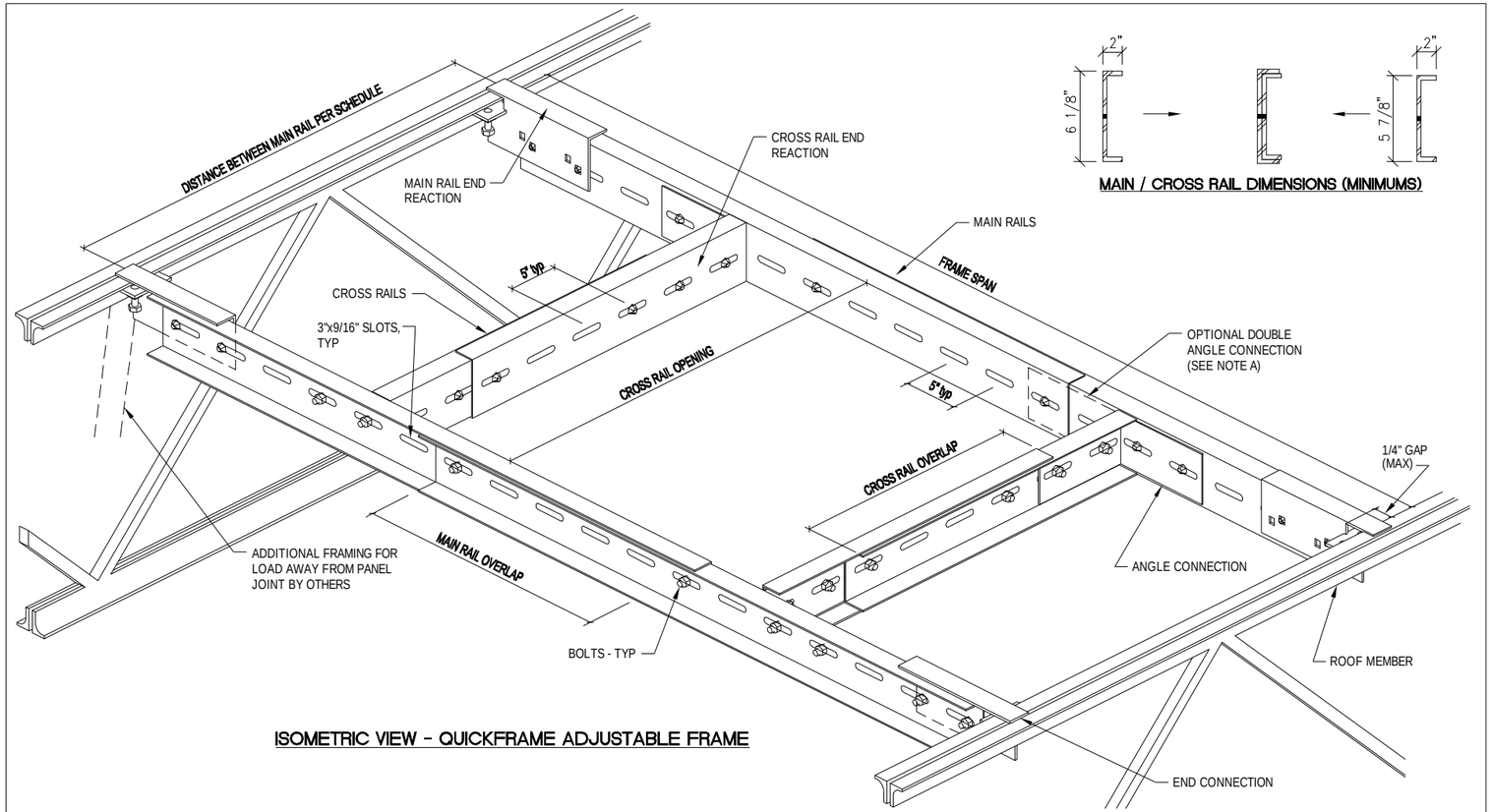

ISOMETRIC VIEW - QUICKFRAME ADJUSTABLE FRAME

MAIN / CROSS RAIL DIMENSIONS (MINIMUMS)

Main/Cross Rail Limitations:

A) Cross Rail end reaction shall not exceed 575 lbs (0.575 Kip) for a single angle connection or 1150 lbs (1.150 Kip) for the optional double angle connection. Installation contractor to verify loading distribution diagram of supported equipment and place equipment so the allowable loads are not exceeded.
B) Main Rail end reaction shall not exceed 510 lbs (0.510 Kip). Installation contractor to verify the loading distribution diagram of supported equipment and place equipment so the allowable loads are not exceeded.
C) Maximum Gap between Main Rail and supporting roof framing shall be 1/4". Main Rail may be installed snug to supporting roof framing.
D) For Frame Span and Cross Rail opening dimensions with corresponding minimum overlaps, See Dimension Table.

QuickFrame Material Specifications:

1. All Main/Cross Rails shall be a minimum 16 GAGE cold formed material and shall conform to ASTM A653 CS TYPE B.
2. All Angle Connections shall be a minimum 12 GAGE cold formed material and shall conform to ASTM A653 CS TYPE B Grade 45 KSI.
3. All End Connections shall be a minimum 10 GAGE material and shall conform to ASTM A653 CS TYPE B Grade 45 KSI.
4. All bolts shall be 1/2" diameter x 1" long SAE Grade 5 or SAE Grade 8.2 carriage bolts with nuts.
   - 4a. Angle connections shall contain 2 bolts in each leg. At optional double angle connection, bolts in cross rail may be shared.
   - 4b. End connections shall contain 2 bolts in main rail.
   - 4c. Main/Cross Rail splice connection shall contain 1 bolt (minimum) at each end of splice.

