



## **SPECIAL INSPECTIONS INTERIM FIELD REPORT**

### **Report No. 2017-166.01**

**Date:** October 31, 2017  
**Project:** 12 Weymouth St., Portland, Maine  
**Project Number:** 2017-166  
**Owner:** Grantwey Apartments, LLC  
**Architect/Designer of Record:**  
**Structural Engineer of Record:**  
**Time at Site:** 9:15am – 9:55 am  
**Weather:** Sunny 55°F  
**Present at Site:** Christopher Ray, P.E. (DSC), Johan Siepmann (Property Manager), Mathew Sarapas (Code Enforcement Officer).

#### **Exterior Wood Egress Stair Framing Review**

We performed a limited Structural Review of the Exterior Wood Egress Stair Framing at the apartment building property located at 12 Weymouth St., Portland, Maine on October 31, 2017. This review is to provide a professional opinion of the current structural adequacy of the exterior wood stair as an accessible means of Egress for the apartment building. Refer to Photos 1-10 attached at the end of this document.

This report is limited to observations made from visual evidence during our site review on October 31, 2017. No destructive or invasive testing was performed. The report is not to be considered a guarantee of condition and no warranty is implied.

The observations, assessments and recommendations made within this report apply to the current condition of the structure at the time of our review.

As Professional Engineers, it is our responsibility to evaluate available evidence relevant to the purpose of this review. We are not responsible for conditions that could not be seen or were not within the scope of our services at the time our site visit. No destructive or invasive testing was performed. This report is not to be considered a guarantee of condition and no warranty is implied.

Our review excluded several areas not limited to the following:

- Areas associated with the apartment building not specifically included in this report. The review excludes the following and not limited to, all major structural roof or floor framing, mechanical,

electrical, plumbing, fire protection and life safety systems with regard to condition and useful future life of those features of the apartment building.

For your reference while reading the content of this report, the following definitions may be helpful:

*Good* - Good compares the component or assembly to items typical of construction in the geographic region in which the inspection occurs. It compares the component or assembly to buildings of similar age and construction type and is intended to be region specific. Component or system is structurally sound and performing in accordance with its intended design, although it may show signs of normal wear and tear. Some minor repairs or upgrade rehabilitation work may be required.

*Fair* - The condition of a building component or assembly may contain one or more of the following: a) Evidence of previous repairs not in compliance with general methods of construction, b) The quality of the component or assembly is not in compliance with general construction methods, c) building component or assembly is obsolete, d) Building component or assembly is near the end of its expected useful life. Repair or replacement is required to prevent further deterioration or extend expected useful life.

*Poor* - Building component or assembly has either failed, or component cannot be expected to perform as originally designed and constructed. Current condition of the building component or assembly is beyond repair; unplanned or sudden collapse of the component is possible and presently may contribute or cause the deterioration to adjacent or adjoining building elements. Replacement is required.

All ratings are determined by comparison to other structures of similar age and construction type.

### **Description**

The property is a five story, 26-unit apartment building constructed in 1910 and features approximately 11500-square foot of living space. Located along the rear of the building is a four story wood framed accessible means of egress stair tower (Refer to Photos 1 and 2).

The basic construction of the stair tower is 2x preservative treated dimensional lumber framing to wood beams and posts. The stair tower consists of five levels and is serviced by wood stairs to each level. According to the Johan Siepmann the stair was constructed approximately 20-years ago. Our review is limited to the exterior egress stair tower framing and excludes other structural systems associated with the main apartment building.

