

# D. M. THOMPSON, Inc.

Engineer/Construction Management

1080 SW Westwood Drive  
Portland, Oregon 97239  
(503) 293-3811

March 13, 2013

A. J. Nation  
Specialty Construction  
P. O. Box 230431  
Tigard, OR 97281

Re: Residence at 6307 SW Terwilliger Blvd in Portland, OR  
Permit # 12-183949-REV-01-RS

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Subject: **Response to Structural Checksheet dated March 4, 2013**

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Mr. Nation:

Below are our responses to the Structural Checksheet.

Item 1. The structural items that have been encountered/repared/replaced include:

a) demolition and replacement of ~19' of exterior foundation wall at the NW corner of the home; b) up-righting and reconnecting a column in the rear of the garage; c) rebuilding exterior deck floor at NW corner; d) replacing non-code handrail with new steel railing at landing and entry stairs.

Item 2. The plan of the stair and landing is shown on the engineering, sht #1. The stair stringers are existing 3.125 x 12 glu-lam beams. The rim beams at the second floor are 4 x 12. The railing base plates are connected to the tops of the stringers and beams.

Item 3. The EFI Global report is fatally flawed and it is obvious that the person writing the report had never seen the site. There were two homes at the bottom of the slope below the house that had collapsed. The house at 6305 SW Terwilliger was directly below the house on Burlingame Pl and received the full force of the debris, causing the first floor to be racked, the entire house to be knocked-off its foundation and all of the debris to be placed at the rear of the building. The house at 6307 SW Terwilliger was damaged by a tree that had been driven into it lower foundation by the debris with some debris being deposited at the NW corner only. The EFI report is centered on the damage to the house that occurred immediately around the impact area which is less than 5% of the total structure. The tree trunk that delivered the damage to the house hit in the lower third of the eight foot high, 8" thick concrete foundation, causing the wall to break horizontally and, then, separate vertically when the trunk reached the corner with an intersecting concrete wall below the dining room. Most of the energy from the impact was absorbed by the breaking concrete and there was no structural element left to transfer enough force to rack the "entire first floor" as alleged in the EFI report. There were two indications that there had been some elastic deflection; namely, the deflected wood trim at the windows in the garage foundation and a straight line separation at a joint in the wallboard on the dining

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room ceiling. If the main floor framing had experienced significant racking, as supposed by the EFI report, the much more fragile wallboard would have been torn from the walls, where as, there were no cracks in the wallboard of the main floor walls, except at the wall just above the impact point. All of the damage described in the EFI report occurred to the partitions in the garage level that were hit by the tree and/or branches from the tree. At our inspection, all doors in the house were plumb and square and working properly. All windows in the house were in tact and operating, except the rear kitchen window where the tree branches had broken the glass. The final conclusion by the EFI report asserted that it would be easier and more cost effective to remove the entire house and foundation in order to facilitate removal of the debris that had been pushed into the rear yard of the house. The entire rear yard at the house is about 10' wide and 30' long and had been thoroughly cleaned without any portion of the structure having to be removed.

When we inspected the building in the summer of 2012, the significant structural damage included the destruction of two adjoining foundation walls that were about 9'-6" long; the dislocation of a column inside the garage; the destruction of a wood deck; and the destruction of block walls that supported the deck. EFI's out-of-plumb walls "within six feet along the accessible perimeter of the building", that indicated the massive racking, were all non-bearing partition and furring walls.

The last three sheets of the report concern the house on Burlingame Place that had collapsed, sending debris down the slope and damaging the two homes below.

The subject structure was never in danger of collapse and was dangerous to occupy only in the very confined areas around the tree-entry location, where loose and broken debris could have been a hazard. The removal of the debris and the repairs/replacements that are itemized in Item 1 above, have restored the entire residence to a safer and more useful condition than occurred in the original house. Without reservation, the home is safe to occupy.

Please contact us if there are further questions.

Submitted by:

Duane M. Thompson, PE  
Oregon #6211



SCAN

**D. M. THOMPSON, Inc.**

Engineer/Construction Management

1080 SW Westwood Drive  
Portland, Oregon 97239  
(503) 293-3811

February 5, 2013

A. J. Nation  
Specialty Construction  
P. O. Box 230431  
Tigard, OR 97281

Re: Residence at 6307 SW Terwilliger Blvd  
Portland, OR.

