10137 SW 50TH AV. REV-01 + DFS-01 RS08-106642

DFS-01 RS08-106642
Rev-01 RS08-106642

C

APR 2 3 2008
MICROFILMED

10-11

CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave., Suite 5000
Portland, OR 97201

MULTNOMAH COUNTY

RESIDENTIAL 1 & 2 FAMILY PERMIT

08-106642-DFS-01-RS

Site Address: 10137 SW 50TH AVE

Issued: 4/2/08

PROJECT INFORMATION		Occ. Group	Const. Type
Single Family Dwelling	Addition	R-3, R-3	V-B V-B

Project Description: DFS - ROOF TRUSS PACKAGE

APPLICANT	TIMOTHY NEIL TUININGA	Phone (503) 259-9510
PROPERTY OWNER	STEVEN P LIEBMANN & MARIANNE C LIEBMANN	Phone
CONTRACTOR	TIMOTHY NEIL TUININGA	Phone

Project Details		Project Details	
Code Edition	2005 ORSC	Construction Type 4	
Final adj to ICC Value reason - Display	Final overrides ICC-b	GIS Update Flag	02/04/08
Number of Stories	1	Square Footage - Occ 1	132
Square Footage - Occ 2	764	Table-based Construction Val Adj - Dis	1
Total Square Footage - Display Only	896	Valuation at Issuance	40000
Zoning Enforcement Agency	Portland		

PAID
APR - 2 2008
CITY OF PORTLAND

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7388.

BEFORE YOU DIG

ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-2344).

CITY CONTACT

E-Mail:

Phone:

Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS

Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request Number: 2734250

CITY OF
PORTLAND, OREGON
BUREAU OF DEVELOPMENT SERVICES
1900 SW 4th Ave., Suite 5000
Portland, OR 97201

MULTNOMAH COUNTY

RESIDENTIAL 1 & 2 FAMILY PERMIT

08-106642-REV-01-RS

Site Address: 10137 SW 50TH AVE

Issued: 4/2/08

PROJECT INFORMATION		Occ. Group	Const. Type
Single Family Dwelling	Addition	R-3, R-3	V-B V-B

Project Description: 4/2/08 REVISION - CHANGE IN CALCS, ADDED BEAMS

APPLICANT	TIMOTHY NEIL TUININGA	Phone (503) 259-9510
PROPERTY OWNER	STEVEN P LIEBMANN & MARIANNE C LIEBMANN	Phone
CONTRACTOR	TIMOTHY NEIL TUININGA	Phone

Project Details

Code Edition	2005 ORSC
Final adj to ICC Value reason - Display	Calculated via Tables
Number of Stories	1
Square Footage - Occ 2	764
Valuation at Issuance	40000
Zoning Enforcement Agency	Portland

PAID
APR - 2 2008
CITY OF PORTLAND

Project Details

Construction Type 4	
GIS Update Flag	02/04/08
Square Footage - Occ 1	132
Total Square Footage - Display Only	896
Water District	Portland Water Bure

This permit expires if, at any time, 180 days pass without an approved inspection. If you are not able to obtain an inspection approval within 180 days, you may request a one-time only extension of 180 days by calling 503-823-7388.

BEFORE YOU DIG ATTENTION: Oregon law requires you to follow rules adopted by the Oregon Utility Notification Center. Those rules are set forth in OAR 952-001-0010 through OAR 952-001-0090. You may obtain copies of the rules by calling the center. (Note: the telephone number for the Oregon Utility Notification Center is 1-800-332-2344).

CITY CONTACT Phone:

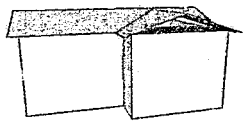
E-Mail: Fax: (503) 823-4172

INSPECTION REQUEST PHONE NUMBERS Building/Trade Inspections - Call Before 6:00 AM: (503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request Number: 2734250

08-106942-DFSU-RS

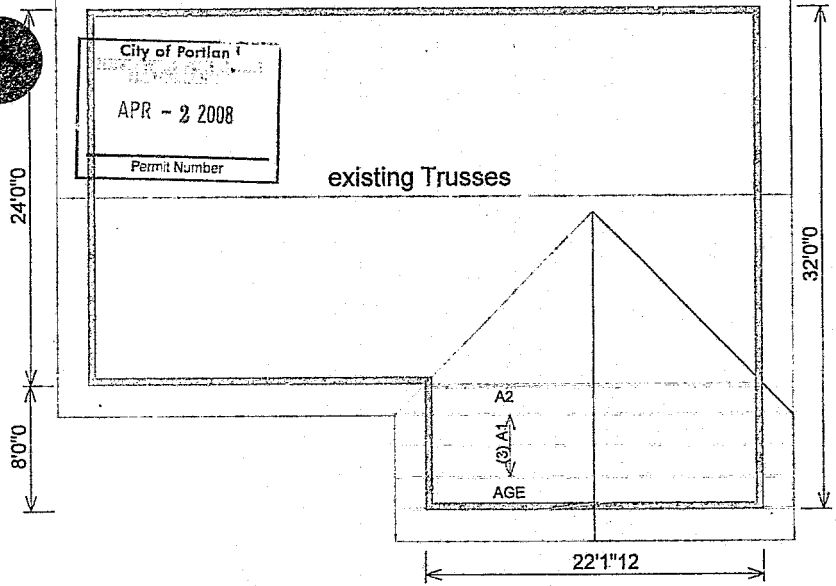


City of Portland

APR - 2 2008

Permit Number

existing Trusses



Garage Right

A=LU24 Hangers
B=LU26 Hangers
C=THA29 Hangers
D=HGUS26 Hangers
E=
F=

Customer Name:		Project Name / Plan #:			
New Oregon Construction		Liebman Remodel			
Customer Address:	Site Contact:	Site Address: 10137 SW 50th Ave.			
	Site Phone #:	Portland, OR			
Rice Phone:	Pitch: 5/12	Overhang: 24"	Date: Feb 11,2008	Job #: 802040	
Rice Fax:	Ceiling Pitch: None	Loading: 42# 25,7,0,10	Wall Size / Plate Size: 2x6	Drawn By: OC	

BMC WEST
TRUSS & COMPONENTS

20285 S.W. Cipole Road
Sherwood, Or. 97140
Office: (503) 925-8787 Fax: (503) 825-4575

SHOP DRAWING APPROVAL

THIS LAYOUT IS THE SOLE SOURCE FOR FABRICATION OF TRUSSES AND VOIDS ALL PREVIOUS ARCHITECTURAL OR OTHER TRUSS LAYOUTS. REVIEW AND APPROVAL OF THIS LAYOUT MUST BE RECEIVED BEFORE ANY TRUSSES WILL BE BUILT. VERIFY ALL CONDITIONS TO INSURE AGAINST CHANGES THAT WILL RESULT IN EXTRA CHARGES TO YOU.

Approved by: Date:

BMC Truss & Components

Office: (503) 925-8787 Fax: (503) 825-4575

To:
New Oregon Construction

Delivery List

Job Number: 802040
Page: 1
Date: 02-26-2008 - 9:20:12 AM
Project ID: JOBS

Project:
Model: Liebman Remodel
Block No:
Lot No:

Contact: Site: Office:
Name: Tim
Phone: (239) 707-6046
Fax:
Tentative Delivery Date:

Deliver To:
10137 SW 50th Ave.
Portland, OR

Account No:
Designer: Erica Robinson
Salesperson: Scott Ingman
Quote Number: 802040

Profile:	Qty:	Truss Id:	Span:	Truss Type:	Slope:	LOH	ROH		Load By:
	3	A1 105 lbs. each	22 - 1 - 12 2X6/2x4	COMMON	5.00 0.00	2-0-0	2-0-0		
	2	A2 (1) 2-Ply 117 lbs. each	22 - 1 - 12 2X6/2X6	COMMON	5.00 0.00	0-0-0	0-0-0		
	1	AGE 117 lbs. each	22 - 1 - 12 2X6/2x4	GABLE	5.00 0.00	2-0-0	2-0-0		

MISC. ITEMS

Quantity:	Description:	
8	2x6 x 22-7/16" Solid Blocks	(26SB)
4	2x6 x 22-7/16" Vented Blocks	(26VB)
12	H2.5 Anchors	(H2.5)
14	THA29 Hangers	(THA29)

Above listed items have been received in good condition. (exceptions listed to right).

Received by:_____

Date:_____

Thank You for your Business.

MiTek®

POWER TO PERFORM.®

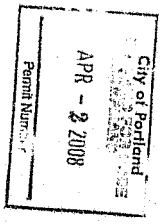
MiTek Industries, Inc.
7777 Greenback Lane
Suite 109
Citrus Heights, CA, 95610
Telephone 916/676-1900
Fax 916/676-1909

Re: 802040
802040--New Oregon Const.--Liebman Remo

The truss drawing(s) referenced below have been prepared by MiTek Industries, Inc. under my direct supervision based on the parameters provided by BMC West-Sherwood, OR.

Pages or sheets covered by this seal: R27906082 thru R27906084

My license renewal date for the state of Oregon is June 30, 2008.



February 25,2008

Tingey, Palmer

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-1995 Sec. 2.

