CITY OF SACRAMENTO

1231 I Street, Sacramento, CA 95814

Permit No: 0011355
Insp Area: 1

Site Address: 79 BRECKENWOOD WY SAC
Parcel No: 293-0103-002

Sub-Type: RES
Housing (Y/N): N

CONTRACTOR
KRUTSON ROOFING
1520 MAIN AV
95838

OWNER
GROW JOHN M & FRANCES L
79 BRECKENWOOD WY
SACRAMENTO CA 95825

ARCHITECT

Nature of Work: REROOF T/O 48SQ INSTALL LITE WEIGHT TILE

CONSTRUCTION LENDING AGENCY : I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Sec. 3097, Civ. C).

Lender's Name _____ Lender'sAddress _____

LICENSED CONTRACTORS DECLARATION: I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with section 7000) of Division 3 of the Business and Professions Code and my license is in full force and effect.

X License Class C 39 License Number 666253 Date 9/25/00 Contractor Signature _____

OWNER-BUILDER DECLARATION: I hereby affirm under penalty of perjury that I am exempt from the contractors License Law for the following reason (Sec. 7031.5, Business and Professions Code; any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he or she is licensed pursuant to the provisions of the Contractors License Law (Chapter 9 (commencing with Section 7000) of Division 8 of the Business and Professions Code) or that he or she is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031 5 by any applicant for a permit subjects the applicant to a civil penalty of not more than five hundred dollars ($500.00);

____ I, as a owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professional Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or herself or through his/her own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he/she did not build or improve for the purpose of sale.)

____ I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code: The Contractors License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractors License Law).

____ I am exempt under Sec. _____ B & PC for this reason: _____

Date _____ Owner Signature _____

IN ISSUING THIS BUILDING PERMIT, the applicant represents, and the city relies on the representation of the applicant, that the applicant verified all measurements and locations shown on the application or accompanying drawings and that the improvement to be constructed does not violate any law or private agreement relating to permissible or prohibited locations for such improvements. This building permit does not authorize any illegal location of any improvement or the violation of any private agreement relating to location of improvements.

I certify that I have read this application and state that all information is correct. I agree to comply with all city and county ordinances and state laws relating to building construction and herby authorize representative(s) of this city to enter upon the abovementioned property for inspection purposes.

X Date 9/25/0 X Applicant/Agent Signature _____

WORKER'S COMPENSATION DECLARATION: I hereby affirm under penalty of perjury one of the following declarations:
____ I have and will maintain a certificate of consent to self-insure for workers' compensation as provided for by Section 3700 of the Labor Code, for the performance of work for which the permit is issued.

X I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued. My workers' compensation insurance carrier and policy number are:

Carrier [illegible] Policy Number wx'3124753 Exp Date 1-1-01

XXX (This section need not be completed if the permit is for $100 or less) I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California and agree that if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

X Date 9/25/0 X Applicant Signature _____

WARNING: FAILURE TO SECURE WORKER'S COMPENSATION COVERAGE IS UNLAWFUL AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS ($100,000) IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST AND ATTORNEY'S FEE.

