CITY OF West Linn
PLANNING AND DEVELOPMENT

STAFF REPORT

PLANNING DIRECTOR DECISION

DATE: September 18, 2009

FILE NO.: MISC-09-11 (Planning Directors Decision)

SUBJECT: Request to replace an existing, nonconforming deck on the same footprint, with the addition of one wall and a roof which would constitute an expansion of a nonconforming structure.

PLANNER: Tom Soppe, Associate Planner

TABLE OF CONTENTS

SPECIFIC DATA

OWNER/ APPLICANT:	Richard Ahyou, 2155 5th Ave., West Linn, OR 97068
CONSULTANT:	Todd Larios, 4804 NE 7th Avenue, Portland, OR 97211
SITE LOCATION:	2155 5th Avenue
SITE SIZE:	Approx. 10,435 sq. ft.
LEGAL DESCRIPTION:	3 1E 02AB, Tax Lot 5700
COMP PLAN DESIGNATION:	Low-Density Residential
ZONING:	R-10, Single-Family Residential
APPROVAL CRITERIA:	CDC Chapters 66 Nonconforming Structures
120-DAY RULE:	The application was declared complete on August 31, 2009. The 120-day period therefore ends on December 29, 2009.
PUBLIC NOTICE:	Notice was mailed to property owners within 100 feet of the subject property and the Willamette Neighborhood Association on September 3, 2009. The notice was also posted on the City's website. Therefore, public notice requirements of Community Development Code Chapter 99 have been met.

EXECUTIVE SUMMARY

The subject house, located in the R-10 zone in the Willamette neighborhood, is a nonconforming structure in that the west side of the house is less than 7.5 feet from the side property line as required by CDC Section 11.070 (5) (b) Most of the house and an existing elevated deck are located 5 feet from the western side property line (see the attached site plan, Exhibit PD-4, page 37). However, a small area at the front of the house is only one foot from the side property line and one small "bumpout" near the rear of the house is approximately 3 feet from the property line. Per CDC Section 38.060(F), the existing deck is nonconforming as well as the house; in that decks over 30 inches in floor height must meet the zoning setback. The deck is over 30 inches in floor height (it is located above a patio that is accessed from a daylight basement). The applicant seeks to replace the existing deck with a new deck on the same footprint, put a roof over it and add a wall along the west side (as depicted in Exhibit PD-4, pages 12 and 13). This constitutes the expansion of a nonconforming structure, in that adding the roof and wall to the nonconforming deck would add building height and mass to the deck area and create an additional projection of the roof eave into the setback. .

PUBLIC COMMENTS

No public comments have been received.

RECOMMENDATION

Based on findings contained in the applicant's submittal in the City record, staff finds that there are sufficient grounds to **approve** this application (MISC-09-11) subject to the following conditions of approval:

1. The expansion of the nonconforming structure shall conform to the drawings contained in Exhibit PD-4 on pages 12, 13, 19 and 21.

2. The eaves of the proposed new section of roof spanning the deck shall maintain a minimum 3 foot setback from the property line, consistent with CDC Section 38.060(B).

3. This approval shall expire 3 years from the effective date of this decision. .

I declare to have no interest in the outcome of this decision due to some past or present involvement with the applicant, the subject property, or surrounding properties, and therefore, can render an impartial decision. The provisions of the Community Development Code Chapter 99 have been met.

John Sonnen
JOHN SONNEN, Planning Director

9/18/2009
DATE

Appeals to this decision must be filed with the West Linn Planning Department within 14 days of mailing date. Cost is $2500. The appeal must be filed by an individual who has established standing by submitting written comments prior to or on September 18, 2009. Approval will lapse 3 years from effective approval date unless an extension is obtained.

Mailed this 21 day of September, 2009.
Therefore, the 14-day appeal period ends at 5 p.m., on

October 5, 2009.

p:/devrvw/staff reports/MIS-09-11

ADDENDUM

APPROVAL CRITERIA AND FINDINGS

MIS-09-11

Staff recommends adoption of the findings for approval contained within the applicant's submittal, with the following exceptions and additions:

66.080 ENLARGEMENT OR ALTERATION TO A NONCONFORMING STRUCTURE: PROCESS AND APPROVAL STANDARDS

A. An enlargement or alteration to a nonconforming structure containing a nonconforming use may be permitted subject to review and approval by the Planning Commission under the provisions of Section 99.060(B) and Sections 65.120 through 65.140.

B. An enlargement or alteration to a nonconforming structure containing a conforming use may be permitted subject to the following:

> *1. If the enlargement, in and of itself, meets all provisions of this Code, the enlargement will be permitted. This exception does not preclude design review or other applicable provisions of this Code. (ORD. 1192)*
>
> *2. If the enlargement, in and of itself, does not meet all provisions of the Code, review and approval by the Planning Director for single-family structures, and by the Planning Commission for non-single-family structures under the provisions of Section 99.060(B) is required subject to the following standards. (ORD. 1192)*
>
> > *a. The enlargement or alteration will not change the nonconformity; and*
> >
> > *b. All other applicable ordinance provisions will be met.*

FINDING NO. 1:
The requested enlargement of the deck located at 2155 5th Avenue does not meet all the provisions of the code. Like the deck it replaces, it breeches the 7.5 foot setback from the west property line. However, the requested enlargement will not change the nonconformity because the requested new deck will not extend closer to the west property line than the deck it replaces. The new roof over the deck would project further into the setback than the deck

would, but that is allowed per CDC Section 38.060(B). Therefore, staff concludes that this proposal does not worsen the nonconformity since the roof line and wall line of the least nonconforming portion of the house, located 5 feet form the property line, are proposed to be extended, not the roof lines or wall lines located 1 to 3 feet from the property line. By adding a wall with a small window along the deck frontage that previously contained no wall or screening, the applicant alleviates some of the privacy issues that can arise due to houses being closer to the property line than allowed by the zoning, despite that new building mass is being added. All other applicable CDC provisions will be met, as long as the eaves of the new roof area above the deck do not come within 3 feet of the property line, in keeping with CDC 38.060(B) which requires a 3 foot setback for eaves. Condition of Approval 2 requires the eaves be no less than 3 feet from the property line. The criteria for expanding a nonconforming structure are met.

EXHIBITS

AFFIDAVIT OF NOTICE

We, the undersigned do hereby certify that, in the interest of the party (parties) initiating a proposed land use, the following took place on the dates indicated below:

GENERAL
File No. M15C-09-11 Applicant's Name Richard Ahyow
Development Name Nonconforming Use - 2155 5th Ave
Scheduled Meeting/Decision Date 9/23/09

NOTICE: Notices were sent at least 20 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE A _____

A. The applicant (date) _____ (signed) _____
B. Affected property owners (date) _____ (signed) _____
C. School District/Board (date) _____ (signed) _____
D. Other affected gov't. agencies (date) _____ (signed) _____
E. Affected neighborhood assns. (date) _____ (signed) _____
F. All parties to an appeal or review (date) _____ (signed) _____

At least 10 days prior to the scheduled hearing or meeting, notice was published/posted:

Tidings (published date) _____ (signed) _____
City's website (posted date) _____ (signed) _____

SIGN

At least 10 days prior to the scheduled hearing, meeting or decision date, a sign was posted on the property per Section 99.080 of the Community Development Code.

(date) _____ (signed) _____

NOTICE: Notices were sent at least 14 days prior to the scheduled hearing, meeting, or decision date per Section 99.080 of the Community Development Code. **(check below)**

TYPE B X

✓ A. The applicant (date) 9/3/09 (signed) [signature]
✓ B. Affected property owners (date) 9/3/09 (signed) [signature]
C. School District/Board (date) _____ (signed) _____
D. Other affected gov't. agencies (date) _____ (signed) _____
✓ E. Affected neighborhood assns. (date) 9/3/09 (signed) [signature]
Willamette v all

Notice was posted on the City's website at least 10 days prior to the scheduled hearing or meeting.
Date: 9/2/09 (signed) [signature]

STAFF REPORT mailed to applicant, City Council/Planning Commission and any other applicable parties 10 days prior to the scheduled hearing.

(date) _____ (signed) _____

FINAL DECISION notice mailed to applicant, all other parties with standing, and, if zone change, the County surveyor's office.

(date) _____ (signed) _____

CITY OF WEST LINN
PLANNING DIRECTOR DECISION

FILE NO. MIS-09-11

The West Linn Planning Director is considering the request of Richard Ahyou for a permit to enlarge/alter a non-conforming structure by replacing an existing unroofed, unwalled deck with a new deck on the same footprint that has a roof and a west wall. The site is located at 2155 5th Avenue. The permit is needed because the existing and proposed deck, as well as sections of the house, are within 7.5 feet of the property's west property line in the R-10 zone. The decision will be based on the approval criteria in Chapter 66 of the Community Development Code (CDC). The approval criteria from the Community Development Code (Zoning Code) are available for review at City Hall, at the City Library, and on the Planning Department's page of the City's website under Documents/CDC.

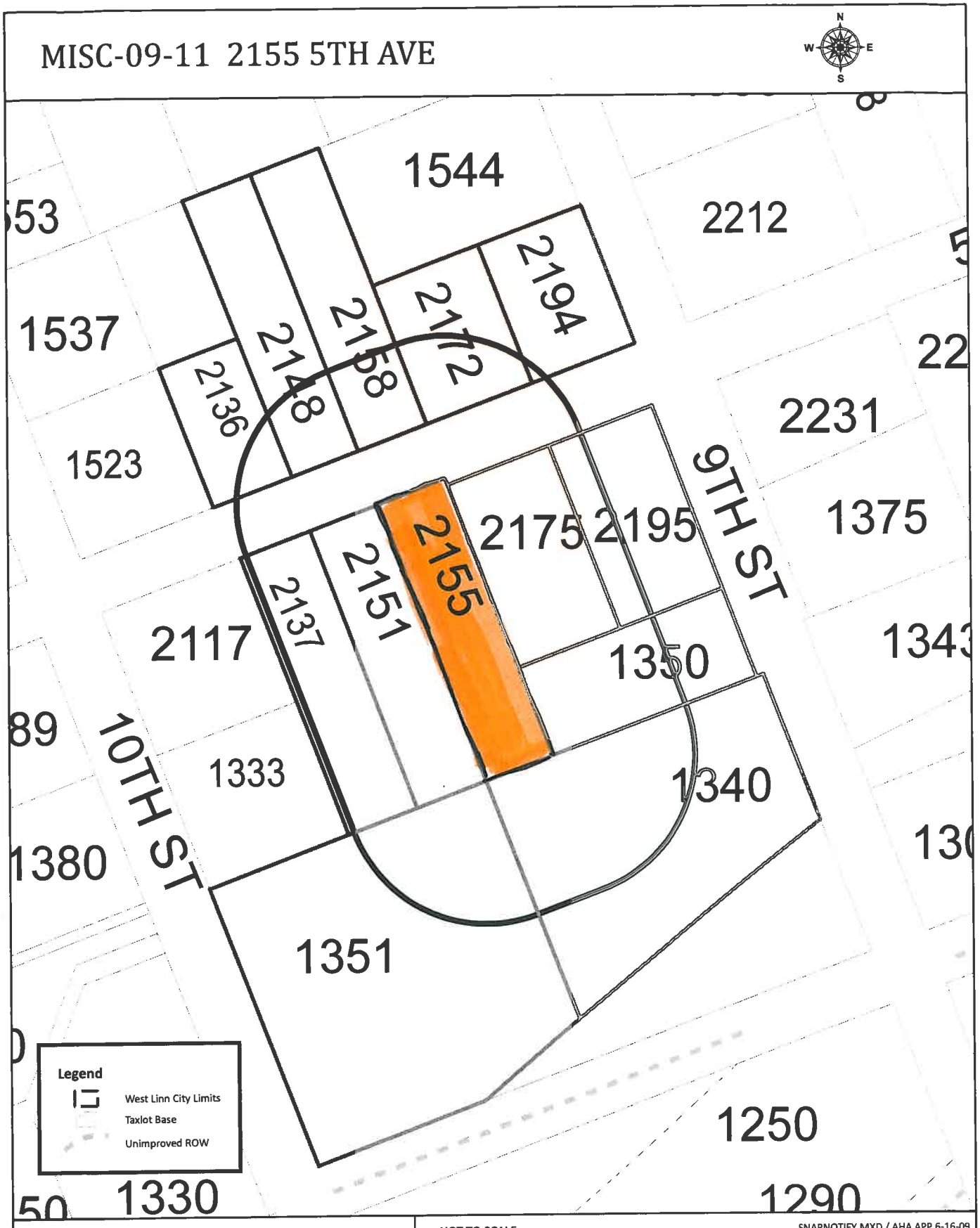
You have been notified because County records show you own property within 100 feet of the site located at Tax Lot 5700, Clackamas County Assessor's Map 3-1E-02AB.

