



B. Keith Brenner, P.E  
Structural Engineer  
62 Highland Shores Road  
Casco, Maine

February 26, 2024

Mr. Anthony Ward  
Town Manager  
Town of Casco  
635 Meadow Road  
Casco, ME 04015

Re: Structural Engineering Review  
9 Leach Hill Road Building  
Casco, Maine

Dear Tony:

Below is my report regarding the structural review of the building at 9 Leach Hill Road which is currently unoccupied. The intent of this review was to determine the feasibility of utilizing the space for Town purposes. A site visit was made on February 8, 2024.

### **Building Description**

The existing building is a one-story wood and steel framed structure located in the “village” section of the Town of Casco. The dimensions of the building are approximately 60’ x 30’ and there is a full basement under the entire footprint. The basement can be accessed by a separate door located on the west side of the building. There were no original design drawings available at the time of my review, and the date of construction is unknown.

It is my understanding that the Town owns the building and is looking to utilize the space for Town related meetings.

### **Findings**

#### **Basement**

The basement consists of cast-place concrete walls and a concrete floor slab. It is an open space with no intermediate columns or bearing walls. The concrete appears to be in good condition with no major cracking noted. The clear distance to the underside of steel beams above is approximately 7’-0 ½”.

## First Floor Framing

The floor framing consists of 2x10 wood joists spaced at 16" on center. These joists span to 16" deep steel beams that are at 10' on center. The steel beams span the entire width of structure and have wood blocking bolted to the webs of beams that the wood joists connect to. The end of each joist is notched top and bottom to allow it to bear on the double blocking at the beams (see photos). This is not an ideal detail as it reduces the depth of the member at the bearing. The steel beams sit on steel bearing plates into pockets in the concrete walls.

## Roof Framing

The roof framing consists of prefabricated wood trusses spaced at 2'-0 on center. The trusses appear to span the full width of the building. However, due to the finishes and insulation, this would need to be verified after some demolition has occurred.

## Analysis

### Floor Framing

Limited structural analysis was performed to determine approximate load capacities of the first floor framing. The analysis performed indicates that the wood joists and the steel beams are capable of supporting a live load of 100 psf, which is the code required loading for public spaces and meeting rooms. Live load is the load produced by occupants of a structure.

Based on this finding, the proposed use of the space as meeting rooms would be acceptable.

### Roof Framing

No specific analysis of the roof trusses could be performed as these are a proprietary structural elements that are designed by the truss manufacturer. Without the wood truss shop drawings, it is not known what was used for the snow load on the roof. The code required snow load on this roof would be 62 psf.

## Conclusions

Based on my findings it appears that the floor structure is capable of supporting the intended loading, however the capacity of the roof framing cannot be verified without additional information from the manufacturer.

Please contact me if you have any questions.

Sincerely,

B. Keith Brenner

Digitally signed by B. Keith Brenner  
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Date: 2024.02.26 10:43:53-05'00'

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*View of Basement*



*Bottom of Steel Beam*





*Notched Joist at Steel Beam*



*Wood Rood Trusses*