TSE Engineering

B-20-0741

2345 W Stewart

City of Puyallup
Development & Permitting Services
ISSUED PERMIT
Building | Planning
Engineering | Public Works
Fire | Traffic

FLOOR TRUSS

Tri-State Engineering, Inc.
12810 NE 178th Street
Suite 218
Woodinville, WA 98072
425.481.6601

Re: J1060421F
Pacific Homes Source

The truss drawing(s) referenced below have been prepared by Tri-State Engineering under my direct supervision based on the parameters provided by The Truss Company (Sumner).

Pages or sheets covered by this seal: I13270352 thru I13270358

My license renewal date for the state of Washington is August 20, 2020.

THE APPROVED CONSTRUCTION PLANS, DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

FULL SIZED LEDGIBLE COLOR PLANS ARE REQUIRED TO BE PROVIDED BY THE PERMITEE ON SITE FOR INSPECTION

April 27,2020

Terry Powell

The seal on these drawings indicate acceptance of professional engineering responsibility solely for the truss components shown. The suitability and use of this component for any particular building is the responsibility of the building designer, per ANSI/TPI 1.

Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F01	GABLE	1	1	I13270352
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:33 2020 Page 1
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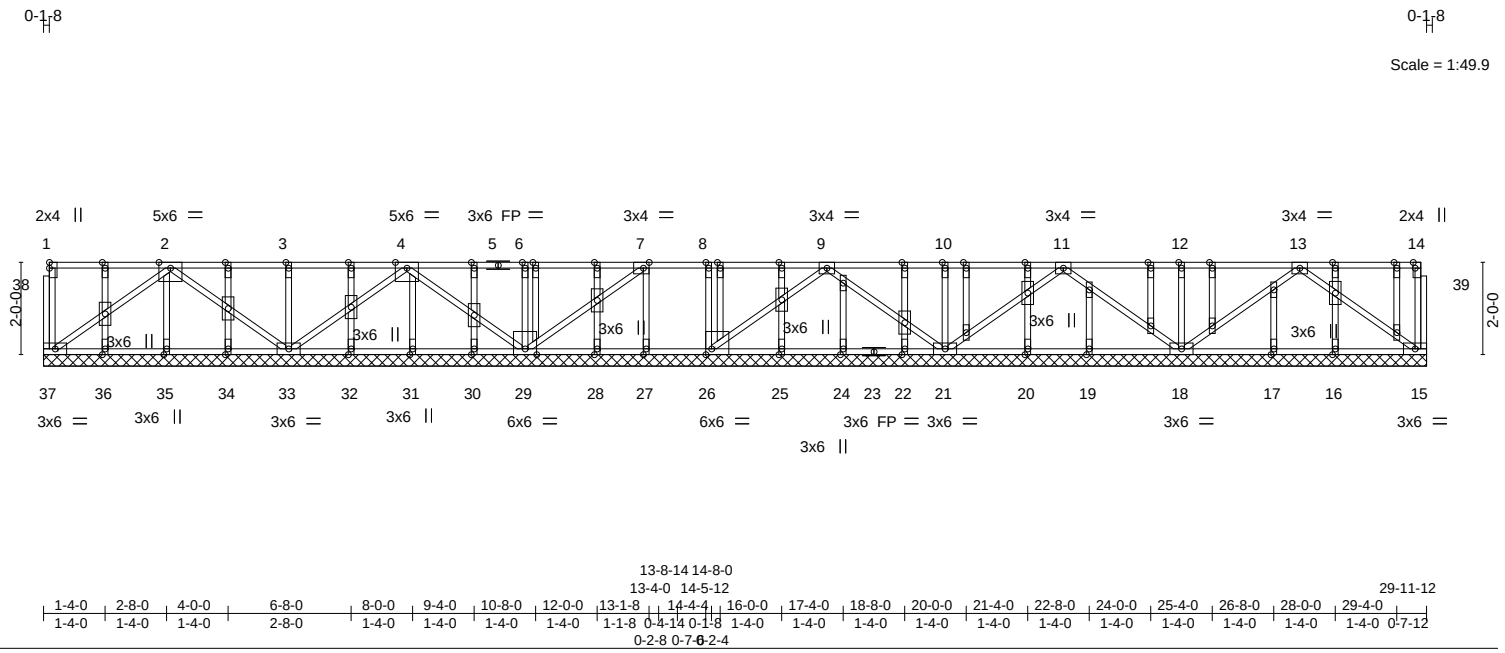

Plate Offsets (X,Y)-- [7:0-1-8,Edge], [14:0-1-8,Edge], [26:0-1-8,Edge], [46:0-0-12,0-0-8], [49:0-0-12,0-0-8], [53:0-0-12,0-0-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.34	Vert(LL)	n/a	-	n/a	999	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	0.10	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0	Rep Stress Incr	YES	WB	0.15	Horz(CT)	0.00	15	n/a	n/a		
BCDL	5.0	Code IRC2015/TPI2014		Matrix-SH							Weight: 181 lb	FT = 20%F, 9%E

LUMBER-

TOP CHORD	2x4 HF No.2(flat)
BOT CHORD	2x4 HF No.2(flat)
WEBS	2x4 DF Stud(flat)
OTHERS	2x4 DF Stud(flat)

BRACING-

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 6-0-0 oc bracing: 28-29,27-28,26-27.

REACTIONS. All bearings 29-11-12.
(lb) - Max Grav All reactions 250 lb or less at joint(s) 37, 15, 36, 35, 34, 32, 31, 30, 28, 25, 24, 22, 20, 19, 17, 16 except 27=427(LC 1), 26=348(LC 1), 33=745(LC 1), 18=577(LC 1), 21=521(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
WEBS 7-27=-428/0, 2-33=-362/0, 3-33=-250/0, 4-33=-454/0, 6-29=-269/0, 7-29=0/402, 13-18=-303/0, 10-21=-254/0

NOTES- (6)
1) All plates are 1.5x4 MT20 unless otherwise indicated.
2) Attach ribbon block to truss with 3-10d nails applied to flat face.
3) Gable requires continuous bottom chord bearing.
4) Gable studs spaced at 1-4-0 oc.
5) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
6) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F02	Floor	32	1	I13270353
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:34 2020 Page 1
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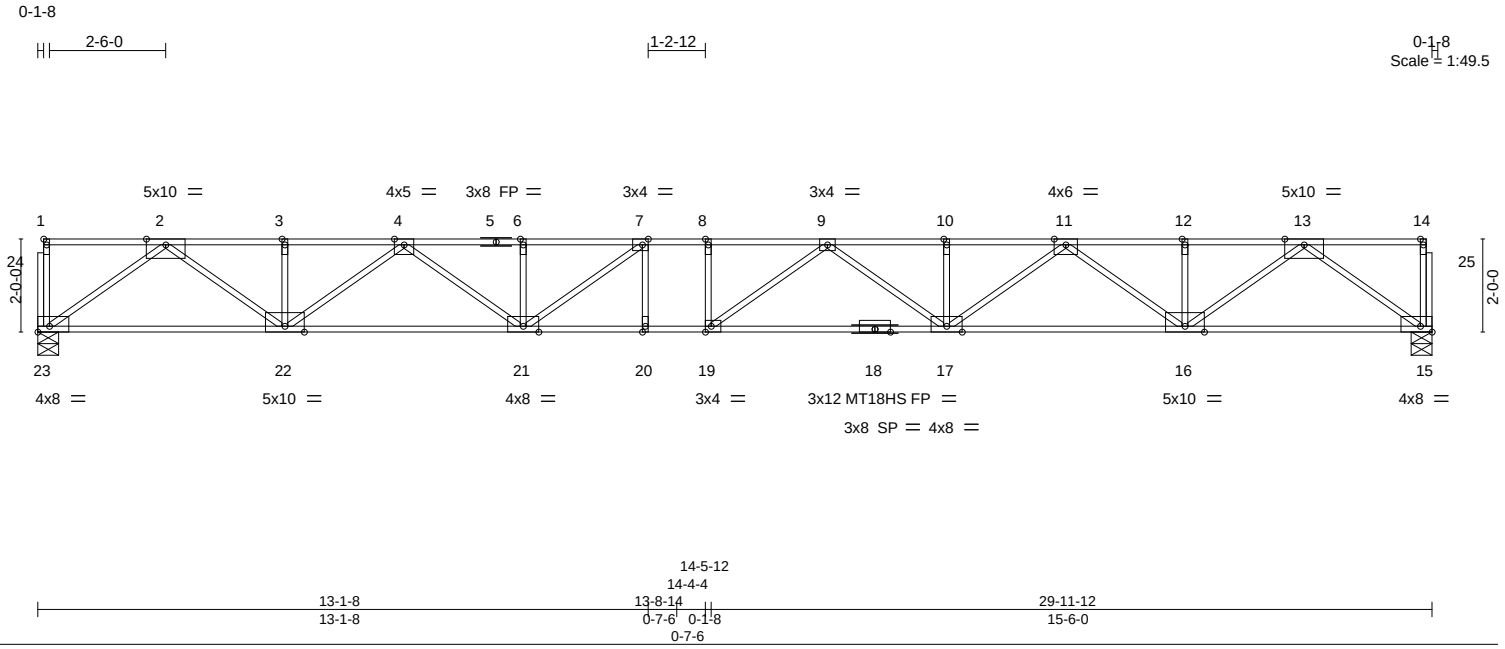