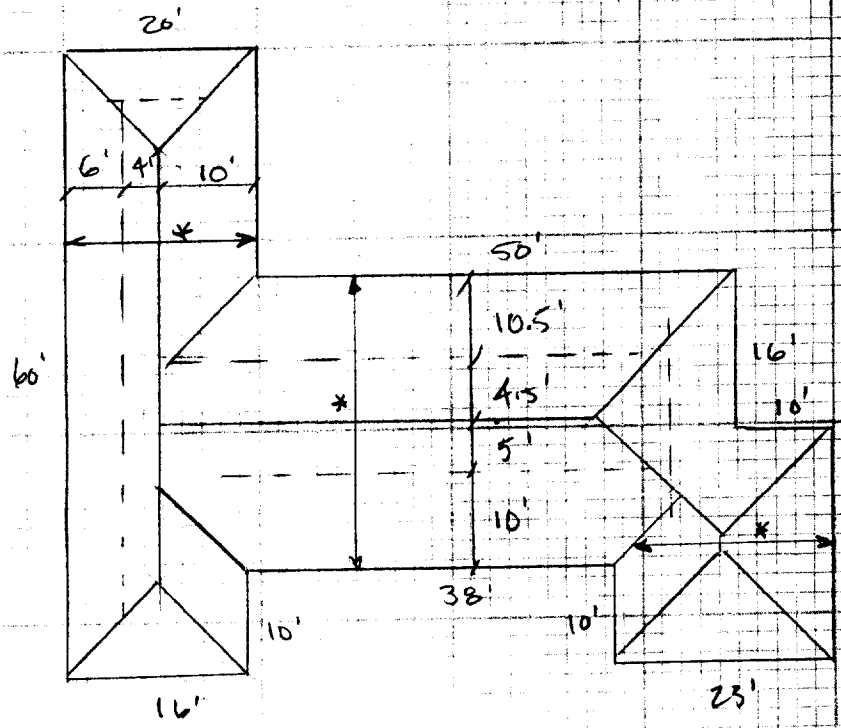
THIS PERMIT SHALL EXPIRE BY LIMITATION IF WORK IS NOT COMMENCED WITHIN 180 DAYS.

Anderson Engineering Consultants

Project: GROW REROOF
79 BRECKENWOOD

Job No. _____ Sheet 1 of 1

Designed By: CCA Checked By: _____ Date: 9-7-00



ISSUED
SEP 25 2000
Sacramento Building Division

--- 2x6 PURLIN

* 2x6@ 24" o.c. W/C.S. & COLLAR TIES

REGISTERED PROFESSIONAL ENGINEER
CARL C. ANDERSON
No. 045457
EXP. 12-31-02
CIVIL
STATE OF CALIFORNIA

APPROVED
DEPT. OF PLANNING & DEVELOPMENT
UNDER TITLE 16 CITY CODE
City of SACRAMENTO, CALIF.
BUILDING INSPECTION DIVISION

This set of plans and specifications must be kept on the job at all times and it is unlawful to make any changes or alterations from the same without written permission from the Building Inspection Division.

The approval of this plan and specification SHALL NOT be held to permit or approve the violation of any City Ordinance or State Law.

9/25/00

16790 Placer Hills Road, Suite A Meadow Vista Ca. 95722 Phone (530) 878-4770 Fax (530) 878-1579

ANDERSON ENGINEERING CONSULTANTS

225 Vista Ridge Dr.
Meadow Vista, CA 95722
Phone: (530) 878-4770

September 7, 2000

Knutson Roofing
1520 Main Avenue
Sacramento, CA. 95838

Subject: Lightweight Tile Re-roof
79 Breckenwood Way
Sacramento, CA. 95864

Dear David,

Pursuant to your request, Anderson Engineering Consultants has reviewed the roof framing of the structure at the above address for structural adequacy. The house is single story, approximately 25 years old, and is conventionally framed. The roof is comprised of the following:

FIELD VERIFY EXISTING CONDITIONS

- Single 2x6 rafters at 24" o.c. with a 10'-6" maximum span.
- 2x6 purlins with 2x4 struts at 6' o.c. brace the rafters, see attached drawing.
- 2x8 hip and valley boards.

The manufacturer has developed a span table to determine the maximum span of the rafter. The table was prepared by a licensed Engineer and is based on the current Uniform Building Code. The span table indicates the following for the given condition:

- Single 2x6 rafters at 24" o.c. – 12'-1".

The roof has a pitch of 4:12 and appears to be in sound condition. 2x6 purlins support the rafters at approximately mid-span and are braced adequately to bearing members. The hip and boards are 2x8's and braced adequately to bearing members. The total dead load on the rafters including roofing material does not exceed 9 psf.

