Lakeville Train Station

Issued: February 23, 2023

Prepared for:

Town of Salisbury
27 Main Street
PO Box 548
Salisbury, CT 06068

Prepared by:

CROSSKEY ARCHITECTS, LLC
750 Main Street, Suite 150
Hartford, CT 06103

Table of Contents

EXECUTIVE SUMMARY

Crosskey Architects, LLC was hired by The Town of Salisbury to conduct a Historic Resource Conditions Assessment Report for the Lakeville Train Station, located at 7 Ethan Allen Place, Lakeville, Connecticut 06039. The assessment included a visual review of the building to determine the existing conditions of various materials, components, and systems. A feasibility study was conducted to review options for protecting the building and improving use and site drainage; options include raising the structure and/or relocating the structure to a new location. Our recommendations and findings have been assembled into the following written report supported by photographs.

The Condition Assessment determines, in a comprehensive way, the current condition of the various building components and identifies maintenance deficiencies that could lead to further damage. Conditions rated as Good, Fair, or Poor describe the condition of the evaluated features. The feature is also rated as Critical, Serious, or Minor to indicate the significance of the feature deficiency. This Conditions Assessment will help inform the scope of work required for the preservation and future use and occupancy of the Lakeville Train Station.

The work included a visual survey of the existing exterior and interior conditions to evaluate features like but, not limited to exterior cladding, windows, roofing, gutters and leaders, exterior paint, as well as interior items and finishes such as plaster, historical defining features, trim, doors, flooring, bathrooms, electrical, plumbing and mechanical systems, etc. In addition, handicap accessibility and potential code violations were considered and evaluated. The conditions assessment provides a building analysis broken down by feature and appropriate treatment recommendations, a list of prioritized work required for the immediate and long-term preservation of the train station, and a summary of probably costs for the associated work. The work is also grouped by priority in anticipation of future phased preservation and rehabilitation projects. As a management tool, the report identifies deficiencies that are in need of immediate repair and is intended to assist the Lakeville Train Station with the acquisition of funds necessary to undertake various building projects.

The components of the assessment included: a site study, document review, and a conditions assessment. The site study was held at the Lakeville Train Station, 7 Ethan Allen Place, Lakeville, Connecticut on October 11, 2022, and was attended by representatives of the Town of Salisbury; Garrett Coady, Historic Preservation Specialist, of Crosskey Architects LLC; Michael Weissbrod, Vice President, of Crosskey Architects, LLC; and James K. Grant, Structural Engineer, of James K. Grant Associates. Mark Gendron of Acorn Consulting Engineers conducted a site visit during the month of October. In addition to the architectural conditions assessment, the Structural Conditions Assessment and Mechanical, Electrical and Plumbing (MEP) Systems Assessment are summarized in this report.

The survey utilized visual and photography methods to investigate potential problem areas to identify the existing building conditions. The visual overview was conducted from vantage points at grade and floor level. Areas of concern were inspected visually and documented via digital images included at the end of this report. Summaries of the Structural and MEP Assessments are provided below.

The Lakeville Train Station is a single-story clapboard and wood shingled structure. Built c.1871 with a gabled roof, large, imbricated brackets with turned motif, and overhanging eaves, the Lakeville Train Station is listed on the National Register of Historic Places as a contributing building of the Lakeville Historic District. The building has both architectural and historical significance, as a regional transportation hub and network. The Lakeville Train Station's construction coincided with the Connecticut Western Railroad's opening of a new through route from Millerton, New York to Hartford, CT. The arrival of the railroad powered the emergence of Lakeville as an important summer resort community while providing support to local manufacturers, like the Holley Manufacturing Company, efficient cost-effective access to a national market for its products.

Presently, the Town of Salisbury utilizes the train station as an office and storage center. However, the town envisions converting the structure into a new tenant space while using existing architectural features within the building. In its current condition architecturally, the train station requires cosmetic upgrades, and most of the building can be maintained for its continued preservation. At the request of the Town of Salisbury, several plausible options were investigated and provided to improve the sitting of the building. There are accessibility changes and Code improvements required to the bring the train station up to standard however, any of these improvements must be weighed against the final use of the building. Structurally, the Lakeville Train Station is in good condition. The present mechanical, electrical, and plumbing systems were reviewed by the MEP Engineer. The current building systems will require select MEP upgrades and replacement of some of these systems. In all, the Lakeville Train Station is in fair condition.

Herein includes the Historic Resources Conditions Assessment Report of the Lakeville Train Station.

Site Assessment

Based on the visual assessment, the site is in fair condition. The train station is surrounded by a bituminous parking lot and concrete walkways on all elevations. Beyond the walkway on the north side, is green space with a tree line that obscures the neighboring road. A stamped concrete pad and walkway wraps around the building on three sides; north, west, and east elevations. There are raised concrete pads serving current or former door landings on the east and north elevations. The concrete is cracked, spalled, and should be replaced. There is a metal bulkhead to the basement on the west elevation that is rusted and pitted, requiring replacement. On the south face, the bituminous parking lot abuts the train station's wood siding. There are parking spots on the east and south sides of the building. According to the Town, the building has suffered previous damage from vehicles because of its proximity to Ethan Allen Street. The exterior wythes of bricks are buried below grade and current grade slopes towards the building on the west and south elevations. There is a wood guardrail/fence in the southwest corner along with an areaway storm drain. This area drain likely collects run – off water from the road. The current site grades could be affecting the drain's ability to properly work, though the roofs' large overhanging eaves could offer support and help minimize the amount of moisture exposure.

Architectural Assessment

Exterior

Please note that prior to undertaking any work as outlined below, consultation with an LEP engineer should occur assuming this has not happened to date. As a general rule, all surfaces should be tested for lead, PCB's, asbestos, or the like before undertaking any restoration work. An abatement plan should be prepared by an environmental consultant to deal with hazard reduction by following the guidance in Preservation Brief 37: Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing.