Plate Offsets (X,Y)-- [1:Edge,0-0-12], [7:0-1-8,Edge], [15:Edge,0-1-8], [19:0-1-8,Edge], [23:Edge,0-1-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.99	Vert(LL)	-0.66	17-19	>540	480	MT20	220/195
TCDL	10.0	Lumber DOL	1.00	BC	0.84	Vert(CT)	-0.93	17-19	>382	360	MT18HS	220/195
BCLL	0.0	Rep Stress Incr	YES	WB	0.79	Horz(CT)	0.15	15	n/a	n/a		
BCDL	5.0	Code IRC2015/TPI2014		Matrix-SH							Weight: 150 lb	FT = 20%F, 9%E

LUMBER-
TOP CHORD 2x4 DF No.1&Btr(flat)
BOT CHORD 2x4 DF 2400F 2.0E(flat)
WEBS 2x4 DF Stud(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (lb/size) 23=1629/0-5-6, 15=1629/0-5-6

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-3771/0, 3-4=-3771/0, 4-6=-5891/0, 6-7=-5891/0, 7-8=-6440/0, 8-9=-6440/0, 9-10=-5906/0, 10-11=-5906/0, 11-12=-3767/0, 12-13=-3767/0
BOT CHORD 22-23=0/2111, 21-22=0/5012, 20-21=0/6440, 19-20=0/6440, 17-19=0/6381, 16-17=0/5017, 15-16=0/2109
WEBS 2-23=-2590/0, 2-22=0/2057, 4-22=-1539/0, 4-21=0/1088, 6-21=-309/37, 7-21=-1040/73, 13-15=-2588/0, 13-16=0/2055, 11-16=-1549/0, 11-17=0/1101, 9-17=-615/0, 9-19=-407/598

NOTES- (7)
1) Unbalanced floor live loads have been considered for this design.
2) All plates are MT20 plates unless otherwise indicated.
3) All plates are 1.5x4 MT20 unless otherwise indicated.
4) Attach ribbon block to truss with 3-10d nails applied to flat face.
5) The Fabrication Tolerance at joint 18 = 9%
6) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
7) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F03	Floor	1	1	I13270354
					Job Reference (optional)

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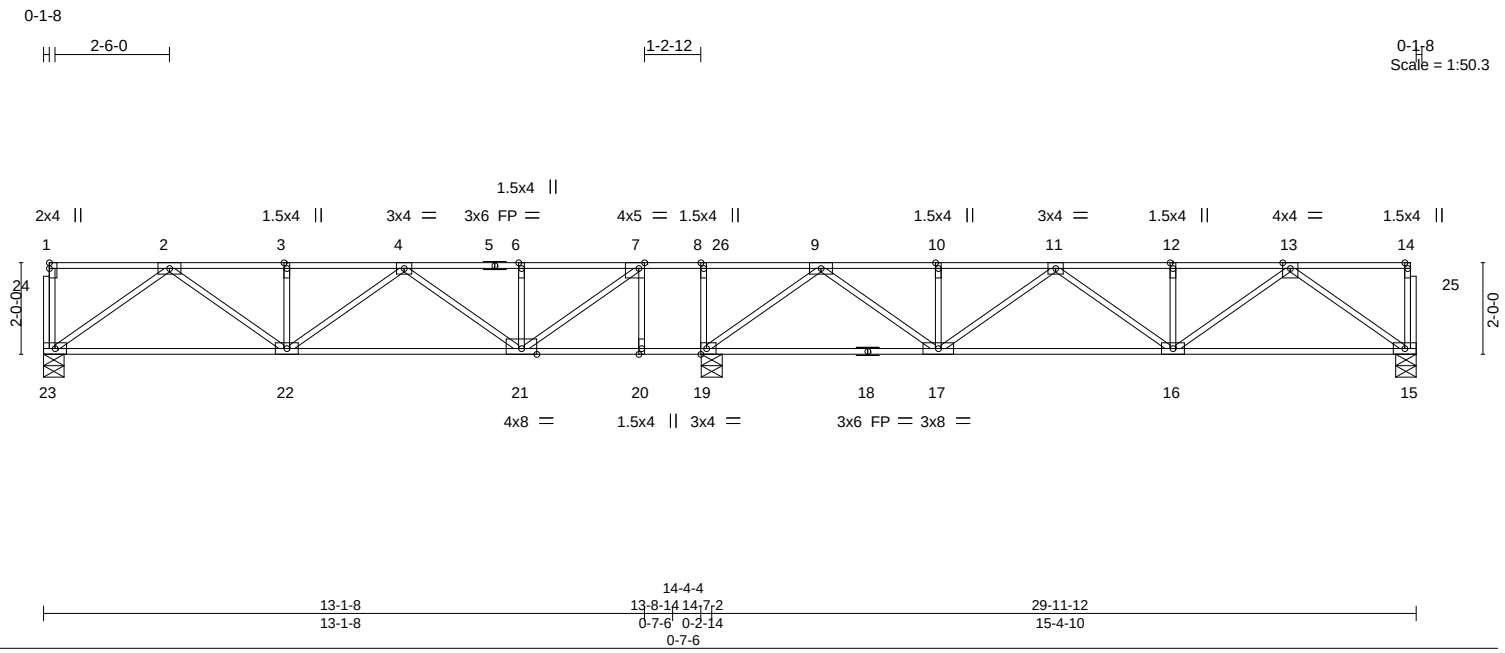

Plate Offsets (X,Y)-- [7:0-1-8,Edge], [19:0-1-8,Edge]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.88	Vert(LL)	-0.29	20-21	>592	480	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	1.00	Vert(CT)	-0.39	20-21	>437	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.50	Horz(CT)	0.05	15	n/a	n/a		
BCDL	5.0	Code IRC2015/TPI2014		Matrix-SH							Weight: 145 lb	FT = 20%F, 9%E

LUMBER-
TOP CHORD 2x4 HF No.2(flat) *Except* 5-14: 2x4 DF 2400F 2.0E(flat)
BOT CHORD 2x4 DF No.1&Btr(flat) *Except* 15-18: 2x4 HF No.2(flat)
WEBS 2x4 DF Stud(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing, Except: 1-4-12 oc bracing: 20-21 6-0-0 oc bracing: 19-20.

