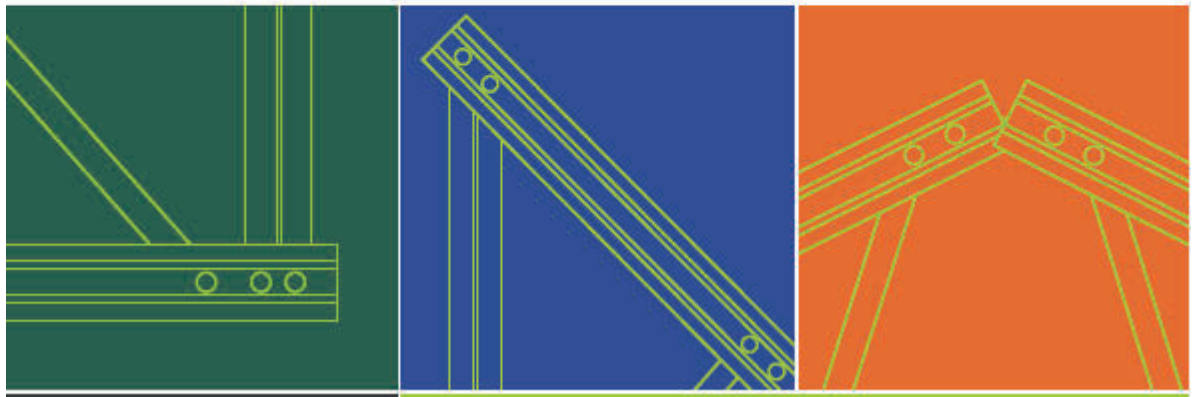
BLUE STAR
STEEL



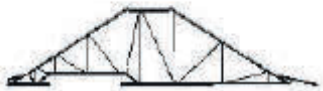
Faster setup
Faster production
Faster installation

Blue Star Steel Corp
41-745 Mooiki Street
Waimanalo, Hawaii 96795 USA
Phone: +1 (808) 259-5617
Fax: +1 (808) 259-8914
info@bluestarsteelusa.com
www.bluestarsteelusa.com

BLUE STAR
STEEL

Bluestar is a family of world-class steel construction products based on revolutionary steel framing technologies. The Bluestar Steel Truss System is a proprietary truss configuration that enables significantly faster setup and production - and faster, safer job site installation.

The Bluestar system's revolutionary, fully integrated computer-aided design and manufacturing process significantly enhances customizability and eliminates dimensional errors common to traditional configurations.



Bluestar vs. Wood

- Greater dimensional accuracy and reliability
- Higher strength-to-weight ratio
- Faster and simpler installation
- Installer-friendly connectors
- Termite and vermin proof
- Rotting and sag resistant
- Non-combustible

Bluestar Features & Benefits

Enhanced customizability

Increased bearing surface for installer safety

Reduced exposed edges for safe handling

Shipped and installed like wood trusses

Galvanized steel

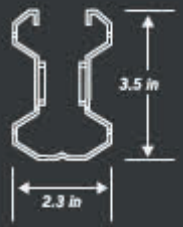
No screws or nails used in production

Excellent chord member bending strength in "out-of-plane" directions

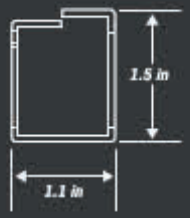
Bluestar Availability

Customized Bluestar Steel Truss Systems can be produced in 22-20-18-16 gauges based on engineered requirements.

Chord Profile



Web Profile



STRUCTURAL CALCULATION SUBMITTAL

Steel Truss Systems

DATE:

_____

FOR:

_____

_____

_____

PROJECT:

_____

_____

BLUE STAR STEEL

Terms and Conditions of Sale

1. Scope of Work Provisions: Blue Star Steel Corp. (hereafter referred to as BSS) shall design and manufacture the trusses and other components, wall panels, stud walls, floor panels, etc., to be supplied in accordance with industry standards and, in particular, the AISI "Specification for the Design of Cold-Formed Steel Structural Members" and the AISI "Design Guide for Cold-Formed Steel Trusses". The trusses will span the distance and withstand the design loads shown on BSS's Truss Design Drawings so long as the trusses are spaced as referenced and properly installed and braced, where applicable. BSS shall submit for review and approval Truss Design Drawings, which depict the individual trusses to be manufactured and, if applicable, a Truss Placement Plan, which indicates the location of trusses assumed by BSS in its design. BSS is not the project engineer, engineer of record, or the project architect, and shall not be assumed to have knowledge equivalent thereto.

   BSS's sole obligation shall be to provide products complying with the design criteria provided by Purchaser and as designed by BSS in its Truss Design Drawings and/or Truss Placement Plan. The design criteria set forth in the Truss Design Documents and/or Truss Placement Plan shall be the sole standards by which BSS's obligations shall be governed, and Purchaser waives any claim that contrary information was given to, or should have been known by, BSS so long as the products manufactured comply within reasonable industry standards with the Truss Design Drawings and Truss Placement Plan criteria.

   Compliance by BSS's products with the criteria in the Truss Design Drawings and/or Truss Placement Plan shall conclusively establish BSS's obligations hereunder, notwithstanding any other information known by or that should have been known by BSS, either before or after delivery of the products to the intended site.

2. ACKNOWLEDGMENT BY PURCHASER AND LIABILITY DISCLAIMER: The trusses, wall panels, stud walls, floor panels, and other products manufactured by BSS are unique because of the proprietary fastening process used by BSS in the fabrication of these products. Once fabricated, however, a BSS product may not be altered without affecting its structural integrity. Therefore, it is **essential** that Purchaser notify BSS on a timely basis before production begins of (i) any changes or alterations to the tolerances, dimensions, specifications, or plans originally submitted to BSS by Purchaser and (ii) any variation of actual field dimensions from the plan dimensions submitted to BSS by Purchaser. The Purchaser must take full responsibility, and bear the full financial burden, for any failure to notify BSS on a timely basis (as determined in the sole discretion of BSS) before production begins of any such changes to, alterations of, or variations from the plans submitted to BSS. In addition to, and not in limitation of the foregoing, the alteration of any BSS product by Purchaser shall cause the limited warranty set forth in paragraph 3 to be null, void, and of no effect with regard to such altered product. FURTHERMORE, BSS EXPRESSLY DISCLAIMS LIABILITY FOR, AND PURCHASER EXPRESSLY ASSUMES THE RISK OF AND RELEASES AND DISCHARGES BSS FROM ANY AND ALL CLAIMS, DEMANDS, CAUSES OF ACTION OR LIABILITY FOR, ***INTER ALIA***, BREACH OF THE IMPLIED WARRANTIES OF MERCHANTABILITY, HABITABILITY AND FITNESS FOR A PARTICULAR PURPOSE, NEGLIGENCE, STRICT LIABILITY AND ALL OTHER TORT LIABILITY ARISING OUT OF OR RELATING TO OR OTHERWISE CAUSED BY ANY AND ALL CHANGES OR OTHER ALTERATIONS MADE BY PURCHASER TO ANY BSS PRODUCT.

3. LIMITED WARRANTY AND LIABILITY DISCLAIMER: Subject to paragraph 2 above, all goods and services provided to Purchaser by BSS are warranted for one year as follows: (i) all products shall be free from defects in materials; (ii) all products shall materially conform to plans, dimensions and specifications provided by Purchaser and to the standards set forth in AISI "Specification for the

Initials:_____

Design of Cold-Formed Steel Structural Members" and the AISI "Design Guide for Cold-Formed Steel Trusses"; and (iii) the trusses will span the distance and withstand the design loads shown on BSS's Truss Design Drawings so long as the trusses are spaced as referenced and properly installed and braced. THE FOREGOING EXPRESS WARRANTY IS IN LIEU OF AND EXCLUDES ALL OTHER WRITTEN OR ORAL WARRANTIES OR CONTRACTUAL AGREEMENTS NOT EXPRESSLY SET FORTH HEREIN, WHETHER EXPRESS OR IMPLIED BY LAW OR OTHERWISE, AND BSS EXPRESSLY DISCLAIMS LIABILITY FOR, AND PURCHASER EXPRESSLY ASSUMES THE RISK OF AND RELEASES AND DISCHARGES BSS FROM, ANY AND ALL CLAIMS, DEMANDS, CAUSES OF ACTION OR LIABILITY FOR, ***INTER ALIA***, BREACH OF THE IMPLIED WARRANTIES OF MERCHANT ABILITY, HABITABILITY, AND FITNESS FOR A PARTICULAR PURPOSE, NEGLIGENCE, STRICT LIABILITY AND ALL OTHER TORT LIABILITY ARISING OUT OF OR RELATING TO, OR OTHERWISE CAUSED BY, ANY AND ALL CONTRACTUAL BREACHES OR TORTIOUS CONDUCT BY BSS IN CONNECTION WITH OR AS A RESULT OF ALL PURCHASES BY PURCHASER OF GOODS, MATERIALS, OR SERVICES FROM BSS.

4. Exclusive Remedy: Purchaser further agrees that its exclusive remedy against BSS in the event the goods, materials or services supplied by BSS are alleged to be defective and/or are alleged to have caused Purchaser to suffer personal injury, loss of life, property damage, or economic losses as a result of a breach by BSS of any

5. applicable warranty, or as a result of any negligence, strict liability, or other tortious conduct or statutory violation by BSS, shall be limited to, and shall not exceed, the purchase price of the goods, materials, or services purchased from BSS by Purchaser and Purchaser agrees that BSS shall not be liable to Purchaser for any other damages, including but not limited to, lost profits, lost wages, indirect, incidental, consequential, compensatory, special, delay, punitive or any other damages, including damages for pain and suffering, mental distress, medical or funeral expenses, and other similar damages, or any attorney fees or costs incurred by Purchaser in connection with pursuing any claim, demand, or cause of action against BSS for breach of any obligations under this agreement, breach of the express or implied warranties delineated above, negligence, strict liability or other tortious conduct committed by BSS in connection with its sale to Purchaser or Purchaser's use of goods, materials or services sold by BSS.

6. Indemnification by Purchaser: Purchaser further agrees that in specific consideration of receiving the one year express warranty granted by BSS in paragraph 3 above, it agrees to indemnify and hold harmless BSS from and for any and all damages, including attorney's fees and costs incurred by BSS in connection with any claim, demand, liability, or cause of action asserted against BSS for personal injuries, loss of life, property damage, or economic losses by Purchaser or its employees, agents, representatives or any other person or entity sustaining damages arising out of the installation and use of BSS's products, where the claim asserted arises in whole or in part from the acts or failures to act by Purchaser.

7. No Reliance on Representations: Purchaser acknowledges that it has entered into this contract, relying on its own knowledge of the subject matter and not upon representations made by BSS or any other person with respect to the character or quality of the subject matter.

8. Installation, Handling, Bracing and Storage: Immediately upon delivery to the location designated in Purchase Order, all risk of loss and responsibility of the goods shall pass to Purchaser. With respect to the goods, Purchaser and his subcontractors shall be responsible for: (a) unloading, handling and storing; and (b) installing, bracing, bracing connection, and connections to the

Initials:_____

supporting structure. The parties understand and agree that BSS shall have no responsibility concerning the installation and bracing of the goods nor shall BSS have any responsibility to verify the dimensions or adequacy of work done by other trades that may relate to the goods.

9. Truss Repair: If any truss sold and delivered under this contract should become broken or damaged, then before the Purchaser or his subcontractor shall modify or relocate any truss, BSS shall be notified as to the need and extent of the repair and such repair shall be approved by BSS's truss design engineer or truss designer. Failure to abide by this provision shall void the Limited Warranty.

10. Delays: In the event that BSS's performance of the work is delayed or interfered with for any reason and for any period of time by acts or omissions by Purchaser, owner, contractor or other subcontractor, BSS may request an extension of time for performance of the work and shall be entitled to an increase in the purchase price or to damages or additional compensation as a consequence of such delays or interference.

11. Terms: All charge sales are due and payable on or before the 30th day following date of purchase. Accounts paid by the 10th day following the date of purchase earn a 1% discount. Accounts are past due on the 30th day following date of purchase. Purchaser agrees to pay interest at 1.5% per month on all past due amounts. If it becomes necessary to enforce payment (even if settlement is subsequently made before any court action becomes final), the Purchaser agrees to pay reasonable attorney's fees (including attorney's fees for appeal) and court costs.

12. Delivery and Indemnification: BSS's responsibility for delivery ceases at the curbside or street frontage of the address for delivery. If the Purchaser requires BSS to cross the curb line or enter upon private property to make delivery on-site, the Purchaser shall be responsible to provide safe and adequate access and such delivery shall be at the risk of the Purchaser, and in consideration of BSS providing on-site delivery, the Purchaser agrees to indemnify BSS for all liability in respect of any damage to public or private property and every injury or wrong whatsoever which may result therefrom.

13.

14. Delivery Site Conditions: BSS reserves the right to determine whether the site for delivery requested by the Purchaser is suitable for such delivery and BSS may refuse to deliver to a site if BSS is of the opinion that delivery would be unsuitable or unsafe. The Purchaser shall be responsible for all costs and damages incurred where adequate access for delivery cannot be obtained.

15. Unattended Delivery Sites: Where delivery of products is to an unattended site, BSS will not be liable for any losses or damage to products, property, or for unsigned delivery tickets. BSS may at its option refuse to deliver to any location unattended by Purchaser, and Purchaser shall pay all charges necessary for any subsequent delivery.

16. Technical Assistance: BSS may provide technical advice or assistance to the Purchaser regarding handling or installation of the products purchased. Advice and assistance provided by BSS is for Purchaser's guidance only and Purchaser agrees that any on-site guidance or advice does not and shall not give rise to any duty or obligation of BSS to evaluate, comment on, or correct any other aspect of the facility under construction, or to evaluate or judge the suitability or acceptability of BSS's product for use in the structure for when they are purchased.

Initials:_____

BSS's sole obligation shall be to provide products meeting the loads and dimensions specified in the Purchase Order as defined in the Truss Design Drawings and the Truss Placement Plan notwithstanding the nature or extent of any technical assistance or advice given by BSS to Purchaser.

17. No Authority: Subject to paragraph 18 below, no employee or agent of BSS has the authority, in the absence of an express writing to the contrary, to make any statement regarding, including restricting or modifying or otherwise concerning, the existence or effect of any of these terms and conditions or of any warranty or guarantee and no such employee or agent making such statements shall be acting on behalf of or with the consent or agreement of BSS. Subject to paragraph 18, these terms and conditions may only be altered or varied in a writing signed by a BSS manager and no other employee nor any other person has authority to alter or vary any or all of these terms and conditions.

18. Basis of Future Purchase Contracts; Terms of Acceptance of Future Purchase Contracts: On or after the date hereof, BSS and Purchaser anticipate that they will from time to time enter into contracts for the purchase by Purchaser of goods and/or services from BSS (collectively the "Purchase Contracts"). The terms and provisions set forth in this Credit Application and Conditions of Sale (the "Conditions") shall automatically and without further action of either BSS or Purchaser become without variation the terms and provisions of any and all such Purchase Contracts; provided, however, in connection with any such Purchase Contract, the Conditions may be modified by a quotation submitted by BSS or acknowledgment from BSS to a purchase order submitted by Purchaser if and only if such quotation or acknowledgment has been executed and delivered to Purchaser by an authorized representative of BSS. Except as provided in the preceding sentence, it is a condition of any such Purchase Contract that any provisions printed or otherwise contained in any acceptance, acknowledgment, or purchase order submitted by Purchaser to BSS inconsistent with or in addition to the Conditions, or in alteration thereof, shall have no force or effect, and that Purchaser by executing these Conditions on the reverse hereof agrees that any such provisions therein or any alternations of the Conditions shall not constitute any portion of any such Purchase Contract. Any purchase order submitted by Purchaser shall be subject to acceptance by BSS in Orangeburg, SC, and upon acceptance shall be subject to the Conditions as specified in this paragraph.

19. Notice: Any notice, request, approval, consent, demand or other communication shall be effective if in writing upon the first to occur of the following: (i) upon receipt by the party to whom such notice, request, approval, consent, demand or other communication is being given; or (ii) three (3) business days after being duly deposited in the U.S. Mail, postage prepaid, and addressed as follows: To Blue Star Steel Corp, 41-745 Mooiki St., Waimanalo, HI 96795; and to Purchaser, at the mailing address set forth on the reverse of this page.

20. Expiration of Quotations; Timing of Delivery: Any quotation submitted by BSS to Purchaser on or after the date hereof shall remain valid for a period of thirty (30) days after the date of each BSS quotation. Truss Design Drawings and/or Truss Placement Plan shall be submitted by Purchaser to BSS within six (6) weeks after the acceptance of any Purchase Contract by BSS. Delivery of truss materials by BSS shall begin six (6) weeks after the date of acceptance and approval by BSS of the applicable Truss Design Drawings and/or Truss Placement Plan.

