RE: Site Specific Engineering/QuickFrames Adjustable Roof Frames

Engineer of Record,

In consideration of the use of QuickFrames on your current and future project, should the QuickFrames standard summary sheet not meet your requirements, upon your request, QuickFrames USA and Caruso Turley Scott Structural Engineers will provide sealed calculations and shop drawings that will meet your project needs.

If you have any questions or concerns please feel free to contact me.

Sincerely,

Chase Sebastian
480-464-1500
chases@quickframes.us
Substitution Request

We certify that the following product is equal or superior to the specified product in appearance, durability, performance, and in every other respect, and we hereby submit it for your consideration as a substitute for the specified item for the above-mentioned project:

1. **Specified Item**
   - QuickFrames Roof Frames

2. **Proposed Substitution**
   - 10,12 or 16 gauge 3/16th End Connection 50 KSI Roof Frames

3. **Reason for Substitution**
   - No weld solution for structural supports under roof top mounted equipment.

4. **Costs**
   - Provide a complete breakdown of costs, including the cost amount to be DEDUCTED from the Contract Sum if the proposed substitution is accepted. Include documentation for both materials and labor.

5. **Schedule**
   - (Describe substitution's affect on construction schedule)

6. **Supporting Data**
   - Cutsheets: Attach complete technical data, including laboratory tests, if applicable.
   - Installation: Include complete information on changes to Drawings and/or Specifications describing the steps that the proposed substitution will require for its proper installation.
   - Samples: Submit with request all necessary samples and substantiating data clearly marked to prove equal quality and performance to that which is specified.

7. **List ways in which the substitution affects dimensions shown on Drawings**
   - Does not affect dimensions on drawings

8. **List affects of proposed substitution on other trades**

9. **List ways in which proposed substitution will be affected by applicable code requirements and agency approval**
   - None

10. **List differences between proposed substitution and specified item**
    - No weld solution for structural supports under roof top mounted equipment.

11. **Manufacturer’s warranties of the proposed and specified items are:**
    - ☐ Same
    - ☐ Different
    - Explain:
12. List information on availability of maintenance service and source of replacement materials

13. Certification of, and Assumption of Liability for, Equivalent Performance

The undersigned certifies that the function, appearance and quality of the proposed substitution is equivalent or superior to the specified item and is in full compliance with the Contract Documents and applicable regulatory requirements.

Supplier: QuickFrames USA LLC.  
Signature

Telephone No.: 480-464-1500  
Date

Signature must be by person authorized to legally bind his/her firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

General Contractor  
Signature

Telephone No.  
Date
### Notes

1. Maximum frame loads shown in Table are based on the above maximum design loads. Contact QuickFrames if above loads are exceeded because the design specific inputs can be designed.
2. Maximum loads shown in Table are based on the above maximum design loads. Contact QuickFrames if above loads are exceeded because the design specific inputs can be designed.
3. Snow 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 and 7-10 Section 7.8.
4. Biaxial 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 and 7-10 Section 7.8.
5. Building Dead Loads between the cross rails must be deducted from the loads shown contain tables for allowable loading. Site-specific engineering is also available upon request.
6. QuickFrame installation and fabrication are based on the QuickFrame installation instructions.

### QuickFrame Installation Instructions

1. MAXIMUM LOADS SHOWN ARE FOR THE QUICKFRAME ADJUSTABLE FRAME ONLY. BUILDING ROOF STRUCTURE FRAMING CAPABILITY OVERLAY ON LOADS SHOWN WILL BE CHECKED BY A REGISTERED STRUCTURAL ENGINEER TO ENSURE THE PROPER LOAD ON THE FRAMES ARE NOT OVERLOADING ANY SUPPLEMENTAL DIGESTING MATERIALS OR BUILDING COMPONENTS.

### Bolt Information

- **Frame Material:**
  - All Main/Cross Rails shall be a minimum 12 O Gauge cold formed material and shall conform to ASTM A653 CS TYPE B Grade 50 KSI.
  - All Angle Connections shall be a minimum 12 O Gauge cold formed material and shall conform to ASTM A653 CS TYPE B Grade 50 KSI.
  - All End Connections shall be a minimum 3/8"/16" material and shall conform to ASTM A36 Steel.
  - All bolts shall be 1/2" diameter x 1" long SAE Grade 5 or SAE Grade 52 carbro bolts with nuts.

- **Main/Cross Rail Splice Connection shall contain 1 bolt (minimum) at each end of splice. The bolts for angle connections may not be used as splice bolts.
### Maximum Opening Span

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<th>20 in</th>
<th>30 in</th>
<th>36 in</th>
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Refer to all notes on accompanying sheets for cross rail and connection limitations.
NOTE:

1. OUTLINE OF MECH'L UNIT.
2. MAIN RAIL.
3. CROSS RAIL.
4. ROOF FRAMING MEMBER BY OTHERS.

MULTIPLE QUICKFRAMES WITHIN SAME BAY SUPPORTED BY COMPLETE FRAMES MUST BE INSTALLED. SHARING FRAMES IS NOT PERMITTED.

FOR A CONSERVATIVE CAPACITY, USE "LIGHT MACHINERY" COLUMN OF LOAD TABLE MULTIPLIED BY NUMBER OF COMPLETE FRAMES.