### **Area(s) of Observations:**

1. Exterior Egress Stair.

### **Observations and Review:**

Our observations and evaluations (*italicized*) are presented as follows

1. Exterior Egress Stair:

- A. The purpose of this site review is to comment on the condition and structural adequacy of the stair tower. Our review included assessment of the condition of the wood framing and connections to the existing building and stair framing components. The connections and attachment to the existing building appear in good condition however many portions of the stair tower and framing connections deviate from current construction industry

standards and are in fair condition. *Our review and structural assessment follows in order of the stair tower photos presented at the end of this document.*

- B. Wood stairs are constructed between each floor level. The stairs are erected with 2x stringers supported with thin walled steel straps nailed to wood headers (Refer to Photos 3, 4, 5 and 6). *The steel straps are in fair condition and we recommend replacement with galvanized steel sloped face mounted hangers properly supported on wood headers. The stair treads in many areas are in fair condition and will likely require replacement. We also noticed stair risers are not provided and we believe this should be considered as part of a stair replacement plan. In addition the stair riser and tread dimensions exceed the allowable dimensions by Code and will need to be reviewed later by the governing Code Official of The City of Portland.*
- C. The ledger board is a structural element supporting half of the deck platforms loads and is nailed to the building structure with common nails equally spaced (Refer to Photo 7). The floor joist framing is comprised of 2x6 joist toenailed to the floor beams (Refer to Photos 4 and 7). *We recommend adding an additional 1/4" diameter galvanized Structural Wood Screw Fastener through the ledger board and into the building structural framing a minimum of 24-inches on center. Also provide galvanized face mounted hangers at each joist connection location.*
- D. We did not observe concrete piers supporting the stair tower posts (Refer to Photo 8). *We recommend installing reinforced concrete piers placed below frost depth and supporting each tower post with the required hold down anchorage.*
- E. Guards shall be located along open-sided stairways, platforms and ramps that are located more than 30-inches above finished grade (Refer to Photos 9 and 10). *Based on our review the height of many of the guard rails is less than 36-inches. We believe this is an urgent issue and should be repaired and constructed according to the latest building code and construction industry standards (Refer to photo 10).*

Additional Comments:

The purpose of this review is to provide a professional opinion of the structural adequacy of exterior stair tower. Based on our review the stair tower is in fair condition overall with several elements in poor condition. At this time the structure is not structurally adequate to support current design live loads given the deficiencies in the stair framing connections and lack of adequate guard protection along each of the floor levels. We believe immediate repair and replacement of deficient items prior to occupancy.

Thank you for the opportunity to provide engineering services and we would be pleased to assist you in the repair and renovation to this building.

It has been a pleasure working with you on this project. We hope that you will call us if you have further questions, you may contact us at (207) 650-3093

Report Prepared by:  
Christopher F. Ray, P.E.