Main Rail Dimensions

Frame Span		Individual Rail Size (in.)	Min. Overlap (in.)
Length (ft.)	Length (in.)		
4'-0"	48"	35"	22"
5'-0"	60"	45"	30"
6'-0"	72"	60"	48"
7'-0"	84"	60"	36"
8'-0" (A)	96"	60"	24"
8'-0" (B)	96"	75"	54"
9'-0"	108"	75"	42"
10'-0"	120"	75"	30"

Cross Rail Dimensions

Opening Span (in.)	Individual Rail Size (in.)	Min. Overlap (in.)
15"-20"	15"	10"
20"-30"	20"	10"
30"-45"	30"	15"
35"-50"	35"	20"
45"-72"	45"	18"

ENGINEERING SUMMARY SHEET

QuickFrames Load Table Schedule

Maximum Frame Load (pounds)*
16 ga Rail / 10 ga End Connector

	4'-0" between main rails		6'-0" between main rails		8'-0" between main rails	
	(1)	(2)	(1)	(2)	(1)	(2)
Span (ft)*	**One Angle Connector**		**One Angle Connector**		**One Angle Connector**	
4'-0"	1788	1118	1648	1030	1508	943
5'-0"	1728	1080	1558	974	1388	868
6'-0"	1668	1043	1468	918	1268	793
7'-0"	1600	1000	1370	856	1140	713
8'-0"(24")	880	550	620	388	360	225
8'-0"(54")	1548	968	1288	805	1028	643
9'-0"	920	575	630	394	340	213
10'-0"	460	288	140	88	---	---
Span (ft)*	**Two Angle Connector**		**Two Angle Connector**		**Two Angle Connector**	
4'-0"	1788	1118	1648	1030	1508	943
5'-0"	1728	1080	1558	974	1388	868
6'-0"	1668	1043	1468	918	1268	793
7'-0"	1600	1000	1370	856	1140	713
8'-0"(24")	880	550	620	388	360	225
8'-0"(54")	1548	968	1288	805	1028	643
9'-0"	920	575	630	394	340	213
10'-0"	460	288	140	88	---	---

(1) The maximum load the frame can carry when all weight is placed evenly on the main rails and cross rails and distributed evenly between all four support ends.
(2) Per IBC Section 1607.8.2, at frames supporting light machinery (shaft or motor driven), the Maximum Frame Loads shown have been reduced by 20%. Also, an industry standard unbalanced mechanical loading of 2/3 and 1/3 is included.
* For Main Rail dimensions and overlap requirements, see Main Rail Dimension Table. Refer to all notes on this sheet for cross rail and end connection limitations.

Design Criteria:

Building / Design Codes:	2009/2006/2003 International Building Code (IBC) ASCE / SEI 7-05 AISI 2007 North American Specification (NAS)
Wind Load (Maximum):	90 MPH, Exposure C
Seismic Load (Maximum):	Seismic Design Category B S_{DS} <0.33; S_{D1} <0.133
Snow Load (Maximum):	20 PSF Flat Roof Load (See Note 3)
Dead / Live Load (Maximum):	10 PSF / 20 PSF (See Note 5)

Notes:

1) Maximum Frame Loads shown in the table are based on the above maximum design loads. Contact Quickframes if above loads are exceeded.
2) Maximum Loads shown for all spans and material strengths do not exceed a L/240 deflection ratio.
3) Snow Drift loads are not included in design. All sides of the roof projections supported by the frame shall be less than 15 feet long per ASCE 7-05 Section 7.8.
4) Dead/Live Loads are roof structure dead and live loads bearing on frame.
5) Quickframe installation shall conform to the Quickframe installation instructions.

Note:

MAXIMUM LOADS SHOWN ARE FOR THE QUICKFRAME ADJUSTABLE FRAME ONLY. BUILDING ROOF STRUCTURE FRAMING CAPACITY (EXISTING OR NEW) SHALL BE CHECKED BY A REGISTERED STRUCTURAL ENGINEER TO ENSURE THE PROPOSED LOAD ON THE FRAME DOES NOT OVERSTRESS ANY ROOF SUPPORTING FRAMING MEMBERS AND/OR BUILDING COMPONENTS.

Project Information:

- **Roof Structure Type:** XXX
- **Roof Material:** XXX
- **QuickFrame Span:** XXX
- **Material Strength:** XXX
- **Equipment Type:** XXX
- **Equipment Weight:** XXX

SEAL:

THIS SHEET IS INTENDED FOR GENERAL USE ONLY AND IS NOT CONSIDERED SITE SPECIFIC UNLESS ADDRESS OF SITE IS SHOWN IN TITLE BLOCK AND THE STRUCTURAL ENGINEER OF RECORDS SEAL IS AFFIXED WITH WRITTEN SIGNATURE.

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16 GAUGE FRAME WITH 10 GAUGE END CONNECTOR.

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JOB NUMBER: 13-120-XXX
DRAWN: TMH | ENGINEER: DEE | CHECKED: SJH
RAIL/CONNECTORS: 16 GA./10 GA. | SCALE: N.T.S.
DATE: XX/XX/2013
SHEET: **S2**