REACTIONS. (lb/size) 23=773/0-5-6, 19=1648/0-5-8, 15=836/0-5-6
Max Grav 23=843(LC 3), 19=1648(LC 1), 15=836(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-1595/0, 3-4=-1595/0, 4-6=-1641/44, 6-7=-1641/44, 7-8=-714/456, 8-9=-714/456, 9-10=-1544/0, 10-11=-1544/0, 11-12=-1587/0, 12-13=-1587/0
BOT CHORD 22-23=0/1008, 21-22=0/1766, 20-21=-456/714, 19-20=-456/714, 17-19=0/939, 16-17=0/1733, 15-16=0/1004
WEBS 7-20=-386/0, 8-19=-751/0, 2-23=-1235/0, 2-22=0/727, 3-22=-257/0, 4-21=-268/0, 6-21=-436/0, 7-21=0/1287, 13-15=-1229/0, 13-16=0/722, 12-16=-251/0, 11-17=-342/54, 10-17=-301/0, 9-17=0/855, 9-19=-1203/72

NOTES- (6)
1) Unbalanced floor live loads have been considered for this design.
2) All plates are 3x6 MT20 unless otherwise indicated.
3) Attach ribbon block to truss with 3-10d nails applied to flat face.
4) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
5) CAUTION, Do not erect truss backwards.
6) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F04	Floor	8	1	I13270355
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:37 2020 Page 1
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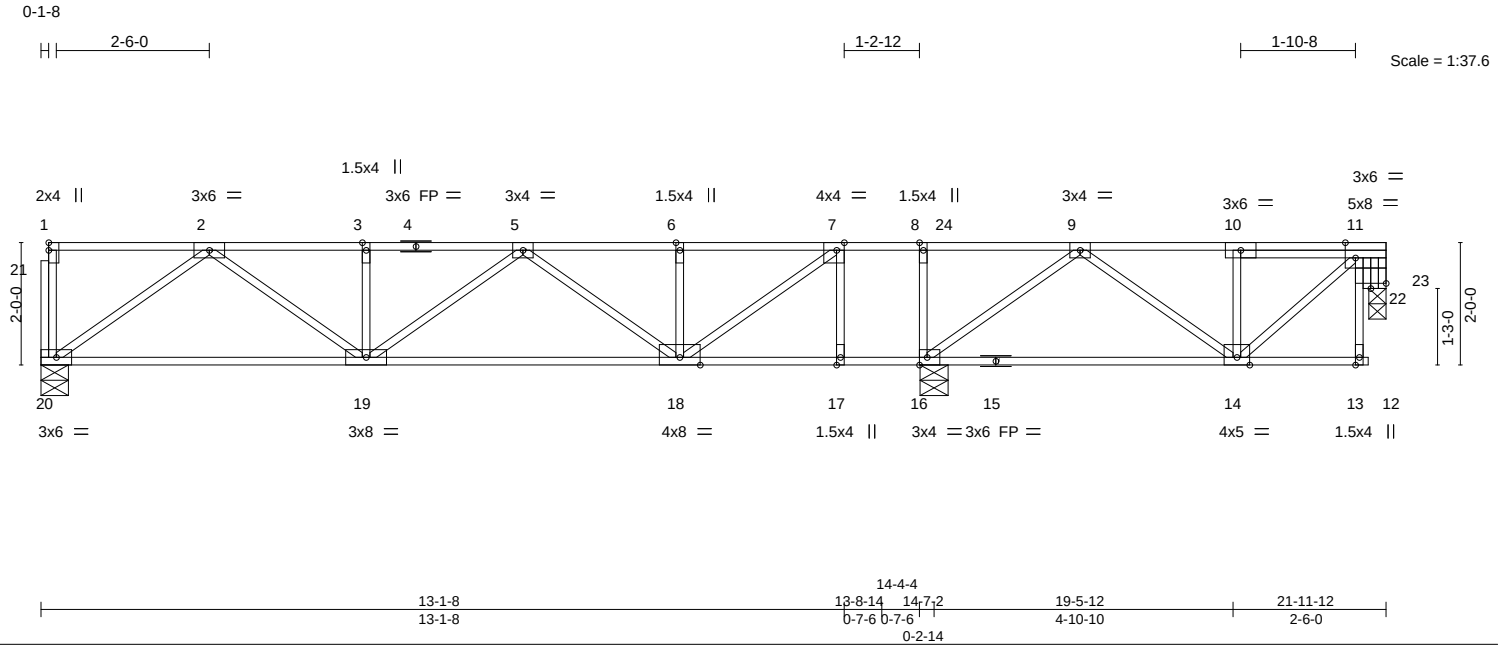

Plate Offsets (X,Y)-- [7:0-1-8,Edge], [11:0-2-0,Edge], [16:0-1-8,Edge], [23:0-3-0,0-1-0]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.96	Vert(LL)	-0.27	17-18	>636	480	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	0.81	Vert(CT)	-0.36	17-18	>474	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.41	Horz(CT)	0.04	23	n/a	n/a		
BCDL	5.0	Code	IRC2015/TPI2014	Matrix-SH							Weight: 112 lb	FT = 20%F, 9%E

LUMBER-

TOP CHORD 2x4 HF No.2(flat) *Except* 4-11: 2x4 DF No.1&Btr(flat)
BOT CHORD 2x4 DF 2400F 2.0E(flat) *Except* 12-15: 2x4 HF No.2(flat)
WEBS 2x4 DF Stud(flat)
OTHERS 2x4 DF Stud(flat)

BRACING-

TOP CHORD Structural wood sheathing directly applied or 2-2-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (lb/size) 20=873/0-5-6, 16=914/0-5-8, 23=564/0-3-6
Max Grav 20=889(LC 3), 16=914(LC 1), 23=564(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-1722/0, 3-5=-1722/0, 5-6=-1894/0, 6-7=-1894/0, 7-8=-1049/0, 8-9=-1049/0, 9-10=-575/0, 10-11=-575/0
BOT CHORD 19-20=0/1074, 18-19=0/1960, 17-18=0/1049, 16-17=0/1049, 14-16=0/837
WEBS 7-17=-374/0, 8-16=-635/0, 2-20=-1315/0, 2-19=0/803, 3-19=-253/0, 5-19=-294/0, 6-18=-405/0, 7-18=0/1066, 11-14=0/735, 10-14=-320/0, 9-16=-351/517, 9-14=-352/0, 11-23=-572/0

NOTES- (6)
1) Unbalanced floor live loads have been considered for this design.
2) Attach ribbon block to truss with 3-10d nails applied to flat face.
3) Bearing at joint(s) 23 considers parallel to grain value using ANSI/TPI 1 angle to grain formula. Building designer should verify capacity of bearing surface.
4) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
5) CAUTION, Do not erect truss backwards.
6) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F05	GABLE	1	1	I13270356
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:41 2020 Page 1
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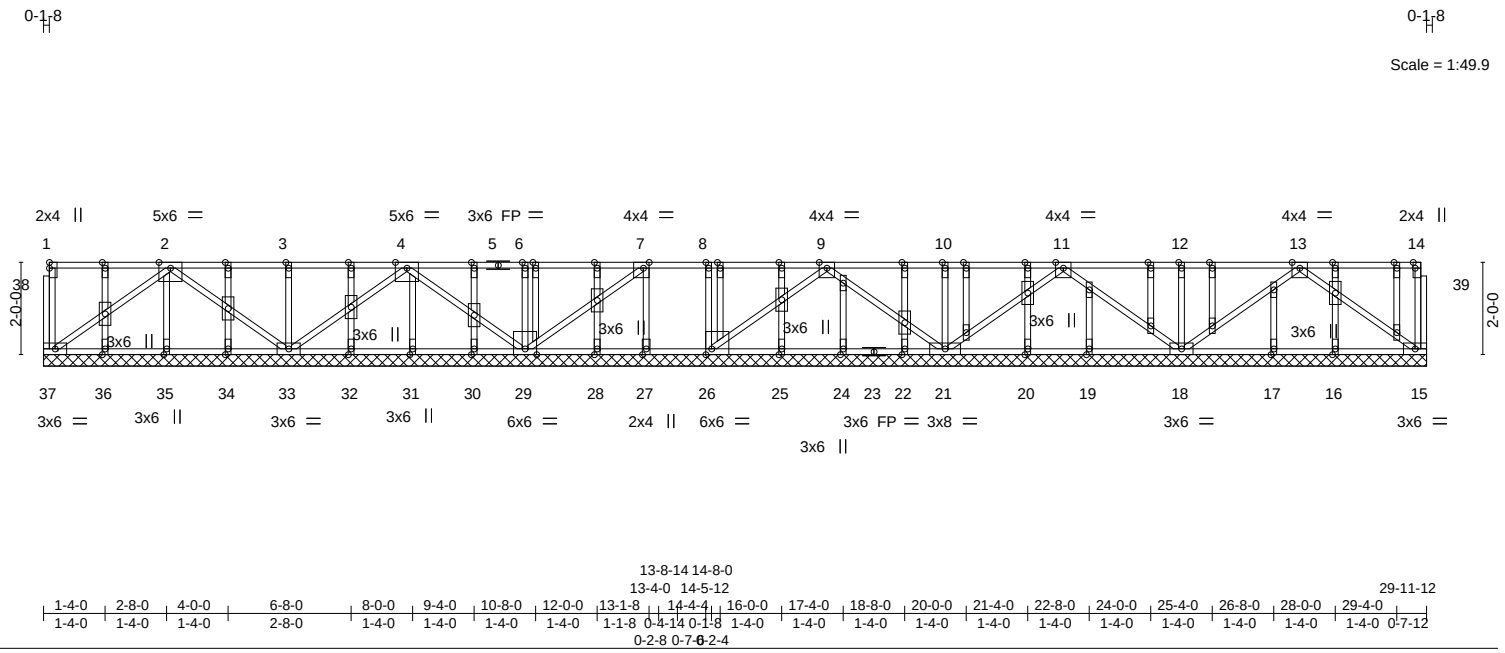

