

654 SW GRANT ST REV-07 C006-149405

Co. 06. 149405 REV. 07.

X

JUN 15 2007
MICROFILMED

18



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



COMMERCIAL BUILDING PERMIT

06-149405-REV-01-CO

Site Address: 654 SW GRANT ST

Issued: 3/30/07

PROJECT INFORMATION		Occ. Group	Const. Type
Apartments/Condos (3 or more units)	Alteration	R-2	V-B
Project Description: 03-30-07 SCB - EXPAND OPENING BETWEEN KITCHEN AND LIVING ROOM AND ADD BEAM IN UNITS 101,102,201,301,202,203,204,302,303,304 (10 OF 11 UNITS), UNIT 102 OPENING CREATED, ADD BEAM BETWEEN LIVING ROOM AND BEDROOM MINOR INTERIOR ALTERATIONS AND FINISHES OF ALL UNITS IN EXISTING ART			
APPLICANT	DEMIAN HEALD	Phone (503) 577-1167	
PROPERTY OWNER	MARIANNA CONDOMINIUMS LLC	Phone	
CONTRACTOR	No Contractor	Phone	

Project Details		Project Details	
Code Edition (Year)	2003 IBC	Lot Area (Sq. Ft.)	6407
Maintain Current Fire Protection?	Yes	Separate Alarm Permit Required?	Yes
Separate Sprinkler Permit Required?	Yes	Sprinkler System Required?	Yes
Water District	Portland Water Bureau	Zoning - Property (1)	RH

PAID
MAR 30 2007

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 503-823-7303.

**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 852-001-0010 through OAR 852-001-0099. 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

PROCESS MANAGEMENT

E-Mail:

Phone: (503) 823-7357

Fax: (503) 823-4172

**INSPECTION REQUEST
PHONE NUMBERS**

For work separately permitted by the Fire Marshal's Office:
Building/Trade Inspections - Call Before 6:00 AM:

(503) 823-1199

(503) 823-7000

TDD: (503) 823-6868

IVR Inspection Request

Number:

2590118

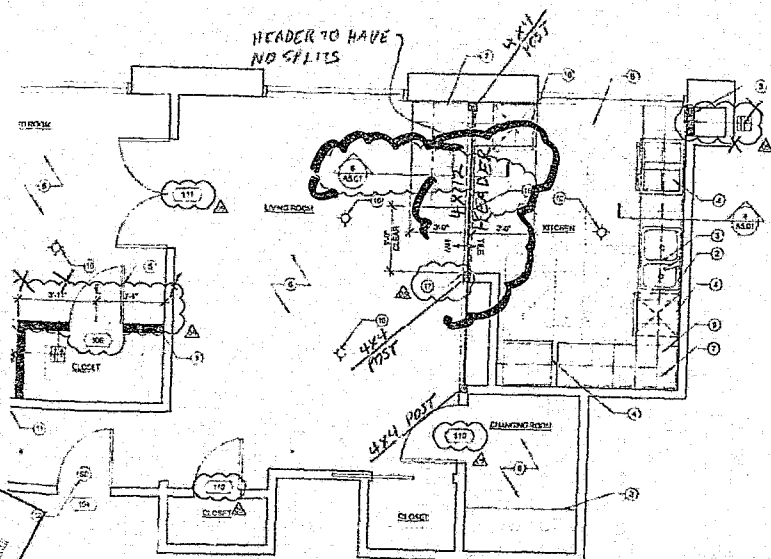
catena

CONSULTING

Project: 654 SW Grant St. renovations
Subject: Header Design
Walls Headers over demolished

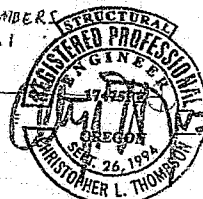
No. 2007047.00 Page:

Date 3.28.2007



S-1 UNIT 101

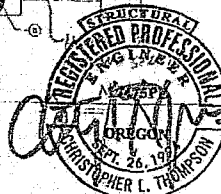
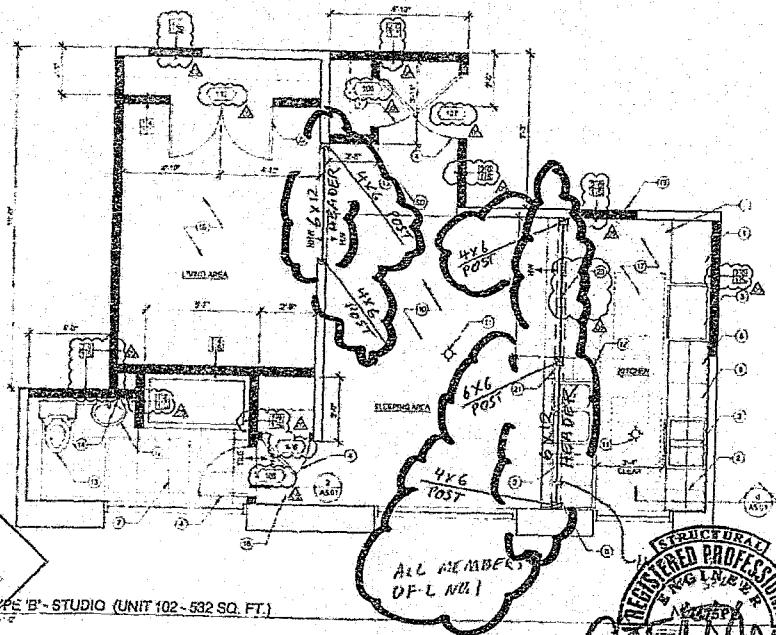
ALL MEMBERS
DFL NO. 1



EXPIRES: 6/30/08

06-149405-PEV-01-CO

City of Portland
Main 311 2307
Permit Number



EXPIRES: 6/30/08

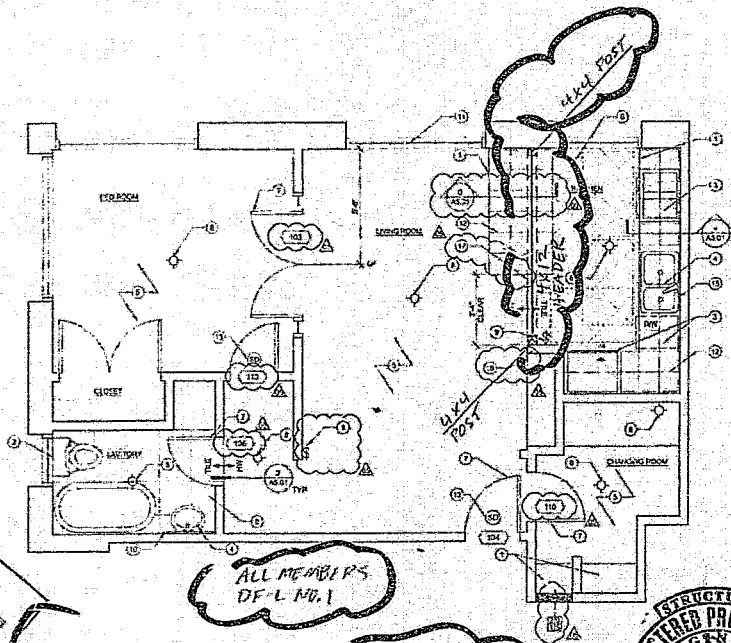
Permit Number

1997.05.21

100-443887-100

UNIT TYPE 'B' - STUDIO (UNIT 102 - 532 SQ. FT.)

Project:	654 SW Grant St. renovations	No.:	2007/047.00	Page:	5-3
Header Design					
Subject:	headers over demolished walls	By:	NUS	Date:	3.28.2007