Initials:_____

BLUE STAR
STEEL

STRUCTURAL CALCULATION SUBMITTAL FOR LIGHT GAUGE STEEL TRUSS SYSTEM

TABLE OF CONTENTS

BLUE STAR
STEEL

I. *Engineering Index Sheet*

BLUE STAR
STEEL

Engineering Index Sheet

Index Page 1 of 1

Job Number

Specification Quantity

A Professional Engineer's seal affixed to this Index Sheet indicates the acceptance of Professional Engineering responsibilities for individual truss components fabricated in accordance with the listed and attached Truss Specification Sheets. Determination as to the suitability of these individual truss components for any structure is the responsibility of the Building Designer. Permanent files of the original Truss Specification Sheets are Maintained by Questions regarding this Index Sheet and/or the attached Specifications Sheets may be directed to the truss fabricator listed above or

	Truss ID	Spec Number		Truss ID	Spec Number		Truss ID	Spec Number
1			31			61		
2			32			62		
3			33			63		
4			34			64		
5			35			65		
6			36			66		
7			37			67		
8			38			68		
9			39			69		
10			40			70		
11			41					
12			42					
13			43					
14			44					
15			45					
16			46					
17			47					
18			48					
19			49					
20			50					
21			51					
22			52					
23			53					
24			54					
25			55					
26			56					
27			57					
28			58					
29			59					
30			60					

BLUE STAR
STEEL

II. Certificate of Compliance

BLUE STAR
STEEL

Certificate of Compliance

Bluestar certifies that our light gauge steel framing components conform to ASTM A653; all members have minimum yield strength of 50 KSI.

All members have a G-90 galvanized coating per ASTM A653; G-60 is available as required.

All structural members conform to ASTM C955.

All structural members are designed in accordance with AISI "Specifications for the design of Cold Formed Structural Members", 1996 edition.

Howard A. Kuhn

Howard A. Kuhn, Ph.D., P.E.
VP & Chief Technical Officer

BLUE STAR
STEEL

Structural Calculation Submittal For Light Gauge Steel Truss System

III. Industry Design Standards

Truss Design:

American Iron and Steel Institute's "Standard For Cold-Formed Steel Framing-Truss Design"

Member Design:

American Iron and Steel Institute's "Specification For The Design of Cold-Formed Steel Structural Members",

Other:

Light Gauge Steel Engineers Association

"Design Guide: Permanent Bracing of Cold-Formed Steel Construction", Tech Note (551e),

BLUE STAR
STEEL

IV. Truss Calculations

Connection	Section	Length	Axial	Int.	Fastener	Pa	Req.
Web # 1	118RW-33(50)	0.67	0.10T	0.02	Rosette	1.456	1
Web # 2	118RW-33(50)	1.21	1.33C	0.38	Rosette	1.456	1
Web # 3	118RW-33(50)	4.78	0.49C	0.86	Rosette	1.456	1
Web # 4	118RW-33(50)	3.70	0.22C	0.25	Rosette	1.456	1
Web # 5	118RW-33(50)	5.96	0.33C	0.87	Rosette	1.456	1
Web # 6	118RW-33(50)	6.20	0.07C	0.20	Rosette	1.456	1
Web # 7	118RW-33(50)	7.06	0.36C	0.93	Rosette	1.456	1
Web # 8	118RW-33(50)	6.20	0.11C	0.31	Rosette	1.456	1
Web # 9	118RW-33(50)	5.96	0.30C	0.79	Rosette	1.456	1
Web # 10	118RW-33(50)	3.71	0.22C	0.25	Rosette	1.456	1
Web # 11	118RW-33(50)	4.78	0.48C	0.86	Rosette	1.456	1
Web # 12	118RW-33(50)	1.21	1.33C	0.38	Rosette	1.456	1
Web # 13	118RW-33(50)	0.67	0.10T	0.02	Rosette	1.456	1
Web Lateral Brc	118RW-33(50)	2.00	0.01C	0.00	#12-14 T/2	0.249	1
Web Diagonal Brc	376RT125-62(50)	3.81	0.01C	24.97	#12-14 T/2	0.249	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	Failed	*	1.16		#10-16 T/2	0.168	7
Steel Stud				1.16	#10-16T/2	0.168	7
Truss Chord	Failed	1	1.15		#10-16 T/2	0.168	7
Steel Stud				1.15	#10-16T/2	0.168	7

GENERAL NOTES

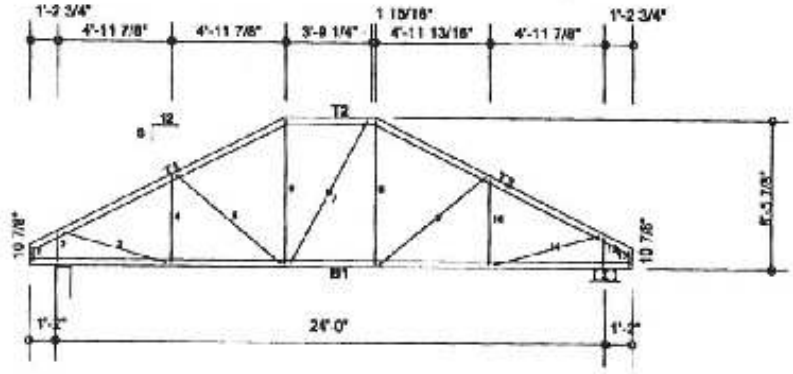
1. Trusses require rows of Lateral bracing. See Truss Layout and Detail sheets.
2. Top Chord and Bottom Chord continuously sheathed.
3. Brace Webs (7) at mid-point of minor axis.
4. Web bracing required at maximum 2.000 ft on center.
5. (ws) denotes web stiffener required at support.
6. Member design based on sections in Rosetta Library.

Maximum Deflection (ASD)
Vertical 0.081 in (L / 3737)
Horizontal 0.019 in

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	1.27	-1.16	0.67
Right	1.27	-1.15	0.00

DESIGN PARAMETERS

Number of Trusses = 1 each
Plate Style: In-Plane
Bearing : 8 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [Is =1.00, Ce = 0.90]
Wind Load : 35.88 psf (design) [Iw = 1.00]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.013



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	1-350RC-33(50)	0.54T	0.09	1.20	11.14	3.59	7.96	0.20
Top Chord	1-350RC-33(50)	1.43C	0.13	2.40	10.24	3.59	7.96	0.44
Web	1-118RW-33w(50)	0.10T	0.02	0.00	4.97	0.88	1.74	0.93

Web offset (X) = 2 3/8"
* denotes Web bracing

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 1/8" = 1'-0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL.

TRUSS D&E, V10.044
DATE: 2/11/2002
TIME: 3:37:
ENGR: MAS
FILE: TR1
NUMBER:

TR1

Design Dwg 1/1

Connection	Section	Length	Axial	Int.	Fastener	Pa	Req.
Web # 1 11	11&RW-33(50)	0.87	0.12T	0.02	Rosette	1.456	1
Web # 2 10	11&RW-33(50)	1.21	1.34C	0.34	Rosette	1.456	1
Web # 3 9	11&RW-33(50)	5.73	0.36C	0.89	Rosette	1.456	1
Web # 4 8	11&RW-33(50)	4.20	0.14C	0.20	Rosette	1.456	1
Web # 5 7	11&RT-33(50)	7.04	0.42C	0.67	Rosette	1.456	1
Web # 6	11&RW-33(50)	7.18	0.20C	0.71	Rosette	1.456	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	CS16x14L	2	1.03		#10-16 T/2	0.171	7
Steel Stud				1.03	#10-16T/2	0.171	7

GENERAL NOTES

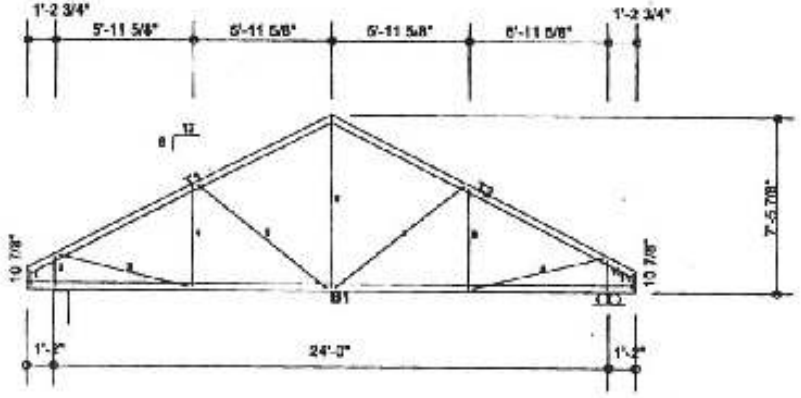
1. Top Chord and Bottom Chord continuously sheathed.
2. (ws) denotes web stiffener required at support.
3. Member design based on sections in Rosetta Library.

Maximum Deflection (ASD)
Vertical 0.093 in (L/3112)
Horizontal 0.017 in

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	1.27	-1.03	0.83
Right	1.27	-1.03	0.00

DESIGN PARAMETERS

Number of Trusses = 11 each
Plate Style: In-Plane
Bearing : 8 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [Is = 1.00, Ce = 0.80]
Wind Load : 35.85 psf (design) [Iw = 1.00]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.013



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	I-350RC-33(50)	1.31T	0.21	1.08	11.14	3.50	7.96	0.25
Top Chord	I-350RC-33(50)	1.41C	0.11	3.60	10.24	3.56	7.96	0.58
Web	I-11&RW-33w(50)	0.12T	0.02	0.00	4.97	0.88	1.74	0.89

Web offset (X) = 2 3/8"

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 1/8" = 1'-0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL.

TRUSS D8E, V10.044
DATE: 1/25/2002
TIME: 10:36
ENGR: MAS
FILE: TR2
NUMBER:

TR2

Design Dwg 1/1

Connection	Section	Length	Axial	Int.	Fastener	Pa	Req.
Web # 1	118RW-33(50)	0.67	0.05T	0.01	Rosette	1.456	1
Web # 2	118RW-33(50)	1.21	0.80C	0.17	Rosette	1.456	1
Web # 3	118RW-33(50)	1.33	1.06T	0.21	Rosette	1.456	1
Web # 4	118RW-33(50)	1.52	0.35C	0.25	Rosette	1.456	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	CS16x14L	1	0.41		#10-16 T/2	0.190	4
Steel Stud				0.41	#10-16T/2	0.190	4
Truss Chord	S/H2	1	0.29		#10-16 T/2	0.204	3
Steel Stud				0.29	#10-16T/2	0.204	3

GENERAL NOTES

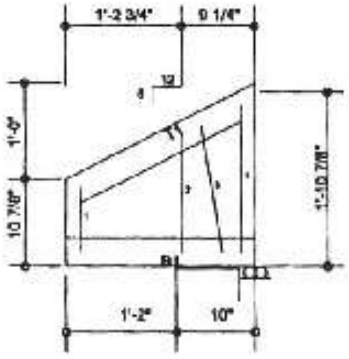
1. Top Chord and Bottom Chord continuously sheathed.
2. (ws) denotes web stiffener required at support.
3. Member design based on sections in Rosetta Library.

Maximum Deflection (ASD)
Vertical 0.004 in (L / 9999)
Horizontal 0.000 in

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	0.23	-0.41	0.34
Right	0.11	-0.29	0.00

DESIGN PARAMETERS

Number of Trusses = 8 each
Plate Style: In-Plane
Bearing : 3 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [Is =1.00, Ce = 0.80]
Wind Load : 34.88 psf (design) [Iw = 1.30]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.013



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	1-350RC-33(50)	0.05C	0.55	1.44	10.24	3.59	7.96	0.21
Top Chord	1-350RC-33(50)	0.11T	0.39	2.04	11.14	3.59	7.96	0.27
Web	1-118RW-33w(50)	0.35C	0.05	0.24	3.14	0.68	1.74	0.25

Web offset (X) = 2 3/8"

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 1/2" = 1'-0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL.

TRUSS D&E, V10.044
DATE: 1/25/2002
TIME: 11:07
ENGR: MAS
FILE: JK2
NUMBER:

JK2

Design Dwg 1/1

Connection	Section	Length	Axial	Int.	Fastener	Pa	Req.
Web # 1	118RW-33(50)	0.67	0.01C	0.00	Rosette	1.456	1
Web # 2	118RW-33(50)	1.21	0.23C	0.07	Rosette	1.456	1
Web # 3	118RW-33(50)	2.59	0.40T	0.08	Rosette	1.456	1
Web # 4	118RW-33(50)	2.52	0.09C	0.40	Rosette	1.456	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	L-2x3x3x0.12	1	0.39		#10-16 T/2	0.181	4
Steel Stud				0.60	#10-16T/2	0.181	4
Truss Chord	CS16x14L	1	0.43		#10-16 T/2	0.190	4
Steel Stud				0.43	#10-16T/2	0.190	4

GENERAL NOTES

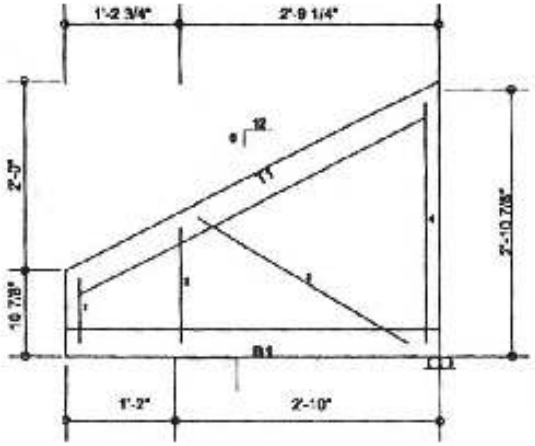
1. Top Chord and Bottom Chord continuously sheathed.
2. (ws) denotes web stiffener required at support.
3. Member design based on sections in Rosella Library.

Maximum Deflection (ASD)
Vertical 0.003 in [L / 9999]
Horizontal 0.000 in

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	0.25	-0.39	0.00
Right	0.16	-0.43	0.00

DESIGN PARAMETERS

Number of Trusses = 8 each
Plate Style: In-Plane
Bearing : 6 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [Is =1.00, Ce = 0.80]
Wind Load : 35.05 psf (design) [Iw = 1.00]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.013



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	1-350RC-33(50)	0.43C	0.03	0.36	9.99	3.59	7.96	0.09
Top Chord	1-350RC-33(50)	0.11T	0.20	1.32	11.14	3.59	7.96	0.18
Web	1-118RW-33w(50)	0.09C	0.08	0.80	1.82	0.68	1.74	0.40

Web offset (X) = 2 3/8"

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 1/2" = 1'-0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL

TRUSS D&E, V10.044
DATE: 1/28/2002
TIME: 11:06
ENGR: MAS
FILE: JK4
NUMBER:

JK4

Design Dwg 1/1

Connection	Section	Length	Axial	InL	Fastener	Pa	Req.
Web # 1	118RW-33(50)	0.87	0.03C	0.01	Rosette	1.456	1
Web # 2	118RW-33(50)	1.18	0.28C	0.08	Rosette	1.456	1
Web # 3	118RW-33(50)	3.28	0.14C	0.13	Rosette	1.456	1
Web # 4	118RW-33(50)	2.88	0.10C	0.07	Rosette	1.456	1
Web # 5	118RW-33(50)	3.20	0.03C	0.03	Rosette	1.456	1
Web # 6	118RW-33(50)	3.52	0.14C	0.84	Rosette	1.456	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	L-2x3x3x0.12	1	0.48		#10-16 T/2	0.175	5
Steel Stud				0.85	#10-16T/2	0.175	5
Truss Chord	L50	1	0.61		#10-16 T/2	0.161	4
Truss Girder				0.61	#10-16T/2	0.161	4

GENERAL NOTES

1. Top Chord and Bottom Chord continuously sheathed.
2. (wa) denotes web stiffener required at support.
3. Member design based on sections in Rosette Library.

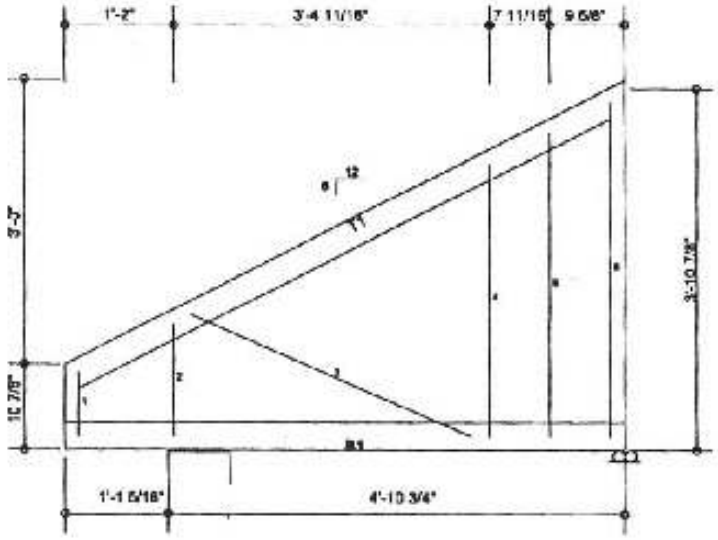
Maximum Deflection (ASD)
Vertical 0.039 in (L / 2078)
Horizontal 0.000 in

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	0.34	-0.48	0.85
Right	0.26	-0.61	0.00

DESIGN PARAMETERS

Number of Trusses = 8 each
Plate Style: In-Plane
Bearing : 6 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [Is =1.00, Ce = 0.60]
Wind Load : 34.39 psf (design) [Iw = 1.00]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.019

** Jack Truss **



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	1-350RC-33(50)	0.61C	0.08	3.36	9.52	3.59	7.98	0.48
Top Chord	1-350RC-33(50)	0.34C	0.15	2.64	10.11	3.59	7.98	0.37
Web	1-118RW-33w(50)	0.14C	0.11	1.20	3.97	0.68	1.74	0.84

Web offset (X) = 2 3/8"

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 1/2" = 1' 0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL

TRUSS D&E, V10.044
DATE: 1/25/2002
TIME: 11:08
ENGR: MAS
FILE: JK6
NUMBER:

JK6

Design Dwg 1/1

Connection	Section	Length	Axial	Int.	Fastener	Pa	Req.
Web # 1	118RW-33(50)	0.67	0.05C	0.02	Rosette	1.456	1
Web # 2	118RW-33(50)	0.99	0.14T	0.03	Rosette	1.456	1
Web # 3	118RW-33(50)	1.18	0.43C	0.12	Rosette	1.456	1
Web # 4	118RW-33(50)	3.29	0.29T	0.08	Rosette	1.456	1
Web # 5	118RW-33(50)	3.20	0.08C	0.07	Rosette	1.456	1
Web # 6	118RW-33(50)	4.00	0.32C	0.42	Rosette	1.456	1
Web # 7	118RW-33(50)	4.52	0.05C	0.10	Rosette	1.456	1
Web # 8	118RW-33(50)	3.13	0.04C	0.03	Rosette	1.456	1

Connection	Simpson	Each	Load	Uplift/Shr	Fastener	Pa	Req.
Truss Chord	L 2x2x3x0.12	1	0.45		#10-16 T/2	0.175	5
Steel Stud				0.72	#10-16T/2	0.175	5
Truss Chord	150	1	0.65		#10-16 T/2	0.181	4
Truss Girder				0.65	#10-16T/2	0.181	4

GENERAL NOTES

1. Top Chord and Bottom Chord continuously sheathed.
2. (ws) denotes web stiffener required at support.
3. Member design based on sections in Rosette Library.

