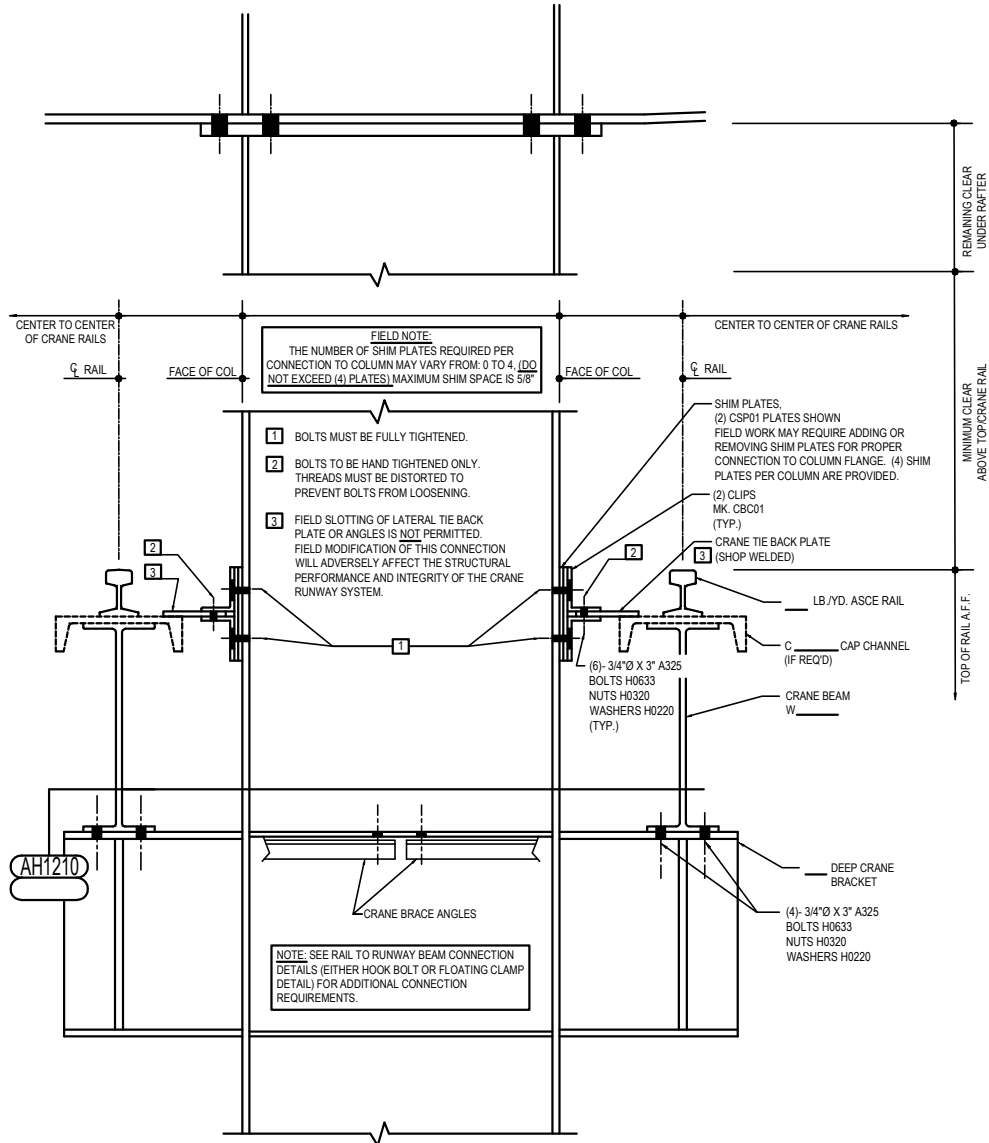
AH1131

Detailer Notes:

- 1) SHOP WELDED STIFFENER: PSC19 AT BU2447 W/ DOUBLE ROD, PSC67 AT BU1663, PSC69 AT BU2447. IF THE BRACKET IS A CUSTOM SIZE THE STIFFENER WILL BE A NON STANDARD SIZE.

AH1201 - BEAM TO BRACKET STD. CONNECTION (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

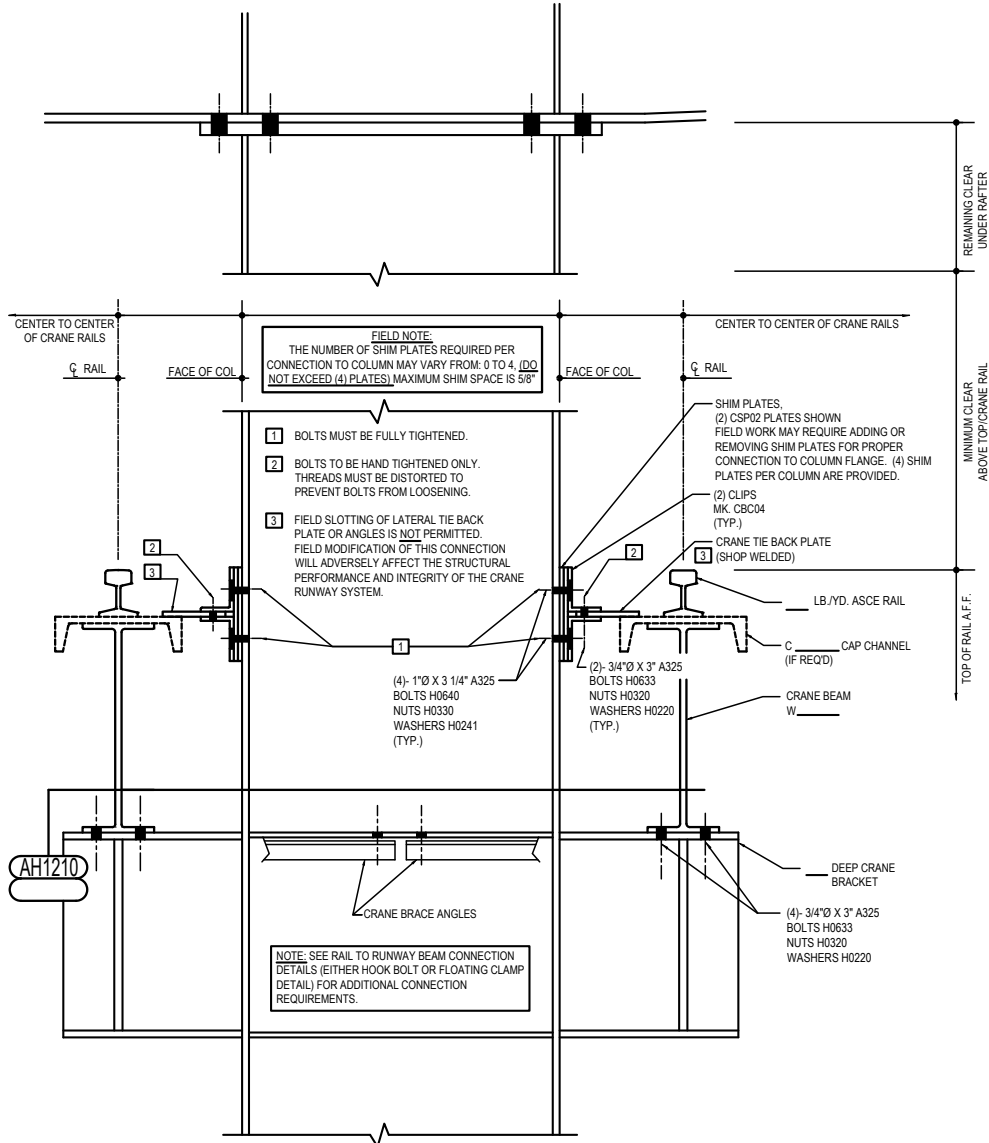
AH1201

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1202 - BEAM TO BRACKET HEAVY CONNECTION (BEAM BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

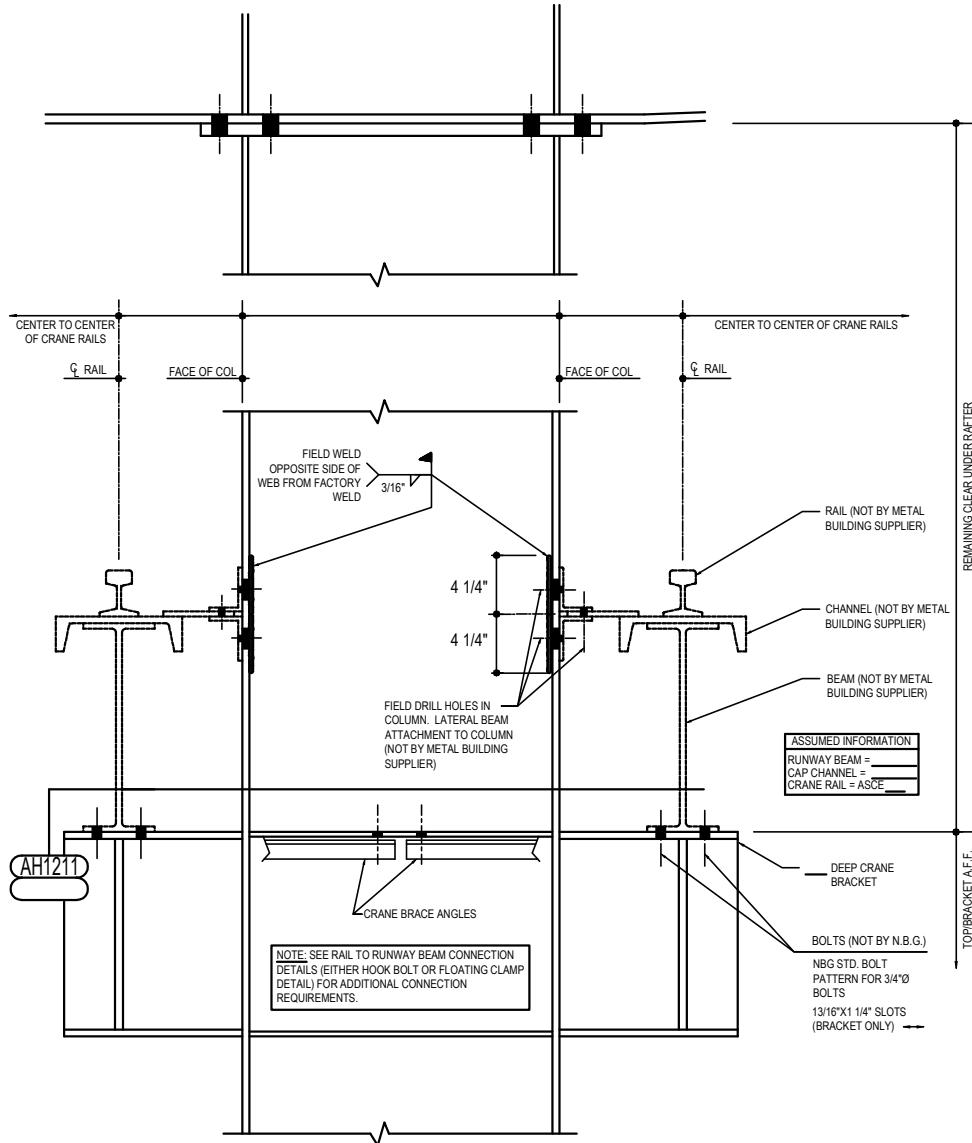
AH1202

Detailer Notes:

- THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1203 - BEAM TO BRACKET (BEAM NOT BY NBG)

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TOP RUNNING BRIDGE CRANE DETAIL
 RUNWAY BEAM TO BRACKET AND CRANE TIE BACK CONNECTION

CRANE ID:

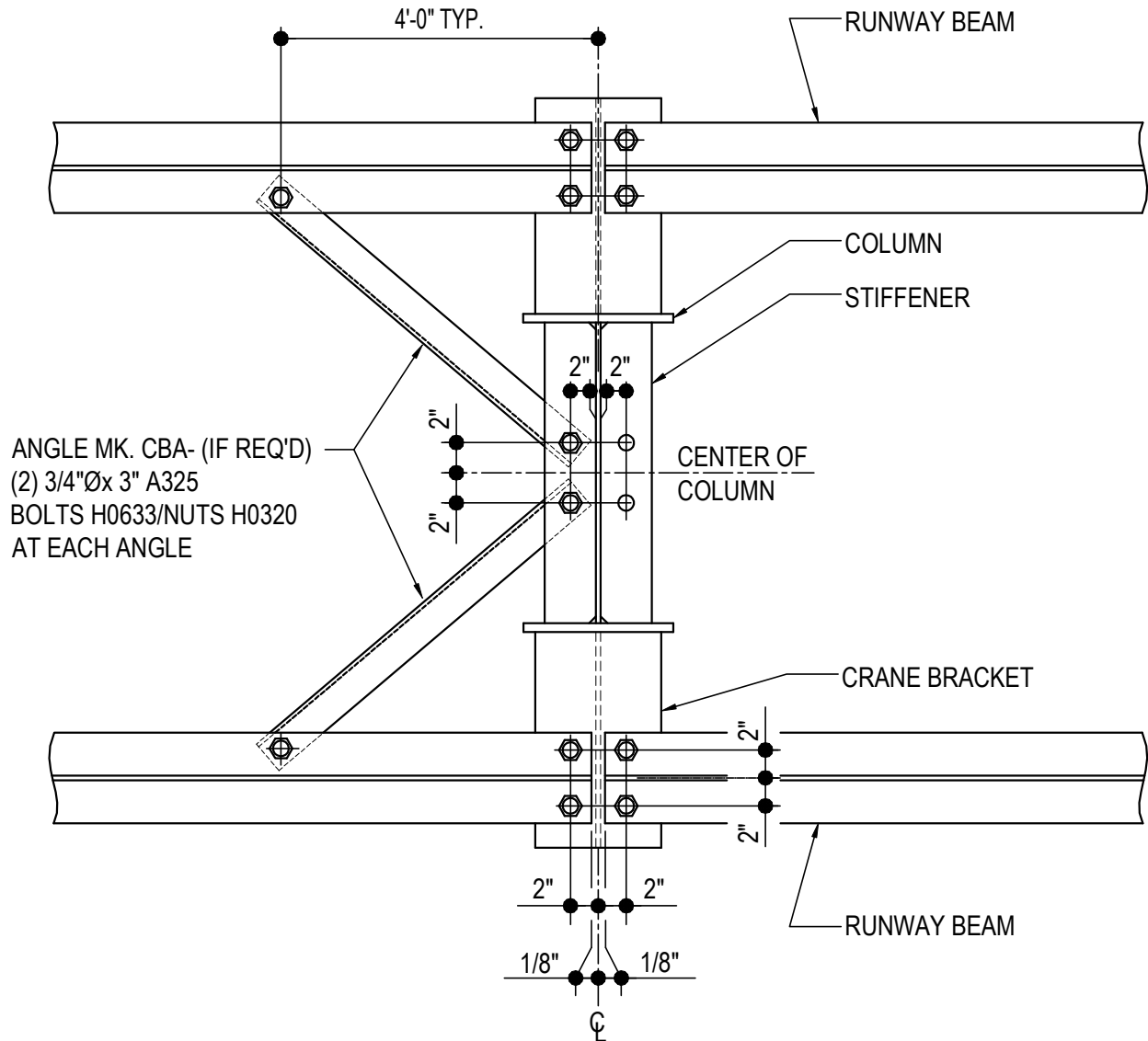
AH1203

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1210 - BEAM BRACING WITH NO BRACE STRUT (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN

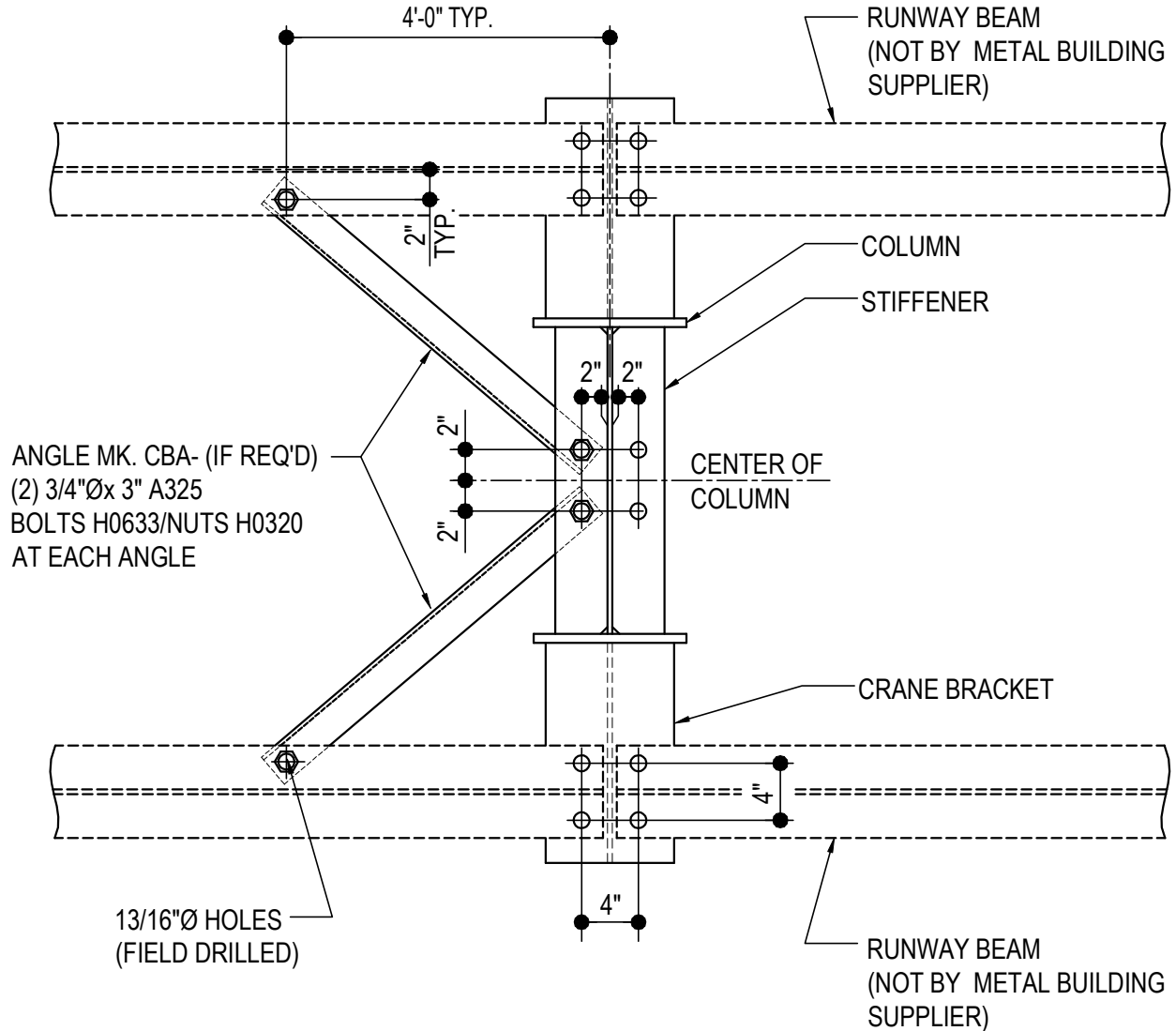
AH1210

Detailer Notes:

1)

AH1211 - BEAM BRACING WITH NO BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN

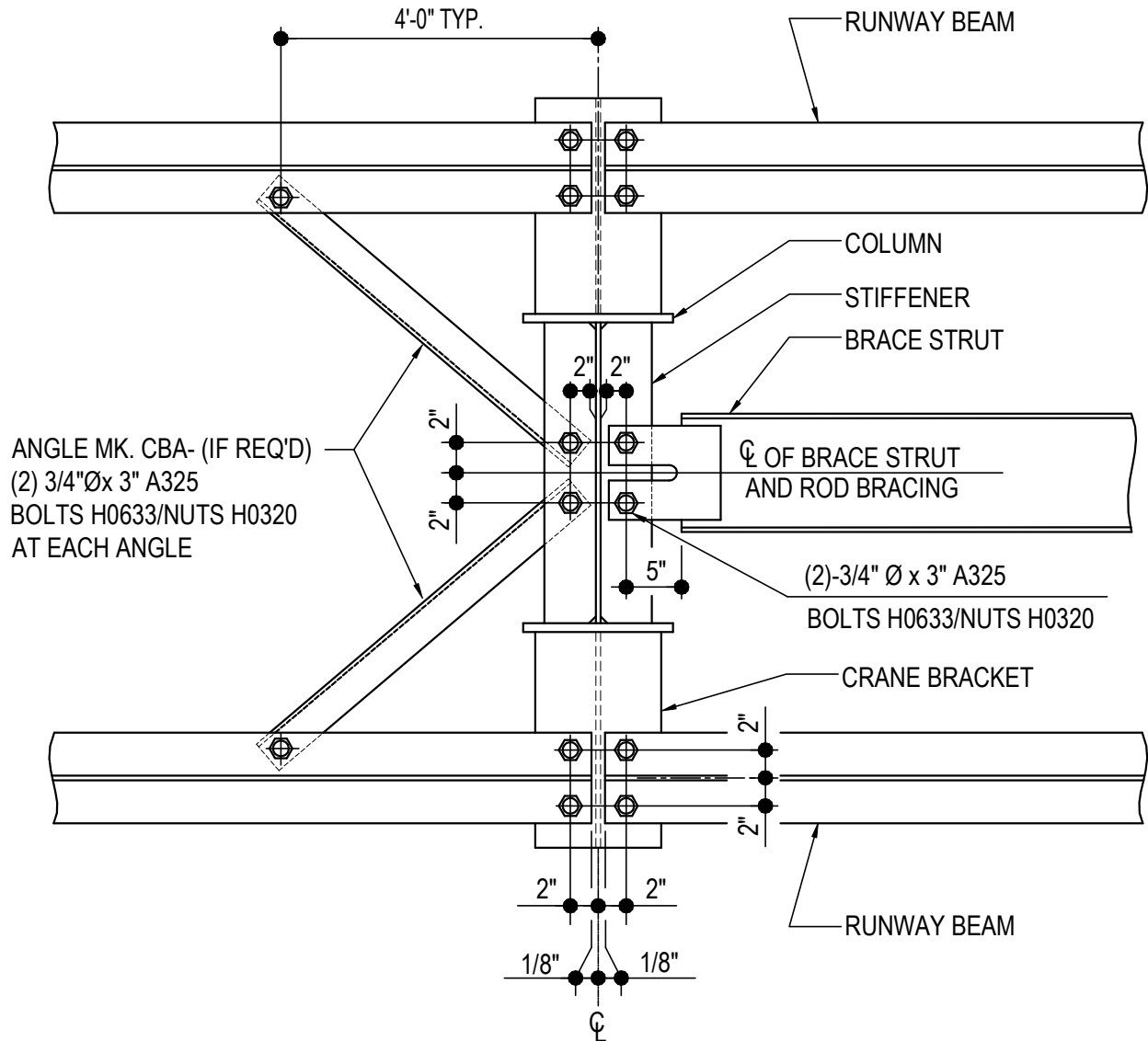
AH1211

Detailer Notes:

1)

AH1220 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

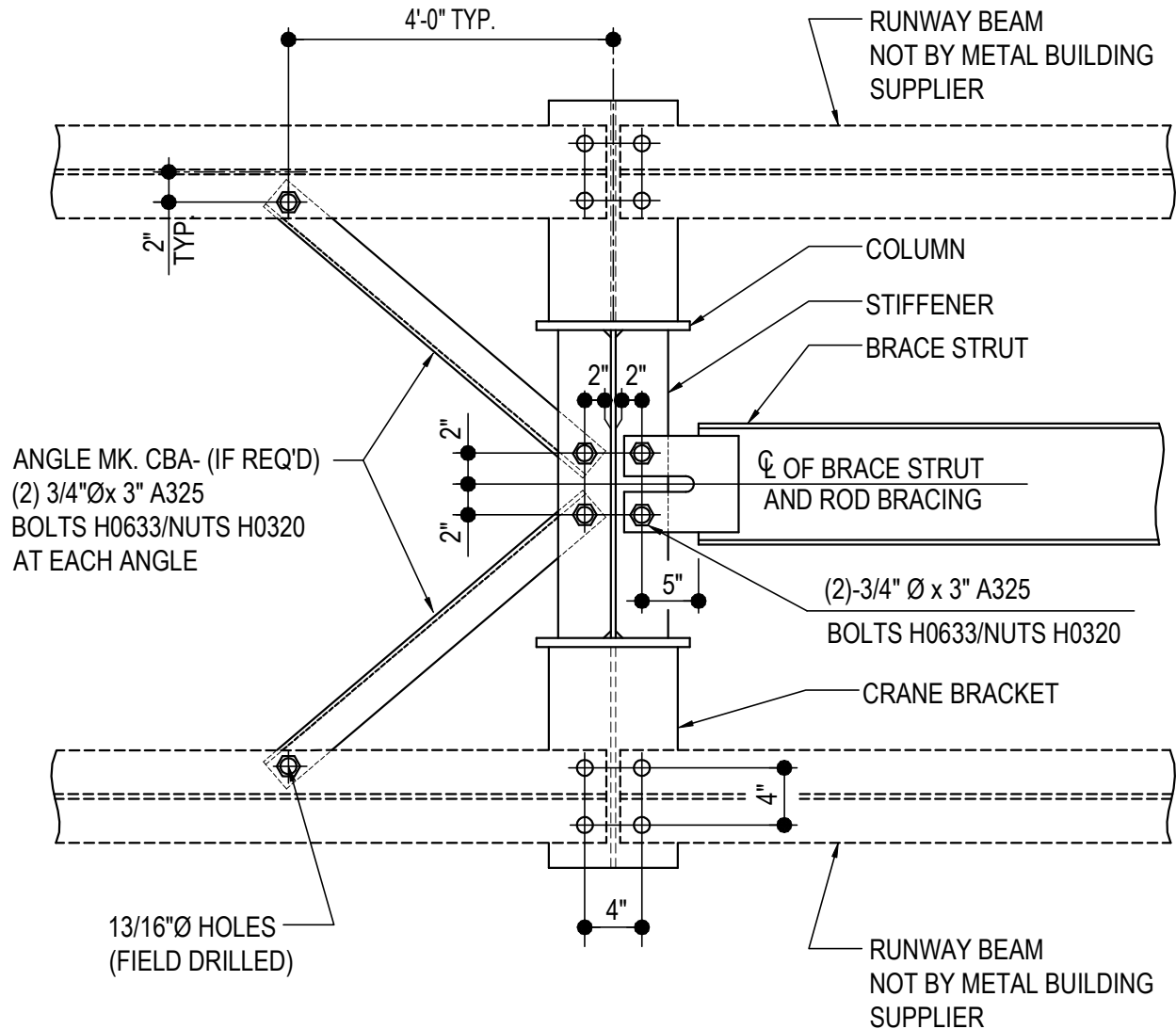
AH1220

Detailer Notes:

1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1221 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

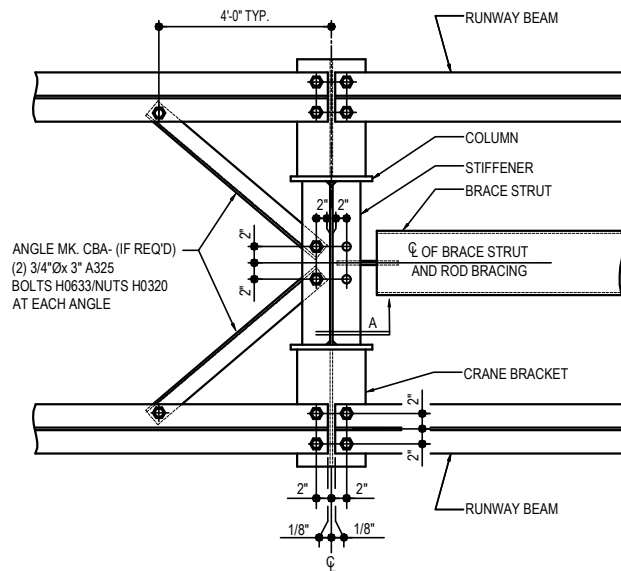
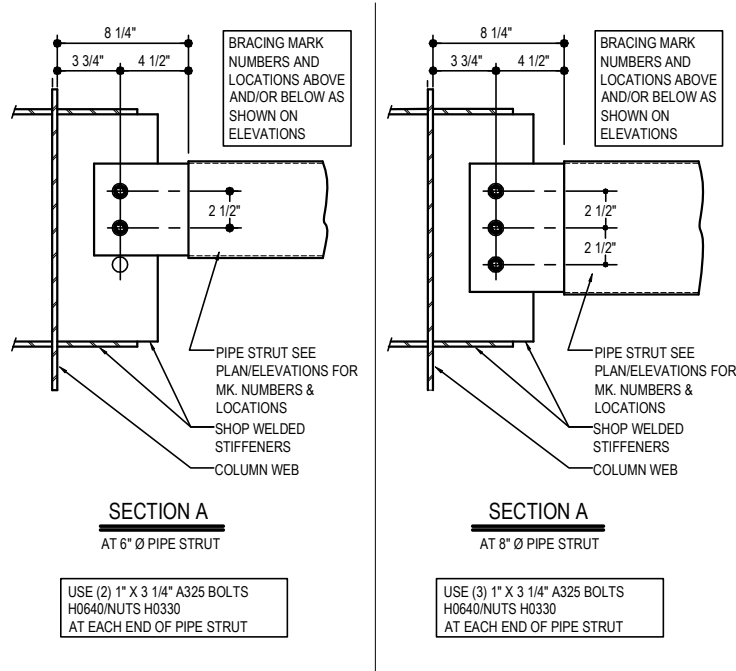
AH1221

Detailer Notes:

- PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1230 - BEAM BRACING WITH PIPE STRUT (BEAM BY NBG)

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



**TOP RUNNING BRIDGE
CRANE DETAIL**
RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

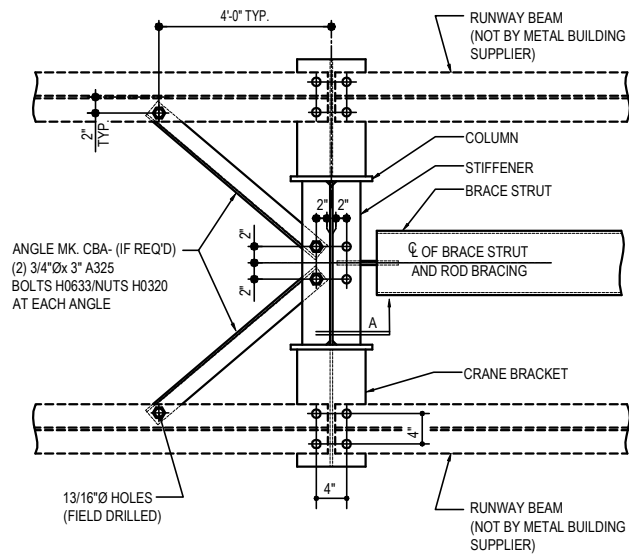
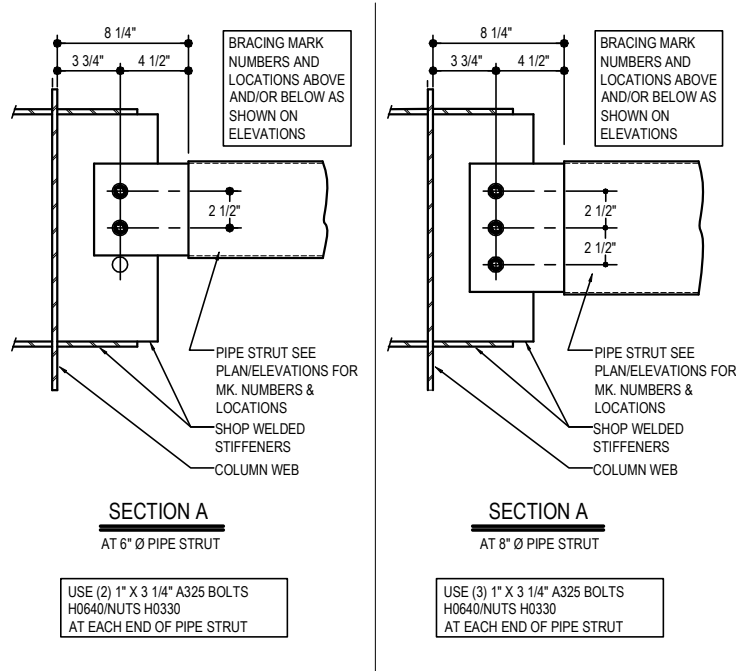
AH1230

Detailer Notes:

- 1) SHOP WELDED STIFFENER: PSC19 AT BU2447 W/ DOUBLE ROD, PSC67 AT BU1663, PSC69 AT BU2447. IF THE BRACKET IS A CUSTOM SIZE THE STIFFENER WILL BE A NON STANDARD SIZE.

AH1231 - BEAM BRACING WITH PIPE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

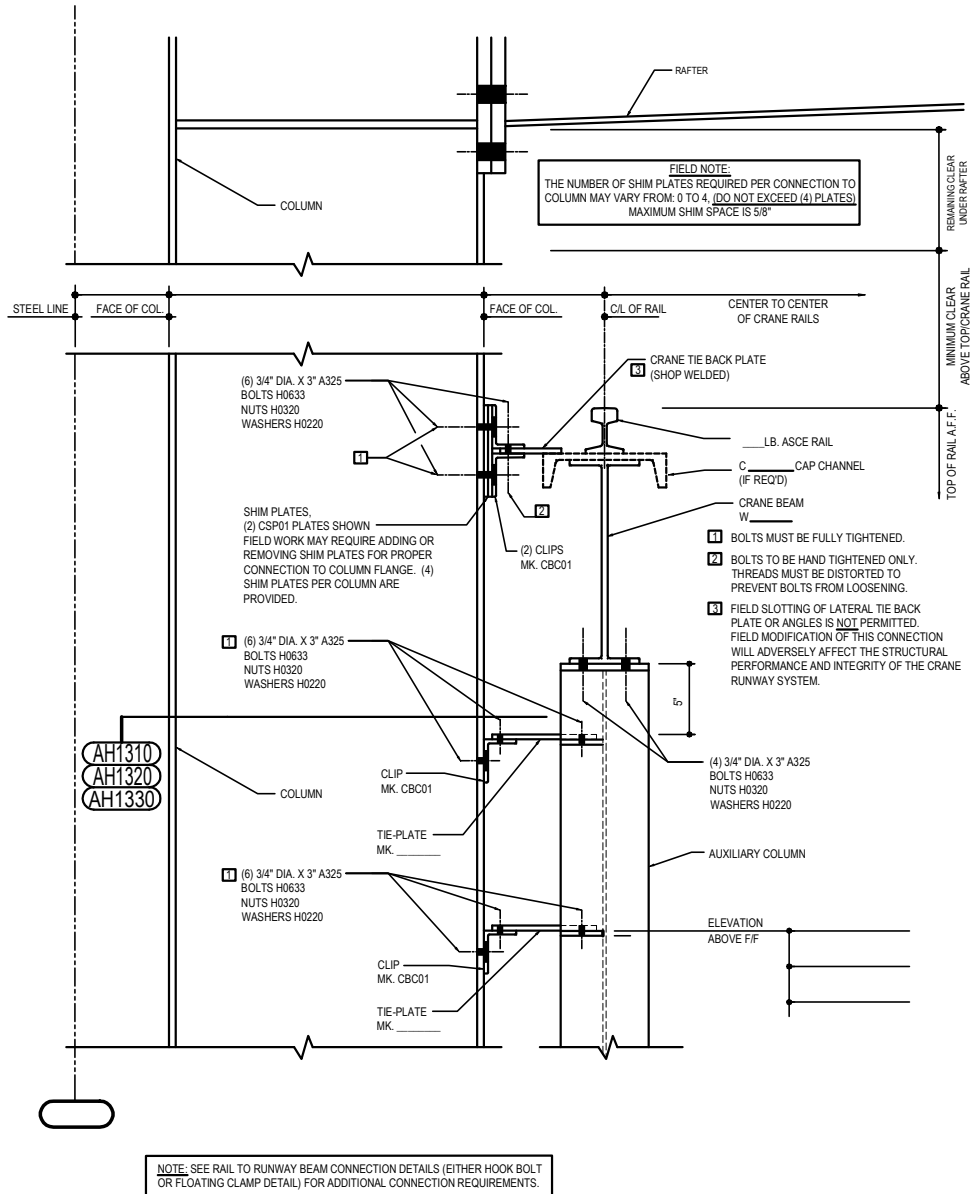
AH1231

Detailer Notes:

- 1) SHOP WELDED STIFFENER: PSC19 AT BU2447 W/ DOUBLE ROD, PSC67 AT BU1663, PSC69 AT BU2447. IF THE BRACKET IS A CUSTOM SIZE THE STIFFENER WILL BE A NON STANDARD SIZE.