Plate Offsets (X,Y)-- [7:0-1-8,Edge], [14:0-1-8,Edge], [26:0-1-8,Edge], [46:0-0-12,0-0-8], [49:0-0-12,0-0-8], [53:0-0-12,0-0-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.34	Vert(LL)	n/a	-	n/a	999	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	0.15	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0	Rep Stress Incr	YES	WB	0.31	Horz(CT)	0.01	16	n/a	n/a		
BCDL	5.0	Code IRC2015/TPI2014		Matrix-SH							Weight: 181 lb	FT = 20%F, 9%E

LUMBER-
TOP CHORD 2x4 HF No.2(flat)
BOT CHORD 2x4 HF No.2(flat)
WEBS 2x4 DF Stud(flat)
OTHERS 2x4 DF Stud(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS. All bearings 29-11-12.
(lb) - Max Horz 37=44(LC 4)
Max Uplift All uplift 100 lb or less at joint(s) 21 except 37=-624(LC 6), 27=-630(LC 7), 26=-689(LC 6), 15=-618(LC 7)
Max Grav All reactions 250 lb or less at joint(s) 36, 35, 34, 32, 31, 30, 28, 25, 24, 22, 20, 19, 17, 16 except 37=687(LC 5), 27=869(LC 2), 26=841(LC 3), 33=745(LC 1), 15=701(LC 4), 18=577(LC 1), 21=521(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 1-2=-898/896, 2-3=-872/937, 3-4=-871/936, 4-6=-1069/990, 6-7=-841/762, 7-8=-268/316, 8-9=-1165/1210, 9-10=-853/883, 10-11=-919/949, 11-12=-879/907, 12-13=-894/922, 13-14=-898/896
BOT CHORD 36-37=-898/930, 35-36=-517/549, 34-35=-393/425, 33-34=-853/884, 32-33=-957/1020, 31-32=-484/546, 30-31=-401/465, 29-30=-749/832, 28-29=-1102/1057, 27-28=-610/565, 26-27=-300/246, 25-26=-753/774, 24-25=-253/274, 22-24=-720/740, 21-22=-1026/1047, 20-21=-889/916, 19-20=-261/289, 18-19=-885/912, 17-18=-885/936, 16-17=-243/323, 15-16=-828/878
WEBS 7-27=-868/639, 2-37=-1140/1102, 2-33=-1173/1053, 3-33=-250/0, 4-33=-1285/1127, 4-29=-1179/1199, 6-29=-269/0, 7-29=-1146/1299, 13-15=-1158/1097, 13-18=-1163/1066, 11-18=-1170/1101, 11-21=-1172/1101, 10-21=-254/0, 9-21=-1306/1243, 9-26=-1320/1238

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NOTES- (9)
1) Unbalanced floor live loads have been considered for this design.
2) All plates are 1.5x4 MT20 unless otherwise indicated.
3) Attach ribbon block to truss with 3-10d nails applied to flat face.
4) Gable requires continuous bottom chord bearing.
5) Gable studs spaced at 1-4-0 oc.
6) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 21 except (jt=lb) 37=624, 27=630, 26=689, 15=618.
7) This truss has been designed for a total drag load of 350 plf. Lumber DOL=(1.60) Plate grip DOL=(1.60) Connect truss to resist drag loads along bottom chord from 0-0-0 to 29-11-12 for 350.0 plf.
8) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
9) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F06	Floor	2	1	I13270357
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:42 2020 Page 1
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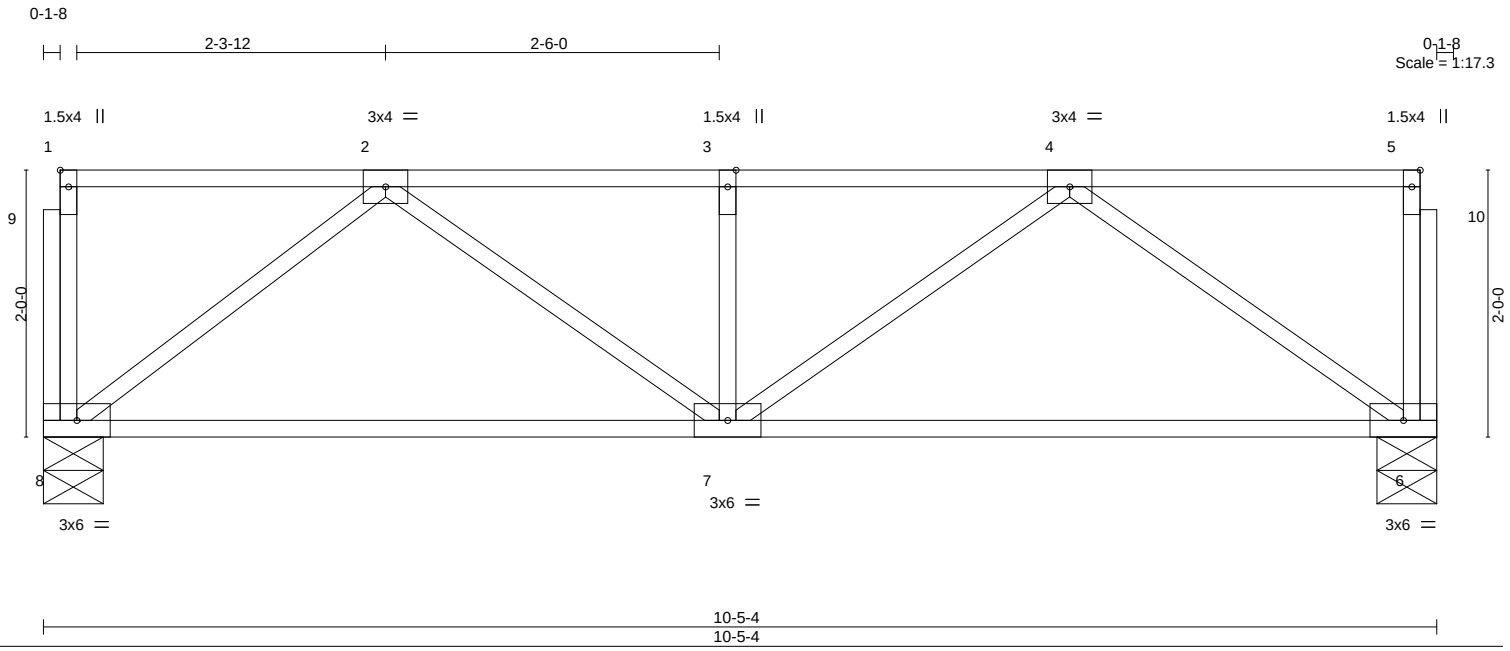

