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Town of Boxford September 11, 2018
Attn: Wendy Perkins, Chair of Boxford Historic District Commission
7A Spofford Road
Boxford, MA 01921

Cummings House Existing Conditions Assessment

It is clear that Julia Cummings had a vision for public good with the donation of her family home to the town of Boxford in 1938. Like most historic homes, there is little history about the type of construction or the original builder. Fortunately, the builder is well represented in the methods illustrated by the remaining timber framed construction of the house.

This investigation delves directly into the viability and structural integrity of the original home. It is known that the 1981 addition to the original house is dangerous due to poor construction methods and severe mold growth leaving the house in jeopardy.

It is also known that the library within the Cummings House was fraught with controversy almost since inception. The original conversion of the house to the town library in 1939 was unequivocally inadequate for the growing town of Boxford by 1970.

Any structural review of an historic home must accommodate its current use. We all know that stacks of library books and public use can exceed the design capacity of a residence.

In 1981, this was fully recognized in the design of the new library and the work done to bolster the original house for this use was successful. An early two story connecting ell has been severely compromised by the 1981 addition effectively destroying any viable historic fabric. The main house, however, has not been seriously compromised and retains much of its historic and structural integrity.

History of Construction:

The Cummings House located at 10 Elm Street in Boxford, Massachusetts is an excellent example of late 19th century timber frame construction. Many of the larger timbers are hand hewn while others are clearly sawn by use of a water powered up and down saw mill. The house measures 18 feet 5 inches wide by 36 feet 1-inch-long and is created with hearty timbers in four distinct bents of irregular spacing. Structural posts rise two floors to accept a continuous top plate with continuous tie beams crossing from eave to eave at each post. Between posts, an additional tie beam crosses the continuous top plate and ties the whole structure together. The roof is made up of common rafters spaced equally along the length of the building. The rafters are nailed to a "flying purlin" timber that creates a small overhang for the house. The roof frame is in exceptional condition for its age.

The building exterior is clad with clapboards and vernacular trim elements. A formal front entry hosts a pediment with sidelights and paneled door. Early windows are uniformly spaced around three facades with six over six sash that have been fully restored. Original chimneys rise from each gable end of the house with two small radius windows accenting each side. A two

story connecting ell extends from the rear/East eave of the house and contains a side entry portico.

The building exterior, windows, and doors are in good shape with only minor repairs needed along the soffit and rakes. It has been well maintained over the years and the house sits on a very solid rubble stone foundation.

Existing Conditions Assessment:

Great care was taken over the years to retain the original fabric and feel of the original Cummings House. It is clear that the character of the house and its residential appearance has been recognized as important and retained. This is best illustrated in the meticulous window sash restoration done by Alison Hardy of The Window Woman on New England in 2001.

The interior of the house has been altered but still retains much of its original interior window trim. Both fireplace surrounds are intact. The first floor is one open space with bolstered second floor floor joists. Wood laminate beams cross under original framing to allow for heavier loads on the second floor. First floor joists are strengthened with new modern dimensional lumber and metal hangers were placed between original joists to increase load capacity.

New sheetrock covers fully insulated walls throughout the house. Sheetrock coverings replace original plaster on all ceilings and walls of the house. Original flooring is covered by industrial carpet. The attic space is unfinished. Stairs from the original floor plan have been eliminated and were replaced with wide stairwells that are largely part of the 1981 addition.

Throughout the alteration process, most of the timber frame of the original house was retained. It was simply added to in order to increase its strength. Some interior non load bearing wall partitions have clearly been eliminated to provide more open and useful library space on the first floor. Heavy alteration to the East eave wall was done to tie the building into the 1981 addition.

The addition is not the focus of this investigation. It is apparent that its construction is substandard and it is slated for removal. Its impact on the main house is not irreversible. Its impact on the connecting ell however, is significant rendering the ell largely unusable. It is possible to utilize the ell form with its portico as part of the restoration of the original frame. This would allow for code compliant stairs and egress to and from the original structure.