It is our opinion that using your proposed re-roof system consisting of the following will not compromise the structural integrity of the roof system:

- 7/8"- 22 gage hat channel fastened to the rafters with 10d galvanized nails (or equal) at 24" o.c.
- "Thermo-ply" underlayment fastened to the hat channel with #8 self-tapping screws (or equal).
- 7/8" - 22 gage steel hat channel battens over the "Thermo-ply" underlayment fastened with #8 self tapping screws (or equal) at every rafter.
- Lightweight Eaglelite concrete tile weighing less than 7.0 psf.

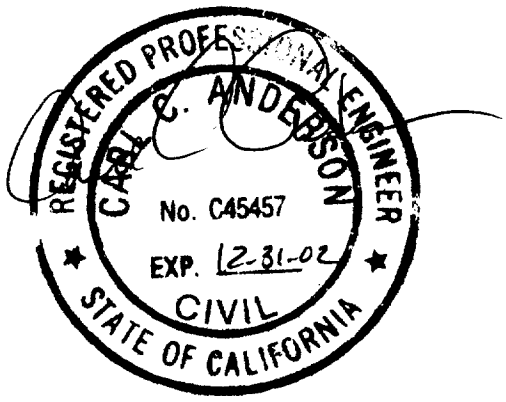
The determination of the roof's structural integrity is based on observation and known mechanical properties of wood.

After re-roofing minor cracking of the ceiling and interior and exterior walls may occur. In addition, a small amount of deflection in the rafters may be observed. These conditions are cosmetic only and do not affect the structural integrity of the roof framing.

Should you have any questions, please do not hesitate to contact us.

Sincerely,

Carl Anderson, P.E.



WHARTON AND ASSOCIATES
STRUCTURAL ENGINEERS
607 S. MILLIKEN AVE., SUITE H
ONTARIO, CA 91761

RE-ROOF PERMIT INFORMATION -

Date: _____

CONTRACTOR: _____ 5-STAR SERVICE NO.: _____

CONTACT: _____ CUSTOMER: _____

ADDRESS: _____ ADDRESS: _____

CITY, STATE, ZIP: _____ CITY, STATE, ZIP: _____

PHONE: _____ PHONE: _____

DESIGN CRITERIA: (1997 U.B.C.)

LIVE LOAD: 20 psf Pitch less than 4:12
16 psf Pitch 4:12 and greater

DEAD LOAD:

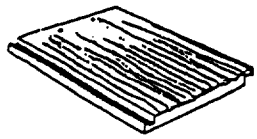
7.0 psf	New EAGLELITE Tile
1.5 psf	New 1/2" CDX Plywood
1.4 psf	Miscellaneous & Felt
9.9 psf	Total Dead Load w/o Clg.
2.5 psf	1/2" Gyp. Brd.
12.4 psf	Total Dead Load w/ Clg.

Existing DL: 1.6 to 4.3 psf Framing and Sheathing*
*Depending on Rafter Size

LUMBER PROPERTIES:

F_b = Allowable Bending Stress =
Includes 25% increase for Roof Loading = 1885 psi 2x4; 1635 psi 2x6; 1510 psi 2x8; 1385 psi 2x10

E = Modulus of Elastitcity = 1.6×10^6 psi



CALCULATIONS:

The maximum allowable span of a member shall be determined by the lowest value of two methods of calculation: Maximum allowable bending stress and maximum allowable deflection (L/180 w/out clg.; L/240 w/ clg.).

$$L_{bending} = \sqrt{\frac{8 \cdot S \cdot F_b}{(DL + LL) \cdot SP \cdot 12}} \qquad L_{\Delta} = \left[\frac{384 \cdot E \cdot I}{(180) \cdot 5 \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}} \text{ (No Ceiling)} \qquad L_{\Delta} = \left[\frac{384 \cdot E \cdot I}{5 \cdot (240) \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}} \text{ (With Ceiling)}$$

Rafter overhangs at eves shall be determined by the lowest value based on member stress or deflection:

$$L_{b.o} = \sqrt{\frac{2 \cdot F_b \cdot S}{(DL + LL) \cdot SP \cdot 12}} \qquad L_{\Delta .o} = \left[\frac{8 \cdot E \cdot I}{180 \cdot (0.5 \cdot DL + LL) \cdot SP \cdot 144}\right]^{\frac{1}{3}}$$

