NOTES: FRAME SHAPES MAY VARY.
X-BRACES ARE PERMANENT AND MAY NOT BE REMOVED AFTER ERECTION UNLESS NOTED FOR PLUMBING PURPOSES ON ERECTION DRAWINGS.
NOTES: FRAME SHAPES MAY VARY.
X-BRACES ARE PERMANENT AND MAY NOT BE REMOVED AFTER ERECTION UNLESS NOTED FOR PLUMBING PURPOSES ON ERECTION DRAWINGS.
NOTES: FRAME SHAPES MAY VARY.
X-BRACES ARE PERMANENT AND MAY NOT BE REMOVED AFTER ERECTION UNLESS NOTED FOR PLUMBING PURPOSES ON ERECTION DRAWINGS.
X-Bracing—Flange Mounted Pipe Strut

NOTES: FRAME SHAPES MAY VARY.
X-Braces are permanent and may not be removed after erection unless noted for plumbing purposes on erection drawings.
NOTES: FRAME SHAPES MAY VARY.
X–BRACING ARE PERMANENT AND MAY NOT BE REMOVED AFTER ERECTION UNLESS NOTED FOR PLUMBING PURPOSES ON ERECTION DRAWINGS.
NOTES: FRAME SHAPES MAY VARY.
X-BRACES ARE PERMANENT AND MAY NOT BE REMOVED AFTER ERECTION UNLESS NOTED FOR PLUMBING PURPOSES ON ERECTION DRAWINGS.
NOTE: FRAME SHAPES MAY VARY.
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS
NOTE: FRAME SHAPES MAY VARY. 
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS
NOTE: FRAME SHAPES MAY VARY.
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS
NOTE: FRAME SHAPES MAY VARY.
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS
PORTAL FRAME DETAIL
PORTAL FRAME WELDED TO COLUMN

NOTE: FRAME SHAPES MAY VARY.
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS
SEE FRAMING PLAN FOR PORTAL FRAME LOCATIONS

NOTE: FRAME SHAPES MAY VARY.

PC7 W/2" A325 BOLTS

PORTAL FRAME RAFTER

PC22

PORTAL FRAME COLUMN

TEK 4 DRILLERS @ 6" O.C.

PC28

1/2" (TYP)

CL205 W/1/2" A325 BOLTS

PC29

FASTEN TO GIRTS W/1/4" S.D.'S

RIGID FRAME RAFTER

RIGID FRAME COLUMN

PORTAL FRAME Rafter
NOTE:
1. ALL BOLTS SHOWN ARE 1/2" HIGH STRENGTH. (A235)
2. KNEE BRACE LOCATIONS ARE PER ERECTION PLANS
3. ROOF SHEETS MUST BE ATTACHED TO THE UPHILL EAVE STRUT WITH SCREWS, ON RIBBED ROOFS OR CLIPS, ON STANDING SEAM ROOFS.
ANCHOR ROD, NUT AND WASHER
SEE ANCHOR RODS PLANS FOR ROD PLACEMENT

COLUMN INNER FLANGE

CHANNEL WELDED TO COLUMN OUTER FLANGE

SECTION A–A

RIGID FRAME RAFTER
NOTE: FRAME SHAPES VARIES

KNEE CONNECTION
(A325 BOLTS)

"A"

CHANNEL (FACTORY WELDED TO
RIGID FRAME COLUMN)

FACTORY WELDED ANGLES

RIGID FRAME COLUMN
NOTE: FRAME SHAPES VARIES

ANCHOR ROD, NUT AND WASHER

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
NOTES: ROOF SHEETS MUST BE ATTACHED TO THE ADDED STRUT PURLINS WITH SCREWS, ON RIBBED ROOFS OR CLIPS, ON STANDING SEAM ROOFS. SEE ROOF PLAN FOR THE BAYS WITH ADDED STRUT PURLINS.
NOTES: ROOF SHEETS MUST BE ATTACHED TO THE ADDED STRUT PURLINS WITH SCREWS, ON RIBBED ROOFS OR CLIPS, ON STANDING SEAM ROOFS. SEE ROOF PLAN FOR THE BAY WITH ADDED STRUT PURLINS AND THE USE OF THE CL277 CLIPS.
TUBE STRUT WITH ANGLE BRACES

(4) A325 BOLTS

WEB MOUNTED TUBE STRUT TSW_

(4) A325 BOLTS

3/8" DIA. A325 BOLT

STANDARD PURLIN

ANGLE BRACES XA_
SEE ERECTION DRAWINGS FOR LOCATION.
TUBE STRUT WITH ANGLE BRACES
(USED AS A STRUT)

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3" DIA. A325 BOLT

(4) A325 BOLTS

WEB MOUNTED TUBE STRUT TSW_

STANDARD PURLIN

ANGLE BRACES XA_
SEE ERECTION DRAWINGS FOR LOCATION.