Based on a visual assessment of the train station's exterior, it is overall in fair condition. The building exterior envelope is finished in wood painted clapboard siding with large overhanging eaves with decorative brackets and motif. The roof overhang has a wood frieze on all elevations, and it appears sections have been previously relaced in kind. There is cedar shingle siding on the east and west gable roof walls with wood louvers. The cedar shingles appear to be rotting and all should be replaced and painted. The clapboard siding is stained with bio – growth typical of age and should be sensitively cleaned in a non – abrasive fashion. The paint has peeled and crazed. It's recommended that loose flaking paint be sanded and area(s) repainted to match the surrounding area. Please refer to the Preservation Brief 10: Exterior Paint Problems on Historic Woodwork for more information on selecting the appropriate/safest method to remove paint. The clapboard and trim have selectively decayed and should be replaced in kind to match the surrounding area. When the existing wood has passed the acceptable level of 12% water saturation, rot can set it and indicate the need for wood repair. A restoration epoxy wood repair system, or dutchman patching with like material would be an appropriate remediation for an in-place repair. When wood has rotted through the entire member, losing its integrity and is no longer sound, replacement becomes warranted. Wood repair should be carried out to match the existing characteristics of the surrounding area. This includes replicating the species, dimension, profile, and finish.

The asphalt shingled roof and flashings appear in the midst of their useful and are in fair condition. A historic postcard depicts the train station north roof overhang extending well beyond the east and west ends of the building after transitioning to a lower gable. This would provide protection to train goers, and the roofline was presumably altered to the existing configuration when the train service was discontinued.

The exterior doors are a mixture of wood raised panel leaf's and wood raised panel leaf's with glass lite. Doors are on each of the south, east, and north elevations, three of which have aluminum storm doors. In all, all exterior doors are in fair condition requiring routine maintenance so they can continue to function. Routine maintenance would include a combination of the following; interior and exterior cleaning, some degree of interior and exterior paint removal and repainting, new weatherstripping, and hardware inspection and maintenance. Note that when the train station was remodeled, the opening configuration was altered. There are multiple openings, both door and window, that were added and/or changed based on this visual assessment.

The train station is finished with two iterations of wood framed, divided lite double hung windows. The first is in a classic Queen Anne style with a decorative grille upper sash and divided lite lower sash. The second style has a divided lite on each the upper and lower sash. The window fenestration is not consistent between the two window types. All windows appeared well preserved and should be repaired in kind. Prior to undertaking any action, consultation with a reputable window restoration company who can review, study, and produce a comprehensive window survey should occur. Such company will be able to provide an accurate scope of work and associated cost estimate of repairs.

Wood windows fall within the three repair classes outlined by the National Park Service: (1) Good Condition - Routine Maintenance; (2) Fair Condition - Structural Stabilization; and (3) Poor Condition - Parts Replacement. Note that the current assessment was taken from the exterior and ground level, and operation was not checked. Based on the visual assessment conducted, the windows appeared in fair condition. All wood windows should be checked for the following; glazing and putty deficiencies, peeling and flaking paint, and broken frames and sashes (operation insufficiencies). Repair and restoration work should be carried out in accordance with Preservation Brief #9: The Repair of Historic Wood Windows. All of the windows are framed in painted exterior flat stock trim, however, wood windows with divided upper and lower sashes have a shallower windowsill profile compared to windows with a decorative grille. This is consistent at all window openings. Exterior window trim was in fair condition and should be treated in a similar fashion to the rest of the exterior trim when warranting repair. All openings have exterior aluminum storm windows but are not appropriate for the window configuration. The aluminum storms are in fair condition and could be maintained but, if consideration is given to replacement materials, they should be done so with an appropriate installation. Please consult Preservation Tech Note – Windows No.3: Exterior Storm Windows Casement Design Wooden Storm Sash for more information.

Interior

Based on the visual inspection of the interior, finishes are overall in fair condition. Items identified herein consists of mainly general maintenance items and selective upgrades. The majority of the interior walls have been altered and an MDF wall covering installed. Some exterior walls have painted beadboard and wainscot with a chair rail. It would be beneficial to verify if similar conditions exist behind any walls with paneling. Doors and windows have a combination of belly band casing with rosettes and/or flat stock trim. Wooden elements are in fair condition and should be repaired in kind or maintained. All repair and/or replacement work of trim elements should be carried out in kind, matching wood species, profile, dimension, and finish.

In what is presumed to be the old train station ticket room on the south side of the station, there is a long wooden bench seat with a stitched leather seat cushion and backing. The wood is finished stained, and it has decorative painted trim. The bench has been damaged over the years but overall, in fair to good condition given its likely age.

Some interior walls are likely to have been added long after the original construction which has altered the historic circulation of the building. A dropped GWB ceiling has been installed throughout the train station minus the kitchenette that has acoustical ceiling tiles. According to the Structural Engineer, if any walls are planned to be removed, further investigation should be made to verify to what level, if any, the interior walls are supporting the roof loads. There are two removable ceiling panels and above the dropped ceiling is a well preserved, decorative, and painted beadboard ceiling. The ceiling has a coved crown profile with rosettes except for a portion of the far eastern ceiling. Here, the ceiling is beadboard but, rather it is stained and does not maintain the same ornamentation. An original wrought iron chandelier was mothballed in place above the ceiling, as well. The woodwork appears in high regard and integrating it into a future tenant space should be considered. If this is a desired future approach, the ceiling should be restored, and a specialist consulted to see if the chandelier can be rewired. This should also be used as a sample fixture for any new lighting package. Per the Structural Engineers Report, it is assumed that the beadboard is attached directly to the ceiling joists.

The flooring is a mixture of carpeting, linoleum tile and one room of exposed hardwood flooring in the kitchenette. Some sections of the carpeting were peeled back and there appeared to be rooms of both hardwood floors and VCT tile. The carpeting is tattered and should be replaced with a new finish. Depending on the condition of the hardwood floors below the carpet, consideration should be given to refinishing. Likewise, the linoleum in the bathroom is beyond its useful life cycle and requires replacement. The kitchenette hardwood flooring is in fair condition and should be maintained or refinished.

The bathroom fixtures are quite antiquated and should be replaced with ADA appropriate fixtures. Likewise, the kitchenette cabinetry is in similar poor condition. The building is currently vacant so replacing or removing all materials depending on the train station's future use is viable.

The basement is an unfinished storage space and houses the existing MEP equipment. The foundation is mortared rubble fieldstone topped with several courses of brick. According to the Structural Engineers reports, there is moisture infiltration through the walls. Rigid Styrofoam insulation covers the brick coursing and behind the insulation were multiple casement window openings. These were not observed from the exterior because the parking lot grade covered them. What is left of the windows is in poor condition. The above floor framing spans north to south and continuous from wall to wall. Center beams are supported by brick piers. The masonry steps in the hatchway show some disturbance of the brick risers, particularly the top two, that could be reset. The floor is finished on a concrete slab. The basement is in fair condition, but any remedial work is dependent on what solution is selected for moving the train station. Please see the Structural Engineers and MEP Engineers reports for more information.