All relevant materials in the above noted file are available for inspection at no cost, or copies may be obtained for a minimal charge per page. Although there is no public hearing, your comments and ideas can definitely influence the final decision of the Planning Director. Planning staff looks forward to discussing the application with you. **The final decision is expected to be made on, and no earlier than, September 18, 2009**, so please get in touch with us prior to this date. For further information, please contact Tom Soppe, Associate Planner, at City Hall, 22500 Salamo Rd., West Linn, OR 97068, telephone (503) 742-8660, or e-mail to tsoppe@westlinnoregon.gov

Any appeals to this decision must be filed within 14 days of the final decision date with the Planning Department. Failure to raise an issue in person or by letter, or failure to provide sufficient specificity to afford the decision-maker an opportunity to respond to the issue, precludes the raising of the issue at a subsequent time on appeal or before the Land Use Board of Appeals.

p:\devrvw\p.d. notices\notice-MIS-09-11

MISC-09-11 2155 5TH AVE



This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Taxlot Base Source: Metro RLIS

NOT TO SCALE

West Linn GIS GEOGRAPHIC INFORMATION SYSTEMS

SNAPNOTIFY.MXD / AHA APP 6-16-09

User Name: T Zak

Map Creation Date: Sep 02, 2009

AHYOU RICHARD F & EMILY CREER
2155 5TH AVE
WEST LINN, OR 97068

BAILEY AMY E & ROB
2194 5TH AVE
WEST LINN, OR 97068

DAVIS DIRK T
1810 RADCLIFFE CT
WEST LINN, OR 97068

DENNIS GARY ALLEN
2148 5TH AVE
WEST LINN, OR 97068

DUNNINGTON LIZABETH T
2136 5TH AVE
WEST LINN, OR 97068

LOONEY TRISHA
2114 SE HEMLOCK ST
PORTLAND, OR 97214

PATTERSON DEVIN L
2175 5TH AVE
WEST LINN, OR 97068

REDMAN GORDON ARTHUR & LEANNA
1340 9TH ST
WEST LINN, OR 97068

SERGEANT STEVEN C
PO BOX 1631
LAKE OSWEGO, OR 97035

SHADBEH ALI & POURAN
1760 SW 87TH
PORTLAND, OR 97225

STREIKER SCOTT M & PHYLLIS L
645 GREENLAWN AVE
DAYTON, OH 45403

SUMPTER JERRY R SR & LORI L
2158 SE 5TH AVE
WEST LINN, OR 97068

WHITNEY ROGER H
2195 5TH AVE
WEST LINN, OR 97068

TODD LARIOS
4804 NE 7TH AVE
PORTLAND, OR 97211

ALL NA

CITY HALL 22500 Salamo Rd. West Linn Oregon 97068 telephone: (503) 657 0331 fax: (503) 650 9041

CITY OF West Linn

MAILED
9/2/09

August 31, 2009

Richard Ahyou
2155 5th Avenue
West Linn, OR 97068

SUBJECT: DR-08-02

Dear Mr. Ahyou:

The Planning Department has declared your application for an expansion/enlargement of a non-conforming structure **complete** on August 31, 2009. Pursuant to Oregon Revised Statutes Chapter 227.178, the city is obliged to exhaust all local review in the next 120 days (by December 29, 2009), including any potential appeal of the director's decision to the West Linn City Council.

A public notice describing your proposal will be mailed to property owners within 100 feet of the site, allowing for a 14-day comment period. The Planning Director will then issue an administrative decision on your application after the comment period is over. You will also receive a copy of the notice, which will inform you of when the end of the comment period will occur.

Please contact me at 503-742-8660, or by email at tsoppe@ci.west-linn.or.us if you have any questions or comments, or if you wish to meet with planning staff regarding these issues.

Sincerely,

Tom Soppe
Associate Planner

c: Todd Larios, 4804 NE 7th Ave., Portland, OR 97211

p:/devrvw/completeness check/compl-MIS-09-11

CITY OF
West Linn
PLANNING AND DEVELOPMENT

FILE NO.: **MISC-09-11**

REQUEST: **PERMIT TO ENLARGE/ALTER A NON-CONFORMING STRUCTURE, FOR NEW REPLACEMENT DECK WITH ROOF AND WALL, AT 2155 5TH AVENUE**

APPLICANTS SUBMITTAL

T 503-888-9419

FROM THE DESK OF
LARIOS

CCB#143240

August 27, 2009
City of West Linn

Dear Recipient,

I have met with Tom Soppe with the City of West Linn for a Pre-Application meeting regarding the proposed changes and additions to Richard Ahyous Deck. We realize that the current deck does not meet current set back codes. Also we have learned that parts of the house are even closer to the property lines. We propose to rebuild the current deck making it stronger and visually more appealing. The proposed addition to the deck, is to extend the roof of the house over the deck. Building a new deck and extending the roof would not bring the house closer to conforming to the current codes, but would also not put the house or deck further into non- compliance. The finished deck and roof would remain at the same distance from the property line as the current deck and house are. Thank you for your consideration.

Todd Larios Todd Larios Aug 27, 09

General Contractor

RECEIVED
AUG 27 2009
PLANNING & BUILDING
CITY OF WEST LINN
INT._____TIME_____

4804 NE 7TH AVE PORTLAND ORE 97211

DEVELOPMENT REVIEW APPLICATION

B

MI-09-4

West Linn

TYPE OF REVIEW (Please check all boxes that apply):

[ ]	Annexation	[X]	Non-Conforming Lots, Uses & Structures
[ ]	Appeal and Review *	[ ]	One-Year Extension *
[ ]	Conditional Use	[ ]	Planned Unit Development
[ ]	Design Review	[ ]	Pre-Application Meeting *
[ ]	Easement Vacation	[ ]	Quasi-Judicial Plan or Zone Change
[ ]	Extraterritorial Ext. of Utilities	[ ]	Street Vacation
[ ]	Final Plat or Plan	[ ]	Subdivision
[ ]	Flood Plain Construction	[ ]	Temporary Uses *
[ ]	Hillside Protection and Erosion Control	[ ]	Tualatin River Greenway
[ ]	Historic District Review	[ ]	Variance
[ ]	Legislative Plan or Change	[ ]	Water Resource Area Protection/Wetland
[ ]	Lot Line Adjustment * /**	[ ]	Willamette River Greenway
[ ]	Minor Partition (Preliminary Plat or Plan)	[ ]	Other/Misc

Home Occupation / Pre-Application / Sidewalk Use Application * / Permanent Sign Review * / Temporary Sign Application require individual application forms available in the forms and application section of the City Website or at City Hall.

TOTAL FEES/DEPOSIT _____ *** No CD required / ** Only one copy needed**

Richard AHYOU 2155 5th Ave West Linn 97068

OWNER'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)
Todd LARIOS	4804 NE 7th Ave	Portland	OR	503-888-9419

APPLICANT'S	ADDRESS	CITY	ZIP	PHONE(res.& bus.)

CONSULTANT	ADDRESS	CITY	ZIP	PHONE

SITE LOCATION 2155 5th Ave West Linn 97068

Assessor's Map No.: _____ **Tax Lot(s):** _____ **Total Land Area:** _____

1. All application fees are non-refundable (excluding deposit).
2. The owner/applicant or their representative should be present at all public hearings.
3. A denial or grant may be reversed on appeal.. No permit will be in effect until the appeal period has expired.
4. **Four (4) complete hard-copy sets (single sided) of application materials must be submitted with this application. One (1) complete set of digital application materials must also be submitted on CD in PDF format.**

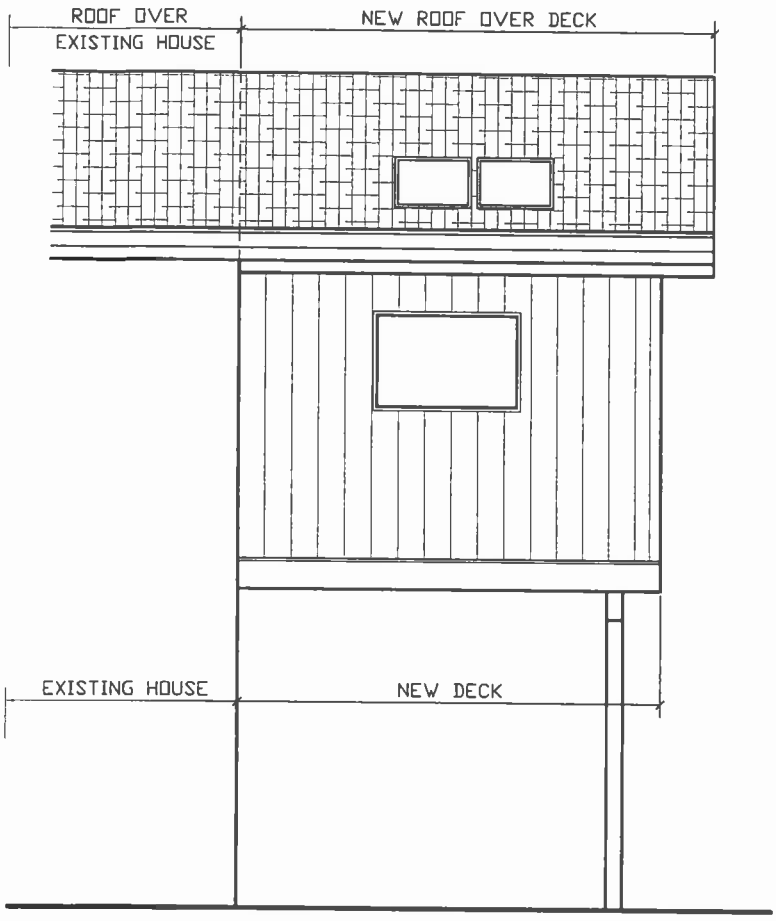
The undersigned property owner(s) hereby authorizes the filing of this application, and authorizes on site review by authorized staff. I hereby agree to comply with all code requirements applicable to my application.

SIGNATURE OF PROPERTY OWNER(S)
X Richard AHYOU Date Aug 5 09

SIGNATURE OF APPLICANT(S)
X Todd Larios Date Aug 25, 09

BY SIGNING THIS APPLICATION, THE CITY IS AUTHORIZED REASONABLE ACCESS TO THE PROPERTY. ACCEPTANCE OF THIS APPLICATION DOES NOT INFER A COMPLETE SUBMITTAL. COMPLETENESS WILL BE DETERMINED WITHIN 30 DAYS OF SUBMITTAL.