Photographs of the interior and exterior of the Cummings House are provided as an addendum to this report. A set of existing conditions drawings is also provided with this report. There is work to be done on the house, but its bones remain viable and its preservation and restoration for adaptive re-use is both economically viable and recommended.

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Recommendations and Cost Estimates:

The following estimates are provided as a guide for the restoration of the Cummings House main house. The numbers are based on projects of similar size and scale. Actual quotes for the adaptive re-use of this structure, including its potential move to a new site nearby, should be acquired upon the creation of a full and thorough scope of work. These estimates do not include the reconstruction of the attached ell and portico. I have not included a foundation estimate because the existing foundation is in great shape. If the house is to be moved from its original site, a new foundation will be necessary.

Demolition of 1981 addition and early ell: $76,750.00

The Cummings House cannot be used without removing the 1981 addition and connecting ell. The demolition of these structures will require numerous dumpsters for debris and a qualified excavation contractor with substantial machinery. The addition would need to be carefully severed from the main house and the East wall would have to be closed in after the 1981 addition is removed. Once removed, the house regains its cohesiveness and is ready for adaptive reuse. Knowing that the Town of Boxford is trying to find a new purpose for the Cummings House, it is important to understand that the original frame is both viable and worth preserving. It can become a part of a larger vision for the community or it can stand alone. It is a strong structure and can be moved intact anywhere within the immediate area. It is adaptable. It is beautiful. It was given freely to the town. It should not be destroyed.

House Move: $35,000.00
(Contingency for wires and streets: $10,000.00 additional)

The house move will involve lifting the structure on steel and moving it along rails to its desired location. This is done over the course of about a two-week period and the building would be set down on a new foundation when the move is complete. If the building is moved across the street, a contingency for moving power lines and traffic control will need to be determined. In Massachusetts, often the wire removal and replacement is done at no charge. Each municipality may be different.

Main House Repairs: $146,000.00

The main house needs work. Primarily, the work necessary is a result of the invading addition. The East wall plane will need to be rebuilt but the frame that creates this wall plane remains intact. New infill studs and windows, siding and trim will need to be created to match the original fabric. Connections between bolster beams and original timber frame must be inspected for durability and capacity. New wiring, insulation, sheetrock, and interior trim will also be needed for the East eave wall. Existing systems in the remaining three original walls should be able to be tied into the new work.

The connected ell is fiercely damaged, but there is enough evidence to recreate it with code compliant stairways and perhaps an elevator should the need be determined. The original front entry along with the early portico entrance provides egress for code compliance. The windows are fully restored and fully operational. A connecting ell and portico is not included in this estimate. Careful design with adaptive use and accessibility in mind can be done to allow accurate pricing for its final destination.

The Barn: (Contingency for dismantling and restoration): $35,000.00

The barn at 10 Elm Street is consistent in age and construction with the Cummings House. It is a unique structure that has been considerably altered over the years as its designated use changed. We were not able to investigate the barn thoroughly on our site visit as it remained locked and inaccessible. We have not created drawings.

From an initial walk through of the property in early Spring, we did have opportunity to view the timber framed barn and it is clear that it is an early structure worthy of restoration. It began its life very likely as a carriage shed. Its original shed roof form has been changed to a gable roof, but most of the framing members remain intact and visible inside the barn. It has been neglected over the years despite some newer siding and roofing.

Where the barn fits into the grand scheme for the adaptive continued use of the Cummings House is not known. If the barn is to be moved, it should likely be dismantled and repaired piece by piece. It is certainly viable to use the barn as a new connecting ell for the main house, but it would have to be modified significantly to do so.

Recommendations for the barn include its careful documentation and dismantling for repair. Its original shed roof should be reintroduced. Its use could be diverse and amenable to the creative solutions you will discover for the Cummings House. I offer a contingency here as a placeholder within your overall adaptive re-use of the house and property.

