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## **15 FERRY STREET, MALDEN**

### **NARRATIVE DESCRIPTION OF PROPOSED BUILDING RELOCATION**

#### **Description of Existing Building**

The building at 15 Ferry St., Malden is a brick building with a footprint of approximately 48 ft. by 30 ft. There are three habitable floors, including a basement. It is considered historically significant by the City of Malden, by virtue of its association with the Converse family, its age of 120 years, and the craftsmanship of its masonry walls, slate roof, and interior features.

15 Ferry St. occurs on relatively flat land in a commercial area near Converse Square, Malden. Its floors and roof are framed of wood and its exterior walls appear to be 8" thick solid brick masonry. In addition to the brick, a band of limestone occurs just below the first floor level. The building is rectangular in plan, except for a covered front entry and an enclosed rear entry. The basement has a wood finish floor; it is unclear whether this finish is underlain by a concrete slab. Two interior lines of structural support are present under the first floor, one on each side of the front entry. Each of these lines is held up by a 15 ft. long beams bearing on the outside walls and a single center brick pier.

#### **Proposed Building Relocation**

A new building project at the corner of Salem and Ferry Streets has led the owner of the property to consider moving the 15 Ferry St. structure to an adjacent lot, owned by the City of Malden. This lot is presently used for municipal parking and does not have a building on it. Two possible scenarios for the relocation are being studied: one that moves the building in its present orientation along Ferry St., and another that moves the building and turns it 90 degrees.

Masonry buildings have successfully been moved to new locations, sometimes over large distances. However, care must be taken to avoid cracking the brick in the relocation process. The services of a professional house-moving subcontractor would be engaged for the relocation.

#### **Preparatory Work on the Existing Structure**

In preparation to move the building, the dimensional stability of the structure and the support of its components must be secured. In addition, utilities must be disconnected and plumbing within the building must be drained. This preliminary work will take place both inside and outside.

On the outside, the building will be banded with steel rods or cables to prevent distortion. The roof over the front stair landing and the small enclosed entry at the rear will be removed, to be replaced after the relocation. Some stainless spiral ties (Helifix) may be used to stabilize existing cracks. The two masonry chimneys may also be braced or boxed with plywood. The limestone water table and supporting elements will be removed from three sides of the building, to be stored and replaced after the move.

In the basement, the two lines of interior bearing will be temporarily supported. The moving firm will insert beams under the first floor, through the basement walls. We expect that the exterior walls of the building will be

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cut off above the basement windows, to allow it to be separated from the existing foundation. Then the structure will be lifted enough so that the supporting beams will clear the top of the basement walls. We have estimated the weight of the empty building at approximately 260,000 lbs, or 130 tons.

### **Construction of a New Foundation**

Simultaneously with the preparatory work at the existing structure, a new cast-in-place concrete foundation, basement walls, and basement floor slab will be constructed. This new concrete will be designed and built to match the dimensions of the existing building. In addition, stairs and ramps for access to the relocated building will be constructed. The level of the relocated first floor may be somewhat different than the original, in order to match grades or improve pedestrian access to the building. The concrete work would be completed prior to the moving of the structure. It is expected that work will include the following:

- Excavation of building footprint
- New 12" thick by 2 ft. wide continuous perimeter wall footings on 2" of crushed stone over natural soil
- Two new 12" thick footing pads for chimneys and fireplaces
- Two new 3 ft. square by 12" thick interior column footings with new 4" steel pipe columns
- Four new 12" thick reinforced concrete basement walls
- New 4" thick concrete slab on grade over 6" of crushed stone and 6 mil vapor barrier.
- Exterior concrete below-grade supports for stairs, enclosures, and ramps.

### **Relocation Scenario 1: Direct linear move along Ferry St.**

In this scheme, the building will slide less than 60 ft. directly from the existing foundation to an adjacent new one. This would be the fastest and simplest way to relocate the building. The design and logistics of this move would be left to the house-moving subcontractor. A sketch illustrates the before and after positions on the site.

### **Relocation Scenario 2: Move and turn**

As an alternative, the building would slide rearward of its current position. Then, once off the original foundation, it would be maneuvered to turn 90 degrees and move onto its proposed location. As in the direct linear move, the logistics and methods would be left to the subcontractor. A second sketch illustrates the before and after position of this scenario.

### **Work on the Relocated Structure**

Once the building is securely connected to its new foundation the steel framework can be extracted. Masonry work in the basement will then complete the bases of the fireplaces. New plumbing, heating, and electrical systems will be installed and connected to the utility lines in the street. Basement windows and doors will be installed.

On the building exterior, the steel banding will be removed, minor pointing and masonry repairs will be completed, and the re-installation of the limestone water table will proceed. New stairs and entry structures at front and rear will be completed. Landscaping and other site components such as fences and signage would then be finished.