AH1301 - BEAM TO AUXILIARY COLUMN STD. CONNECTION (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

CRANE ID:

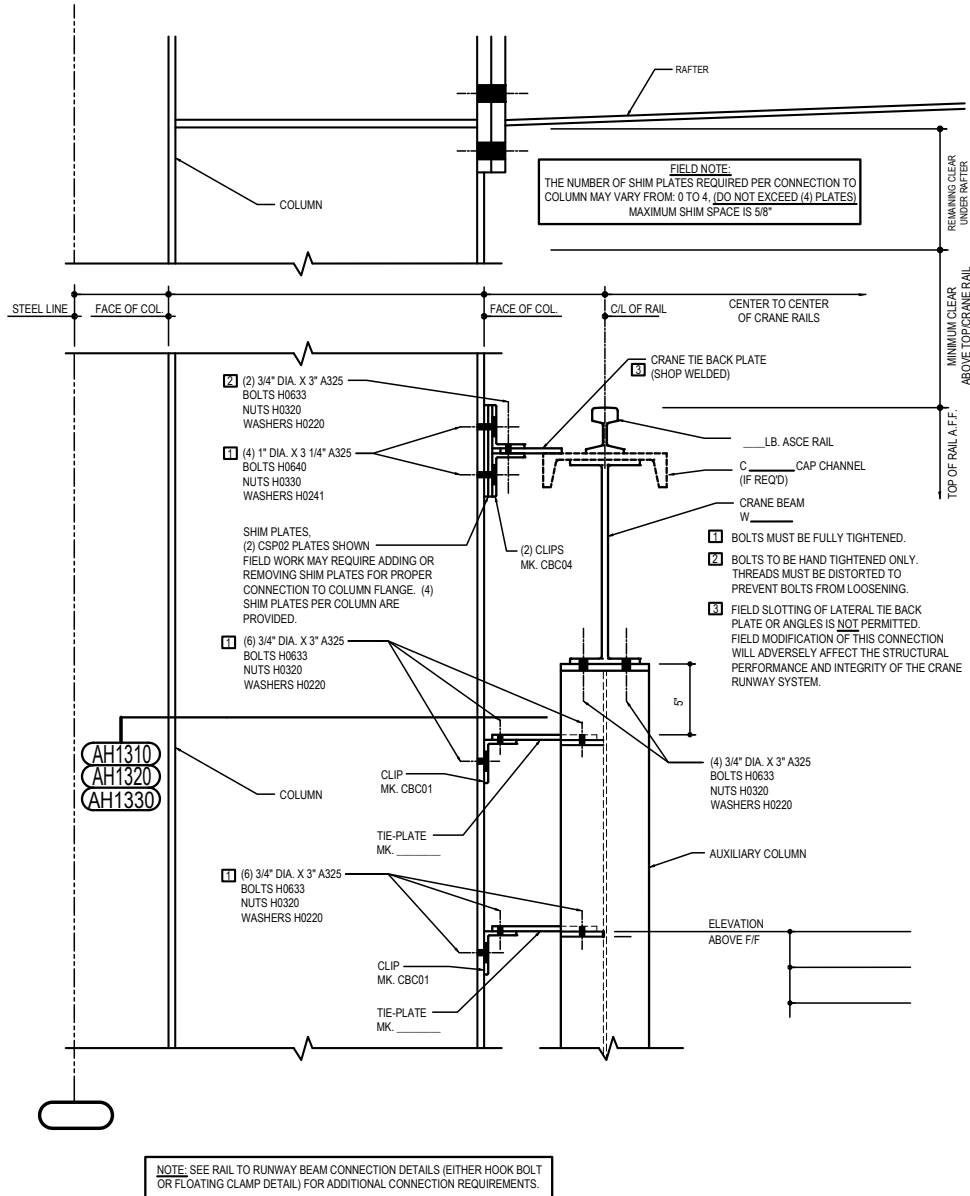
AH1301

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES. TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1302 - BEAM TO AUXILIARY COLUMN HEAVY CONNECTION (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

CRANE ID:

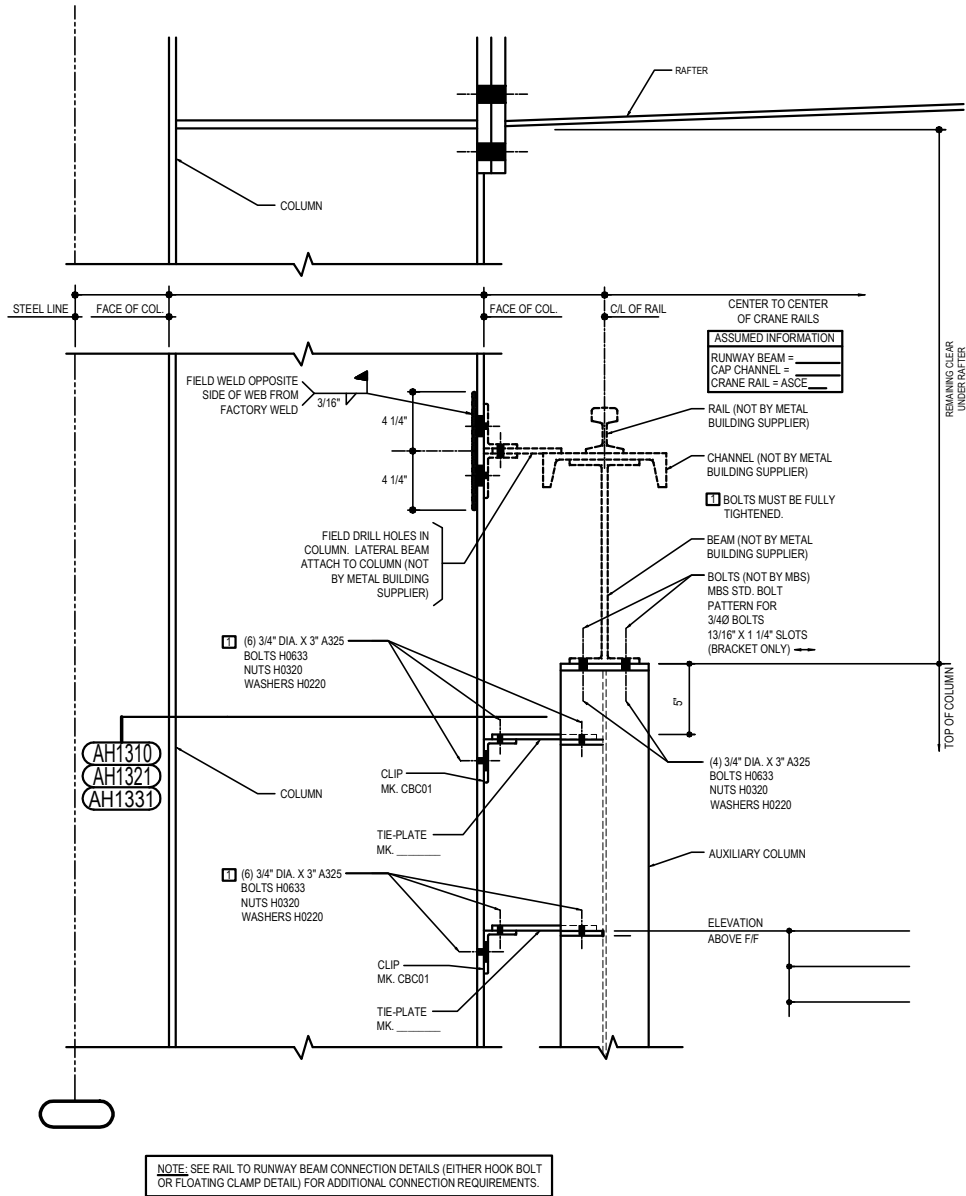
AH1302

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1303 - BEAM TO AUXILIARY COLUMN (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

CRANE ID:

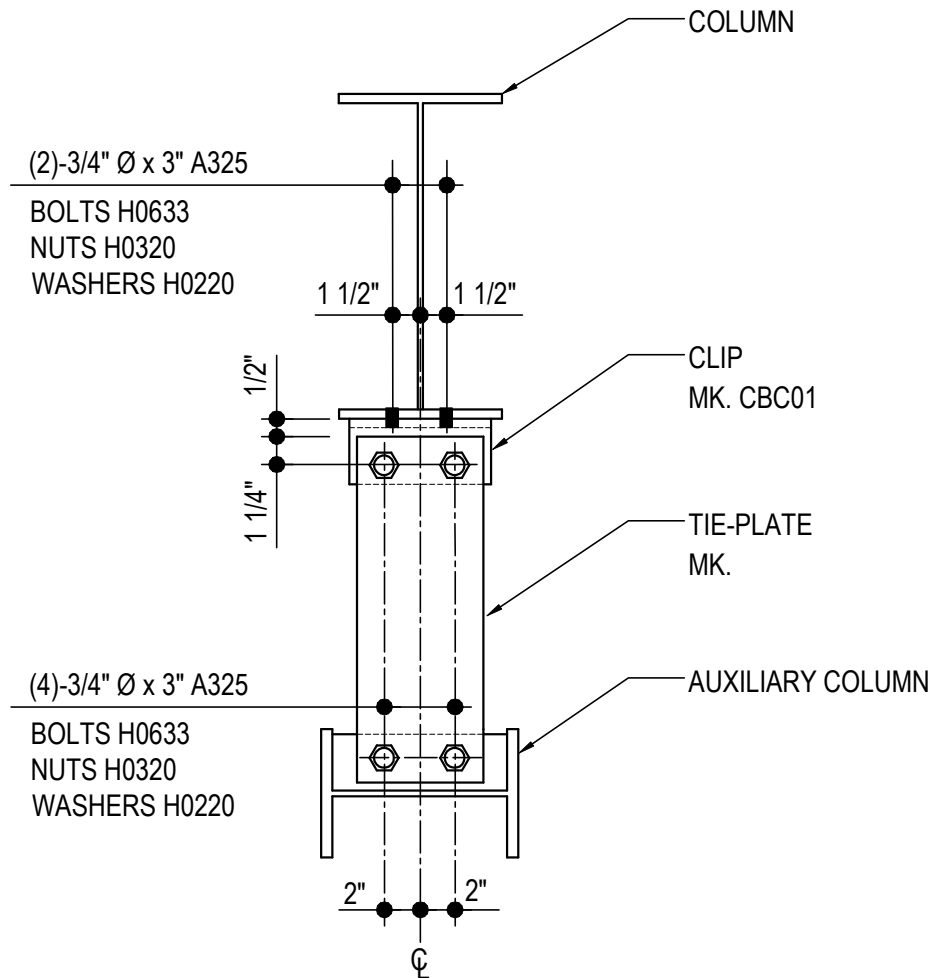
AH1303

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1310 - COLUMN TO AUXILIARY COLUMN CONNECTION

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



**TOP RUNNING BRIDGE
CRANE DETAIL**

COLUMN TO AUXILIARY COLUMN ATTACHMENT

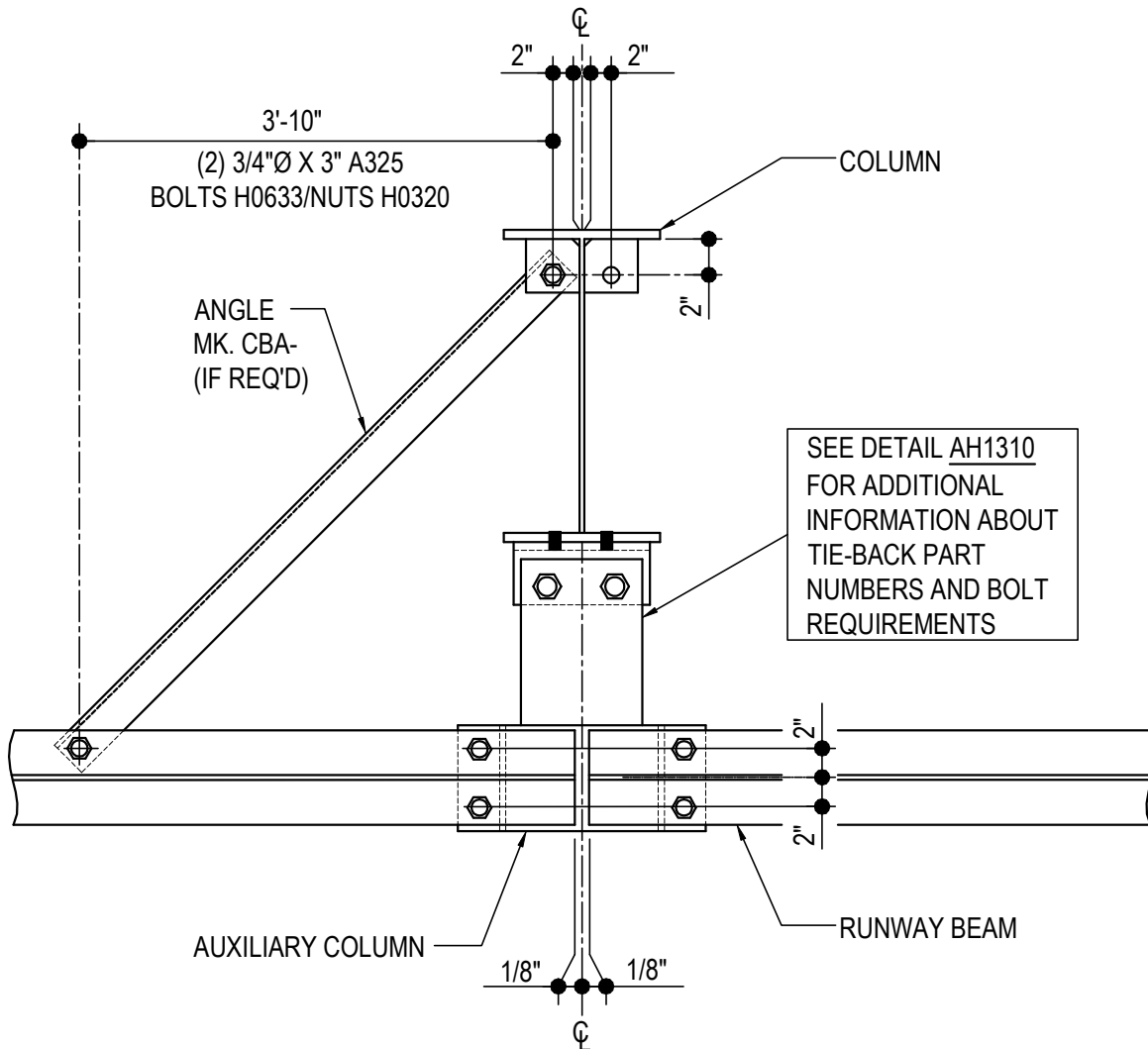
AH1310

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1320 - BEAM BRACING NO BRACE STRUT (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

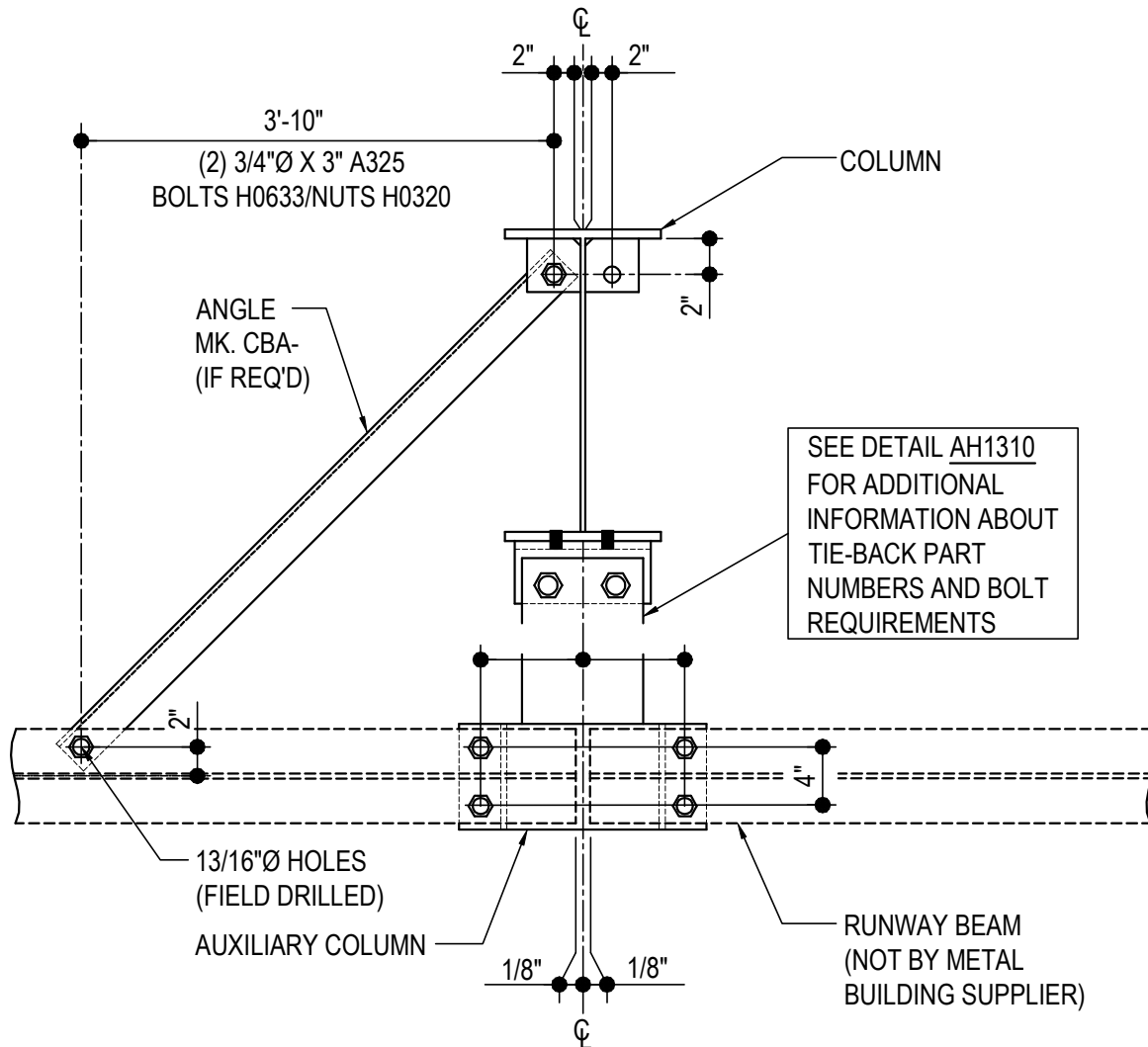
AH1320

Detailer Notes:

- 1)

