

12-119217-MT
12-119212-CO



Building Permit Application
City of Portland, Oregon - Bureau of Development Services

1900 SW 4th Avenue, Portland, Oregon 97201 • 503-823-7310 • TTY 503-823-6868 • www.portlandoregon.gov/bds

This permit application expires if a permit is not obtained within 180 days after it has been accepted as complete.

Office Use Only	
Permit no.:	
Date received:	
By:	

Required Data: One and Two Family Dwelling

Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.

Valuation:	
Number of bedrooms:	
Number of bathrooms:	
Total number of floors:	
New dwelling area:	square feet
Garage/carport area:	square feet
Covered porch area:	square feet
Deck area:	square feet
Other structure area:	square feet

Required Data: Commercial Use

Permit fees* are based on the value of the work performed. Indicate the value (rounded to the nearest dollar) of all equipment, materials, labor, overhead, and the profit for the work indicated on this application.

Valuation:	\$ 4.4 million
Existing building area:	0 square feet
New building area:	31,030 square feet
Number of stories:	4
Type of construction:	TYPE VB OVER IA
Occupancy groups	
Existing:	
New:	M, B, R-2

Notice

All contractors and subcontractors are required to be licensed with the Oregon Construction Contractors Board under ORS 701 and may be required to be licensed in the jurisdiction in which work is being performed. If the applicant is exempt from licensing, the following reasons apply.

Statement of Fact: I certify that the facts and information set forth in this application are true and complete to the best of my knowledge. I understand that any falsification, misrepresentation or omission of fact (whether intentional or not) in this application or any other required document, as well as any misleading statement or omission, may be cause for revocation of permit and/or certificate of occupancy, regardless of how or when discovered.

Building Permit Fees*

Please refer to fee schedule	
Fees due upon application	
Amount received	
Date received	

Sub-contractor information can be faxed to 503-823-7693.

Type of work	
<input checked="" type="checkbox"/> New construction	<input type="checkbox"/> Addition/alteration/replacement
<input type="checkbox"/> Demolition	<input type="checkbox"/> Other:

Category of construction		
<input type="checkbox"/> 1 & 2 family dwelling	<input type="checkbox"/> Commercial/industrial	<input type="checkbox"/> Accessory building
<input checked="" type="checkbox"/> Multifamily	<input type="checkbox"/> Master builder	<input type="checkbox"/> Other:

Job site information and location	
Job no.:	Job address: 3339 SE DIVISION ST.
City/State/ZIP: PORTLAND, OR. 97202	
Suite/bldg./apt. no.:	Project name: 3339 SE DIVISION
Cross street/directions to job site: 33 RD PLACE & DIVISION	
	SW 1/4 OF SEC 1, T.15. R
Subdivision: VAN HADAMISEN	Lot no. 14, 15, 16 Tax map/parcel no. 1E. 000

Description of work	
A MIXED-USE 4 STORY BUILDING WITH RETAIL ON THE GROUND FLOOR AND APARTMENTS ABOVE.	

<input type="checkbox"/> Reference RS / Combination	Permit no.
---	------------

<input checked="" type="checkbox"/> Property owner	<input type="checkbox"/> Tenant
Name: 3339 SE DIVISION LLC	
Address: 136 NE 28 TH AVE.	
City/State/ZIP: PORTLAND, OR. 97232	
Phone: 503-946-3265	FAX:
Owner installation: This installation is being made on property that I own, which is not intended for sale, lease, rent, or exchange.	
Owner signature: <i>Mark</i>	Date: 3/8/12

Contractor

Business name: LORENZ BRUNN CONSTRUCTION	
Address: 3611 SE 20 TH AVE., SUITE 300	
City/State/ZIP: PORTLAND, OR. 97202	
Phone: 503-232-7106	FAX: 503-232-5609
CCB lic. no. 33	

Authorized signature: <i>[Signature]</i>	
Print name: Kurt Brunn	Date: 3/8/12

Applicant

Business name: THA ARCHITECTURE	
Contact name: ROBIN WILCOX	
Address: 733 SW OAK ST.	
City/State/ZIP: PORTLAND, OR. 97205	
Phone: 503-227-1254	FAX: 503-227-7818
E-mail: rwilcox@thaarchitecture.com	

Authorized signature: <i>[Signature]</i>	
Print name: ROBIN WILCOX	Date: 3/8/12

SCAN

Life Safety Checksheet Response

Permit #: 12-119212-000-00-CO

Date: July 6, 2012

Customer name and phone number: Robin Wilcox, 503-227-1254

Note: In the spaces below, please provide specific information concerning the changes that you have made in response to the checksheet. Note the checksheet item number, your response or a description of the revision, and the location of the change on the plans (i.e. page number and/or detail number). Use as many lines as needed. If the item is not in response to a checksheet, write "Applicant" in the column labeled "Checksheet item number."

Checksheet item number	Description of changes, corrections, additions, etc.	Location on plans
4 <i>on</i>	Type A accessible unit is shown as Unit 408 on plans, see A-402. Clearances at the kitchen sink and all appliances have been added.	A-402
7 <i>on</i>	Property lines have been called out on L-101	L-101
13 <i>on</i>	B) Wall types 6.6/1/A and 6.6/2/A – An approved testing laboratory listing has been provided for this wall type on A-010, SA-830628. C) Wall type 5.6/2/A is still applicable to this project, located at 2 hour walls at Stair 1 and Stair 2 on the First Floor. <i>CHECK W/ ARCHITECT</i>	A-010, A-101
14 <i>on</i>	General Note has been added on A-010 indicating the use of type X GBD at rated assemblies.	A-010
15 <i>on</i>	Detail tag was shown on wrong floor and has been moved to the correct position. This detail separates the floor of the Second Floor apartments from the Retail space below.	A-300
18 <i>on</i>	Minimum ventilation area for the interior room in Unit E has been added to sheet A-402. 1203.4.1.1 requires 8% of the floor area of the interior room, but not less than 25 square feet. The interior room is 100 square feet, so 25 square feet is shown as the required area. 47 square feet of opening is provided.	A-402
20 <i>on</i>	Door schedule has been updated to include door hardware number.	A-640, A-645
32 <i>on</i>	Toilet rooms in offices have been revised to have the required clearances around plumbing fixtures. The bathtub/showers have been changed to shower compartments with grab bars and seat complying with ICC/ANSI 117.1. Grab bars are provided at the toilets to comply with ICC/ANSI 117.1. <i>INTENTION ELEVATIONS, GRAB BARS?</i>	A-102

Plan Bin Location: AX 10-1..specs on shelf

RECEIVED
JUL 06 2012
BDS
DOCUMENT SERVICES

			B) Show how the future grab bar reinforcements for water closets where a side wall is not available are provided. Update interior elevations of bathroom in unit E, G, H, J, L and M. OK.
35	E-1- E-3	1006 7-3-12	Provide egress lighting in first floor elevator lobby/hallway and hallway 200 – 400 to comply with section 1006. OK.
36	E-1-E-3	ICC/ANSI 309 7-3-12	In all dwelling units and in common use areas, the light switches, circuit panel boxes, environmental and other controls shall be 48" high maximum above the finished floor. The electrical and telecommunication (telephone / television outlets) receptacles on walls shall be no lower than 15" above the finished floor. OK.

End of Checksheet

To respond to this checksheet, come to Permitting Services located at 1900 SW Fourth Ave., 2nd Floor, and update all four sets of the originally submitted drawings. To update the drawings, you may either replace the original sheets with new sheets, or edit the originally submitted sheets. (Specific instructions for updating plans are posted in Document Services.)

Please complete the attached Checksheet Response Form and include it with your re-submittal.

If you have specific questions concerning this Checksheet, please call me at the phone number listed above. To check the status of your project, go to <http://www.portlandonline.com/bds/index.cfm?c=34194>. Or, you may request the status to be faxed to you by calling 503-823-7000 and selecting option 4.

You may receive separate Checksheets from other City agencies that will require separate responses.

NEW DEVELOPMENT SERVICES CENTER HOURS: The DSC (1st floor) and Permitting Services (2nd floor) are open Tuesday through Friday from 8:00 a.m. to 3:00 p.m. (closed on Mondays). In the DSC, Land Use, Site Development or Building Permit application review, submittal or intake of complete permits/applications will be limited to between 8:00 AM and 12:00 PM. Land Use applications and Building Permit review or intake will not be processed after 12:00 PM. Please visit the BDS website for more information regarding the Development Services Center hours.

NEW RECHECK FEE: Please note that for plans submitted on or after July 1, 2010 plan review fees for Life Safety, Structural, Site Development and Planning and Zoning will cover the initial review and up to two checksheets and the reviews of the applicant's responses to those checksheets. All additional checksheets and reviews of applicant responses will be charged \$175.00 per checksheet.

22	A-101 A-640	709.6 Table 715.4 7-3-12	Door # 107 shall be 1/3 hour rated and shall be equipped with smoke and draft control door assembly. Please update door schedule as required. OK.
23	A-101- A-104	1011.3 7-3-12	Provide a tactile sign stating EXIT and complying with section 1107.5 shall be posted adjacent to each door to an exit stairway, an exit passageway and exit discharge. OK.
24	A-101- A-104	1108.4.12 7-3-12	Show how the accessibility requirements for permanent room signage and other signs which provide direction to or information about the building are provided. OK.
25	A-101- A-253,	2406.3.6 7-3-12	Provide tempered glass in all interior and exterior windows/storefront within 24" arc of doors and/or doorways and at conditions where the bottom edge of windows/storefront is less than 18" above the floor. Please update plans, exterior and interior elevations to show how such requirements are provided. OK.
26	A-101 A-640	ICC/ANSI A117 404.2.4, 404.2.6 7-3-12	Specify door width, type and hardware for door# 101F, #101G, #101H, #101C and #101D. Update door schedule and provide door details as required. OK.
27	A-101- A-104	2010 OEESC 7-3-12	Show how the building thermal envelope complies with 2010 Oregon Energy Efficiency Specialty Code Table 502.2(1) and 502.3. Update code plans sheet G-001 to include summary of building thermal envelope. OK.
28	A101	2010 OEESC 7-3-12	Show how the air leakage requirement of sliding door assemblies listed as above noted in item # 22 complies with the values in section 502.4.2. OK.
29	A-640	 7-3-12	Provide door types and indicate type in door schedule. OK.
30	A-201	 7-3-12	Detail 4/A-421 tagged on north elevation-balcony condition 2/A-201 is missing. Provide such detail as required. OK.
31	A-520	1008.1.7 7-3-12	A) Detail 8/A-520 – Top of threshold shall be ½" high maximum above adjacent floors to comply with ICC/ANSI A117 section 404.2.4. Update detail as required. B) Detail 7/A-520 – Top of threshold shall be ½" high maximum above adjacent floors. Wood threshold as shown is not code compliant. Please update detail as required. OK.
32	A-400- A-403	ICC/ANSI 7-3-12	Provide and show 30" x 48" clear floor space for plumbing fixtures in bathroom in type A and type B accessible units to comply with ICC/ANSI section 1003.11 and 1004.11. OK. Toilet rooms in offices shall be accessible complying ICC/ANSI section 604, 606, and 607. Show required floor clearance around plumbing fixtures to comply with section 305.3, 604.3.1 and 607.2.
33	A-400- A403	ICC/ANSI 7-3-12	Provide and show minimum clearances between all opposing base cabinets, counter tops or walls within kitchen work in kitchen in type A and type B accessible units to comply with ICC/ANSI section 1003.12 and 1004.12. OK.
34	A-251- A-253	ICC/ANSI	A) Indicate mounting height of future grab bar reinforcements in walls for water closet and tub in bathroom in all accessible units to comply with ICC/ANSI section 604.5, 607.4

		7-3-12	<p>C) <u>Wall type 5.6/2/A – North, east and west wall of stairway enclosure #1 and #2 at 3rd and 4th floor.</u></p> <p>Please clarify and indicate wall type 5.6 is applicable to this project and what location?</p> <p>Please update such wall types to include acoustic test listing and STC 50 rating.</p>
14	A-101-A-104	Table 601, 602 7-312	<p>Provide wall type and details for exterior walls with required fire-rating and UL listing. Tag such walls on plans as required.</p> <p>OK.</p> <p>Please note and update interior and exterior wall and floor-ceiling sheathing GBD as indicated on wall type and floor-ceiling details sheet A-010 to state Type "X" GBD (gypsum board).</p>
15	A-010	1207.2 1207.3 7-3-12 7-3-12	<p>A) Floor-ceiling assembly 1/A-010 with UL listing G549 does not provide acoustical listing of STC 60 and IIC 30. Provide an approved testing laboratory listing for floor-ceiling which provides required one-hour fire-rating, sound transmission class (STC) of 50 and impact insulation class (IIC) rating of 50.</p> <p>B) Provide detail of one-hour rated floor-ceiling assembly at second floor North exterior deck over dwelling unit A. Such floor-ceiling assembly shall include STC 50 and IIC 50 rating of an approved testing laboratory listing.</p> <p>OK.</p> <p>C) <u>Tag all floor-ceiling assemblies on building sections as required.</u></p> <p>Floor/ceiling assembly type 5 separating dwelling units and tagged as 5/A-010 on building section 1/A-300 does not provide STC 50 and IIC 50. Update such floor/ceiling assembly type as required.</p>
16	A-101	1106.1.10.1 7-3-12	<p>Mail boxes located in the residential lobby-110 shall be accessible in compliance with section 1109.2.3.5 and 1109.2.3.6. Please update interior elevation 2/A-250 as required.</p> <p>OK.</p>
17	A-101-A-104	709.6 715.4.3 7-3-12	<p>Provide 1/3 hour rated door at elevator with smoke and draft control assembly complying section 715.4.3.1. Please update plans, door schedule and hardware group.</p> <p>OK.</p>
18	A-402 A-403	1203.4.1.1 7-3-12	<p><u>Show how the natural ventilation in dwelling unit sleeping areas without exterior window is provided to comply with section 1203.4.1.1. Such dwelling units are unit B, C, D, E and F.</u></p> <p>Indicate minimum ventilation opening required area with dimensions on plans for sleeping area in unit E.</p>
19	A-420-A-422	1009, 1013 7-3-12	<p>Provide information on code features for stairway #1, #2, #3 and #4 as follows:</p> <p>A) Riser dimension: 7" high maximum.</p> <p>B) Tread dimension: 11" in depth minimum.</p> <p>C) Guardrail: 42" in height, spacing between railings 4" maximum.</p> <p>D) Indicate handrail type and size, handrail mounting height handrail extensions etc.</p> <p>E) Indicate stair tread and riser material.</p> <p>OK.</p>
20	A-640	7-3-12	<p>Provide door hardware group/schedule.</p> <p>Update door schedule to include door hardware group number.</p>
21	A-101 A-640	1027.5.2 7-3-12	<p>The door #102A, #106, #107B and #108 are located in exterior walls of exit courts that are less than 10 feet in width are required to have ¾ hour rating. Please update door schedule as required.</p> <p>OK.</p>