Subject: **Response to City's request for information dated 1/11/2013**

Mr. Nation:

The City is requesting information that we covered in our first inspection report prior to your purchasing the property and in our last report that covers the completion of the structural items. Please include those documents and the foundation repair plans in your submittal to them.

Below is the information and findings which we prepared from our inspection on October 11, 2008, of the original building collapse on October 8, 2008. The complete synopsis of this event and the history of the building involved set the basis for our conclusions concerning the stability of your project site.

In the early morning of October 8, 2008, neighbors on the east loop of SW Burlingame Place awoke to the sounds of grinding and cracking. When they looked outside, they saw the house at 6438 SW Burlingame Pl. dropping "like an elevator" into the ground. When the neighbors went to the edge of the hole where the house had stood, they found the owner, Mrs. Hendrickson, standing on a piece of concrete walk outside of her front door that was about fifteen feet below the edge of the hole. After retrieving one-half of an extension ladder from one of their homes, they lifted her, vertically, out of the hole by having her grab the lowest rung. Fifteen to twenty minutes after this, the south end of the house tipped to the south and east and the entire house disintegrated, with debris running downhill to the east, confined in the natural ravine behind the house. The lowest edge of the debris ended against the house at 6305 SW Terwilliger, which had been built across the lower end of the ravine. The speed and force of the debris was displayed by the movement of the floor structure of the garage that began on the north end of the Burlingame house. The complete floor, with the car that was parked on it, floated down the slope in an upright position and hit the house on Terwilliger with enough momentum to tip the floor and car from horizontal to vertical and to slam the car into the side of the house.

Shortly after the house collapsed, the Burlingame front yard, consisting of uncontrolled fills that

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was thoroughly wetted by irrigation, slid down the slope over the near debris field and stopped 100' to 150' from its original position.

On October 11, 2008, we were asked by a contractor who had done work on the Burlingame home in 2004 and 2006, to advise him on what liability might be connected to his work and the failure of the house. To assist our evaluation, he provided us a folder that had been given to him by the Hendricksons and that showed details, documents and pictures of work that the Hendricksons had undertaken since they bought the home.

In the folder was an engineering report from 1995, prepared by Mike Bye, P.E. His investigation of the structure found that the rear wall of the building had deflected in the downhill direction and that the deflection was 8" beyond the rear foundation when measured from the main floor level. He supervised placement of tie-rods from the back edge of the main floor to the concrete foundation and added turn-buckles to be used to decrease the deflection. The turn-buckles were not able to affect the amount of deflection.

Also, in the folder were details and pictures of extensive concrete, landscaping and irrigation work performed across the entire front of the house in 2005 and 2006. This work involved removing the mono-lithic concrete driveway and front patio and replacing the driveway with free draining granular base and spaced, concrete segments that allowed rainwater to flow down to the subgrade and toward the house foundation. The entire front yard was raised 12" to 18" in elevation with topsoil, was completely irrigated with an automatic sprinkler system and was covered with planting beds and lawn.

When we viewed the site on October 11, we saw the end-result of the devastation that we described above and added the details that were given to us by the neighbors who actually witnessed the event and sequences. The most obvious cause of the final collapse of the foundation was displayed in the approximately 150 LF of open embankment that ran along Burlingame and then directly to the corner of the house at 6470 SW Burlingame Pl. These, almost vertical, embankments, which had once been supported by walls, stood 12' to 15' tall, were dark brown (wet) for their full heights and were topped with lush, green grass. Both neighbors had thoroughly soaked their yards, weakening the active strength of the soil and increasing the pressure on the interconnected wall systems.