Job	Truss	Truss Type	Qty	Ply	602040--New Oregon Const.--Liebma + Remo	R27906082
602040	A1	COMMON	3	1	Job Reference (optional)	

BMC West--Sherwood, Sherwood, Or. 97140 — 6.500 s Apr 2 2007 MiTek Industries, Inc. Mon Feb 25 09:25:17 2008 Page 1

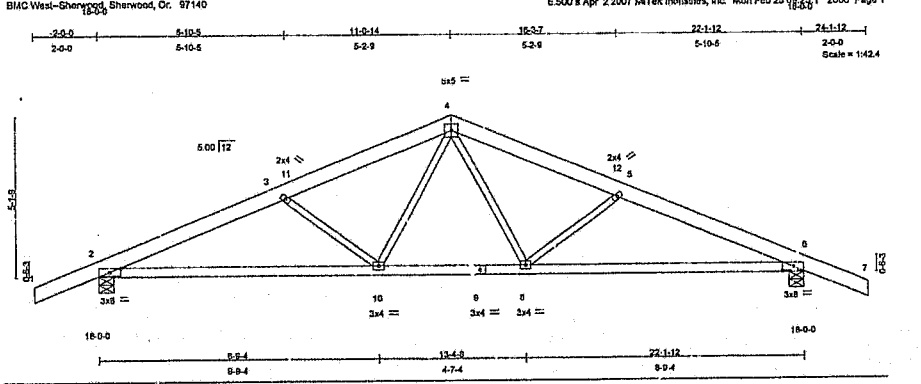


Plate Offsets (X,Y): [2:0-4-2,0-1-8], [6:0-4-2,0-1-8]

LOADING (psf)		SPACING	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plates Increase	1.15	TC	0.30	Vert(LL)	-0.11	6-8	>999	240	MT20	197/144
(Roof Snow=25.0)		Lumber Increase	1.15	BC	0.50	Vert(TL)	-0.34	6-8	>769	180		
TCDL	7.0	Rep Stress Incr	YES	WB	0.25	Horz(TL)	0.06	6	n/a	n/a		
BCLL	0.0 *	Code	IBC2006/TP2002	(Matrix)							Weight: 105 lb	
BCDL	10.0											

LUMBER
TOP CHORD 2 X 6 DF No.2
BOT CHORD 2 X 4 DF No.2 G
WEBS 2 X 3 SPF Stud

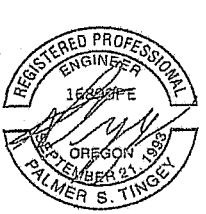
BRACING
TOP CHORD Structural wood sheathing directly applied or 5-11-9 oc purlins.
BOT CHORD Rigid ceiling directly applied or 10-0-0 oc bracing.

REACTIONS (lb/size) 2=1054/0-5-8, 6=1054/0-5-8
Max Uplift 2=-388(LC 5), 6=-388(LC 5)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/77, 2-3=-1660/451, 3-11=-1387/371, 4-11=-1355/388, 4-12=-1355/388, 5-12=-1387/371, 5-6=-1660/451, 6-7=0/77
BOT CHORD 2-10=-290/1458, 9-10=-135/1051, 8-9=-135/1051, 6-8=-290/1458
WEBS 3-10=-393/172, 4-10=-47/412, 4-8=-47/412, 5-8=-393/172

NOTES
1) Wind: ASCE 7-05; 100mph; h=25ft; TCDL=4.2psf; BCDL=5.0psf; Category II; Exp B; enclosed; C-C Exterior(2); cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33.
2) TCLL: ASCE 7-05; Pf=25.0 psf (flat roof snow); Category II; Exp B; Fully Exp.; Ct= 1
3) Unbalanced snow loads have been considered for this design.
4) This truss has been designed for greater of min roof live load of 19.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
5) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
6) This truss requires plate inspection per the Tooth Count Method wi an this truss is chosen for quality assurance inspection.
7) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
8) A plate rating reduction of 20% has been applied for the green lumber members.
9) This truss is designed in accordance with the 2006 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard



EXPIRATION DATE: 06/30/08
February 25,2008

Job	Truss	Truss Type	Qty	Ply	802040-New Oregon Const.-Liebman Remo	R27906083
802040	A2	COMMON	1	2	Job Reference (optional)	

BMC West-Sherwood, Sherwood, Or. 97140 — 6.500 s Apr 2 2007 MiTek Industries, Inc. Mon Feb 25 09:25:14 2008 Page 1

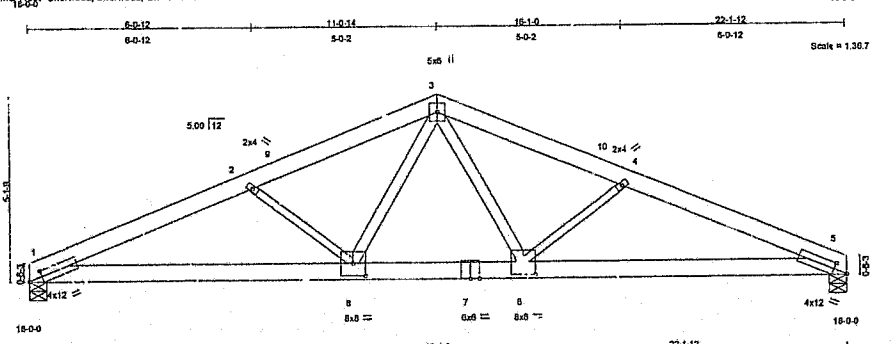


Plate Offsets (X,Y): [1:0-4-5,0-2-0], [5:0-4-5,0-2-0], [6:0-4-0,0-4-4], [8:0-4-0,0-4-4]

LOADING (psf)		SPACING	2-0-0	CSI		DEFL	in	(loc)	l/defl	L/d	PLATES	GRIP
TCLL	25.0	Plates Increase	1.15	TC	0.59	Vert(LL)	-0.28	5-6	>919	240	MT20	197/144
(Roof Snow=25.0)		Lumber Increase	1.15	BC	0.83	Vert(TL)	-0.69	5-6	>375	180		
TCDL	7.0	Rep Stress Incr	NO	WB	0.38	Horz(TL)	0.11	5	n/a	n/a		
BCLL	0.0 *	Code	IBC2006/TPI2002	(Matrix)								
BCDL	10.0											

Weight: 235 lb

LUMBER
TOP CHORD 2 X 6 DF 2400F 1.7E
BOT CHORD 2 X 6 DF 2400F 1.7E
WEBS 2 X 3 SPF Stud *Except*
3-8 2 x 4 DF No.2 G, 3-6 2 x 4 DF No.2 G

BRACING
TOP CHORD Structural wood sheathing directly applied or 5-5-0 oc purlins.
BOT CHORD Rigid ceiling directly applied or 6-0-0 oc bracing.

REACTIONS (lb/size) 1=5816/0-5-8, 5=5816/0-5-8
Max Uplift 1=-1721(LC 5), 5=-1721(LC 5)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=-9916/2967, 2-9=-6507/2840, 3-9=-6483/2865, 3-10=-6507/2840, 4-5=-9916/2967
BOT CHORD 1-8=-2893/9151, 7-8=-1966/6950, 6-7=-1966/6950, 5-6=-2893/9151
WEBS 2-8=-668/292, 3-8=-1141/3975, 3-6=-1141/3930, 4-6=-803/292

NOTES
1) 2-ply truss to be connected together with 10d (0.148"x3") nails as follows:
Top chords connected as follows: 2 X 6 - 1 rows at 0-9-0 oc.
Bottom chords connected as follows: 2 X 6 - 2 rows at 0-9-0 oc.
Webs connected as follows: 2 X 3 - 1 row at 0-9-0 oc, 2 X 4 - 1 row at 0-9-0 oc.
2) All loads are considered equally applied to all plies, except if noted as front (F) or back (B) face in the LOAD CASE(S) section. Ply to ply connections have been provided to distribute only loads noted as (F) or (B), unless otherwise indicated.
3) Wind: ASCE 7-05; 100mph; h=25ft; TCDL=4.2psf; BCDL=5.0psf; Category II; Exp B; enclosed; C-C Exterior(2); cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33.
4) TCLL: ASCE 7-05; Pf=25.0 psf (flat roof snow); Category II; Exp B; Fully Exp.; Ct=1
5) Unbalanced snow loads have been considered for this design.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) This truss requires plate inspection per the Tooth Count Method when this truss is chosen for quality assurance inspection.
8) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
9) A plate rating reduction of 20% has been applied for the green lumber members.
10) This truss is designed in accordance with the 2006 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.
11) Girder carries tie-in span(s): 24-0-0 from 0-0-0 to 22-1-12