PLANNING AND BUILDING; 22500 SALAMO RD #1000; WEST LINN, OR 97068;
PHONE: 656-4211 FAX: 656-4106



WEST ELEVATION

SCALE: 1/4" = 1'-0"

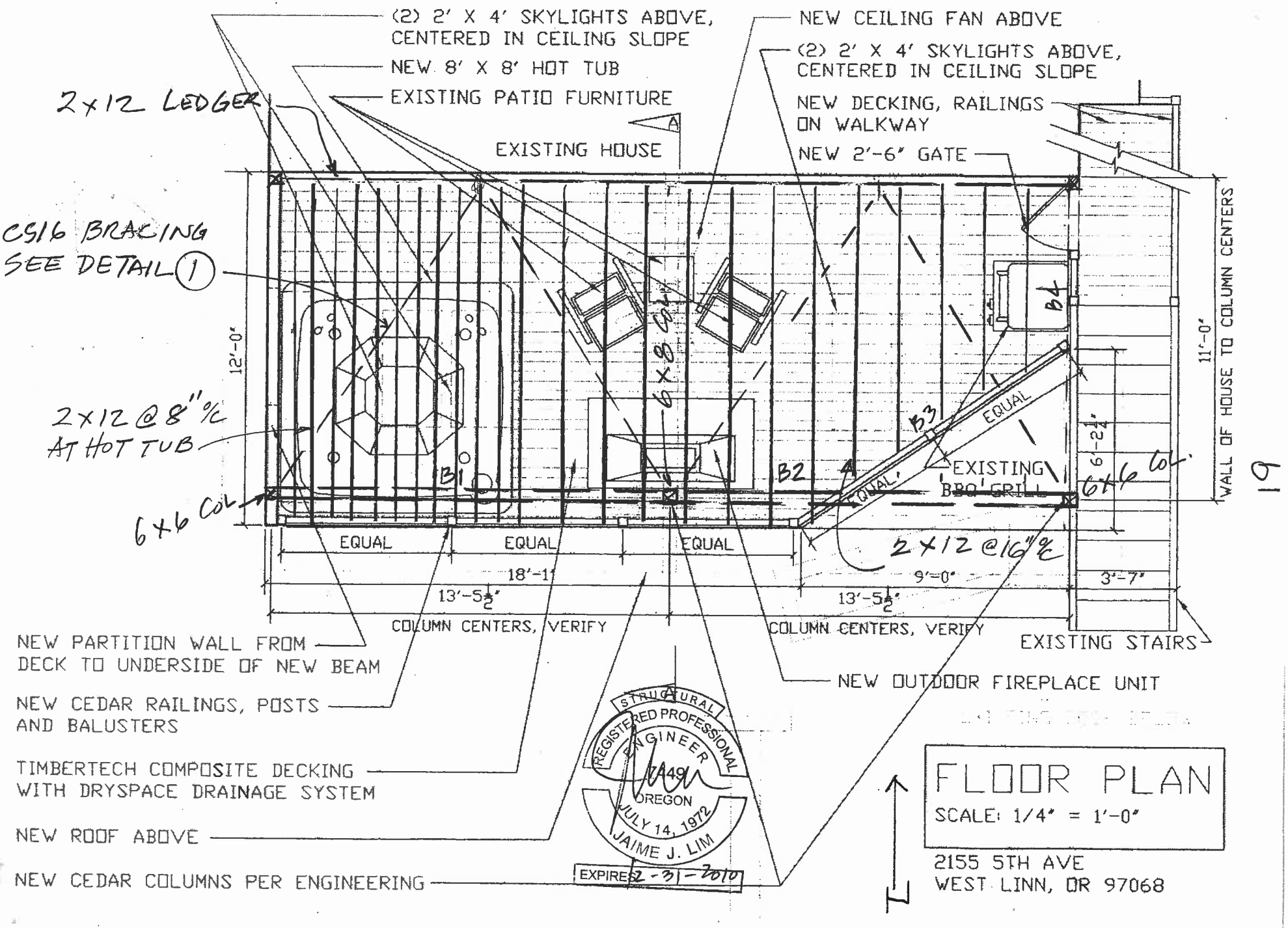
2155 5TH AVE
WEST LINN, OR 97068

EAST ELEVATION

SCALE: 1/4" = 1'-0"

2155 5TH AVE
WEST LINN, OR 97068

10

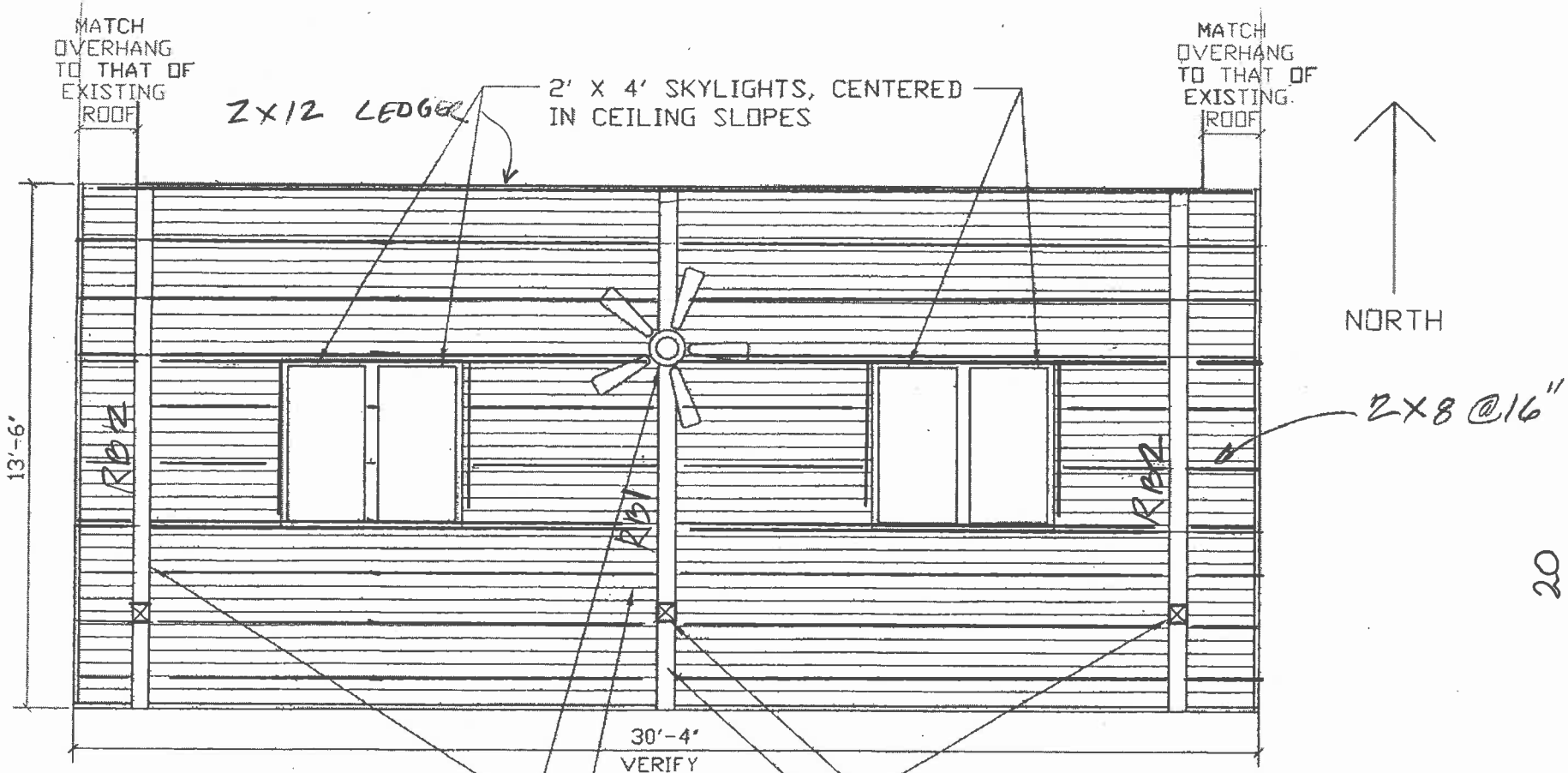


FLOOR PLAN

SCALE: 1/4" = 1'-0"

2155 5TH AVE
WEST LINN, OR 97068

19



STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 7449 OREGON JULY 14, 1972 JAIME J. LIM
EXPIRES:

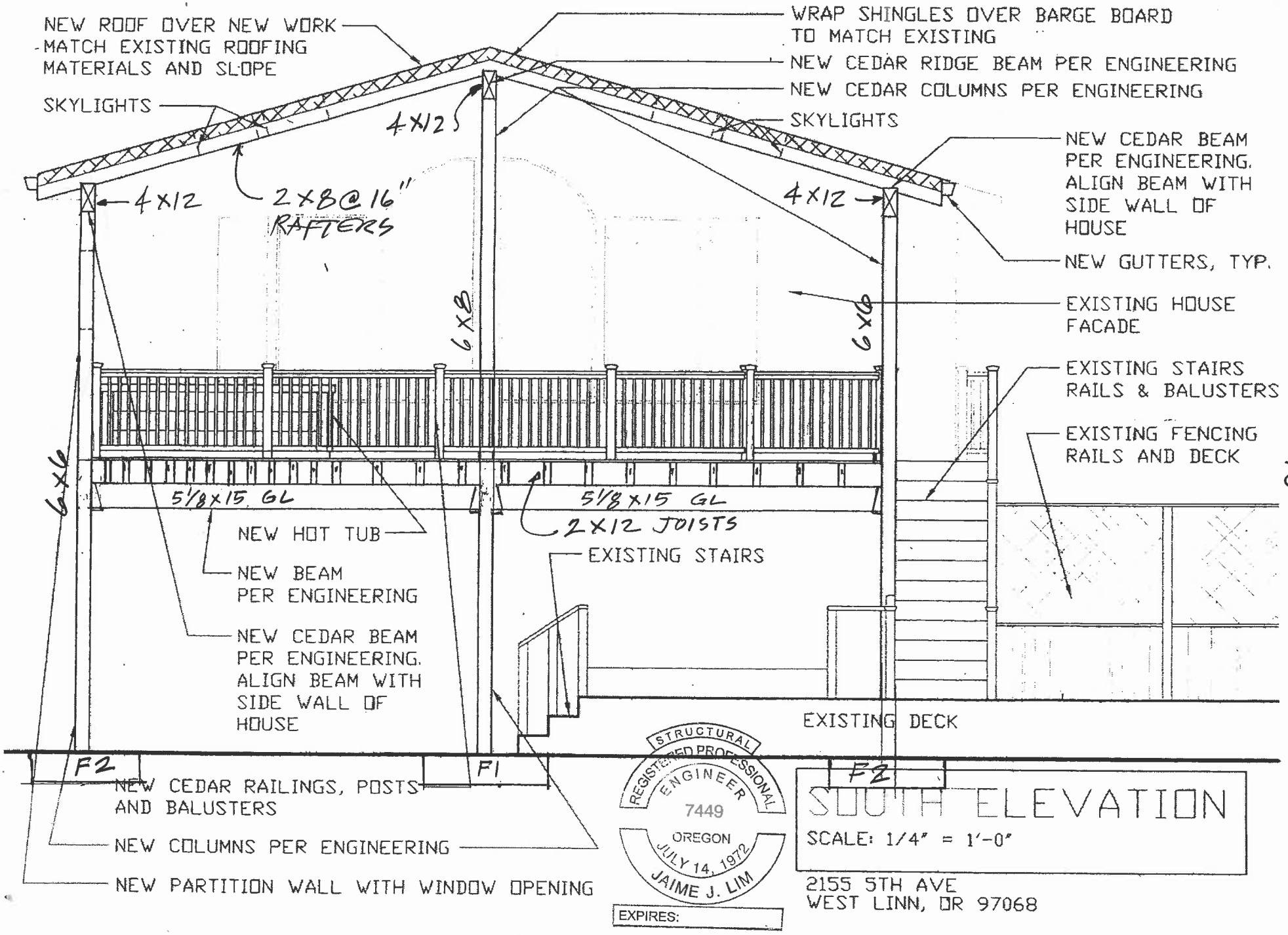
REFLECTED CEILING PLAN

SCALE: 1/4" = 1'-0"

2155 5TH AVE
WEST LINN, OR 97068

20

W


NEW ROOF OVER NEW WORK
MATCH EXISTING ROOFING MATERIALS AND SLOPE
SKYLIGHTS
4X12
2X8@16" RAFTERS
4X12
WRAP SHINGLES OVER BARGE BOARD TO MATCH EXISTING
NEW CEDAR RIDGE BEAM PER ENGINEERING
NEW CEDAR COLUMNS PER ENGINEERING
SKYLIGHTS
NEW CEDAR BEAM PER ENGINEERING. ALIGN BEAM WITH SIDE WALL OF HOUSE
NEW GUTTERS, TYP.
4X12
6X8
6X8
EXISTING HOUSE FACADE
EXISTING STAIRS RAILS & BALUSTERS
EXISTING FENCING RAILS AND DECK
6X6
5 1/8X15 GL
5 1/8X15 GL
2X12 JOISTS
NEW HOT TUB
NEW BEAM PER ENGINEERING
NEW CEDAR BEAM PER ENGINEERING. ALIGN BEAM WITH SIDE WALL OF HOUSE
EXISTING STAIRS
EXISTING DECK
F2
F1
F2
NEW CEDAR RAILINGS, POSTS AND BALUSTERS
NEW COLUMNS PER ENGINEERING
NEW PARTITION WALL WITH WINDOW OPENING
STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
2155 5TH AVE
WEST LINN, OR 97068
21
A

UNITED ENGINEERING, INC.