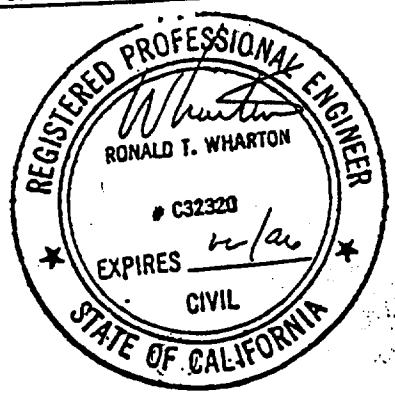
WHERE:
F_b is Maximum Allowable Bending Stress (psi)
S is Section Modulus of Lumber (in^3)
LL is Live Load (psf)
DL is Dead Load (psf)
E is Modulus of Elasticity (psi)
I is Moment of Inertia (in^4)
SP is Rafter Spacing (ft)
L is Span (ft)

TABULATED VALUES, MAXIMUM ALLOWABLE RAFTER SPANS:

Rafter Size	Rafter Spacing	Pitch < 4:12 (No Clg.) Single	Pitch < 4:12 (No Clg.) Double	Pitch > 4:12 (No Clg.) Single	Pitch > 4:12 (No Clg.) Double	Pitch > 4:12 (w/ Clg.) Single	Pitch > 4:12 (w/ Clg.) Double	Over Hangs at Eves
2x4	12"	9'-10"	12'-4"	10'-5"	13'-0"	9'-4"	11'-7"	4'-7"
$I = 5.36\ in^4$	16"	9'-0"	11'-3"	9'-6"	11'-11"	8'-6"	10'-7"	4'-2"
$S = 3.06\ in^3$	24"	7'-9"	9'-10"	8'-4"	10'-5"	7'-5"	9'-4"	3'-8"
2x6	12"	15'-5"	19'-3"	16'-4"	20'-2"	14'-7"	18'-1"	7'-3"
$I = 20.8\ in^4$	16"	13'-9"	17'-7"	14'-8"	18'-6"	13'-2"	16'-7"	6'-7"
$S = 7.56\ in^3$	24"	11'-4"	15'-5"	12'-1"	16'-4"	11'-7"	14'-7"	5'-8"
2x8	12"	19'-10"	25'-2"	21'-1"	26'-6"	19'-1"	23'-8"	9'-6"
$I = 47.6\ in^4$	16"	17'-4"	23'-1"	18'-6"	24'-4"	17'-5"	21'-8"	8'-8"
$S = 13.14\ in^3$	24"	14'-3"	19'-10"	15'-3"	21'-1"	14'-7"	19'-1"	7'-1"
2x10	12"	23'-11"	31'-11"	25'-6"	33'-6"	24'-3"	29'-11"	11'-11"
$I = 98.9\ in^4$	16"	21'-0"	28'-8"	22'-8"	30'-4"	21'-6"	27'-6"	10'-6"
$S = 21.4\ in^3$	24"	17'-4"	23'-11"	18'-6"	25'-6"	17'-9"	24'-3"	8'-8"

ENGINEER'S COMMENTS:

Existing roofing material must be removed. The maximum span values are for vertical gravity loading only. All framing shall comply with the Uniform Building Code. Cosmetic cracking of walls and ceiling can occur during and after re-roofing. Furthermore, visible deflection of the roof can occur, especially for rafters approaching maximum allowable spans. Cracking and deflections do not affect the structural integrity of the roof framing. This form is provided as a convenience to homeowners and contractors. Eagle Roofing Products Company and the Architect or Engineer assume no responsibility for the accuracy of the information supplied by others.