AH1321 - BEAM BRACING NO BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

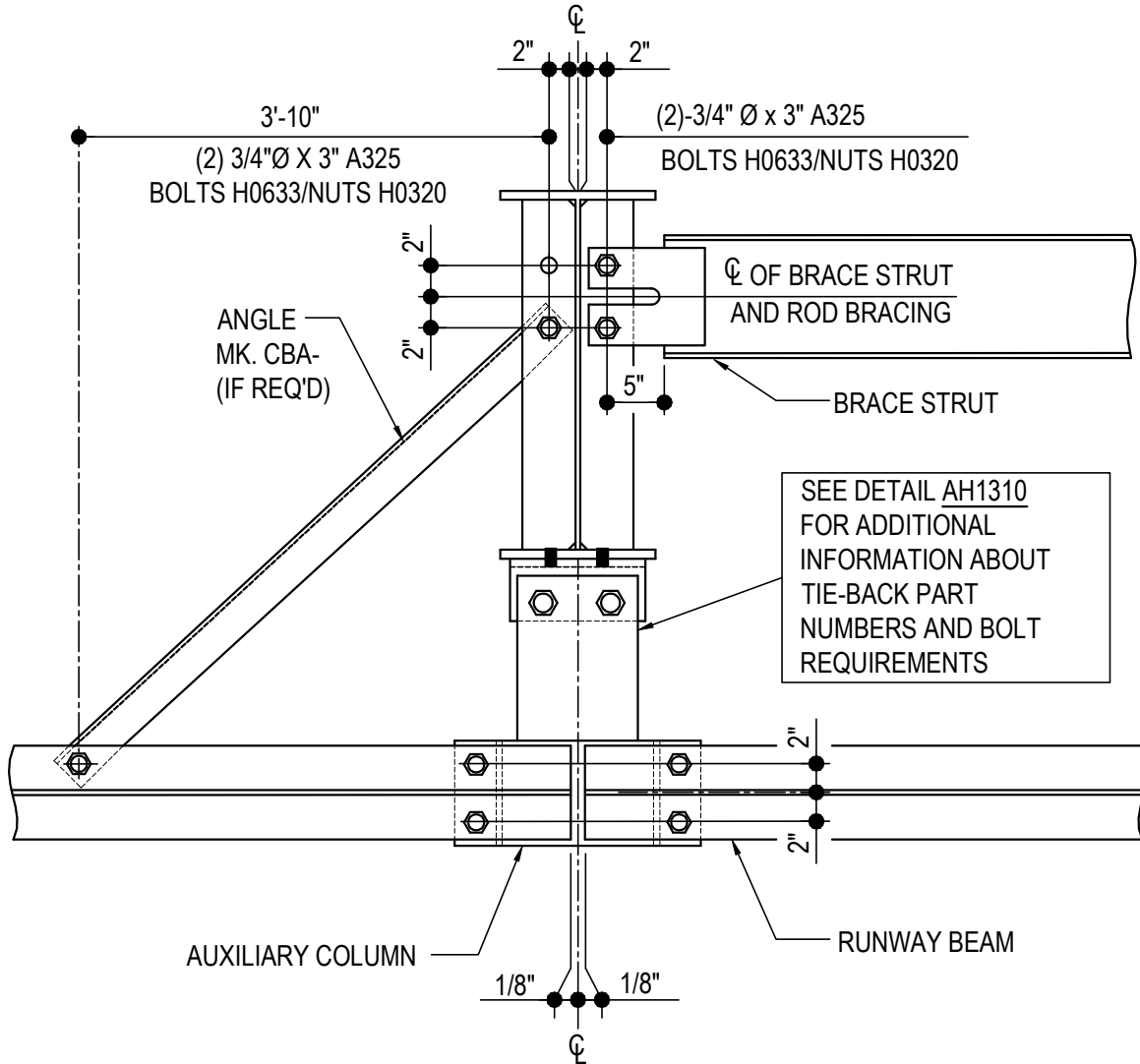
AH1321

Detailer Notes:

- 1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1330 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)

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



**TOP RUNNING BRIDGE
CRANE DETAIL**

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

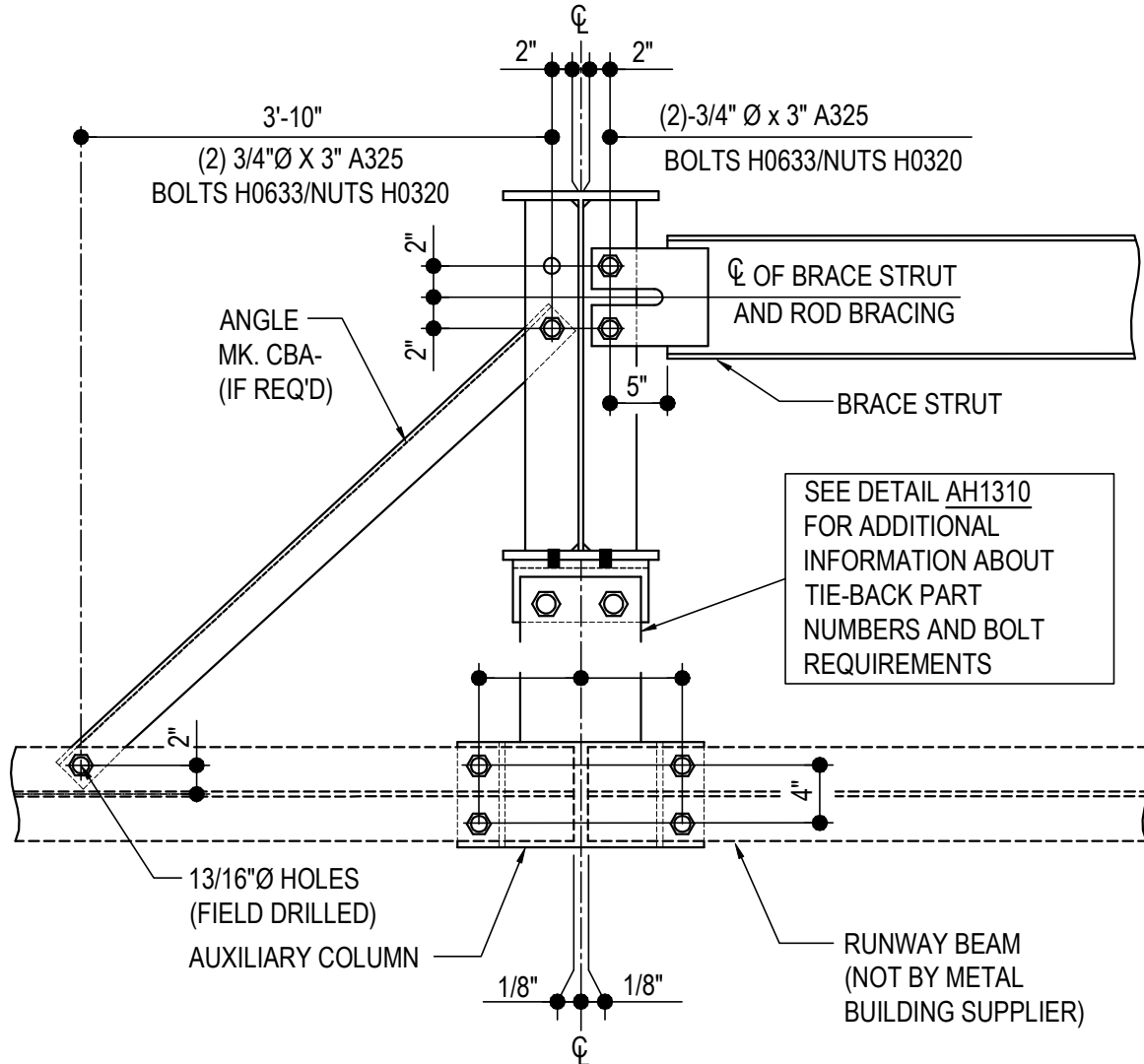
AH1330

Detailer Notes:

- PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1331 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL UNLESS NOTED OTHERWISE)

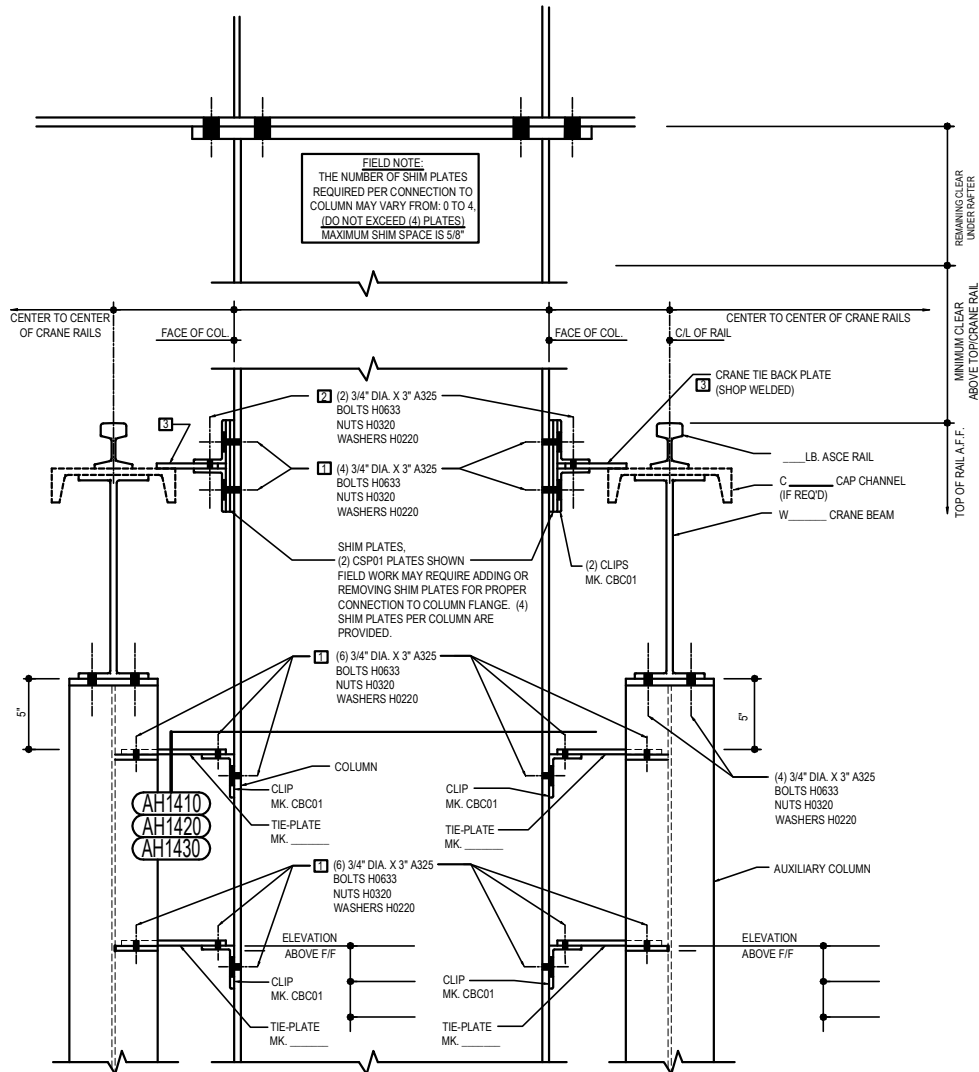
AH1331

Detailer Notes:

- 1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.
- 2) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1401 - BEAM TO AUXILIARY COLUMN STD. CONNECTION (BEAM BY NBG)

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



NOTE: SEE RAIL TO RUNWAY BEAM CONNECTION DETAILS (EITHER HOOK BOLT OR FLOATING CLAMP DETAIL) FOR ADDITIONAL CONNECTION REQUIREMENTS.

- 1 BOLTS MUST BE FULLY TIGHTENED.
- 2 BOLTS TO BE HAND TIGHTENED ONLY. THREADS MUST BE DISTORTED TO PREVENT BOLTS FROM LOOSENING.
- 3 FIELD SLOTTING OF LATERAL TIE BACK PLATE OR ANGLES IS NOT PERMITTED. FIELD MODIFICATION OF THIS CONNECTION WILL ADVERSELY AFFECT THE STRUCTURAL PERFORMANCE AND INTEGRITY OF THE CRANE RUNWAY SYSTEM.

TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

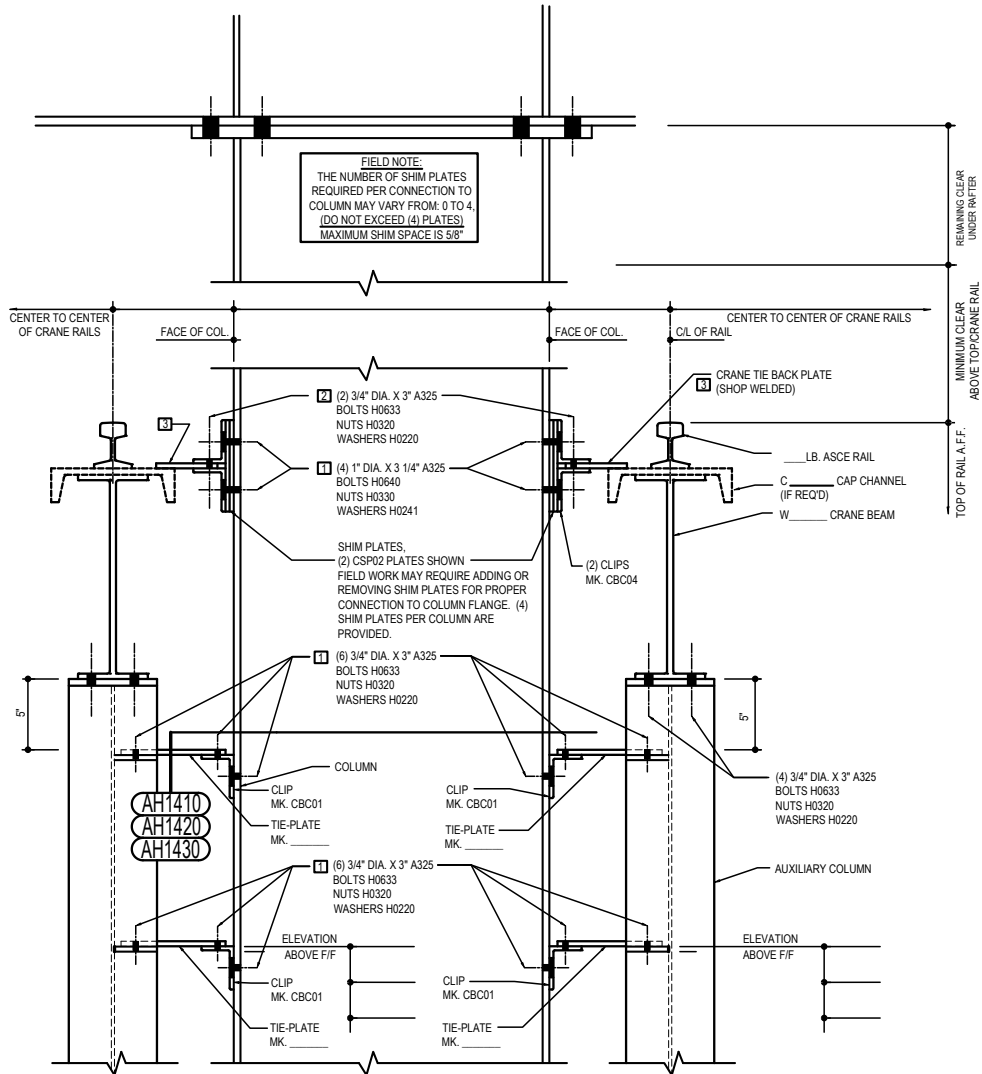
CRANE ID: AH1401

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1402 - BEAM TO AUXILIARY COLUMN HEAVY CONNECTION (BEAM BY NBG)

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



NOTE: SEE RAIL TO RUNWAY BEAM CONNECTION DETAILS (EITHER HOOK BOLT OR FLOATING CLAMP DETAIL) FOR ADDITIONAL CONNECTION REQUIREMENTS.

- 1 BOLTS MUST BE FULLY TIGHTENED.
- 2 BOLTS TO BE HAND TIGHTENED ONLY. THREADS MUST BE DISTORTED TO PREVENT BOLTS FROM LOOSENING.
- 3 FIELD SLOTTING OF LATERAL TIE BACK PLATE OR ANGLES IS NOT PERMITTED. FIELD MODIFICATION OF THIS CONNECTION WILL ADVERSELY AFFECT THE STRUCTURAL PERFORMANCE AND INTEGRITY OF THE CRANE RUNWAY SYSTEM.

TOP RUNNING BRIDGE CRANE DETAIL
RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

CRANE ID:

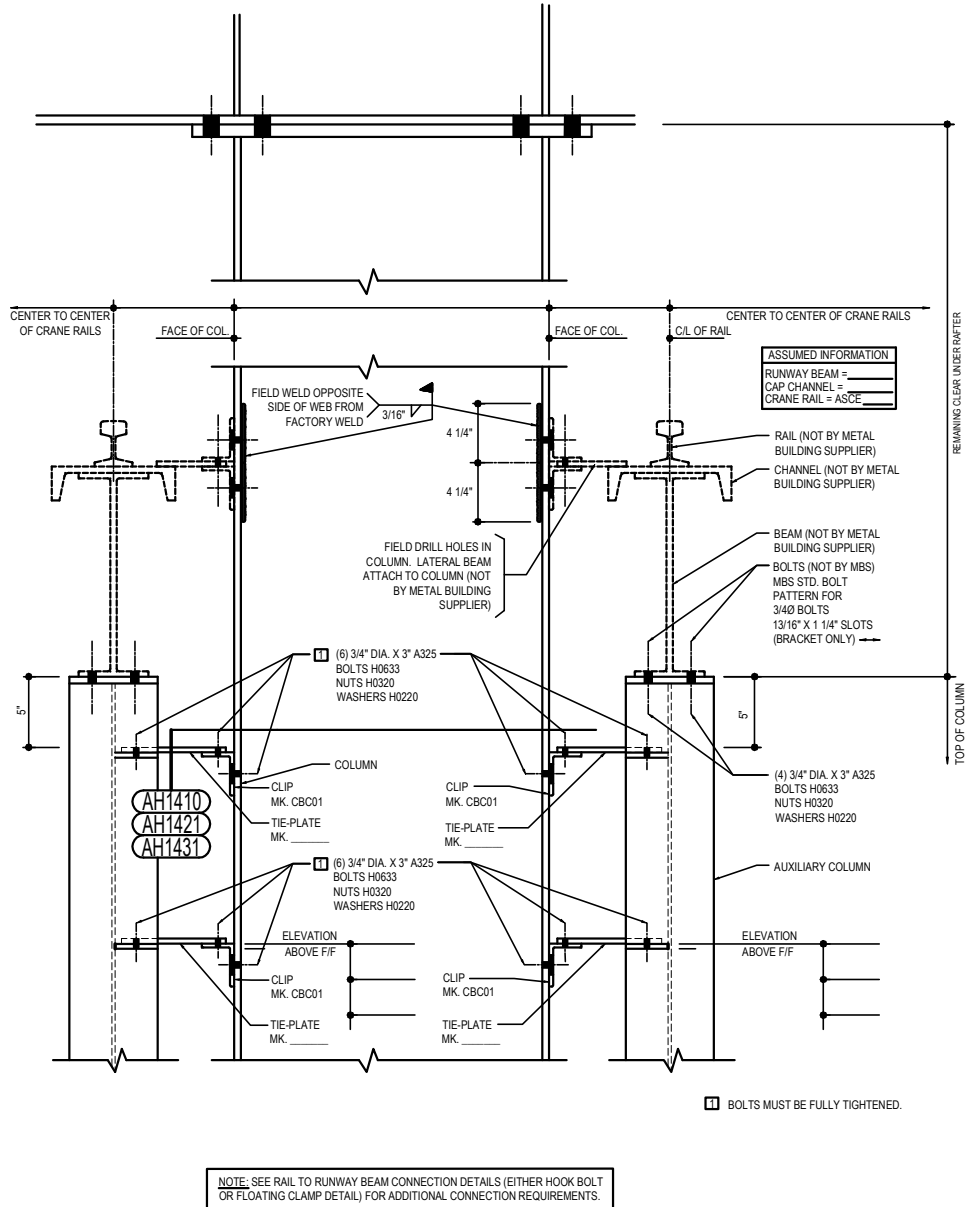
AH1402

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1403 - BEAM TO AUXILIARY COLUMN (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL
 RUNWAY BEAM TO AUXILIARY COLUMN CONNECTION