LOAD CASE(S) Standard
1) Snow: Lumber Increase=1.15, Plate Increase=1.15

REGISTERED PROFESSIONAL ENGINEER
OREGON
SEPTEMBER 21, 1999
PALMER S TINGEY

EXPIRATION DATE: 06/30/08

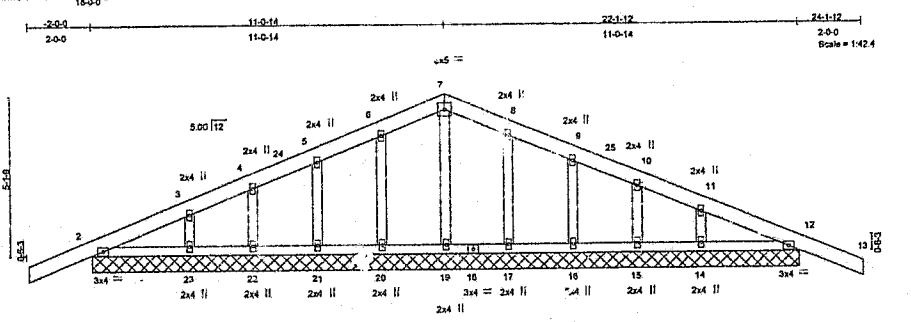
February 25,2008

Continued on page 2

MiTek
7777 Greenback Lane, Suite 109
Citrus Heights, CA 95610

Job	Truss	Truss Type	Qty	Ply	802040--New Oregon Const --Liebman Remo	R27906084
802040	AGE	GABLE	1	1	Job Reference (optional)	

BMC West--Sherwood, Sherwood, Or. 97140 — 8.500 s Apr 2 2007 MiTek Industries, Inc. Mon Feb 25 09:25:15 2008 Page 1



LOADING (psf)	SPACING 2-0-0	CSI	DEFL in (loc) l/defl L/d	PLATES GRIP
TCLL 25.0	Plates Increase 1.15	TC 0.24	Vert(LL) -0.03 13 n/r 120	MT20 185/148
(Roof Snow=25.0)	Lumber Increase 1.15	BC 0.11	Vert(TL) -0.03 13 n/r 90	
TCDL 7.0	Rep Stress Incr YES	WB 0.06	Horz(TL) 0.00 12 n/a n/a	
BCLL 0.0 *	Code IBC2006/TPI2002	(Matrix)		Weight: 118 lb
BCDL 10.0				

LUMBER
TOP CHORD 2 X 6 DF No.2
BOT CHORD 2 X 4 DF No.2 G
OTHERS 2 X 4 HF Std

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

REACTIONS (lb/size) 2=295/22-1-12, 12=295/22-1-12, 19=156/22-1-12, 20=168/22-1-12, 21=169/22-1-12, 22=165/22-1-12, 23=184/22-1-12, 17=169/22-1-12, 16=169/22-1-12, 15=165/22-1-12, 14=184/22-1-12
Max Uplift 2=-204(LC 5), 12=-204(LC 5), 20=-44(LC 5), 21=-64(LC 5), 22=-79(LC 5), 23=-31(LC 6), 17=-44(LC 5), 16=-64(LC 5), 15=-79(LC 5), 14=-31(LC 6)
Max Grav 2=368(LC 6), 12=368(LC 6), 19=156(LC 1), 20=232(LC 2), 21=221(LC 2), 22=170(LC 2), 23=184(LC 1), 17=232(LC 3), 16=221(LC 3), 15=170(LC 3), 14=184(LC 1)

FORCES (lb) - Maximum Compression/Maximum Tension
TOP CHORD 1-2=0/78, 2-3=-67/25, 3-4=-41/56, 4-24=-41/91, 5-24=-14/97, 5-6=-51/137, 6-7=-53/168, 7-8=-53/168, 8-9=-51/137, 9-25=-14/97, 10-25=-41/91, 10-11=-41/56, 11-12=-67/25, 12-13=0/76
BOT CHORD 2-23=0/73, 22-23=0/73, 21-22=0/73, 20-21=0/73, 19-20=0/73, 18-19=0/73, 17-18=0/73, 16-17=0/73, 15-16=0/73, 14-15=0/73, 12-14=0/73
WEBS 7-19=-116/0, 6-20=-192/63, 5-21=-161/86, 4-22=-132/91, 3-23=-139/57, 8-17=-192/63, 9-16=-161/86, 10-15=-132/91, 11-14=-139/57

NOTES
1) Wind: ASCE 7-05; 100mph; h=25ft; TCDL=4.2psf; BCDL=5.0psf; Category II; Exp B; enclosed; C-C Exterior(2); cantilever left and right exposed ; end vertical left and right exposed; Lumber DOL=1.33 plate grip DOL=1.33.
2) Truss designed for wind loads in the plane of the truss only. For studs exposed to wind (normal to the face), see Standard Industry Gable End Details as applicable, or consult qualified building designer as per ANSI/TPI 1-2002.
3) TCLL: ASCE 7-05; Pf=25.0 psf (flat roof snow); Category II; Exp B; Fully Exp.; Ct= 1
4) Unbalanced snow loads have been considered for this design.
5) This truss has been designed for greater of min roof live load of 19.0 psf or 2.00 times flat roof load of 25.0 psf on overhangs non-concurrent with other live loads.
6) This truss has been designed for a 10.0 psf bottom chord live load nonconcurrent with any other live loads.
7) This truss requires plate inspection per the Tooth Count Method when this truss is chosen for quality assurance inspection.
8) Gable requires continuous bottom chord bearing.
9) Gable studs spaced at 2-0-0 oc.
10) * This truss has been designed for a live load of 20.0psf on the bottom chord in all areas where a rectangle 3-6-0 tall by 2-0-0 wide will fit between the bottom chord and any other members.
11) A plate rating reduction of 20% has been applied for the green lumber members.
12) This truss is designed in accordance with the 2006 International Building Code section 2306.1 and referenced standard ANSI/TPI 1.

LOAD CASE(S) Standard

City of Portland — APR 2 2008 — Permit Number

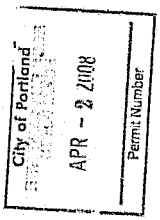
REGISTERED PROFESSIONAL ENGINEER — 16890PE — OREGON — SEPTEMBER 21, 1993 — PALMER S. TINGEY

EXPIRATION DATE: 08/30/08
February 25,2008

Job	Truss	Truss Type	Qty	Ply	802040-New Oregon Const.-Lieberman Remo	R27906083
802040	A2	COMMON	1	2	Job Reference (optional)	

BMC West-Sherwood, Sherwood, Or. 97140 8.500 s Apr 2 2007 MiTek Industries, Inc. Mon Feb 25 09:25:14 2008 Page 2

LOAD CASE(S) Standard
Uniform Loads (plf)
Vert: 1-5=-472(F=-452), 1-3=-84, 3-5=-84

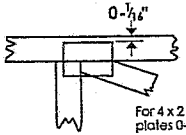


MiTek
7777 Greenback Lane, Suite 109
Citrus Heights, CA 95610

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.

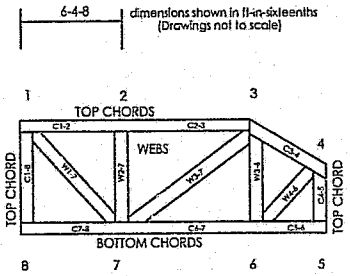
Industry Standards:

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, 95-43, 96-31, 9667A NER-487, NER-561 95110, 84-32, 96-67, ER-3907, 2447A

MiTek Engineering Reference Sheet: MII-7473

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.

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STEPS TO SETTING TRUSSES
LAS MEDIDAS DE LA INSTALACIÓN DE LOS TRUSSES

☑ 1) Install ground bracing. 2) Set first truss and attach securely to ground bracing. 3) Set next 4 trusses with short member temporary lateral restraint (see below). 4) Install top chord diagonal bracing (see below). 5) Install web member plane diagonal bracing to stabilize the first five trusses (see below). 6) Install bottom chord temporary lateral restraint and diagonal bracing (see below). 7) Repeat process on groups of four trusses until all trusses are set.

1) Instale los arriostres de tierra. 2) Instale el primero truss y ate seguramente al arriostre de tierra. 3) Instale los próximos 4 trusses con restricción lateral temporal de miembro corto (vea abajo). 4) Instale el arriostre diagonal de la cuerda superior (vea abajo). 5) Instale arriostre diagonal para los planos de los miembros secundarios para estabilice los primeros cinco trusses (vea abajo). 6) Instale la restricción lateral temporal y arriostre diagonal para la cuerda inferior (vea abajo). 7) Repita éste procedimiento en grupos de cuatro trusses hasta que todos los trusses estén instalados.

⚠ Refer to BCSI-B2 Summary Sheet – Truss Installation & Temporary Restraint/Bracing for more information.

Vea el resumen BCSI-B2 – Instalación de Trusses y Restricción/Arriostre Temporal para más información.

RESTRAINT/BRACING FOR ALL PLANES OF TRUSSES
RESTRICCIÓN/ARRIOSTRE PARA TODOS PLANOS DE TRUSSES

☑ This restraint & bracing method is for all trusses except 3x2 and 4x2 parallel chord trusses.

Este método de restricción y arriostre es para todo trusses excepto trusses de cuerdas paralelas 3x2 y 4x2.