*Field Report 10\_31\_2017.docx*



**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

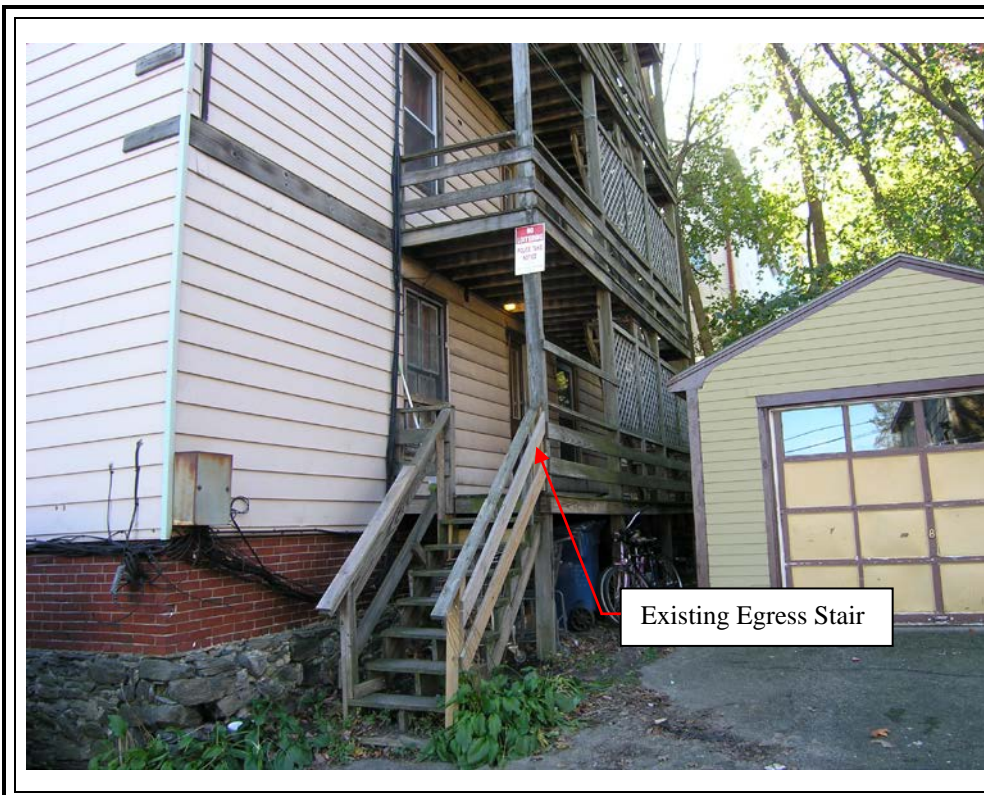
**Date:**

October 31, 2017

**Description:**

Exterior Rear Building  
Egress Stair.

**Number 1.**



**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

**Date:**

October 31, 2017

**Description:**

Exterior Rear Building  
Egress Stair.

**Number 2.**



**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

**Date:**

October 31, 2017

**Description:**

Existing Stair Stringer  
Connection Detail.

**Number 3.**



**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

**Date:**

October 31, 2017

**Description:**

Existing Stair Stringer  
Connection Detail.

**Number 4.**



(E) Egress  
Stair Framing.

**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

**Date:**

October 31, 2017

**Description:**

Existing Egress Stair  
Framing.