Plate Offsets (X,Y)-- [1:Edge,0-0-12]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.31	Vert(LL)	-0.02	7	>999	480	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	0.29	Vert(CT)	-0.07	6-7	>999	360		
BCLL	0.0	Rep Stress Incr	YES	WB	0.21	Horz(CT)	0.01	6	n/a	n/a		
BCDL	5.0	Code IRC2015/TPI2014		Matrix-P							Weight: 52 lb	FT = 20%F, 9%E

LUMBER-
TOP CHORD 2x4 HF No.2(flat)
BOT CHORD 2x4 HF No.2(flat)
WEBS 2x4 DF Stud(flat)

BRACING-
TOP CHORD Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. (lb/size) 8=554/0-5-6, 6=554/0-5-6

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-802/0, 3-4=-802/0
BOT CHORD 7-8=0/579, 6-7=0/609
WEBS 4-6=-744/0, 2-7=0/276, 2-8=-726/0

NOTES- (3)
1) Attach ribbon block to truss with 3-10d nails applied to flat face.
2) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
3) All dimensions given in feet-inches-sixteenths (FFIISS) format.

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Job	Truss	Truss Type	Qty	Ply	Pacific Homes Source
J1060421F	F07	GABLE	1	1	I13270358
					Job Reference (optional)

The Truss Company (Sumner), Sumner, WA - 98390, 8.330 s Mar 23 2020 MiTek Industries, Inc. Mon Apr 27 15:07:43 2020 Page 1
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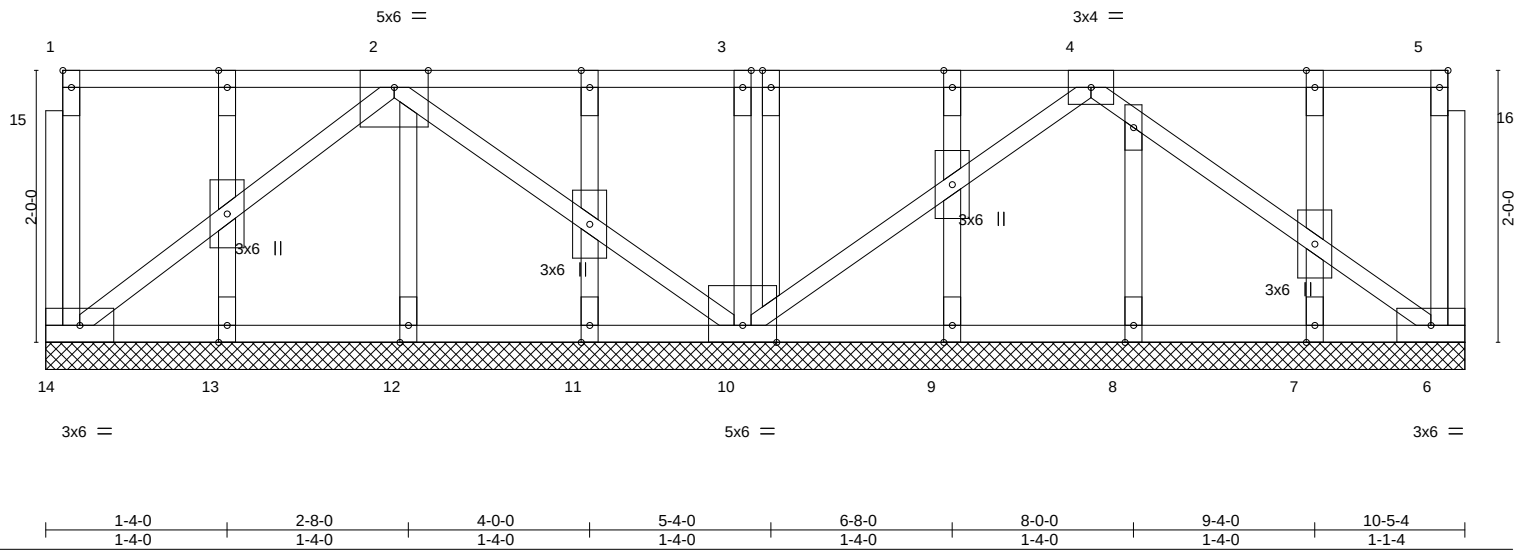

Plate Offsets (X,Y)-- [1:Edge,0-0-12], [19:0-0-12,0-0-8], [22:0-0-12,0-0-8]

LOADING (psf)		SPACING-	2-0-0	CSI.		DEFL.	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	40.0	Plate Grip DOL	1.00	TC	0.31	Vert(LL)	n/a	-	n/a	999	MT20	185/148
TCDL	10.0	Lumber DOL	1.00	BC	0.30	Vert(CT)	n/a	-	n/a	999		
BCLL	0.0	Rep Stress Incr	YES	WB	0.18	Horz(CT)	0.01	6	n/a	n/a		
BCDL	5.0	Code	IRC2015/TPI2014	Matrix-P							Weight: 67 lb	FT = 20%F, 9%E

LUMBER-

TOP CHORD	2x4 HF No.2(flat)
BOT CHORD	2x4 HF No.2(flat)
WEBS	2x4 DF Stud(flat)
OTHERS	2x4 DF Stud(flat)

BRACING-

TOP CHORD	Structural wood sheathing directly applied or 6-0-0 oc purlins, except end verticals.
BOT CHORD	Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS. All bearings 10-5-4.
(lb) - Max Uplift All uplift 100 lb or less at joint(s) 12, 8
Max Grav All reactions 250 lb or less at joint(s) 13, 12, 11, 9, 8, 7 except 14=465(LC 1), 6=465(LC 1)

FORCES. (lb) - Max. Comp./Max. Ten. - All forces 250 (lb) or less except when shown.
TOP CHORD 2-3=-607/0, 3-4=-607/0
BOT CHORD 13-14=0/483, 12-13=0/483, 11-12=0/483, 10-11=0/483, 9-10=0/510, 8-9=0/510, 7-8=0/510, 6-7=0/510
WEBS 4-6=-623/0, 2-14=-606/0

NOTES- (7)
1) All plates are 1.5x4 MT20 unless otherwise indicated.
2) Attach ribbon block to truss with 3-10d nails applied to flat face.
3) Gable requires continuous bottom chord bearing.
4) Gable studs spaced at 1-4-0 oc.
5) Provide mechanical connection (by others) of truss to bearing plate capable of withstanding 100 lb uplift at joint(s) 12, 8.
6) Recommend 2x6 strongbacks, on edge, spaced at 10-0-0 oc and fastened to each truss with 3-10d (0.131" X 3") nails. Strongbacks to be attached to walls at their outer ends or restrained by other means.
7) All dimensions given in feet-inches-sixteenths (FFIISS) format.

B-20-0741

April 27,2020

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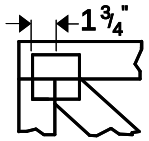
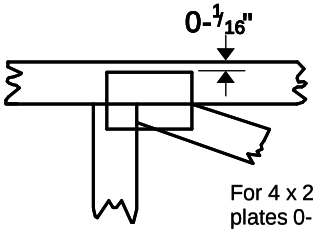
Symbols

PLATE LOCATION AND ORIENTATION



Center plate on joint unless x, y offsets are indicated. Dimensions are in ft-in-sixteenths. Apply plates to both sides of truss and fully embed teeth.



For 4 x 2 orientation, locate plates 0- 1/16" from outside edge of truss.

This symbol indicates the required direction of slots in connector plates.

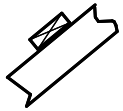
*** Plate location details available in MiTek 20/20 software or upon request.**

PLATE SIZE

4 x 4

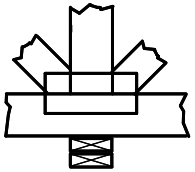
The first dimension is the plate width measured perpendicular to slots. Second dimension is the length parallel to slots.