W.A.S.Z

			<p>— elec. room-105, mech. Room-106 and bike storage-107 to read; S-1/R-2.</p> <p>B) Code Analysis: Under Fire Resistive Building Elements, fire resistivity required is listed type V-B that does not match with building construction type i.e. V-A. Please clarify and update code analysis for fire resistive building elements as required.</p> <p>OK.</p>
4	G-001	107.2.1 7-3-12	<p>Please update Code Analysis to include number of dwelling units that are accessible units as follows:</p> <p>A) Accessible unit with loft.</p> <p>B) Type A accessible units (2% of total number of units proposed).</p> <p>C) Type B accessible units.</p> <p>Please identify and designate type A accessible unit and show all required accessible features on plans.</p>
5			
6	G-001	1014.3 7-3-12	<p>The common path of egress travel in dwelling unit-117 exceeds the code allowed maximum distance 125 feet. Show how such requirement is provided or obtain approval through Building Code Appeal.</p> <p>OK.</p>
7	L-101	107.2.1 7-3-12	<p><u>Indicate property lines on site plan as required.</u></p> <p>Note property lines on site plan.</p>
8	G-001 A-101	1022.2 1022.2.1 7-3-12	<p>The building code classifies corridor-108 as an exit passageway. Provide 1 1/2-hour-rated door separation between the exit stairway enclosure #2 and such exit passageway. Please update code plans, floor plans and door schedule as required.</p> <p>OK.</p>
9	G-001 A-101	1027.5.2 7-3-12	<p>Exterior walls of retail 1-101, retail 2-103, bike storage-107 and mechanical room-106 located in the exit courts serving as a portion of exit discharge shall be one-hour fire-resistance construction and openings in such walls shall be protected by 3/4 hour assemblies. The location of such exterior walls are as follows:</p> <p>A) Retail 1-101 — East exterior wall.</p> <p>B) Retail 2-103 — East and west exterior walls.</p> <p>C) Bike storage-107 and Mechanical room-106 — East exterior walls.</p> <p>Please update plans and show rated construction of exterior walls and opening protectives of windows/doors are to be provided.</p> <p>OK.</p>
10	A-101- A-104	 7-3-12	<p>Please indicate up/down arrows on all stairway plans including enlarged stairway plans.</p> <p>OK.</p>
11	A-101 L-101	1027.3 7-3-12	<p>Exterior stairway #4 shall be located at least 10 feet from the property line. Show how such requirement is provided.</p> <p>OK.</p>
12	A-101	General 7-3-12	<p>Note on plans Tenant Improvements for retail tenant spaces under "Separate permit".</p> <p>OK.</p>
13	A-101- A-104	1207.2 7-3-12 7-3-12	<p><u>Provide an approved testing laboratory listing for wall types which provide required sound transmission class (STC) of 50 as follows:</u></p> <p>A) Wall type 4.6/1/A.</p> <p>OK.</p> <p>B) Wall type 6.6/1/A.</p> <p>Provide Acoustic Design Studio engineer's review and analysis for wall type 6.6/1A and 6.6/2/A.</p>

SCAN



CITY OF PORTLAND, OREGON – BUREAU OF DEVELOPMENT SERVICES

1900 SW Fourth Avenue, Suite 5000 • Portland, Oregon 97201 • www.portlandonline.com/bds



LIFE SAFETY CHECKSHEET

Review Date: July 3, 2012

Application #: **12-119212-000-00-CO**
IVR #: **3157247**

To:		ROBIN WILCOX THA ARCHITECTURE 733 SW OAK ST PORTLAND, OR 97205	Work: (503) 227-1254 Fax: (503) 227-7818 Email: rwilcox@thaarchitecture.com
From:	LIFE SAFETY PLANS EXAMINER	NAUMAN QURAISHI	Phone: (503) 823-7544 Email: Nauman.Quraishi@portlandoregon.gov
cc:	OWNER	3339 DIVISION LLC 136 NE 28TH AVE PORTLAND, OR 97232-3146	

PROJECT INFORMATION

Street Address:	3339 SE DIVISION ST					
Description of Work:	NEW 4-STORY 31-UNIT APARTMENT BUILDING WITH 2 GROUND FLOOR RETAIL SPACES. Demolish existing buildings on site via separate permit(s)					
The following assumptions were made when reviewing your project:						
Code Edition	Occupancy group	Construction Type	Building Area	Stories	Sprinklers	Alarms
2010 OSSC	R-2 / M / B	V-A	30,850 SF	4	Yes	Yes

PLAN REVIEW

Based on the plans submitted, the items listed below appear to be missing or not in conformance with the Oregon Structural Specialty Code (OSSC), ICC/ANSI A117.1 (ANSI), the Oregon Energy Efficiency Specialty Code (OEESC), and/or other City requirements.

Item #	Location on plans	Code Section	Clarification / Correction Required
1	Title Sheet	107.2.1	Please update project title sheet to include: A) — A list of all required special inspections. B) — A list of all deferred submittals. C) — Note sprinklers and fire alarms system under separate permit from Fire Marshal's office. D) — Please add a note in large text reading: — <i>"The General Contractor shall schedule a Firestopping meeting with the Building Inspector and all Subcontractors that will be installing Firestopping materials. Each Subcontractor will provide a list of firestop materials/assemblies which will be used, the type of penetrations where each material/assembly will be used; and the listing and approval information (i.e. UL, ICC, or other approved reports/listing numbers.) This information must be submitted to, and approved by, the building Inspector prior to any installation."</i>
		7-3-12	OK.
2	Title sheet	107.2.1	Please update project title sheet to include a narrative description of proposed work.
		7-3-12	OK.
3	G-001		A) — First floor/Basement Code Plan — Replace occupancy classification for

Water Bureau WQBF Checksheet Response

Permit #: 12-119212-000-00-CO

Date: 6-7-12

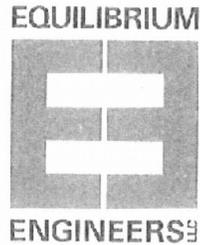
Customer name and phone number: ROBIN WILCOX 503-227-1254

NOTE: Please number each change in the '#' column. Use as many lines as necessary to describe your changes. Indicate which reviewer's checksheet you are responding to and the item your change addresses. If the item is not in response to a checksheet, write **customer** in the last column.

#	Description of changes, revisions, additions, etc.	Checksheet and item #
1	The existing 4" Domestic line will be reused as a dedicated fire line. from this existing 4" line a new Domestic Line will be tapped off. This new 3" domestic line will be ran through a new 2" water meter	1
2	The existing DCDA will be removed as a new one inside the building is being installed for fire protection.	2
3	TOM CLARK FROM LORENTZ BRUNN CONSTRUCTION (503-327-5056) WILL COORDINATE DEMOLITION WITH YOU.	3

Bin#: AX 10-1..specs on shelf

(for office use only)



April 10, 2012

Miklos Ugrai
City of Portland
Bureau of Development Services
1900 SW Fourth Ave. Suite 5000
Portland, OR 97201

RE: 3339 SE Division St.
Permit Application No. 12-119212-000-00-CO

Dear Miklos:

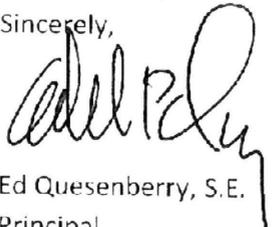
Following are responses to your plan review comments for the above mentioned project dated April 3, 2012:

1. Special Inspection Form has been completed.
2. A Floor Live Load map has been included on Sheet S001. Posting of Live Loads will be addressed by the Architect and Owner.
3. Bidder designed items are listed on Sheet S001, under *Submittals*, Note #2.
4. The Seneca software computes actual stresses in the PT slab at transfer of PT forces and at Service Load conditions. We then compare those stresses with code allowables per ACI 318, Chapter 18 and ensure that the profile and amount of PT tendons is sufficient to maintain actual stress levels below the code maximums. For each PT computer run, the summary of stresses can be found in Section 6 of the output. Refer to page 54 for an example.
5. The concrete columns are designed for $f'_c=4000$ psi (Ref calcs, page 16). The PT analysis utilizes the column concrete strength to calculate equivalent frame stiffnesses. We use 5000 psi for the columns only in the PT Data analysis because it is likely that the final column strength will be closer to 5000 psi than 4000 psi. We have attached a revised PT Data run of strip EastB4, and you will see that there is no significant change in slab stresses when the column strength is adjusted to 4000 psi. It is our opinion that no further calculations are needed on this issue.
6. Mechanical unit loads have been added to the drawings.
7. As noted on the detail, the $\frac{1}{4}$ inch plate and associated welds occur on two sides of the post. Refer to calculation page 278 for plate and weld design.
8. There is a column support for the PT slab at this connection, so the slab deflection at this location is negligible. The slab is a 4 foot long cantilever to the right in the detail. According to our PT analysis, the deflection at the end of the cantilever is approximately .006 inches (ref calc page 65).
9. Refer to calc page 261. The maximum axial + bending stress ratio is 0.29, well below allowable. This factor of safety against code allowable allows for nominal eccentricities by inspection.

10. The calculation you are referring to is for the shearwall on Grid 7 at Grid F.3. As you can see on S-101, the footing is shown as 54 feet long in that location-it extends from Grid F.2 to near Grid H. Since the calcs match the drawings, no revision is necessary.
11. The eccentricity has been added, and additional reinforcing was added to the piers to account for the additional moment due to the eccentricity. See additional calc page 201A, 201B and 201C, attached.
12. The lateral displacements of the second floor diaphragm due to concrete shearwall deflection are nominal (less than 1/16 inch). Accordingly, P-Delta effects are relatively insignificant.

This concludes our responses to your comments. Please do not hesitate to contact me if you have questions.

Sincerely,



Ed Quesenberry, S.E.
Principal



EXPIRES: 12/31/17

PTData.Net {V09.18.11-939300}
POST TENSIONED TWO-WAY SLAB DESIGN
 04 10 2012

PROJECT: Division St
 MEMBER ID: East B4
 STORAGE ID: C:\Users\ed quesenberry\Documents\2011 Projects\111118 SE Division Mixed Use\PT DATA\EastB4final.PT

Copyright 2010 Seneca Software Solutions

2 SPANS 2 CANTILEVERS SKIP LL DL FACTOR=1.2 LL FACTOR=1.6 CONCRETE: BEAM 5000psi 150pcf E=4287ksi
 1 END SPANS LEFT 1 END SPANS RIGHT 125psi MINIMUM F/A COLUMN 4000psi 150pcf E=3034ksi
 ALLOWABLE TENSILE STRESSES TOP 6.0 SQRT f'c=424psi BOT 6.0 SORT f'c=424psi %SUP.DL%TRANSFER=0.0
 TENDON COVER: INTERIOR SPANS TOP 1.00 in EXTERIOR SPANS TOP 1.00 in UNBONDED, LOW RELAXATION
 BOTTOM 1.00 in BOTTOM 2.00 in PERP F/A=125psi
 MIN REBAR REQUIREMENTS: 0.075% @ TOP, No/0.8fy @ BOT WHEN $\lambda > 2 \sqrt{f'c}$ REBAR YIELD=60.00ksi
 TENDON DIAM=0.50in MAX LONG BAR SIZE=#5/#5 REBAR COVER: 1.00in TOP 1.50in BOT
 lse=174.0ksi Col Ic/Ig=1.00 No Top Columns @ Stressing



Section 1 - EQUIVALENT FRAME INPUT DATA

-----GEOMETRY-----						-----TENDON PROFILE-----						-----SUPERIMPOSED LOADS-----					
L	l	TriBL	TriBR	Yref		CL	CR	A	B	C		LOAD	DL	LL	A	B	
SPAN (ft)	(in)	(ft)	(ft)	(in)	TYPE	(in)	(in)	(ft)	(ft)	(ft)	SPAN	TYPE	(k/ft)	(k/ft)	(ft)	(ft)	
CL	4.00	12.00	9.00	11.00	3.00	12	0.00	0.00	1.00	0.00	0.00	CL	U	0.167	0.097	0.00	4.00
1	24.50	12.00	9.00	11.00	3.00	2	6.00	0.00	0.00	0.00	1	U	0.167	0.097	0.00	24.50	
2	23.00	12.00	9.00	11.00	3.00	2	3.00	8.00	0.00	0.00	2	U	0.167	0.097	0.00	23.00	
CR	5.00	12.00	9.00	11.00	3.00	12	0.00	0.00	1.25	0.00	0.00	CL	U	0.167	0.097	0.00	5.00

-----COLUMNS-----																	
-----Bottom-----						-----Top-----						-----Cap-----		-----Trans Br-----			
JOINT	H	C2	CL	Far	End	H	C2	CL	Far	End	W1	W2	h	Bw	Ytb	Bw	Ytb
	(ft)	(in)	(in)		(ft)	(in)	(in)		(ft)	(in)	(in)	(in)	(in)	(in)	(in)	(in)	(in)
1	13.50	16.00	12.00	Fix	0.00	0.00	0.00	Fix	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	13.50	16.00	16.00	Fix	0.00	0.00	0.00	Fix	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	13.50	16.00	16.00	Fix	0.00	0.00	0.00	Fix	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section 2 - SLAB AND COLUMN MOMENTS (k-ft)

Column Moments are Factored, All Other Moments are Unfactored

-----DEAD LOAD-----				-----BALANCED LOAD-----				-----BEAM SECONDARY-----				
SPAN	L	M(x-ft)	R	L	M(x-ft)	R	L	R	L	R	L	R
CL			-41.28			9.36						
1	-48.49	262.22(10.2)	-373.00	24.88	-139.38(10.2)	213.07	14.90	23.34				
2	-367.17	187.08(13.3)	76.20	210.35	-116.03(13.3)	41.86	20.67	21.89				
CR	-83.28			18.55								

-----MOST POS LL-----				-----MOST NEG LL-----				-----COLUMN MOMENTS (FACTORED)-----		
SPAN	L	M(x-ft)	R	L	M(x-ft)	R	JOINT	TOP	BOT	
CL			-11.88			-11.88				
1	1.93	101.43(10.2)	7.77	-15.88	-13.27(10.2)	-115.15	1	0.00	38.79	
2	7.92	86.19(13.3)	5.17	-113.60	-17.37(20.5)	-27.10	2	0.00	-38.98	
CR	-18.21			-13.21			3	0.00	-52.36	

Section 3 - EFFECTIVE FORCES AND PROFILES

Tendon Weight= 0.500 psf

SPAN	Eff (k)	Force (k/ft)	No. Strands	CGS Dim. (in)	l _{o1}	l _{o2}	l _{o3}	F/A (ksi)	Min	Max
CL	479.20	23.96	18.0	0.00	6.00	3.00	5.75	3.166	0.166	0.166
1	479.20	23.96	18.0	5.75	9.75	0.00	1.25	3.166	0.166	0.166
2	479.20	23.96	18.0	1.25	9.25	0.00	5.50	3.166	0.166	0.166
CR	479.20	23.96	18.0	5.50	6.00	0.00	0.00	3.166	0.166	0.166

Section 4 - REBAR REQUIREMENTS (in2)

JOINT	ULT(%R=0.0)		Min		ULT(%R=0.0)		MIN	
	TOP	BOT	TOP	BOT	TOP	BOT	TOP	BOT
1	0.00	0.00	2.65	0.00	0.00	0.00	0.00	4.65
2	2.47	0.00	2.57	0.00	0.00	0.00	0.00	1.90
3	0.00	0.00	2.48	0.00				

Controlling Rebar For This Redistribution Case

JOINT	TOP	BOT	SPAN	BOT	TOP
1	9-#5	0-#5	1	18-#5 @ 16.0in c/c	0-#5 @ 0.0in c/c
2	9-#5	0-#5	2	7-#5 @ 34.3in c/c	0-#5 @ 0.0in c/c
3	9-#5	0-#5			

PTData.Net {V09.18.11-939300}

ULT (SR=7.5)			Min		ULT (SR=7.5)			MIN	
JOINT	TOP	BOT	TOP	BOT	SPAN	TOP	BOT	TOP	BOT
1	0.00	0.00	2.65	0.00	1	0.00	0.00	0.00	4.65
2	1.45	0.00	2.57	0.00	2	0.00	0.00	0.00	1.90
3	0.00	0.00	2.48	0.00					