1) TOP CHORD — CUERDA SUPERIOR

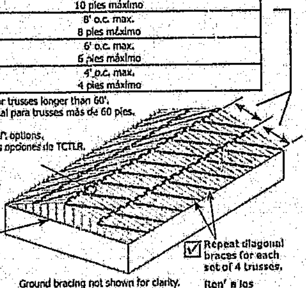
Truss Span Longitud de Tramo	Top Chord Temporary Lateral Restraint (TCTLR) Spacing Espaciamiento del Arriostre Temporal de la Cuerda Superior
Up to 30' Hasta 30 pies	10' o.c. max. 10 pies máximo
30' to 45' 30 a 45 pies	8' o.c. max. 8 pies máximo
45' to 60' 45 a 60 pies	6' o.c. max. 6 pies máximo
60' to 80'* 60 a 80 pies*	4' o.c. max. 4 pies máximo

*Consult a Professional Engineer for trusses longer than 60'.
*Consulte a un Ingeniero Profesional para trusses más de 60 pies.

☑ See BCSI-B2** for TCTLR options.
Vea el BCSI-B2** para las opciones de TCTLR.

⚠ Refer to BCSI-B3 Summary Sheet – Permanent Restraint/Bracing of Chords & Web Members** for Gable End Frame restraint/bracing/reinforcement information.

Para información sobre restricción/arriostre/refuerzo para Armazones Hastiales vea el resumen BCSI-B3 – Restricción/Arriostre Permanente de Cuerdas y Miembros Secundarios**.



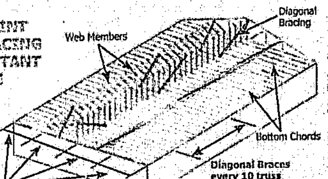
☑ Repeat diagonal braces for each set of 4 trusses.

Repita los arriostres diagonales para cada grupo de 4 trusses.

2) WEB MEMBER PLANE — PLANO DE LOS MIEMBROS SECUNDARIOS

⚠ LATERAL RESTRAINT & DIAGONAL BRACING ARE VERY IMPORTANT

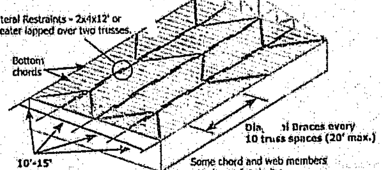
¡LA RESTRICCIÓN LATERAL Y EL ARRIOSTRE DIAGONAL SON MUY IMPORTANTES!



⚠ 10'-15' max. Same spacing as bottom chord Lateral Restraint

Some chord and web members not shown for clarity.

3) BOTTOM CHORD — CUERDA INFERIOR

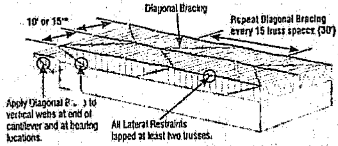


Some chord and web members not shown for clarity.

RESTRAINT & BRACING FOR 3X2 AND 4X2 PARALLEL CHORD TRUSSES
RESTRICCIÓN Y ARRIOSTRE PARA TRUSSES DE CUERDAS PARALELAS 3X2 Y 4X2

⚠ Refer to BCSI-B7 Summary Sheet – Temporary Permanent Restraint/Bracing for Parallel Chord Trusses [illegible]

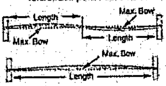
Vea el resumen BCSI-B7 [illegible] para Trusses de Cuerdas Paralelas [illegible]



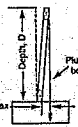
*Top chord Temporary Lateral Restraint spacing shall be 10' o.c. max. for 3x2 chords and 15' o.c. for 4x2 chords.

INSTALLING — INSTALACIÓN

☑ Tolerances for Out-of-Plane.
Tolerancias para Fuera-de-Plano.



☑ Tolerances for Out-of-Plumb.
Tolerancias para Fuera-de-Plomada.



Out of Plumb	
D/50	D (ft.)
1/4"	1'
1/2"	2'
3/4"	3'
1"	4'
1-1/4"	5'
1-1/2"	6'
1-3/4"	7'
2"	≥8'

Out of Plane	
Max. Bow	Truss Length
3/4"	12.5'
7/8"	14.6'
1"	16.7'
1-1/8"	18.8'
1-1/4"	20.8'
1-3/8"	22.9'
1-1/2"	25.0'
1-3/4"	29.2'
2"	≥33.3'

CONSTRUCTION LOADING — CARGA DE CONSTRUCCIÓN

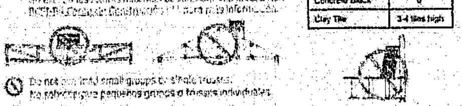
⚠ Do not proceed with construction until all lateral restraint and bracing is securely and properly in place.

No proceda con la construcción hasta que todas las restricciones laterales y los arriostres estén colocados en forma apropiada y segura.

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

⊘ Do not exceed maximum stack heights. Refer to BCSI-B4 Summary Sheet – Construction Loading** for more information.

No exceda las alturas máximas de montón. Vea el resumen BCSI-B4 Carga de Construcción** para más información.



⊘ Do not overload small groups or single trusses.
No sobrecargue pequeños grupos o trusses individuales.

⊘ Never stack materials near a peak.
Nunca amontone los materiales cerca de un pico.

☑ Place loads over as many trusses as possible.
Coloque las cargas sobre tantos trusses como sea posible.

☑ Position loads over load bearing walls.
Coloque las cargas sobre las paredes soportantes.

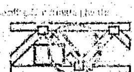
ALTERATIONS — ALTERACIONES

⚠ Refer to BCSI-B5 Summary Sheet – Truss Damage, Jobsite Modifications & Installation Errors.**

Vea el resumen BCSI-B5 Daños de Trusses, Modificaciones en la Obra y Errores de Instalación.**

⊘ Do not cut, alter, or drill any structural member of a truss unless specifically permitted by the Truss Design Drawing.

Nunca corte, altere o perfore ningún miembro estructural de un truss, a menos que esté específicamente permitido en el Dibujo del Diseño del Truss.



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

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

**Contact the Component Manufacturer for more information or consult a Professional Engineer for assistance. To view a non-printing PDF of this document, visit www.sbcindustry.com/b1.

WTCA
6300 Enterprise Lane • Madison, WI 53719
608/274-4849 • www.sbcindustry.com

TRUSS PLATE INSTITUTE
218 N. Lee St., Ste. 312 • Alexandria, VA 22314
703/683-1010 • www.tpinst.org

B1WARN11x17 070724

GENERAL NOTES

Trusses are not marked in any way to identify the frequency or location of temporary lateral restraint and diagonal bracing. Follow the recommendations for handling, installing and temporary restraining and bracing of trusses. Refer to BCSI Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses*** for more detailed information.

Truss Design Drawings may specify locations of permanent lateral restraint or reinforcement for individual truss members. Refer to the BCSI-B3 Summary Sheet – Permanent Restraint/Bracing of Chords & Web Members*** for more information. All other permanent bracing design is the responsibility of the Building Designer.

NOTAS GENERALES

Los trusses no están marcados de ningún modo que identifique la frecuencia o localización de restricción lateral y arriostre diagonal temporales. Use las recomendaciones de manejo, instalación, restricción y arriostre temporal de los trusses. Vea el folleto BCSI Guía de Buena Práctica para el Manejo, Instalación, Restricción y Arriostre de los Trusses de Madera Conectados con Placas de Metal*** para información más detallada.

Los dibujos de diseño de los trusses pueden especificar las localizaciones de restricción lateral permanente o refuerzo en los miembros individuales del truss. Vea la hoja resumen BCSI-B3 – Restricción/Arriostre Permanente de Cuerdas y Miembros Secundarios*** para más información. El resto de los diseños de arriostres permanentes son la responsabilidad del Diseñador del Edificio.

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

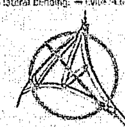
El resultado de un manejo, levantamiento, instalación, restricción y arriostre incorrecto puede ser la caída de la estructura o aún peor, heridos o muertos.

⚠ Banding and truss plates have sharp edges. Wear gloves when handling and safety glasses when cutting banding.

Empaques y placas de metal tienen bordes afilados. Lleve guantes y lentes protectores cuando corte los empaques.

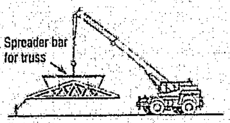
HANDLING — MANEJO

⚠ Avoid lateral bending. — Evite la flexión lateral.



⚠ Use special care in windy weather or near power lines and airports.

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

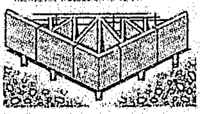


⚠ The contractor is responsible for properly receiving, unloading and storing the trusses at the jobsite.

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

☑ Use proper rigging and hoisting equipment.

Use equipo apropiado para levantar e improvisar.



☑ If trusses are to be stored horizontally, place blocking of sufficient height beneath the stack of trusses at 8' to 10' on center.

For trusses stored for more than one week, cover bundles to prevent moisture gain but allow for ventilation.

Refer to BCSI Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses*** for more detailed information pertaining to handling and jobsite storage of trusses.

Si los trusses estarán guardados horizontalmente, ponga bloqueando de altura suficiente detrás de la pila de los trusses a 8 hasta 10 pies en el centro.

Para trusses guardados por más de una semana, cubra los paquetes para prevenir aumento de humedad pero permita ventilación.