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SUMMARY OF COSTS:

The Main House:	
Demolition of 1981 addition and early ell:	$76,750.00
House Move:	$35,000.00
(Contingency for wires and streets: $10,000.00 additional)	$10,000.00
Main House Repairs:	$146,000.00
Estimated Project Cost of Main House:	$267,750.00

The Barn:	
(Contingency for documentation and dismantling):	$35,000.00

Assumptions and Exclusions:

The estimates above are designed for the purpose of preserving the Cummings House using in kind fabric to match original features of the home. Structural changes to accommodate a new use may be necessary. Additions and infrastructure may also be appropriate for its final use. Please use these component estimates as guides for a comprehensive plan for the preservation of the house. Actual numbers will vary depending upon the final plans for the home. The barn estimate is specifically for its full documentation and peaceful dismantling for future use. Its preservation can take many forms. I would welcome more opportunity to further study this important building.

Excluded from this estimate:

- Foundation for the main house
- An attached ell and portico
- Alterations of the main house for new purpose
- Infrastructure changes and additions for new purpose
- Repair and repurpose of the barn

Please feel free to contact us with questions and comments. PTF is both willing and able to participate in the preservation of the Cummings House as you move forward with your plan.

Respectfully Submitted,

Arron J. Sturgis, President
Preservation Timber Framing Inc.
www.preservationtimberframing.com

Cummings House Boxford, Massachusetts

10 Elm Street, Boxford, MA

By Arron Sturgis | September 12, 2018

10 Elm Street | Boxford, Massachusetts
Aug 24, 2018 Arron Sturgis

West Facade: Symmetrical window fenestration with front entry pediment and sidelights.

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North Gable: Both gables host chimneys and radius windows on each side. Rakes and soffit with return creates small overhang at roof.

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South gable facade: Main House with connecting ell and side entrance portico

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Main House: The first floor of the house has been opened up for library use. The chimneys and fireplace surrounds were retained. The interior window trim and sash have been carefully restored and retained as well. Note the ceiling bolster beams extending down into the room. They are in alignment with original timber floor beams and structural posts.

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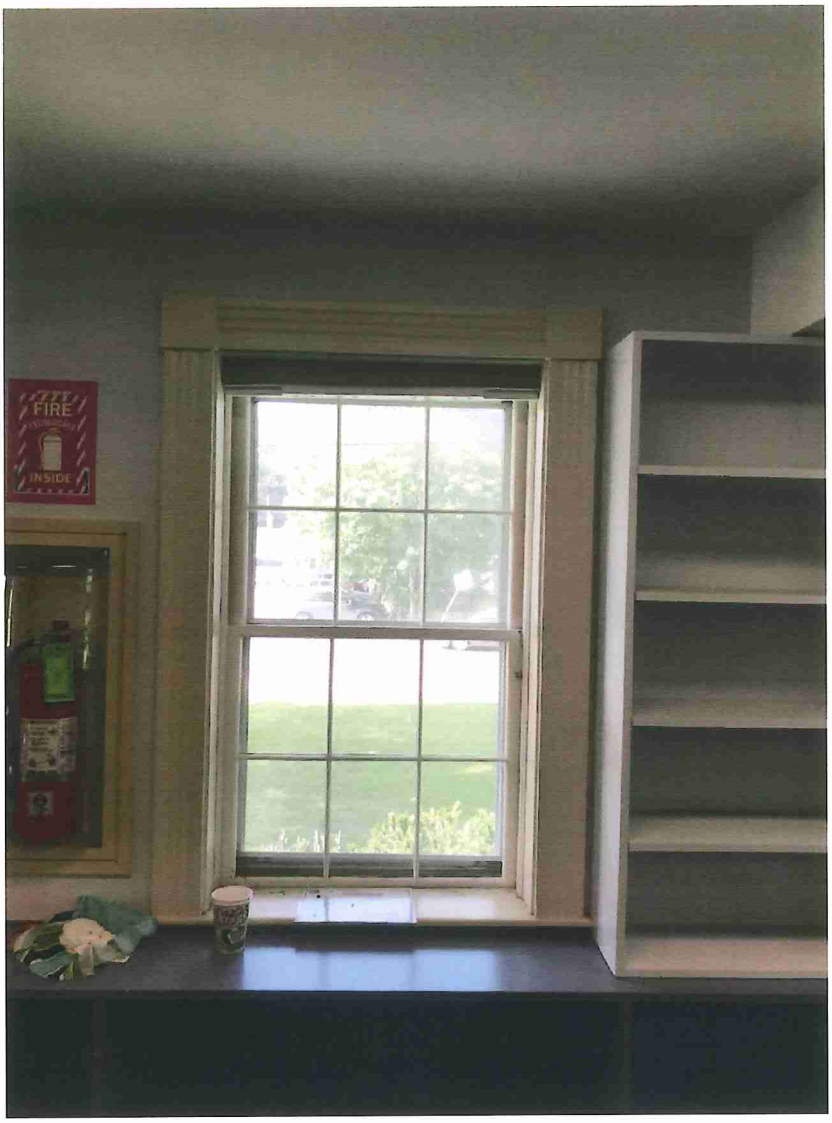
Main House: The front entry door is new but emulates the original house form. The trim is authentic and in keeping with the age of the home.