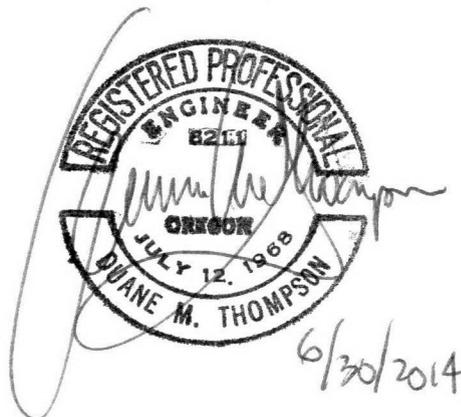
From the full extent of our information, we could easily sort out the facts that the foundation had been inadequately built and that it had been in a condition of failure since it was backfilled in 1930. With the deflection of the foundation, an equilibrium between the soil's active strength and the foundation mass had been developed. When the Hendricksons added fill and rebuilt the front yard and driveway, the balance had to have been jeopardized, and the wide-spread soaking of the soil caused an over-whelming pressure increase against the walls. We conjectured that the front foundation wall buckled inward (possibly at a horizontal cold joint/joints which are common occurrences in residential foundation from the 1920's and 1930's) allowing the house to drop vertically in place and causing the very tall rear, frame wall (that was already sloping downhill) to buckle or simply fall over. Once the house fell, the water service to the home was sheared off and the discharge of water undermined the south end, causing it to lean over, break off and to

pull the rest of the structure in the downhill direction. Muddy water and the building debris hit the house on Terwilliger while the sliding soil laid over the debris and stopped half way down the slope. There was nothing that showed that the natural, undisturbed soils had become unstable anywhere on the slope, and there is no indication that any of the four properties impacted by this event currently have this risk. The house at 6470 SW Burlingame, which is contemporary with the house that collapsed, has had its inadequate foundation enveloped by reinforced concrete and its uncontrolled-filled front yard retained with a tied-back wall system. The slope behind this house was found to be stable and is the extension of the slope that occurs behind your project. This remedial work was recommended by other engineers and is completely consistent with our findings on the cause of failure and the stability of the area.

The house on your property became a party to the collapse of the house on Burlingame only by the coincidental occurrence when the debris toppled a 50' tall fir tree in the direction of your house and then drove the tree into the foundation. The breaking concrete absorbed most of the energy of the impact so that the affect on the home's structure stayed within the elastic capacity of the floors and walls, so that no other damage resulted.

Submitted by:

Duane M. Thompson, PE  
Oregon #6211



12-183949 Rev 01 RS



# City of Portland, Oregon - Bureau of Development Services

1900 SW Fourth Avenue • Portland, Oregon 97201 • 503-823-7300 • www.portlandoregon.gov/bds



## Permit Revision Application and Submittal Requirements

A Permit Revision is required when there are proposed changes to the project after the permit has been issued. This may arise due to discrepancies between the city-approved permit drawings and actual field conditions, or the customer has changed their mind about an aspect of the project. In all cases, a revision to the existing permit must be submitted, reviewed and approved.

### Applicants will provide:

- A copy of this application
- Three (3) sets of plans that clearly reflect the proposed change(s).  
Drawings and calculations must be stamped and signed by the Architect and/or the Engineer of Record, if applicable.
- One (1) copy of the original city approved permit drawings. (NOTE: If your project has an assigned process manager please contact them regarding submittal of the revision).
- Two (2) sets of calculations, if applicable
- Inspector's correction notice, if revision is due to an inspection correction
- Revision fee (paid at time of submittal)

### Contact Information:

Contact name AJ Nation

Address 6307 SW Terwilliger

City Portland State OR Zip Code \_\_\_\_\_

Phone 503-997-8750 Email Specialty Construction@Comcast.net

Value of proposed revision 2,400 Issued permit # 12-183949-000-00-RS

Description of revision Definition of 1st Floor wall and designation of area New Hand Rail and treads, High side stability

### Fees:

The Permit Revisions are subject to fees associated with plan review, processing and any increase in project value. Additional fees may apply if adding plumbing fixtures.

The Bureau of Development Services fee schedule is available under the fees tab on the BDS web site at: [www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds). Fees are updated annually on July 1st.

### Helpful Information:

**Bureau of Development Services**  
 City of Portland, Oregon  
 1900 SW 4th Avenue, Portland, OR 97201  
[www.portlandoregon.gov/bds](http://www.portlandoregon.gov/bds)

**Submit your plans in person to:**  
 Development Services Center (DSC), First Floor,  
 Tuesday - Friday:  
 7:30 am - 12:00 pm  
 Closed Mondays

### Important Telephone Numbers:

BDS main number .....503-823-7300  
 DSC automated information line .....503-823-7310  
 Building code information .....503-823-1456  
 BDS 24 hour inspection request line .....503-823-7000  
 Residential information for  
 one and two family dwelling .....503-823-7388  
 General Permit Processing and  
 Fee Estimate info .....503-823-7357  
 City of Portland TTY .....503-823-6868