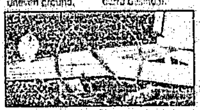
Vea el folleto BCSI Guía de Buena Práctica para el Manejo, Instalación, Restricción y Arriostre de los Trusses de Madera Conectados con Placas de Metal*** para información más detallada sobre el manejo y almacenado de los trusses en área de trabajo.

⊘ Do not store unbraced bundles upright.

No almacene verticalmente los trusses sueltos.

⊘ Do not store on uneven ground.

No almacene en tierra desigual.



HOISTING RECOMMENDATIONS FOR TRUSS BUNDLES
RECOMENDACIONES PARA LEVANTAR PAQUETES DE TRUSSES

⚠ Warning! Don't overload the crane.

¡Advertencia! No sobrecargue la grúa.

⊘ Do not use banding to lift a bundle.

Do not lift a group of individually banded bundles.

Nunca use los empaques para levantar un paquete.

No levante un grupo de paquetes empaquetados individualmente.

☑ A single lift point may be used for bundles with trusses up to 45'.

Two lift points may be used for bundles with trusses up to 60'.

Use at least 3 lift points for bundles with trusses greater than 60'.

Puede usar un solo lugar de levantar para paquetes de trusses hasta 45 pies.

Puede usar dos puntos de levantar para paquetes hasta 60 pies.

Use por lo menos tres puntos de levantar para paquetes más de 60 pies.

⚠ Warning! Do not overload supporting structure with truss bundle.

¡Advertencia! No sobrecargue la estructura apoyada con el paquete de trusses.

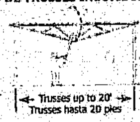
☑ Place truss bundles in stable position.

Puse paquetes de trusses en una posición estable.

INSTALLATION OF SINGLE TRUSSES BY HAND
INSTALACIÓN DE TRUSSES INDIVIDUALES POR LA MANO

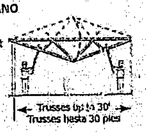
☑ Trusses 20' or less, support at peak.

Soporte del pico los trusses de 20 pies o menos.



☑ Trusses 30' or less, support at quarter points.

Soporte de los cuartos de tramo los trusses de 30 pies o menos.



HOISTING OF SINGLE TRUSSES — LEVANTAMIENTO DE TRUSSES INDIVIDUAL

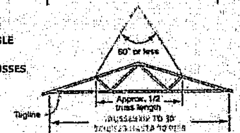
☑ Hold each truss in position with the erection equipment until top chord temporary lateral restraint is installed and the truss is fastened to the bearing points.

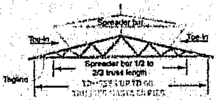
Sostenga cada truss en posición con equipo de grúa hasta que la restricción lateral temporal de la cuerda superior esté instalado y el truss está asegurado en los soportes.

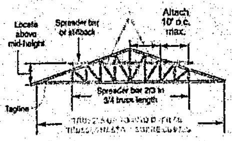
⚠ Warning! Using a single pick-point at the peak can damage the truss.

¡Advertencia! El uso de un solo lugar en el pico para levantar puede hacer daño al truss.

HOISTING RECOMMENDATIONS FOR SINGLE TRUSSES
RECOMENDACIONES PARA LEVANTAR TRUSSES INDIVIDUALES







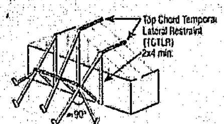
TEMPORARY RESTRAINT & BRACING
RESTRICCIÓN Y ARRIOSTRE TEMPORAL

⚠ Refer to BCSI-B2 Summary Sheet – Truss Installation & Temporary Restraint/Bracing for more information.

Vea el resumen BCSI-B2 – Instalación de Trusses y Restricción/Arriostre Temporal para más información.

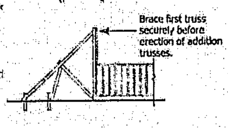
☑ Locate ground braces for first truss directly in line with all rows of top chord temporary lateral restraint (see table in the next column).

Coloque los arriostres de tierra para el primer truss directamente en línea con cada una de las filas de restricción lateral temporal de la cuerda superior (vea la tabla en la próxima columna).



⊘ Do not walk on unbraced trusses.

No camine en trusses sueltos.



ALLSTRUCTURE
Engineering LLC
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v: 503.620.4314 • f: 503.620.4304
www.allstructure.com

STRUCTURAL DOCUMENTS

Project:

Allstructure #
07303.01

Liebman Remodel
Field Revision
Portland, OR

March 28, 2008

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		Sheet No.
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CALCULATIONS		1-9

NOTES:

Allstructure Engineering LLC was retained in a limited capacity for this project and is responsible only for the items described in these documents.

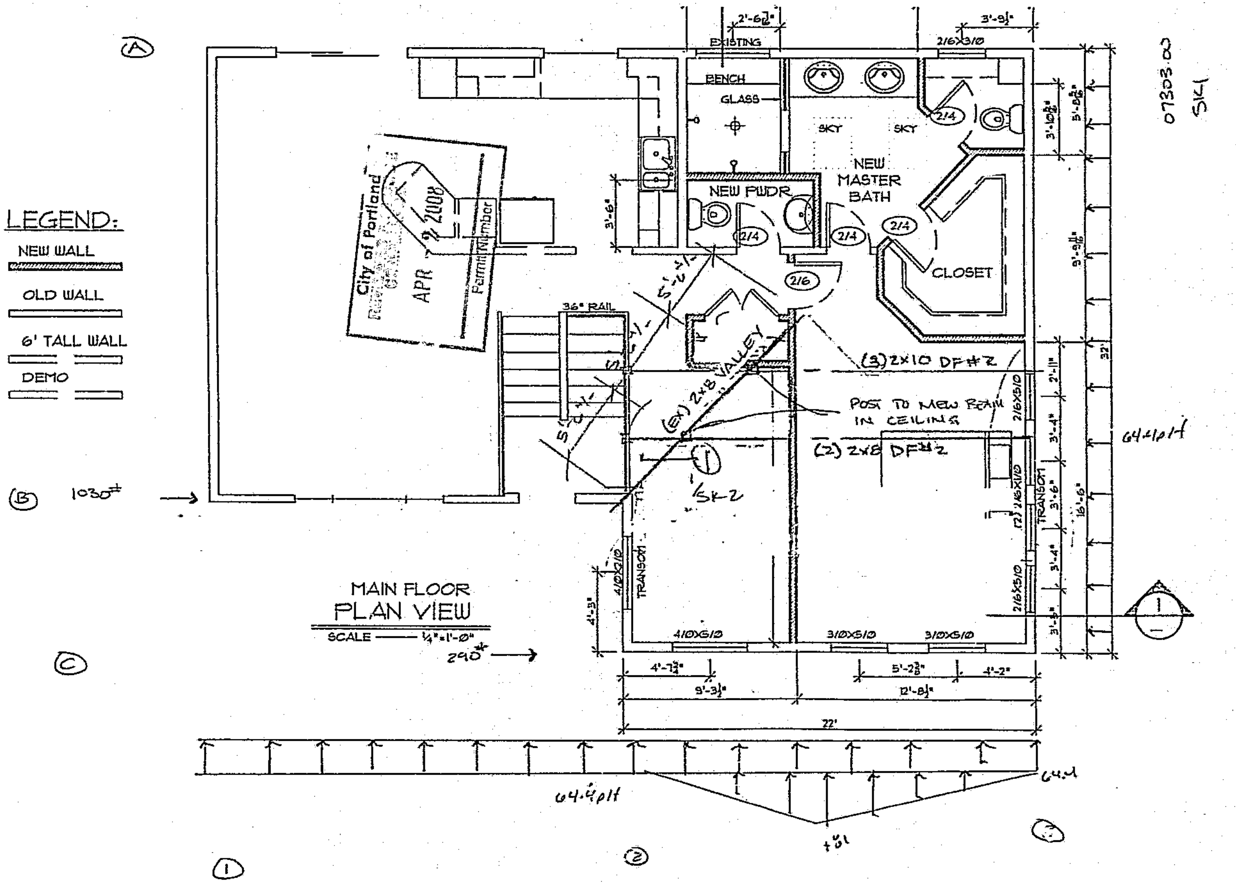
The attached calculations are not meant to stand alone but are meant to supplement previous calculations submitted on August 2, 2007. The changes for these calculations are for support of an existing valley rafter and an analysis of a header for its capacity to support the new girder truss loading. See attached for added support for the valley rafter. The window header was found to be adequate.