Controlling Rebar for This Redistrib. bottom Case

JOINT	TOP	BOT	SPAN	BOT	TOP
1	9-#5	0-#5	1	15-#5 @ 16.0in o/c	0-#5 @ 0.0in o/c
2	9-#5	0-#5	2	7-#5 @ 34.3in o/c	0-#5 @ 0.0in o/c
3	9-#5	0-#5			

ULT (SR=15.0)			Min		ULT (SR=15.0)			MIN	
JOINT	TOP	BOT	TOP	BOT	SPAN	TOP	BOT	TOP	BOT
1	0.00	0.00	2.65	0.00	1	0.00	1.00	0.00	4.65
2	0.52	0.00	2.57	0.00	2	0.00	0.00	0.00	1.90
3	0.00	0.00	2.48	0.00					

Controlling Rebar For This Redistribution Case

JOINT	TOP	BOT	SPAN	BOT	TOP
1	9-#5	0-#5	1	15-#5 @ 16.0in o/c	0-#5 @ 0.0in o/c
2	9-#5	0-#5	2	7-#5 @ 34.3in o/c	0-#5 @ 0.0in o/c
3	9-#5	0-#5			

Section 5 - PUNCHING SHEAR ANALYSIS

JOINT	Ac (in ²)	Jc (in ⁴)	Critical Section #1				f _x (ksi)	Allow (ksi)	c/Ro (in/in)	Gamma	Factored St. Shears & Moments			
			F _x (in)	xL (in)	xR (in)	fL (ksi)					Shear (kips)	Moment (k-ft)	Shear (kips)	Moment (k-ft)
1	906.24	76640.3	0.00	10.80	10.80	0.154	0.201	0.212	0.58	161.01	36.26	147.42	38.79	
2	1113.00	135380.2	0.00	13.25	13.25	0.290	0.278	0.218	0.40	315.91	-33.03	271.53	38.68	
3	985.04	111749.1	0.00	12.80	12.80	0.195	0.145	0.218	0.40	167.48	-44.00	150.22	-52.36	

Section 6 - CONCRETE FLEXURAL STRESSES AND DEFLECTIONS

SPAN	-----Stresses (ksi)-----						-----Deflections (in)-----			
	Service Loads			Transfer of Prestress			DL + BUL		LL	
	Tension (x)	Compression (x)		Tension (x)	Compression (x)		Delta L/Delta	Delta L/Delta		
CR T	-0.075 (0.50)	0.166 (4.00)		-0.179 (0.50)	0.134 (4.00)		0.036	1339	0.013	2557
B	-0.166 (4.00)	-0.258 (0.50)		-0.194 (4.00)	-0.210 (0.50)		0.070	4204	0.067	4410
1 T	0.407 (23.83)	-0.634 (10.22)		-0.099 (10.22)	-0.366 (23.83)		0.029	9547	0.050	3497
B	0.301 (10.22)	-0.740 (23.83)		-0.022 (23.83)	-0.240 (10.22)		0.015	3943	0.020	3029
2 T	0.397 (0.57)	-0.494 (13.31)		-0.000 (13.31)	-0.368 (0.67)					
B	0.161 (13.31)	-0.730 (0.67)		-0.023 (0.67)	-0.303 (13.31)					
CR T	-0.035 (0.57)	0.166 (5.00)		-0.181 (0.67)	0.194 (5.00)					
B	-0.166 (5.00)	-0.298 (0.67)		-0.194 (5.00)	-0.288 (0.67)					

Section 7 - FACTORED COLUMN LOADS

JOINT	Maximum Axial Load			Maximum Moment		
	Axial Load (kips)	Column Top (k-ft)	Column Bottom (k-ft)	Axial Load (kips)	Column Top (k-ft)	Column Bottom (k-ft)
1	161.01	0.00	36.26	47.42	0.00	38.79
2	315.91	0.00	-13.03	271.53	0.00	38.68
3	167.48	0.00	-44.00	150.22	0.00	-52.36

Project	3339 DIVISION ST
Location	
Client	TIA



By	<i>[Signature]</i>	Sheet #	201A
Date	4/17/12	Job #	
Revised			
Date	1.0		

CHECK ECCENTRICITY ON PIERS

PIER CAP TORSION

$$C_u_{max} = 145 \text{ k}$$

$$T_u = 145 (15'') = 2175 \text{ k-in}$$

DISTRIBUTES TO (2)

PIERS, $\therefore \text{MAX } T_u = \frac{2175}{2} = 1090 \text{ k-in}$

CHECK CONC SECTION PER
ACI 11.5.3.1

$$\sqrt{\left(\frac{V_u}{b_w d}\right)^2 + \left(\frac{T_u P_h}{1.7 A_{off}^2}\right)^2} < \phi \left(\frac{V_c}{b_w d} + 8 \sqrt{f'_c}\right)$$

$$P_h = 72 + 40 = 112 \text{ in}$$

$$A_{off} = 36 \times 20 = 720 \text{ in}^2$$

$$\sqrt{\left(\frac{72}{42(21)}\right)^2 + \left(\frac{1090(112)}{1.7(720^2)}\right)^2} = 160 \text{ PSI}$$

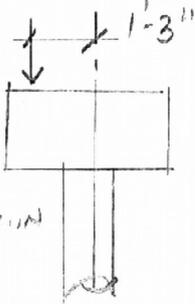
$$.75 \left(\frac{2\sqrt{3000}(42)(21)}{42(21)} + 8\sqrt{3000} \right) = 410 \text{ PSI}$$

$$160 < 410 \therefore \text{OK}$$

$$A_T = \frac{1090(12)}{2(.85)(720)(60) \cot 45} = .18 \text{ in}^2/\text{ft}$$

#4 Hoops @ 8" OC

$$A_T = .20 \left(\frac{12}{8}\right) = .30 \text{ in}^2/\text{ft}$$



$$A_d = \frac{A_T P_h}{5} \left(\frac{f_{yT}}{f_y}\right) \cot^2 45$$

$$A_d = \frac{.18}{12} (112) = 1.68 \text{ in}^2$$

$$A_{d/2} = .84 \text{ in}^2$$

$$A_{STOT} = 1.76 + .84 = 2.6 \text{ in}^2$$

USE (5) - #7 + #3

$$A_{STOT} = 6.0 \text{ in}^2$$

CHECK ADDITIONAL MOMENT ON PIER

$$M_{ADD} = 1090 \text{ k-in} = 91 \text{ k-ft}$$

$$M_u = 45 + 91 = 136 \text{ k-ft}$$

$$\text{VIRTUAL ECCENTRICITY} = \frac{136}{90} = 1.51$$

USE (9) - #7 VERTS

Southeast Mixed Use
 East Building
 Job # 11110

Title :
 Engineer:
 Project Desc:

Job #

2018

Printed: 17 APR 2012 1:38PM

Concrete Column

File: c:\Users\ed.quesberry\Documents\ENERCALC Data Files\civils\cns12411
 ENERCALC.INQ: 1993-2011, Build: 124.11, Ver: 6.12.4.11

Lic. #: KW-06008381

Licensee: EQUILIBRIUM ENGINEERS LLC

Description: Drilled pier

Calculations per, ASCE 7-05

General Information

fc: Concrete 28 day strength = 4.0 ksi
 E = 3,122.0 ksi
 Density = 145.0 pcf
 β = 0.850
 fy - Main Rebar = 60.0 ksi
 E - Main Rebar = 29,000.0 ksi
 Allow. Reinforcing Limits *ASTM A515 Bars Used*
 Min. Reinf. = 1.0 %
 Max. Reinf. = 8.0 %

Overall Column Height = 20.0 ft
 End Fixity: Top & Bottom Pinned

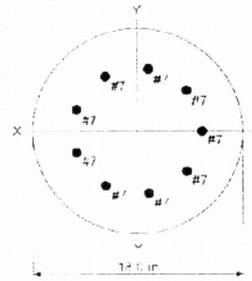
Brace condition for deflection (buckling) along columns:
 X-X (width) axis: Unbraced Length for X-X Axis buckling = 10 ft, K = 1.0
 Y-Y (depth) axis: Fully braced against buckling along Y-Y Axis

Load Combination: 2006 IBC & ASCE 7-05

Column Cross Section

Column Dimensions: 18.0 in Diameter, Column Edge to Rebar Edge
 Cover = 3.0 in

Column Reinforcing: 9.0 - #7 bars



Applied Loads

Entered loads are factored per load combinations specified by user.

Column self weight included: 5,124.72 lbs * Dead Load Factor

AXIAL LOADS ...

Seismic Reaction: Axial Load at 20.0 ft above base, Xecc = 18.0 in, E = 90.0 k

DESIGN SUMMARY

Load Combination: +0.90D+E+1.60H
 Location of max. above base: 19.866 ft
Maximum Stress Ratio: 0.9454 : 1
 Ratio = $(P_u^2 + M_u^2)^{0.5} / (\Phi P_n^2 + \Phi M_n^2)^{0.5}$
 Pu = 94.612 k Φ * Pn = 98.843 k
 Mu-x = 0.0 k-ft Φ * Mn-x = 0.0 k-ft
 Mu-y = 134.094 k-ft Φ * Mn-y = 0.0 k-ft
 Mu Angle = 270.0 deg
 Mu at Angle = 134.094 k-ft Φ Mn at Angle = 141.837 k-ft

Maximum SERVICE Load Reactions ...

Top along Y-Y: k Bottom along Y-Y: k
 Top along X-X: k Bottom along X-X: k

Maximum SERVICE Load Deflections ...

Along Y-Y: 0.0 in at 0.0 ft above base for load combination:
 Along X-X: -0.3753 in at 11.678 ft above base for load combination: E Only

Pn & Mn values located at Pu-Mu vector intersection with capacity curve

Column Capacities ...

Pnmax: Nominal Max. Compressive Axial Capacity: 1,170.84 k
 Pnmin: Nominal Vir. Tension Axial Capacity: -324.0 k
 Φ Pnmax: Usable Compressive Axial Capacity: 696.65 k
 Φ Pnmin: Usable Tension Axial Capacity: -226.80 k

General Section Information

φ = 0.70 β = 0.850 η = 0.850
 ρ: % Reinforcing: 2.122 % Rcb: % Ok
 Reinforcing Area: 5.40 in²
 Concrete Area: 254.469 in²

Governing Load Combination Results

Governing Factored Load Combination	Dist. from base ft	Axial Load (k)		Bending Analysis (k-ft)						Utilization Ratio	
		Pu	Φ * Pn	δx	δx * Mu-x	δy	δy * Mu-y	Alpha (deg)	δ Mu		Φ Mn
+1.4D	19.87	7.17	696.65					0.000			0.010
+1.20D+0.50L+0.20S+E	19.87	96.15	103.03	1.000		1.000	134.09	270.000	134.09	142.02	0.944
+0.90D+E+1.60H	19.87	94.61	98.84	1.000		1.000	-134.09	270.000	134.09	141.84	0.945

Southeast Mixed Use
 East Building
 Job # 11110

Title :
 Engineer:
 Project Desc.:

Job #

2010

Printed: 17 APR 2012, 1:23PM

Concrete Column

File: c:\Users\jed.quesenberry\Documents\ENERCALC Data Files\divisionst.ec6
 ENERCALC, INC. 1993-2011 Build 6.12.4.11, Ver:6.12.4.11

Lic. #: KW-06008381

Licensee: EQUILIBRIUM ENGINEERS LLC

Description: Drilled pier

Maximum Reactions - Unfactored

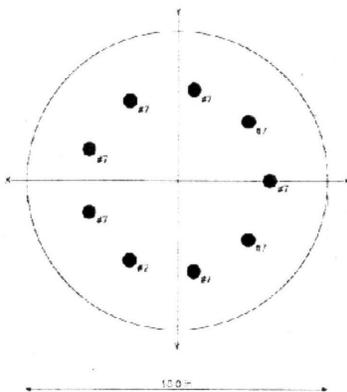
Note: Only non-zero reactions are listed.

Load Combination	Reaction along X-X Axis		Reaction along Y-Y Axis		Axial Reaction
	@ Base	@ Top	@ Base	@ Top	@ Base
E Only		k	6.750	6.750 k	90.000 k

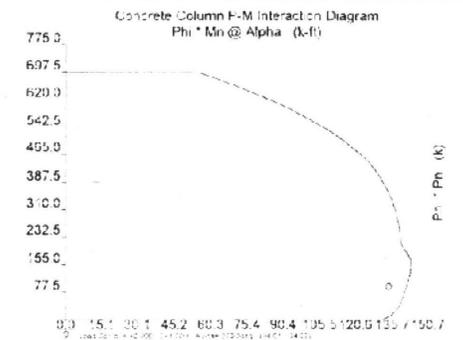
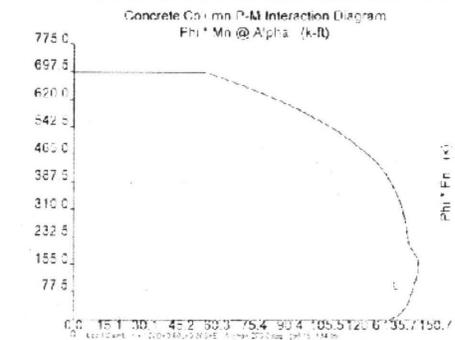
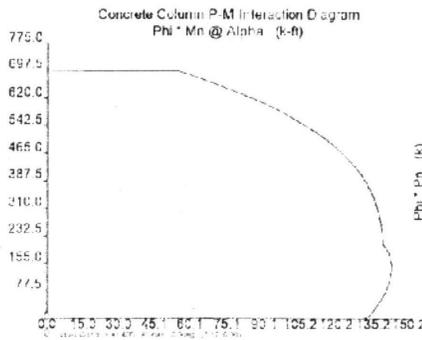
Maximum Deflections for Load Combinations - Unfactored Loads

Load Combination	Max. X-X Deflection	Distance	Max. Y-Y Deflection	Distance
E Only	-0.3753 in	11.678 ft	0.000 in	0.000 ft

Sketches



Interaction Diagrams



STRUCTURAL CHECKSHEET

Application # 12-119212-000-00-CO

Review Date: April 3, 2012

INSTRUCTIONS

To respond to this checksheet, come to Permitting Services (located at 1900 SW Fourth Ave., 2nd Floor, hours 8:00 a.m. - 3:00 p.m. Tuesday through Friday) and update all four sets of the originally submitted drawings. To update the drawings, you may either replace the original sheets with new sheets, or edit the originally submitted sheets. (Specific instructions for updating plans are posted in Document Services.)

Please complete the attached Checksheet Response Form and include it with your re-submittal.

If you have specific questions concerning this Checksheet, please call me at the phone number listed above. To check the status of your project, go to <http://www.portlandonline.com/bds/index.cfm?c=34194>. Or, you may request the status to be faxed to you by calling 503-823-7000 and selecting option 4.

You may receive separate Checksheets from other City agencies that will require separate responses.

NEW DEVELOPMENT SERVICES CENTER HOURS: The DSC (1st floor) and Permitting Services (2nd floor) are open Tuesday through Friday from 8:00 a.m. to 3:00 p.m. (closed on Mondays). In the DSC, Land Use, Site Development or Building Permit application review, submittal or intake of complete permits/applications will be limited to between 8:00 AM and 12:00 PM. Land Use applications and Building Permit review or intake will not be processed after 12:00 PM. Please visit the BDS website for more information regarding the Development Services Center hours.

NEW RECHECK FEE: Please note that for plans submitted on or after July 1, 2010 plan review fees for Life Safety, Structural, Site Development and Planning and Zoning will cover the initial review and up to two checksheets and the reviews of the applicant's responses to those checksheets. All additional checksheets and reviews of applicant responses will be charged \$167 per checksheet.