Train Station Relocation

The Town of Salisbury's primary goal with this conditions assessment report was to determine options for providing better protection to the structure from vehicular traffic and moisture infiltration. The Town envisions fitting out the train station with as a tenant space and their desire to protect the structure has garnered local support for two primary reasons:

1. Over time, the grade has risen around the train station as evident in the basement where multiple courses of foundation brick and window openings are now entirely covered over. As such, this has led to a drainage problem around the structure and threatened the long-term preservation of the train station.

2. The Train Station's proximity and footprint on Ethan Allen Street has threated its long-term preservation. On multiple occasions trucks and the alike have hit the low, overhanging roof eaves of the train station when they attempt to make the tight swing around the southwest corner of the building.

As part of this study, the Structural Engineer brought on a historic building and structure moving consultant, Four Square Post and Beam (Four Square), to observe the existing conditions. From their evaluations, there is no concern over the ability to safely move and relocate the train station. Four Square has provided a proposal and cost estimate which includes four (4) options for lifting and transporting the structure. All four (4) proposed solutions shall also include foundation improvements while minimally affecting the integrity and design of the historic train station.

The four (4) proposed options to lift and relocate the Lakeville Train Station are as follows:

1. Raise the building approximately 18 – 24" onto brick faced, CMU walls built on the existing stone walls.
    a. Option to add an 8" thick concrete cap on top of the existing stone wall and under the CMU walls.
    b. Per General Assumptions, Four Square assumes approximately 24" wide.
2. Same as Option #1 above but, includes raising and spinning the building 180 degrees.
3. Move the train station straight back (north) onto a new foundation with basement.
4. Same as Option #3 above but, includes spinning the train station 180 degrees.

To safely move the train station structure, approximately sized holes will be cut in the existing brick foundation and steel I – Beams inserted under the floor joists. These two main lifting beams are anticipated to be about 60' – 0" long and enter from the east parking lot end. To make proper room for the lifting beams, trenches will be dug approximately 2' – 0" wide by 2' – 0" deep and 12' – 0" long. The insertion points of the beams will occur on the north and east sides of the building. These points were advantageously selected to utilize the existing sloped grade which should help minimize the length of trenching and land disturbance of the surrounding area.

The brick foundation walls lay on top of the rubble stone and provide adequate room for the I – Beams, therefore, little to no damage is anticipated to the main stone foundation walls. Once the beams are set into place, the sill plates shall be cut from the foundation and building raised approximately seven (7) feet. Supporting crib piles will be placed at the existing basement and/or grade level as necessary.

Please see the Lakeville Train Station Proposal dated January 10, 2023, by Four Square Post and Beam for more details on each available option along with foundations concepts developed by the Structural Engineer.

The project team has also theorized a fifth (5) plausible solution yet, this would involve leaving the train station in its current location. Here, the drainage would be improved by the use of permeable pavers and/or trench drains near the building. This option was preliminarily shared with the Town of Salisbury. Improving the drainage around the train station and leaving it in its present location would be less expensive, yet it would not address the potential for further damage from vehicular traffic. This solution would also require additional parking lot milling the next time they resurface the area, and the overhanging eaves would remain susceptible to vehicle damage.

We and the Town of Salisbury feel that moving the building away from the road is the best solution for achieving the town's needs and the future tenant fit out of the historic train station. As such, we and the Town have reviewed the proposal from Four Square and prefer Option #4 – Move the train station back onto a new

foundation with basement and spin it 180 degrees. This would place the current north elevation on the southern street side. The design team has created a conceptual site plan which is included under this cover along with existing conditions drawings.

Moving the Lakeville Train Station farther north would alleviate the Town of Salisbury's primary concerns and ensure the preservation of an important local landmark within Lakeville. Once it is determined if and how the train station can be moved, the future phased work as specified in the Prioritized Scope of Work Table will occur.

Building Accessibility Assessment

The following is an itemized list of accessibility items that were reviewed and should be accounted for once a decision is made over the possible relocation of the building. In no particular order, the following was observed at the Lakeville Train Station:

- There is no accessible entrance to the building.
- There is no accessible restroom within the building.
- There are portions of the interior layout that do not provide adequate HCP maneuvering clearances.
- An accessible entrance can be provided with a new external ramp (preferably at the rear of the building).
- The restroom should be expanded to provide accessibility but, is not required until substantial work transpires.
- The interior can be reconfigured as part of a future fit-out to provide adequate accessibility based on the proposed use.

Building Code Assessment

This is to be determined based on the final use. Refer to the MEP Engineer's report for more discussion on fire alarm and sprinklers.

Structural Condition Assessment

Provided below is a summary of the train stations' existing structural condition. Please see the Structural Engineers report for more details.

The Lakeville Train Station is in good structural condition. The foundation walls are free of movement but there is moisture infiltration through the mortar joints as evident from washout. Exterior drainage improvements should minimize that condition. The floor framing has no visible deficiencies and is sound underfoot. Assessment of the perimeter of the floor was limited, however, an additional inspection should be made by exposing the ends of the joists and the sill plate that supports the joists, as well as the exterior face of the brick wall on the top of the foundation wall. The 12 and 14 foot spans of the center floor beam should have columns added at their centers to increase their load capacity to the 100 PSF live load capacity of the joists. The roof framing does not have any visually detectable deficiencies.

<u>Raising and/or Relocating the Building</u>
Four options for improving the siting of the building and the accompanying structural implications were considered. The available options are as follows:

1. Raise the building 18 – 24" and reset it on extended foundation walls.
2. Raise the building and turn it 180 degrees so the front of the building faces south.

3. Move the building straight back onto a new concrete foundation with a basement or crawl space.
4. Same as number three (3) but turning it 180 degrees as well.

The building is in sound condition and can be raised, turned, or relocated by an experienced house moving company. A consulting contractor, Four Square Post and Beam of Barkhamsted, Connecticut, is an included member of this assessment and team. Please refer to their proposal for additional details. The provided costs within Four Square's proposal should be regarded as a Reasonable Order of Magnitude (ROM) estimate for planning purposes only.

See the Structural Engineers individual Assessment and supplements for more information.