**Number 5.**



Loose and  
deteriorated  
wood treads

**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

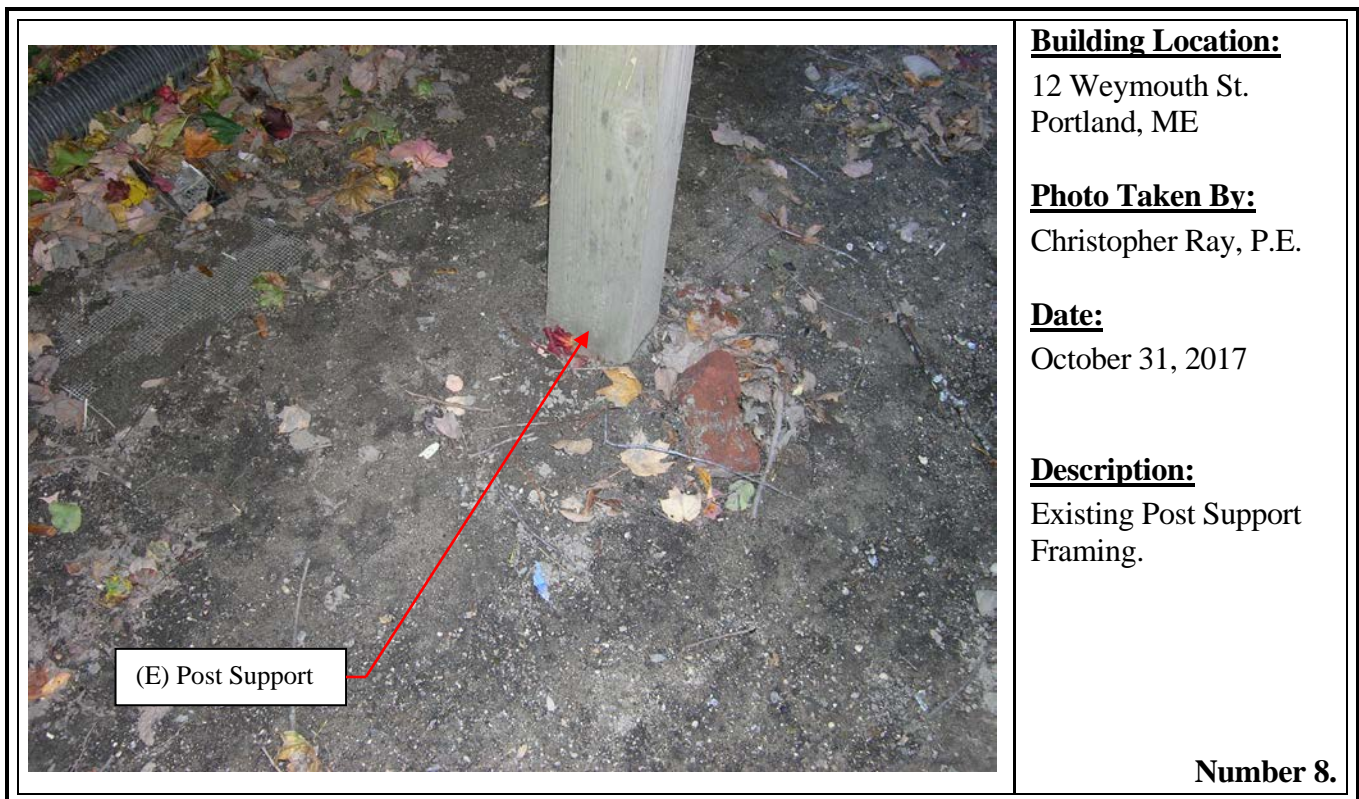
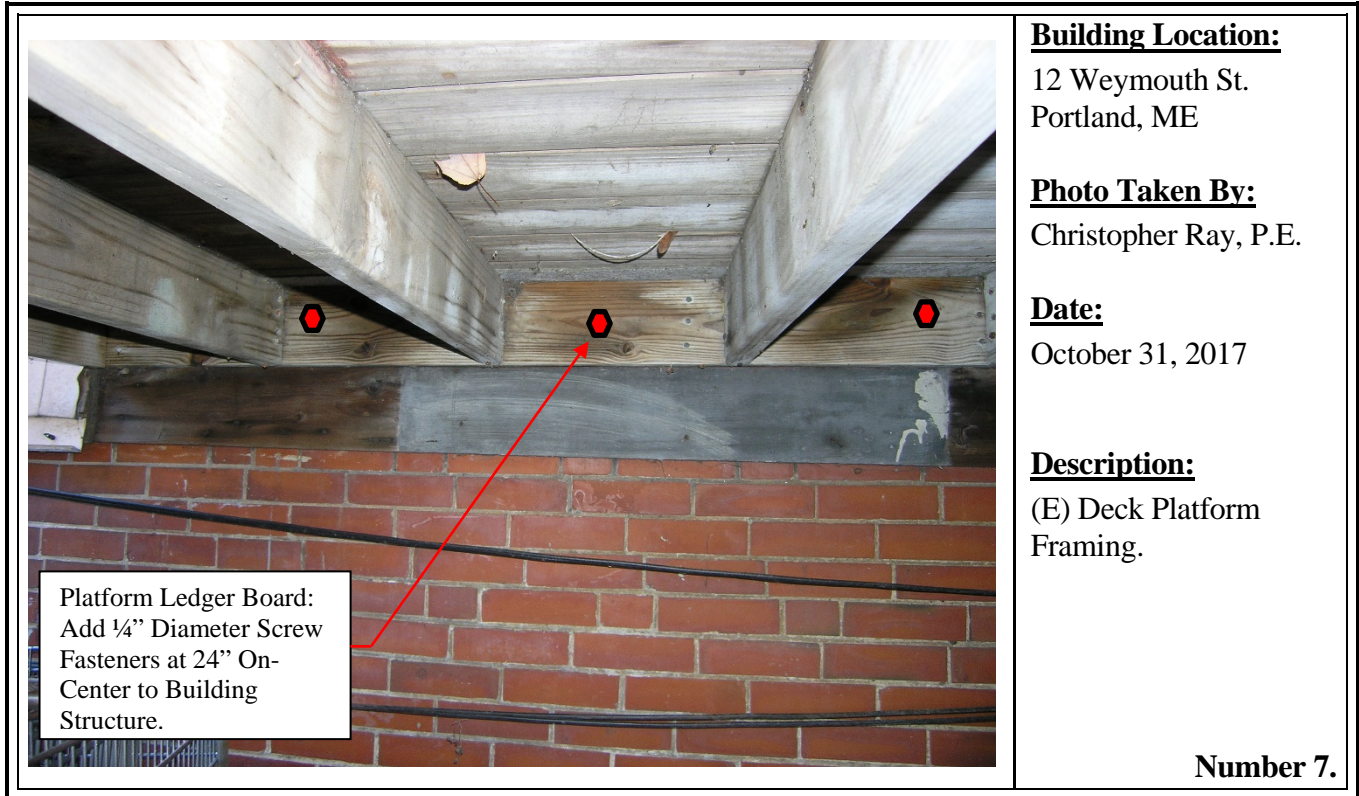
**Date:**