LATERAL BRACING LOCATION



Indicated by symbol shown and/or by text in the bracing section of the output. Use T, I or Eliminator bracing if indicated.

BEARING

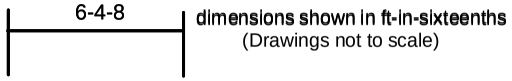


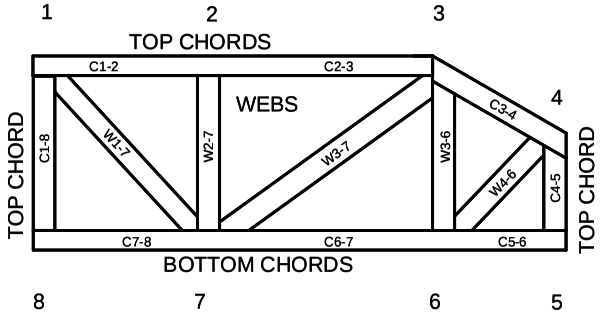
Indicates location where bearings (supports) occur. Icons vary but reaction section indicates joint number where bearings occur.

Industry Standards:

ANSI/TPI1: National Design Specification for Metal Plate Connected Wood Truss Construction.
DSB-89: Design Standard for Bracing.
BCSI1: Building Component Safety Information, Guide to Good Practice for Handling, Installing & Bracing of Metal Plate Connected Wood Trusses.

Numbering System





JOINTS ARE GENERALLY NUMBERED/LETTERED CLOCKWISE AROUND THE TRUSS STARTING AT THE JOINT FARTHEST TO THE LEFT.

CHORDS AND WEBS ARE IDENTIFIED BY END JOINT NUMBERS/LETTERS.

PRODUCT CODE APPROVALS

ICC-ES Reports:

ESR-1311, ESR-1352, ER-5243, 9604B, 9730, 95-43, 96-31, 9667A
NER-487, NER-561
95110, 84-32, 96-67, ER-3907, 9432A

theTRUSSCO. INC.

General Safety Notes

Failure to Follow Could Cause Property Damage or Personal Injury

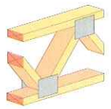
1. Additional stability bracing for truss system, e.g. diagonal or X-bracing, is always required. See BCSI1.
2. Truss bracing must be designed by an engineer. For wide truss spacing, individual lateral braces themselves may require bracing, or alternative T, I, or Eliminator bracing should be considered.
3. Never exceed the design loading shown and never stack materials on inadequately braced trusses.
4. Provide copies of this truss design to the building designer, erection supervisor, property owner and all other interested parties.
5. Cut members to bear tightly against each other.
6. Place plates on each face of truss at each joint and embed fully. Knots and wane at joint locations are regulated by ANSI/TPI 1.
7. Design assumes trusses will be suitably protected from the environment in accord with ANSI/TPI 1.
8. Unless otherwise noted, moisture content of lumber shall not exceed 19% at time of fabrication.
9. Unless expressly noted, this design is not applicable for use with fire retardant, preservative treated, or green lumber.
10. Camber is a non-structural consideration and is the responsibility of truss fabricator. General practice is to camber for dead load deflection.
11. Plate type, size, orientation and location dimensions indicated are minimum plating requirements.
12. Lumber used shall be of the species and size, and in all respects, equal to or better than that specified.
13. Top chords must be sheathed or purlins provided at spacing indicated on design.
14. Bottom chords require lateral bracing at 10 ft. spacing, or less, if no ceiling is installed, unless otherwise noted.
15. Connections not shown are the responsibility of others.
16. Do not cut or alter truss member or plate without prior approval of an engineer.
17. Install and load vertically unless indicated otherwise.
18. Use of green or treated lumber may pose unacceptable environmental, health or performance risks. Consult with project engineer before use.
19. Review all portions of this design (front, back, words and pictures) before use. Reviewing pictures alone is not sufficient.
20. Design assumes manufacture in accordance with ANSI/TPI 1 Quality Criteria.

BCSI-B7 SUMMARY SHEET – GUIDE FOR HANDLING, INSTALLING & BRACING OF 3x2 & 4x2 PARALLEL CHORD TRUSSES

B7

GENERAL NOTES

The restraint and bracing recommendations provided in this document address Parallel Chord Trusses (PCT) built with the wide-face of the lumber oriented horizontally. Refer to BCSI-B2*** for restraint and bracing recommendations for PCT built with the wide-face of the lumber oriented vertically.



Refer to BCSI – Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses*** for more detailed information on the handling, installing, restraining and bracing of all truss types and configurations.

Truss Design Drawings may specify locations of permanent lateral restraint for individual truss members. Refer to the BCSI-B3*** for more information. All other permanent bracing design is the responsibility of the building designer.

*Las recomendaciones de restricción y arriostre provistas en este documento tratan los Trusses de Cuerdas Paralelas (PCT) fabricados con la cara-ancha de la madera orientada horizontalmente. Refiera al BCSI-B2*** para las recomendaciones de restricción y arriostre para PCT construido con la cara-ancha de la madera orientada verticalmente.*

*Refiera al BCSI – Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses*** para información más detallada sobre el manejo, instalación, restricción y arriostre de todos tipos de trusses y todas configuraciones.*

*Los Dibujos del Diseño de Truss pueden especificar las ubicaciones de restricción lateral permanente para miembros individuos del truss. Refiera al BCSI-B3*** para más información. Todo del otro diseño de arriostre permanente es la responsabilidad del diseñador del edificio.*

WARNING! The consequences of improper handling, erecting, installing and bracing of PCT can result in a collapse of the structure, or worse, serious personal injury or death.

¡ADVERTENCIA! El resultado del manejo, levantamiento, instalación, restricción y arriostre incorrecto de PCT puede ser la caída de la estructura, o aún peor, heridos o muertos.

CAUTION! Wear personal protective equipment for the eyes, feet, hands and head when working with trusses.

¡CAUTELA! Lleve equipo protectivo personal para los ojos, los pies, las manos y la cabeza cuando trabaje con trusses.

STORAGE & HANDLING

NOTICE The contractor is responsible for properly receiving, storing and handling the trusses at the jobsite.

El contratista tiene la responsabilidad de recibir, descargar y almacenar adecuadamente los trusses en la obra.

NOTICE Avoid lateral bending.
Evite la flexión lateral.

☑ Trusses may be unloaded directly on the ground at the time of delivery or stored temporarily in contact with the ground after delivery. If trusses are to be stored for more than one week, place blocking of sufficient height beneath the stack of trusses at 8′ (2.4 m) to 10′ (3 m) on-center (o.c.) and cover bundles to prevent moisture gain but allow for ventilation.

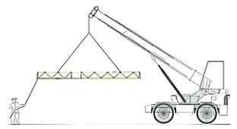
Trusses pueden ser descargados directamente en el piso en el tiempo de la entrega o almacenados temporalmente en contacto con el piso después de la entrega. Para trusses almacenados por más de una semana, ponga bloqueando de altura suficiente debajo de la pila de trusses a 8′ hasta 10′ en el centro (o.c.) y cubra los paquetes para prevenir el aumento de humedad pero permita ventilación.

☑ Keep trusses banded together until installation begins.

Guarde los trusses atados juntos hasta que la instalación empiece.

CAUTION! Use special care in windy conditions or near power lines and airports.

¡CAUTELA! Utilice cuidado especial en días ventosos o cerca de cables eléctricos o de aeropuertos.



☑ Use proper rigging and hoisting equipment.

Use equipo apropiado para levantar e improvisar.

HOISTING RECOMMENDATIONS FOR TRUSS BUNDLES
RECOMENDACIONES PARA LEVANTAR PAQUETES DE TRUSSES

🚫 **DON'T** overload the crane or lift.
NO sobrecargue la grúa o ascensor.