SCAN



CITY OF PORTLAND, OREGON – BUREAU OF DEVELOPMENT SERVICES

1900 SW Fourth Avenue, Suite 5000 • Portland, Oregon 97201 • www.portlandonline.com/bds



LIFE SAFETY CHECKSHEET

Review Date: April 23, 2012

Application #: **12-119212-000-00-CO**
IVR #: **3157247**

To:	APPLICANT	ROBIN WILCOX THA ARCHITECTURE 733 SW OAK ST PORTLAND, OR 97205	Work: (503) 227-1254 Fax: (503) 227-7818 Email: rwilcox@thaarchitecture.com
From:	LIFE SAFETY PLANS EXAMINER	NAUMAN QURAISHI	Phone: (503) 823-7544 Email: Nauman.Quraishi@portlandoregon.gov
cc:	OWNER	3339 DIVISION LLC 136 NE 28TH AVE PORTLAND, OR 97232	

PROJECT INFORMATION

Street Address:	3339 SE DIVISION ST					
Description of Work:	NEW 4-STORY 31-UNIT APARTMENT BUILDING WITH 2 GROUND FLOOR RETAIL SPACES.					
The following assumptions were made when reviewing your project:						
Code Edition	Occupancy group	Construction Type	Building Area	Stories	Sprinklers	Alarms
2010 OSSC	R-2 / M / B	V-A	30,850 SF	4	Yes	Yes

PLAN REVIEW

Based on the plans submitted, the items listed below appear to be missing or not in conformance with The Oregon Structural Specialty Code (OSSC) and/or other City requirements.

Item #	Location on plans	Code Section	Clarification / Correction Required
1	Title Sheet	107.2.1	Please update project title sheet to include: A) A list of all required special inspections. B) A list of all deferred submittals. C) Note sprinklers and fire alarms system under separate permit from Fire Marshal's office. D) Please add a note in large text reading: <i>"The General Contractor shall schedule a Firestopping meeting with the Building Inspector and all Subcontractors that will be installing Firestopping materials. Each Subcontractor will provide a list of firestop materials/assemblies which will be used, the type of penetrations where each material/assembly will be used; and the listing and approval information (i.e. UL, ICC, or other approved reports/listing numbers.) This information must be submitted to, and approved by, the building Inspector prior to any installation."</i>
2	Title sheet	107.2.1	Please update project title sheet to include a narrative description of proposed work.
3	G-001		A) First floor/Basement Code Plan – Replace occupancy classification for elec. room-105, mech. Room-106 and bike storage-107 to read; S-1/R-2. B) Code Analysis: Under Fire Resistive Building Elements, fire resistivity required is listed type V-B that does not match with building construction

W.A. 2

			type i.e. V-A. Please clarify and update code analysis for fire resistive building elements as required.
4	G-001	107.2.1	Please update Code Analysis to include number of dwelling units that are accessible units as follows: A) Accessible unit with loft. B) Type A accessible units (2% of total number of units proposed). C) Type B accessible units.
5			
6	G-001	1014.3	The common path of egress travel in dwelling unit-117 exceeds the code allowed maximum distance 125 feet. Show how such requirement is provided or obtain approval through Building Code Appeal.
7	L-101	107.2.1	Indicate property lines on site plan as required.
8	G-001 A-101	1022.2 1022.2.1	The building code classifies corridor-108 as an exit passageway. Provide 1 1/2-hour-rated door separation between the exit stairway enclosure #2 and such exit passageway. Please update code plans, floor plans and door schedule as required.
9	G-001 A-101	1027.5.2	Exterior walls of retail 1-101, retail 2-103, bike storage-107 and mechanical room-106 located in the exit courts serving as a portion of exit discharge shall be one-hour fire-resistance construction and openings in such walls shall be protected by 3/4 hour assemblies. The location of such exterior walls are as follows: A) Retail 1-101 – East exterior wall. B) Retail 2- 103 – East and west exterior walls. C) Bike storage-107 and Mechanical room-106 – East exterior walls. Please update plans and show rated construction of exterior walls and opening protectives of windows/doors are to be provided.
10	A-101- A-104		Please indicate up/down arrows on all stairway plans including enlarged stairway plans.
11	A-101 L-101	1027.3	Exterior stairway #4 shall be located at least 10 feet from the property line. Show how such requirement is provided.
12	A-101	General	Note on plans Tenant Improvements for retail tenant spaces under “Separate permit”.
13	A-101- A-104	1207.2	Provide an approved testing laboratory listing for wall types which provide required sound transmission class (STC) of 50 as follows: A) Wall type 4.6/1/A. B) Wall type 6.6/1/A. C) Wall type 5.6/2/A – North, east and west wall of stairway enclosure #1 and #2 at 3 rd and 4 th floor. Please update such wall types to include acoustic test listing and STC 50 rating.
14	A-101- A-104	Table 601, 602	Provide wall type and details for exterior walls with required fire-rating and UL listing. Tag such walls on plans as required.
15	A-010	1207.2 1207.3	A) Floor-ceiling assembly 1/A-010 with UL listing G549 does not provide acoustical listing of STC 60 and IIC 30. Provide an approved testing laboratory listing for floor-ceiling which provides required one-hour fire-rating, sound transmission class (STC) of 50 and impact insulation class (IIC) rating of 50. B) Provide detail of one-hour rated floor-ceiling assembly at second floor North exterior deck over dwelling unit A. Such floor-ceiling assembly shall include STC 50 and IIC 50 rating of an approved testing laboratory listing. C) Tag all floor-ceiling assemblies on building sections as required.
16	A-101	1106.1.10.1	Mail boxes located in the residential lobby-110 shall be accessible in

			compliance with section 1109.2.3.5 and 1109.2.3.6. Please update interior elevation 2/A-250 as required.
17	A-101-A-104	709.6 715.4.3	Provide 1/3 hour rated door at elevator with smoke and draft control assembly complying section 715.4.3.1. Please update plans, door schedule and hardware group.
18	A-402 A-403	1203.4.1.1	Show how the natural ventilation in dwelling unit sleeping areas without exterior window is provided to comply with section 1203.4.1.1. Such dwelling units are unit B, C, D, E and F.
19	A-420- A-422	1009, 1013	Provide information on code features for stairway #1, #2, #3 and #4 as follows: A) Riser dimension: 7" high maximum. B) Tread dimension: 11" in depth minimum. C) Guardrail: 42" in height, spacing between railings 4" maximum. D) Indicate handrail type and size, handrail mounting height handrail extensions etc. E) Indicate stair tread and riser material.
20	A-640		Provide door hardware group/schedule.
21	A-101 A-640	1027.5.2	The door #102A, #106, #107B and #108 are located in exterior walls of exit courts that are less than 10 feet in width are required to have ¾ hour rating. Please update door schedule as required.
22	A-101 A-640	709.6 Table 715.4	Door # 107 shall be 1/3 hour rated and shall be equipped with smoke and draft control door assembly. Please update door schedule as required.
23	A-101- A-104	1011.3	Provide a tactile sign stating EXIT and complying with section 1107.5 shall be posted adjacent to each door to an exit stairway, an exit passageway and exit discharge.
24	A-101- A-104	1108.4.12	Show how the accessibility requirements for permanent room signage and other signs which provide direction to or information about the building are provided.
25	A-101- A-253,	2406.3.6	Provide tempered glass in all interior and exterior windows/storefront within 24" arc of doors and/or doorways and at conditions where the bottom edge of windows/storefront is less than 18" above the floor. Please update plans, exterior and interior elevations to show how such requirements are provided.
26	A-101 A-640	ICC/ANSI A117 404.2.4, 404.2.6	Specify door width, type and hardware for door# 101F, #101G, #101H, #101C and #101D. Update door schedule and provide door details as required.
27	A-101- A-104	2010 OEESC	Show how the building thermal envelope complies with 2010 Oregon Energy Efficiency Specialty Code Table 502.2(1) and 502.3. Update code plans sheet G-001 to include summary of building thermal envelope.
28	A101	2010 OEESC	Show how the air leakage requirement of sliding door assemblies listed as above noted in item # 22 complies with the values in section 502.4.2.
29	A-640		Provide door types and indicate type in door schedule.
30	A-201		Detail 4/A-421 tagged on north elevation-balcony condition 2/A-201 is missing. Provide such detail as required.
31	A-520	1008.1.7	A) Detail 8/A-520 – Top of threshold shall be ½" high maximum above adjacent floors to comply with ICC/ANSI A117 section 404.2.4. Update detail as required. B) Detail 7/A-520 – Top of threshold shall be ½" high maximum above adjacent floors. Wood threshold as shown is not code compliant. Please update detail as required.
32	A-400- A-403	ICC/ANSI	Provide and show 30" x 48" clear floor space for plumbing fixtures in bathroom in type A and type B accessible units to comply with ICC/ANSI section 1003.11 and 1004.11.
33	A-400- A403	ICC/ANSI	Provide and show minimum clearances between all opposing base cabinets, counter tops or walls within kitchen work in kitchen in type A and type B

			accessible units to comply with ICC/ANSI section 1003.12 and 1004.12.
34	A-251- A-253	ICC/ANSI	A) Indicate mounting height of future grab bar reinforcements in walls for water closet and tub in bathroom in all accessible units to comply with ICC/ANSI section 604.5, 607.4 B) Show how the future grab bar reinforcements for water closets where a Side wall is not available are provided. Update interior elevations of bathroom in unit E, G, H, J, L and M.
35	E-1- E-3	1006	Provide egress lighting in first floor elevator lobby/hallway and hallway-200 – 400 to comply with section 1006.
36	E-1-E-3	ICC/ANSI 309	In all dwelling units and in common use areas, the light switches, circuit panel boxes, environmental and other controls shall be 48" high maximum above the finished floor. The electrical and telecommunication (telephone / television outlets) receptacles on walls shall be no lower than 15" above the finished floor.

End of Checksheet

To respond to this checksheet, come to Permitting Services located at 1900 SW Fourth Ave., 2nd Floor, and update all four sets of the originally submitted drawings. To update the drawings, you may either replace the original sheets with new sheets, or edit the originally submitted sheets. (Specific instructions for updating plans are posted in Document Services.)

Please complete the attached Checksheet Response Form and include it with your re-submittal.

If you have specific questions concerning this Checksheet, please call me at the phone number listed above. To check the status of your project, go to <http://www.portlandonline.com/bds/index.cfm?c=34194>. Or, you may request the status to be faxed to you by calling 503-823-7000 and selecting option 4.

You may receive separate Checksheets from other City agencies that will require separate responses.

NEW DEVELOPMENT SERVICES CENTER HOURS: The DSC (1st floor) and Permitting Services (2nd floor) are open Tuesday through Friday from 8:00 a.m. to 3:00 p.m. (closed on Mondays). In the DSC, Land Use, Site Development or Building Permit application review, submittal or intake of complete permits/applications will be limited to between 8:00 AM and 12:00 PM. Land Use applications and Building Permit review or intake will not be processed after 12:00 PM. Please visit the BDS website for more information regarding the Development Services Center hours.

NEW RECHECK FEE: Please note that for plans submitted on or after July 1, 2010 plan review fees for Life Safety, Structural, Site Development and Planning and Zoning will cover the initial review and up to two checksheets and the reviews of the applicant's responses to those checksheets. All additional checksheets and reviews of applicant responses will be charged \$167.00 per checksheet.

Life Safety Checksheet Response

Permit #: 12-119212-000-00-CO

Date: June 19, 2012

Customer name and phone number: Robin Wilcox, 503-227-1254

Note: In the spaces below, please provide specific information concerning the changes that you have made in response to the checksheet. Note the checksheet item number, your response or a description of the revision, and the location of the change on the plans (i.e. page number and/or detail number). Use as many lines as needed. If the item is not in response to a checksheet, write "**Applicant**" in the column labeled "Checksheet item number."

Checksheet item number	Description of changes, corrections, additions, etc.	Location on plans
1 <i>al</i>	Special inspections, deferred submittals, and the requested notes have been added to the Title Sheet.	Title Sheet, S-001
2 <i>al</i>	Project narrative has been added to the Title Sheet.	Title Sheet
3 <i>al</i>	Occupancy classifications for the Elec Room 105, Mech Room 106, and Bike Storage 107 have been changed to S-1/R-2.	G-001
3 <i>al</i>	Fire Resistivity Required has been changed to V-A. Requirements listed were for V-A.	G-001
4 <i>al</i>	Code analysis has been updated to show number of dwelling units types.	G-001
6	The travel distance from Unit 117 is 125' to door 110A. The common path of egress travel from this unit should be measured to the top of the stair in Lobby 110 where there are two paths of egress travel. The first is to continue through door 110A and the second is to exit through Stair 2 and Exit Passageway 108. The distance to this point is 112' from Unit 117. No change made.	G-001
7	Property Lines have been added to the Site Plan. <i>NOTE PROPERTY LINES.</i>	A-101 LINES.
8 <i>al</i>	A 2 hour fire rated separation with a 1 1/2 hour rated door separation has been added between Stair 2 and Corridor 108. The floor plan and door schedule have been updated.	A-101, A-640
9 <i>al</i>	The east wall of Retail 1 and the west wall of Retail 2 have been changed to 1-hour rated construction. Openings in these walls will be protected by quick response fire sprinklers installed within 2' of the openings on the room side under a separate permit from the Fire Marshal's Office per granted appeal. The east wall of Retail 2, Mechanical Room 106, and Bike Storage 107 is indicated as a 1-hour rated wall and doors are protected by 3/4 hour assemblies.	A-101
10 <i>al</i>	Up/Down arrows have been added on all stairway plans.	A-101, A-101A, A-102, A-103, A-104, A-400, A-401, A-402, A-403, A-420, A-421, A-422
11 <i>al</i>	An appeal was submitted and granted allowing for Exterior Stair 4 to remain in its current location with a 1-hour fire-resistance rated wall for the entire length of the stair and terrace along the east property line. The top of the wall will be 7 feet above the adjacent stair tread or finished terrace surface.	A101, A-102, A-202, A-422
12 <i>al</i>	Note has been added on A-101.	A-101