Multi-Loaded Beam[97 UBC (91 NDS)] Ver. v4051796
By: Carl Anderson , Anderson Engineering on: 09-07-2000

Project: GROW - Location: 2X8 HIP & VALLEY

Summary:
1.50 IN x 7.25 IN x 14.0 FT / #2 - DOUGLAS FIR-LARCH - Dry Use
Section Adequate By: 4.8% Controlling Factor: Section Modulus / Depth Required 7.08 In

Deflections:			
Dead Load:	DLD=	0.26	IN
Live Load:	LLD=	0.36	IN = L/462
Total Load:	TLD=	0.62	IN = L/271
End Reactions(Left Side):			
Live Load:	RL1=	149	LB
Dead Load:	RD1=	112	LB
Total Load:	RT1=	261	LB
End Reactions(Right Side):			
Live Load:	RL2=	299	LB
Dead Load:	RD2=	205	LB
Total Load:	RT2=	504	LB
Bearing Length Reqd.(Left) :	BL1=	0.28	IN
Bearing Length Reqd.(Right):	BL2=	0.54	IN
Beam Data:			
Span:	L=	14.0	FT
Maximum Unbraced Span:	Lu=	0.0	FT
Live Load Duration Factor:	Cd=	1.25	
Live Load Deflect. Criteria:	L/	240	
Total Load Deflect. Criteria:	L/	180	
Uniform Load:			
Live Load:	wL=	0	PLF
Dead Load:	wD=	0	PLF
Beam Self Weight:	BSW=	3	PLF
Total Load:	wT=	3	PLF
Triangular Load (Max. @ Right):			
Live Load:	wL_TR=	64	PLF
Dead Load:	wD_TR=	40	PLF
Total Load:	wT_TR=	104	PLF
Properties For: #2- DOUGLAS FIR-LARCH			
Bending Stress:	Fb=	875	PSI
Shear Stress:	Fv=	95	PSI
Modulus of Elasticity:	E=	1600000	PSI
Stress Perpendicular to Grain:	Fc_perp=	625	PSI
Adjusted Properties:			
Fb' (Tension):	Fb'=	1313	PSI
Adjustment Factors: Cd=1.25 Cf=1.20			
Fv':	Fv'=	119	PSI
Adjustment Factors: Cd=1.25			
Design Requirements:			
Maximum Moment:	M=	1371	FT-LB
8.037 FT From Left Support			
Shear (@ d from beam end):	V=	441	LB
Comparisons With Required Sections:			
Section Modulus:	Sreq=	12.6	IN3
	S=	13.1	IN3
Area:	Areq=	5.6	IN2
	A=	10.8	IN2
Moment of Inertia:	Ireq=	31.7	IN4
	I=	47.6	IN4