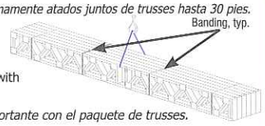
🚫 **NEVER** use banding to lift a bundle.
NUNCA use las ataduras para levantar un paquete.

☑ A single lift point may be used for securely banded bundles of trusses up to 30′ (13.7 m).

Puede usar un solo lugar de levantar para paquetes firmamente atados juntos de trusses hasta 30 pies.

☑ Place truss bundles in stable position.

Puse paquetes de trusses en una posición estable.



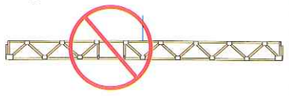
WARNING! Do not over load supporting structure with truss bundle.

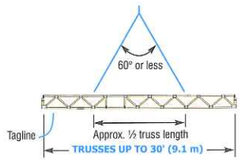
¡ADVERTENCIA! No sobrecargue la estructura soportante con el paquete de trusses.

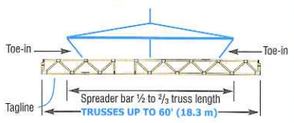
HOISTING RECOMMENDATIONS FOR SINGLE TRUSSES
RECOMENDACIONES PARA LEVANTAR TRUSSES INDIVIDUALES

NOTICE Using a single pick at the mid-span can damage the truss.

El uso de un solo lugar en el medio-tramo o para levantar puede hacer daño al truss.







☑ Hold each truss in position with the erection equipment until top chord temporary lateral restraint is installed and the truss is fastened to the bearing points.

Sostenga cada truss en posición con equipo de grúa hasta que la restricción lateral temporal de la cuerda superior esté instalado y el truss está sujetado a los soportes.

RECOMMENDATIONS FOR LIFTING SINGLE TRUSSES BY HAND
RECOMMENDACCIONES PARA LEVANTAR TRUSSES INDIVIDUALES POR LA MANO

☑ Trusses 20′ (6.1 m) or less can be raised into position by lifting at or near the center.

Los trusses de 20′ o menos pueden ser levantados en lugar por levantando en o cerca del pico.

☑ Trusses with spans less than or equal to 30′ (9.1 m) should be raised into position by lifting at or near each end.

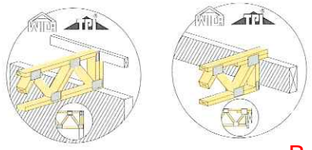
Trusses con tramos menos de o igual a 30′ deben ser levantados en lugar por levantando en o cerca de cada extremo.

CAUTION! Seek help if lifting by hand as trusses can be heavy and awkward.

¡CAUTELA! Pide ayuda si levantando a mano porque los trusses pueden ser pesados y difíciles.

INSTALLATION AND TEMPORARY RESTRAINT & BRACING

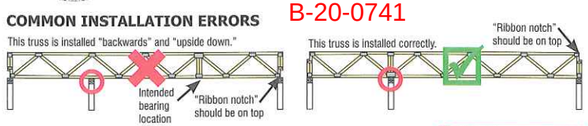
STANDARD END BEARING DETAILS



☑ Make sure bottom chord bearing PCT are installed with the correct side up and in the correct orientation. Refer to the Truss Design Drawing.

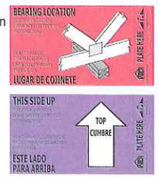
Asegure que los PCT para el soporte de la cuerda inferior son instalados con el lado correcto hacia arriba y en la orientación correcta. Refiera al Dibujo del Diseño de Truss.

COMMON INSTALLATION ERRORS



☑ Many truss manufacturers use supplemental tags such as the ones shown here to instruct and warn the contractor to correctly install the PCT.

Muchos fabricantes de trusses usan placas suplementarias, tal como las mostradas aquí, para instruir y advertir el contratista de como instalar el PCT correctamente.



🚫 **DO NOT** walk on unbraced Trusses.
NO camine en trusses sueltos.

WARNING! Lateral restraint and diagonal bracing of PCT are very important.

¡ADVERTENCIA! La restricción lateral y el arriostre diagonal de PCT son muy importantes.

☑ Use a minimum of 2x4 stress-graded lumber for lateral restraint and diagonal bracing and attach to each truss with a minimum of 2-10d (0.128x3″) nails, unless otherwise specified.

Utilice el mínimo de 2x4 madera graduada por esfuerzo para la restricción lateral y arriostre diagonal y sujetar a cada truss con un mínimo de 2-10d (0.128x3″) clavos, a menos que es especificado de otro modo.

STEPS TO SETTING TRUSSES

1) Set first truss and attach securely to supporting structure.

2) Set next four trusses at end of bay, properly nailing the trusses at all bearing locations. Secure the ends of bottom chord bearing trusses with diagonal bracing, blocking or rim board as each truss is installed (see figures, in column to the right).

3) Brace this five-truss-assembly by attaching structural sheathing to the top chords or by adding 2x4 lateral restraint and diagonal bracing (see table and figures, in column to the right).

4) Continue setting trusses, making sure to properly attach each truss at the bearing locations.

5) Restrain and brace the trusses as they are being installed by attaching structural sheathing, or rows of top chord lateral restraint at the spacing provided in the table in the column to the right with diagonal bracing to the top chord (and end vertical web if bottom chord bearing truss) at intervals of no more than 30′ (9.1 m) along the run of trusses.

PASOS PARA INSTALAR LOS TRUSSES

***1)** Coloque el primer truss y sujetarlo seguramente a la estructura soportante.*

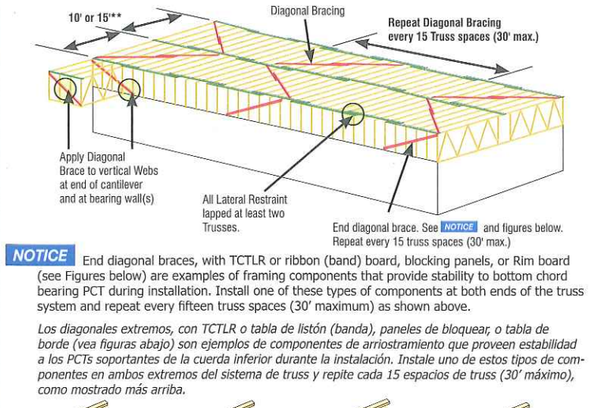
***2)** Coloque los próximos cuatro trusses al extremo del espacio, clavando apropiadamente los trusses en todos lugares de cojinetes. Asegure los extremos de los trusses soportantes de la cuerda inferior con el arriostre diagonal, el bloqueando o la tabla de borde cuando cada truss está instalado (vea las figuras en la próxima columna).*

***3)** Arriostre este ensamblaje de cinco trusses por sujetar el entablado estructural a las cuerdas superiores o por añadir 2x4 restricción lateral y arriostre diagonal (vea las tablas y figures en la próxima columna).*

***4)** Continué la colocación de los trusses, y asegure de sujetar apropiadamente cada truss en las ubicaciones de cojinetes.*

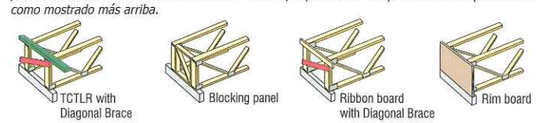
***5)** Restringe y arriostre los trusses mientras ellos son instalados por sujetar el entablado estructural, o filas de restricción lateral de la cuerda superior al espaciamiento provisto en la tabla en la próxima columna con arriostre diagonal a la cuerda superior (y el miembro secundario vertical del extremo, si es un truss soportante de la cuerda inferior) en intervalos de no más de 30′ al lado de la línea de trusses.*

Maximum Spacing for Top Chord Temporary Lateral Restraint (TCTLR)	
Chord Size	**TCTLR Spacing**
3 x 2	10′ on-center**
4 x 2	15′ on-center**



NOTICE End diagonal braces, with TCTLR or ribbon (band) board, blocking panels, or Rim board (see Figures below) are examples of framing components that provide stability to bottom chord bearing PCT during installation. Install one of these types of components at both ends of the truss system and repeat every fifteen truss spaces (30′ maximum) as shown above.