Maximum Deflection (ASD)

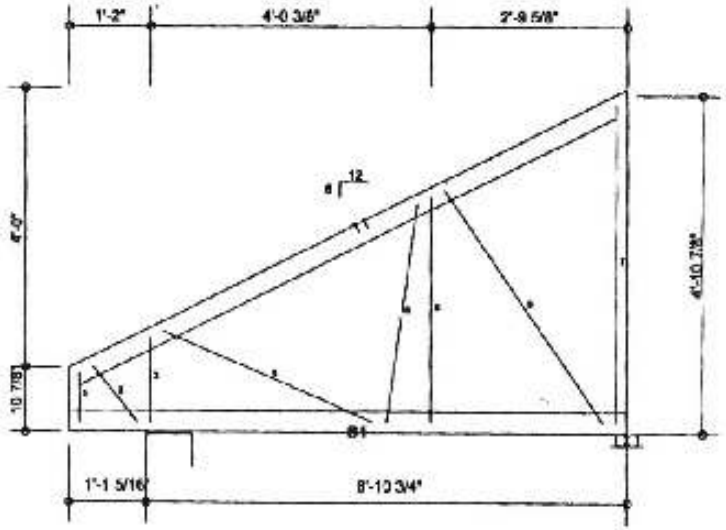
Vertical	0.009 in	(L / 9442)
Horizontal	0.003 in	
Top Overhang	0.010 in	(L / 1377)
Web Extension	0.000 in	(L / 0)

Support Reaction (ASD)	Down	Uplift	Horizontal
Left	0.43	-0.48	0.72
Right	0.32	-0.65	0.00

DESIGN PARAMETERS

Number of Trusses = 8 each
Plate Style: In-Plane
Bearing : 8 in
Bldg Height: 19.708 ft
Spacing : 2 ft
Dead Load : 15.00 psf (top chd)
Dead Load : 10.00 psf (bottom chd)
Live Load : 20.00 psf (top chd)
Live Load : 0.00 psf (bottom chd)
Snow Load : 0.00 psf (ground)
Snow Load : 0.00 psf (design) [ls =1.00, Ce = 0.80]
Wind Load : 35.08 psf (design) [Iw = 1.00]
Wind Speed : 110 mph (Exposure C)
Open Category: E
Building Category: (2) General
Seismic Coefficient: 0.013

** Jack Truss **



(w) = weak axis

Per 1996 AISI CFSDM		Actual			Allowable			
Member	Section	Axial	Shear	Mom	Axial	Shear	Mom	Ratio
Bottom Chord	1-350RC-33(50)	0.30C	0.05	0.96	9.96	3.69	7.96	0.15
Top Chord	1-350RC-33(50)	0.02T	0.21	2.04	11.14	3.69	7.96	0.26
Web	1-118RW-33w(50)	0.32C	0.00	0.00	0.76	0.68	1.74	0.42

Web offset (X) = 2 3/8"

1997 Uniform Building Code: PASSED
Design Method - (ASD)
Component Wind Pressure Design (Interior)
Scale: 3/8" = 1'-0"

RIVERSIDE PUBLIX

JACKSONVILLE, FL.

TRUSS D&E, V10.044
DATE: 1/25/2002
TIME: 11:09
ENGR: MAS
FILE: JKB
NUMBER:

JKB

Design Dwg 1/1

V. Product Technical Data

BLUE STAR
STEEL

Spec Sheet

Product Name
Bluestar Steel Truss
Light Gauge Steel Roof Truss Systems

Manufacturer

Product Description
Bluestar Steel Trusses are produced from proprietary roll formed chord and web profiles using the patented Rosette fastening system. This system uses material in the chord and web members, through a unique crimping process, to fasten the members together in a strong connection that eliminates the need for screws, rivets, nails, or welding. Each Rosette connection is equivalent to six #8 self-tapping screws.

An integrated CAD/CAM system is used to produce a precision truss that is reproducible to 0.010 inches. Trusses are designed in an advanced CAD system and analyzed through integrated structural software to meet any code requirement. The CAD data is then sent to the production line where chord and web members are punched, formed, and cut to length with an accuracy of 0.020 inches. The just-in-time (JIT) manufacturing operation is adaptable to mass customized production of light gauge steel trusses for clearspan applications under 70 feet in both residential and commercial structures.

Bluestar Steel Trusses are manufactured from mill-certified Grade 50 coil steel meeting the specifications of ASTM 653 or ASTM 607. The steel has a G60 galvanized coating per ASTM A525.

All truss designs using Bluestar Steel Trusses are signed and sealed by a Professional Engineer registered in the state of the building site.

Technical Data
Attached – Structural Properties and Rosette Connection Tables

Installation
Bluestar Steel Trusses are bundled and stacked for safe delivery, and unloaded at the site free from damage in-transit. Trusses stockpiled at the site must be supported at sufficient bearing points to prevent in-plane or lateral bending or tipping.

Special clips, hangers, and brackets are provided by Bluestar for truss-to-wall and truss-to-truss connections. Instructions for field erection are provided for rapid assembly of the truss system.

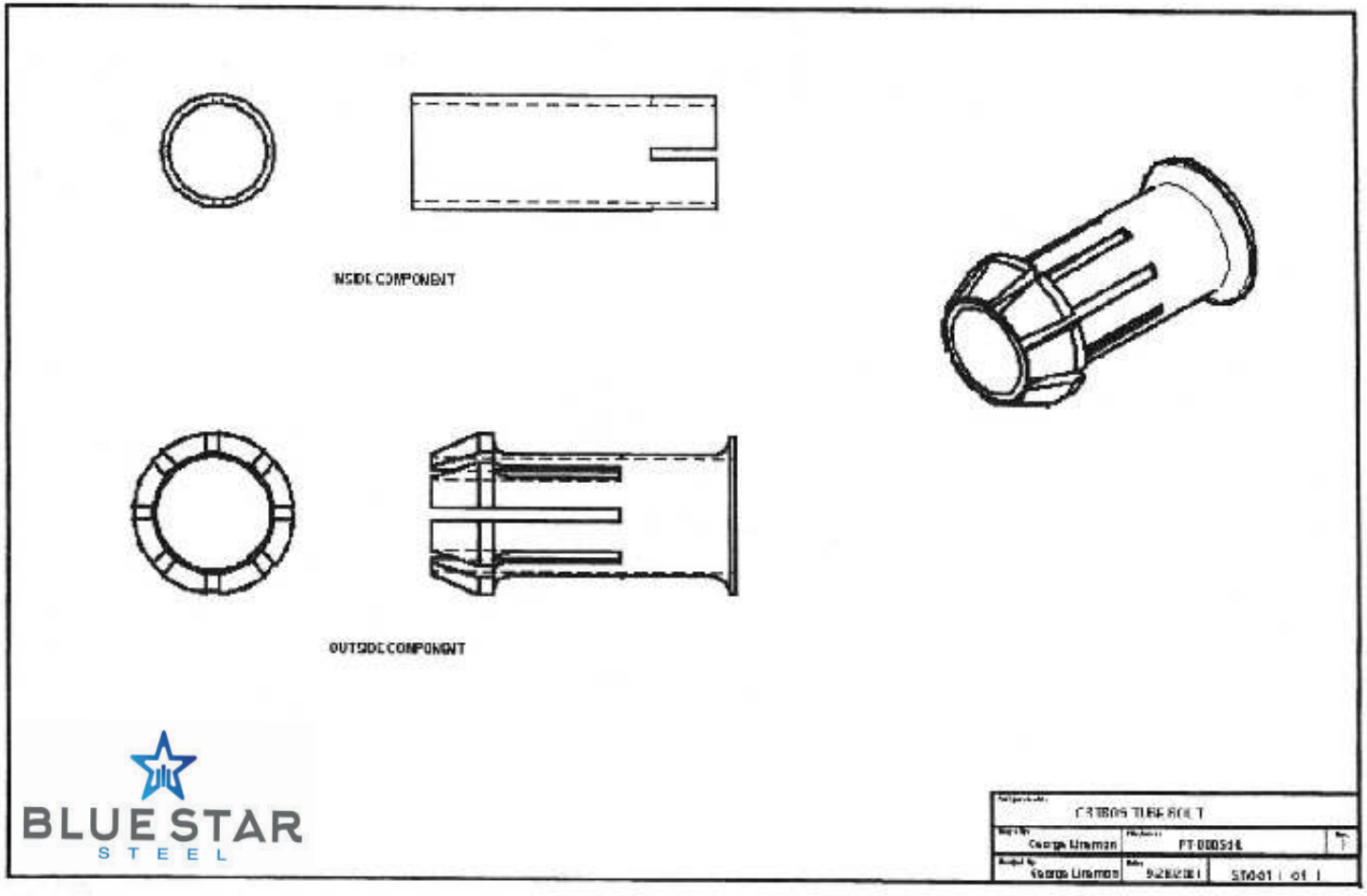
BLUE STAR
STEEL

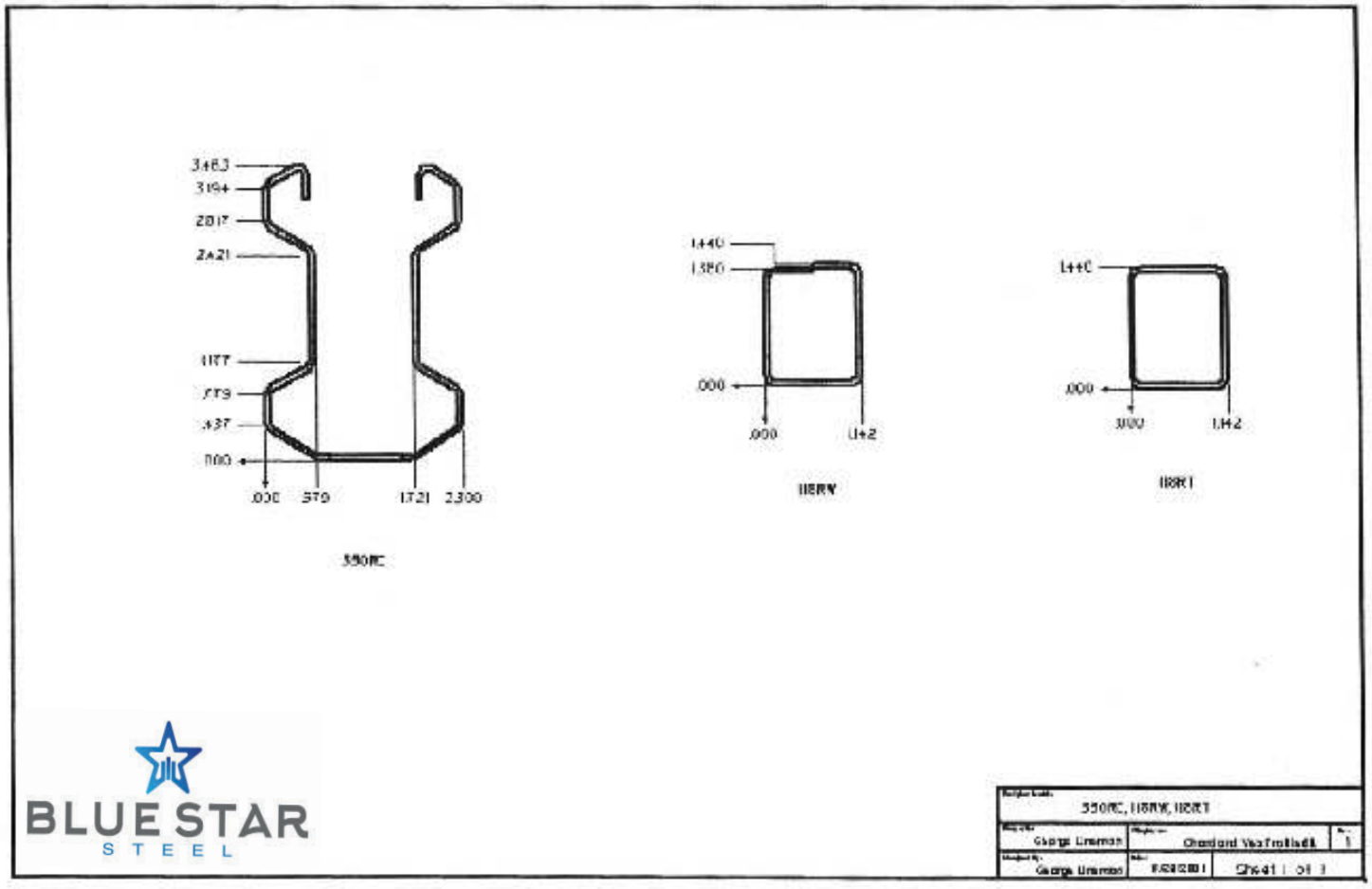
TECHNICAL SPECIFICATIONS

Steel Truss Structual Properties

Designation	Design Thickness	Weight (lbs/ft)	Area (in^2)	Ix (in^4)	Rx (in)	Iy (in^4)	Ry (in)
350 RC Chord	0.0346	1.26	0.372	0.2252	0.7778	0.4968	1.1553
	0.0451	1.62	0.478	0.2860	0.7732	0.6238	1.1420
	0.0566	2.01	0.593	0.3546	0.7729	0.7571	1.1294
	0.0674	2.36	0.696	0.4058	0.7636	0.8658	1.11154
118 RW Open Web	0.0346	0.555	0.163	0.3679	0.4746	0.0464	0.5328
	0.0451	0.721	0.263	0.0519	0.4708	0.0598	0.5310
	0.0566	0.895	0.212	0.0470	0.4660	0.0733	0.5276
	0.0674	1.054	0.310	0.0661	0.4614	0.08481	0.5229
118 RT Tube Web	0.0346	0.564	0.167	0.0368	0.4695	0.0481	0.5365
	0.0451	0.738	0.217	0.0471	0.4656	0.0620	0.5346
	0.0566	0.917	0.270	0.0572	0.4600	0.0762	0.5315
	0.0674	1.080	0.317	0.0661	0.4560	0.0882	0.5267

[Diagrams of the profiles are shown on the attached page]


INSIDE COMPONENT
OUTSIDE COMPONENT
BLUE STAR
STEEL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1721
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350RC
1440
1380
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000
1142
110RW
1440
000
000
1142
110RT
350RC, 110RW, 110RT
George Lineman
George Lineman

ROSETTE CONNECTION

The Rosette joining system is a completely new press-joining method for light-gage cold-formed steel structures. The Rosette connection has several advantages over other common joining methods used in steel construction, such as riveting, bolting and welding. The joint is formed using the parent metal of the sections to be connected; thus, there are no additional fasteners, such as screws, rivets, or nails. Also, there is no need for heating (e.g., due to welding) which may cause damage to protective coatings and decrease the strength of the material. The Rosette technology was developed to facilitate fully automated, integrated processing of strip coil material directly into light gauge steel frame components for structural applications, such as stud wall panels and roof trusses. This integrated manufacturing system produces prefabricated and dimensioned frame components, making possible the just-in-time assembly of frame panels or trusses without further measurements or jigs.

The Rosette connection is made by first punching holes (0.80 inches in diameter) in one part of the joint and forming collared holes in the other part to be joined. Next, the collars are snapped into the holes during loose assembly of each joint. Finally, the Rosette tool head penetrates the hole at each joint, the head expands and is then pulled back by hydraulic force. The expanded tool head crimps the collar part against the hole part completing the connection. The joining process is illustrated in Figure 1 and the finished Rosette connection is shown in Figure 2.

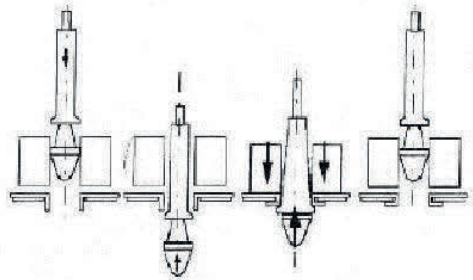


Figure 1

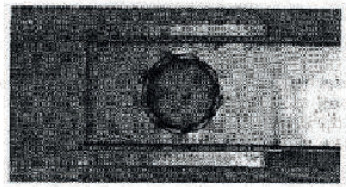


Figure 2

In application, the Rosette connection is used in pairs in any joint between a web and chord or stud and track. Figure 3 shows such a connection pair in a T-joint test configuration. A TubeBolt, Figure 4, may be used for additional strength of the joint. Following are certified data on the Rosette connection from tests using T-joints.