13	<p>Listings have been added to wall types.</p> <p>A) Wall type 4.6/1/A. Please see attached Acoustic Design Studio letter dated June 21, 2012 for expected minimum performance of STC 52 for this wall type.</p> <p>B) Wall type 6.6/1/A, UL# U423, STC: 61, SA-830628.</p> <p>C) Wall type 5.6/2/A - north, east and west wall of stair enclosures #1 and #2, at the 2nd, 3rd, and 4th floor has been changed to wall type 6.6/2/A, UL# U423, STC: 61, SA-830628.</p>	A-010
14	<p>Exterior wall types with required fire-rating and UL listing have been added to A-010, and tagged on the floor plans.</p>	A-010, A-101, A-101A, A-102, A-400, A-401, A-402, A-403
15	<p>A) Floor-ceiling assembly 1/A-010 listing has been changed to UL G551. Please see attached Acoustic Design Studio letter dated June 21, 2012 for expected minimum performance of STC 62 and IIC 50-53 for this floor/ceiling type.</p> <p>B) Detail of floor/ceiling assembly with deck above has been added, 3/A-010. Please see attached Acoustic Design Studio letter dated June 21, 2012, floor type 3, for expected minimum performance of STC 58 and IIC 54-57 for this floor/ceiling type. Detail of floor/assembly in the loft unit with a dwelling unit above has also been added; see 2/A-010. Reference attached letter floor type 2 for expected minimum performance of STC 58 and IIC 54-57 for this floor/ceiling type.</p> <p>C) Assemblies have been tagged on building sections.</p>	A-010, A-300, A-301, A-302, A-303, A-304, A-305, A-306
16	<p>Mailboxes have been updated to be accessible in compliance with section 1109.2.3.6.</p>	A-250
17	<p>20 minute rated doors have been added at elevator openings. See plans, door schedule, and hardware schedule.</p>	A-101, A-102, A-103, A-104, A-640
18	<p>Units B, C, D, and F have operable windows in the sleeping areas. The doors have been removed from Unit E. The interior room of Unit E is ventilated through the adjoining room, with 54 square feet of opening, more than the required 8% or minimum of 25 square feet.</p>	A-102, A-103, A-104, A-402, A-403
19	<p>Riser dimension, tread dimension, guardrail dimensions, handrail information, and tread material have been added to stair drawings.</p>	A-400, A-401, A-420, A-421, A-422
20	<p>See hardware schedule.</p>	A-645
21	<p>Door schedule has been updated.</p>	A-640
22	<p>Door schedule has been updated.</p>	A-640
23	<p>Locations of tactile signs stating EXIT have been added to the Code Plans.</p>	G-001, G-002
24	<p>Refer to typical drawing detail 6/A-250.</p>	A-250
25	<p>A symbol for tempered glass has been added to the Symbols and Abbreviations sheet and tempered glass has been indicated on the exterior and interior elevations.</p>	A-000, A-200, A-201, A-202, A-203, A-204, A-250, A-251, A-252, A-301
26	<p>Door widths and type have been added to the door schedule. Door hardware to be manufacturer's standard wire pull handles and cylinder lock, to comply with 404.2.6. Maximum threshold height is 1/2", see detail 15/A-520.</p>	A-640, A-645
27	<p>Summary of building thermal envelope has been added to G-001.</p>	G-001
28	<p>Please see attached performance test report showing air leakage of .25 cfm/ft² at 1.57 psf for the Arcadia 5280 sliding door.</p>	
29	<p>Door types have been added and indicated in the door schedule.</p>	A-640
30	<p>Detail tag has been removed from 2/A-201.</p>	2/A-201
31	<p>A) Detail 8/A-520 has been re-numbered as 10/A-520. The maximum</p>	A-520

	threshold of 1/2" has been added to the detail. <input checked="" type="checkbox"/> B) Detail 7/A-520 has been re-numbered as 9/A-520. The threshold detail has been modified to be compliant with the code, and the maximum threshold height of 1/2" has been added to the detail.	
32	Clear floor space requirements have been added to all bathrooms. <i>clear floor spaces not shown in offices</i>	A-101, A-102, A-400, A-401, A-402, A-403
33 <i>al</i>	Minimum clearances have been added to all kitchens.	A-400, A-401, A-402, A-403
34 <i>al</i>	A) Mounting height for future grab bar reinforcement has been added to interior elevations. Tub/shower enclosure has reinforcement to accommodate future ICC/ANSI 607.4.2 compliant grabbars. B) Reinforcement is provided for future swing-up grab bars in units G, H, J, K, L, and M.	A-252, A-253
35 <i>al</i>	Egress lighting complying with OSCC 1006 will be provided in the first floor elevator lobby/hallway and corridors 200, 300, and 400. Note has been added to G-001.	G-001
36 <i>al</i>	In all dwelling units and in common areas, the light switches, circuit panel boxes, environmental and other controls will be 48" high maximum above finished floor. Electrical and telecommunication outlets will be no lower than 15" above the finished floor. See 7/A-250 for typical mounting heights.	A-250

Plan Bin Location: AX 10-1..specs on shelf

ACOUSTIC DESIGN STUDIO

519 SW Park Avenue • Suite 305 • Portland, OR 97205
503.735.5961 • todd@acousticdesignstudio.com
acousticdesignstudio.com

June 21, 2012

THA Architects
733 SW Oak Street, Suite 100
Portland, Oregon 97205

Attention: Robin Wilcox
Reference: 33rd + Division Apartments

Project: 12-34

Dear Mr. Wilcox:

This letter is written in summary of an analysis performed in order to determine sound isolation class (STC) and impact isolation class (IIC) ratings for partitions of the referenced project.

1. Background

- 1.1 Section 1207.3 in Chapter 12 of the 2010 Oregon Structural Specialty Code requires floor/ceiling assemblies to meet a minimum Impact Isolation Class (IIC) of 50 or Field Impact Isolation class (FIIC) of 45 between dwelling units. Similarly, Sound Transmission Class requirements for partitions are also STC 50 or Field Sound Transmission Class (FSTC) 45. The IIC and STC measurements are made in controlled, laboratory conditions. The field measurements (FIIC and FSTC) are measured in the same way as the IIC and STC except that the noise data of the partition system under test is obtained from measurements made in the field.
- 1.2 Impact and sound isolation ratings derived from measurements made in the field are not usually the same as laboratory ratings. The reason for this difference is usually attributable to the flanking paths (noise transmission paths other than the direct transmission through the system under test) associated with a field test. With good quality control to ensure that and flanking transmission is reduced, the FIIC or FSTC would be slightly lower than the lab tested IIC or STC for the same partition.

✓ 2. **Wall Type 4.6**

- 2.1 Wall Type 4.6 consists of 6", 16 gauge steel studs, 24" on center with 5/8" thick gypsum on one side of the studs and 5/8" thick Series 200 Sure-Board wall panels directly applied to the opposite side of the studs. A second 5/8" gypsum panel is applied over the Sure-Board on one side of the wall for a total of three layers of 5/8" gypsum. Glass fiber insulation is in placed in the stud cavities.
- 2.2 Test TL-06-402 by Western Electro-Acoustic Laboratory was performed on a similar wall having 6" metal studs, 16" on center with one layer of 5/8" gypsum on one side of the studs, a 5/8" Series 200 Sure-Board panel applied to the other side of the studs and 6" thick R-19 insulation in the stud cavities. This wall tested at STC 47.
- 2.3 Based on tests of US Gypsum wall assemblies (Riverbank Laboratory tests TL84-141 and TL84-136), an improvement of 3 STC points is realized in comparing a wall with three layers of gypsum wallboard versus a two layer wall, given the wall incorporates insulation in the stud cavities *and a resilient channel on one side of the studs*. Tests by US Gypsum (801036 and 810938) show an improvement of 6 points for a wall with three layers of gypsum versus a two layer wall that incorporates insulation in the stud cavities *but does not include a resilient channel*.
- 2.4 Thus, a minimum improvement of 3 points is expected for the additional layer of 5/8" gypsum in Wall Type 4.6 versus the wall in test TL-06-402. Additionally, an improvement of 2 STC points can be expected for the 24" stud spacing of the proposed Wall Type 4.6, compared to 16" stud spacing under test.
- 2.5 Based on the referenced data, the expected minimum performance for Wall Type 4.6 is STC 52.

✓ 3. **Floor Type 1**

- 3.1 Floor Type 1 consists of a 2" thick unfinished concrete slab on 1-1/2" steel deck supported by 12" deep metal joists, 24" on center. Batt insulation, 3.5" thick, is located in the joist cavities. A two layer 5/8" type X gypsum ceiling is suspended on 7/8" thick hat channels fixed to the bottom of the joists using Pac International "RSIC" clips that are 48" on center.
- 3.2 A field impact isolation test on a floor/ceiling assembly built to identical specifications as Floor/Ceiling Assembly Type III (F3), was performed by Elki Lahav, PE of A Acoustics on June 9, 2011. The system tested (test number 060911-FIIC, attached) was found to have a field-tested impact isolation rating of FIIC-47.
- 3.3 Determining the IIC or FIIC of an assembly requires the estimation of the amount of sound absorption in the receiving room (the room beneath the test assembly) and a normalization of the receiving room sound pressure levels based on a standard

quantity of room absorption. Normalization is intended to remove the effects of receiving room acoustical characteristics, which can vary from test to test in the field.

- 3.4 The normalization process based on a standard quantity of room absorption is strongly dependent on the receiving room volume. It has been shown¹ that tests with volumes greater than 1100 cubic feet will tend to show lower FIIC performance, while test with receiving rooms smaller than 1100 cubic feet will tend to increase FIIC performance.
- 3.5 For the referenced field test, the receiving room had a volume of roughly 1500 cubic feet. For a receiving room of that volume, the measured FIIC is expected to be underestimated by 1 FIIC point.
- 3.6 Field testing would be expected to introduce flanking pathways for impact noise that are typically not present in laboratory test environments. Both the field tested building and the project will incorporate steel framed walls. Flanking pathways would include the transfer of vibration from the slab to the walls. Vibration of the walls would be converted back into audible noise in the receiving room.
- 3.7 Airborne flanking paths can also be present in field tests. Airborne sound generated by the tapping machine will reach the microphone in the receiving room if holes or other "leaks" are present in the floor system. Any additional noise that does not transfer directly through the floor under test but reaches the microphone through an alternative path will increase the sound levels in the receiving room and result in a lower value for tested FIIC.
- 3.8 Lab testing is performed within an environment where flanking is less likely to occur. Alternative pathways for vibration are reduced as the source and receiving room walls are constructed of more massive materials, such as concrete. Gaps or other "leaks" that allow airborne sound through floor systems are less likely to occur. Penetrations that may be present in the field are omitted in the laboratory. Structural intersections and interfaces where gaps or "leaks" may occur are minimized in an accredited laboratory test chamber.
- 3.9 Based on the attached field test and the consideration of the tests receiving room volume, Floor Type 1 will perform at FIIC 48 minimum.
- 3.10 Based on the typical amount of flanking transmission that is expected in field tests, the Floor Type 1 would perform 2 to 5 points greater at IIC 50 to 53 when tested in a laboratory.

¹ John LoVerde and Wayland Dong, "Normalization methods for field impact testing," J. Acoust. Soc. Am. **118**, 638-646 (2005)

- 3.11 Test TLF-03-011a by the National Research Council of Canada was performed on a floor system consisting of an unfinished concrete slab of 35 to 50 mm (1-3/8" to 2") thickness on 15 mm (5/8") deep corrugated steel deck over 205 mm (8") metal C-joists 406 mm (16") on center. Two layers of 13 mm (1/2") gypsum were attached to the bottom of the joists using resilient channels at 406 mm (16") on center. This floor tested at STC 62.

✓ 4. Floor Type 2

- 4.1 Floor Type 2 is an unfinished 12" thick concrete slab that incorporates a 5/8" thick gypsum ceiling suspended using resilient neoprene and metal ("RSIC") clips attached to the underside of the slab. The clips support 7/8" thick metal hat channels 48" on center to which the gypsum is attached. Glass fiber batt insulation having a minimum nominal R-8 rating is installed between the slab and the ceiling below.
- 4.2 Riverbank Acoustical Laboratory test TL-76-77 of an 8" thick concrete slab *with no ceiling below* exhibited performance at STC 58. It is expected that the floor will perform at a minimum of STC 58.
- 4.3 A field impact isolation test on a floor/ceiling assembly built to similar specifications as Floor Type 2 (using an 8", rather than 12" slab) was performed by Kerrie Standlee of Daly Standlee & Associates on May 12, 2003. The system tested (test number 129031-IIC1, attached) was found to have a field-tested impact isolation rating of FIIC-51.
- 4.4 As with Floor Type 1, the receiving room in the referenced field test had a volume of roughly 1500 cubic feet. For a receiving room of that volume, the measured FIIC is expected to be underestimated by 1 FIIC point. Additionally, it is expected that the 12" slab will have slightly better (0 to 2 points) impact isolation than the 8" slab.
- 4.5 Based on the attached field test and the consideration of the tests receiving room volume, Floor Type 2 will perform at FIIC 52 minimum.
- 4.6 Based on the typical amount of flanking transmission that is expected in field tests, the Floor Type 1 would perform 2 to 5 points greater at IIC 54 to 57 when tested in a laboratory.

✓ 5 Floor Type 3

- 5.1 Floor Type 3 consists of a 12" concrete slab that incorporates a gypsum ceiling suspended using resilient neoprene and metal clips hung from the slab using metal wire. The clips support 7/8" thick metal hat channels 48" on center to which the

gypsum is attached. Glass fiber batt insulation having a minimum nominal R-8 rating is installed between the slab and the ceiling below.

- 5.2 Essentially, Floor Type 3 is the same as Type 2 however the resilient clips are suspended using wire, rather than attached directly to the slab. This creates a larger airspace between the slab and the ceiling.
- 5.3 Based on the cited STC and IIC tests for Floor Type 2 and the additional airspace between the slab and floor, the expected IIC and STC of Floor Type 3 is expected to be as good or better than the performance of Floor Type 2.

6. Conclusions

- 6.1 When tested in a laboratory, Wall Type 4.6 will exhibit a rated performance of STC 50 or greater.
- 6.2 When tested in a laboratory, Floor Types 1, 2 and 3 will exhibit a rated performance of IIC 50 or greater and STC 50 or greater.

7. Comments

This analysis has been performed simply to determine compliance with current building codes for one wall and three floor-ceiling assemblies. The analysis was performed without an examination of all of the building documents and without considering other factors of noise control, such as the type or usage of rooms on either side of the examined assemblies, other noise pathways (flanking) or variations in the quality of construction. Meeting the code minimum for both IIC and STC does not insure the satisfaction of all building occupants.

Sincerely,

T. A. Matthias

Todd A. Matthias, P.E.
Acoustic Design Studio, Inc.



EXPIRES: 12-31-2012



AACOUSTICS
 9324 SW CAMILLE TER.
 PORTLAND, OR. 97223 - 7043
 (503) 977 - 2690
 elki@aacoustics.com

November 8, 2011

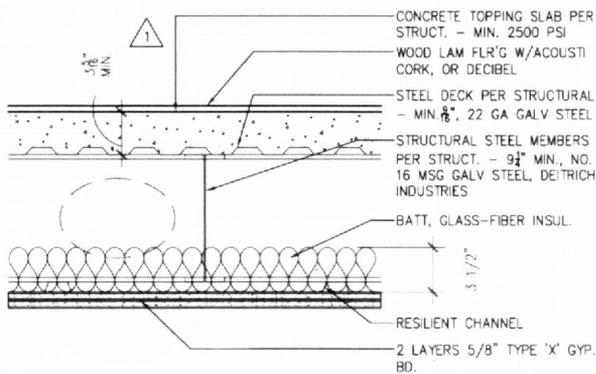
Ron Huffman
 Lorentz Bruun Co., Inc.
 3611 SE 20th Ave, Suite 300
 Portland, Or 97202
 Cell: 503.327.6950
 www.lbruun.com

This letter is an amendment for "AACoustics Jun 9, 2011," Field Impact Insulation Class (FIIC) Test" Report.

On November 4, 2011, Mr. Ron Huffman from *Lorentz Bruun Co., Inc.* informed *AACOUSTICS* that the floor/ceiling assembly shown on Page #3 of the said report is an error. Please note that all other information's in that report were correct and are not changed.

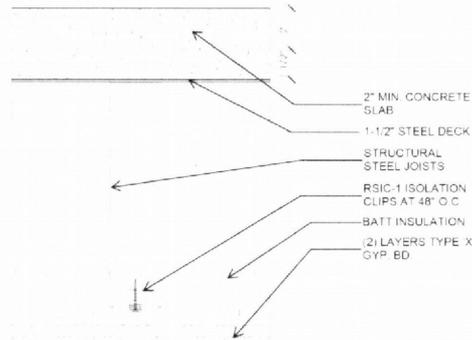
The following two Figures show the amendment: Figure 1 shows the assembly that was reported in the Jun 9, 2011 report, and Figure 2 is the amended Assembly. We tested the floor directly on the concrete.