ALL MEMBERS
OF L. NO. 1

5-3

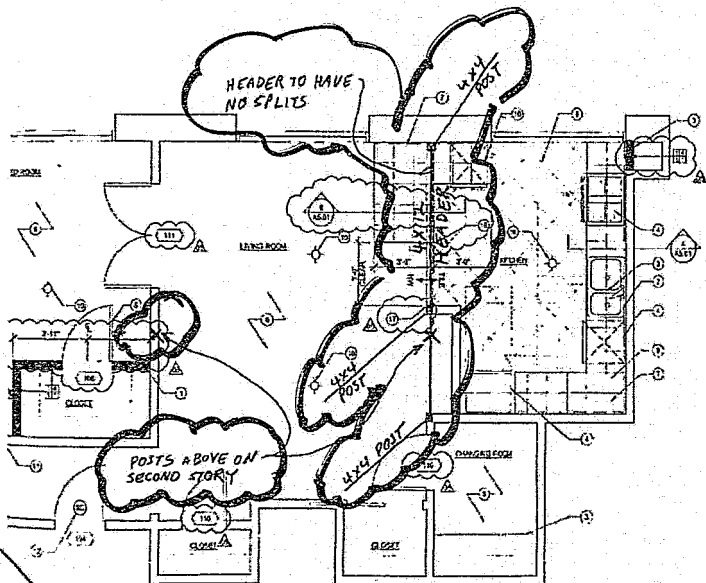
(UNITS 201 & 301 - 568 SQ. FT.)

UNITS 202, 203, 204, 302, 303, 304 SIMILAR.

EXPIRES: 6/30/2007

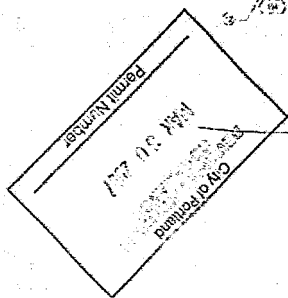
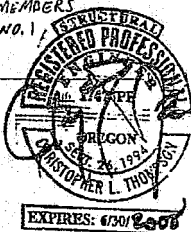
Acadefina

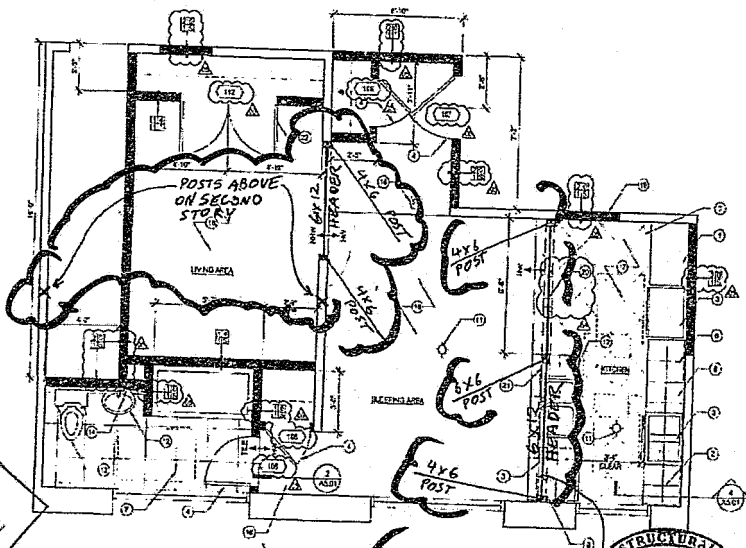
Project: 654 SW Grant St. renovations No. 2007047.00 Page: 5-1
 Subject: Header Design Header Design
 Walls: Headers over demolished walls Bjt. NLS Date: 3.23.2007



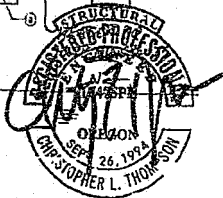
(S-1) UNIT 101

ALL MEMBERS
 DFL NO. 1



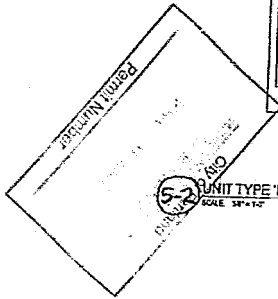


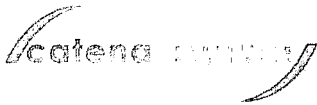
UNIT TYPE 'B' - STUDIO (UNIT 102 - 532 SQ. FT.)
 SCALE 3/8"=1'-0"



3/25/07

EXPIRES: 6/30/2007





March 28, 2007

Mr. Demian Heald
O.V. River Group
0224 SW Hamilton Street
Portland, OR 97239

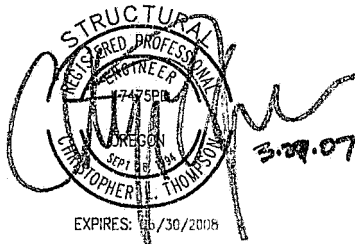
RE: 654 SW Grant Street Renovations
Project Number: 2007047.00