AISI design shear strength of Rosette connection pair (HUT Test, Finland)

Configuration		Compression (kips)		Tension (kips)	
Web Thickness (in.)	Chord Thickness (in.)	W/O TubeBolt	With TubeBolt	W/O TubeBolt	With TubeBolt
0.04	0.04	2.31	2.60	2.25	-------
0.06	0.04	2.60	3.43	2.62	3.47
0.06	0.06	3.72	4.98	3.43	3.85

AISI design shear strength of Rosette connection pair (NAHB Test, US)

Configuration		Compression (kips)		Tension (kips)	
Web Thickness (in.)	Chord Thickness (in.)	W/O TubeBolt	With TubeBolt	W/O TubeBolt	With TubeBolt
0.035	0.035	2.09	3.30	1.92	1.86
0.055	0.035	2.41	3.57	2.40	3.64
0.055	0.055	3.95	4.61	4.10	4.14

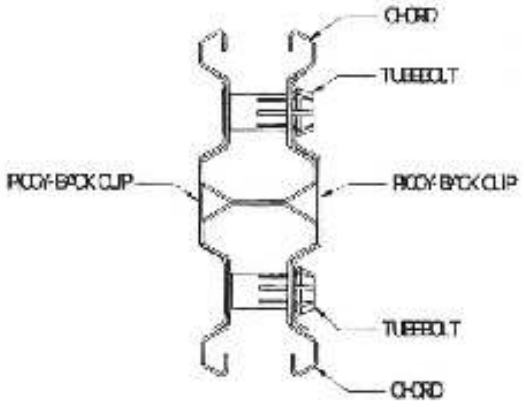
VI. Connection Sections & Data

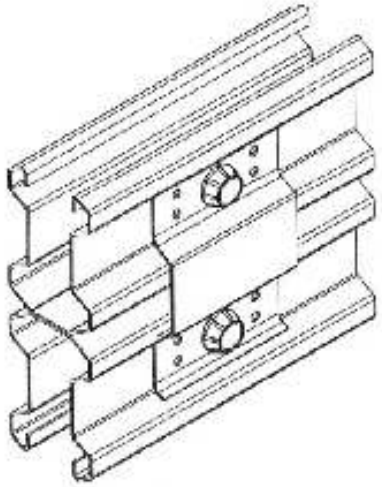
C3PB06 CLIP

THE C3PB06 CLIP IS ATTACHED TO PIGGY-BACKED CHORDS WITH TUBEBOLTS OR #12 SELF-TAPPING SCREWS. THE CLIP SHOULD BE STAGGERED ALONG EACH SIDE 4 FEET OC.

C3PB06 CLIPS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3PB06 ALLOWABLE LOADS IN KIPS - 54 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	0.075"	0.054"
UPLIFT	NA	3.900
GRAVITY	NA	NA





BLUE STAR STEEL

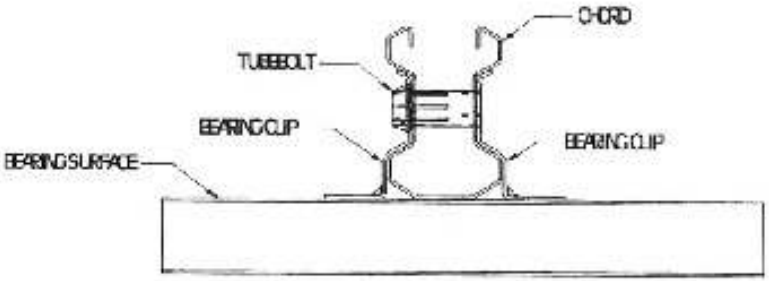
C3PB06 - PIGGY-BACK CLIP		
Drawn By: George Lineman	File Name: PI-0006.DWG	Rev: *
Checked By: George Lineman	Date: 11/27/2001	Sheet: 1 of 1

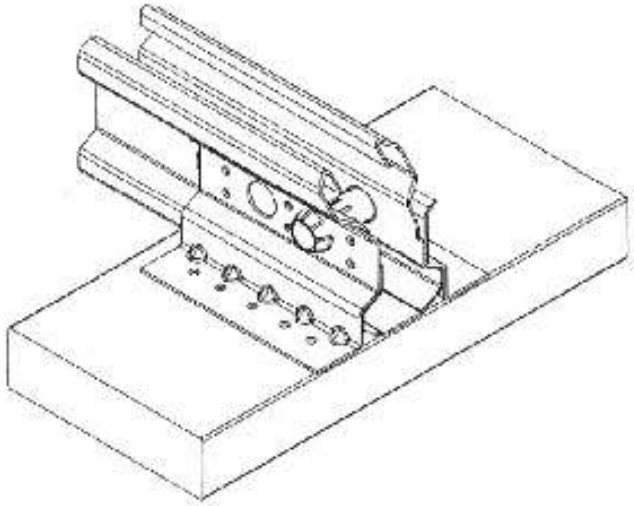
C3BC08 BEARING CLIP

THE C3BC08 BEARING CLIP ATTACHES THE LOWER CHORD TO ANY BEARING POINT, INCLUDING MASONARY, STEEL BEAMS, WOOD AND LIGHT GAUGE STEEL USING #12 SELF-TAPPING SCREWS. A TUBE BOLT OR #12 SELF-TAPPING SCREWS CAN BE USED TO SECURE THE CLIP TO THE TRUSS CHORD. USE TWO BEARING CLIPS AT EACH BEARING CLIP LOCATION TO MEET SPECIFIED ALLOWABLE LOADS.

C3BC08 BEARING CLIPS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3BC08 ALLOWABLE LOADS IN RC-54 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	075 (19)	054 (16)
UPLIFT	5060 #	N/A
GRAVITY	N/A	N/A





BLUE STAR STEEL

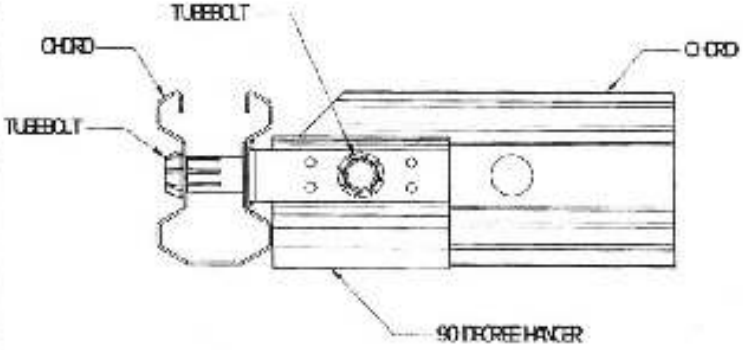
PART NUMBER: C3BC08 - BEARING CLIP GENERAL USE		
DRAWN: George Lineman	FILE NAME: PT 0008.dft	REV: -
ENGINEER: George Lineman	DATE: 1/27/2021	Sheet 1 of 1

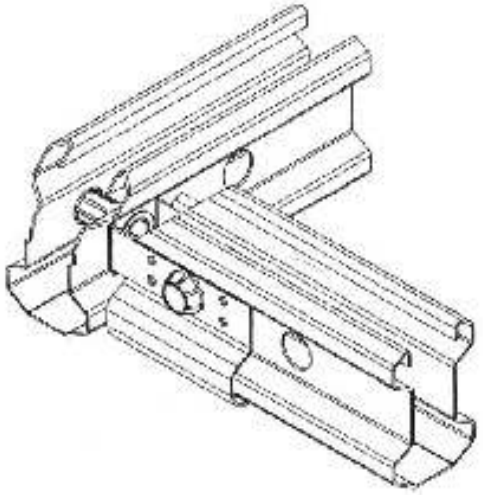
C3JH09 HANGER

THE C3JH09 HANGER IS ATTACHED TO THE CHORD END BY A TUBE BOLT OR ϕ12 SELF-TAPPING SCREWS. ATTACHMENT TO THE BUTTING TRUSS CHORD IS BY A TUBE BOLT OR ϕ12 SELF-TAPPING SCREWS.

C3JH09 HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3JH09 ALLOWABLE LOADS IN RC 54 CHORD		
LOAD TYPE	AVAILABLE LOADS	
	0.75 DFM	0.54 DFM
UPLIFT		
GRAVITY		





BLUE STAR STEEL

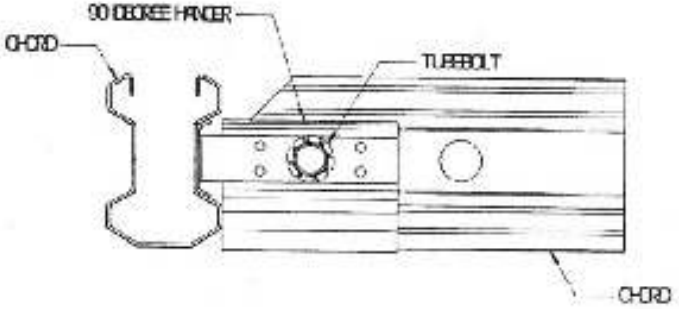
	C3JH09 - 90 DEGREE HANGER	
DRAWN: George Unerman	FILE NAME: PF-C03.dft	REV: *
CHECKED: George Unerman	DATE: 1/27/2001	Sheet 1 of 1

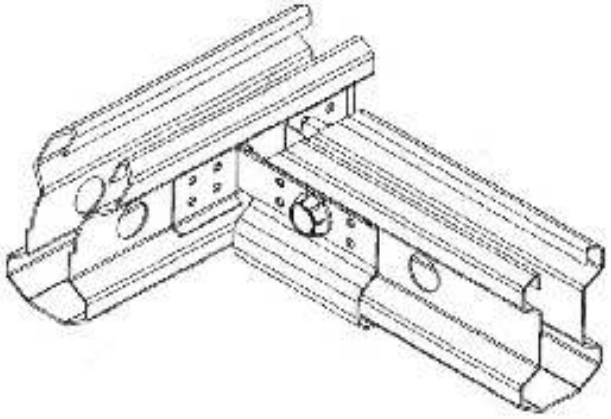
C3JHD HANGER

THE C3JHD HANGER ATTACHES TO THE CHORD END BY A TUBEBOLT OR #12 SELF-TAPPING SCREWS. ATTACHMENT TO THE BUILDING TRUSS CHORDS IS BY #12 SELF-TAPPING SCREWS.

C3JHD HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3JHD ALLOWABLE LOADS IN RC 54 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	.075 (18)	.054 (16)
UPLIFT		
GRAVITY		





BLUE STAR STEEL

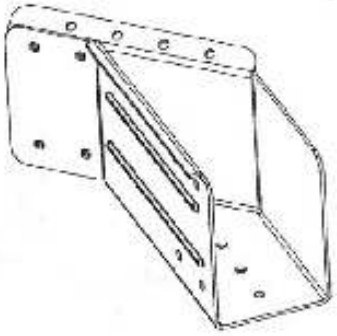
C3JHD - 90 DEGREE HANGER		
George Lineman	PF-007.dft	REV. -
George Lineman	1/12/2001	Sheet 1 of 1

C3JH14 HANGER

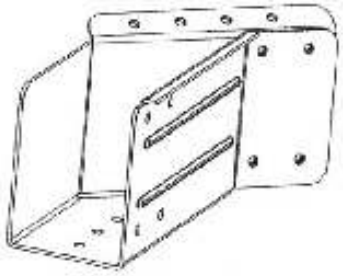
THE C3JH14 HANGER ATTACHES THE CORNER HIP GIRDER TO THE STEP DOWN GIRDER AND THE CORNER JACKS TO THE HIP GIRDER. THIS HANGER IS ATTACHED USING #12 SELF-TAPPING SCREWS.

C3JH14 HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.

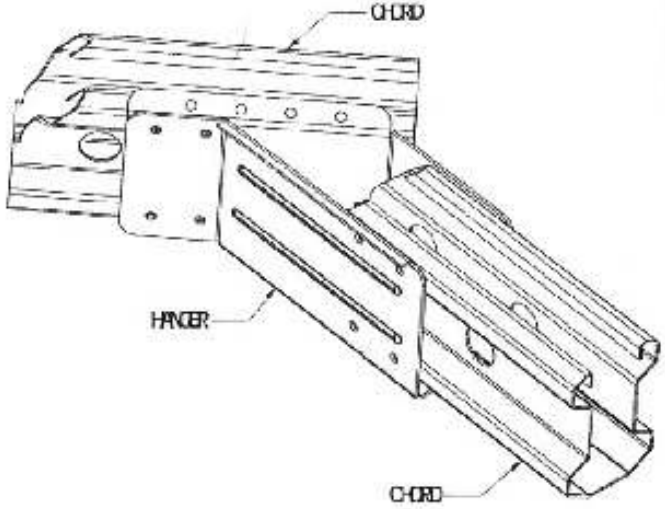
C3JH14 ALLOWABLE LOADS IN RG-54 CHORD		
LOAD TYPE	ALLOWABLE GAUGE	
	0.75 (18)	0.54 (16)
UPLIFT	2200#	N/A
GRAVITY	6970 #	N/A



C3JH14L



C3JH14R



BLUE STAR STEEL

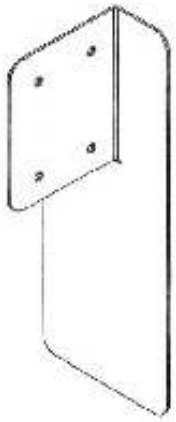
C3JH14L, C3JH14R - 135 DEGREE HANGER		
George Lineman	11" 00 1/4 dft	-
George Lineman	11/28/2001	Sheet 1 of 1

C3VC15 VALLEY CLIP

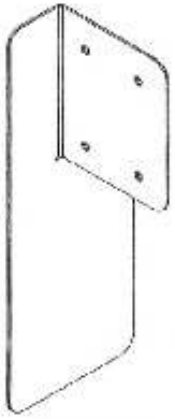
THE C3VC15 VALLEY CLIP ATTACHES THE VALLEY TRUSS TO THE STANDARD TRUSS. THIS CLIP IS ATTACHED USING #12 SELF-TAPPING SCREWS.

C3VC15 VALLEY CLIPS ARE MADE OF GRADE 50 GALVANIZED STEEL.

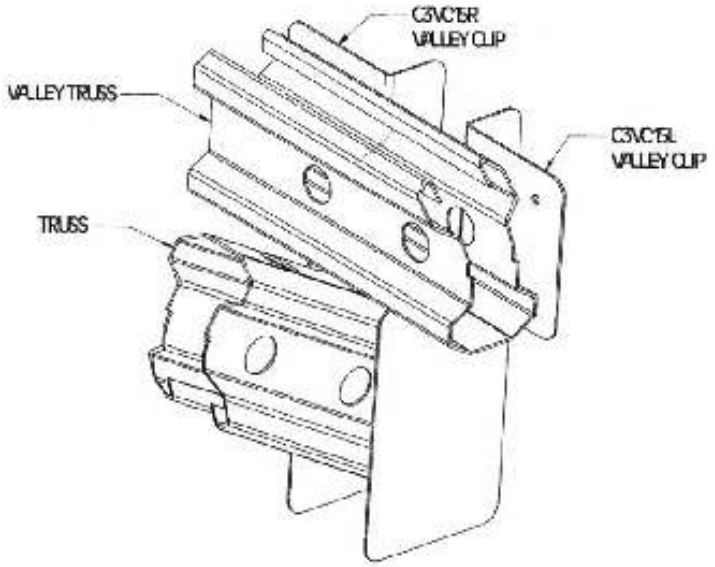
C3VC15 ALLOWABLE LOADS IN RC-54 CHORD		
LOAD TYPE	AVAILABLE CAUCE	
	.075 (19)	.054 (16)
UPLIFT	N/A	2500#
GRAVITY	N/A	N/A



C3VC15L



C3VC15R



BLUE STAR STEEL

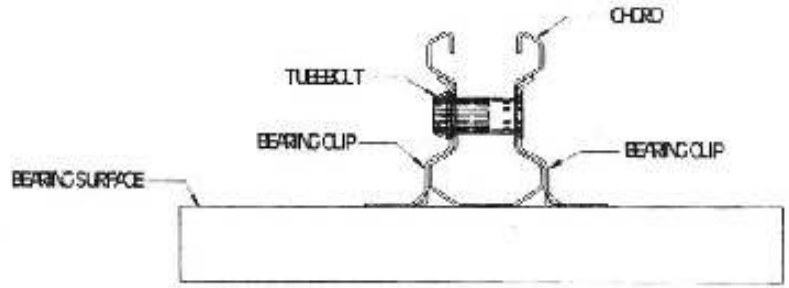
C3VC15L, C3VC15R - VALLEY CLIP		
George Lineman	PT-0015.dft	-
George Lineman	10/28/2011	Sheet 1 of 1

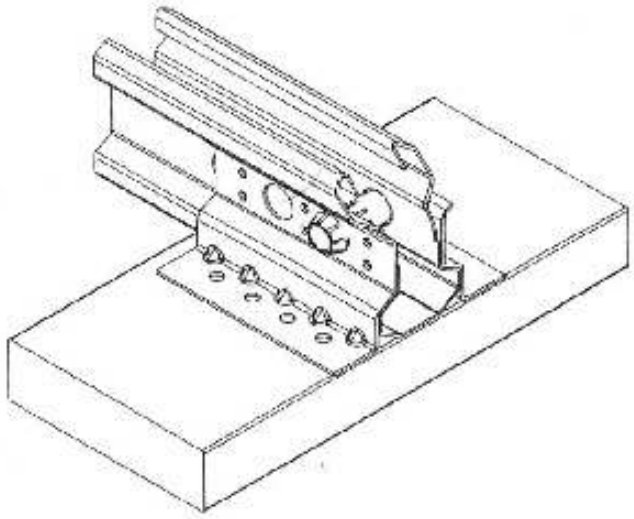
C3BC16 BEARING CLIP

THE C3BC16 BEARING CLIP ATTACHES THE LOWER CHORD TO MASONRY USING FOUR 1/4" WEDGE BOLTS. A TUBEBOLT OR #12 SELF-TAPPING SCREWS ARE USED TO SECURE THE CLIP TO THE TRUSS CHORD. USE TWO BEARING CLIPS AT EACH BEARING CLIP LOCATION TO MEET SPECIFIED ALLOWABLE LOADS.