REGISTERED PROFESSIONAL ENGINEER
76768PE
OREGON
MAY 10, 2005
RYAN HARDIE

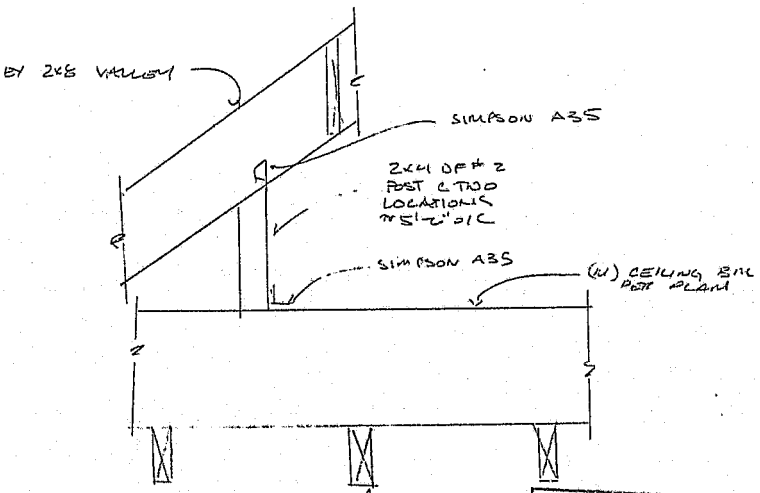
EXPIRES: 6/30/09

City of Portland
APR - 2 2008
Permit Number

08-108678 REV-01 RS



LEGEND:
NEW WALL
OLD WALL
6' TALL WALL
DEMO
MAIN FLOOR
PLAN VIEW
SCALE ——— 1/4"=1'-0"
07303.00
SK1
EXISTING
2/6X3/0
BENCH
GLASS
SKY
SKY
NEW MASTER BATH
NEW PWDR
2/4
2/4
2/4
2/4
2/4
2/6
CLOSET
36" RAIL
(3) 2X10 DF#2
POST TO NEW BEAM IN CEILING
(EX) 2x8 VALLEY
(2) 2X8 DF#2
1/SK-2
2/6X5/0
2/6X1/0
TRANSOM
2/6X5/0
4/0X2/0
TRANSOM
4/0X5/0
3/0X5/0
3/0X5/0
2'-6 7/16"
3'-9 1/2"
5'-8 5/8"
3'-10 5/8"
3'-6"
9'-9 1/16"
32'
2'-11"
3'-4"
3'-6"
16'-6"
3'-4"
3'-3"
4'-3"
4'-7 3/4"
9'-3 1/2"
5'-2 3/8"
4'-2"
12'-8 1/2"
22'
64.4 plf
1030#
290#
64.4 plf
64.4
City of Portland
APR 2008
Permit Number
A
B
C
1
2
3



SECTION @ ROOF

ALLSTRUCTURE Engineering LLC
7140 SW Fir Loop, Suite 231
Tigard, Oregon 97223
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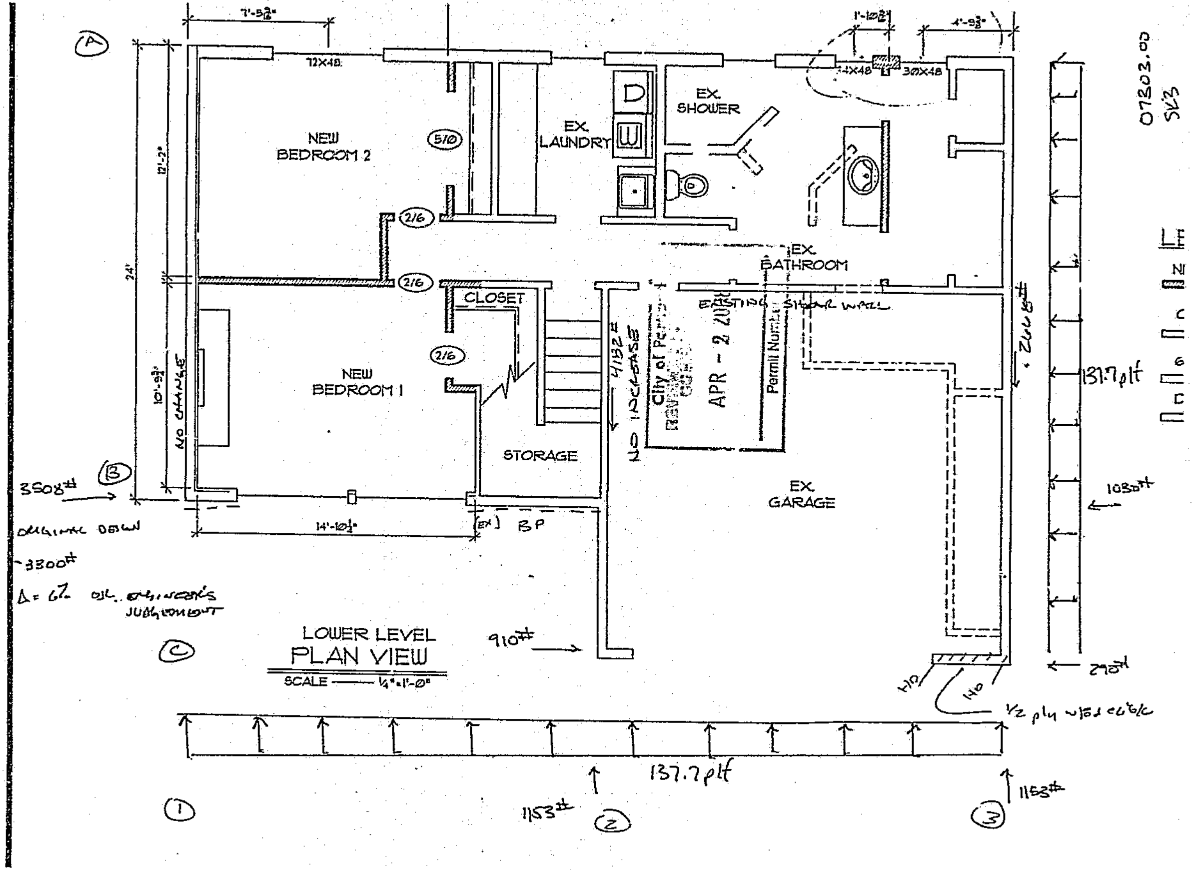
HERMANN RESIDENCE

BY _____ DATE _____
CHK BY _____ DATE _____
JOB NO 07303
SHEET SK2 OF _____


07303.00
SK3
NEW
BEDROOM 2
5/0
EX.
LAUNDRY
EX.
SHOWER
2/6
EX.
BATHROOM
2/6
CLOSET
EXISTING SHEAR WALL
NEW
BEDROOM 1
2/6
STORAGE
4182#
NO INCREASE
APR - 2 2008
City of
Permit Number
EX.
GARAGE
72X48
30X48
7'-5 5/8"
1'-10 3/4"
4'-9 3/8"
12'-2"
24'
10'-9 3/4"
NO CHANGE
14'-10 1/4"
3508#
ORIGINAL DESIGN
~3300#
Δ = 6% OK, ENGINEER'S JUDGEMENT
(EX) BP
137.7plf
1030#
290#
910#
1/2 ply w/8d e6/12
LOWER LEVEL
PLAN VIEW
SCALE 1/4"=1'-0"
137.7plf
1153#
1153#
A
B
C
1
2
3

EX VALLEY

SHINGLES 2x8 SPAN: 15'-6"

CO'- wdl = 15psf o = 0plf
wsl = 25psf o = 0 plf

@ 15'-2 wdl = 15psf 11' = 165plf
wsl = 25psf 11' = 275 plf

NO GOOD POST @ 3rd points
(2) points

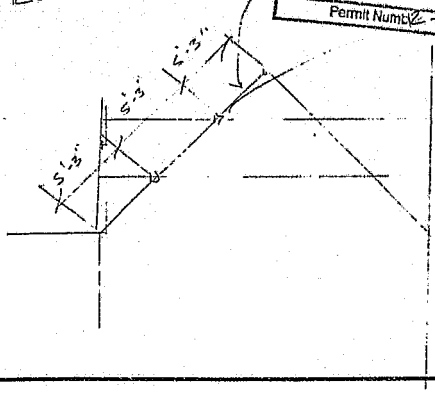
- worst case

10'-5 - 15'-5
L ~ 5.25'

@ 0' wdl = 110plf
@ 0' wsl = 183plf

@ 5.25' wdl = 165plf
wsl = 275 plf

R =



ALLSTRUCTURE
Engineering LLC
7140 SW Fir Loop, Suite 231
Tigard, Oregon 97223
v: 503.620.4314 • f: 503.620.4304

BY _____ DATE _____
CHK BY _____ DATE _____
JOB NO 07303
SHEET 1 OF _____

Title :
Dsgnr:
Description :

Job #
Date: 2:07PM, 28 MAR 08

Scope :

General Timber Beam

Description ex valley

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000, Base allowables are user defined

Section Name	2x8	Center Span	5.25 ft	.....Lu	0.00 ft
Beam Width	1.500 in	Left Cantilever	ft	.....Lu	0.00 ft
Beam Depth	7.250 in	Right Cantilever	ft	.....Lu	0.00 ft
Member Type	Sawn	Douglas Fir - Larch, No.2			
		Fb Base Allow	900.0 psi		
Load Dur. Factor	1.150	Fv Allow	180.0 psi		
Beam End Fixity	Pin-Pin	Fc Allow	625.0 psi		
		E	1,600.0 ksi		

Trapezoidal Loads

#1 DL @ Left	110.00 #/ft	LL @ Left	165.00 #/ft	Start Loc	1.000 ft
DL @ Right	183.00 #/ft	LL @ Right	275.00 #/ft	End Loc	5.250 ft