Figure 1 is the mistaken assembly



F3 FLOOR/CEILING, 1-HR RATED
 ICBO: UL: 0549 STC: 60 IIC: 50 1HR. RATED

Figure 2 is the corrected assembly



F3 FLOOR/CEILING, 1-HR RATED
 ICBO: UL: 0551 STC: 62 FIIC: 47 1HR. RATED

If you have any questions, please call us on (503) 977-2690

Sincerely

AACOUSTICS

Elki M. Lahav

Elki M. Lahav PE





A ACOUSTICS
9324 S.W. CAMILLE TER.
PORTLAND, OR 97223-7043
TEL/FAX: 503-977-2690
elki@aacoustics.com

Report on Field Impact Insulation Class (FIIC) Test

Subject:
**Concrete Floor Ceiling Assembly System
Between Bedrooms Unit #408 to Bedroom Unit #308 Move in the Move The
House Apartments.**

Prepared for:
Mr. Ron Huffman
Lorentz Bruun Co., Inc.
3611 SE 20th Ave, Suite 300
Portland Oregon 97202

AAcoustics Test No: 060911-FIIC
Conducted: June 09, 2011

Summary

- This report describes a test conducted to determine the Field Impact Insulation Class (FIIC) rating of a floor/ceiling assembly system according to standard test procedures outlined in ASTM Designation E1007-97 and E989-89.

The test met all the requirements of ASTM E1007-97.
The assembly achieved a FIIC rating of 47

Tested By:

Elki M. Lahav PE
Acoustical



Field Impact Insulation Class (FIIC) Test Report

For: Ron Huffman
On: Move The House Apartments

AAcoustics Test No: 060911-FIIC
Conducted on: June 09, 2011

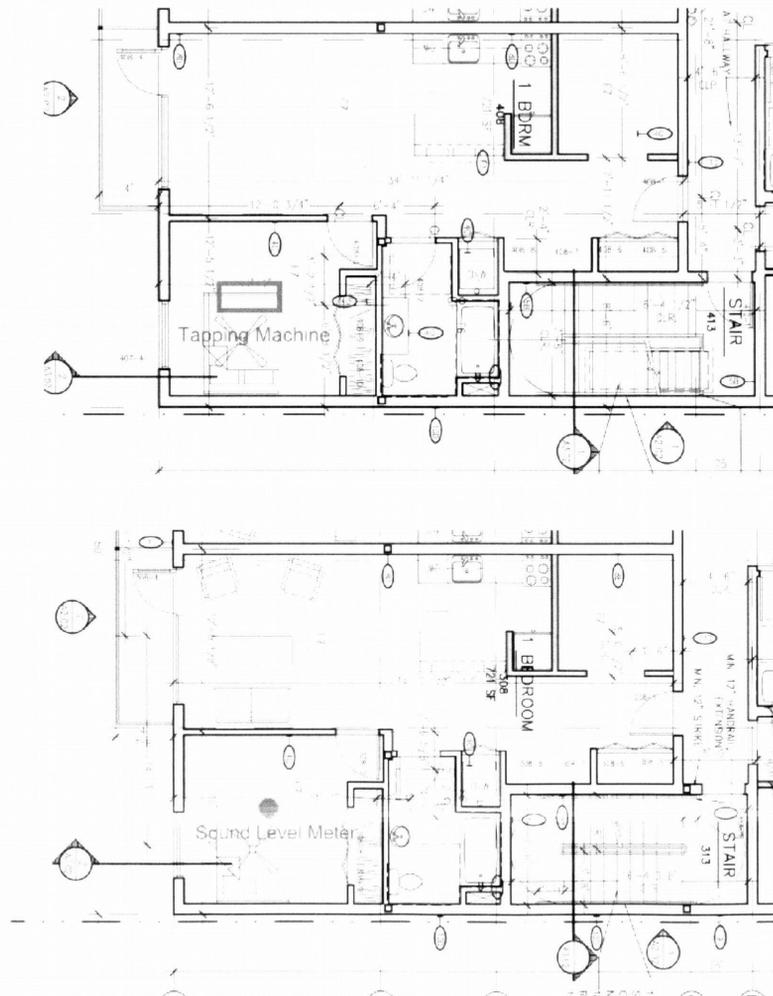
Conformance to Standards

A structure borne sound insulation field test was conducted at the request of Ron Huffman, to determine the Field Impact Insulation Class (FIIC) rating of the floor/ceiling assemblies located between the Bedroom of unit (4th floor) 408 and the Bedroom of Unit 308 (3rd floor) at the Move The House Apartments on 3810 SE Division Street Portland, Oregon 97202. The test was conducted in conformance to the test method and procedures outlined in the ASTM (American society for testing and materials) E 1007-97.

Description of Test Environment

The subject of this test was the floor/ceiling assembly between the bedroom of unit 408 and the Bedroom of unit 308 Building at the Move The House Apartments. The impacted floor area was the concrete floor in the bedroom of Unit 408. The sound receiving space for the test was the bedroom of unit 308. The receiving space has empty with concrete Floor, with gypsum board wall and ceiling. The dimensions of the floor/ceiling assembly under test were approximately 14'-1" by 12'-5". The red outline of the unit plans below is the area of both the tapping machine and the recording sound underneath.

Unit Plan
Bedrooms at the southeast corner of the building



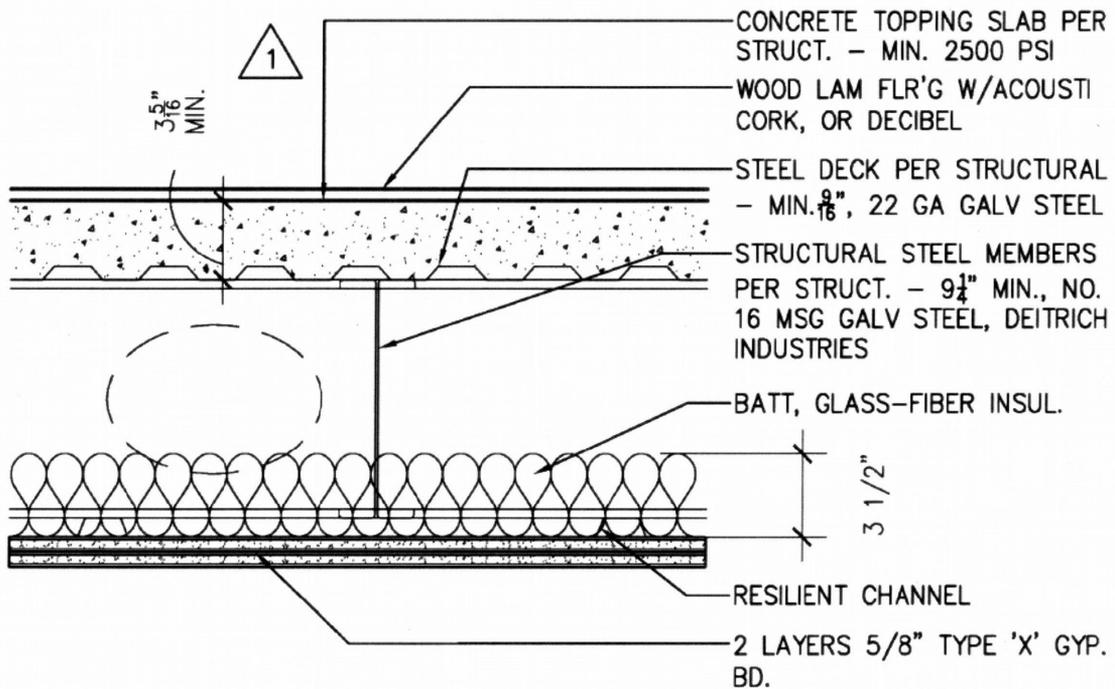
Field Impact Insulation Class (FIIC) Test Report

For: Ron Huffman
On: Move The House Apartments

A Acoustics Test No: 060911-FIIC
Conducted on: June 09, 2011

Description of Test Specimen

The test specimen has no wood flooring above the concrete.



F3

FLOOR/CEILING, 1-HR RATED

ICBO:

UL: G549

STC: 60 IIC: 50

1 HR. RATED

Field Impact Insulation Class (FIIC) Test Report

For: Ron Huffman
 On: Move The House Apartments

AAcoustics Test No: 060911-FIIC
 Conducted on: June 09, 2011

Description of Test Procedure

The test was conducted in accordance with the procedures outlined in ASTM Designations E1007-97 and E989-89. All measurements were made with General Radio 1982 Precision Sound Level Meter, which meet the American National Standard Institute (ANSI) standard for Type 1 meter, and Sony DAT Recorder, which allow fast real-time acquisition and analysis of sound data. As specified in section 10.1, 10.2, 10.5 of ASTM E1007-97. Absorption in the receiving room was calculated from the reverberation time measurement results as prescribed in the test procedure.

Test results

Table 1 present the calculated normalized sound pressure level (SPL) value at each of the sixteen standard 1/3-octave band test frequencies. Deficiencies in the data relative to an assigned Impact Insulation Class (IIC) curve are presented and used to establish an IIC rating per ASTM Designation E989-89. Table 1 also lists the receiving room absorption values in each frequency band. The FIIC rating was control by the normalized Impact at the 125 Hz.

Table 1- Normalized Impact Sound Pressure Level for the Floor /Ceiling assembly between the Bedrooms

Frequency (Hz)	Normalized Impact SPL (dB)	Deficiency dB	Receiving Room Absorption (Sabins) sqr. ft	Frequency (Hz)	Normalized Impact SPL (dB)	Deficiency dB	Receiving Room Absorption (Sabins) sqr. ft
100	47	0	7	630	55	0	7
125	51	0	7	800	56	0	7
160	52	0	7	1,000	55	0	7
200	47	0	7	1,250	55	0	7
250	52	0	7	1,600	56	2	7
315	54	0	7	2,000	57	6	7
400	52	0	7	2,500	56	8	7
500	53	0	7	3,150	53	8	7
Total Deficiencies = 24				FIIC = 47			

Field Impact Insulation Class (FIIC)

The rating of the floor ceiling system is FIIC-49. The deficiency between the recorded sound pressure levels and the assigned IIC curve total 24 dB, with no deficiency exceeding 8 dB in any 1/3-octave frequency band.

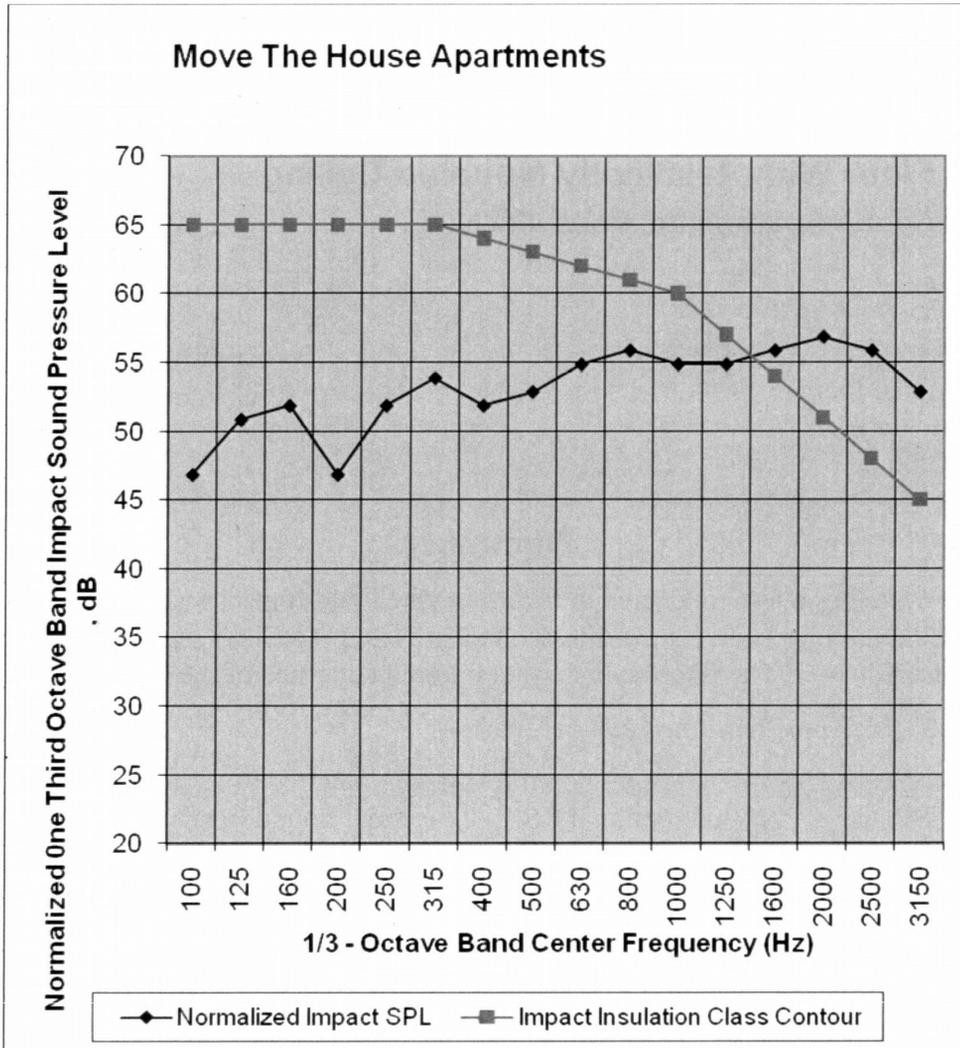
Figure 1 displays the normalized measured SPL Values and the FIIC Contour.

Field Impact Insulation Class (FIIC) Test Report

For: Ron Huffman
On: Move The House Apartments

AAcoustics Test No: 060911-FIIC
Conducted on: June 09, 2011

Figure 1
The normalized measured SPL Values and the FIIC Contour





Daly-Standlee & Associates, Inc.
 4900 SW Griffith Drive, Suite 216
 Beaverton, OR 97005

tel: 503-646-4420
 fax: 503-646-3385

Report on

Field Impact Insulation Class (FIIC) Test

Subject:

**Concrete Floor With Resiliently Mounted Ceiling
 Vancouver Center Apartments, Units 424/324**

Prepared for:

Mike Gernhart
 PAC International Inc.
 PO Box 5369
 Aloha OR 97006

DSA Test No: 129031-IIC1
 Conducted: May 12, 2003

Summary

This report describes a test conducted to determine the Field Impact Insulation Class (FIIC) rating of a floor/ceiling system according to standard test procedures outlined in ASTM Designation E1007-97. The floor/ceiling system tested consisted of the following elements:

An 8" thick post-tensioned concrete slab

A single layer of 5/8" gypsum board resiliently mounted to the underside of the slab using PAC International RSIC-1 Resilient Sound Insulation Clips and 7/8" x 25 gauge furring channel.

The 1-5/8" cavity between the concrete slab and the gypsum board was filled with R8 fiberglass batt insulation.

The test met all the requirements of ASTM E1007-97. When tested with no floor covering (bare concrete), the assembly achieved a FIIC rating of 51).

Tested by:

Joseph C. Begin
 Sr. Engineer

Approved by:



EXPIRES: 6/30/04

Principal

Field Impact Insulation Class (FIIC) Test Report

For: PAC International Inc.
On: Vancouver Center Apartments
Floor/Ceiling System Unit 424 – Unit 324

DSA Test No: 129031-IIC1
Conducted on: 05/22/2003

Conformance to Standards

A structure borne sound insulation field test was conducted at the request of PAC International Inc., to determine the Field Impact Insulation Class (FIIC) rating of a floor/ceiling system located between the living room of upper Unit 424 and the living room of lower Unit 324 at the Vancouver Center Apartments at the corner of 6th Avenue and Columbia Street, in Vancouver, Washington. The test was conducted in conformance to the test methods and procedures outlined in the American Society for Testing and Materials and E1007-97.