C3BC16 BEARING CLIPS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3BC16 ALLOWABLE LOADS IN RC-51 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	.075 (14)	.054 (16)
UPLIFT	5080	N/A
GRAVITY	N/A	N/A





BLUE STAR STEEL

C3BC16 - BEARING CLIP MASONARY USD

Drawn By: Dwight Linenian | Filename: PF-0076.dft | Rev: -

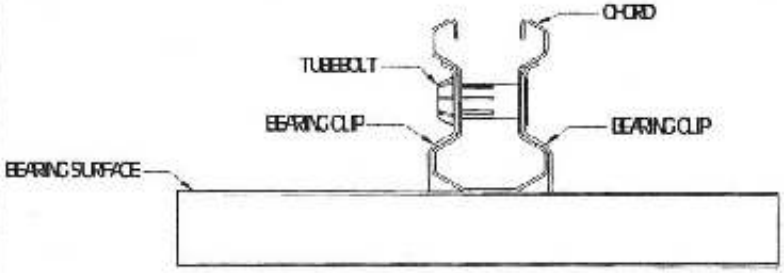
Checked By: George Linenian | Date: 11/28/2001 | Sheet 1 of 1

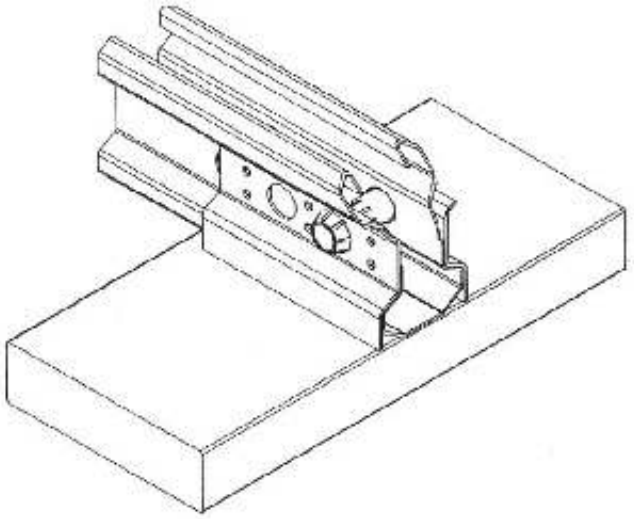
C3BC24 BEARING CLIP

THE C3BC24 BEARING CLIP ATTACHES THE LOWER CHORD TO A BEARING POINT BY WELDING A TUBEBOLT OR #12 SELF-TAPPING SCREWS ARE USED TO SECURE THE CLIP TO THE TRUSS CHORD. USE TWO BEARING CLIPS AT EACH BEARING CLIP LOCATION TO MEET SPECIFIED ALLOWABLE LOADS.

C3BC24 BEARING CLIPS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3BC24 ALLOWABLE LOADS IN KG-54 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	075 (18)	054 (16)
UPLIFT	5060#	NA
GRAVITY	NA	NA





BLUE STAR STEEL

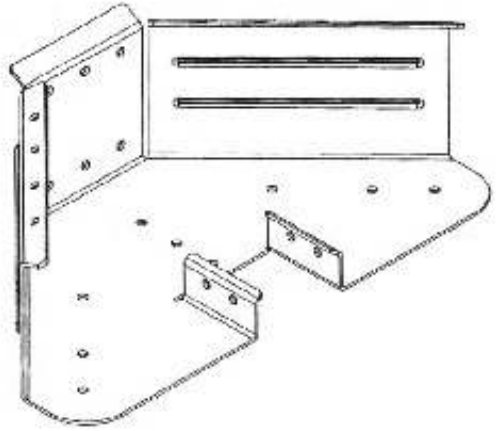
C3BC24 - BEARING CLIP WELDED

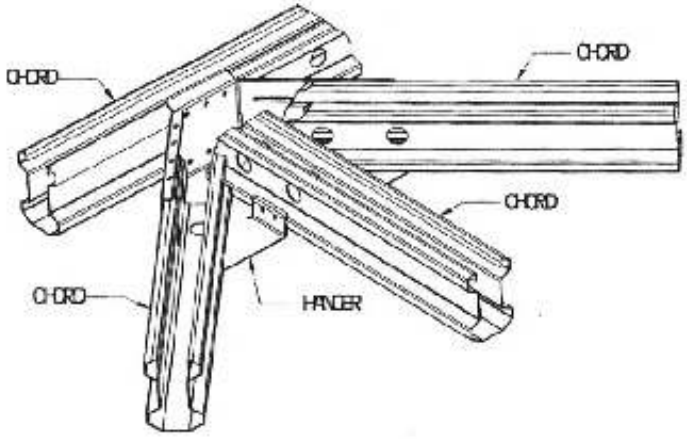
George Unerman | PT-0024.dft | Sheet 1 of 1

C3JH25 HANGER

THE C3JH25 HANGER ATTACHES 3 INTERSECTING TRUSSES TO A SINGLE TRUSS. THIS HANGER IS ATTACHED USING #12 SELF-TAPPING SCREWS.

C3JH25 HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.





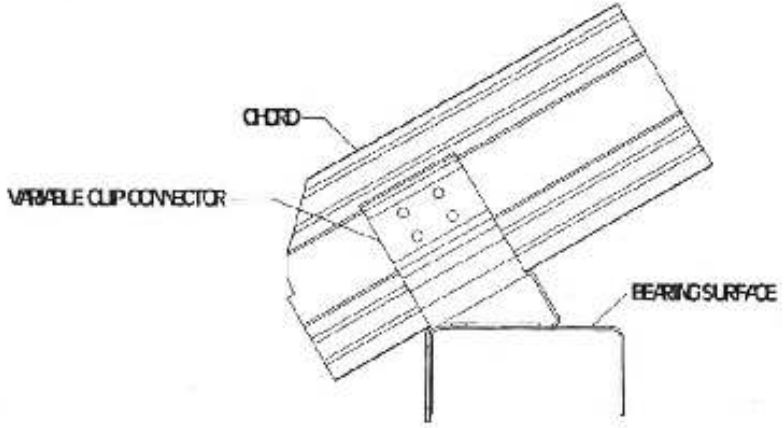
BLUE STAR STEEL

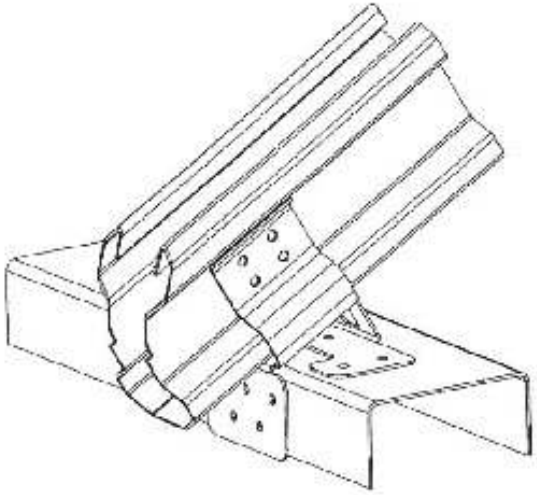
PART NUMBER: C3JH25 TERMINAL HP HANGER		
DRAWN BY: George Lineman	FILENAME: PT-3025.dft	SIZE: -
CHECKED BY: George Lineman	DATE: 1/28/2001	Sheet 1 of 1

C3VP52 VARIABLE CLIP CONNECTOR

THE C3VP52 VARIABLE CLIP CONNECTOR ATTACHES THE LOWER CHORD TO ANY BEARING POINT, INCLUDING STEEL BEAMS, WOOD AND LIGHT GAUGE STEEL USING #12 SELF-TAPPING SCREWS. #12 SELF-TAPPING SCREWS ARE USED TO SECURE THE CLIP TO THE TRUSS CHORD.

C3VP52 VARIABLE CLIP CONNECTORS ARE MADE OF GRADE 50 GALVANIZED STEEL.



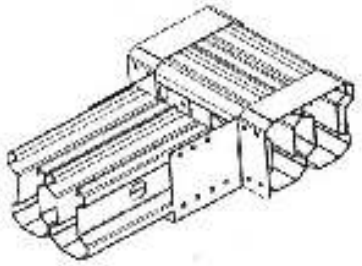


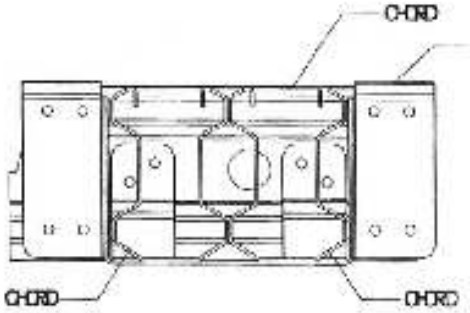
Part number: C3VP52 - VARIABLE CLIP CONNECTOR		
Drawn By: George Linerman	File name: C3VP52.dft	Rev: -
Checked By: George Linerman	Date: 7/28/2002	Sheet: 1 of 1

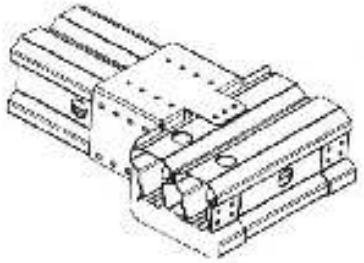
C3JH63 TWO PLY HANGER

THE C3JH63 TWO PLY HANGER ATTACHES TWO LOWER CHORDS TO TWO PLY GIRDER TRUSSES USING #12 SELF-TAPPING SCREWS. #12 SELF-TAPPING SCREWS ARE USED TO SECURE THE CLIP TO THE TRUSS CHORD.

C3JH63 TWO PLY HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.







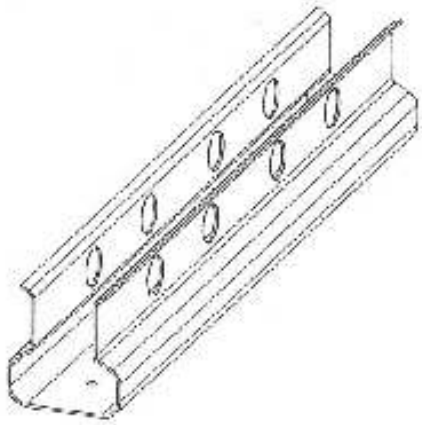
C3JH63 - TWO PLY GIRDER TRUSS HANGER		
George Limeman	PT-C33.dft	-
George Limeman	12/5/2002	Sheet 1 of 1

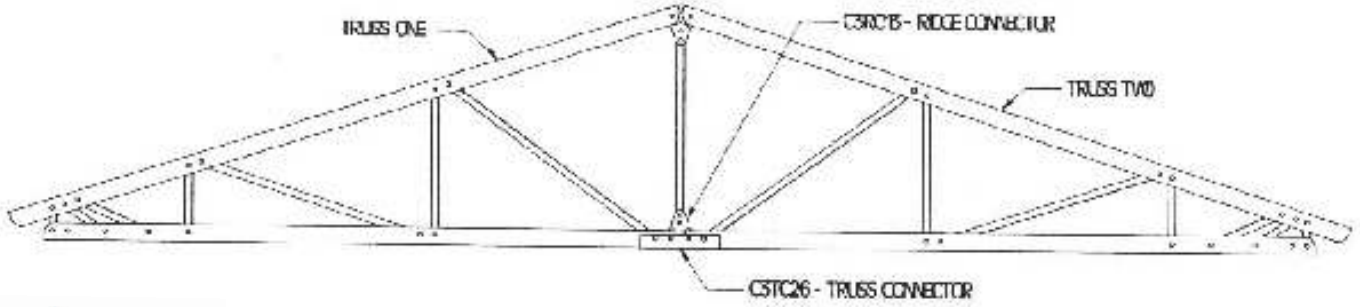
C3TC26 TRUSS CONNECTOR

THE C3TC26 TRUSS CONNECTOR ALONG WITH A C3RC16 RIDGE CONNECTOR ATTACHES TWO HALF TRUSSES USING #12 SELF-TAPPING SCREWS AND TUBE BOLTS. THIS ENABLES THE MANUFACTURING OF TRUSSES OVER 45 FEET.

C3TC26 TRUSS CONNECTORS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3TC26 ALLOWABLE LOADS IN KG 54 CHORD		
LOAD TYPE	AVAILABLE GAUGE	
	0.75 (19)	0.54 (16)
UPLIFT		
GRAVITY		
DEAD		





BLUE STAR STEEL

X	±1
XX	±0.1
XXX	±0.05
XXXX	±0.005

C3TC26 - TRUSS CONNECTOR

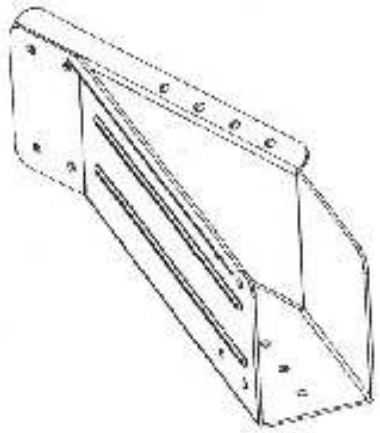
George Lineman — PT-C026.dft — Sheet 1 of 1

C3JH60 HANGER

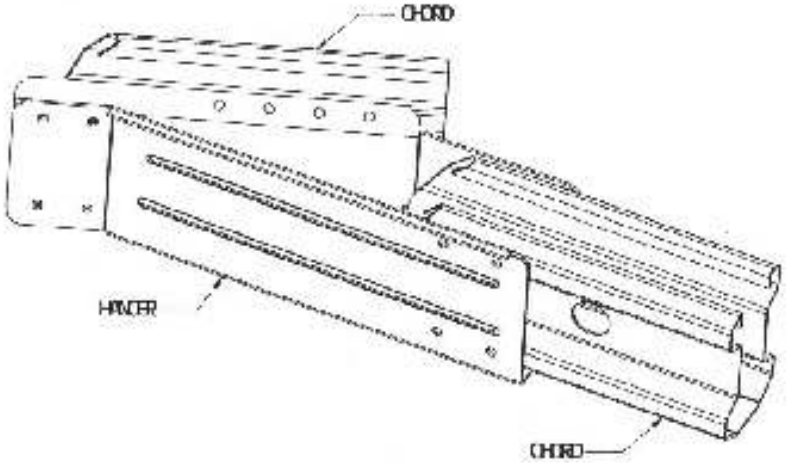
THE C3JH60 HANGER ATTACHES THE CORNER HIP ORDER TO THE STEP DOWN ORDER AND THE CORNER JACKS TO THE HIP ORDER. THIS HANGER IS ATTACHED USING #12 SELF-TAPPING SCREWS.

C3JH60 HANGERS ARE MADE OF GRADE 50 GALVANIZED STEEL.

C3JH60 ALLOWABLE LOADS IN RE: 54 CHORD		
LOAD TYPE	AVAILABLE LOADS	
	0.75 RW	0.54 RW
UPLIFT	2200#	NA
GRAVITY	6910 #	NA

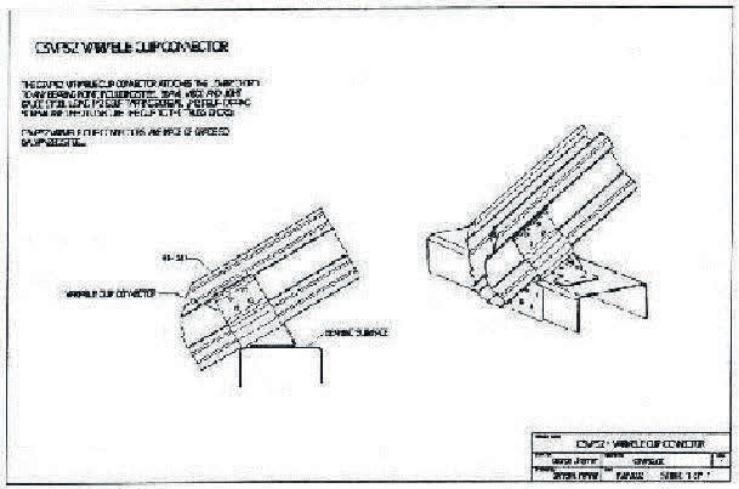


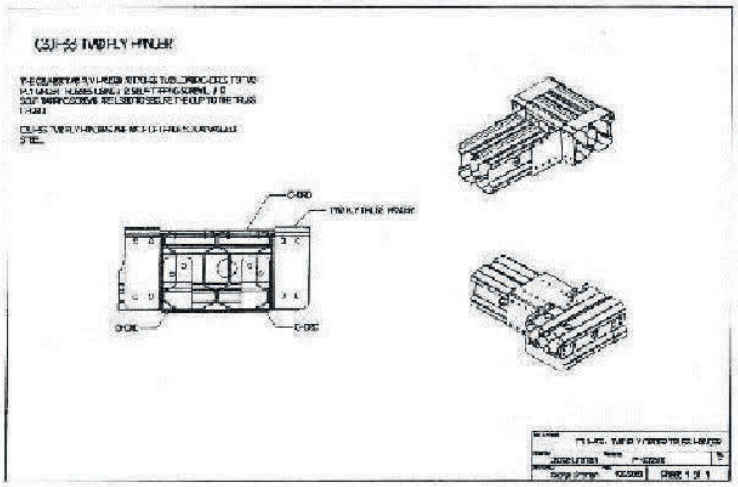
C3JH60L



BLUE STAR STEEL

C3JH60L - 67.5 DEGREE HANGER		
George Lineman	PI-CC-0031	-
George Lineman	11/20/2007	Sheet 1 of 1





VII. Handling Instructions

LGSEA **Light Gauge Steel Engineers Association**

1726 M Street, N.W., Suite 601 • Washington, D.C. 20036 • (202) 263-4486 • FAX (202) 785-3856

FIELD INSTALLATION GUIDE FOR COLD-FORMED STEEL ROOF TRUSSES

Improper or inadequate construction bracing is one of the most significant contributors to the collapse of truss systems. This document is intented to provide the Erector with some general guidelines for the proper storage, handling, and bracing of trusses. Further information on the design of construction (temporary) and permanent bracing is provided in LGSEA Technical Notes 551d, *"Design Guide for Construction Bracing of Cold-Formed Steel Trusses"*, and 551e, *"Design Guide for Permanent Bracing of Cold-Formed Steel Trusses."*

This safety alert symbol is used to attract your attention! PERSONAL SAFETY IS INVOLVED! When you see this symbol - BE ALERT TO POSSIBLE DANGER.