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Window Sash: The main house windows are authentic and remain in their original locations. Windows like the one pictured have been removed from the East eave wall where the 1981 addition interrupts the main house and connecting ell.

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Window Sash: The six over six sash create a period look for the house. They are protected by aluminum storms to the exterior.

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Window Sash: The muntin profile appears to be early and is appropriate for the age of the house.

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Window Sash: The windows are all fully operational in their window frames. Storms host screen and storm panels. There is also a unique spring loaded button that allows the windows to be safely opened with no fear of closing hard.

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Main House: Original structural posts extend from sill to top plate and accept original floor beams and bolster beams at the second floor level. The original beams appear in very good shape.

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Main house attic space: Original rafters spaced about 29 inches on center with rough board sheathing. Some bolstering added to roof framing in 1981.

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Main House: Roof system is created with common rafters sitting on the tie beams with a flying purlin overhang. Top plate is continuous along the length of the eave wall. Ceiling joists are notched into a continuous tie beam crossing from eave wall to eave wall.

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Main house attic: Common rafters also land on the flying purlin between tie beams. A birds mouth joint at the heal of the rafter is secured to the flying purlin with cut nails.

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Main house cellar: Much of the first floor is bolstered with new joists and floor girts. Part of the cellar retains its original joists and girts with new joists added between the old.

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Main house cellar: Two simple brick piers integrate with perimeter gable rubble stone foundation to support the fireplaces above. Some spalling of the bricks is evident. The stone foundation under the main house is in very good condition.

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South Gable: Connecting ell joins with 1981 addition. Ell very compromised by addition.

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1981 addition: A large open space with conventional trusses as interior finish. Mold pervasive throughout this structure.

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1981 addition: The truss is partially clad with flat trim boards. the ceiling is created with 6 inch tongue and groove boards. Mold is pervasive.

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1981 addition: The lighting valence is open and clearly visible from the library stair well rising to the second floor of the main house. It appears sloppy and unfinished. Mold is pervasive.

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1981 addition: The gusset plates holding the conventional trusses together are clearly visible from the library stair well rising to the second floor of the main house. This is typically not a finish detail.

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1981 addition: The East Gable of the addition is shrouded now with heavy vegetation. Windows and siding are rotting and the mold on the interior is unabated.

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The Barn: The barn is a very early timber framed structure contemporary with the age of the house. It is in remarkable condition for its age.The original form of the barn hosted a shed roof. It current configuration is very different and the alterations while extensive are reversible. It is currently underutilized for equipment storage.

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The Barn: The barn South gable is clad with clapboards with sliding doors. Windows are added later. All of the exterior on the barn is much newer that the structure hidden within.

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The Barn: The east eave wall is clad with board and batten siding. It is relatively new. Grade around the barn is very high and covers both siding and sill. This structure is quite unique in form and worth saving if a new use can be found.