TA = 56 SF

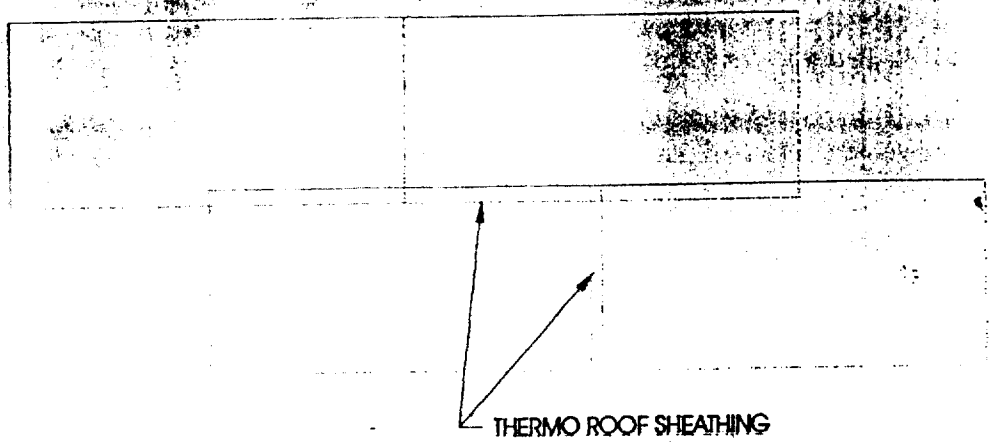
$W_{LL} = 16(56)/14' = 64$ PLF

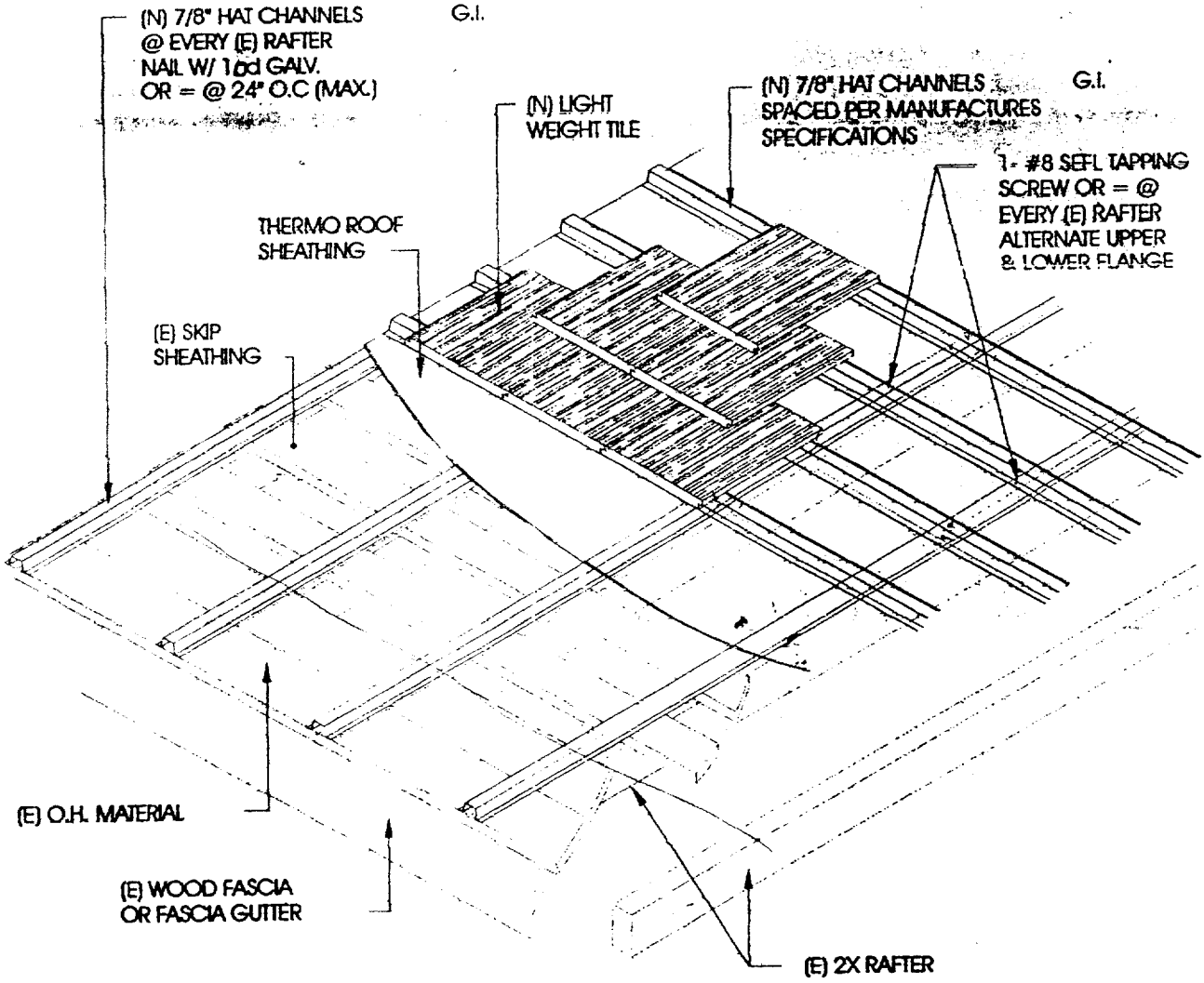
$W_{DL} = 10(56)/14 = 40$ PLF

104 PLF

METAL COUNTERBATTEN ROOF SYSTEM

SCALE: N.T.S.





CERTIFIED INSTALLER
KNUTSON ROOFING