Dear Demian:

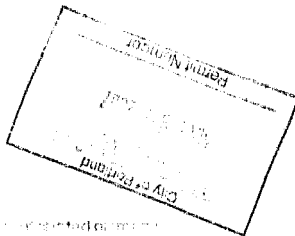
The attached calculation pages 1 through 3, dated March 2007, verify the structural adequacy of the new wall headers to be constructed in the existing building at 654 SW Grant Street in Portland, Oregon. The scope of work is shown on sketches S-1 through S-3, dated March 28, 2007, which supplement the building renovation drawings prepared by Myhre Group Architects dated September 11, 2006. New structural elements have been designed in accordance with the 2004 Oregon Structural Specialty Code.

Respectfully,

Jake Stept
Associate



Chris Thompson
Principal



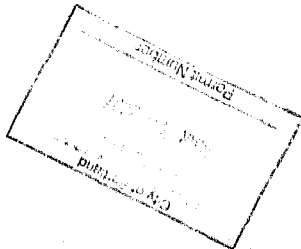
06-149405-REV-01-CO

The existing building at 654 SW Grant Street is currently undergoing interior renovations. Existing interior wood-framed bearing walls will be demolished in ten of the eleven units, usually adjacent to the kitchen in each unit. Approximately 6.75' of wall length will be removed in each of the four units on the second and third floors. 5.25' of wall will be removed in unit 101, and 11' of wall will be removed in unit 102. New wood headers will be designed to support the dead and live loads currently supported by the walls. New wood posts will support the ends of each header, and a post will also support the middle of the long header in unit 102.

Live loads

25 psf minimum roof snow load plus drifting
40 psf reducible floor load

Dead loads - 15 psf existing floor structure



Typical Kitchen Wall Header

Consider units 201-204 and 201-304

$$L = 9.25' \quad \text{trib. width: } \frac{15.8'}{2} = 9.25'$$

$$DL = 15 \text{ psf} \quad \left(\text{floor loads also use for roof} \right)$$

$$W = 9.25(15 + 40) = 509 \text{ plf}$$

$$M = \frac{509(9.25)^2}{8} = 5441 \text{ lb-ft}$$

$$V = 509(9.25)/2 = 2354 \text{ lb}$$

$$f_b = \frac{5441(12)}{2354(1.5)} = 554 \text{ psi}$$

$$f_v = \frac{2354(1.5)}{2354} = 90 \text{ psi}$$

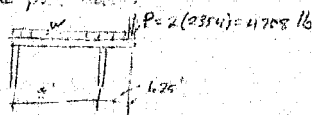
$$\text{Use DFL No. 1 } F_b = 1000 \text{ psi } F_v = 95 \text{ psi}$$

Unit 101 kitchen wall header

$$L = 8' \quad \text{trib. width: } \frac{20.5'}{2} = 12.25'$$

$$W = 12.25(15 + 40) = 674 \text{ plf}$$

Extend the west end of the header over the post to pick up the load from the post.



Consider units

$$W = 674(8)/2 = 5392 \text{ lb-ft}$$

$$V = 674(8)/2 = 674 \text{ lb}$$

Negative bending

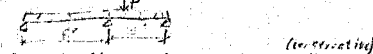
$$M = 4708(1.25) + 5392(1.25)/2 = 4411 \text{ lb-ft}$$

$$V = 4708 + 674(1.25) = 5551 \text{ lb}$$

$$f_b = \frac{4411(12)}{5551(1.5)} = 1042 \text{ psi}$$

$$f_v = \frac{5551(1.5)/3}{5551} = 411 \text{ psi } \text{OK}$$

∴ Extend header over post 12.5 ft



$$M = 674(12.5) + 4708(12.5)(0.5) = 35311 \text{ lb-ft}$$

$$V = \frac{35311}{12.5} = 3531 \text{ lb}$$

$$f_b = \frac{35311(12)}{3531(1.5)} = 1060 \text{ psi}$$

$$f_v = \frac{3531(1.5)}{3531} = 134 \text{ psi}$$

$$\text{DFL No. 1 } F_b = 1100 \text{ psi } F_v = 1100 \text{ psi } \text{OK}$$

$$F_v = 1100 \text{ psi } F_b = 1100 \text{ psi } \text{OK}$$

Post supports wall load

Unit 101 exterior post under header

$$W = \frac{15}{2}(674 \text{ plf}) + \frac{3.75}{2}(4708 \text{ lb}) = 1912 \text{ lb}$$