Description of Test Environment

The subject of this test was the floor/ceiling system between the living room of Unit 424 and the living room of Unit 324 at the Vancouver Center Apartments. The impacted floor area was the bare concrete floor in the living room of Unit 424. The sound receiving space for the test was the living room area of Unit 324. The receiving space had a bare concrete floor, with gypsum board walls and ceiling, and there were no furnishings in the room at the time of the test. The dimensions of the floor/ceiling under test were approximately 13.9 feet by 12.5 feet. The total volume of the receiving space was calculated to be approximately 1,497 cubic feet.

The room had a set of patio doors to the outside, and on the interior wall, a doorway (without a door) separated the receiving room from the rest of the suite. For the test, the doorway in the interior wall was temporarily covered with two layers of 5/8" gypsum board. To minimize contamination of the test by exterior noise, the patio door was also temporarily covered with two layers of 5/8" gypsum board. The doorway between the living room and the laundry closet was also covered with gypsum board to further minimize potential flanking paths.

Description of Test Specimen

The test specimen was the bare concrete floor in the living room of Unit 424 and the ceiling above the living room in Unit 324. The floor construction consisted of an 8" thick post-tensioned concrete slab. The ceiling system consisted of one layer of 5/8" Type X gypsum board attached to the underside of the concrete floor slab using PAC International's Resilient Sound Isolation Clip System with 7/8" x 25 gauge furring channel. The RSIC-1 clips were spaced at 24" x 48" OC, and were attached to the concrete slab with 2" powder actuated pins. The furring channel was spaced at 24" OC. The gypsum board was attached to the furring channel using 1-1/4" steel drywall screws. The gypsum board was cut so as to leave a 1/4" to 3/8" gap around the perimeter, where the ceiling meets the wall. This perimeter gap was then caulked with acoustical sealant. The gypsum board was then fire taped to seal all joints and drywall screws.

The ceiling of the receiving room had a 22-1/2" wide by 11-1/2" deep soffit running along the longer wall on one side. This soffit, which contained ducts and pipes, was formed using gypsum board attached the wall and the concrete slab with 20 gauge steel angles. This soffit was covered with an additional layer of 5/8" gypsum board, resiliently mounted with the PAC RSIC system.

Description of Test Procedure

The test was conducted in accordance with the procedures outlined in ASTM Designation E1007-97. All measurements were made with a Larson Davis Model 800B Sound Level Meter (SLM), which meets the American National Standards Institute (ANSI) standard for Type 1 meters, and a computer-based spectral analysis program, which allows fast real-time acquisition and analysis of sound data. As specified in Sections 10.1, 10.3 and 10.6 of ASTM E1007-97, a single microphone was moved continuously along a defined traverse in order to obtain the necessary space-average levels. Absorption in the receiving room

Field Impact Insulation Class (FIIC) Test Report

For: PAC International Inc.
 On: Vancouver Center Apartments
 Floor/Ceiling System Unit 424 – Unit 324

DSA Test No: 129031-IIC1
 Conducted on: 05/22/2003

was calculated from the reverberation time measurement results as prescribed in the test procedure.

Test Results

Table 1 presents the calculated normalized sound pressure level (SPL) values at each of sixteen standard 1/3-octave band test frequencies. Deficiencies in the data relative to an assigned Impact Insulation Class (IIC) curve are presented and used to establish an IIC rating per ASTM Designation E989-89. Table 1 also lists the receiving room absorption values in each frequency band.

As noted under Table 1, the receiving room volume was less than ideally required by ASTM E1007 (6.4) for testing in the 100 Hz 1/3-octave band. However, this would not affect the test result, because as the data shows, the FIIC rating was control by frequencies above 1600 Hz.

Table 1 – Normalized Impact Sound Pressure Levels for Bare Concrete Floor/Ceiling System Between Vancouver Center Apartments Units 424 and 324

1/3 Octave Center Frequency (Hz)	Normalized Impact SPL (dB)	Deficiency (dB)	Receiving Room Absorption (Sabins)	Notes	1/3 Octave Center Frequency (Hz)	Normalized Impact SPL (dB)	Deficiency (dB)	Receiving Room Absorption (Sabins)	Notes
100	50	0	129	1	630	42	0	42	
125	50	0	66		800	43	0	42	
160	49	0	64		1000	43	0	47	
200	46	0	52		1250	43	0	50	
250	45	0	49		1600	45	0	54	
315	43	0	44		2000	50	3	61	
400	45	0	41		2500	51	7	64	
500	42	0	39		3150	49	8	61	
Total Deficiencies = 18					FIIC = 51				

Notes: 1. Receiving room volume was less than the ideal value specified in ASTM E1007-97 (6.4) for testing in the 100 Hz band

Field Impact Insulation Class (FIIC)

The rating of the floor ceiling system with no floor covering is FIIC-51. The deficiencies between the recorded sound pressure levels and the assigned IIC curve total 18 dB, with no deficiency exceeding 8 dB in any 1/3-octave frequency band.

Figure 1 displays the normalized measured SPL values and the FIIC contour.

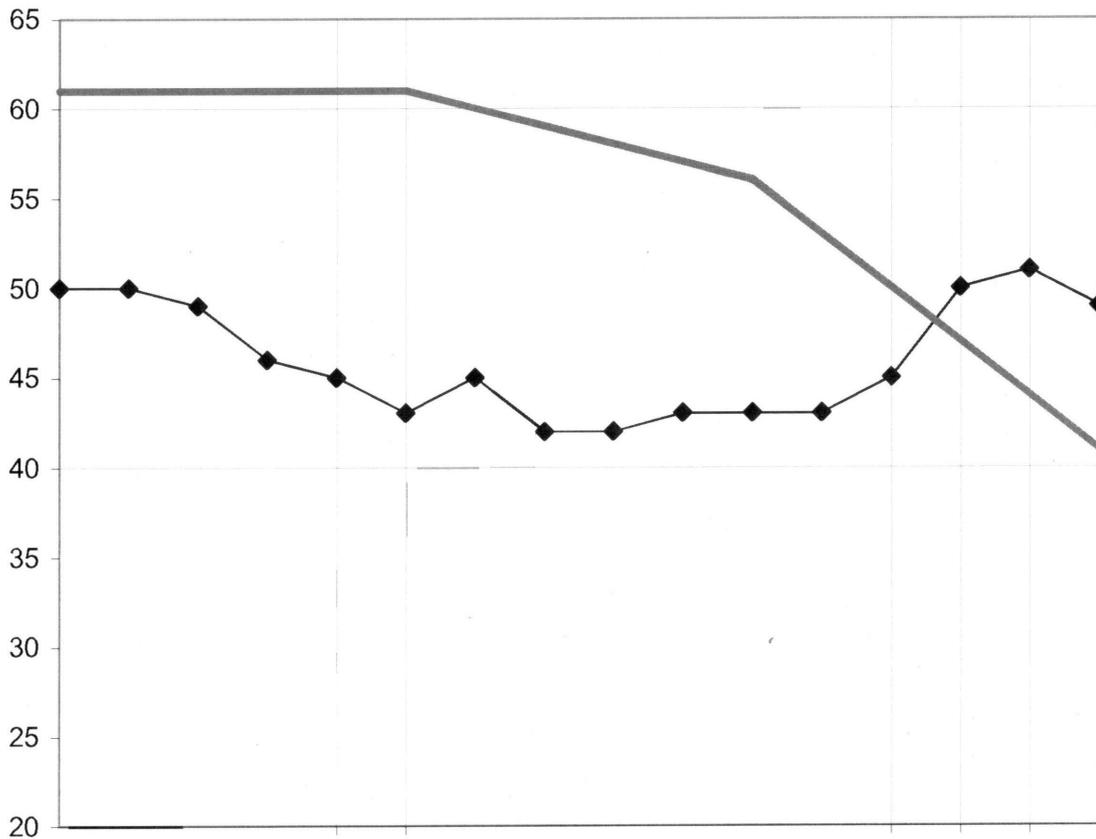
Field Impact Insulation Class (FIIC) Test Report

For: PAC International Inc.
On: Vancouver Center Apartments
Floor/Ceiling System Unit 424 – Unit 324

DSA Test No: 129031-IIC1
Conducted on: 05/22/2003

Figure 1

Vancouver Center Apartments - 424/324 - Bare Concrete Floor



1/3-Octave Center Frequency (Hz)

◆ Normalized SPL — FIIC-51



Architectural Testing

PERFORMANCE TEST REPORT

Rendered to:

ARCADIA ARCHITECTURAL PRODUCTS, INC.

**PROJECT: Mock-up Assemblies
Stamford, Connecticut**

Report No.: 68709.01-112-43
Set-Up and Test Date: 10/30/06
Report Date: 11/09/06

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129



Architectural Testing

PERFORMANCE TEST REPORT

Rendered to:

ARCADIA ARCHITECTURAL PRODUCTS, INC.
60 Bonner Street
Stamford, Connecticut 06902

Report No.: 68709.01-112-43
Set-Up Date and Test Date: 10/30/06
Report Date: 11/09/06

Project Summary: Architectural Testing, Inc. was contracted to perform on-site testing at Arcadia Architectural Products, Inc.'s facility located in Stamford, Connecticut. Air infiltration and water penetration tests were conducted on two specimens. Test Specimen #1 consisted of a Series/Model 5820 sliding glass door. Test Specimen #2 consisted of a Series/Model 500 horizontal sliding window. The results of testing are listed herein.

Test Methods: Tests were conducted in accordance with the following:

ASTM E 783, *Field Measurement of Air Leakage Through Installed Exterior Windows and Doors.*

ASTM E 1105, *Field Determination of Water Penetration of Installed Exterior Windows, Curtain Walls, and Doors by Uniform or Cyclic Static Air Pressure Difference.* (Uniform static air pressure difference was employed during these tests).

Test Procedure:

A visual inspection of the test specimens was performed. No obvious deficiencies were found. The test specimens were operated, closed and locked prior to testing. The perimeter of the chambers were attached and sealed to the interior surface of the test buck frames. The chambers were equipped with a centrifugal blower/vacuum pump, air flow meter, and a pressure sensing device to maintain the desired air pressure differential across the assemblies. Air infiltration tests were conducted at 1.57 psf and 6.24 psf pressure differentials on Test Specimen #1. Air infiltration tests were conducted at 6.24 psf pressure differentials, on Test Specimen #2. Water penetration tests were conducted at 2.00 psf, 3.00 psf, 5.00 psf, 8.00 psf and 9.00 psf pressure differentials for Test Specimen #1. Water penetration tests were conducted at 8.00 psf, 8.50 psf and 9.00 psf pressure differentials for Test Specimen #2. Water was simultaneously sprayed on to the exterior face of the assemblies at the required rate of 5 gph/ft². During testing, the interior faces of the test areas were inspected for water leakage. Testing continued for 15 minutes.

130 Derry Court
York, PA 17406-8405
phone: 717-764-7700
fax: 717-764-4129

Performance Criteria: Provided by Robert Sayour, Arcadia Architectural Products, Inc.

Air Infiltration:

Maximum allowable air infiltration: 0.30 cfm/ft²

Water Leakage: (ASTM E 1105-00)

Penetration of water beyond a plane parallel to the glazing (the vertical plane) intersecting the innermost projection of the test specimen, not including interior trim and hardware under the specified conditions of air pressure difference across the specimen. For products with non-planer surfaces (domes, vaults, pyramids, etc.) the plane defining water penetration is the plane defined by the innermost edges of the unit frame. Failure also occurs whenever water penetrates through the perimeter frame of the specimen.

TEST RESULTS

Date: 10/30/06

Ambient Exterior Air Temperature: 45°F

General Note: All locations referenced are viewed from the interior. All remedial work was performed and documented by Arcadia Architectural Products, Inc.

Test Specimen #1:

Manufacturer: Arcadia Architectural Products, Inc.

Description: A Series/Model 5820 sliding glass door (XXX), (reference Photo Nos. 1 and 2).

Overall Size: 8' 0" wide by 7' 8" high

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Air Infiltration @ 1.57 psf	0.48 cfm/ft ²	0.30 cfm/ft ²
@ 6.24 psf	0.43 cfm/ft ²	0.30 cfm/ft ²

Remedial Work: The weepholes at the sill were sealed.

Air Infiltration @ 1.57 psf	0.48 cfm/ft ²	0.30 cfm/ft ²
@ 6.24 psf	0.43 cfm/ft ²	0.30 cfm/ft ²

Remedial Work: Sealant was placed at the jambs on the exterior of the specimen, (reference Photo No. 3)

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Air Infiltration @ 1.57 psf	0.25 cfm/ft ²	0.30 cfm/ft ²
@ 6.24 psf	0.56 cfm/ft ²	0.30 cfm/ft ²

TEST RESULTS

Date: 10/30/06

Ambient Exterior Air Temperature: 45°F

Test Specimen #1: (Continued)

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Water Penetration @ 2.00 psf	No water leakage	No water leakage
Water Penetration @ 3.00 psf	No water leakage	No water leakage
<i>General Note: Prior to the following test, a 2" sill leg was installed along the specimen.</i>		
Water Penetration @ 5.00 psf	No water leakage	No water leakage
Water Penetration @ 8.00 psf	No water leakage	No water leakage
Water Penetration @ 9.00 psf	See Note #1	No water leakage

Note #1: Water leakage occurred at approximately four minutes and twenty seconds into testing. Water was observed overflowing the sill.

Test Specimen #2:

Manufacturer: Arcadia Architectural Products, Inc.
Description: A Series/Model 500 aluminum horizontal sliding window (XX), (reference Photo Nos. 4 and 5).
Overall Size: 8' 0" wide by 6' 6" high

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Air Infiltration @ 6.24 psf	0.11 cfm/ft ²	0.30 cfm/ft ²
Water Penetration @ 9.00 psf	See Note #2	No water leakage

Note #2: Water leakage occurred at approximately three minutes and thirty seconds into testing at the sill. Water was observed overflowing the sill approximately 2" to the left of the meeting stile, (reference Photo No. 6).

Remedial Work: The weephole baffles were removed from all the weepholes at the sill.

Water Penetration @ 9.00 psf	See Note #3	No water leakage
---------------------------------	-------------	------------------

Note #3: Water leakage occurred at approximately two minutes into testing at the sill. Water was observed overflowing the sill approximately 2" to the left of the meeting stile, (reference Photo No. 7).

TEST RESULTS

Date: 10/30/06

Ambient Exterior Air Temperature: 45°F

Test Specimen #2: (Continued)

Remedial Work: The weepholes at the sill were inspected and cleared of debris and dirt.

General Note: Prior to the following test, the spray rack was shortened from 8' 0" by 8' 0" to 6' 0" by 6' 0".

<u>Title of Test</u>	<u>Test Results</u>	<u>Allowable</u>
Water Penetration @ 8.00 psf	No water leakage	No water leakage

General Note: Prior to the following test, sealant was placed at the top and bottom of the interlock. Sealant also placed at the head and sill inserts.

Water Penetration @ 8.50 psf	See Note #4	No water leakage
---------------------------------	-------------	------------------

Note #4: Water leakage occurred at approximately four minutes into testing at the sill. Water was observed overflowing the sill approximately 2" to the left of the meeting stile, (reference photo No. 8).

Remedial Work: Sealant was removed from the head and sill inserts.

Water Penetration @ 8.50 psf	See Note #5	No water leakage
---------------------------------	-------------	------------------

Note #5: Water leakage occurred at approximately four minutes into testing at the sill. Water was observed overflowing the sill approximately 2" to the left of the meeting stile, (reference Photo No. 9)

Remedial Work: A 1/2" hole was drilled in the center of the sill at the exterior of the specimen.