Consulting Engineering * Civil * Structural * Environmental Engineering * Planning

922 N. Killingsworth St. - Suite: 1A
Portland, OR 97217 USA
Email : jaimelim@asianreporter.com

Telephone : (503) 289-7775
Fax : (503) 283-4445

BEAM SCHEDULE

MARK	SIZE	END CONNECTION	
B1	5 1/8 x 15 GLULAM	HU 5.25/16	
B2	5 1/8 x 15 GLULAM	HU5.25/16	
B3	4 X 12	HU4X12	
B4	4 X 12	HU 4 X 12	
RB1	4 X 12	HU 412	
RB2	4 X 12	HU 4 X 12	
JST 1	2 X 12	@ 16" o/c	
JST 2	2 X 12	@ 8" o/c	

FOOTING SCHEDULE

MARK	SIZE	REINFORCING	
F1	48" x 48" x 12"	#4@7" EW	
F2	36" x 36" x 12"	#4@6" EW	

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:

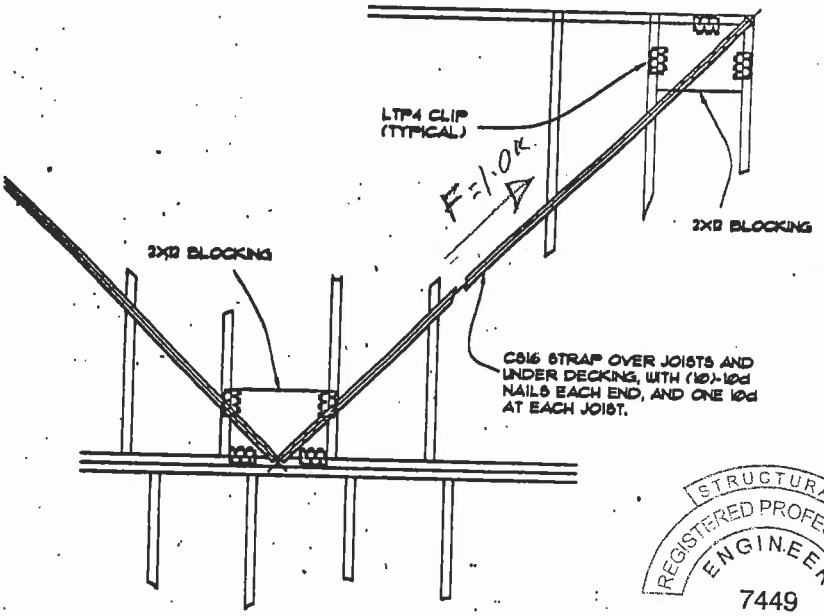
UNITED ENGINEERING, INC.

Consulting Engineering * Civil * Structural * Environmental Engineering * Planning

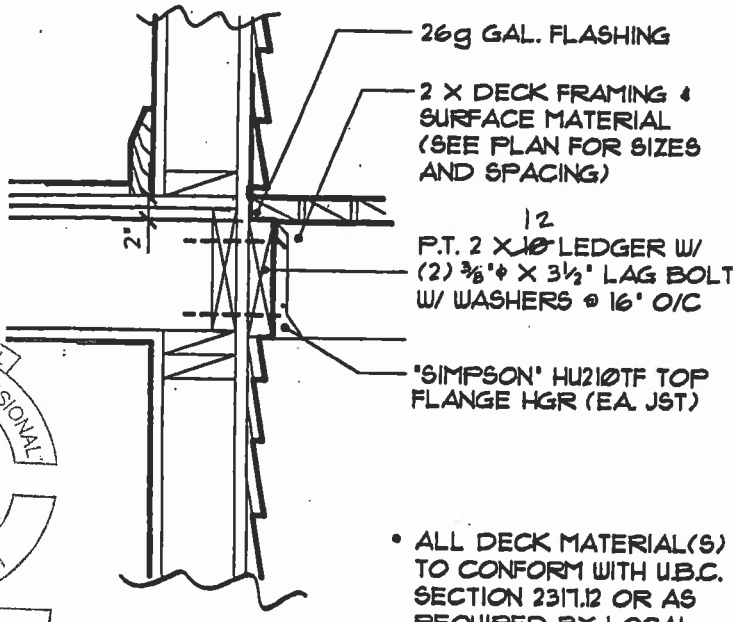
922 N. Killingsworth St. - Suite: 1A
Portland, OR 97217 USA
Email : jaimelim@asianreporter.com

Telephone : (503) 289-7775
Fax : (503) 283-4445

RICHARD AH YOU		



1 PLAN VIEW OF DECK BRACING



2 DECK LEDGER
3/4" = 1'-0"

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:

SEISMIC

DEAD LOAD = 10 PSF X 13' X 27' = 3510# + 12,000#

SEISMIC BASE SHEAR V = .20 (3510 + 12000) = 15.5^k

BRACING F = $\sqrt{2}$ (15.5^k) = 3.1^k

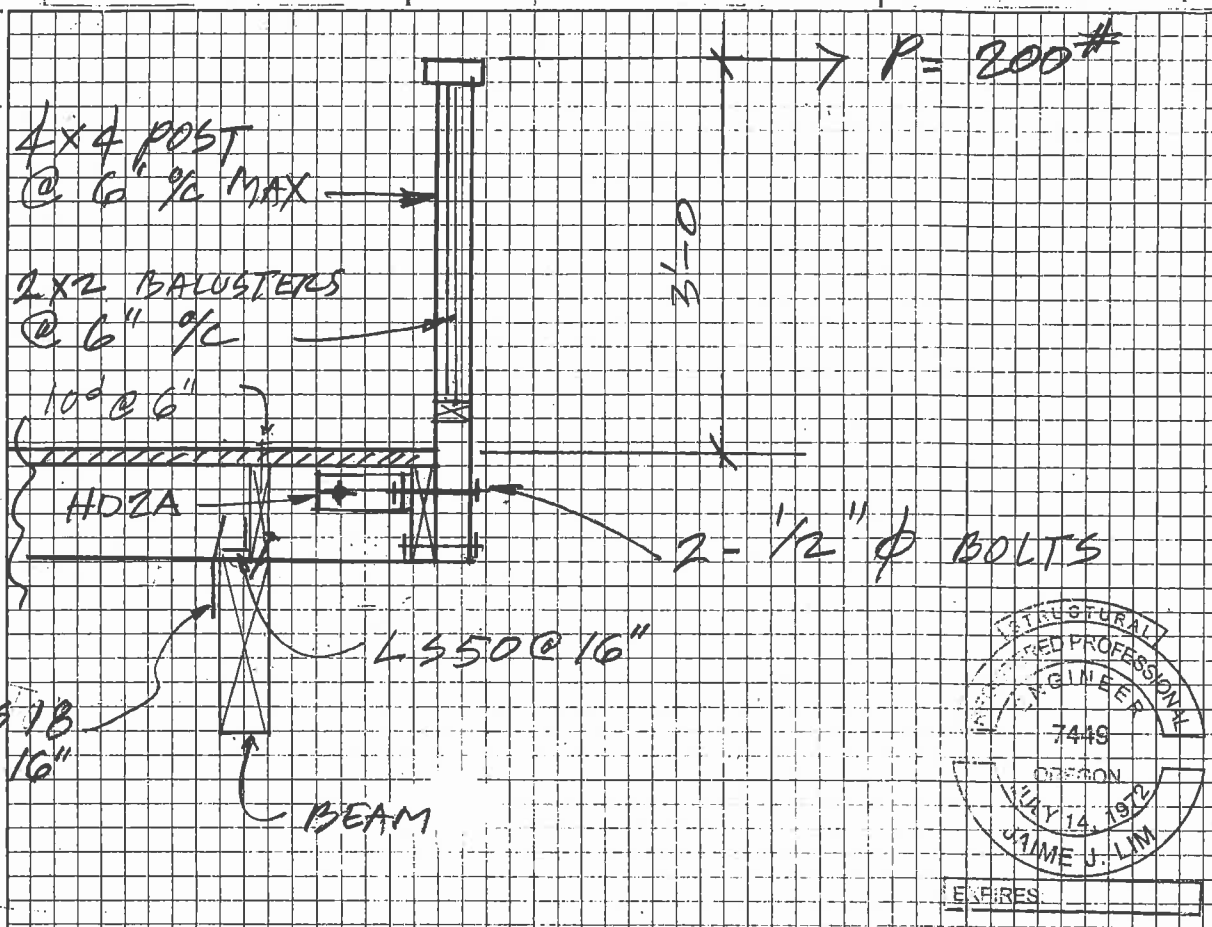
USE SIMPSON CS16 STRAP BRACING (2 SETS)

UNITED ENGINEERING, INC.

Consulting Engineering * Civil * Structural * Environmental Engineering * Planning