$$L = 8' = 26"$$

$$W = 1912/26 = 73.5 \text{ plf}$$

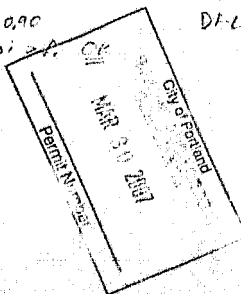
$$f_b = 26(73.5)/2 = 234 \text{ psi}$$

$$f_v = 26(73.5)/2 = 234 \text{ psi}$$

$$f_b = 1500(1.5)/2 = 2544 \text{ psi}$$

$$f_v = \frac{2544(1.5)}{2544} = 90 \text{ psi}$$

$$f_b = 2544(1.5)/2 = 1592 \text{ psi } \text{OK}$$



Unit 102 living area header

$$L = 6.25'$$

$$\text{trib. width} = 26' \times 12' \text{ for } 2^{\text{nd}} \text{ floor}$$

also 509 plf from bearing walls @ 2nd floor - each

$$w = 2(509) + 12(5140) = 1733 \text{ plf}$$

$$M = 1733(6.25)^2 / 2 = 3426 \text{ lb-ft}$$

$$V = 1733(6.25) / 2 = 5416 \text{ lb}$$

$$6 \times 12 \quad f_y = 8462(12) / (12 \times 2) = 8338 \text{ psi}$$

$$f_y = 5416(12) / (6 \times 2) = 1284 \text{ psi}$$

$$No. 2 \text{ bars} \quad F_y = 875 \text{ psi} > f_y$$

$$\text{negligible } C_{H1} = 2.00 \quad F_u = 2.0(875) = 1700 \text{ psi} > f_u$$

OK

Unit 102 kitchen header

$$\text{trib. width} = \frac{26}{2} = 11.5' \text{ on } 2^{\text{nd}}, 3^{\text{rd}}, \text{ + roof}$$

$$w = 3(11.5)(14540) = 1598 \text{ plf}$$

$$\text{try } L = 13.5' \text{ span}$$

$$M = 1598(13.5)^2 / 8 = 4322 \text{ lb-ft}$$

$$V = 1598(13.5) / 2 = 10811 \text{ lb}$$

$$\frac{10811(12)}{6} = 10811 \text{ psi}$$

$$6 \times 12 \times 10 \frac{1}{2}$$

If a part is used @ midspan,

$$L = 6.75'$$

$$M = 1598(6.75)^2 / 8 = 10811 \text{ lb-ft}$$

$$V = 1598(6.75) / 2 = 5406 \text{ lb}$$

$$6 \times 12 \quad f_y = 10811(12) / (12 \times 2) = 1070 \text{ psi}$$

$$f_u = 5406(12) / (6 \times 2) = 152 \text{ psi}$$

$$No. 1 \quad F_y = 185 \text{ psi}$$

$$f_y = 2.0(185) = 170 \text{ psi} \text{ (no splices)}$$

OK

For 6 x 12 piers

$$F_y = 1598(6.75) = 10811 \text{ lb}$$

$$\text{check 6 x 12 pier } f_c = 12 \times 12 \times 25 = 424 \text{ psi}$$

$$L = 12' / 1.5 = 8'$$

$$F_{u2} = 2(1000000) / (12 \times 8) = 1245$$

$$F_y = 1245 \times 12 \times 8 = 11808$$

$$(p) = \frac{11808}{2(6)} = \sqrt{\left(\frac{11808}{2(6)}\right)^2 + \left(\frac{11808}{2(6)}\right)^2} = 0.61$$

$$F_c = 0.61(424) = 258 \text{ psi} < f_c \text{ OK}$$