CRANE ID:

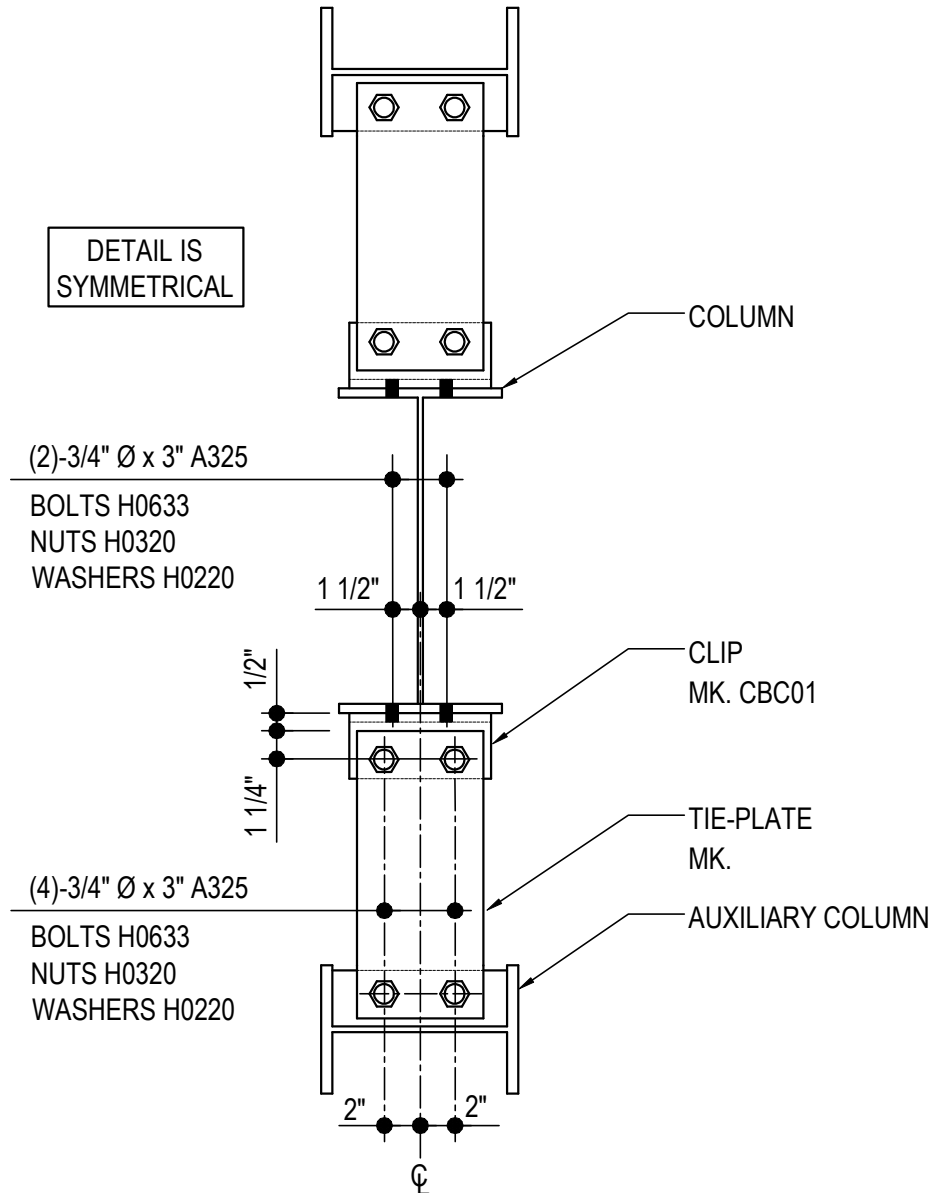
AH1403

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1410 - COLUMN TO AUXILIARY COLUMN CONNECTION

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



**TOP RUNNING BRIDGE
CRANE DETAIL**

COLUMN TO AUXILIARY COLUMN ATTACHMENT

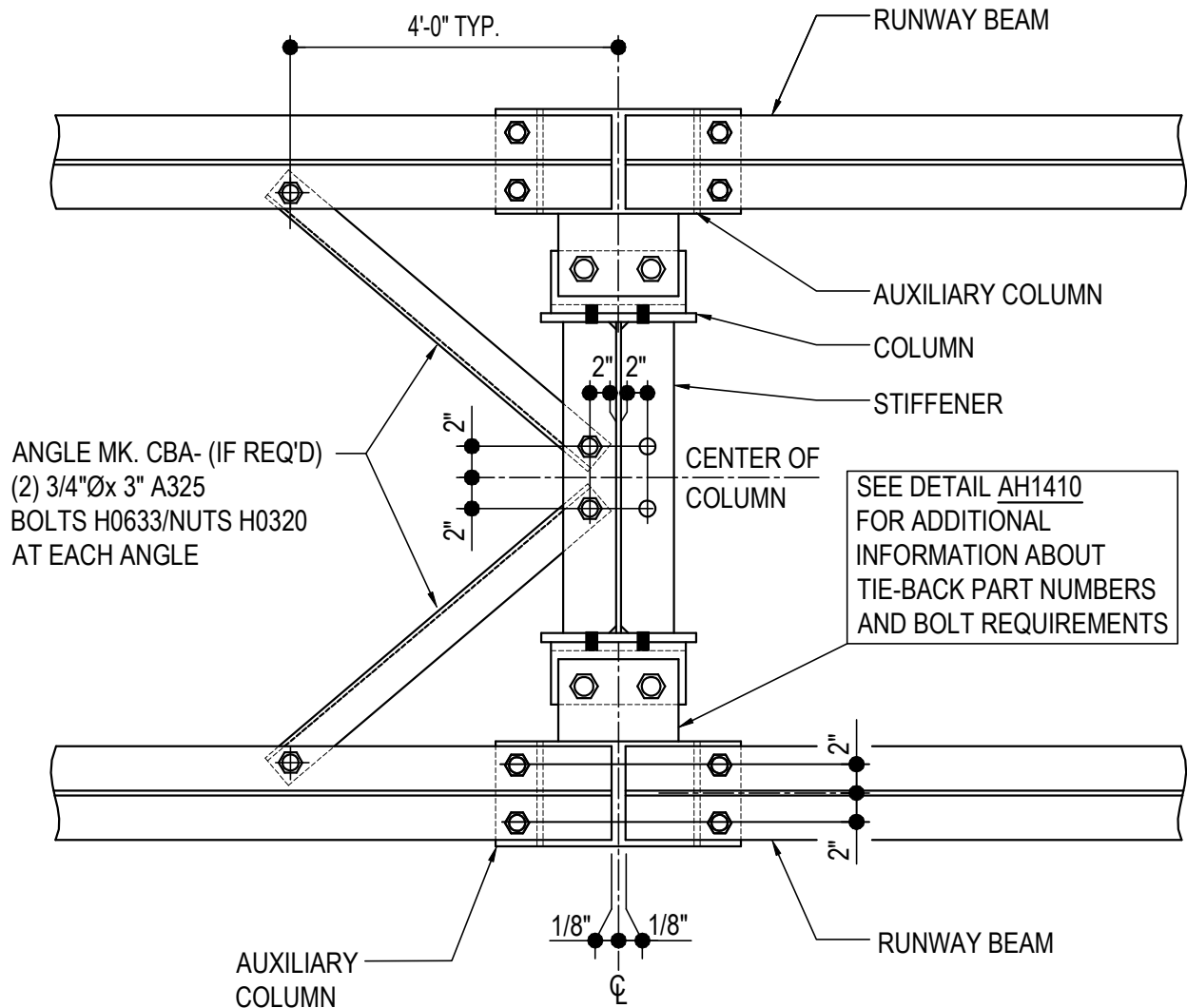
AH1410

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1420 - BEAM BRACING NO BRACE STRUT (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO AUXILIARY COLUMN (TYPICAL UNLESS NOTED OTHERWISE)

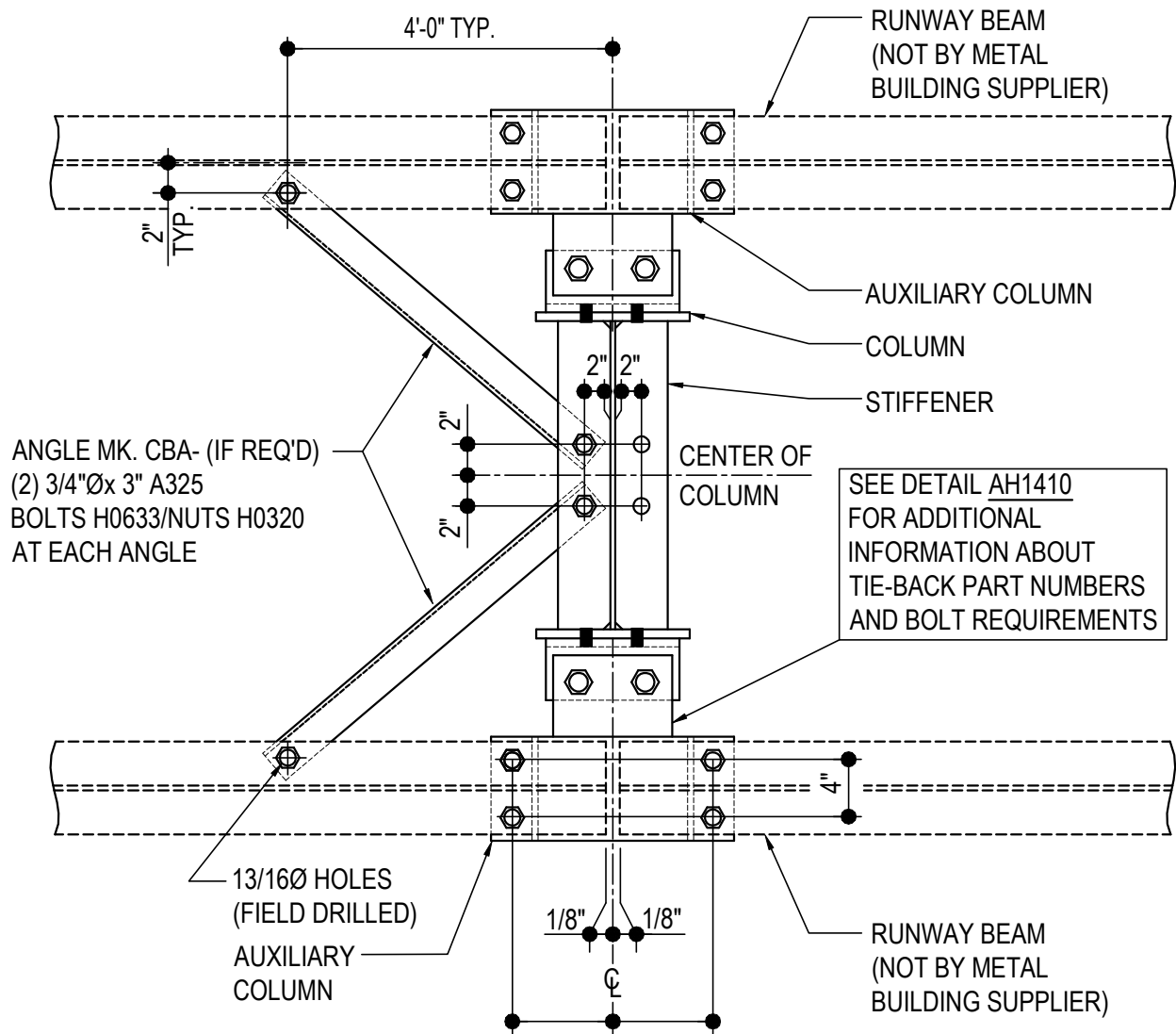
AH1420

Detailer Notes:

- PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.

AH1421 - BEAM BRACING NO BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO AUXILIARY COLUMN (TYPICAL UNLESS NOTED OTHERWISE)

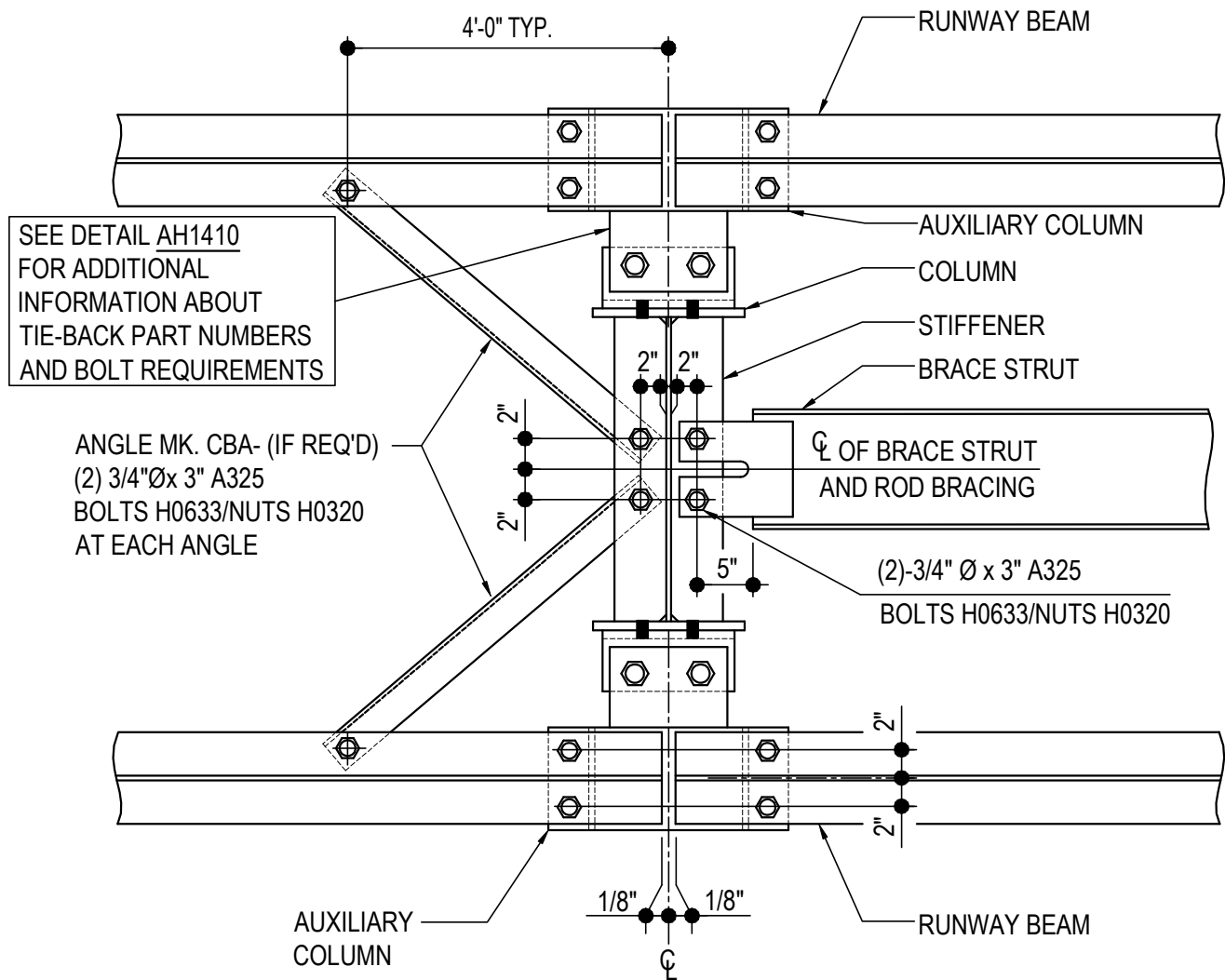
AH1421

Detailer Notes:

- 1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.
- 2) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1430 - BEAM BRACING WITH BRACE STRUT (BEAM BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

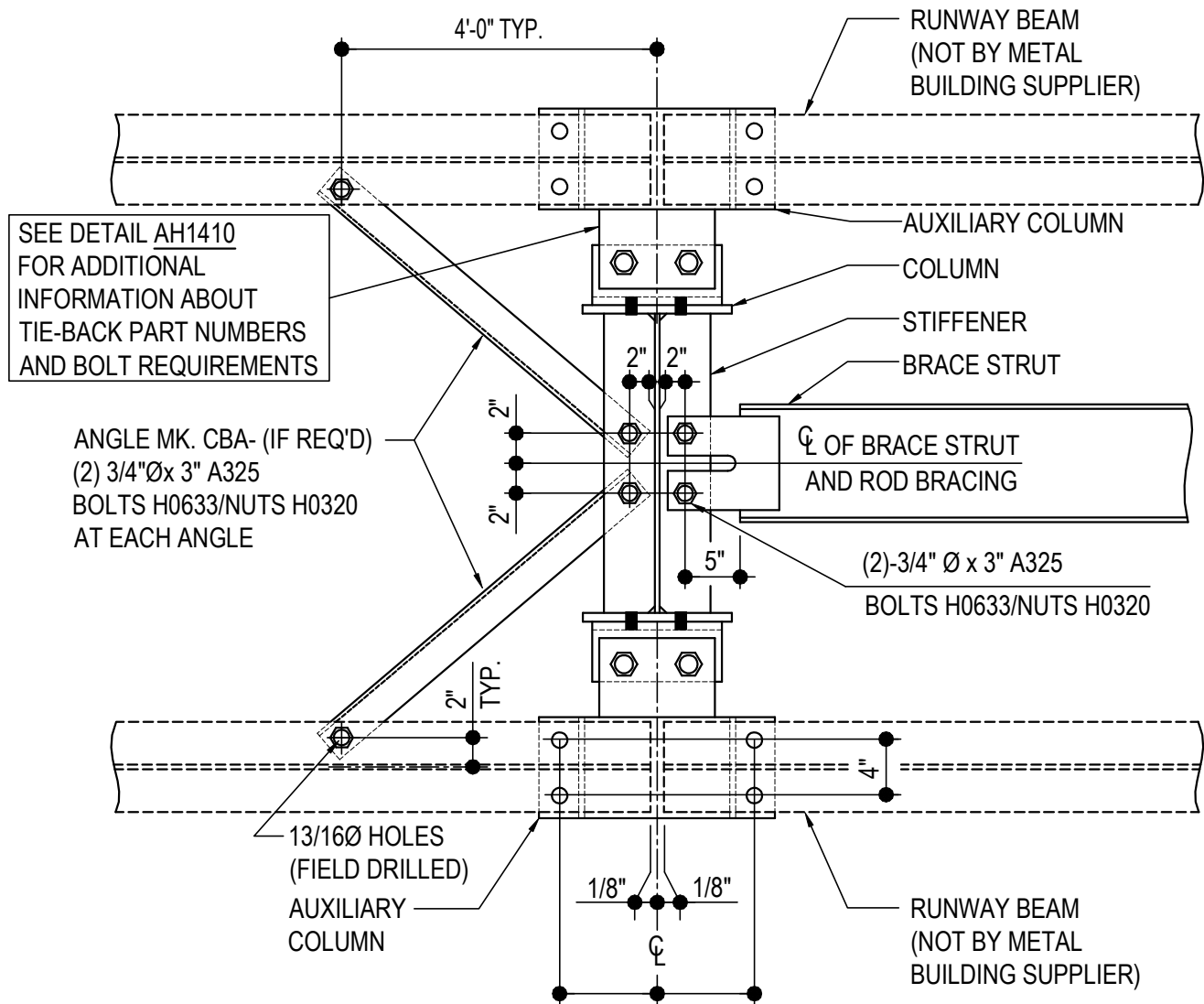
AH1430

Detailer Notes:

- 1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.
- 2) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1431 - BEAM BRACING WITH BRACE STRUT (BEAM NOT BY NBG)

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



TOP RUNNING BRIDGE CRANE DETAIL

RUNWAY BEAM TO COLUMN BRACING (TYPICAL AT BRACED BAY)

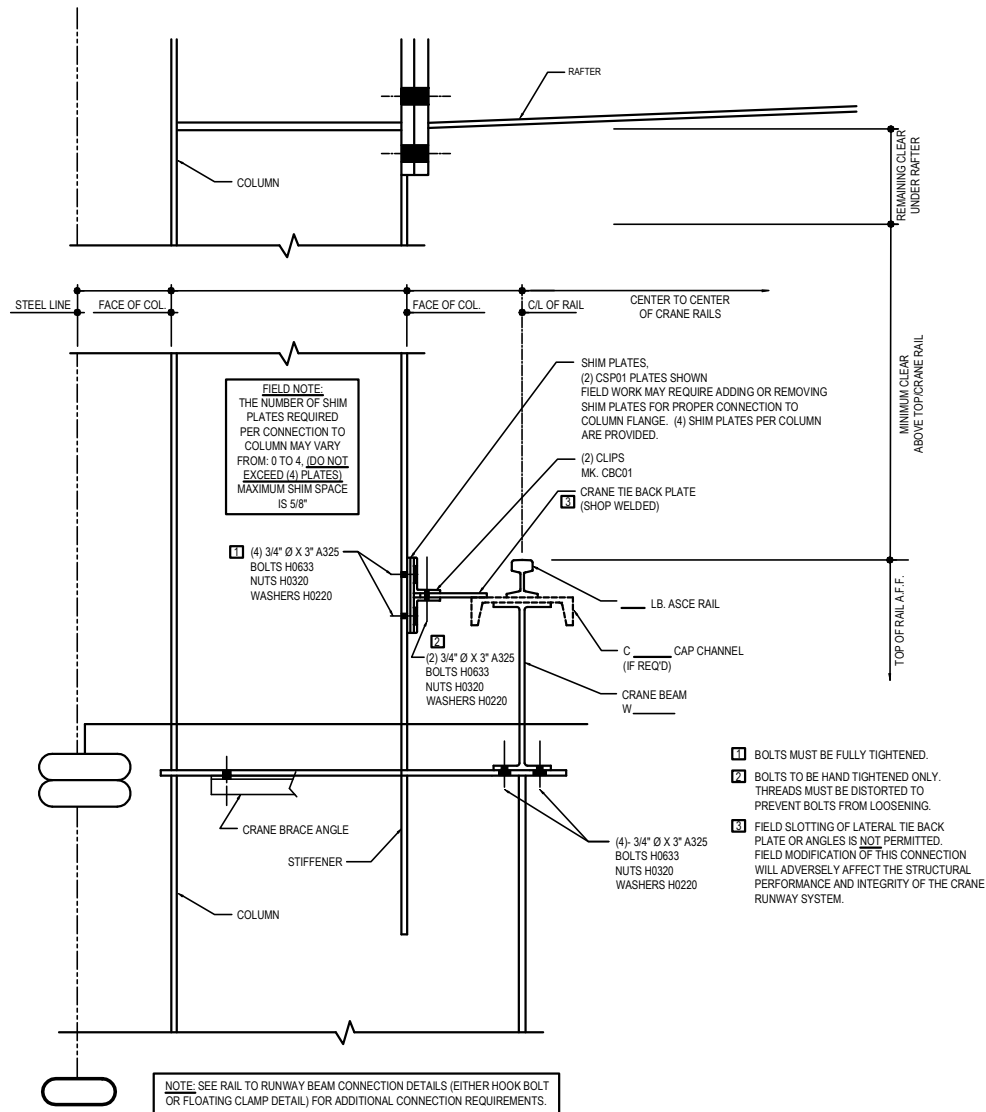
AH1431

Detailer Notes:

- 1) PLEASE NOTE THAT THE 2" DIMENSION ON THE BRACE STRUT SHOWN ABOVE (THE ONE AT THE VERY TOP OF THE DETAIL) IS FROM THE WEB TO HOLE AND NOT FROM CENTERLINE OF WEB.
- 2) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1501 - BEAM TO STEPPED COLUMN STD. CONNECTION (BEAM BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

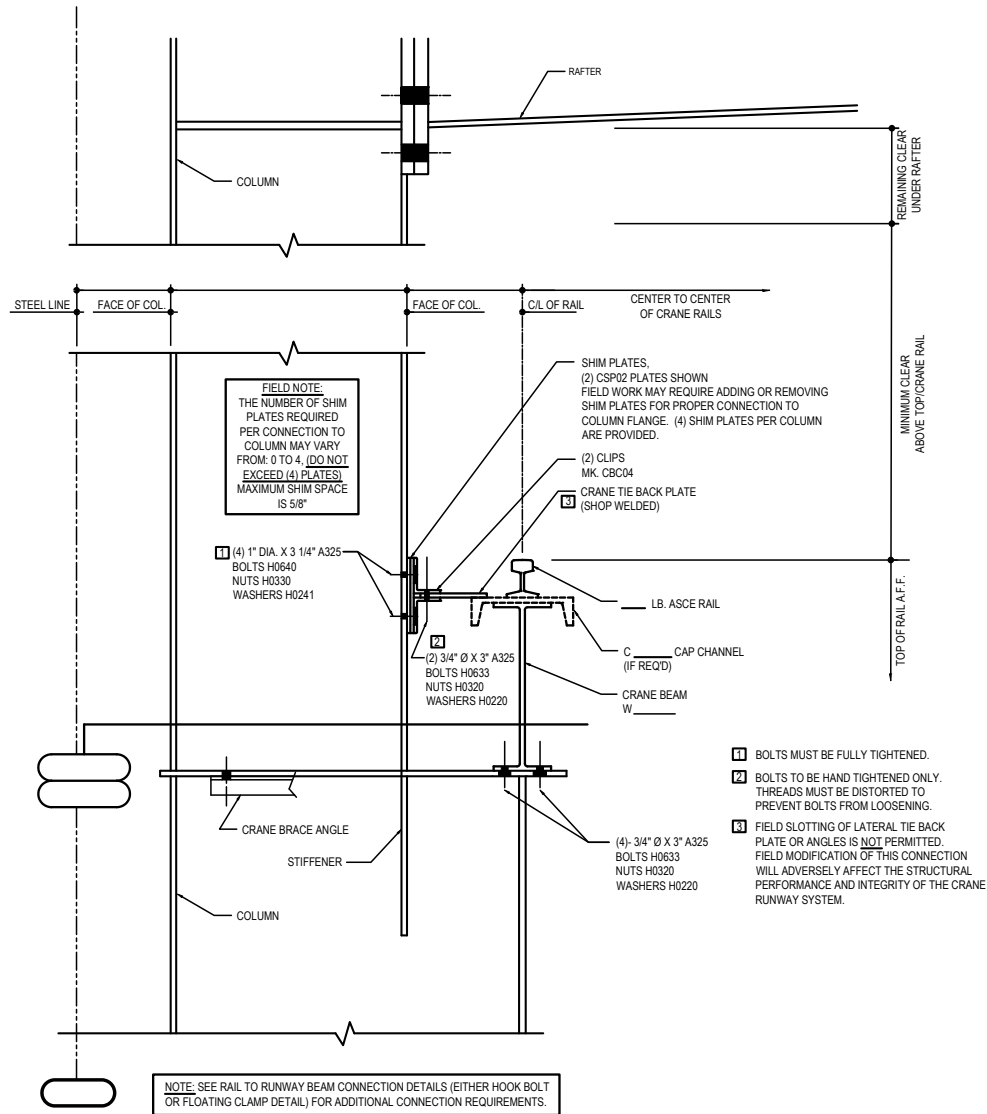
AH1501

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1110, AH1120 AND AH1130 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1502 - BEAM TO STEPPED COLUMN HEAVY CONNECTION (BEAM BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

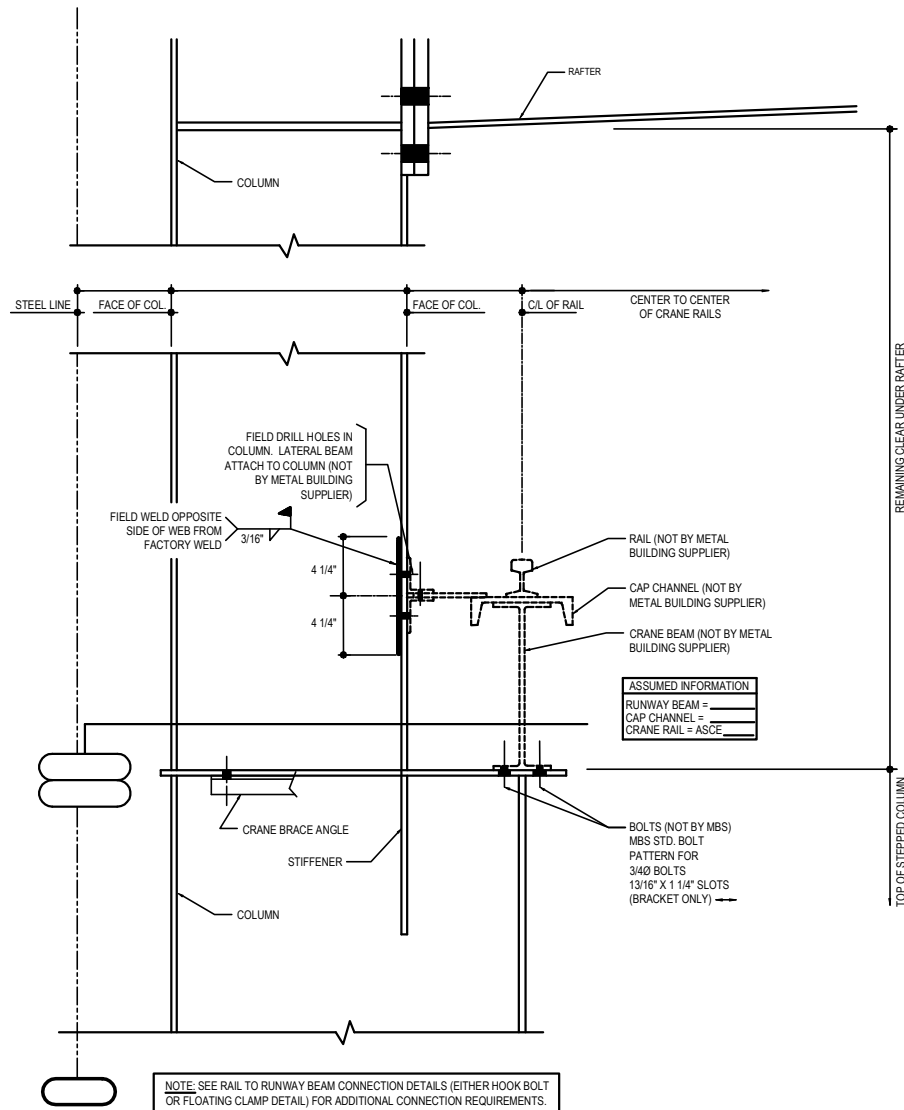
AH1502

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1110, AH1120 AND AH1130 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1503 - BEAM TO STEPPED COLUMN (BEAM NOT BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

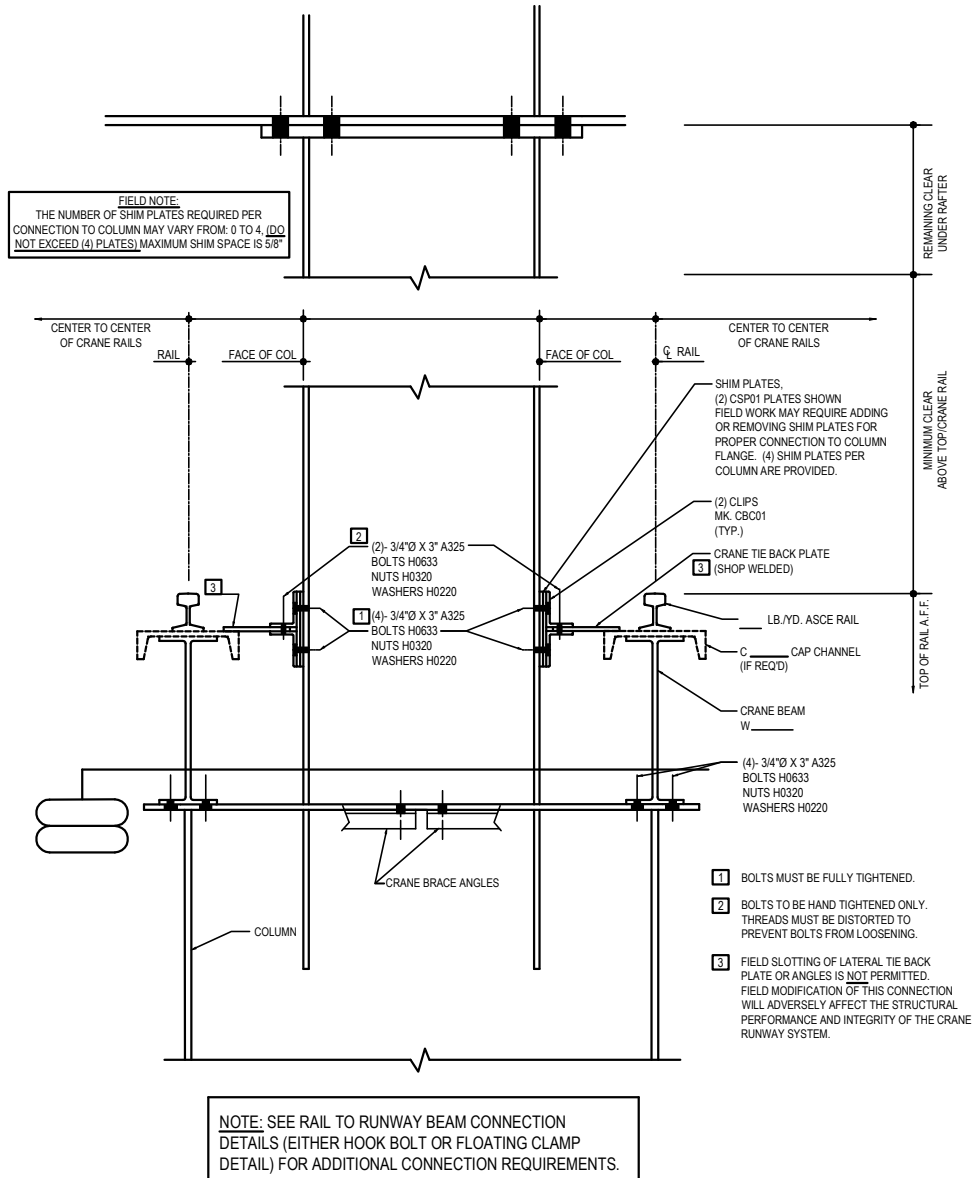
AH1503

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1110, AH1120 AND AH1130 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1511 - BEAM TO STEPPED COLUMN STD. CONNECTION (BEAM BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

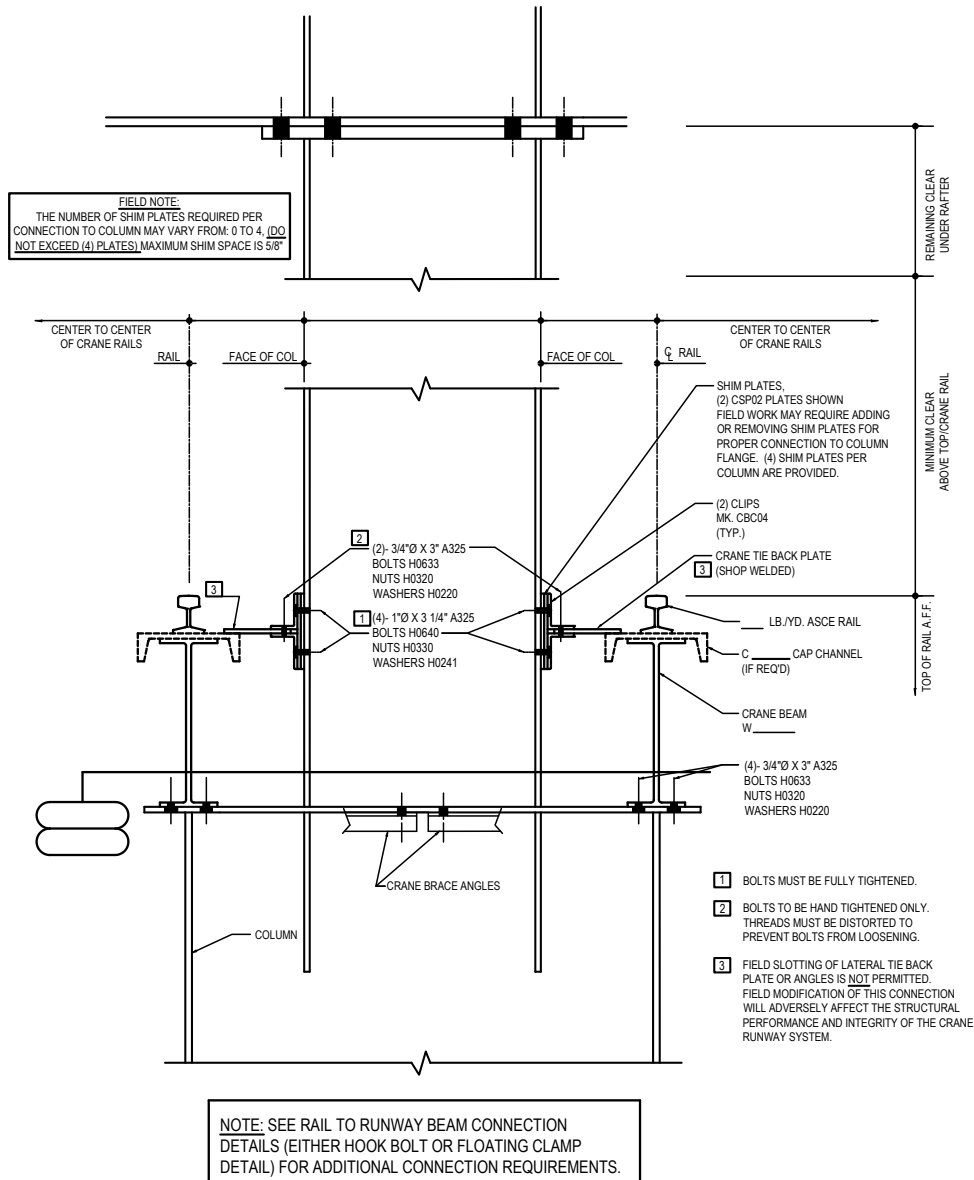
AH1511

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1210, AH1220 AND AH1230 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1512 - BEAM TO STEPPED COLUMN HEAVY CONNECTION (BEAM BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