Building Systems Assessment

Provided below is a summary of the train stations' existing building systems. Please see the MEP Engineers report for more details.

HVAC Systems

The building is heated but does not have cooling or mechanical ventilation. Cast iron steam radiators are in each room and are fed from a boiler in the basement. The boiler is oil–fired cast iron and steam pipe is two – pipe using a gravity condensate return system. The heating system is in a poor condition, inefficient, and antiquated. It is recommended that this be replaced. We recommend either an all – electric heat pump or LP gas fired central air system. Further, new ductwork, ventilation, energy upgrades to the envelope, and free-standing dehumidification for the basement is recommended.

Plumbing & Fire Protection Systems

Piping systems appear to be cast iron waste piping and copper water piping in fair condition. The electric water heater is located in the basement and appears in fair condition as well.

The bathroom fixtures are antiquated and in fair to poor condition. Replacement of the fixtures with modern accessible and water conserving units is recommended.

The oil tank and associated piping should also be removed for a more modern heating system.

The building has no fire protection, and a sprinkler system should be installed to protect the property and life, although it is not required by code. An alternate approach would include the installation of a full smoke and heat detection monitoring alarm system.

Electrical Systems

The electrical service appears to have been upgraded to 200 amps, single phase, which would support the added cooling loads recommended under the HVAC section of this report. All devices such as wall switches and receptacles should be replaced, as they are beyond their useful life cycle.

The distribution panel and breaker are in good condition and may remain. The existing generator fuse panel, however, should be replaced with an automatic transfer switch and residential grade transformer in the 15 – 25 KW range depending on the selected HVAC system.

All incandescent or florescent light fixtures should be replaced with energy efficient LED lamped fixtures. Any fixtures deemed “historic” could be rebuilt.

There are no life safety systems such as exit signs, emergency lighting, or fire alarm systems. Code would require exit signage and emergency lighting for public assembly or business use occupancy. The fire alarm system is not required but would be recommended.

Please see the MEP Engineers Report for more information.

Resource Orientation Information

Location:	7 Ethan Allen Place
City:	Lakeville
County:	Connecticut
Resource name:	The Lakeville Train Station
Year Constructed:	1871
Owner/Manager:	Town of Salisbury
Current Use:	Office
Open to Public:	No
National Register Status:	Listed

Scope of Project and Objectives

The Condition Assessment determines, in a comprehensive way, the current condition of the various structural and architectural elements, and features of the building. In addition, it indicates maintenance deficiencies that could lead to further damage. Conditions rated as Good, Fair, or Poor describe the actual condition of the features that are evaluated. The feature is also rated as Critical, Serious, or Minor to indicate the significance of the deficiency of the features.

The following standard condition assessment ratings are based on those outlined by the National Park Service Facility Management Division's Asset Management Process (AMP) under the Facility Condition Index Rating Scale.

Condition Ratings

Good - This rating indicates that:

(a) routine maintenance should be sufficient to maintain the current condition

Fair - This rating indicates that:

(a) the feature generally provides an adequate level of service to operations, but

(b) the feature requires more than routine maintenance attention.

(c) This rating also indicates that maintenance or repair / rehabilitation work may be required in the future.

Poor - This indicates that the feature is in need of immediate attention. This rating also indicates that:

(a) routine maintenance is needed at a much higher level of effort to meet significant safety and legal requirements;

(b) maintenance should be scheduled for the current year and / or

(c) immediate repair / rehabilitation should be requested consistent with long term management objectives

Maintenance Deficiency Priority Ratings

Listed as "Priority Ratings" on the *Feature Inventory Condition Assessment Tables,* these ratings are based on the condition rating of each feature and a priority rating was established. These priority ratings indicate either a ***critical***, ***serious***, or ***minor*** deficiency priority rating.

Critical – (Emergency / Immediate)

- This rating defines an advanced state of deterioration which has resulted in the failure of a feature or will result in the failure of a feature ***if not corrected within 1 year;*** or
- There is accelerated deterioration of adjacent or related materials or systems as a result of the feature's deficiencies ***if not corrected within 1 year;*** or
- There is an immediate threat to the health and / or safety of the user; or
- There is a failure to meet a legislated requirement.

Serious – (Immediate / Short Term)

- This rating defines a deteriorated condition that if not corrected ***within 1 to 3 years*** will result in the failure of the feature; or
- A threat to the health and / or safety of the user may ***occur within 1 to 3 years*** if the ongoing deterioration is not corrected; or
- There is ongoing deterioration of adjacent or related materials and / or features as a result of the feature's deficiency.

Minor – (Short Term / Long Term)

- This rating indicates standard preventative maintenance practices and preservation methods have not been followed; or
- There is reduced life expectancy of affected adjacent or related materials and / or systems **within *3 to 5 years* and beyond**; or
- There is a condition with a long-term impact **within 3 *to 5 years* and beyond**.

Lakeville Train Station - Building Features List

Site

Structure
Foundation
Floor Structure
Wall Structure
Roof Structure
Chimneys

Exterior Envelope
Wall Cladding
Roof Surface Covering

Penetrations
Windows
Doors

Interior Envelope
Floor Finishes
Wall Finishes
Ceiling Finishes
Architectural Trim

Mechanical, Electrical and Plumbing (MEP) Systems Assessment
Appended

Structural Condition Assessment
Appended

PRIORITIZED BUILDING FEATURES RATING TABLE

PRIORITIZED SCOPE OF WORK TABLE	
SCOPE OF WORK DESCRIPTION	PRIORITY RATING
Phase 1: Building Relocation	
Environmental Abatement	Unknown
Disconnect existing utilities	Minor
Selective demolition including trees, fencing, and paving	Minor
Relocate train station (assuming Option #4)	Serious
Pavement reconfiguration, striping, and associated site work	Minor
New utility connections to the building (excludes sprinkler, includes catch basin modifications)	Minor
Phase 2: Building Repair	
New exterior stairs and ramp	Minor
Exterior siding and trim repair (including minor repairs on doors and windows)	Minor
Exterior painting	Minor
Remove existing non – historic dropped ceiling	Minor
Interior selective demolition including removal of non – original partitions, cabinets, plumbing fixtures, and alike	Minor
Phase 3: Fit – Out	
All scope to be determined based on tenant and use	Minor

Preventative Maintenance Discussion

Regular maintenance of the building is critical for the long-term preservation of the structure. Preventing future deterioration of materials by controlling environmental conditions of interiors, specifically climate control is key to protecting interior finishes. Climate controls can stabilize extreme temperature fluctuations, thus preserving interior finishes. Preventative maintenance describes maintenance work on a building, such as gutter cleaning, exterior painting, applying wood preservative, etc., that prevents deterioration of building fabric. After all, the best and most cost-effective way to preserve a building is to maintain it. Preventative maintenance is not discussed enough, as the subject is often deemed less critical than response to damaged or threatened properties, because it is ongoing and cyclical. Through preventative maintenance, successful stewards can

educate caretakers (who are the front-line of defense against loss) about techniques, coupled with ongoing monitoring. Preventative maintenance plans are best placed in high-priority, institutional contexts by being included in long-term facilities management. Preventative maintenance standardizes tasks so that the managing institutions can be pro-active rather than reactive. Preventative maintenance is an important aspect of preservation that is often overlooked, but a necessary part of the process that is critical for superb site stewardship.