QUICKFRAMES ROOF FRAME AT MULTIPLE OPENINGS

NO SCALE

06

03 ANGLE CONNECTOR DETAIL

NO SCALE

FOR THE STABILITY AND DESIGN CAPACITY OF THE QUICKFRAMES ADJUSTABLE FRAME, THE METAL DECK IS NOT REQUIRED TO BE ATTACHED TO THE QUICKFRAMES ADJUSTABLE FRAME. HOWEVER, THE OUTER SHEET OF THE BUILDING IS UNATTACHED TO THE QUICKFRAMES ADJUSTABLE FRAME. THE FOLLOWING ARE THREE ACCEPTABLE METHODS:

A. HILTI X-U SHOTPINS OR APPROVED EQUAL ARE AN ACCEPTABLE CONNECTION. IN ADDITION, ICC APPROVED SCREWS ARE AN ACCEPTABLE CONNECTION.

B. IF THE CONNECTION AREA IS ACCESSIBLE TO PERFORM PUDDLE WELDS, PUDDLE WELDS FROM THE DECK TO THE QUICKFRAMES ADJUSTABLE FRAME ARE AN ACCEPTABLE CONNECTION.

C. IF THE METAL DECK IS AT LEAST A MINIMUM OF 20 GAUGE IN THICKNESS, 1/8" FILLET WELDS STITCHED ALONG THE BACKSIDE OF THE QUICKFRAMES ADJUSTABLE FRAME SECTIONS OF THE BEND FROM THE FLANGE TO THE WEB IS AN ACCEPTABLE CONNECTION.

IN ADDITION, IN SEISMIC DESIGN CATEGORY C OR HIGHER, THE DECK SHALL BE ATTACHED TO THE MAIN RAIL AND CROSS RAILS FOR ONE OF THE THREE METHODS LISTED ABOVE.

04 QUICK CONNECTION TO MAIN/CROSS RAILS

NO SCALE

01 MAIN/CROSS RAIL

NO SCALE

02 END CONNECTOR DETAIL

NO SCALE

NOTE:

1. OUTLINE OF MECH'L UNIT.
2. MAIN RAIL.
3. CROSS RAIL.
4. ROOF FRAMING MEMBER BY OTHERS.

MULTIPLE QUICKFRAMES WITHIN SAME BAY SUPPORTED BY COMPLETE FRAMES MUST BE INSTALLED. SHARING FRAMES IS NOT PERMITTED.

FOR A CONSERVATIVE CAPACITY, USE "LIGHT MACHINERY" COLUMN OF LOAD TABLE MULTIPLIED BY NUMBER OF COMPLETE FRAMES.
THE FASTER, **SAFER, EASIER,** low-cost solution to frame roof openings.

> WHY ARE WE DIFFERENT?
> - **NO** welding and **NO** cutting
> - **JUST-IN-TIME** delivery (even overnight for emergencies)
> - **ADJUSTABLE** to support 4’ to 10’ joist spans with 15” to 96” openings
> - **QUICK and EASY** installation - even after the deck is installed

> APPLICATIONS
> - Commercial buildings
> - Pre-engineered buildings
> - New construction
> - Tenant improvement
> - Panelized wood roof systems

> INSTALLATION
> - Tools: 3/4” wrench or a cordless impact driver (recommended)
> - Typical installation: 10 - 30 minutes

> FRAME LOAD CAPACITY
> QuickFrames are pre-engineered for most applications. **Site-specific** engineering is included as needed.

<table>
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<tr>
<th>SPAN</th>
<th>4’</th>
<th>5’</th>
<th>6’</th>
<th>7’</th>
<th>8’</th>
<th>9’</th>
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<tbody>
<tr>
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<td>1000</td>
<td>968</td>
<td>575</td>
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* Based on a 4’ opening between the main rails, using two angle connectors per junction of main and cross rails. 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 unbalancing mechanical loading of 2/3 and 1/3 is included. Maximum loads shown are for the QuickFrames adjustable frame only. Building roof structure framing capacity (existing or new) shall be verified by a registered structural engineer to ensure proper loading.

READY TO GO, EVEN IF YOUR ROOF ISN’T
**PARTS LIST**

**Main Rails (2)**
- Each set consists of two (2) rails, one sliding inside the other.
- Main rail pieces are manufactured from 10, 12, or 16-gauge, G-90 galvanized steel, cold formed in a channel configuration with 5¾" depth and 1¾" flanges.

**Cross Rails (2)**
- Each cross rail consists of two (2) rails with one sliding inside the other.
- Cross rail pieces are manufactured from 10, 12, or 16-gauge, G-90 galvanized steel, cold formed in a channel configuration with 5¾" depth and 1¾" flanges.

**Angle Brackets (4)**
- Angle brackets are manufactured from 12-gauge, G-90 galvanized, cold formed steel.

**Main Rail Hangers (4)**
- Powder coated joist hangers are manufactured from cold formed A36 1/8" (white) or 3/16" (black) HR steel plate. Connector plates are A36 1/4" HR steel plate, ¾" x 13 square nut and 1 ½" x ½" x 13 grade 5 tap bolt.
- Powder coated black wood and purlin hangers are manufactured from 12-gauge, G-90 galvanized steel

**Hardware (32 ea.)**
- 1" x ½" grade 5 zinc coated carriage bolts.
- ¾" x 13 serrated zinc coated flange nuts.

**SHIPPING**
- QuickFrames are shipped unassembled, typically on pallets, for lower freight costs.
- Partial pre-assembly available
- For small orders or in case of an emergency they can even be shipped individually, via overnight air shipment.

<table>
<thead>
<tr>
<th>SHIPPPING DETAILS</th>
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<tr>
<td>Single Unit Weight (8')</td>
<td>118lbs</td>
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<tr>
<td>Single Unit Weight (10')</td>
<td>192lbs</td>
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<td>Palletized Shipping</td>
<td>Up To 40/Pallet</td>
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**FOR MORE INFORMATION**
To learn about all the advantages QuickFrames has over conventional roof frames – including some major safety and cost advantages – call 480.464.1500 or visit www.quickframes.us.