922 N. Killingsworth St. - Suite: 1A
Portland, OR 97217 USA
Email : jaimelim@asianreporter.com

Telephone : (503) 289-7775
Fax : (503) 283-4445



RAILING SUPPORT

P = 200 # M = 200# x 3' = 600 1-# $S_R = \frac{600}{1200} = .50 IN^3$

USE 4 x 4 POST @ 6'-0 o/c

BOLTING REQ'D = $\frac{600}{.5}$ = 1200 # = T

USE 1/2" ϕ THRU BOLTS WITH 2" ϕ WASHERS

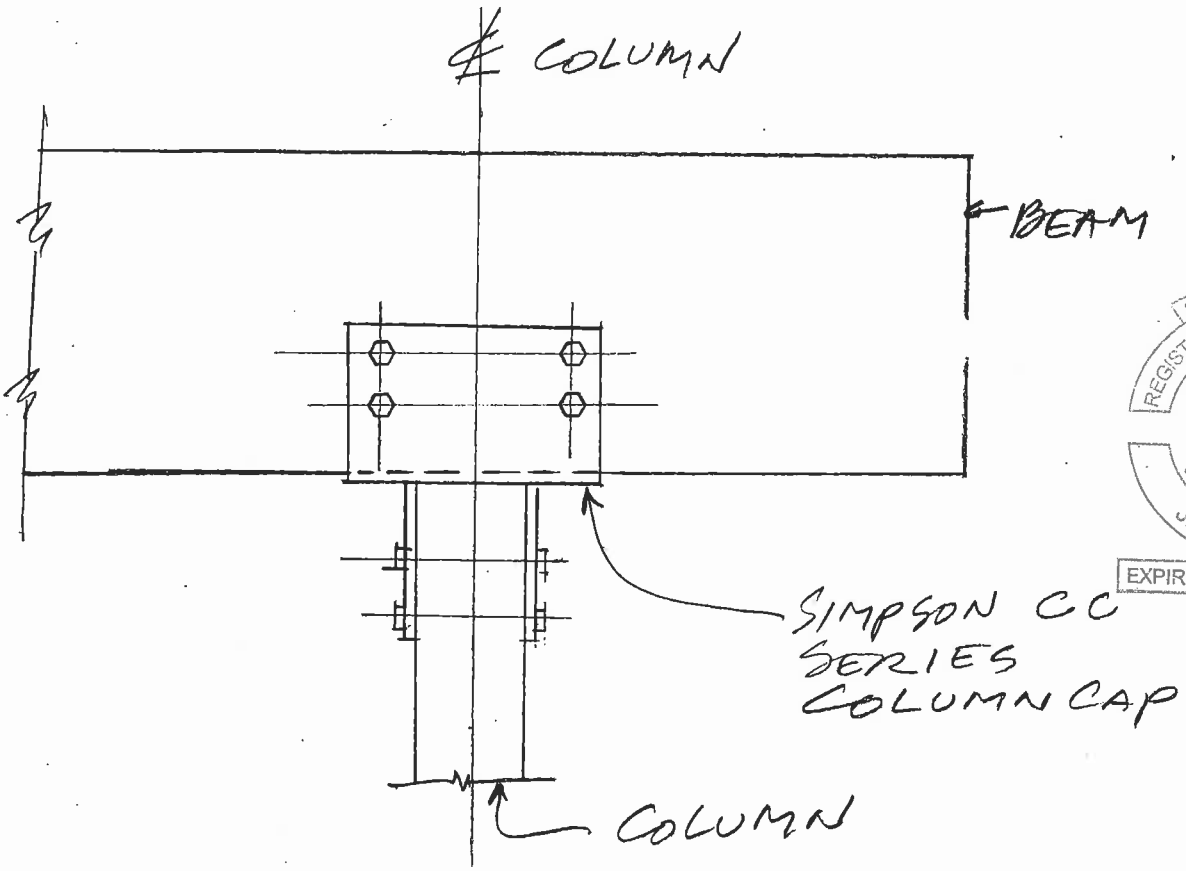
8

UNITED ENGINEERING, INC.

Consulting Engineering * Civil * Structural * Environmental Engineering * Planning

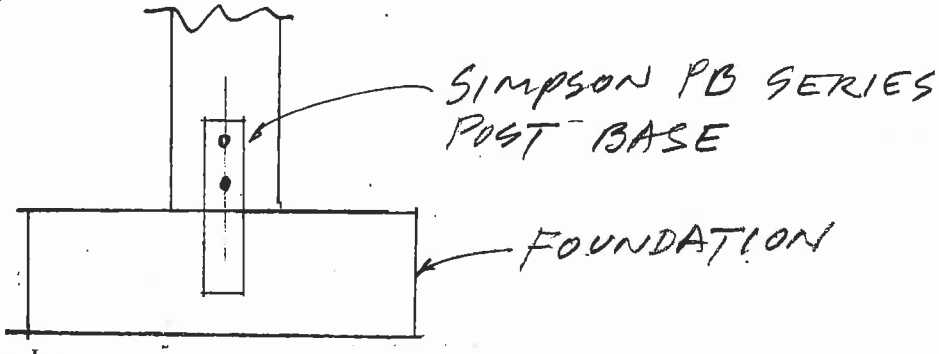
922 N. Killingsworth St. - Suite: 1A
Portland, OR 97217 USA
Email : jaimelim@asianreporter.com

Telephone : (503) 289-7775
Fax : (503) 283-4445



STRUCTURAL
REGISTERED PROFESSIONAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:

X BEAM COLUMN DETAIL



Project: Richard Ahyou
Location: Floor Beam B1
Uniformly Loaded Floor Beam
[2006 International Building Code(2005 NDS)]
5.125 IN x 15.0 IN x 13.5 FT
24F-E4 - E-Rated Western Species - Dry Use
Section Adequate By: 0.1%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:30:40 AM

DEFLECTIONS	Center	
Live Load	0.00	IN L/MAX
Dead Load	0.44	in
Total Load	0.44	IN L/371

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	0 lb	0 lb
Dead Load	10237 lb	10237 lb
Total Load	10237 lb	10237 lb
Bearing Length	3.07 in	3.07 in

BEAM DATA	Center
Span Length	13.5 ft
Unbraced Length-Top	0 ft
Floor Duration Factor	1.00
Camber Adj. Factor	1
Camber Required	0.44
Notch Depth	0.00

MATERIAL PROPERTIES
24F-E4 - E-Rated Western Species

		Base Values		Adjusted	
Bending Stress:	Fb =	2400	psi	*Controlled by:*	
	Fb_cmpr =	1450	psi	Fb' =	2160 psi
	Cd=0.90				
Shear Stress:	Fv =	265	psi	Fv' =	239 psi
	Cd=0.90				
Modulus of Elasticity:	E =	1800	ksi	E' =	1800 ksi
Min. Mod. of Elasticity:	E_min =	930	ksi	E_min' =	930 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	650	psi	Fc - ⊥' =	650 psi

Controlling Moment: 34552 ft-lb
6.75 ft from left support
Created by dead loads only on all span(s).
Controlling Shear: 8395 lb
At a distance d from support.
Created by dead loads only on all span(s).

Comparisons with required sections:	Req'd	Provided
Section Modulus:	191.95 in3	192.19 in3
Area (Shear):	52.8 in2	76.88 in2
Moment of Inertia (deflection):	932.74 in4	1441.41 in4
Moment:	34552 ft-lb	34594 ft-lb
Shear:	8395 lb	12223 lb

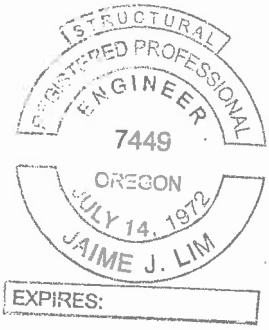
LOADING DIAGRAM

FLOOR LOADING

		Side 1	Side 2
Floor Live Load	FLL =	40 psf	40 psf
Floor Dead Load	FDL =	15 psf	15 psf
Floor Tributary Width	FTW =	0 ft	0 ft
Wall Load	WALL =	1500 plf	

BEAM LOADING

Beam Total Live Load:	wL =	0 plf
Beam Total Dead Load:	wD =	1500 plf
Beam Self Weight:	BSW =	17 plf
Total Maximum Load:	wT =	1517 plf



NOTES

10

Project: Richard Ahyou
Location: Floor Beam B2
Uniformly Loaded Floor Beam
[2006 International Building Code(2005 NDS)]
5.125 IN x 15.0 IN x 13.5 FT
24F-E4 - E-Rated Western Species - Dry Use
Section Adequate By: 134.8%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

page of

StruCalc Version 8.0.98.0 7/24/2009 9:31:37 AM

DEFLECTIONS	Center	
Live Load	0.00	IN L/MAX
Dead Load	0.19	in
Total Load	0.19	IN L/870

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A		B	
Live Load	0	lb	0	lb
Dead Load	4365	lb	4365	lb
Total Load	4365	lb	4365	lb
Bearing Length	1.31	in	1.31	in

BEAM DATA	Center	
Span Length	13.5	ft
Unbraced Length-Top	0	ft
Floor Duration Factor	1.00	
Camber Adj. Factor	1	
Camber Required	0.19	
Notch Depth	0.00	

LOADING DIAGRAM

FLOOR LOADING

		Side 1	Side 2
Floor Live Load	FLL =	40 psf	40 psf
Floor Dead Load	FDL =	15 psf	15 psf
Floor Tributary Width	FTW =	0 ft	0 ft
Wall Load	WALL =	630 plf	

BEAM LOADING

Beam Total Live Load:	wL =	0 plf
Beam Total Dead Load:	wD =	630 plf
Beam Self Weight:	BSW =	17 plf
Total Maximum Load:	wT =	647 plf

MATERIAL PROPERTIES
24F-E4 - E-Rated Western Species

		Base Values		Adjusted	
Bending Stress:	Fb =	2400	psi	*Controlled by:*	
	Fb_cmpr =	1450	psi	Fb' =	2160 psi
	Cd=0.90				
Shear Stress:	Fv =	265	psi	Fv' =	239 psi
	Cd=0.90				
Modulus of Elasticity:	E =	1800	ksi	E' =	1800 ksi
Min. Mod. of Elasticity:	E_min =	930	ksi	E_min' =	930 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	650	psi	Fc - ⊥' =	650 psi

Controlling Moment: 14732 ft-lb
6.75 ft from left support
Created by dead loads only on all span(s).
Controlling Shear: -3579 lb
At a distance d from support.
Created by dead loads only on all span(s).

Comparisons with required sections:	Req'd	Provided
Section Modulus:	81.84 in3	192.19 in3
Area (Shear):	22.51 in2	76.88 in2
Moment of Inertia (deflection):	397.7 in4	1441.41 in4
Moment:	14732 ft-lb	34594 ft-lb
Shear:	-3579 lb	12223 lb

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 7449 OREGON JULY 14, 1972 JAIME J. LIM EXPIRES:

NOTES

Project: Richard Ahyou
Location: Multi-Span Roof Beam RB1
Multi-Span Roof Beam
[2006 International Building Code(2005 NDS)]
3.5 IN x 11.5 IN x 13.5 FT (10 + 3.5)
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 13.3%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:53:31 AM

DEFLECTIONS	Center		Right	
Live Load	0.11	IN L/1082	-0.12	IN L/338
Dead Load	0.05	in	-0.03	in
Total Load	0.16	IN L/750	-0.15	IN L/273

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS	A		B	
Live Load	1750	lb	3189	lb
Dead Load	963	lb	2000	lb
Total Load	2713	lb	5189	lb
Bearing Length	1.24	in	2.37	in

BEAM DATA	Center	Right
Span Length	10 ft	3.5 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	10 ft	3.5 ft
Roof Pitch	1 :12	
Roof Duration Factor	1.15	
Notch Depth	0.00	

LOADING DIAGRAM

ROOF LOADING		Center	Right
Roof Live Load	RLL =	25 psf	25 psf
Roof Dead Load	RDL =	15 psf	15 psf
Roof Tributary Width Side One	TW1 =	7 ft	7 ft
Roof Tributary Width Side Two	TW2 =	7 ft	7 ft
Wall Load	WALL =	0 plf	0 plf

BEAM LOADING	Center	Right
Total Live Load	350 plf	350 plf
Total Dead Load (Adjusted for Roof Pitch)	211 plf	211 plf
Beam Self Weight	9 plf	9 plf
Total Load	569 plf	569 plf

MATERIAL PROPERTIES
#2 - Douglas-Fir-Larch

	Base Values		Adjusted	
Bending Stress:	Fb =	900 psi	Fb' =	1139 psi
	Cd=1.15 CF=1.10			
Shear Stress:	Fv =	180 psi	Fv' =	207 psi
	Cd=1.15			
Modulus of Elasticity:	E =	1600 ksi	E' =	1600 ksi
Min. Mod. of Elasticity:	E_min =	580 ksi	E_min' =	580 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 6462 ft-lb
4.8 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -2684 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	68.11 in3	77.15 in3
Area (Shear):	19.45 in2	40.25 in2
Moment of Inertia (deflection):	157.48 in4	443.59 in4
Moment:	6462 ft-lb	7319 ft-lb
Shear:	-2684 lb	5555 lb

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER 7449 OREGON JULY 14, 1972 JAIME J. LIM
EXPIRES:

NOTES

12

Project: Richard Ahyou
Location: Multi-Span Roof Beam RB2
Multi-Span Roof Beam
[2006 International Building Code(2005 NDS)]
3.5 IN x 11.5 IN x 13.5 FT (10 + 3.5)
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 5.9%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

page / of

StruCalc Version 8.0.98.0 7/24/2009 9:54:30 AM

DEFLECTIONS	Center		Right	
Live Load	0.11	IN L/1082	-0.12	IN L/338
Dead Load	0.06	in	-0.06	in
Total Load	0.17	IN L/689	-0.19	IN L/225