APPENDIX A: COST ESTIMATE

Crosskey Architects LLC
750 Main St Hartford, CT 06103
860 724 3000

SUMMARY OF PROBABLE COSTS - Lakeville CNE Railroad Station

February 23, 2023

Phase	Priority	Material	Cost	Contingency (10%)	Total	Remarks
		Phase One: Building Relocation				
	1	Environmental Abatement	$ 25,000	$ 2,500.00	$ 27,500	Scope unknown at this time. This includes a recommended allownace
	1	Disconnect existing utilities	$ 2,500	$ 250.00	$ 2,750	
	1	Selective site demolition	$ 15,000	$ 1,500.00	$ 16,500	Trees, fencing, paving
	1	Relocate building	$ 310,000	$ 31,000.00	$ 341,000	Assumes Option #4 per report, plus additional contingency
	1	Pavement reconfiguration, striping, etc.	$ 7,500	$ 750.00	$ 8,250	
	1	New utility connections to building	$ 20,000	$ 2,000.00	$ 22,000	Does not include sprinkler; includes catch basin modifications
		PHASE TOTAL			**$ 418,000**	
		Phase Two: Building Repairs				
	2	New exterior stairs and ramp	$ 15,000	$ 1,500.00	$ 16,500	
	2	Exterior siding and trim repair	$ 20,000	$ 2,000.00	$ 22,000	Includes minor repairs on exterior doors and windows
	2	Exterior painting	$ 50,000	$ 5,000.00	$ 55,000	
	2	Remove existing non-historic ceiling	$ 45,000	$ 4,500.00	$ 49,500	Extend partitions to ceiling, restore original ceiling
	2	Interior selective demolition	$ 15,000	$ 1,500.00	$ 16,500	Removal of non-original partitions, cabinets, plumbing fixtures, etc.
		PHASE TOTAL			**$ 159,500**	
		Phase Three: Fit-Out				
	3	Tenant Fit-Out	TBD	TBD	TBD	Scope to be determined based on tenant and use
		PHASE TOTAL			**TBD**	
		SUBTOTAL			**$ 577,500**	
		General Conditions 12% (dumpsters, site management, etc.)			**$ 69,300**	
		GC/Cm Overhead and Profit: 10% of General Conditions +Total			**$ 64,680**	
		Permits, Utility fees and bonding			**$ 20,000**	
		GRAND TOTAL			**$ 731,480**	

*These costs do not take into account the volatility of today's market. Additional contingencies should be included to account for unforeseen items which commonly occur with rehabilitation projects, and for market volatility. Design fees are not included. This estimate also does not include abatement of hazardous materials as the extent of such materials are unknown. Prior to demolition a hazardous materials report and testing will be required to identify any hazardous materials that may be present. Hazardous materials will need to be abated prior to the commencement of the respective work.