Los diagonales extremos, con TCTLR o tabla de listón (banda), paneles de bloquear, o tabla de borde (vea figuras abajo) son ejemplos de componentes de arriostramiento que proveen estabilidad a los PCTs soportantes de la cuerda inferior durante la instalación. Instale uno de estos tipos de componentes en ambos extremos del sistema de truss y repite cada 15 espacios de truss (30′ máximo), como mostrado más arriba.



PERMANENT RESTRAINT & BRACING

☑ Permanently restrain and brace the top chords of the PCT with properly sized and attached structural sheathing.

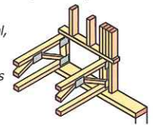
Restringe y arriostre permanentemente las cuerdas superiores del PCT con el entablado estructural sujetado del tamaño apropiado.

☑ Permanently restrain and brace the bottom chords of the PCT with directly applied gypsum panel ceiling or with rows of lateral restraint installed at 10′ on-center along the truss span and diagonal bracing installed at no more than 20′ intervals along the run of trusses, unless otherwise specified.

Restringe y arriostre permanentemente las cuerdas inferiores del PCT con techo de panel de yeso aplicado directamente o con filas de restricción lateral instalado a 10′ en-centro al lado del tramo de truss y arriostre diagonal instalado en no más de intervalos de 20′ al lado de la línea de trusses, a menos que especificado de otro modo.

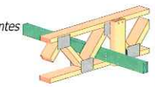
☑ Install structural sheathing, ribbon board with structural sheathing, blocking panels, or rim board (see figures above) at the bearing locations of bottom chord bearing PCT as specified by the building designer to transfer lateral diaphragm forces to the shearwalls.

Instale el entablado estructural, tabla de listón con entablado estructural, paneles de bloqueando, o tabla de borde (vea las figuras más arriba) en los lugares de cojinetes del truss soportante de la cuerda inferior como especificado por el diseñador del edificio para transferir las fuerzas laterales de diafragma a los paredes portantes.



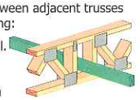
☑ Install solid blocking directly beneath load bearing columns above to maintain load path through floor to support below.

Instale el bloquendo sólido al truss directamente debajo las columnas soportantes arribas para mantener un sendero de carga por el piso para soportar abajo.



STRONGBACKING

Strongbacking enhances truss performance by limiting differential deflection between adjacent trusses and reducing vibration. Use the following guidelines when installing strongbacking:



☑ Use a minimum of 2x6 (nominal) lumber oriented with the wide-face vertical.

☑ Space rows of strongbacking at no more than 10′ on-center.

☑ Attach strongbacking to each truss. Attach to vertical webs or scabs with a minimum of three (3) 10d (0.131x3.0″) nails.

Strongbacking aumenta el desempeño de los trusses por limitar el desvío diferencial entre trusses contiguos y reducir la vibración. Utilice las siguientes pautas para instalar strongbacking:

Use madera de 2x6 mínimo (nominal) orientada con la cara-ancha vertical.

Espacie las filas de strongbacking en no más de 10′ en centro.

Sujete el strongbacking a cada truss. Sujete a los miembros verticales o costras con un mínimo de tres (3) 10d (0.131x3.0″) clavos.

☑ Attach the ends of each row of strongbacking to a wall or other secure end restraint. Maintain continuity of each row of strongbacking as much as possible. If required to be cut, removed, or modified, continuity with the adjoining floor sections must be maintained as determined by the designer specifying the strongbacking.

Sujete los extremos de cada fila de strongbacking a una pared u otra restricción de extremo segura. Mantenga la continuidad de cada fila de strongbacking tanto como sea posible. Si requiere que ser cortado, quitado o modificado, tiene que mantener la continuidad en las secciones contiguos del piso como fue determinado por el diseñador que especifiqué el strongbacking.

☑ Refer to Chapter B7 of BCSI***, and finish flooring specifications for additional information concerning strongbacking installed to control deflection and vibration.

*Refiera al Capítulo B7 de BCSI***, y termina las especificaciones del piso para información adicional con respecto a strongbacking instalado para controlar el desvío y la vibración.*

☑ Many truss manufacturers include a supplemental tag to further assist the contractor in correctly installing strongbacking.

Muchos fabricantes de trusses incluyen una placa suplementaria para asistir más el contratista en la instalación correcta de strongbacking.

CONSTRUCTION LOADING

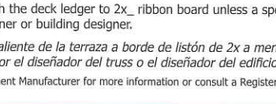
🚫 **DO NOT** proceed with construction until all lateral restraint and diagonal bracing is securely and properly in place.
NO procede con la construcción hasta que toda la restricción lateral y arriostre diagonal es seguramente y apropiadamente en lugar.

🚫 **DO NOT** exceed maximum stack heights in table at right.
NO exceda las alturas máximas de montón en la tabla a la derecha.

Maximum Stack Height for Material on Trusses	
Material	**Height**
Gypsum Board	12" (305 mm)
Plywood or OSB	16" (406 mm)
Asphalt Shingles	2 bundles
Concrete Block	8" (203 mm)
Clay Tile	3-4 tiles high

🚫 **NEVER** overload small groups or single trusses.
NUNCA sobrecargue grupos pequeños o trusses individuales.

🚫 **DO NOT** lean stacks of materials against walls.
NO permite que montones de materiales se apoyen en las paredes.



🚫 **DON'T** drop loads of any material on trusses.
NO deje caer cargas de ningunos materiales en los trusses.

☑ Position load over as many trusses as possible with longest dimension perpendicular to Trusses.

Coloque la carga sobre tantos trusses como sea posible con la dimensión más larga perpendicular a los trusses.

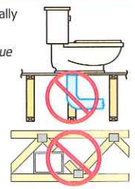
☑ Place material next to outside Load bearing wall or directly over interior bearing wall.

Coloque el material al lado de la pared soportante de cargas exterior o directamente sobre la pared soportante interior.

☑ Refer to BCSI-B4*** for more information about construction loading.

*Refiera al BCSI-B4*** para más información sobre cargas de construcción.*

ALTERATIONS



🚫 **DO NOT** cut, alter, or drill any structural member of a truss unless specifically permitted by the Truss Design Drawing.
NO corte, altere o perfore ningún miembro estructural de un truss a menos que esté específicamente permitido en el Dibujo del Diseño de Truss.

NOTICE Trusses that have been overloaded during construction or altered without the Truss Manufacturer's prior approval will render the Truss Manufacturer's limited warranty null and void.

Trusses que se han sido sobrecargados durante la construcción o han sido alterados sin la autorización previa del Fabricante de Truss, pueden hacer nulo y sin efecto la garantía limitada del Fabricante de Trusses.

NOTICE Refer also to BCSI-B5*** Truss Damage, Jobsite Modifications & Installation Errors.

*También refiera al BCSI-B5*** Daño a los Trusses, Modificaciones en la Obra y Errores de Instalación.*

SPECIAL CONDITIONS

NOTICE Attachment of residential decks to trusses requires the use of a standard detail provided by the truss manufacturer or by a registered design professional. An alternative is to use a free standing deck.

La sujeción de terrazas residenciales a los trusses requiere el use de un detalle estándar provisto por el fabricante de truss o un profesional registrado de diseño. El uso de una terraza independiente es un alternativo.

☑ Refer to the WTCA Technical Note – *Attachment of Residential Decks to Wood Truss Floor Systems* for special blocking details and attachment requirements (www.sbcindustry.com).

Refiera al WTCA Technical Note – Attachment of Residential Decks to Wood Truss Floor Systems *para detalles especiales de bloquear y requisitos de sujetar. (www.sbcindustry.com).*

🚫 **DO NOT** attach the deck ledger to 2x_ ribbon board unless a special detail has been provided by the truss designer or building designer.

NO sujete la saliente de la terraza a borde de listón de 2x a menos que un detalle especial ha sido provisto por el diseñador del truss o el diseñador del edificio.

*** Contact the Component Manufacturer for more information or consult a Registered Design Professional for assistance.

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