Water Penetration @ 8.50 psf	See Note #6	No water leakage
---------------------------------	-------------	------------------

Note #6: Water leakage occurred at approximately four minutes and thirty seconds into testing at the sill. Water was observed overflowing the sill approximately 2" to the left of the meeting stile.

Remedial Work: No additional remedial work was performed at this time.

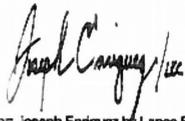
Witnesses: The following representatives witnessed all or part of the testing.

Robert Sayour	Arcadia Architectural Products, Inc.
Brian Sasso	Arcadia Architectural Products, Inc.
Victor Sokolowski	Arcadia Architectural Products, Inc.
Alfredo Basurto	Arcadia Architectural Products, Inc.
Bryan Costello	Arcadia Architectural Products, Inc.
Joe Enriquez	Architectural Testing, Inc.
Lance Conley	Architectural Testing Inc.

This report is prepared for the convenience of our customer and endeavors to provide accurate and timely project information. It contains a summary of observations made by a qualified representative of Architectural Testing, Inc. This report is intended to help in your Quality Assurance Program, but it does not represent a continuous nor exhaustive evaluation. The statements made herein do not constitute approval, disapproval, certification or acceptance of performance or materials.

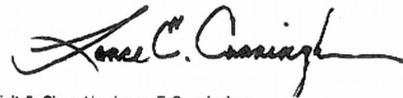
A copy of this report will be retained by Architectural Testing, Inc. for a period of four years. This report is the exclusive property of the client so named herein. This report may not be reproduced except in full without approval of Architectural Testing.

For ARCHITECTURAL TESTING, INC:



Digitally Signed for: Joseph Enriquez by Lance E. Cunningham

Joseph W. Enriquez
Technician



Digitally Signed by: Lance E. Cunningham

Lance E. Cunningham
Director - Field Testing

JWE:dd

Attachments (pages):

Appendix-A: Photographs (5)

1 SIMPLIFIED APPROACHDate: revised 06/19/12Permit Number: 12-119212-000-00-CO

If total impervious area for submitted development proposal is less than 10,000 square feet, the Simplified Approach form may be used for sizing stormwater facilities.

If total impervious area for submitted development proposal is equal to or greater than 10,000 square feet or includes public or private street improvements, the Presumptive or Performance Approach must be used and a Stormwater Management Report will be required. For more information, refer to the 2008 Stormwater Management Manual (SWMM) Sections 2.2.2 and 2.2.3, respectively.

1 Site Address: 3339 SE Division Street
Portland, Oregon 97202

2 State Property ID (R number): R293183

3 Brief Description of Proposed Development Mixed Use Development with ground level retail and upper level residential. Site includes public zones, walkways, landscape areas, and rooftop.

4 Total Amount of Proposed Impervious Area: 9,996 s.f.

Site Evaluation

Please refer to Stormwater Management Manual (SWMM) References and Resources section for site evaluation maps (including soil drainage class, slopes and groundwater).

S1 NRCS Soil Drainage Class: C/D

S2 Is the slope anywhere on the project area greater than 20%? yes no

S3 Are there known seeps, springs, or a high groundwater table in the project area? yes no

If answered yes to questions S2 or S3, then a flow-through or partial infiltration facility is required with overflow to an approved discharge point. If no, see S4.

S4 Required Infiltration Testing: Applicant may conduct a simple open pit test or any of the infiltration testing methods prescribed for the Presumptive Approach. (See Appendix E.2 for specifications.) **See attached geotechnical report.**

Please Note: Each individual tax lot is required to manage the stormwater it generates on the same lot to the maximum extent feasible. If the proposal is unable to meet this requirement, the applicant must submit a Special Circumstances request.

Form 1 - SIMPLIFIED APPROACH

FACILITY SIZING WORKSHEET

Total impervious area being developed or redeveloped: 9,996 s.f. BOX 1

1 Impervious Area Reduction

Ecoroof 938 sf
 Pervious asphalt or concrete _____ sf
 Permeable pavers 1,565 sf

Total Impervious Area Reduction: 2,503 s.f. BOX 2

Total impervious area requiring stormwater management: 7,493 s.f. BOX 3

2 Surface Facilities Impervious Area Managed Sizing Factor Facility Surface Area

Planter	8,698 sf	x	0.06	=	522 sf
Swale	_____ sf	x	0.09	=	_____ sf
Basin	_____ sf	x	0.09	=	_____ sf
Vegetated Filter Strip for walks and driveways	_____ sf	x	0.20	=	_____ sf

Overflow will be directed to (check all that apply):

- Subsurface facility Surface water
- Stormwater sewer Combined Sewer

3 Subsurface Facilities

The following subsurface facilities can receive overflow from the facilities listed above or can be used independently to manage stormwater from residential roofs. If stormwater is generated from anything other than residential roofs, the facilities are subject to the UIC (Underground Injection Control) requirements.

(See Section 2.3.3 for sizing information) Facility Size

Drywell	_____ sf	_____ Diameter	_____ Depth
Soakage Trench	_____ sf	_____ Length	_____ Width

Sum of
Total Impervious Area Managed

8,698 s.f. BOX 4

(BOX 4 should be greater than or equal to BOX 3)

4 Escape Route

In the event the stormwater facility temporarily fails or rainfall exceeds the facility design capacity, describe where flows will drain to in order to maintain public safety and avoid property damage. Depending on site conditions, this may include storage in an overflow structure, parking lot, street, or landscaped area. Planters & ecoroof both verflow to storm sewer via pipes. Pervious pavement is sloped away from buildings to overflow escape drains.

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soils, which rely on interparticle friction for strength, are susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand soils with low silt and clay contents are the most susceptible to liquefaction. Silty soils with low plasticity are moderately susceptible to liquefaction under relatively higher levels of ground shaking. Based on the subsurface conditions encountered during our investigation, there is no risk of liquefaction and associated lateral spreading under design levels of ground shaking.

11.0 INFILTRATION TESTING

An infiltration test was conducted in boring B-2 located in the area of the proposed infiltration trench at the north end of the site. Infiltration testing was conducted in general accordance with the City of Portland Bureau of Environmental Services Stormwater Management Manual (revised February 1, 2010).

A representative grab sample was collected below the infiltration test depth for sieve analysis. Table 5 presents a summary of infiltration test results and fines content determinations. The exploration log and particle-size analyses are presented in the Appendix.

Table 5. Infiltration Test Results

Exploration	Depth (feet BGS)	Observed Infiltration Rate (inches/hour)	Fines Content' (percent)
B-2	4	0.25	69

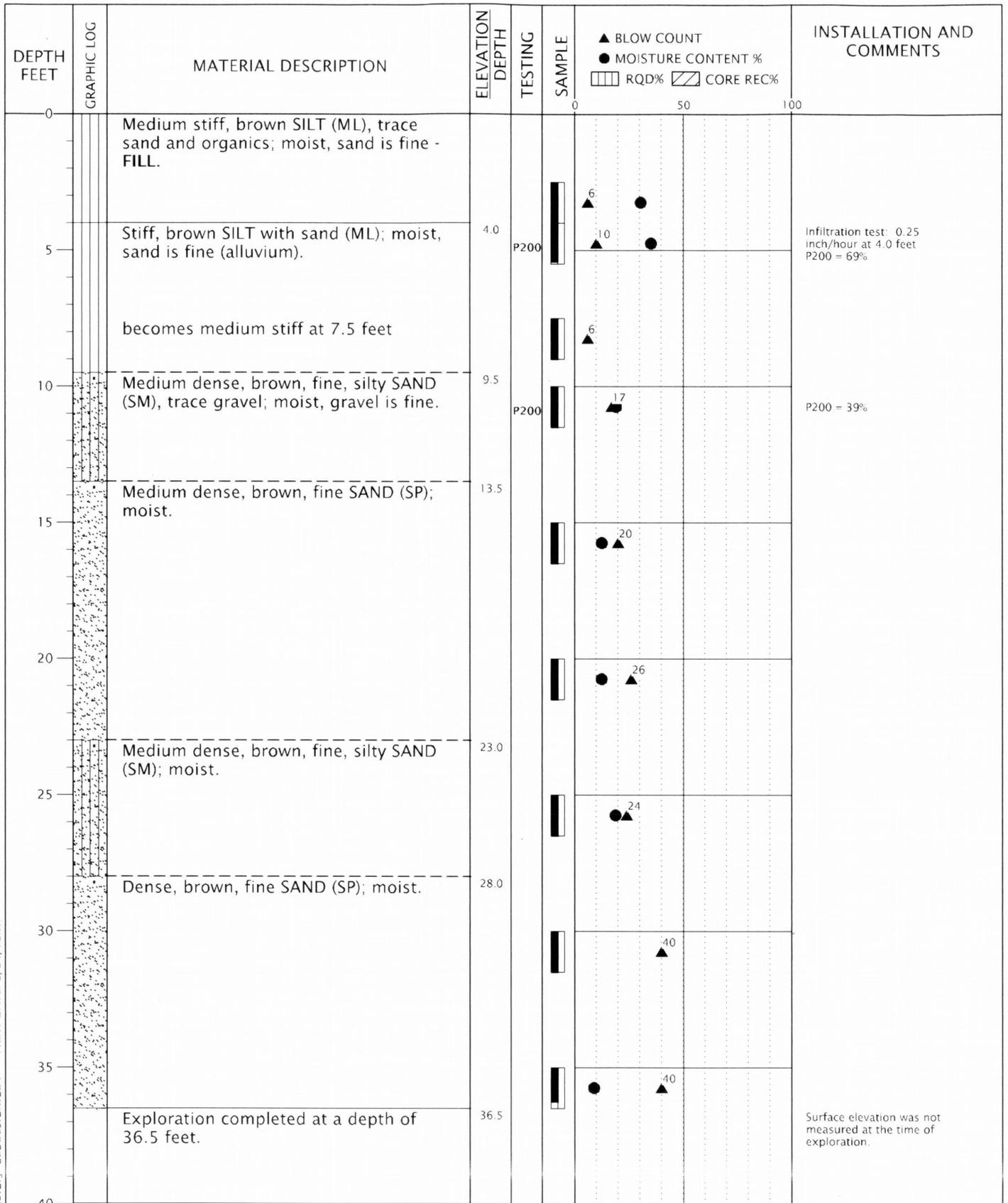
1. Fines content: material passing the U.S. Standard No. 200 Sieve

12.0 OBSERVATION OF CONSTRUCTION

Satisfactory earthwork and foundation performance depends to a large degree on the quality of construction. Subsurface conditions observed during construction should be compared with those encountered during the subsurface explorations. Recognition of changed conditions often requires experience; therefore, qualified personnel should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated. In addition, sufficient observation of the contractor's activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications.

13.0 LIMITATIONS

We have prepared this report for use by the Lorentz Bruun Co. Inc., Urban Development Partners NW, LP, and their consultants. The data and report can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.



BORING LOG LORENTZ-3-01-B1_2.GPJ GFODESIGN.GDT PRINT DATE: 2/24/12 KT

DRILLED BY: Dan J. Fischer Excavating, Inc.

LOGGED BY: CR

COMPLETED: 12/12/11

BORING METHOD: hollow-stem auger (see report text)

BORING BIT DIAMETER: 4-inch



15575 SW Sequoia Parkway - Suite 100
Portland OR 97224
Off 503.968.8787 Fax 503.968.3068

LORENTZ-3-01

BORING B-2

FEBRUARY 2012

PROPOSED MIXED-USED DEVELOPMENT
PORTLAND, OR

FIGURE A-2



Generated by COMcheck-Web Software
Envelope Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **New Construction**
 Project Title : 3339 SE Division

Construction Site:
 3339 SE Division
 Portland, Oregon 97202

Owner/Agent:
 Mark Vuong
 3339 Division LLC
 136 NE 28th Ave.
 Portland, Oregon 97232
 503-946-3265
 mark@udplp.com

Designer/Contractor:
 Robin Wilcox
 THA Architecture
 733 SW Oak St.
 Portland, Oregon 97205
 503-227-1254
 rwilcox@thaarchitecture.com

Section 2: General Information

Building Location (for weather data): **Portland, Oregon**
 Climate Zone: **4c**
 Building Type for Envelope Requirements: **Residential**
 Vertical Glazing / Wall Area Pct.: **29%**

Activity Type(s)	Floor Area
Retail	4656
Multifamily	23489
Office	2885

Section 3: Requirements Checklist

Envelope PASSES Design 1% better than code.

Climate-Specific Requirements:

Component Name/Description	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor(a)
Ext. Wall: Steel-Framed, 24in. o.c.	22375	13.0	7.5	0.060	0.064
Window: Wood Frame, 2 Pane w/ Low-E, Clear, SHGC 0.32	4056	---	---	0.370	0.350
Window: Metal Frame Curtain Wall/Storefront, 2 Pane w/ Low-E, Clear, SHGC 0.27	1556	---	---	0.410	0.450
Door: Glass (over 50% glazing), Nonmetal Frame, Non-Entrance Door, SHGC 0.32	650	---	---	0.370	0.350
Door: Glass (over 50% glazing), Metal Frame, Entrance Door, SHGC 0.21	210	---	---	0.690	0.800
Door: Glass (over 50% glazing), Metal Frame, Non-Entrance Door, SHGC 0.32	479	---	---	0.460	0.550
Ext. Wall: Solid Concrete, 12in. Thickness, Normal Density, Furring: None	1563	---	7.5	0.105	0.080
Ext. Wall: Solid Concrete, 8in. Thickness, Normal Density, Furring: None	418	---	10.0	0.085	0.080
Roof: Insulation Entirely Above Deck	8367	---	20.0	0.048	0.048
Roof: Other (b)	1429	---	---	0.026	0.027
Floor: Unheated Slab-On-Grade	465	---	---	---	---
Floor: Unheated Slab-On-Grade, Vertical 2 ft.	140	---	10.0	---	---
Floor: Concrete Floor (over unconditioned space)	623	---	19.0	0.045	0.064

12-119217-MT
 12-119212-CO

-
- (a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.
(b) 'Other' components require supporting documentation for proposed U-factors.

Air Leakage, Component Certification, and Vapor Retarder Requirements:

- 1. All joints and penetrations are caulked, gasketed or covered with a moisture vapor-permeable wrapping material installed in accordance with the manufacturer's installation instructions.
- 2. Windows, doors, and skylights certified as meeting leakage requirements.
- 3. Component R-values & U-factors labeled as certified.
- 4. No roof insulation is installed on a suspended ceiling with removable ceiling panels.
- 5. 'Other' components have supporting documentation for proposed U-Factors.
- 6. Insulation installed according to manufacturer's instructions, in substantial contact with the surface being insulated, and in a manner that achieves the rated R-value without compressing the insulation.
- 7. Stair, elevator shaft vents, and other outdoor air intake and exhaust openings in the building envelope are equipped with motorized dampers.
- 8. Cargo doors and loading dock doors are weather sealed.
- 9. Recessed lighting fixtures installed in the building envelope are Type IC rated as meeting ASTM E283, are sealed with gasket or caulk.
- 10. Building entrance doors have a vestibule equipped with self-closing devices.

Exceptions:

- Building entrances with revolving doors.
- Doors not intended to be used as a building entrance.
- Doors that open directly from a space less than 3000 sq. ft. in area.
- Doors used primarily to facilitate vehicular movement or materials handling and adjacent personnel doors.
- Doors opening directly from a sleeping/dwelling unit.

Section 4: Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed envelope system has been designed to meet the 2009 IECC requirements in COMcheck-Web and to comply with the mandatory requirements in the Requirements Checklist.

Name - Title

Signature

Date