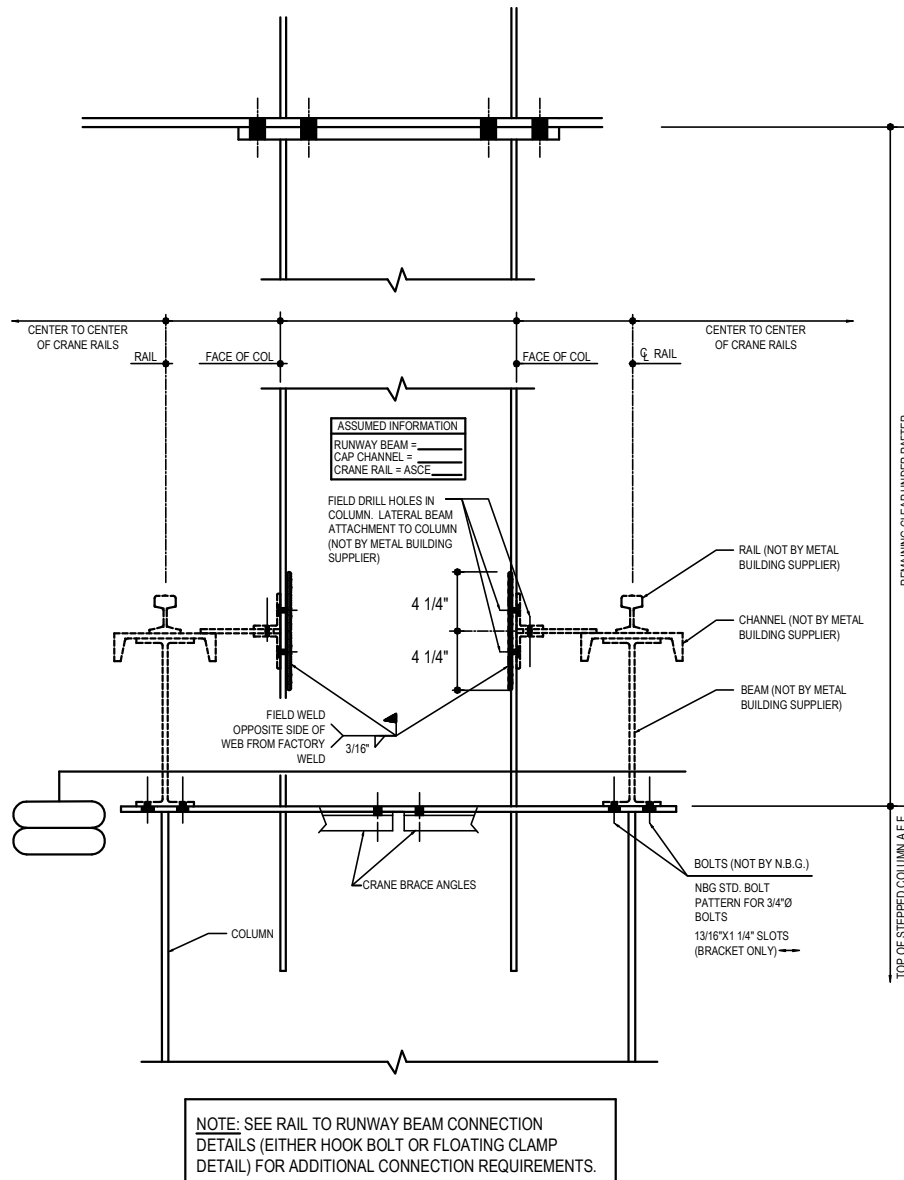
AH1512

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1210, AH1220 AND AH1230 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1513 - BEAM TO STEPPED COLUMN (BEAM NOT BY NBG)

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



STEP CRANE COLUMN DETAIL
RUNWAY BEAM TO STEPPED COLUMN CONNECTION

CRANE ID:

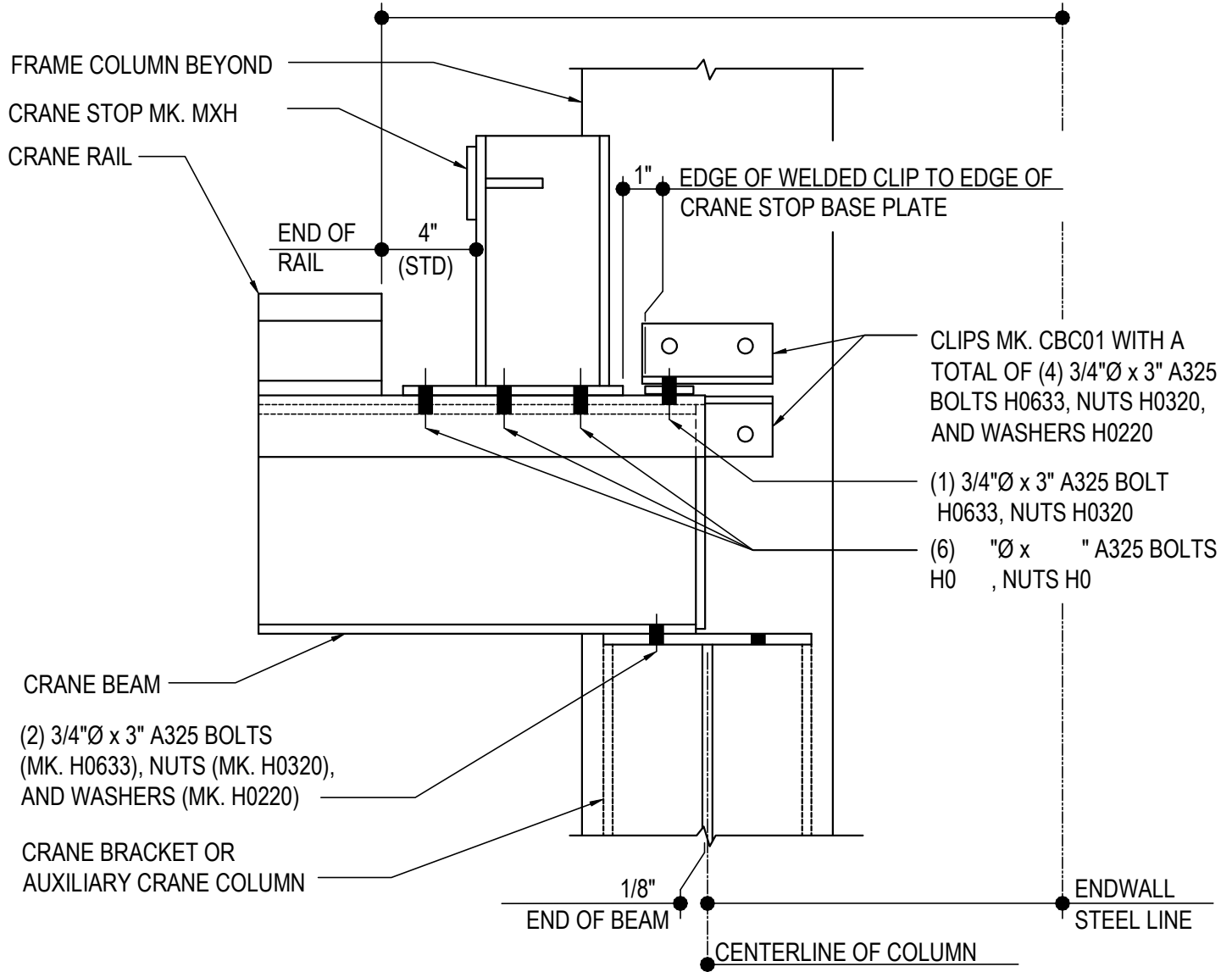
AH1513

Detailer Notes:

- 1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.
- 2) USE DETAILS AH1210, AH1220 AND AH1230 FOR BEAM BRACING DETAILS, SOME MODIFICATIONS TO THE DETAILS ARE REQUIRED.

AH1601 - CRANE STOP DETAIL (WITH CBC01)

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



TOP RUNNING CRANE STOP

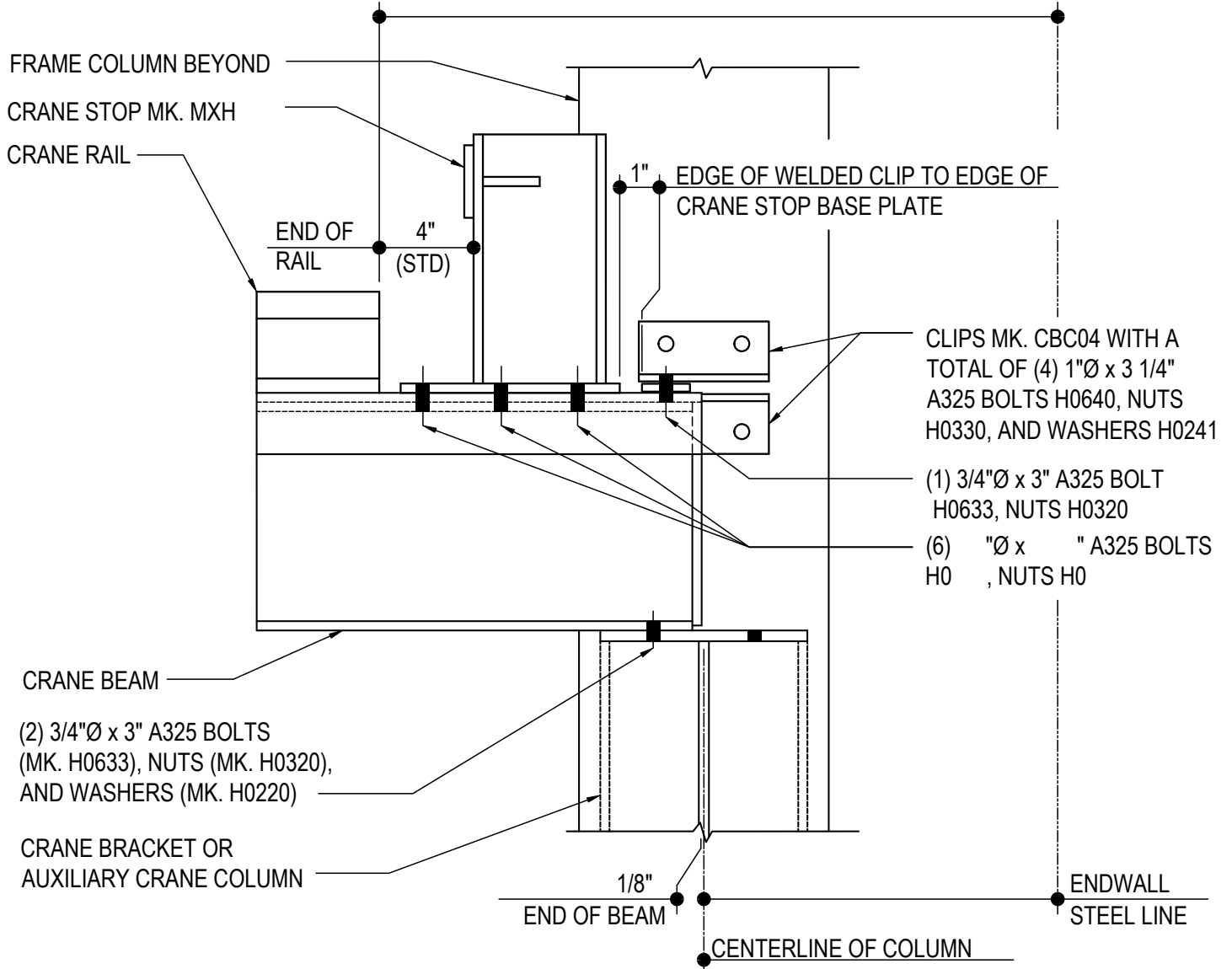
AH1601

Detailer Notes:

1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1602 - CRANE STOP DETAIL (WITH CBC04)

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



TOP RUNNING CRANE STOP

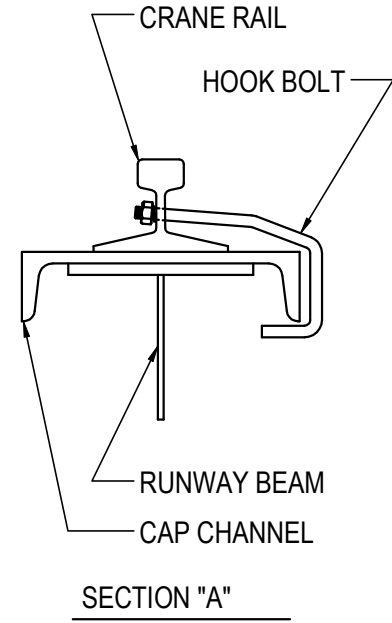
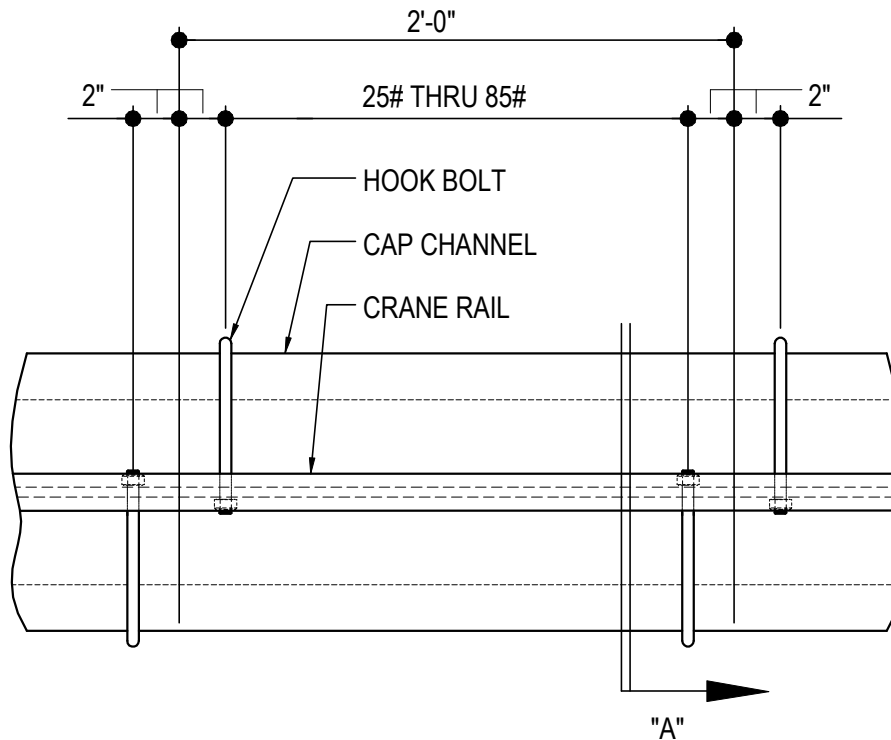
AH1602

Detailer Notes:

1) THIS DETAIL HAS ATTRIBUTES, TO ACCESS ATTRIBUTES DOUBLE CLICK DETAIL.

AH1620 - RAIL TO RUNWAY HOOK BOLT

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



RAIL SIZE: _____

HOOK BOLT DIAMETER: _____

JOINT BARS: STANDARD

RAIL	HOOK BOLT DIA.
25# - 30#	5/8"
40# - 60#	3/4"
70# - 85#	7/8"

RAIL TO RUNWAY BEAM HOOK BOLT CONNECTION

TOP RUNNING BRIDGE CRANE DETAIL

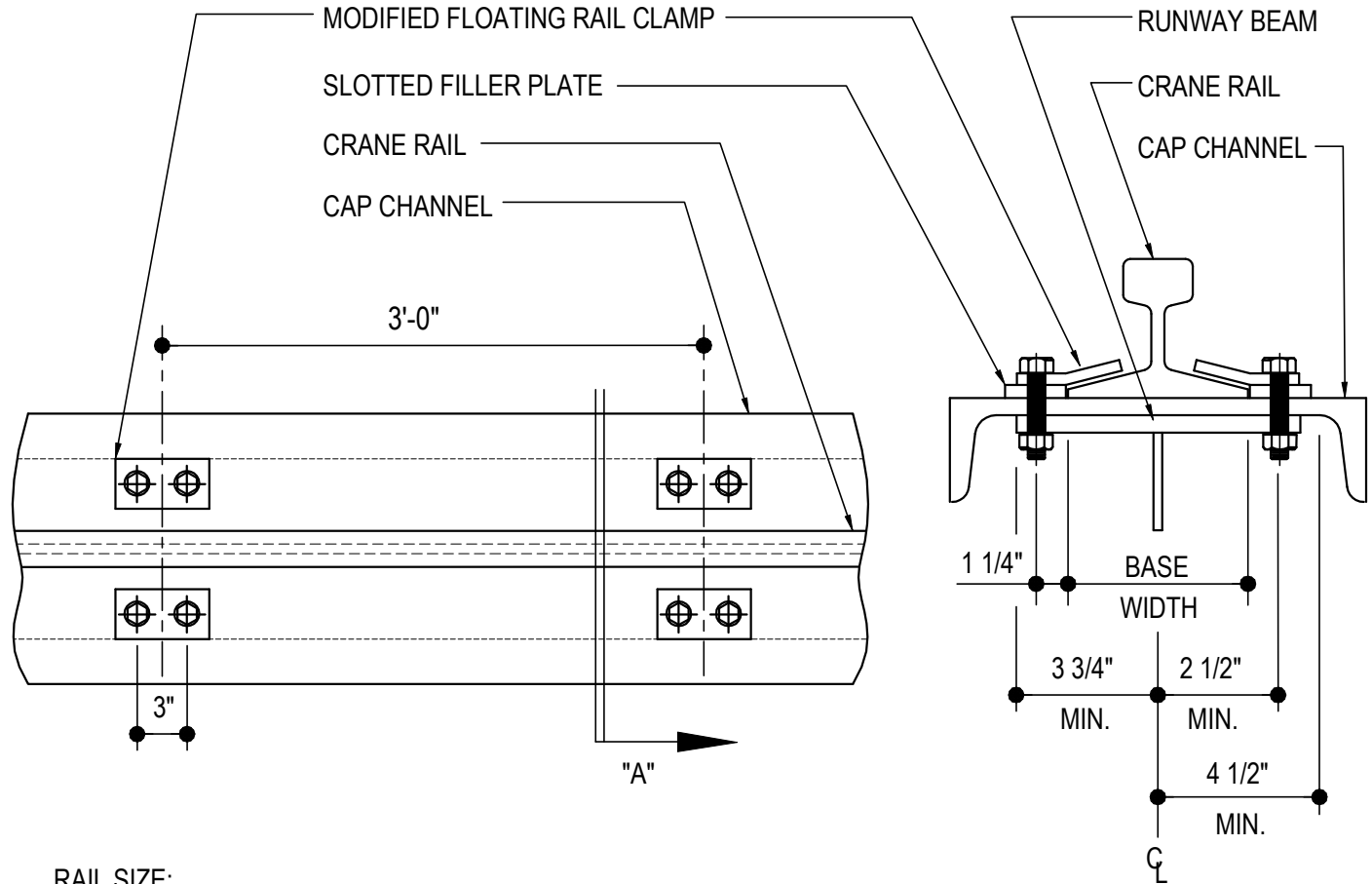
AH1620

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1630 - RAIL TO RUNWAY BEAM FLOATING CLAMP