CAUTION: A CAUTION identifies safe operating practices or indicates unsafe conditions that could result in personal injury or damage to structures.

WARNING: A WARNING describes a condition where failure to follow instruction could result in severe personal injury or damage to structures.

DANGER: A DANGER designates a condition where failure to follow instruction or heed warnings will most likely lead to serious personal injury or death, or damage to structures.

DESIGN CONSIDERATIONS

TRUSSES TO BE SPACED AT A MAXIMUM 4'-0" FOR ALL CONDITIONS DESCRIBED BY THIS DOCUMENT.

CAUTION: All temporary bracing should be designed in accordance with LGSEA "Technical Note" 551d - Design Guide for Construction Bracing of Cold-Formed Steel Trusses."

WARNING: Temporary bracing is designed to hold trusses plumb during erection. ***DO NOT STEP*** on temporary bracing.

CAUTION: All bracing materials to be minimum 33 mil (20 gauge), 7/8" or 1-1/2" hat channel, or 33 mil (20 gauge) 3-1/2" "C" stud.

CAUTION: All connections should be made with (3) #10 self-drilling screws for diagonal bracing, and (2) #10 self-drilling screws for lateral bracing.

TRUSS STORAGE

CAUTION: Trusses should not be unloaded on uneven surfaces or terrain which could cause damage to the truss.

CAUTION: Trusses must be stored on a slight slope and supported by blocking to allow for draining of water and prevent ponding of water on the interior of truss members.

CAUTION: Tarping of trusses during storage must allow for proper ventilation to prevent undue condensation.

WARNING: Do not lift bundled trusses by the bands.

DANGER: Do not store bundles upright unless properly braced. Do not break bands until bundles are placed in a stable position. Upon cutting bands, immediately inspect trusses to ensure there is no damage to the chord or web members.

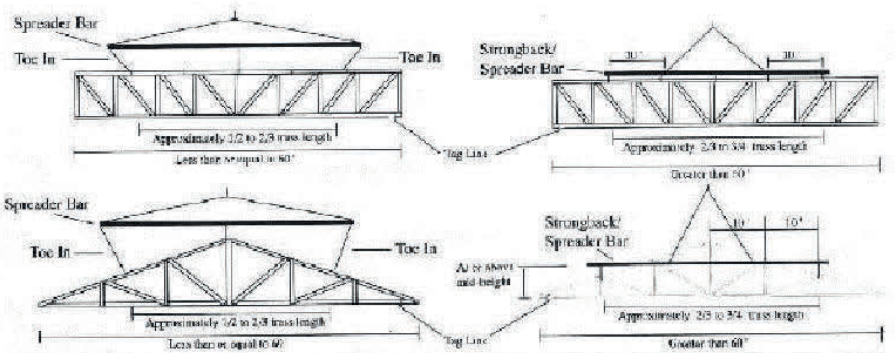
CAUTION: Do not overload trusses during construction with stacks of construction material. Design loads should not be applied until all permanent bracing, including sheathing when used, has been properly attached.

MECHANICAL INSTALLATION

WARNING: Do not attach cables, chains, or hooks to the web members.

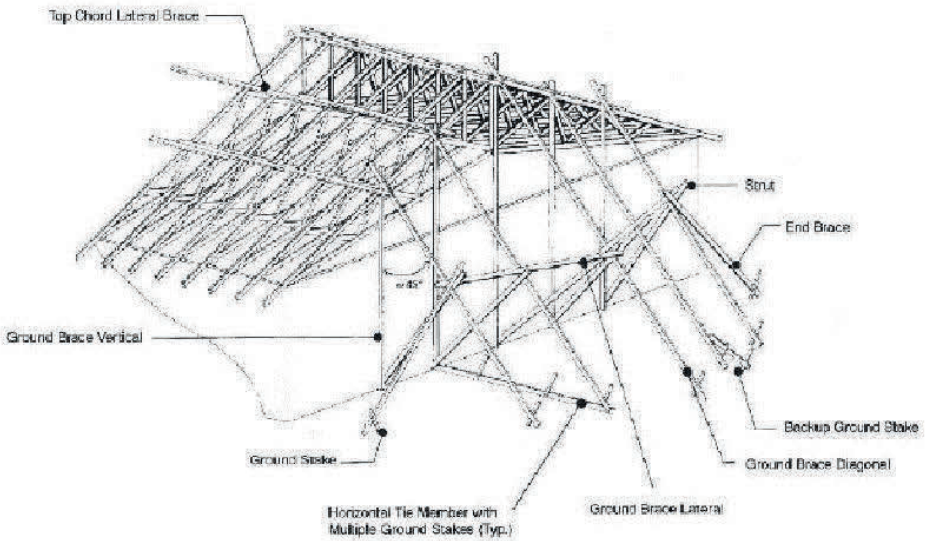
WARNING: Do not lift single trusses with spans greater than 30' by the peak

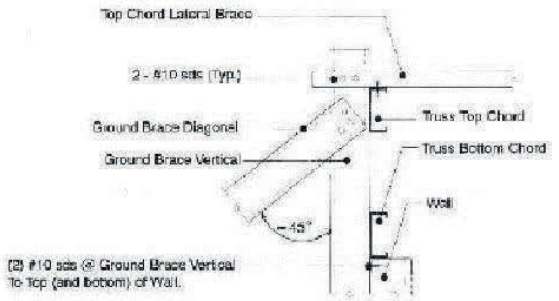
Damage to the chord must be prevented. Lifting devices should be connected to the truss top chord with a closed-loop attachment utilizing materials such as slings, chains, cables, nylon strapping, etc. of sufficient strength to carry the weight of the truss. Each truss should be set in proper position per the building designer's framing plan and held with the lifting device until the ends of the truss are securely fastened and temporary bracing is installed.



CAUTION: Temporary bracing shown in this summary sheet is adequate for the installation for trusses with similar configurations. Consult a licensed professional engineer if a different bracing arrangement is desired. The engineer may design bracing in accordance with LGSEA's Technical Note, *"Design Guide for Construction Bracing of Cold-Formed Steel Trusses."* (551d).

GROUND BRACING

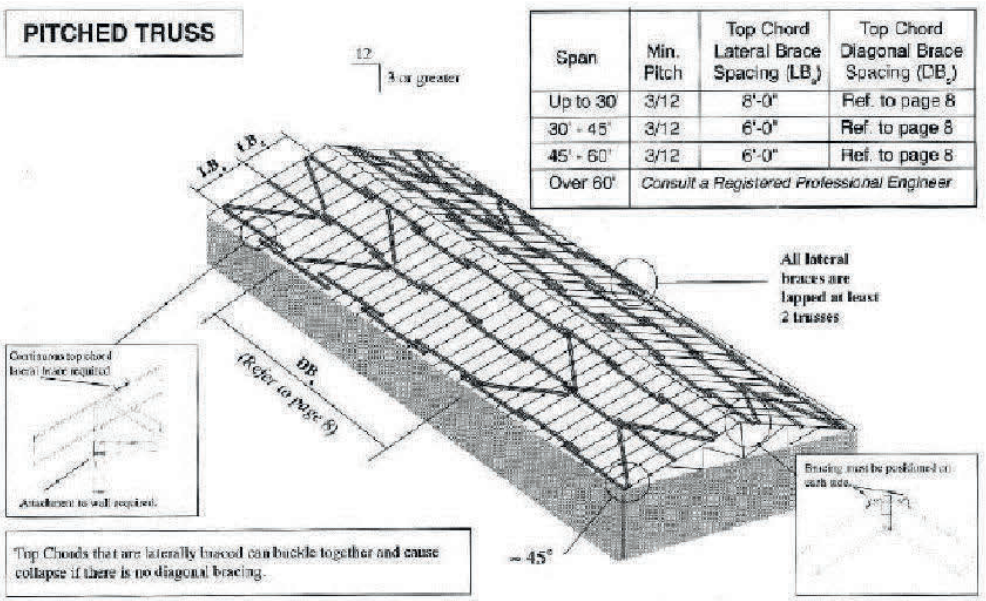




CAUTION: Ground bracing required for all installations. Ground brace needed at each lateral brace location

PITCHED TRUSS

Span	Min. Pitch	Top Chord Lateral Brace Spacing (LB_s)	Top Chord Diagonal Brace Spacing (DB_s)
Up to 30'	3/12	8'-0"	Ref. to page 8
30' - 45'	3/12	6'-0"	Ref. to page 8
45' - 60'	3/12	6'-0"	Ref. to page 8
Over 60'	*Consult a Registered Professional Engineer*		

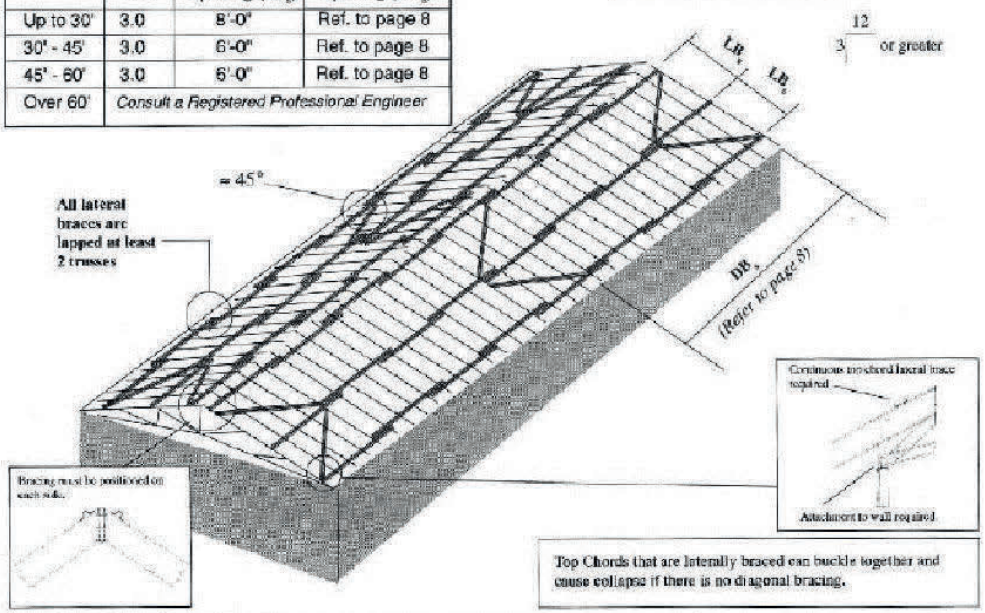


Top Chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing.

WARNING: Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

SCISSORS TRUSS

Span	Min. Pitch Diff.	Top Chord Lateral Brace Spacing (LB_s)	Top Chord Diagonal Brace Spacing (DB_s)
Up to 30'	3.0	8'-0"	Ref. to page 8
30' - 45'	3.0	6'-0"	Ref. to page 8
45' - 60'	3.0	6'-0"	Ref. to page 8
Over 60'	*Consult a Registered Professional Engineer*		

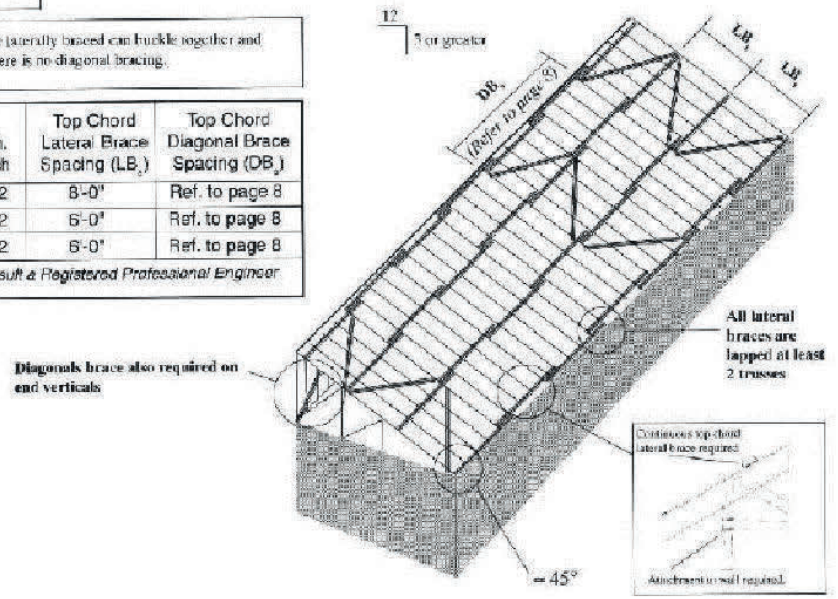


Top Chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing.

MONO TRUSS

Top Chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing.

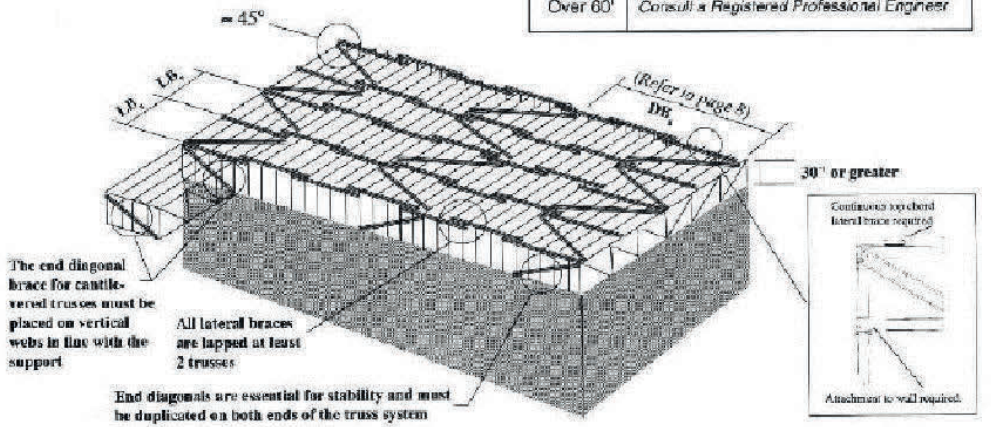
Span	Min. Pitch	Top Chord Lateral Brace Spacing (LB_s)	Top Chord Diagonal Brace Spacing (DB_s)
Up to 30'	3/12	8'-0"	Ref. to page 8
30' - 45'	3/12	6'-0"	Ref. to page 8
45' - 60'	3/12	6'-0"	Ref. to page 8
Over 60'	*Consult a Registered Professional Engineer*		



PARALLEL CHORD TRUSS

Top Chords that are laterally braced can buckle together and cause collapse if there is no diagonal bracing.