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS	A	B
Live Load	1750 lb	2161 lb
Dead Load	1055 lb	1381 lb
Total Load	2805 lb	3542 lb
Bearing Length	1.28 in	1.62 in

BEAM DATA	Center	Right
Span Length	10 ft	3.5 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	10 ft	3.5 ft
Roof Pitch	1 :12	
Roof Duration Factor	1.15	
Notch Depth	0.00	

MATERIAL PROPERTIES
#2 - Douglas-Fir-Larch

	Base Values		Adjusted	
Bending Stress:	Fb = 900 psi		Fb' = 1139 psi	
	Cd=1.15 CF=1.10			
Shear Stress:	Fv = 180 psi		Fv' = 207 psi	
	Cd=1.15			
Modulus of Elasticity:	E = 1600 ksi		E' = 1600 ksi	
Min. Mod. of Elasticity:	E_min = 580 ksi		E_min' = 580 ksi	
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi		Fc - ⊥' = 625 psi	

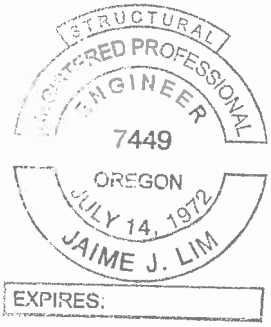
Controlling Moment: 6908 ft-lb
4.9 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -2438 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	72.82 in3	77.15 in3
Area (Shear):	17.67 in2	40.25 in2
Moment of Inertia (deflection):	177.78 in4	443.59 in4
Moment:	6908 ft-lb	7319 ft-lb
Shear:	-2438 lb	5555 lb

LOADING DIAGRAM

ROOF LOADING		Center	Right
Roof Live Load	RLL =	25 psf	25 psf
Roof Dead Load	RDL =	15 psf	15 psf
Roof Tributary Width Side One	TW1 =	7 ft	2 ft
Roof Tributary Width Side Two	TW2 =	7 ft	2 ft
Wall Load	WALL =	0 plf	0 plf

BEAM LOADING	Center	Right
Total Live Load	350 plf	100 plf
Total Dead Load (Adjusted for Roof Pitch)	211 plf	60 plf
Beam Self Weight	9 plf	9 plf
Total Load	569 plf	169 plf



NOTES

13

Project: Richard Ahyou
Location: Column 1
Column
[2006 International Building Code(2005 NDS)]
5.5 IN x 5.5 IN x 8.0 FT
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 16.4%

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

page / of

StruCalc Version 8.0.98.0 7/24/2009 9:33:22 AM

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	10000	lb
Dead Load:	Vert-DL-Rxn =	5052	lb
Total Load:	Vert-TL-Rxn =	15052	lb

COLUMN DATA

Total Column Length:	8	ft
Unbraced Length (X-Axis) Ly:	8	ft
Unbraced Length (Y-Axis) Ly:	8	ft
Column End Condtion-K (e):	1	
Axial Load Duration Factor	1.00	

COLUMN PROPERTIES
#2 - Douglas-Fir-Larch

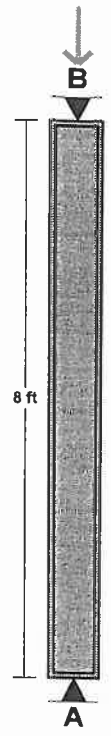
	Base Values		Adjusted	
Compressive Stress:	Fc = 700 psi		Fc' = 595	psi
	Cd=1.00 Cp=0.85			
Bending Stress (X-X Axis):	Fbx = 750 psi		Fbx' = 750	psi
	Cd=1.00 CF=1.00			
Bending Stress (Y-Y Axis):	Fby = 750 psi		Fby' = 750	psi
	Cd=1.00 CF=1.00			
Modulus of Elasticity:	E = 1300 ksi		E' = 1300	ksi
Min. Mod. of Elasticity:	E_min = 470 ksi		E_min' = 470	ksi

Column Section (X-X Axis):	dx =	5.5	in
Column Section (Y-Y Axis):	dy =	5.5	in
Area:	A =	30.25	in2
Section Modulus (X-X Axis):	Sx =	27.73	in3
Section Modulus (Y-Y Axis):	Sy =	27.73	in3
Slenderness Ratio:	Lex/dx =	17.45	
	Ley/dy =	17.45	

Column Calculations (Controlling Case Only):
Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	498	psi
Allowable Compressive Stress:	Fc' =	595	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	750	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	750	psi
Combined Stress Factor:	**CSF =**	**0.84**	

LOADING DIAGRAM



AXIAL LOADING

Live Load:	PL =	10000	lb
Dead Load:	PD =	5000	lb
Column Self Weight:	CSW =	52	lb
Total Load:	PT =	15052	lb

NOTES

STRUCTURAL REGISTERED PROFESSIONAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:

14

Project: Richard Ahyou
Location: Column 2
Column
[2006 International Building Code(2005 NDS)]
5.5 IN x 5.5 IN x 8.0 FT
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 10.8%

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:58:26 AM

VERTICAL REACTIONS

Live Load:	Vert-LL-Rxn =	10000	lb
Dead Load:	Vert-DL-Rxn =	6052	lb
Total Load:	Vert-TL-Rxn =	16052	lb

COLUMN DATA

Total Column Length:	8	ft
Unbraced Length (X-Axis) Ly:	8	ft
Unbraced Length (Y-Axis) Ly:	8	ft
Column End Condtion-K (e):	1	
Axial Load Duration Factor	1.00	

COLUMN PROPERTIES
#2 - Douglas-Fir-Larch

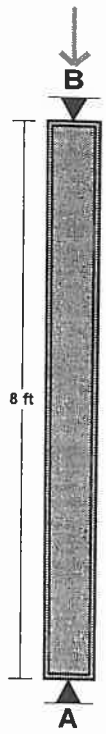
	Base Values		Adjusted	
Compressive Stress:	Fc = 700	psi	Fc' = 595	psi
	Cd=1.00 Cp=0.85			
Bending Stress (X-X Axis):	Fbx = 750	psi	Fbx' = 750	psi
	Cd=1.00 CF=1.00			
Bending Stress (Y-Y Axis):	Fby = 750	psi	Fby' = 750	psi
	Cd=1.00 CF=1.00			
Modulus of Elasticity:	E = 1300	ksi	E' = 1300	ksi
Min. Mod. of Elasticity:	E_min = 470	ksi	E_min' = 470	ksi

Column Section (X-X Axis):	dx =	5.5	in
Column Section (Y-Y Axis):	dy =	5.5	in
Area:	A =	30.25	in2
Section Modulus (X-X Axis):	Sx =	27.73	in3
Section Modulus (Y-Y Axis):	Sy =	27.73	in3
Slenderness Ratio:	Lex/dx =	17.45	
	Ley/dy =	17.45	

Column Calculations (Controlling Case Only):
Controlling Load Case: Axial Total Load Only (L + D)

Actual Compressive Stress:	Fc =	531	psi
Allowable Compressive Stress:	Fc' =	595	psi
Eccentricity Moment (X-X Axis):	Mx-ex =	0	ft-lb
Eccentricity Moment (Y-Y Axis):	My-ey =	0	ft-lb
Moment Due to Lateral Loads (X-X Axis):	Mx =	0	ft-lb
Moment Due to Lateral Loads (Y-Y Axis):	My =	0	ft-lb
Bending Stress Lateral Loads Only (X-X Axis):	Fbx =	0	psi
Allowable Bending Stress (X-X Axis):	Fbx' =	750	psi
Bending Stress Lateral Loads Only (Y-Y Axis):	Fby =	0	psi
Allowable Bending Stress (Y-Y Axis):	Fby' =	750	psi
Combined Stress Factor:	**CSF =**	**0.89**	

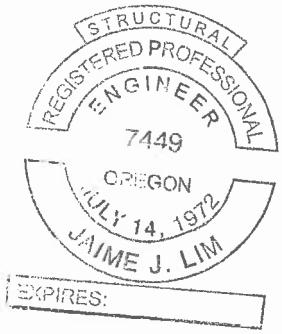
LOADING DIAGRAM



AXIAL LOADING

Live Load:	PL =	10000	lb
Dead Load:	PD =	6000	lb
Column Self Weight:	CSW =	52	lb
Total Load:	PT =	16052	lb

NOTES



15

Project: Richard Ahyou
Location: Footing 1
Footing
[2006 International Building Code(2005 NDS)]
Footing Size: 4.0 FT x 4.0 FT x 12.00 IN
Reinforcement: #4 Bars @ 8.00 IN. O.C. E/W / (6) min.
Section Footing Design Adequate

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:59:14 AM

FOOTING PROPERTIES

Allowable Soil Bearing Pressure:	Qs =	1500	psf
Concrete Compressive Strength:	F'c =	2500	psi
Reinforcing Steel Yield Strength:	Fy =	40000	psi
Concrete Reinforcement Cover:	c =	3	in

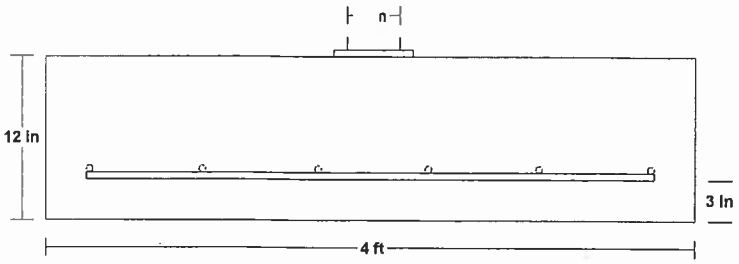
FOOTING SIZE

Width:	W =	4	ft
Length:	L =	4	ft
Depth:	Depth =	12	in
Effective Depth to Top Layer of Steel:	d =	8.25	in

COLUMN AND BASEPLATE SIZE

Column Type:	Steel		
Column Width:	m =	4	in
Column Depth:	n =	4	in
Baseplate Width:	bsw =	6	in
Baseplate Length:	bsl =	6	in

LOADING DIAGRAM



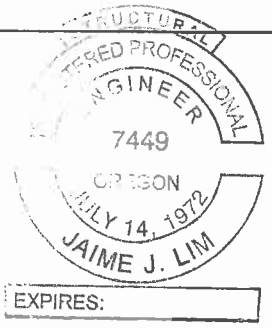
FOOTING LOADING

Live Load:	PL =	15000	lb
Dead Load:	PD =	6000	lb
Total Load:	PT =	21000	lb
Ultimate Factored Load:	Pu =	31200	lb

FOOTING CALCULATIONS

Bearing Calculations:			
Ultimate Bearing Pressure:	Qu =	1313	psf
Effective Allowable Soil Bearing Pressure:	Qe =	1350	psf
Required Footing Area:	Areq =	15.56	sf
Area Provided:	A =	16.00	sf
Baseplate Bearing:			
Bearing Required:	Bear =	31200	lb
Allowable Bearing:	Bear-A =	99450	lb
Beam Shear Calculations (One Way Shear):			
Beam Shear:	Vu1 =	8613	lb
Allowable Beam Shear:	Vc1 =	29700	lb
Punching Shear Calculations (Two Way Shear):			
Critical Perimeter:	Bo =	53	in
Punching Shear:	Vu2 =	28823	lb
Allowable Punching Shear (ACI 11-35):	vc2-a =	98381	lb
Allowable Punching Shear (ACI 11-36):	vc2-b =	134888	lb
Allowable Punching Shear (ACI 11-37):	vc2-c =	65588	lb
Controlling Allowable Punching Shear:	vc2 =	65588	lb
Bending Calculations:			
Factored Moment:	Mu =	150231	in-lb
Nominal Moment Strength:	Mn =	339930	in-lb
Reinforcement Calculations:			
Concrete Compressive Block Depth:	a =	0.46	in
Steel Required Based on Moment:	As(1) =	0.51	in2
Min. Code Req'd Reinf. (Shrink./Temp. (ACI-10.5.4):	As(2) =	1.15	in2
Controlling Reinforcing Steel:	As-reqd =	1.15	in2
Selected Reinforcement:	#4's @ 8.0 in. o.c. e/w (6) Min.		
Reinforcement Area Provided:	As =	1.18	in2
Development Length Calculations:			
Development Length Required:	Ld =	15	in
Development Length Supplied:	Ld-sup =	18.5	in