Summary

Beam Design OK

Span= 5.25ft, Beam Width = 1.500in x Depth = 7.25in, Ends are Pin-Pin

Max Stress Ratio	0.832 : 1						
Maximum Moment	1.1 k-ft			Maximum Shear * 1.5			1.1 k
Allowable	1.4 k-ft			Allowable			2.3 k
Max. Positive Moment	1.13 k-ft	at	2.835 ft	Shear:	@ Left		0.58 k
Max. Negative Moment	-0.00 k-ft	at	5.250 ft		@ Right		0.98 k
Max @ Left Support	0.00 k-ft			Camber:	@ Left		0.000 in
Max @ Right Support	0.00 k-ft				@ Center		0.043 in
Max. M allow	1.36				@ Right		0.000 in
fb 1,033.08 psi	fv 99.00 psi		Reactions...				
Fb 1,242.00 psi	Fv 207.00 psi		Left DL	0.23 k	Max		0.58 k
			Right DL	0.39 k	Max		0.98 k

Deflections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	-0.029 in	-0.072 in	Deflection	0.000 in	0.000 in
...Location	2.688 ft	2.688 ft	...Length/Defl	0.0	0.0
...Length/Defl	2,175.4	869.64	Right Cantilever...		
Camber (using 1.5 * D.L. Defl) ...			Deflection	0.000 in	0.000 in
@ Center	0.043 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	31.887	Le	0.000 ft	Sxx	13.141 in3	Area	10.875 in2
Cf	1.200	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	1.13 k-ft	10.93 in3	1,242.00 psi
@ Left Support	0.00 k-ft	0.00 in3	1,242.00 psi
@ Right Support	0.00 k-ft	0.00 in3	1,242.00 psi

Shear Analysis

	@ Left Support	@ Right Support
Design Shear	0.87 k	1.08 k
Area Required	4.188 in2	5.201 in2
Fv: Allowable	207.00 psi	207.00 psi

Bearing @ Supports

Max. Left Reaction	0.58 k	Bearing Length Req'd	0.617 in
Max. Right Reaction	0.98 k	Bearing Length Req'd	1.045 in

07303
2

Title :
Dsgnr:
Description :

Job #
Date: 2:07PM, 28 MAR 08

Scope :

General Timber Beam

Description ex valley

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

Section Name	2x8	Center Span	5.25 ft	....Lu	0.00 ft
Beam Width	1.500 in	Left Cantilever	ft	....Lu	0.00 ft
Beam Depth	7.250 in	Right Cantilever	ft	....Lu	0.00 ft
Member Type	Sawn	Douglas Fir - Larch, No.2			
		Fb Base Allow	900.0 psi		
Load Dur. Factor	1.150	Fv Allow	180.0 psi		
Beam End Fixity	Pin-Pin	Fc Allow	625.0 psi		
		E	1,600.0 ksi		

Trapezoidal Loads

#1 DL @ Left	55.00 #/ft	LL @ Left	83.00 #/ft	Start Loc	1.000 ft
DL @ Right	110.00 #/ft	LL @ Right	165.00 #/ft	End Loc	5.250 ft

Summary

Beam Design OK

Span= 5.25ft, Beam Width = 1.500in x Depth = 7.25in, Ends are Pin-Pin

Max Stress Ratio 0.463 : 1

Maximum Moment	0.6 k-ft			Maximum Shear * 1.5			0.6 k
Allowable	1.4 k-ft			Allowable			2.3 k
Max. Positive Moment	0.63 k-ft	at	2.877 ft	Shear:	@ Left		0.32 k
Max. Negative Moment	-0.00 k-ft	at	5.250 ft		@ Right		0.56 k
Max @ Left Support	0.00 k-ft			Camber:	@ Left		0.000 in
Max @ Right Support	0.00 k-ft				@ Center		0.024 in
Max. M allow	1.36				@ Right		0.000 in
fb 575.64 psi	fv	55.94 psi	Reactions...				
Fb 1,242.00 psi	Fv	207.00 psi	Left DL	0.13 k	Max		0.32 k
			Right DL	0.22 k	Max		0.56 k

Deflections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	-0.016 in	-0.040 in	Deflection	0.000 in	0.000 in
...Location	2.688 ft	2.688 ft	...Length/Defl	0.0	0.0
...Length/Defl	3,913.4	1,563.06	Right Cantilever...		
Camber (using 1.5 * D.L. Defl) ...			Deflection	0.000 in	0.000 in
@ Center	0.024 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	31.887	Le	0.000 ft	Sxx	13.141 in3	Area	10.875 in2
Cf	1.200	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	0.63 k-ft	6.09 in3	1,242.00 psi
@ Left Support	0.00 k-ft	0.00 in3	1,242.00 psi
@ Right Support	0.00 k-ft	0.00 in3	1,242.00 psi

Shear Analysis

	@ Left Support	@ Right Support
Design Shear	0.47 k	0.81 k
Area Required	189 in2	2,939 in2
Fv: Allowable	.00 psi	207.00 psi

Bearing @ Supports

Max. Left Reaction	0.32 k	Bearing Length Req'd	0.337 in
Max. Right Reaction	0.56 k	Bearing Length Req'd	0.599 in

c7303
3

CEILING BEAM - WORST CASE

SPAN: 22'-0"

PLL PSL = 1040# @ 7'-4"

USE (3) 2x10 OR (2) 13/16 9 1/4 1.9E LVL

CEILING CLOSER TO WALL = (2) 2x3 DF #

GIRDER TRUSS BEARING

R = (15psf + 25psf) x 11' x 12' = 5280#

4x12 HDR - OKAY FOR 5'0" SP AW

EXIST WINDOW 4'-0" ∴

ALLSTRUCTURE
Engineering LLC
7140 SW Fir Loop, Suite 231
Tigard, Oregon 97223
v: 503.620.4314 • f: 503.620.4304

BY _____ DATE _____

CHK BY _____ DATE _____

JOB NO. 07303

SHEET 1 OF _____

Title :
Dsgnr:
Description :

Job #
Date: 2:13PM, 28 MAR 08

Scope :

General Timber Beam

Description new ceiling

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000, Base allowables are user defined

Section Name	MicroLam: 3.5x9.25	Center Span	22.00 ft	.....Lu	0.00 ft
Beam Width	3.500 in	Left Cantilever	ft	.....Lu	0.00 ft
Beam Depth	9.250 in	Right Cantilever	ft	.....Lu	0.00 ft
Member Type	Manuf/So.Pine	Truss Joist - MacMillan, MicroLam 1.9 E			
		Fb Base Allow	2,600.0 psi		
Load Dur. Factor	1.150	Fv Allow	285.0 psi		
Beam End Fixity	Pin-Pin	Fc Allow	750.0 psi		
		E	1,900.0 ksi		

Point Loads

Dead Load	379.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
Live Load	631.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
...distance	7.330 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft

Summary

Beam Design OK

Span= 22.00ft, Beam Width = 3.500in x Depth = 9.25in, Ends are Pin-Pin

Max Stress Ratio	0.396 : 1				
Maximum Moment	4.9 k-ft		Maximum Shear * 1.5		1.0 k
Allowable	12.4 k-ft		Allowable		10.6 k
Max. Positive Moment	4.92 k-ft	at 7.304 ft	Shear:	@ Left	0.67 k
Max. Negative Moment	0.00 k-ft	at 22.000 ft		@ Right	0.34 k
Max @ Left Support	0.00 k-ft		Camber:	@ Left	0.000 in
Max @ Right Support	0.00 k-ft			@ Center	0.427 in
				@ Right	0.000 in
Max. M allow	12.44	Reactions...			
fb 1,182.69 psi	fv 31.20 psi	Left DL	0.25 k	Max	0.67 k
Fb 2,990.00 psi	Fv 327.75 psi	Right DL	0.13 k	Max	0.34 k

Deflections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	-0.285 in	-0.759 in	Deflection	0.000 in	0.000 in
...Location	10.032 ft	10.032 ft	...Length/Defl	0.0	0.0
...Length/Defl	926.8	347.80	Right Cantilever...		
Camber (using 1.5 * D.L. Defl)...			Deflection	0.000 in	0.000 in
@ Center	0.427 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	20.444	Le	0.000 ft	Sxx	49.911 in3	Area	32.375 in2
Cf	1.000	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	4.92 k-ft	19.74 in3	2,990.00 psi
@ Left Support	0.00 k-ft	0.00 in3	2,990.00 psi
@ Right Support	0.00 k-ft	0.00 in3	2,990.00 psi

Shear Analysis

	@ Left Support	@ Right Support
Design Shear	1.01 k	0.50 k
Area Required	3.082 in2	1.540 in2
Fv: Allowable	327.75 psi	327.75 psi

Bearing @ Supports

Max. Left Reaction	0.67 k	Bearing Length Req'd	0.257 in
Max. Right Reaction	0.34 k	Bearing Length Req'd	0.128 in

607303
5

Title :
Dsgnr:
Description :

Job #
Date: 2:13PM, 28 MAR 08

Scope :