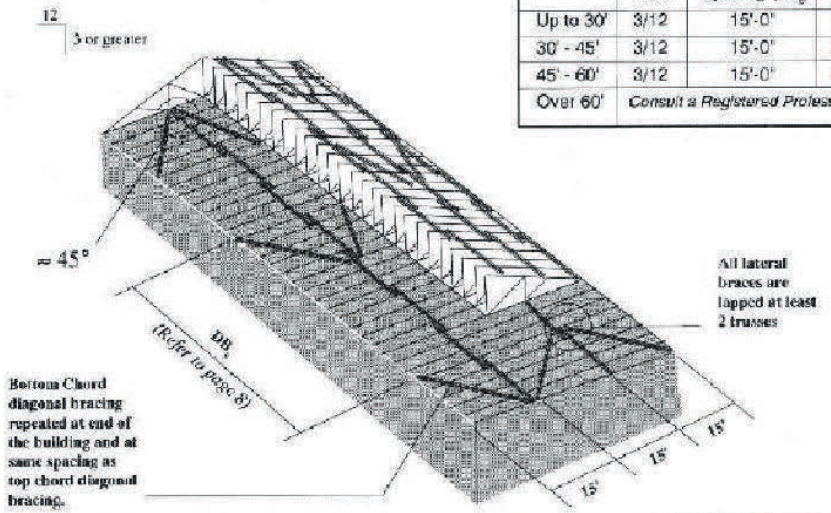
Span	Min. Depth	Top Chord Lateral Brace Spacing (LB_s)	Top Chord Diagonal Brace Spacing (DB_s)
Up to 30'	30"	6'-0"	Ref. to page 8
30' - 45'	42"	5'-6"	Ref. to page 8
45' - 60'	48"	5'-6"	Ref. to page 8
Over 60'	*Consult a Registered Professional Engineer*		



WARNING: Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

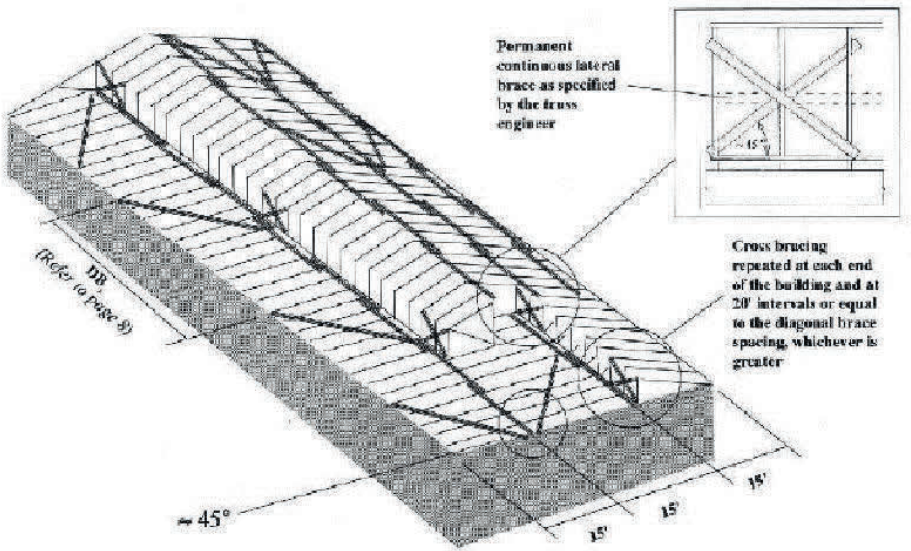
BOTTOM CHORD PLANE

Span	Min. Pitch	Bottom Chord Lateral Brace Spacing (LB_b)	Bottom Chord Diagonal Brace Spacing (DB_b)
Up to 30'	3/12	15'-0"	Ref. to page 8
30' - 45'	3/12	15'-0"	Ref. to page 8
45' - 60'	3/12	15'-0"	Ref. to page 8
Over 60'	*Consult a Registered Professional Engineer*		



WARNING: Failure to follow these recommendations could result in severe personal injury or damage to trusses or buildings.

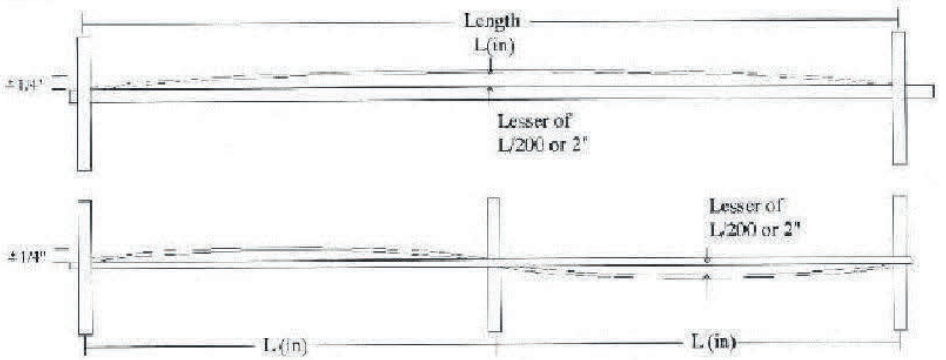
WEB MEMBER PLANE



INSTALLATION TOLERANCES

OUT-OF-PLANE INSTALLATION TOLERANCES

BOW

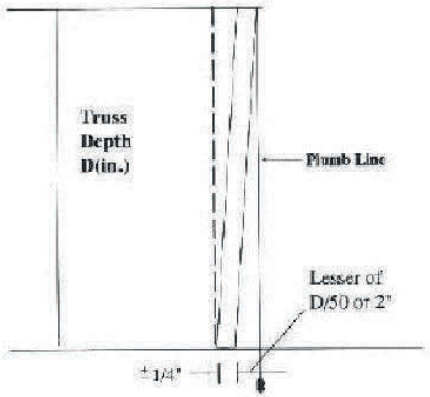


L (in.)	L/200	L(ft)
50"	1/4"	4'-2"
100"	1/2"	8'-4"
150"	3/4"	12'-6"

L (in.)	L/200	L(ft)
200"	1"	16'-8"
250"	1-1/4"	20'-10"
300"	1-1/2"	25'-0"

OUT-OF-PLUMB INSTALLATION TOLERANCES

D (in.)	D/50	D(ft)
12"	1/4"	1'
24"	1/2"	2'
36"	3/4"	3'
48"	1"	4'
60"	1-1/4"	5'
72"	1-1/2"	6'
84"	1-3/4"	7'
96"	2"	8'
108"	2"	9'



WARNING: Do not cut, alter, or remove fasteners from trusses.

DANGER: Under no circumstances should construction loads of any description be placed on unbraced trusses.

DANGER: Do not walk on trusses when wet due to slippage hazard.

DIAGONAL BRACE SPACING (DB_s)

Span Range	Bracing Material *	DB_s (ft. o.c.) 2'0" truss spacing	4'0" truss spacing
up to 30'	87 F 125 - 33	40	40
up to 30'	87 F 125 - 43	40	40
up to 30'	150 F 125 - 33	40	40
up to 30'	150 F 125 - 43	40	40
up to 30'	350 S 162 - 33	40	40
up to 30'	350 S 162 - 43	40	40
30' to 45'	87 F 50 - 33	18	20
30' to 45'	87 F 50 - 43	20	40
30' to 45'	150 F 50 - 33	20	16
30' to 45'	150 F 50 - 43	20	32
30' to 45'	350 S 162 - 33	20	40
30' to 45'	350 S 162 - 43	20	40
45' to 60'	87 F 50 - 33	8	8
45' to 60'	87 F 50 - 43	12	16
45' to 60'	150 F 50 - 33	8	8
45' to 60'	150 F 50 - 43	12	12
45' to 60'	350 S 162 - 33	12	24
45' to 60'	350 S 162 - 43	12	24

*** Using This Chart**

The material designations in this chart are based on industry standards adopted by the Steel Stud Manufacturers Association. These designations contain the following elements:

a. Member depth expressed in 1/100th inches;

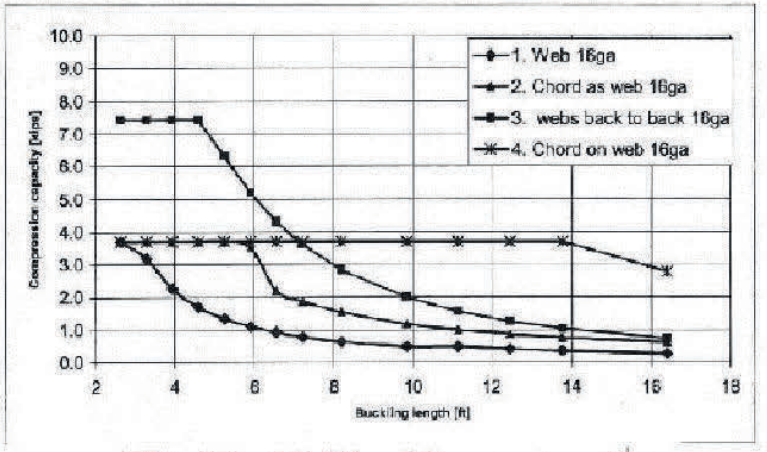
b. A single letter designator to represent the type of material

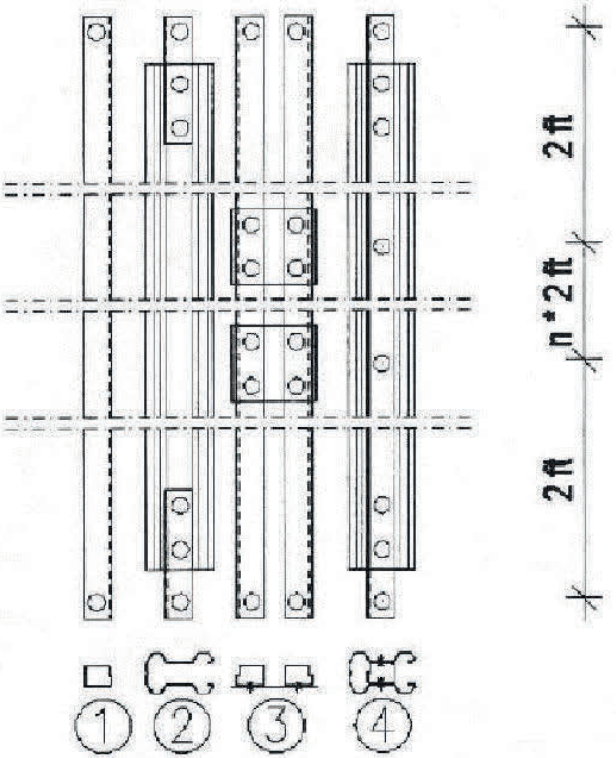
S = Stud T = Track U = Cold rolled channel F = Furring (or Hat) channel

c. Flange width expressed in 1/100th inches;

d. Minimum base metal thickness in mils (1/1000th of an inch = 1 mil).

Sample: **150 F 125 - 43**

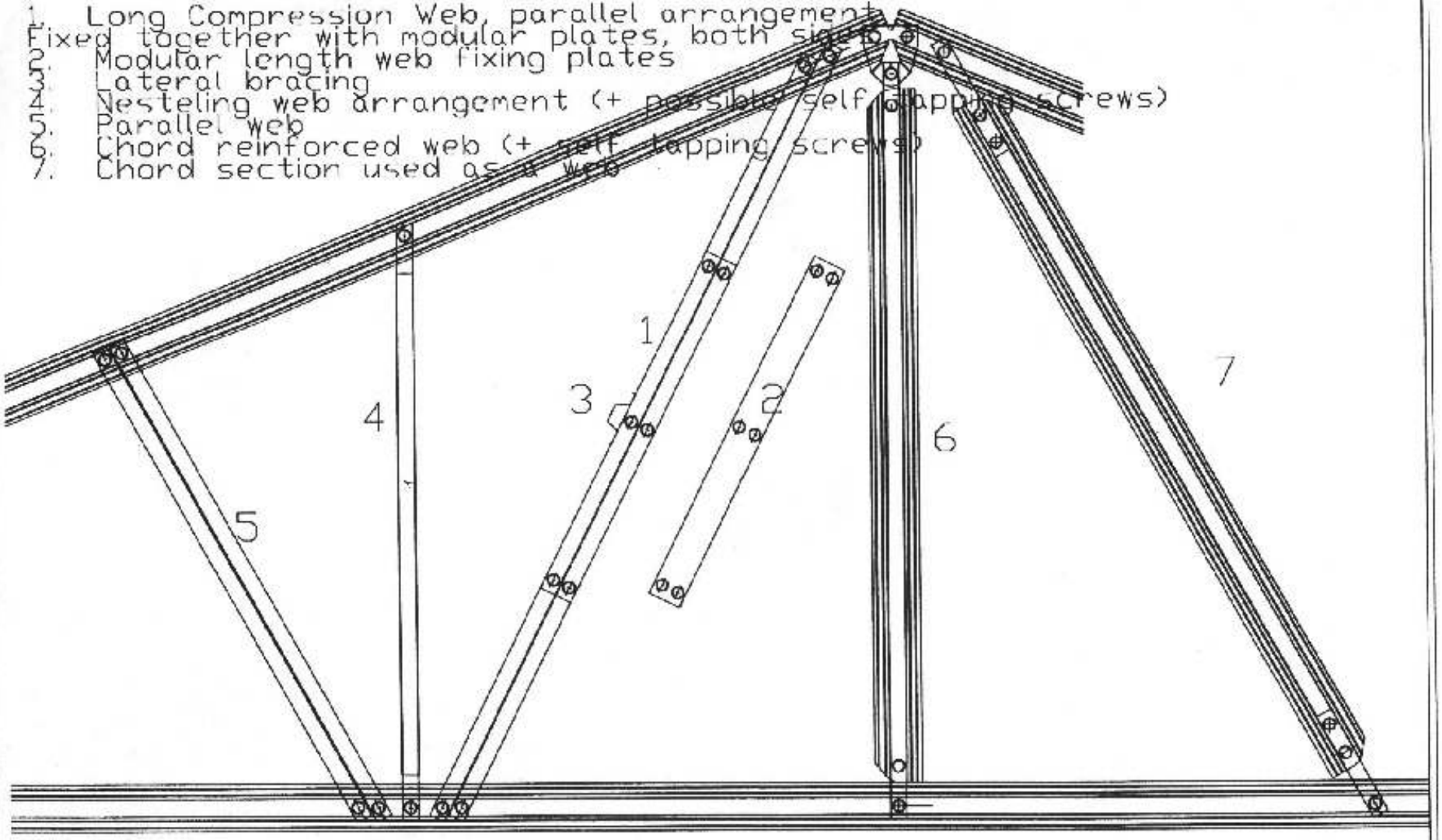




Steel yield strength 50ksi
Material thickness 18ga for all members
Rosette joint without Tubebolt

Alternative Web Arrangements

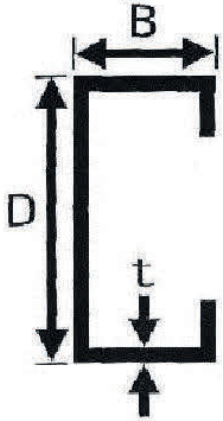
1. Long Compression Web, parallel arrangement
Fixed together with modular plates, both sides
2. Modular length web fixing plates
3. Lateral bracing
4. Nesteling web arrangement (+ possible self tapping screws)
5. Parallel web
6. Chord reinforced web (+ self tapping screws)
7. Chord section used as a web



Need the STUF? Get it here...

The Right STUF:

Universal Designator System for Light Gauge Steel Framing Members



The Right STUF will identify any common light gauge steel framing member using:

Web Depth (D), expressed in 1/100th inches.

Flange Width (B), expressed in 1/100th inches.

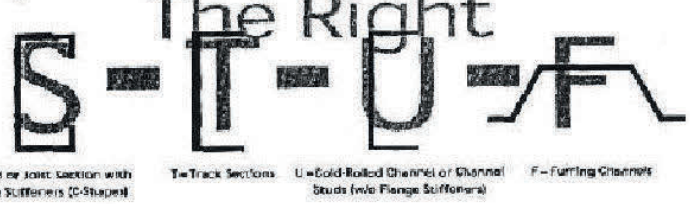
Minimum Base Metal Thickness (t), expressed in mils (1/1000th inches), and the following designators.

Ⓢ= Stud or Joist Sections with Flange Stiffeners (C-Shapes)

Ⓣ= Track Sections

Ⓤ= Cold-Rolled Channel or Channel Studs (w/o Flange Stiffeners)

Ⓕ= Furring Channels



Examples

Designation for a 5-1/2"–16 gauge C-shape with 1–5/8" flanges: 550S162-54

550 S 162 –54

- 54 — Minimum base metal thickness in mils (.054 in = 54 mils)
- 162 — 1-5/8" flange in 1/100th inches
- S — Stud or joist with flange stiffeners
- 550 — 5-1/2" member depth in 1/100th inches (outside to ouside dimension)

Designation for a 3-1/2"–20 gauge Track with 1-1/4" flanges: 350T125-33

350 T 125 –33

- 33 — Minimum base metal thickness in mils (.033 in = 33 mils)
- 125 — 1-1/4" flange in 1/100th inches
- T — Track section
- 350 — 3-1/2" member depth in 1/100th inches (inside to inside dimension)

TECHNICAL NOTE

On Cold-Formed Steel Construction

INSPECTION CHECKLIST
for
LOAD BEARING
COLD-FORMED STEEL FRAMING

FIELD GUIDE

Light Gauge Steel Engineers Association
2417 Galbraith Drive • Nashville, TN 37215
(615) 386-7239 • Fax: (615) 385-5045
LGSEA@AOL.com • www.lgsea.com

TECH NOTE (1010 b) *10/98*

First Edition

This document is intended to provide building inspectors, contractors, architects, and engineers with a partial list of items to be reviewed during construction of a project. It provides some basic, but necessary, checks to assure that the approved design drawings are constructed per plan and industry standards. This document is intended only as an aid to the qualified inspector. For more specific information, a design professional experienced in cold-formed steel design should be consulted.

Limitations:

1. This guide is limited to steel materials that can be verified;
2. This guide is limited to conventional framing practices with stud, joist, and truss framing spaced at 24"on center, or less;
3. This guide should only be used as an aid to inspecting load-bearing cold-formed steel structures. For specific details, refer to the approved drawings.

Definitions:

1. **Inspector** - A building official, third party inspection agency, architect, or engineer who has responsibility for inspecting the building.
2. **Design Professional** - A licensed engineer or architect responsible for the structural design of the cold-formed steel framing.
3. **Plans** - The approved design drawings prepared by a design professional.
4. **Cold-formed steel** (also called "light gauge steel") - Shall be defined as cold-formed sheet steel with thicknesses ranging from 97 mils (12 gauge) to 33 mils (20 gauge) *Although not discussed in this document, thinner steels (22 mil/27 gauge and 18 mil/25 gauge) may be used in non-load bearing conditions.*
5. **Contractor** - Company responsible for receiving and erecting the cold-formed steel framing.