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



SECTION "A"

RAIL SIZE: _____

JOINT BARS: STANDARD

RAIL CLAMPS: (2) BOLT MODIFIED FLOATING RAIL CLAMP

BOLT SIZE: 1" Ø A325 W/ (1) LOCK WASHER

**RAIL TO RUNWAY BEAM
FLOATING CLAMP CONNECTION**

TOP RUNNING BRIDGE CRANE DETAIL

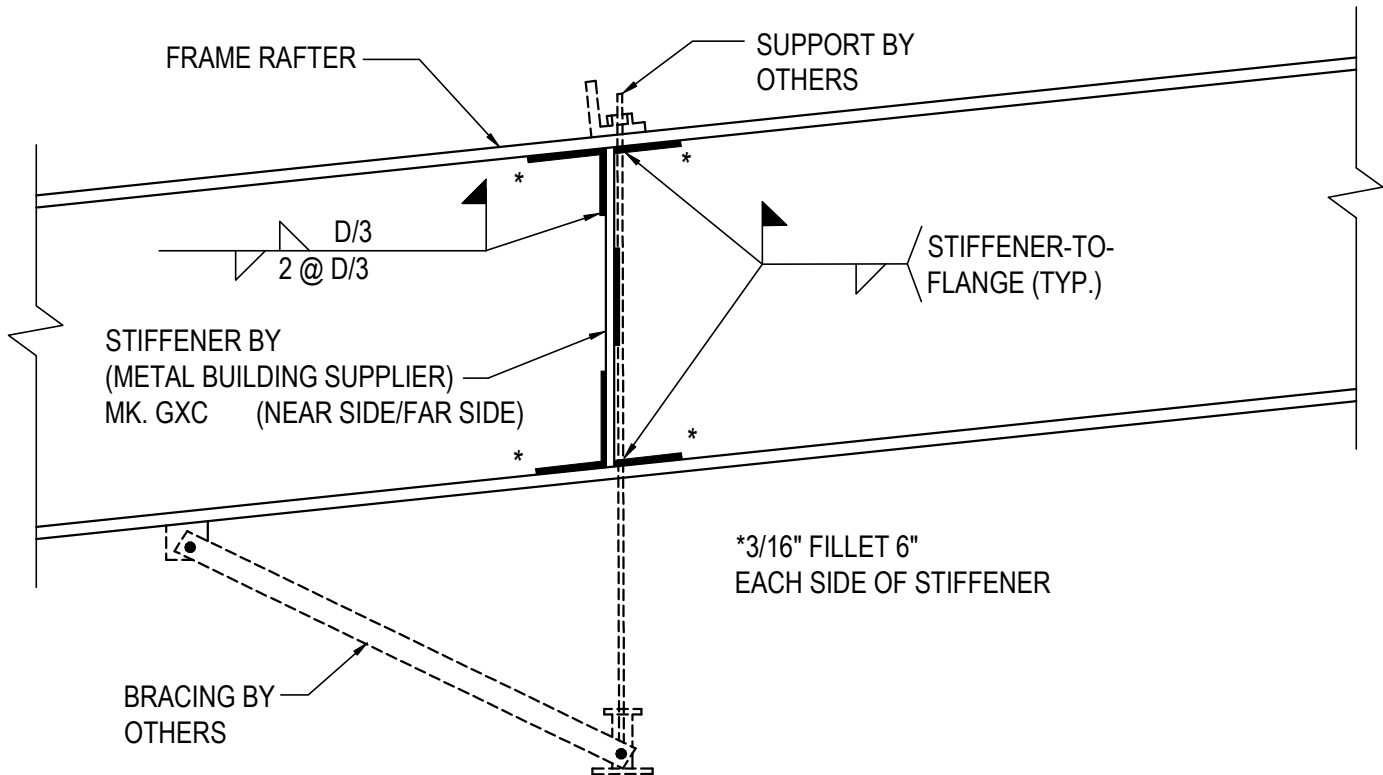
AH1630

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1700 - UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT (BY NBG)

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



NOTE:

- MBS IS PROVIDING FOR CRANE CAPACITY ONLY. ADDITIONAL REINFORCEMENT ON RIGID FRAMES DUE TO CRANE LOADS IS NOT BY MBS. SEE DETAIL ABOVE FOR WEB REINFORCEMENT INFORMATION AT CRANE ATTACHMENT LOCATIONS.
- ALL WELDING MUST BE PERFORMED BY AWS CERTIFIED WELDERS WHO ARE QUALIFIED FOR THE WELDING PROCESSES AND POSITIONS INDICATED. ALL WORK MUST BE COMPLETED AND INSPECTED IN ACCORDANCE WITH THE APPLICABLE AWS SPECIFICATIONS. WELD ELECTRODES USED FOR THE SMAW (OR STICK) WELD PROCESS MUST BE 70 KSI STEEL AND LOW HYDROGEN CONTENT.

UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT

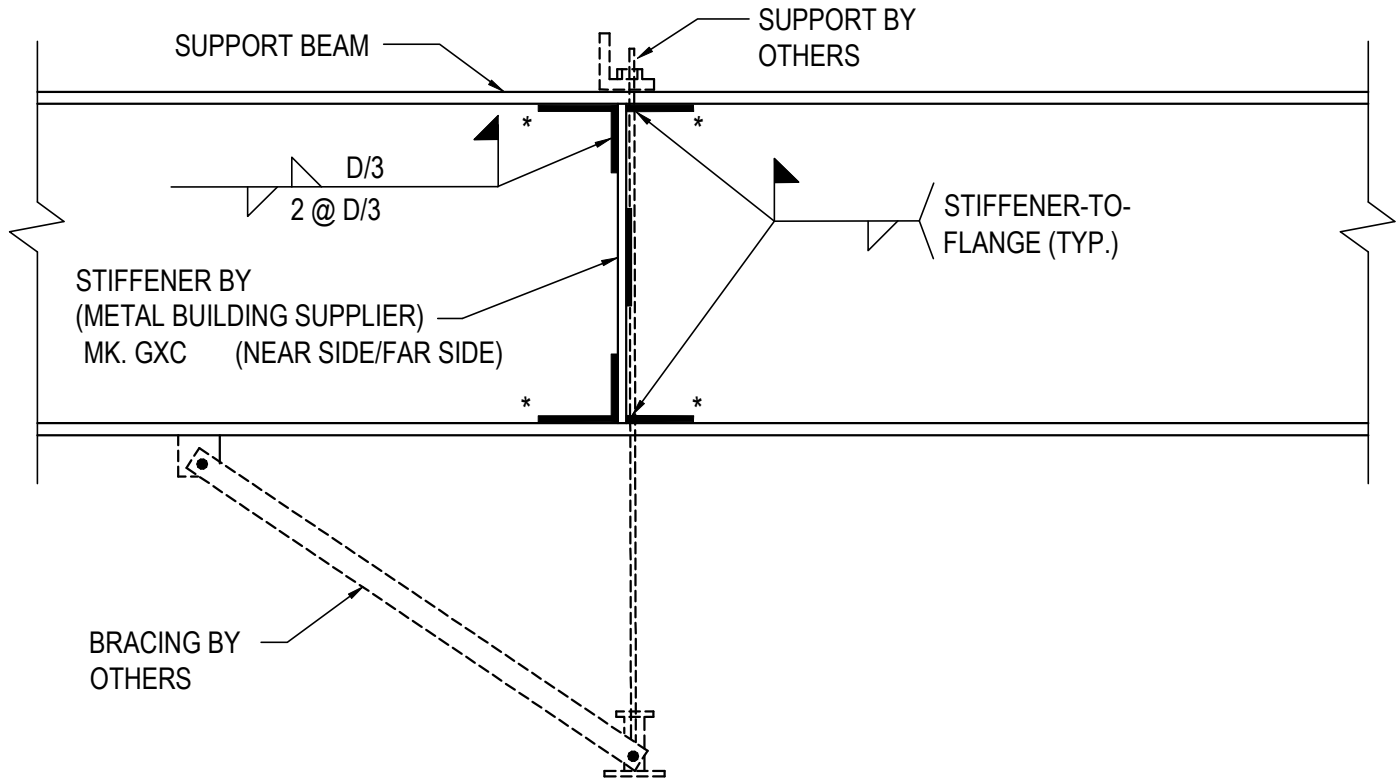
AH1700

Detailer Notes:

- 1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1710 - TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT (BY NBG)

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



NOTE:

- MBS IS PROVIDING FOR CRANE CAPACITY ONLY. ADDITIONAL REINFORCEMENT ON RIGID FRAMES DUE TO CRANE LOADS IS NOT BY MBS. SEE DETAIL ABOVE FOR WEB REINFORCEMENT INFORMATION AT CRANE ATTACHMENT LOCATIONS.
- ALL WELDING MUST BE PERFORMED BY AWS CERTIFIED WELDERS WHO ARE QUALIFIED FOR THE WELDING PROCESSES AND POSITIONS INDICATED. ALL WORK MUST BE COMPLETED AND INSPECTED IN ACCORDANCE WITH THE APPLICABLE AWS SPECIFICATIONS. WELD ELECTRODES USED FOR THE SMAW (OR STICK) WELD PROCESS MUST BE 70 KSI STEEL AND LOW HYDROGEN CONTENT.

TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT

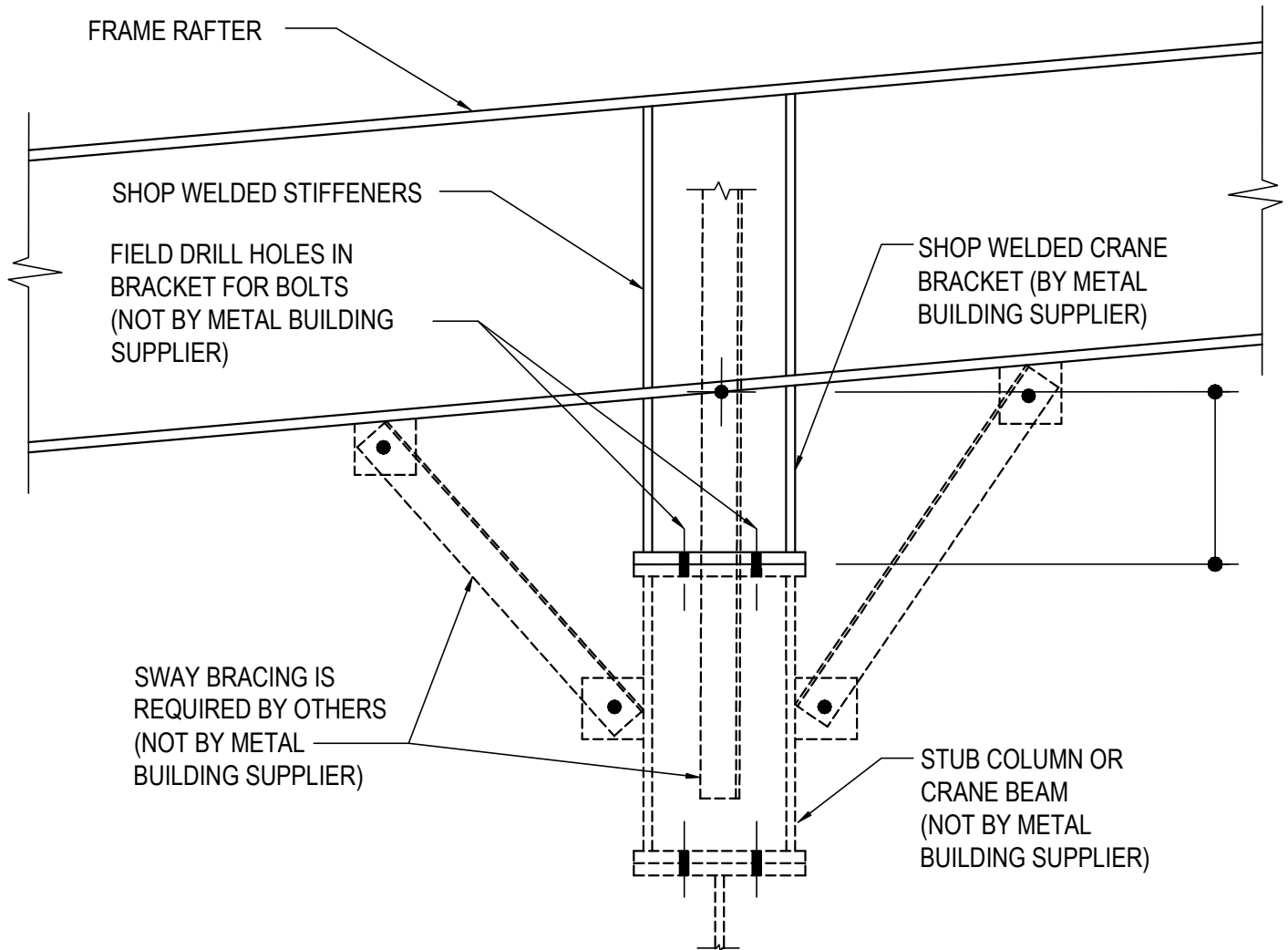
AH1710

Detailer Notes:

- 1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1720 - UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT (BY NBG)

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UNDERHUNG / MONORAIL CRANE ATTACHMENT POINT

RUNWAY BEAM, STUB/CRANE BEAM, SWAY
BRACING AND CONNECTIONS (NOT BY MBS)

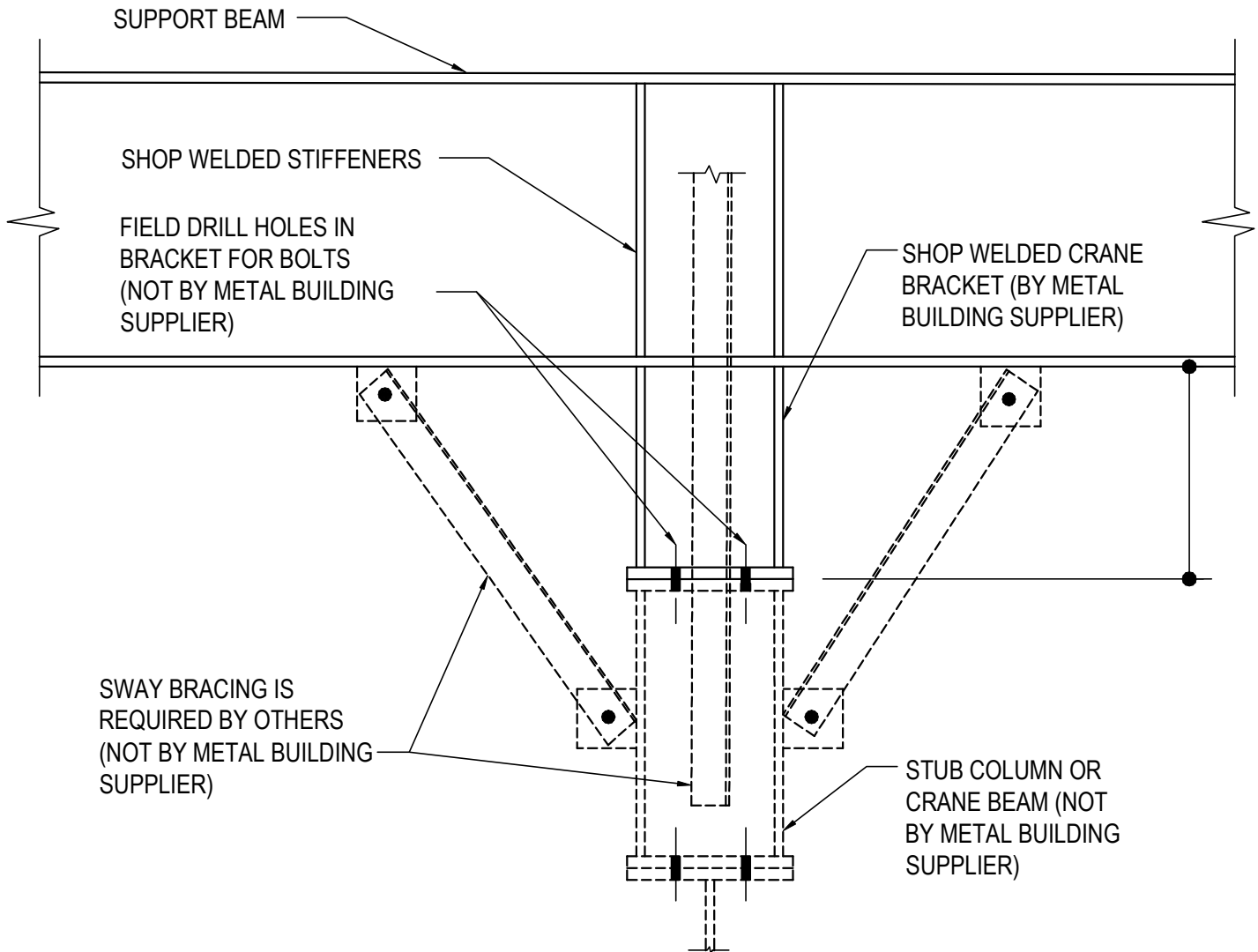
AH1720

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.

AH1730 - TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT (BY NBG)

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TRANSVERSE UNDERHUNG CRANE ATTACHMENT POINT

RUNWAY BEAM, STUB/CRANE BEAM, SWAY
BRACING AND CONNECTIONS (NOT BY MBS)

AH1730

Detailer Notes:

1) THIS DETAIL IS CONTROLLED BY ATTRIBUTES. SIMPLY DOUBLE CLICK ON THE DETAIL AND FILL IN ATTRIBUTES.