October 31, 2017

**Description:**

Existing Fourth Floor  
Stair Framing.

**Number 6.**







(E) Guard Rail  
3<sup>rd</sup> Floor Level

**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

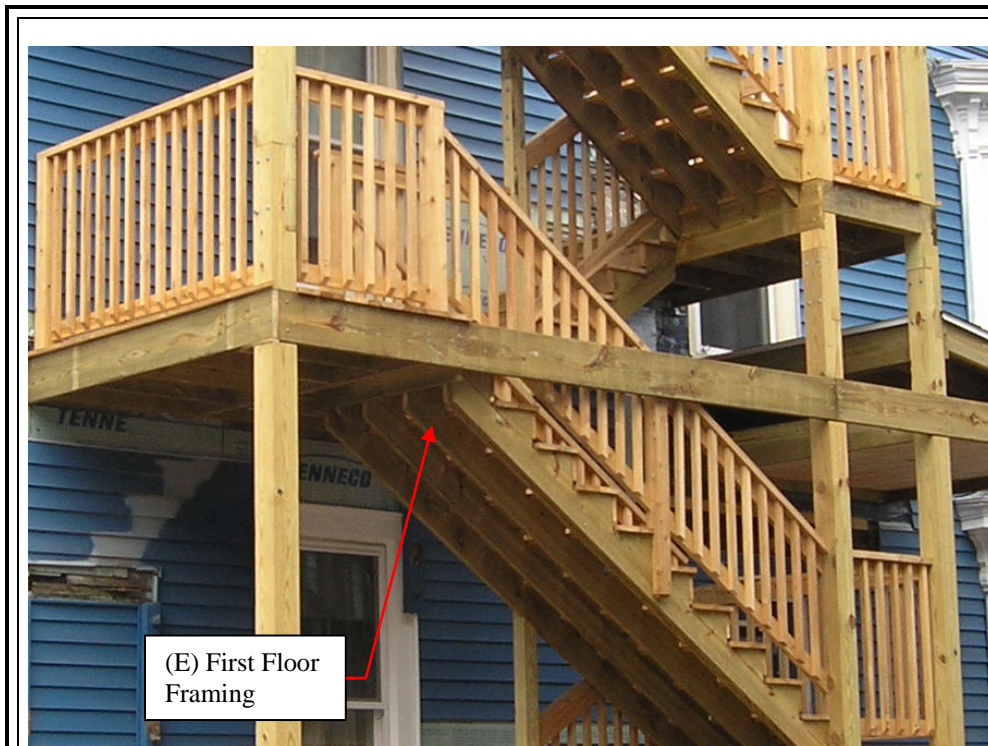
**Date:**

October 31, 2017

**Description:**

Existing Platform:  
Egress Stair Framing.

**Number 9.**



(E) First Floor  
Framing

**Building Location:**

12 Weymouth St.  
Portland, ME

**Photo Taken By:**

Christopher Ray, P.E.

**Date:**

October 31, 2017

**Description:**

Proposed Guard and  
Handrail Design  
Framing.

**Number 10.**