Section I: General Requirements

1. All construction should conform to the approved plans, specifications, and local building code, in addition to the following specific items;
2. All variations from the approved plans and specifiction must be approved by the Design Professional responsible for the Plans;
3. Should there be a conflict between the information in this document (Tech Note 1010b) and the Plan, the Plan should govern and the party responsible for the plans should be notified to resolve the conflict.
4. This document is intended to be an aid in the inspection of a project using cold-formed steel framing and does not imply that a specific project will be in compliance with local code requirements.
5. If any of the checklist items below are not satisfied, the contractor shall correct the item or have it approved by the design professional or code official.

1.0 Materials

1.1 Steel Verification: Confirm that the cold-formed steel members being installed match the project's specified size, type, mechanical properties and spacing.

1.1.1 Each stud should bear a logo, name, or initials of the manufacturer, base metal thickness (uncoated), and minimum specified yield strength (if other than 33 ksi).

5.3 **Miscellaneous**

1. Verify that screws or pins are driven so that the head is no more than 1/16" below surface of sheathing;
2. Confirm that all sheathing is installed with continuous strap or other approved blocking detail at horizontal intermediate panel edges (if applicable);
3. Inspect edge fasteners at multiple studs to ensure that all are driven into the member connected to the holdown device (if applicable);
4. Verify that the bottom track connection, to the foundation or structure, meets all requirements called out on the Plans;
5. Verify that the blocking and/or shear transfer connections at the tops of the walls meet all requirements called out or detailed on the approved drawings;
6. Confirm that all shear wall ends have boundary studs (typically, a minimum of 2), per current code assemblies, or as required by the Plan;
7. Where holdowns are indicated, verify that all holdowns are attached through the webs of (2) studs.
8. Where anchor bolts are used, verify that nuts and washers are properly installed.

6.0 **Beams/Headers**

6.1 **Beam/Header Stud Composition and Support Studs:** Inspect the beams/headers to make sure they conform with the Plans, prescriptive building code, or method approved by the Design Professional. Inspect the members used to make built upbeams for punchouts or other penetrations. Beam penetrations should be allowed only with the approval of a Design Professional.

6.2 **Beam Stiffeners:** Review the Plans or prescriptive building code for beam stiffener requirements. Unless otherwise noted, beams require stiffeners at the ends and at intermediate interior locations where point loads occur (i.e., girder truss bearing).

7.0 **Trusses**

7.1 **Truss Chord and Web Members and Panel Points:** Check the Plans for truss details. The Plans may call for Pre-Engineered Trusses to be designed by others rather than the Design Professional, and therefore a separate set of truss shop drawing may be required by the Plans. Check these drawings for design loads, chord sizes, gauges, panel point connections, and number of fasteners to confirm compliance with the Plans. Also, verify that they contain the shop drawing review approval seal of the Engineer of Record.

7.2 Check that connections of truss heel to top track conform with the Plans, prescriptive building code, or other method approved by the Design Professional.

7.3 **Truss Bracing:** Reference the Plans and the Pre-Engineered Truss Shop Drawing Plans for specific requirements.

7.4 **Truss Tail Holdown:** Check the Plans to determine if truss tailing holdown connections are required. If required, the holdown typically will attach to the truss and to the aligned stud below.

7.5 **Shear Connector Blocking at Exterior Bearing Walls:** Check the Plan details to determine if a strap, and intermediate blocking or continuous blocking, are required for the transfer of shear from the roof to wall diaphragms. If required, reference the Plans for specific requirements.

References

1. American Iron and Steel Institute, *"Specification for the Design of Cold-Formed Steel Structural Members"*, 1996, Washington, D.C.
2. Light Gauge Steel Engineers Association, *"Newsletter for the Light Gauge Steel Engineers Association"*, April 1995, Nashville, TN.
3. International Conference of Building Officials, *"Acceptance Criteria for Steel Studs, Joists, and Track - AC 46"*, January 1994, revised May 1995, Whittier, CA
4. International Conference of Building Officials, *"Acceptance Criteria for Tapping Screw Fasteners - AC 118"*, 1996, revised 1997, Whittier, CA
5. Council of American Building Officials, *"One and Two Family Dwelling Code,"* 1996 ed., Falls Church, VA.
6. Light Gauge Steel Engineers Association, *"Technical Note: Screw Fastener Selection for Light Gauge Steel Frame Construction"*, 1996, Nashville, TN.
7. American Iron and Steel Institute, *"Prescriptive Method for Residential Cold-formed Steel Framing"*, Second Edition, 1997, Washington, D.C.

Section II: Installation /Erection

3.0 Floor Joists

3.1 Check floor joist members for span to make sure they conform with Plans or prescribed building code. Check for multiple or single span joists and that they conform with the Plans.

3.2 **Joist Stiffeners:** Check that bearing stiffeners that they conform with the Plan, prescribed building code, or other stiffening method approved by the Design Professional

3.3 **Joist Bracing:** Check to ensure that joist bracing is installed in accordance with the Plans, prescritive building code, or other method approved by the Design Professional. Bracing may consist of gypsum board, steel strapping with blocking, or X-bracing.

3.4 **Joist Splicing:** No joist splicing is permitted unless approved by a Design Professional. Joists lapped over an interior support are not considered spliced.

3.5 **Joist Punchouts:** See the Plan or prescriptive building code for allowable punchout sizes and locations. Typically, punchouts should not be located closer than 10 inches from a bearing support.

3.6 **Floor Cantilevers and Openings:** Should be installed in accordance with the Plans, prescriptive building code, or other method approved by the Design Professional.

3.7 **Floor Trusses:** Should be installed in accordance with manufacturer recommendations.

4.0 Walls

4.1 **Bearing Stud Seating:** Check to ensure that load bearing studs are seated tightly within the stud track. Gaps between the end of the stud and the track web shall be no greater than 1/8".

4.2 **Bearing Stud Alignment:** Review the Plans to identify if the stud wall system indicated is either "in-line" or a wall top plate distributor system" and that loads are properly transferred as appropriate to the system used.

4.2.1 For "In-line" framing, where the roof trusses, rafter, and floor joists are aligned over a bearing stud, the acceptable tolerance for alignment is 3/4" between the centerline of the bearing stud and centerline of the horizontal framing element.

4.2.2 For the "wall top plate distributor" system, check to make sure the top track is properly framed following the Plans.

4.3 **Foundation Connection:** Steel-framed walls should be anchored to foundations or floors in accordance with the Plans, prescriptive method, or other approved method.

4.4 Load bearing walls should be constructed in accordance with the Plans, prescriptive method, or other method approved by the Design Professional.

4.5 **Bearing Wall Bracing:** Lateral wall bracing of load bearing walls should be in accordance with one of the following (as specified in the Plans):

4.5.1 Gypsum board or structural sheathing;

4.5.2 Horizontal steel strapping on both sides in accordance with the Plans or prescribed building code.

4.5.3 A combination of 4.5.1 or 4.5.2

4.6 **Splicing:** Studs and other structural members should not be spliced without an approved design. Track splices should be made continuous by means of splicing the track with an approved connection, as shown on the Plans or prescribed building code.

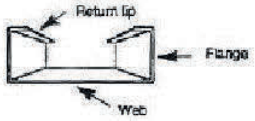
5.0 **Shear Walls:** Review the approved drawing and identify the lateral load resisting shear wall system being used. This Guide addresses only *"Sheathed"* and *"X-Braced"* shear walls.

5.1 **"Sheathed" Shear Walls:** Inspect the following:

1. Panel sheathing type (i.e.structurally-rated ply wood or OSB, per current building codes, or other approved sheathing as indicated by the Design Professional as to thickness and type);
2. Roof diaphragm boundary to blocking fastener size and spacing;
3. Roof blocking to wall top track fastener size and spacing;
4. Panel sheathing boundary, and field fastener size and spacing;
5. Bottom wall track through floor diaphragm to rim track fastener size and spacing;
6. Floor rim track to top wall track fastener size and spacing;
7. Foundation track fastener type, size and spacing;
8. Holdown size, location, and fastener requirement.

5.2 **"X-Braced" Shear Walls:** Confirm that diagonal straps are installed taut and remain taut after all dead loads have been placed on the walls. Verify all track and rim track connections as detailed in section 5.1.1 and 5.1.2 above (as applicable).

.2 Verify that the lengths of webs flanges, and return lips are the same as specified in the Plans, specifications, or code.



.3 The galvanized coating weight of load bearing studs and track should be G60 or equivalent, per ASTM C955-97, unless other coating weight is specified on the Plans.

In jurisdictions that do not require labeling of the cold-formed steel framing members, the contractor shall be responsible for verifying that the steel delivered to the job site is in compliance with project specifications, and shall obtain Material Certificates which verify chemical, mechanical, and galvanization coating properties. Copies of all Material Certificates shall be maintained at the job site and supplied to the Engineer of Record upon request.

5 Visually inspect the cold-formed steel members for cracking in the steel at the bend radius locations. Observe the studs for red rusting or scaling of the protective coating.

4 **Allowable Penetrations:** Confirm that punchouts conform with the Plans, prescriptive building code, or other approved method. Typically, penetrations are not closer than 24" on-center or located closer than 10' from a bearing condition. The size of a punchout or penetration should not be larger than one-half the web depth, or 2-1/2" maximum in the web direction and not more than 4-1/2" long in the member direction. Web holes violating these tolerances should be patched using a design approved by the Design Professional.

.5 **Field Cuts:** Verify that there are no field cuts or notches through the flanges or lips of any load bearing cold-formed steel structural members unless specifically approved by the Design Professional.

2.0 **Fasteners**

2.1 **Screws**

2.1.1 **Verification of Manufacturer's Allowable Capacity:** Review the Plans for specified style and size used for specific applications. Screws for steel-to-steel connections should be self-drilling tapping, in compliance with SAE J78. The contractor should provide data confirming the screws supplied will comply with the Plans for screw shear, pull-out requirements, diameter, and point style in relation to the combined thickness of all connected steel frame members.

2.1.2 Inspect screws to ensure they are fully driven and have a minimum penetration of three (3) threads through the last material joined.

2.1.3 Screws shall penetrate individual components in the connection without causing permanent separation between the components.

2.1.4 Inspection: Look for popped screw heads which may indicate improper installation methods, tool, screw type, or quality of screw.

2.1.5 Check for stripped connections (i.e., screws that turn freely).

2.2 **Pneumatically Driven Pins**

2.2.1 Review the plans for specified style and size used for specific applications, noting the manufacturer's research report number or approved test data, headmarking, and values. The contractor should provide manufacturer data confirming the pins installed will comply with the plans and meet code requirements.

2.2.2 Verify that the pins are fully driven and have a minimum penetration of 1/4" through the last material joined. No attempt should be made to reset underdriven pins; another pin should be installed in another location.

2.2.3 Confirm that the pins have the protective coating as specified on the Plan for the project environmental conditions.

2.3 **Welding:** All welding should be in accordance with the"Structural Welding Code:", AWS D1 and "Structural Welding Code Sheet Steel", AWS D1.3 for sheet steel. All welding shall be by certified welders, using E6013 or E71T11 electrodes adjusted to eliminate "burn through" in all light gauge steel materials.

2.4 **Bolted Connections:** Review the Plans for size, type,and spacing of bolted connections. Bolts should meet or exceed the requirements of ASTM A307. Bolts should be installed with nuts and washers. Center-to-center spacing of bolts connecting sheet metal material to concrete should be a minimum of three bolt diameters.

At the foundation sill track, preset anchor bolts, expansion bolts, or epoxy bolts are to be installed per manufacturer specification. Pre-drilled holes in the sill track for preset bolts should not be oversized more than 1/16" for bolt sizes up to 1/2" diameter and no more than 1/8" for bolt sizes larger than 1/2" in diameter. No burned holes are permitted.

2.5 Low Velocity Fasteners: Inspect the fastener type, spacing, and edge distance requirements for conformance to Plan.

BLUE STAR
STEEL

BLUE STAR
STEEL

BLUE STAR
STEEL

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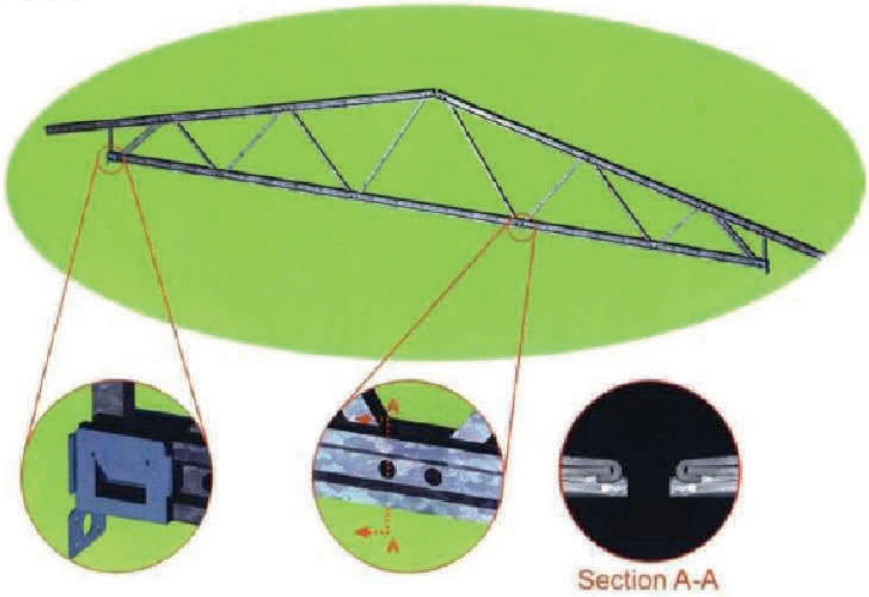
STEEL



Bluestar Truss System is a highly engineered structure consisting of trusses, bracing, and connectors. Each component is designed using advanced prototyping methods to permit snap-fit assembly of the truss system components to the walls and each other.

In addition to its sleek and robust appearance, the Bluestar Truss System is distinguished by its strength, giving it unparalleled resistance to hurricane winds or earthquake tremors. This performance is the result of code-based design of the truss system, the use of high strength steels, and proper joining of the truss system parts. These joints are formed by the Rosette clinching process and are engineered to provide optimum strength through advanced clinching tool design.

Bluestar trusses are manufactured by a unique CAD/CAM forming and assembly line that produces trusses to an unprecedented precision of one-half millimeter. This process also enables JIT production of the trusses for next day delivery to the construction site.

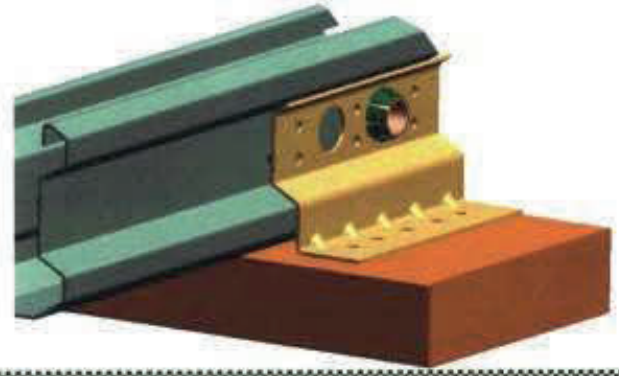
BLUE STAR
STEEL

Savannah on Piedmont, Building 4 Wall Panels

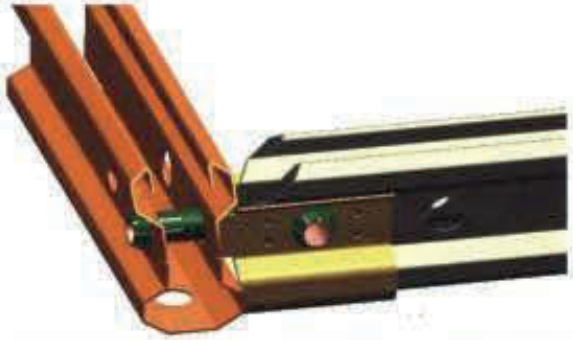
BLUE STAR
STEEL

BLUE STAR
STEEL

BLUE STAR
STEEL



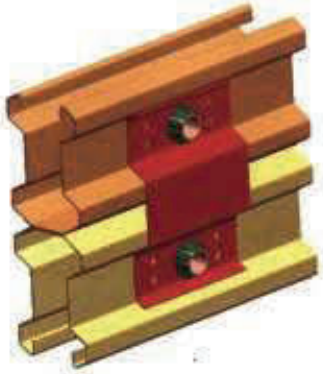
Bearing Clip



Joist Hanger

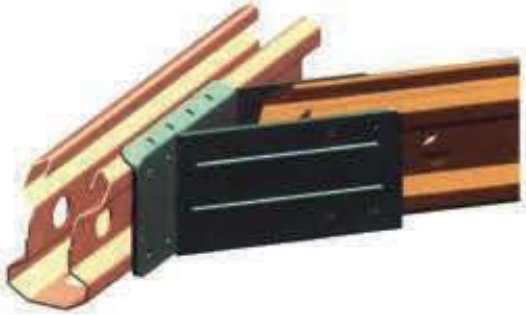
"T" Bracket

BLUE STAR
STEEL



Piggy-Back Bracket

Ridge Connector



45° Hanger

BLUE STAR
STEEL

BLUE STAR
STEEL

BLUE STAR
STEEL

Steel walls on a 6-story apartment building in Atlanta, Georgia

BLUE STAR
STEEL

Savannah on Piedmont, Building 4 Wall Panels

BLUE STAR
STEEL

Savannah on Piedmont, Building 4 Wall Panels