NOTES



16

Project: Richard Ahyou
Location: Footing 2
Footing
[2006 International Building Code(2005 NDS)]
Footing Size: 2.75 FT x 2.75 FT x 12.00 IN
Reinforcement: #4 Bars @ 6.00 IN. O.C. E/W / (5) min.
Section Footing Design Adequate

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:36:18 AM

FOOTING PROPERTIES

Allowable Soil Bearing Pressure:	Qs =	1500	psf
Concrete Compressive Strength:	F'c =	2500	psi
Reinforcing Steel Yield Strength:	Fy =	40000	psi
Concrete Reinforcement Cover:	c =	3	in

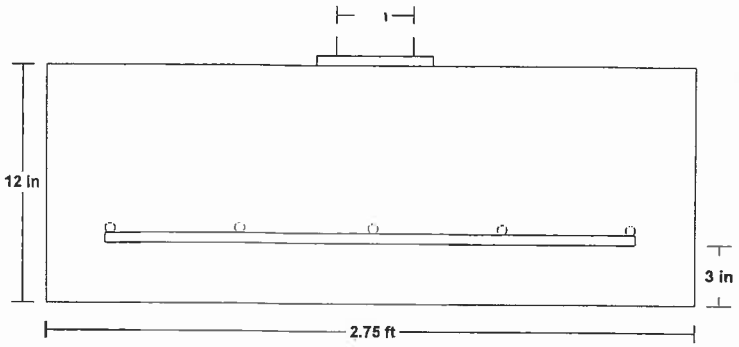
FOOTING SIZE

Width:	W =	2.75	ft
Length:	L =	2.75	ft
Depth:	Depth =	12	in
Effective Depth to Top Layer of Steel:	d =	8.25	in

COLUMN AND BASEPLATE SIZE

Column Type:	Steel		
Column Width:	m =	4	in
Column Depth:	n =	4	in
Baseplate Width:	bsw =	6	in
Baseplate Length:	bsl =	6	in

LOADING DIAGRAM



FOOTING LOADING

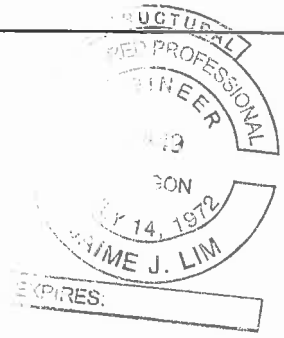
Live Load:	PL =	7000	lb
Dead Load:	PD =	3000	lb
Total Load:	PT =	10000	lb
Ultimate Factored Load:	Pu =	14800	lb

FOOTING CALCULATIONS

Bearing Calculations:			
Ultimate Bearing Pressure:	Qu =	1322	psf
Effective Allowable Soil Bearing Pressure:	Qe =	1350	psf
Required Footing Area:	Areq =	7.41	sf
Area Provided:	A =	7.56	sf
Baseplate Bearing:			
Bearing Required:	Bear =	14800	lb
Allowable Bearing:	Bear-A =	99450	lb
Beam Shear Calculations (One Way Shear):			
Beam Shear:	Vu1 =	2579	lb
Allowable Beam Shear:	Vc1 =	20419	lb
Punching Shear Calculations (Two Way Shear):			
Critical Perimeter:	Bo =	53	in
Punching Shear:	Vu2 =	12414	lb
Allowable Punching Shear (ACI 11-35):	vc2-a =	98381	lb
Allowable Punching Shear (ACI 11-36):	vc2-b =	134888	lb
Allowable Punching Shear (ACI 11-37):	vc2-c =	65588	lb
Controlling Allowable Punching Shear:	vc2 =	65588	lb
Bending Calculations:			
Factored Moment:	Mu =	43952	in-lb
Nominal Moment Strength:	Mn =	281545	in-lb
Reinforcement Calculations:			
Concrete Compressive Block Depth:	a =	0.56	in
Steel Required Based on Moment:	As(1) =	0.15	in2
Min. Code Req'd Reinf. (Shrink./Temp. (ACI-10.5.4):	As(2) =	0.79	in2
Controlling Reinforcing Steel:	As-reqd =	0.79	in2
Selected Reinforcement:	#4's @ 6.0 in. o.c. e/w (5) Min.		
Reinforcement Area Provided:	As =	0.98	in2
Development Length Calculations:			
Development Length Required:	Ld =	15	in
Development Length Supplied:	Ld-sup =	11	in

Note: Plain concrete adequate for bending, therefore adequate development length not required.

NOTES



17

Project: Richard Ahyou
Location: Roof Rafter 1
Roof Rafter
[2006 International Building Code(2005 NDS)]
1.5 IN x 7.25 IN x 15.5 FT (13.5 + 2) @ 16 O.C.
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 30.9%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/24/2009 9:49:10 AM

DEFLECTIONS	Center		Right	
Live Load	0.33	IN L/496	0.02	IN L/1588
Dead Load	0.19	in	0.00	in
Total Load	0.51	IN L/316	0.00	IN L/Infinity

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

RAFTER REACTIONS

	LOADS	REACTIONS
Upper Live Load @ A	169 plf	225 lb
Upper Dead Load @ A	99 plf	132 lb
Upper Total Load @ A	268 plf	357 lb
Lower Live Load @ B	222 plf	297 lb
Lower Dead Load @ B	133 plf	178 lb
Lower Total Load @ B	356 plf	475 lb

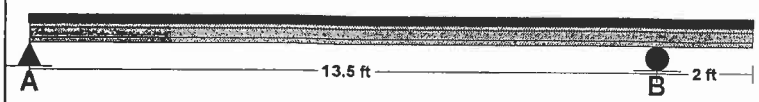
RAFTER SUPPORT DATA

	A	B
Bearing Length	0.38 in	0.51 in

RAFTER DATA	Interior	Eave
Span Length	13.5 ft	2 ft
Rafter Pitch	0	:12

Roof sheathing applied to top of joists-top of rafters fully braced.
Roof Duration Factor 1.15
Peak Notch Depth 0.00
Base Notch Depth 0.00

LOADING DIAGRAM



RAFTER LOADING

Uniform Floor Loading

Roof Live Load:	LL =	25	psf
Roof Dead Load:	DL =	15	psf

Slope Adjusted Spans And Loads

Interior Span:	L-adj =	13.5	ft
Eave Span:	L-Eave-adj =	2	ft
Rafter Live Load:	wL-adj =	33	plf
Eave Live Load:	wL-Eave-adj =	33	plf
Rafter Dead Load:	wD-adj =	20	plf
Rafter Total Load:	wT-adj =	53	plf
Eave Total Load:	wT-Eave-adj =	53	plf

MATERIAL PROPERTIES
#2 - Douglas-Fir-Larch

	Base Values		Adjusted	
Bending Stress:	Fb = 900 psi		Fb' = 1428 psi	
	Cd=1.15 CF=1.20 Cr=1.15			
Shear Stress:	Fv = 180 psi		Fv' = 207 psi	
	Cd=1.15			
Modulus of Elasticity:	E = 1600 ksi		E' = 1600 ksi	
Min. Mod. of Elasticity:	E_min = 580 ksi		E_min' = 580 ksi	
Comp. ⊥ to Grain:	Fc - ⊥ = 625 psi		Fc - ⊥' = 625 psi	

Controlling Moment: 1195 ft-lb
6.75 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -339 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	10.04 in3	13.14 in3
Area (Shear):	2.46 in2	10.88 in2
Moment of Inertia (deflection):	27.13 in4	47.63 in4
Moment:	1195 ft-lb	1564 ft-lb
Shear:	-339 lb	1501 lb

STRUCTURAL ENGINEER
7449
OREGON
JULY 14, 1972
JAIME J. LIM
EXPIRES:

NOTES

18

Project: Richard Ahyou
Location: Deck Joist 1 2 x 12 @ 16" o/c
Multi-Span Floor Beam
[2006 International Building Code(2005 NDS)]
1.5 IN x 11.25 IN x 11.0 FT (10 + 1)
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 83.1%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/27/2009 9:14:39 AM

DEFLECTIONS	Center		Right	
Live Load	0.06	IN L/1889	-0.02	IN L/590
Dead Load	0.02	in	-0.01	in
Total Load	0.08	IN L/1466	-0.03	IN L/460

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	402 lb	486 lb
Dead Load	118 lb	144 lb
Total Load	520 lb	630 lb
Bearing Length	0.55 in	0.67 in

BEAM DATA	Center	Right
Span Length	10 ft	1 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	10 ft	1 ft
Floor Duration Factor	1.00	
Notch Depth	0.00	

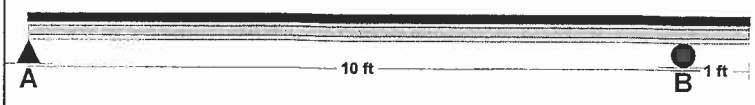
MATERIAL PROPERTIES
#2 - Douglas-Fir-Larch

	Base Values		Adjusted	
Bending Stress:	Fb =	900 psi	Fb' =	900 psi
	Cd=1.00 CF=1.00			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1600 ksi	E' =	1600 ksi
Min. Mod. of Elasticity:	E_min =	580 ksi	E_min' =	580 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 1296 ft-lb
5.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -432 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	17.28 in3	31.64 in3
Area (Shear):	3.6 in2	16.88 in2
Moment of Inertia (deflection):	54.26 in4	177.98 in4
Moment:	1296 ft-lb	2373 ft-lb
Shear:	-432 lb	2025 lb

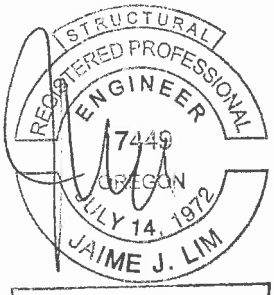
LOADING DIAGRAM



FLOOR LOADING		Center	Right
Floor Live Load	FLL =	60 psf	60 psf
Floor Dead Load	FDL =	15 psf	15 psf
Floor Tributary Width Side One	TW1 =	0.7 ft	0.7 ft
Floor Tributary Width Side Two	TW2 =	0.7 ft	0.7 ft
Wall Load	WALL =	0 plf	0 plf

BEAM LOADING	Center	Right
Reduced Floor Live Load	60 psf	60 psf
Total Live Load	80 plf	80 plf
Total Dead Load	20 plf	20 plf
Beam Self Weight	4 plf	4 plf
Total Load	104 plf	104 plf

NOTES



EXPIRES:

19

Project: Richard Ahyou
Location: Deck Joist 2 @ 8" o/c Hot Tub Support Joist
Multi-Loaded Multi-Span Beam
[2006 International Building Code(2005 NDS)]
1.5 IN x 11.25 IN x 11.0 FT (10 + 1)
#2 - Douglas-Fir-Larch - Dry Use
Section Adequate By: 1.2%
Controlling Factor: Moment

Jaime Lim, P.E.
First United Engineering
922 N. Killingsworth St.
Portland, Oregon 97217

StruCalc Version 8.0.98.0 7/27/2009 9:18:06 AM

DEFLECTIONS	Center		Right	
Live Load	0.12	IN L/1000	-0.04	IN L/297
Dead Load	0.02	in	-0.01	in
Total Load	0.14	IN L/844	-0.05	IN L/252

Live Load Deflection Criteria: L/360 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	506 lb	956 lb
Dead Load	119 lb	176 lb
Total Load	625 lb	1132 lb
Bearing Length	0.67 in	1.21 in