¾" DIA. A325 BOLT
PURLINS ARE NOT BOLTED TO WIND STRUT RAFTER. CL277 IS BOLTED TO WIND STRUT RAFTER AND PURLIN WEB.

ROD BRACING TO PRIMARY FRAME

FLANGE BRACE MAY BE 1 SIDE OR 2 SIDES (2 SIDES SHOWN SEE ROOF FRAMING PLAN)

PURLINS ARE NOT BOLTED TO WIND STRUT RAFTER. CL277 IS BOLTED TO WIND STRUT RAFTER AND PURLIN WEB.

(4) ½” A325 BOLTS

EAVE STRUT

SOLDIER COLUMN

SOLDIER COLUMN

ROD BRACING TO PRIMARY FRAME

FLANGE BRACE IF REQUIRED (SEE ROOF FRAMING PLAN)
EAVELINE CANOPY - BY-PASS

DETAIL AT WALL LINE

Notes: Frame shapes may vary.
See frame cross sections for additional frame information.
See sidewall elevations for eave struts marks.
NOTES: FRAME SHAPES VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS GREATER THAN OR EQUAL TO 1'-3"

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS LESS THAN 1’-3”

EAVE STRUT
CANOPY RAFTER

\[ \frac{3}{4} \text{" A325 BOLTS} \]

\[ \frac{1}{2} \text{" A325 BOLTS} \]

GC CHANNEL

\[ \frac{1}{2} \text{" A325 BOLTS} \]

\[ \frac{1}{2} \text{" A325 BOLTS} \]

DETAIL AT WALL LINE

EAVE STRUT
CANOPY RAFTER

\[ \frac{3}{4} \text{" A325 BOLTS} \]

GC CHANNEL

\[ \frac{1}{2} \text{" A325 BOLTS} \]

\[ \frac{1}{2} \text{" A325 BOLTS} \]

RIGID FRAME COLUMNS

RIGID FRAME RAFTER

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
RIGID FRAME COLUMN
GC CHANNEL
PURLIN

CANOPY RAFTER

DETAIL AT WALL LINE

GC CHANNEL
PURLIN

CL200

0.5" A325 BOLTS

FASTENERS (ONE PER FOOT)

GIRT

25/8" X 4" ANGLE

25/8" X 4" ANGLE

RIGID FRAME COLUMN

0.5" A325 BOLTS

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS GREATER THAN OR EQUAL TO 1'-3”
RIGID ENDFRAME

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS LESS THAN 1’-3"
RIGID ENDFRAME

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
BEARING ENDFRAME

- Eave Strut
- Canopy Rafter
- GC Channel
- CL292
- Purlin
- Bearing Frame Rafter
- Channel Support
- Rigid Frame Column
- (2) Self-Drillers Top and Bottom

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.

(2) 2" A325 Bolts

1/2" A325 Bolts
PRIMARY FRAME DETAIL
EAVELINE CANOPY - INSET/FLUSH

EAVE STRUT

EAVE STRUT

\( \frac{1}{2} \)" A325 BOLTS

CONNECTION PLATE
CL273 - 8\( \frac{1}{2} \)" EAVE STRUT
CL323 - 10" AND 12" EAVE STRUT

CANOPY RAFTER

\( \frac{1}{2} \)" A325 BOLTS

DETAIL AT WALL LINE

EAVE STRUT

EAVE STRUT

RIGID FRAME RAFTER

CANOPY RAFTER

RIGID FRAME COLUMN

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE SIDEWALL ELEVATIONS FOR EAVE STRUTS MARKS.
NOTES: FRAME SHAPES VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS GREATER THAN OR EQUAL TO 1’-3”

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS LESS THAN 1’–3”

DETAIL AT WALL LINE

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
RIGID FRAME COLUMN

CANOPY RAFTER

GC CHANNEL

PURLIN

FASTENERS (ONE PER FOOT)

GIRT

2 5/8" x 4" ANGLE

3/8" A325 BOLTS

1/2" A325 BOLTS

DETAIL AT WALL LINE

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1/2" A325 BOLTS

CL200

GC CHANNEL

PURLIN

CL292

GIRT

2 5/8" x 4" ANGLE

RIGID FRAME COLUMN

3/8" A325 BOLTS

CANOPY RAFTER

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMNS DEPTH IS LESS THAN 1'-3"
RIGID ENDFRAME

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
COLUMN DEPTH IS GREATER THAN OR EQUAL TO 1'–3"
RIGID ENDFRAME

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE SIDEWALL ELEVATIONS FOR EAVE STRUTS MARKS.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.

SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
GC CHANNEL

EAVE STRUT

CANOPY RAFTER
(A325 BOLTS)

1/2" A325 BOLTS

1/2" A325 BOLTS

NOTES: FRAME SHAPES MAY VARY.
SEE FRAME CROSS SECTIONS FOR ADDITIONAL FRAME INFORMATION.
SEE ERECTION DRAWINGS FOR COLDFORM PIECE MARKS.
NOTE: INSTALL TIE-BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

WING PLATE

SP210 4” DIA. ROD TIE-BACK

3/4” DIA. NUT (TYP)

3/4” DIA. BEVELED WASHER INSIDE CAP CHANNEL

ANGLE BRACE

HOOK BOLTS

A325 BOLTS WITH FLAT WASHER

BRACKET

COLUMN

WALL X-BRACE

RAIL

RUNWAY BEAM

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: INSTALL TIE-BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

NOTE: CRIMP BOLT THREADS AND NUT THREADS AS SHOWN

SECTION A

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: INSTALL TIE-BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

SECTION B

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: INSTALL TIE-BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

WING PLATE
¾" DIA. A325 BOLT

SP210 ¾" DIA. ROD TIE-BACK
¾" DIA. NUT (TYP)
¾" DIA. BEVELED WASHER INSIDE CAP CHANNEL
ANGLE BRACE

HOOK BOLTS

A

RAIL

½" DIA. A325 BOLTS WITH FLAT WASHER

A325 BOLTS
¾" DIA. A325 BOLTS

RUNWAY BEAM

SUPPORT COLUMN

WALL X-BRACE

COLUMNS

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: INSTALL TIE-BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

NOTE: CRIMP BOLT THREADS AND NUT THREADS AS SHOWN

DETAIL "A"

SECTION A

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: INSTALL TIE–BACK RODS IN COLUMN BEFORE ATTACHING RUNWAY BEAM.

NOTE: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: NUT LOCATED ON BOTTOM OF BEAM FLANGE. CRIMP BOLT THREADS AND NUT THREADS AS SHOWN.

\( \frac{3}{4} \)" DIA. A325 BOLT (TYP)
WING PLATE
RAFTER
PURLIN
CRANE GRID LINE
CRANE X-BRACE
A325 BOLTS
ANGLE BRACE
A325 BOLTS WITH BEVELED AND FLAT WASHER IF REQUIRED
SEE DETAIL "A"
END STOP NOT BY CECO
RUNWAY BEAM
RUNWAY BEAM HEIGHT
TO STEEL LINE SPAN
CRANE GRID LINE

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: NUT LOCATED ON BOTTOM OF BEAM FLANGE. CRIMP BOLT THREADS AND NUT THREADS AS SHOWN

DETAIL "A"

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.
NOTE: NUT LOCATED ON BOTTOM OF BEAM FLANGE. CRIMP BOLT THREADS AND NUT THREADS AS SHOWN

DETAIL "A"

CL121 3/8" WING PLATE
3/4" DIA. A325 BOLT (TYP)
STIFFENERS (NS & FS)

ANGLE BRACE
3/4" DIA. A325 BOLT (TYP)

SUPPORT BEAM (IN RAFTER LINE)

CLIPS OR ANGLES (NS & FS) WITH 3/8"
A325 BOLTS
1/2" STIFFENER

RAFTER

A325 BOLTS WITH BEVELED AND FLAT WASHER IF REQUIRED. SEE DETAIL "A"

BRACKET HEIGHT

RUNWAY BEAM HEIGHT

END STOP NOT BY CECO
RUNWAY BEAM

SPAN TO FRAME LINE
CRANE GRID LINE

NOTES: FRAME SHAPES MAY VARY.
SEE CRANE ELEVATION FOR ADDITIONAL INFORMATION.