**City of Portland, Oregon**  
**Bureau of Development Services**  
**Plan Review / Permitting Services**  
 FROM CONCEPT TO CONSTRUCTION

Dan Saltzman, Commissioner  
 Paul L. Scarlett, Director  
 Phone: (503) 823-7310  
 Fax: (503) 823-4172  
 TTY: (503) 823-6868  
 www.portlandoregon.gov/bds

**BDS Checksheet Response**

Permit #: 12-153949 Date: \_\_\_\_\_

Customer name and phone number: \_\_\_\_\_

*Note:* Check which review you are responding to. Please provide specific information concerning the changes you have made in response to the checksheet. Note the checksheet item number. Describe the change, revision, or correction. Identify the location 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."*

- |                                      |   |                                     |   |   |
|--------------------------------------|---|-------------------------------------|---|---|
| <input type="checkbox"/> Planning    | <input type="checkbox"/> Structural               | <input type="checkbox"/> PDOT       | <input type="checkbox"/> Fire               | <input type="checkbox"/> Plumbing             |
| <input type="checkbox"/> Life Safety | <input type="checkbox"/> BES Pollution Prevention | <input type="checkbox"/> BES        | <input type="checkbox"/> Water              | <input checked="" type="checkbox"/> Site Dev. |
| <input type="checkbox"/> Electrical  | <input type="checkbox"/> Urban Forestry           | <input type="checkbox"/> Addressing | <input type="checkbox"/> Parks & Recreation |   |

Please use this sheet to submit your response to only one of the above review groups. If you need to respond to more than one review group, you will need a separate Checksheet Response Form for each group.

Checksheet item number	Description of changes, corrections, additions, etc.	Location on plans
#1	PROVIDE SPECIAL INSPECTION FORM	
#2	PROVIDE SPECIFIC STATEMENT OF SITE SAFETY	
#3	TITLED SITE/VICINITY PLAN	

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March 13, 2013

A. J. Nation  
Specialty Construction  
P. O. Box 230431  
Tigard, OR 97281

Re: Residence at 6307 SW Terwilliger Blvd in Portland, OR  
Permit # 12-183949-REV-01-RS

Subject: **Response to Site Development Checksheet dated March 5, 2013**

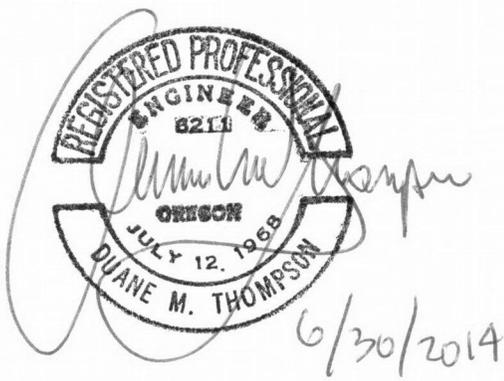
Mr. Nation:

As requested by the City, we hereby explicitly affirm that our soils investigations at the referenced building site support our conclusions that slope instability is not a hazard to the dwelling and that the residence is safe to occupy with the completion of the recommended rip-rap and jute matting surface stabilization.

Please contact us if you have any questions or require further assistance for approvals.

Submitted by:

Duane M. Thompson, PE  
Oregon #6211



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Permit #: 12-183949 Date: \_\_\_\_\_

Customer name and phone number: \_\_\_\_\_

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- |                                      |   |                                     |   |                                    |
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| <input type="checkbox"/> Life Safety | <input type="checkbox"/> BES Pollution Prevention | <input type="checkbox"/> BES        | <input type="checkbox"/> Water              | <input type="checkbox"/> Site Dev. |
| <input type="checkbox"/> Electrical  | <input type="checkbox"/> Urban Forestry           | <input type="checkbox"/> Addressing | <input type="checkbox"/> Parks & Recreation |                                    |

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Checksheet item number	Description of changes, corrections, additions, etc.	Location on plans
Item #1	LISTED STRUCTURAL WORK ITEMS	
#2	IDENTIFIED STAIR PLANS & STRUCTURAL MEMBERS	
#3	ADDRESS / RESPONDED TO EPI REPORT	

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