APPENDIX B: CONDITIONS ASSESSMENT PHOTOGRAPHS

1. WEST SITE AND ELEVATION PERSPECTIVE.

2. NORTHWEST SITE AND ELEVATION PERSPECTIVE.

2. SOUTH ELEVATION PERSPECTIVE.

3. WEST ELEVATION PERSPECTIVE.

4. SOUTH SITE PERSPECTIVE.

5. SOUTH SITE PERSPECTIVE.

6. WEST ELEVATION ROOF GABLE AND LOUVER.

7. SOUTH ELEVATION CHIMNEY.

8. NORTH EKEVATION AND SITE PERSPECTIVE.

9. EAST ELEVATION.

10. WEST ELEVATION ROOF GABLE AND LOUVER.

11. DECORATIVE ROOF FRIEZE BOARD.

12. NORTH SITE PERSPECTIVE.

13. ROOF OVERHANG AND ROOF BRACKETS.

14. NORTH ELEVATION ORINGINAL WOOD WINDOWS.

15. NORTH ELEVATION ORIGINAL WOOD WINDOW UPPER SASH.

16. EAST ELEVATION REPLACEMENT WINDOW.

17. NORTH ELEVATION ORIGINAL WINDOW AND SILL.

18. EAST ELEVATION REPLACEMENT WINDOW AND SILL.

19. NORTH ELEVATION INFILLED OPENING.

20. NORTH ELEVATION CLAPBOARD SIDING.

21. NORTH ELEVATION CLAPBOARD SIDING.

22. SOUTH ELEVATION DOOR.

23. WEST ELEVATION BULKHEAD BASEMENT DOORS.

24. WEST ELEVATION BASEMENT STAIRS.

25. MASONRY BASEMENT STAIRS.

26. BASEMENT VIEW LOOKING EAST.

27. BASEMENT VIEW LOOKING EAST.

28. NORTH SITE PERSPECTIVE.

29. SOUTH ELEVATION.

30. BASEMENT VIEW LOOKING SOUTHEAST.

31. FORMER STEEL WINDOW OPENING.

32. FORMER STEEL WINDOW OPENING.

33. VIEW OF FLOOR FRAMING AND BRICK PIER.

34. VIEW OF FLOOR FRAMING.

35. FIRST FLOOR, CAMERA FACING EAST.

36. FIRST FLOOR, CAMERA FACING NORTHWEST.

37. FIRST FLOOR, CAMERA FACING NORTH.

38. FIRST FLOOR, CAMERA FACING DOWN AND WEST.

39. FIRST FLOOR, CAMERA FACING SOUTH.

40. FIRST FLOOR, CAMERA FACING EAST.

41. FIRST FLOOR, CAMERA FACING EAST.

42. FIRST FLOOR, CAMERA FACING NORTH.

43. FIRST FLOOR, CAMERA FACING WEST.

44. FIRST FLOOR, CAMERA FACING WEST.

45. FIRST FLOOR, CAMERA FACING NORTHWEST.

46. FIRST FLOOR, CAMERA FACING WEST.

47. FIRST FLOOR, CAMERA FACING SOUTHWEST.

48. FIRST FLOOR, CAMERA FACING EAST.

49. FIRST FLOOR, CAMERA FACING WEST.

50. FIRST FLOOR, CAMERA FACING WEST.

51. ABOVE CEILING ATTIC.

52. ABOVE CEILING DECORATIVE BEADBOARD.

53. ABOVE CEILING DECORATIVE BEADBOARD.

54. ABOVE CEILING DECORATIVE LIGHT FIXUTRE.

55. ABOVE CEILING DECORATIVE BEARBOARD.

56. ABOVE CEILING DOCORATIVE BEADBOARD.

APPENDIX C: STRUCTURAL CONDITION ASSESSMENT

LAKEVILLE CNE RAILROAD STATION
7 Ethan Allen Place
Lakeville, CT

Structural Condition Assessment

Submitted by:

James K. Grant Associates
P.O. Box 235
Collinsville, CT 06022

STATE OF CONNECTICUT ★ JAMES K. GRANT ★ No. 6897 LICENSED PROFESSIONAL ENGINEER

James K. Grant

January 16, 2023

Background

James K. Grant Associates was engaged by Crosskey Architects, LLC to conduct a structural condition assessment of the Lakeville Railroad Station. The purpose of the assessment was to identify deficiencies which may compromise the structural performance of the building and require remedial work and to evaluate the feasibility of raising and/or relocating the structure. The assessment is based solely on visual observations. No probe holes into hidden spaces were made, limited structural calculations were made and no material or load testing was done. Site visits were made on August 16 and October 11, 2022.

Structural Description

The Lakeville Railroad Station is a single story, wood framed building with a full basement built in the late 19th or early 20th century. It has a mortared, rubble fieldstone foundation wall topped with several courses of brick. The thickness of the wall could not be determined but is judged to be 18"-24". Rigid styrofoam insulation conceals some of the brick, which is assumed to be at least 12" thick. There is a concrete floor slab which may have been added some time after the initial construction. Access to the basement is by a hatch on the west side of the building which has steep steps made of stone treads on brick risers. A modern steel hatch covers the steps.

The floor framing consists of 2" x 10" joists spaced 16" o.c. spanning in the north-south direction from the foundation wall to a 6" x 10"center wood beam. The joists are continuous from wall-to-wall but are notched 3" where they pass over the beam. At the foundation wall the joists are supported on a wood plate which bears on the brick wall. In some locations, the brick is built up to surround the joists. The center beam is supported on wood posts and brick piers.

The framing of the exterior walls was not exposed but is assumed to be wood studs, probably 2" x 4" @ 16" o.c., with 3/4" board sheathing on the exterior face of the studs. Wood clapboard siding covers the exterior and painted plaster on wood lath is used for the interior finish. There are ornate, spoked wood brackets spaced approximately 5 feet o.c. that help support the wide roof overhang on all sides of the building. Wood posts to which the brackets are attached are visible at each of the brackets. The interior of the building has been divided into smaller spaces by walls which are not load bearing. A dropped ceiling has been added which conceals the original wood beadboard ceiling that was attached directly to ceiling joists.

The roof structure is basically a 12/12 pitch gable roof supported on the north and south exterior walls. A small area of the roof framing at the east end of the building could be seen through access openings reached by a ladder. Rafters were not measured but appear to be 2" x 8" spaced approximately 24" o.c. Wood firring over the joists is now covered with plywood to support the asphalt shingle roofing. An 8 foot wide, low pitch, gently curved roof overhang projects beyond all the exterior walls. Its framing is not fully exposed but it appears that there are low-slope rafters that are fastened to the sides of the main roof rafters and get supported at the exterior wall plane and extend out to a beam at the edge of the overhang that is supported on the ends of the brackets. Joists spanning between the brackets provide support for the paneling on the underside of the overhang.

Observations

Foundations

The foundation walls are in good condition. There is no sign of movement in any of the stonework but some of the mortar is newer and there could have been movement or settlement in the past that required re-mortaring. There is moisture infiltration through the walls as evidenced by accumulations of fines at the base of the wall in some locations. These conditions are not significant and no remedial work is called for on the stone walls. Where exposed, the brick walls appear to be in sound condition but there is some mortar loss. The exterior wythes of the brick are buried below grade, however, and may have some deterioration due to moisture. The roof overhangs help minimize the amount of moisture exposure but the west and south sides may be more effected due to grade sloping toward the building. The brick walls should be fully exposed on the interior and exterior faces for a thorough assessment. The brick piers and chimney base are in very good condition and show no deterioration at their bottoms where the effects of rising damp are often found in building of this and older eras. The masonry steps in the hatchway are in fair condition but there is some disturbance of the brick risers, particularly the top two, that could use some resetting. The two wood posts supporting the center beam are in good condition.

Floor Framing

Insulation conceals all but the bottom few inches of the floor joists but the portions that are exposed are in very good condition. The ends of the joists are not visible in most locations and could not be evaluated. Where they penetrate into the brick wall there is a possibility that there may be some rot. Some corrective work should be anticipated. The wood sill plate could not be assessed and could also have need of rot repair in some places. The center beam is in very good condition and shows no sign of distress. A load analysis of the floor framing indicates that the joists have a live load capacity in excess of 100 pounds per square foot (psf), which allows assembly uses. The center beam, however, has two spans of about 14 and 12 feet that will require added columns in order to develop the same capacity.

Interior Walls

Some of the interior walls may have been added long after the original construction and are not bearing walls unless they are supporting the dropped ceiling that was added later. Some walls may be supporting part of the original ceiling load but it is highly unlikely that any of the interior wall are supporting roof loads. If proposed alterations involve removing walls, investigation should be conducted to be sure that supports are not being removed.

Exterior Walls

There are no signs of structural problems with the exterior walls. The roof overhangs provide protection that minimizes the effects of wet weather and water intrusion.