General Timber Beam

Description new ceiling

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

Section Name	3-2x10	Center Span	22.00 ft	.....Lu	0.00 ft
Beam Width	4.500 in	Left Cantilever	ft	.....Lu	0.00 ft
Beam Depth	9.250 in	Right Cantilever	ft	.....Lu	0.00 ft
Member Type	Sawn	Douglas Fir - Larch, No.2			
		Fb Base Allow	900.0 psi		
Load Dur. Factor	1.150	Fv Allow	180.0 psi		
Beam End Fixity	Pin-Pin	Fc Allow	625.0 psi		
		E	1,600.0 ksi		

Point Loads

Dead Load	379.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
Live Load	631.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
...distance	7.330 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft

Summary

Beam Design OK

Span= 22.00ft, Beam Width = 4.500in x Depth = 9.25in, Ends are Pin-Pin

Max Stress Ratio	0.741 : 1				
Maximum Moment	4.9 k-ft		Maximum Shear * 1.5		1.0 k
Allowable	6.6 k-ft		Allowable		8.6 k
Max. Positive Moment	4.92 k-ft	at 7.304 ft	Shear:	@ Left	0.67 k
Max. Negative Moment	0.00 k-ft	at 22.000 ft		@ Right	0.34 k
Max @ Left Support	0.00 k-ft		Camber:	@ Left	0.000 in
Max @ Right Support	0.00 k-ft			@ Center	0.395 in
Max. M allow	6.64			@ Right	0.000 in

Reactions...

fb	919.87 psi	fv	24.27 psi	Left DL	0.25 k	Max	0.67 k
Fb	1,242.00 psi	Fv	207.00 psi	Right DL	0.13 k	Max	0.34 k

flections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	-0.263 in	-0.701 in	Deflection	0.000 in	0.000 in
...Location	10.032 ft	10.032 ft	...Length/Defl	0.0	0.0
...Length/Defl	1,003.5	376.56	Right Cantilever...		
Camber (using 1.5 * D.L. Defl) ...			Deflection	0.000 in	0.000 in
@ Center	0.395 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	31.887	Le	0.000 ft	Sxx	64.172 in3	Area	41.625 in2
Cf	1.200	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	4.92 k-ft	47.53 in3	1,242.00 psi
@ Left Support	0.00 k-ft	0.00 in3	1,242.00 psi
@ Right Support	0.00 k-ft	0.00 in3	1,242.00 psi

Shear Analysis	@ Left Support	@ Right Support
Design Shear	1.01 k	0.50 k
Area Required	4.880 in2	2.439 in2
Fv: Allowable	207.00 psi	207.00 psi

Bearing @ Supports

Max. Left Reaction	0.67 k	Bearing Length Req'd	0.239 in
Max. Right Reaction	0.34 k	Bearing Length Req'd	0.120 in

0730?
C

Title :
Dsgnr:
Description :

Job #
Date: 2:14PM, 28 MAR 08

Scope :

General Timber Beam

Description new ceiling 2

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000. Base allowables are user defined

Section Name	2-2x8	Center Span	22.00 ft	.....Lu	0.00 ft
Beam Width	3.000 in	Left Cantilever	ft	.....Lu	0.00 ft
Beam Depth	7.250 in	Right Cantilever	ft	.....Lu	0.00 ft
Member Type	Sawn	Douglas Fir - Larch, No.2			
		Fb Base Allow	900.0 psi		
Load Dur. Factor	1.150	Fv Allow	180.0 psi		
Beam End Fixity	Pin-Pin	Fc Allow	625.0 psi		
		E	1,600.0 ksi		

Point Loads

Dead Load	253.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
Live Load	421.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
...distance	4.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft

Summary

Beam Design OK

Span= 22.00ft, Beam Width = 3.000in x Depth = 7.25in, Ends are Pin-Pin

Max Stress Ratio	0.809 : 1				
Maximum Moment	2.2 k-ft	Maximum Shear * 1.5			0.8 k
Allowable	2.7 k-ft	Allowable			4.5 k
Max. Positive Moment	2.20 k-ft at 4.048 ft	Shear:		@ Left	0.55 k
Max. Negative Moment	0.00 k-ft at 22.000 ft			@ Right	0.12 k
Max @ Left Support	0.00 k-ft	Camber:		@ Left	0.000 in
Max @ Right Support	0.00 k-ft			@ Center	0.508 in
Max. M allow	2.72	Reactions...		@ Right	0.000 in
fb 1,004.49 psi	fv 38.03 psi	Left DL	0.21 k	Max	0.55 k
Fb 1,242.00 psi	Fv 207.00 psi	Right DL	0.05 k	Max	0.12 k

Deflections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	-0.339 in	-0.902 in	Deflection	0.000 in	0.000 in
...Location	9.504 ft	9.504 ft	...Length/Defl	0.0	0.0
...Length/Defl	779.5	292.61	Right Cantilever...		
Camber (using 1.5 * D.L. Defl) ...			Deflection	0.000 in	0.000 in
@ Center	0.508 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	31.887	Le	0.000 ft	Sxx	26.281 in3	Area	21.750 in2
Cf	1.200	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	2.20 k-ft	21.26 in3	1,242.00 psi
@ Left Support	0.00 k-ft	0.00 in3	1,242.00 psi
@ Right Support	0.00 k-ft	0.00 in3	1,242.00 psi

Shear Analysis	@ Left Support	@ Right Support
Design Shear	0.83 k	0.18 k
Area Required	3.996 in2	0.868 in2
Fv: Allowable	207.00 psi	207.00 psi

Bearing @ Supports

Max. Left Reaction	0.55 k	Bearing Length Req'd	0.294 in
Max. Right Reaction	0.12 k	Bearing Length Req'd	0.065 in

07302

1

Title :
Dsgnr:
Description :

Job #
Date: 2:18PM, 28 MAR 08

Scope :

General Timber Beam

Description Headser w/ Girder Truss Loading

General Information

Code Ref: 1997/2001 NDS, 2000/2003 IBC, 2003 NFPA 5000, Base allowables are user defined

Section Name	4x12		Center Span	5.00 ft ....Lu	0.00 ft
Beam Width	3.500 in		Left Cantilever	ft ....Lu	0.00 ft
Beam Depth	11.250 in		Right Cantilever	ft ....Lu	0.00 ft
Member Type	Sawn		Douglas Fir - Larch, No.2		
			Fb Base Allow	900.0 psi	
Load Dur. Factor	1.150		Fv Allow	180.0 psi	
Beam End Fixity	Pin-Pin		Fc Allow	625.0 psi	
			E	1,600.0 ksi	

Point Loads

Dead Load	lbs	lbs	lbs	lbs	lbs	lbs	lbs
Live Load	5,280.0 lbs	lbs	lbs	lbs	lbs	lbs	lbs
...distance	2.500 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft	0.000 ft

Summary

Beam Design OK

Span= 5.00ft, Beam Width = 3.500in x Depth = 11.25in, Ends are Pin-Pin

Max Stress Ratio	0.942 : 1				
Maximum Moment	6.6 k-ft		Maximum Shear * 1.5		4.0 k
Allowable	7.0 k-ft		Allowable		8.2 k
Max. Positive Moment	6.60 k-ft	at 2.500 ft	Shear:	@ Left	2.64 k
Max. Negative Moment	0.00 k-ft	at 5.000 ft		@ Right	2.64 k
Max @ Left Support	0.00 k-ft		Camber:	@ Left	0.000 in
Max @ Right Support	0.00 k-ft			@ Center	0.000 in
Max. M allow	7.00			@ Right	0.000 in

				Reactions...			
fb	1,072.76 psi	fv	100.57 psi	Left DL	0.00 k	Max	2.64 k
Fb	1,138.50 psi	Fv	207.00 psi	Right DL	0.00 k	Max	2.64 k

Deflections

Center Span...	Dead Load	Total Load	Left Cantilever...	Dead Load	Total Load
Deflection	0.000 in	-0.036 in	Deflection	0.000 in	0.000 in
...Location	5.000 ft	2.500 ft	...Length/Defl	0.0	0.0
...Length/Defl	0.0	1,677.94	Right Cantilever...		
Camber (using 1.5 * D.L. Defl) ...			Deflection	0.000 in	0.000 in
@ Center	0.000 in		...Length/Defl	0.0	0.0
@ Left	0.000 in				
@ Right	0.000 in				

Stress Calcs

Bending Analysis

Ck	31.887	Le	0.000 ft	Sxx	73.828 in3	Area	39.375 in2
Cf	1.100	Rb	0.000	Cl	0.000		

	Max Moment	Sxx Req'd	Allowable fb
@ Center	6.60 k-ft	69.57 in3	1,138.50 psi
@ Left Support	0.00 k-ft	0.00 in3	1,138.50 psi
@ Right Support	0.00 k-ft	0.00 in3	1,138.50 psi

Shear Analysis	@ Left Support	@ Right Support
Design Shear	3.96 k	3.96 k
Area Required	19.130 in2	19.130 in2
Fv: Allowable	207.00 psi	207.00 psi

Bearing @ Supports

Max. Left Reaction	2.64 k	Bearing Length Req'd	1.207 in
Max. Right Reaction	2.64 k	Bearing Length Req'd	1.207 in

07303