BEAM DATA	Center	Right
Span Length	10 ft	1 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	10 ft	1 ft
Live Load Duration Factor	1.00	
Notch Depth	0.00	

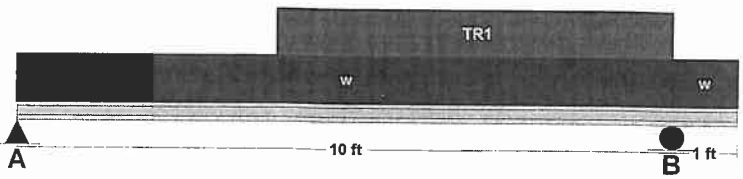
MATERIAL PROPERTIES
#2 - Douglas-Fir-Larch

	Base Values		Adjusted	
Bending Stress:	Fb =	900 psi	Fb' =	900 psi
	Cd=1.00 CF=1.00			
Shear Stress:	Fv =	180 psi	Fv' =	180 psi
	Cd=1.00			
Modulus of Elasticity:	E =	1600 ksi	E' =	1600 ksi
Min. Mod. of Elasticity:	E_min =	580 ksi	E_min' =	580 ksi
Comp. ⊥ to Grain:	Fc - ⊥ =	625 psi	Fc - ⊥' =	625 psi

Controlling Moment: 2345 ft-lb
5.6 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2
Controlling Shear: -854 lb
At a distance d from right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 2, 3

Comparisons with required sections:	Req'd	Provided
Section Modulus:	31.27 in3	31.64 in3
Area (Shear):	7.12 in2	16.88 in2
Moment of Inertia (deflection):	107.95 in4	177.98 in4
Moment:	2345 ft-lb	2373 ft-lb
Shear:	-854 lb	2025 lb

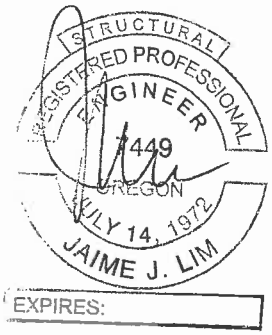
LOADING DIAGRAM



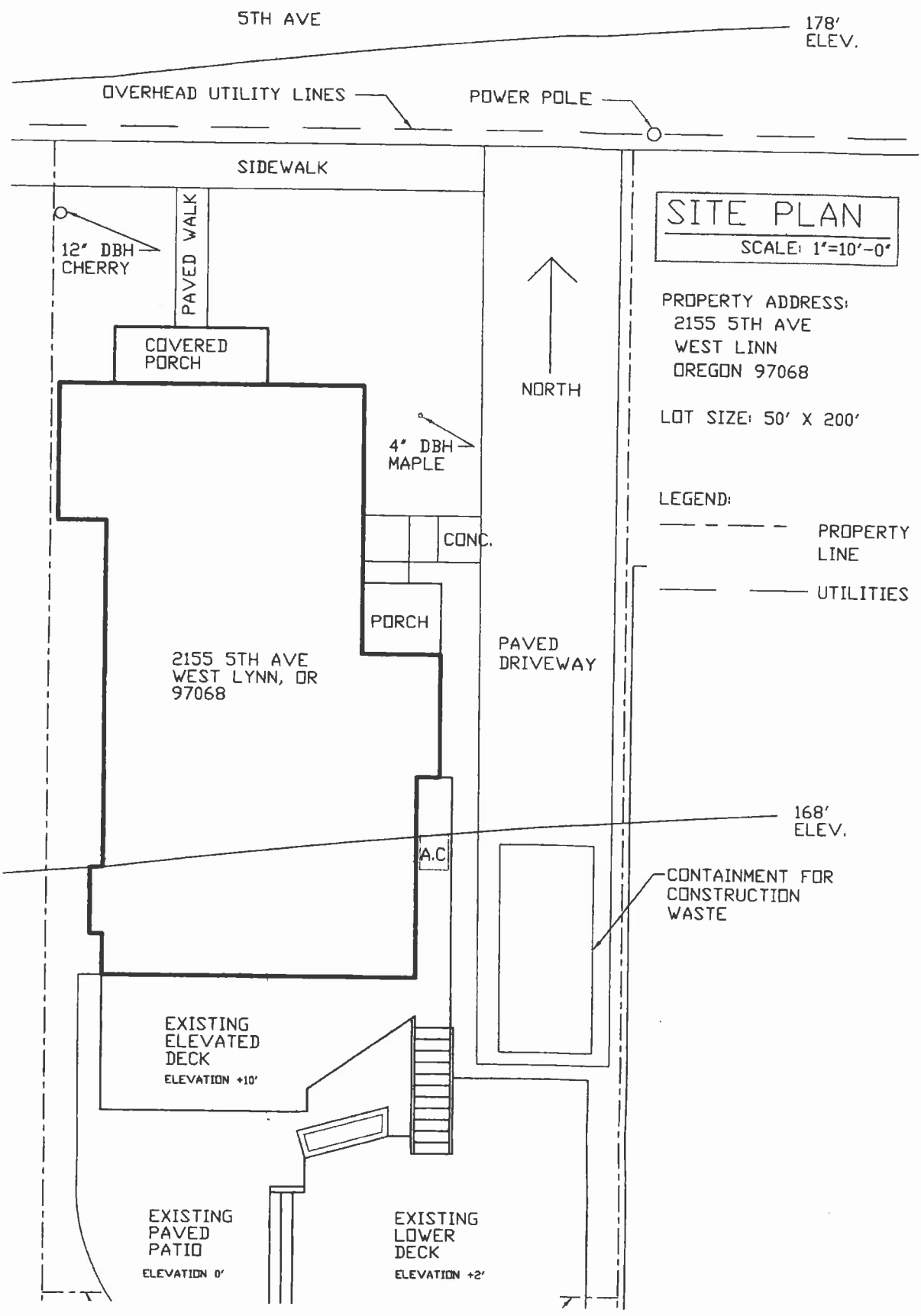
UNIFORM LOADS	Center	Right
Uniform Live Load	40 plf	40 plf
Uniform Dead Load	15 plf	15 plf
Beam Self Weight	4 plf	4 plf
Total Uniform Load	59 plf	59 plf

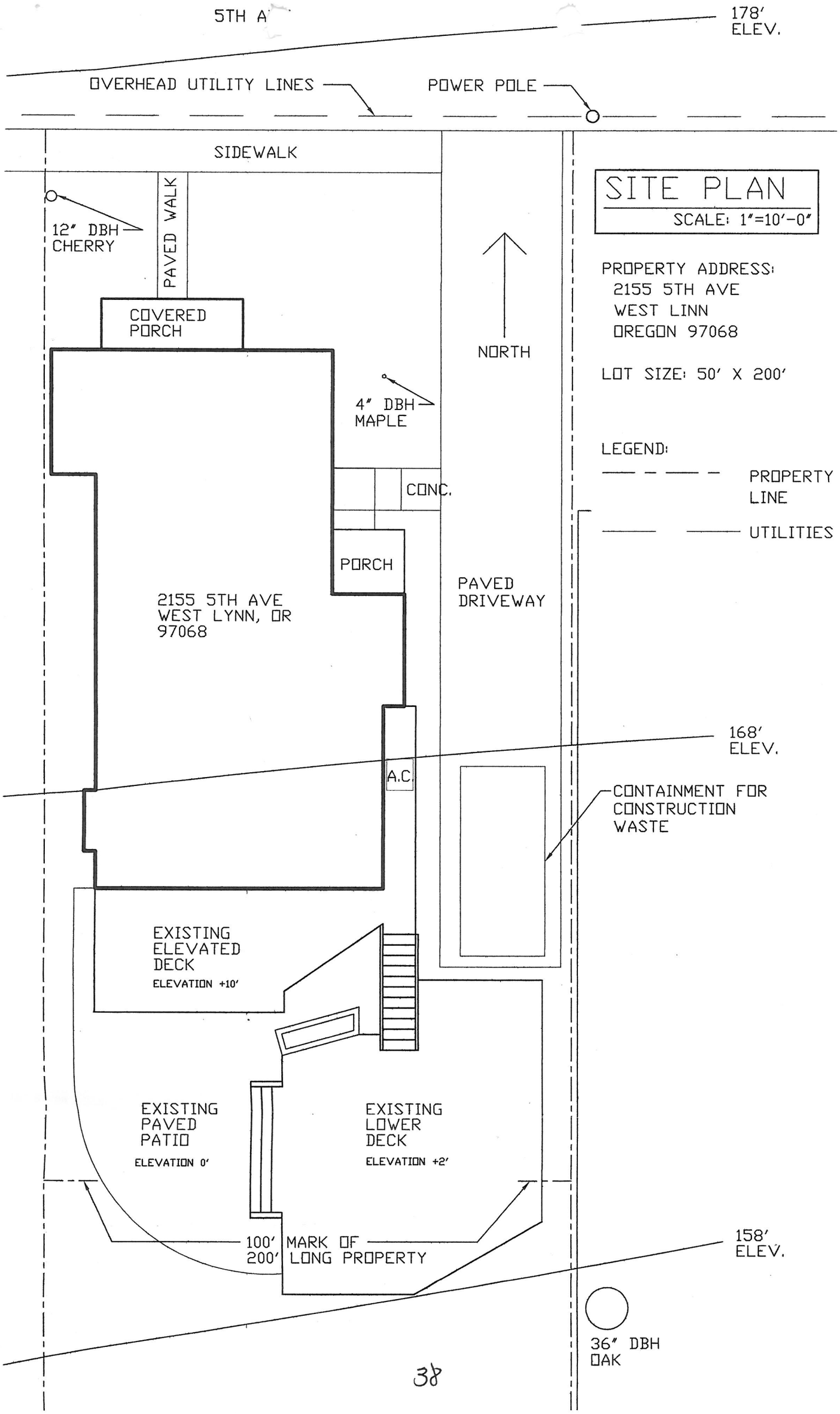
TRAPEZOIDAL LOADS - CENTER SPAN	
Load Number	One
Left Live Load	170 plf
Left Dead Load	15 plf
Right Live Load	170 plf
Right Dead Load	15 plf
Load Start	4 ft
Load End	10 ft
Load Length	6 ft

NOTES



EXPIRES:


5TH AVE
178' ELEV.
OVERHEAD UTILITY LINES
POWER POLE
SIDEWALK
PAVED WALK
12" DBH CHERRY
COVERED PORCH
4" DBH MAPLE
CONC.
PORCH
2155 5TH AVE
WEST LYNN, OR
97068
PAVED DRIVEWAY
NORTH
SITE PLAN
SCALE: 1"=10'-0"
PROPERTY ADDRESS:
2155 5TH AVE
WEST LINN
OREGON 97068
LOT SIZE: 50' X 200'
LEGEND:
PROPERTY LINE
UTILITIES
168' ELEV.
A.C
CONTAINMENT FOR CONSTRUCTION WASTE
EXISTING ELEVATED DECK
ELEVATION +10'
EXISTING PAVED PATIO
ELEVATION 0'
EXISTING LOWER DECK
ELEVATION +2'


5TH A
178' ELEV.
OVERHEAD UTILITY LINES
POWER POLE
SIDEWALK
PAVED WALK
12" DBH CHERRY
COVERED PORCH
NORTH
4" DBH MAPLE
CONC.
PORCH
PAVED DRIVEWAY
2155 5TH AVE WEST LYNN, OR 97068
168' ELEV.
A.C.
CONTAINMENT FOR CONSTRUCTION WASTE
EXISTING ELEVATED DECK
ELEVATION +10'
EXISTING PAVED PATIO
ELEVATION 0'
EXISTING LOWER DECK
ELEVATION +2'
100' 200' MARK OF LONG PROPERTY
158' ELEV.
36" DBH OAK
SITE PLAN
SCALE: 1"=10'-0"
PROPERTY ADDRESS:
2155 5TH AVE
WEST LINN
OREGON 97068
LOT SIZE: 50' X 200'
LEGEND:
PROPERTY LINE
UTILITIES