Roof Framing

Very little of the roof framing could be seen but based on visual observation of the main ridge line and the edge of the overhang, there is no significant deflection that would raise concerns of

the structural integrity of the roof. Its successful performance through a century or more of hurricanes and blizzards is additional proof of that. The postcard reproduction on the cover of this report shows that the north roof overhang originally extended well beyond the east and west ends of the building after transitioning to a gable form to provide a linear shelter for passengers along the track. Presumably, the extensions were removed when the train service was discontinued.

Conclusions

The Lakeville Railroad Station is in very good structural condition. The foundation walls are free of movements but there is moisture infiltration through the mortar joints that is washing fines from the mortar. Exterior drainage improvements should minimize that condition. The floor framing has no visible deficiencies and is sound underfoot. Assessment of the perimeter of the floor was limited, however, and additional inspection should be made by exposing the ends of the joists and the sill plate that supports the joists, as well as the exterior face of the brick wall on top of the foundation wall. The 12 and 14 foot spans of the center floor beam should have columns added at their centers to increase their load capacity to the 100 psf live load capacity of the joists. The roof framing does not have any visually detectable deficiencies

Raising and/or Relocation of the Building

Four options for improving the siting of the building and the accompanying structural implications were considered.

1. Raise the building 18-24" and reset it on extended foundation walls.
2. Raise it and turn it 180 degrees so the front of the building faces south.
3. Move it straight back onto a new concrete foundation with basement or crawl space.
4. Same as 3 but turn it 180 degrees.

The building is in sound condition and can be raised, turned or relocated by an experienced house moving company. A consulting contractor, Four Square Post and Beam of Barkhamsted, CT, is a member of this assessment team and has brought in Wolfe House and Building Movers to visit the site and provide cost estimates for each of the options. Four Square has incorporated Wolfe's estimates into their proposal for all structural work. Refer to the proposal for details. The costs should be regarded as Reasonable Order of Magnitude (ROM) estimates for planning purposes only.

1. South elevation of Lakeville Railroad Station

2. North wall of station showing 8 foot overhang and brackets.

3. Basement view looking west. Brick chimney base and pier in foreground.

4. Fines deposited at base of foundation wall indicating moisture infiltration.

5. Floor joists bearing on center beam and 16" x 16" brick pier.

6. Center beam passing by chimney base.

7. Floor joists supported on wood sill plate bearing on brick wall on top of foundation wall.

8. Southeast corner of stone foundation with brick on top of wall.

9. View of floor framing at chimney base and brick pier.

10. Brick piers and chimney base are in very good condition, no deterioration.

11. Hatchway steps require some resetting of bricks.

12. A former floor opening has been closed. Minor repairs needed.

13. Interior walls may be supporting ceiling loads. Investigate before removing or altering.

14. Existing dropped ceiling conceals original ornate ceiling.

15. Access panel to space above dropped ceiling is in the corner.

16. Original ceiling and light fixture remains above dropped ceiling.

17. Ceiling condition near chimney.

18. Limited view of roof framing. New plywood visible between original furring.

CNE Train Station – Lakeville CT

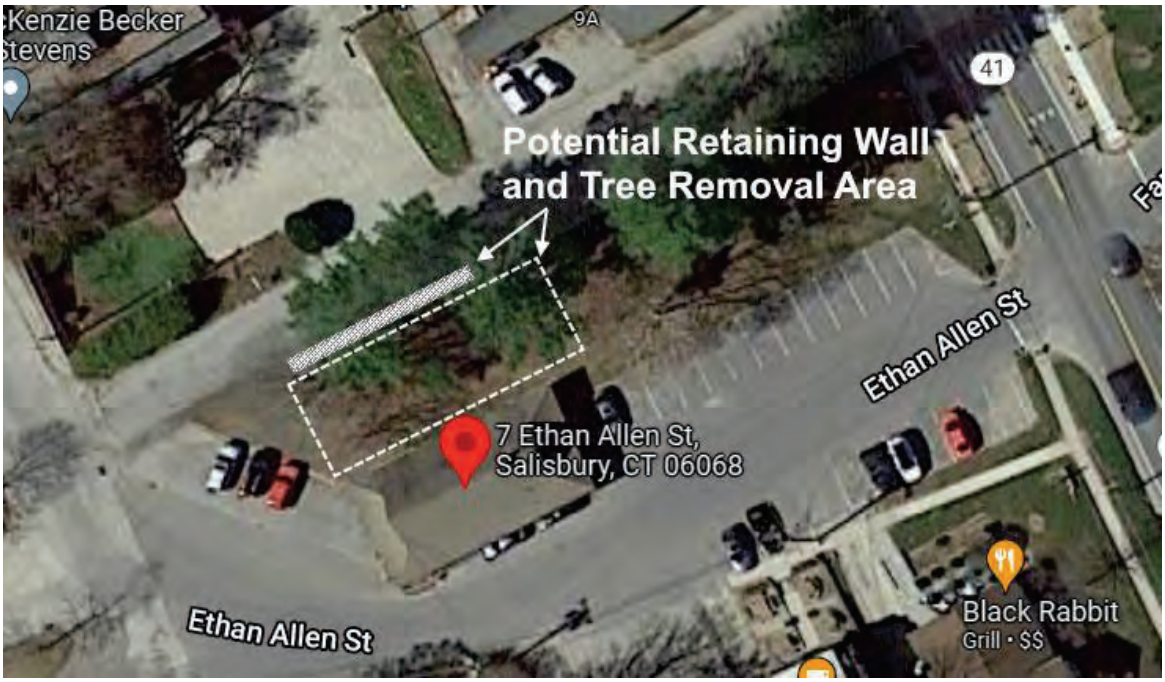
Date: 1/10/23

To: Jim Grant

The following is a proposal and cost estimate to provide moving services and foundation improvements for the CNE Train Station at 7 Ethan Allen Street, Lakeville, CT. This proposal will layout the methodology for lifting and transporting the structure while minimally affecting the integrity and design of the building. In order to accurately present this proposal, the following assumptions have been made:

General Assumptions:

1. All site planning and preparation, including but not limited to, shall be the responsibility of the contracted GC and are not considered in this proposal and cost estimate.
    a. Removal of all electrical, HVAC, plumbing from the existing basement
    b. Disconnect any utilities coming into the building including cutting and capping any gas lines as necessary
    c. Removal of all furniture, loose items, wall hangings, appliances etc. from all floors and attic of the building prior to commencement of the building moving process.
    d. Any environmental testing or requirements associated with removing the oil tank
    e. Authorization/coordination to blocking off or closing parts of Ethan Allen Street and the associated parking spaces
    f. Tree and stump removal along with an embankment or retaining wall (if required)
    g. Removal of guard rail near the south west corner of the building



2. Prevailing wage applies
3. An engineered stamped drawing and approved methodology will be provided to Four Square Post and Beam. This proposal does not consider engineering fees associated with the provided drawings/methodologies.
4. For concrete estimates, Four Square assumes the existing stone wall is approximately 24 inches thick.
5. Four Square will not be responsible for repaving the surrounding parking lot. All trenches and holes dug for moving the house will be backfilled with appropriate approved fill.
6. The bulkhead door foundation when raised does not need to be extended. Therefore, a wood ladder will replace the current stairs.

Per the request of the customer the following four scenarios shall be considered in this proposal:

1. Raise the building approx. 18-24" onto brick faced, cmu walls built on the existing stone walls.
    a. Option to add an 8” thick concrete cap on top of the existing stone wall and under the CMU wall. (Per general assumptions, Four Square assumes approximately 24 inches wide)
2. Same as 1 but, raise and spin the building 180 degrees.
3. Move the building straight back onto a new foundation with basement.
4. Same as 3 but spin 180 degrees.

Train Station Moving

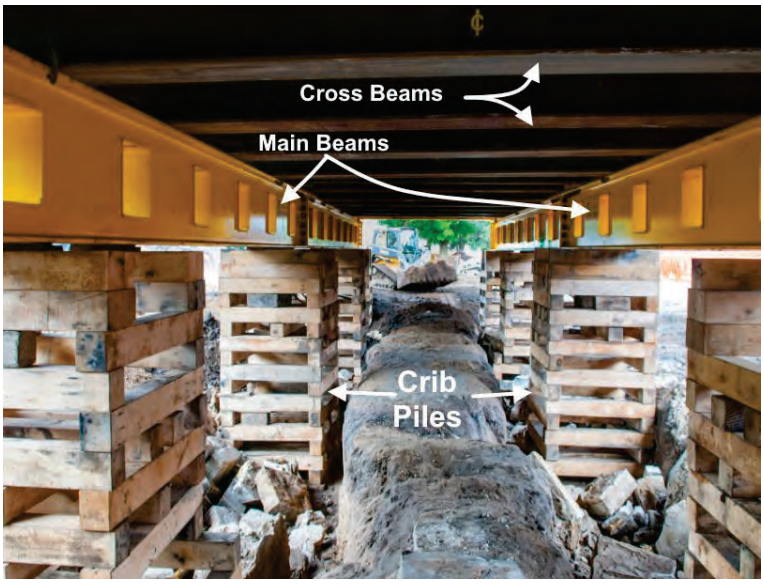
The structure moving process starts by cutting appropriately sized holes in the existing brick foundation and inserting steel I-beams under the floor joists. Two main lifting beams will be about 60 feet long and enter in from the east parking lot (Rt 41 side). To make room for the lifting beams, trenches approximately 2 feet wide X 2 feet deep X 12 feet long will be dug. The insertion points of the beams will occur on the north and east side of the building. These locations were chosen to take advantage of the sloping grade with the goal of minimizing the length of the trenches and disturbing the surrounding land and parking lot as little as possible. Below is an image showing the insertion points and trenches of the lifting beams. Note: The image is not to scale.

CNE Train Station – Lakeville CT

Date: 1/10/23

The current brick wall that lays on top of the stone wall provides adequate room for the I-beams, therefore, little to no damage is expected on the main stone wall.

Once the beams are set into place, the sill plates will be cut from the foundation and the building will be jacked approximately seven feet. Supporting crib piles will be placed at the existing basement and/or grade level. See below for an example of crib piles.



Option 1 Procedure:

In option 1 the building will remain on the crib piles while the top layer of bricks is removed and the new wall is built on top of the existing stone wall. After the wall is complete, the structure will be lowered onto the new pressure treated sill plates and reattached to the foundation. The attachment method to the sill plates has not yet been determined, however, it is assumed that hurricane ties or similar engineered approved attachment method will suffice.

Option 2-4 Procedure:

Option 2-4 is identical to option 1, but will require the use of movable jacks. The structure will be supported by crib piles like in option 1, but then be lifted off the piles and slid/driven into a new position. Below is an example of the lifting jacks to be used.

Note: although the exact location of the new foundation has not yet been determined, it is assumed it is in the general area shown below and that it will not overlap the existing foundation.


Approx. Location
of new Foundation
(Options 3 & 4)
7 Ethan Allen St,
Salisbury, CT 06068


New Foundation Location
Will Not Intersect Existing Foundation
7 Ethan Allen St,
Salisbury, CT 06068

Pricing:

Option 1: Raise the building approx. 18-24" onto brick faced, cmu walls built on the existing stone walls

Step	Description	Amount
1	Detach existing sill plates and prepare for building move	$6,500
2	Lift structure on to crib piles and replace onto repaired foundation	$50,440
3	Add 8" concrete cap (optional)	$15,600
4	Build CMU wall and brick face and backfill	$26,000
5	Reattach building to new sill plates. Install new bulkhead door and ladder.	$7150
6	Contingency to replace any rotted sill plates, joists, install additional Lally columns, or repair existing stone wall	$20,000
Projected Project Cost		$105,690 (+20,000)

Option 2: Same as 1 but, raise and spin the building 180 degrees.

Step	Description	Amount
1	Detach existing sill plates and prepare for building move	$6,500
2	Lift structure on to crib piles, spin 180 degrees and replace onto repaired foundation	$87,360
3	Add 8" concrete cap (optional)	$15,600

4	Build CMU wall and brick face and backfill	$26,000
5	Reattach building to new sill plates. Install new bulkhead door and ladder	$7150
6	Contingency to replace any rotted sill plates, joists, install additional Lally columns, or repair existing stone wall	$20,000
Projected Project Cost		$142,610 (+20,000)

Option 3: Move the building straight back onto a new foundation with basement.

Step	Description	Amount
1	Detach existing sill plates and prepare for building move	$6,500
2	Lift structure on to crib piles and replace onto new foundation	$97,360
3	Excavate and pour foundation with bulkhead door and full basement. No Brick face required.	$110,500
5	Reattach building to new sill plates and install new bulkhead door and staircase.	$7150
6	Backfill and grade existing basement and new foundation	$32,500
7	Contingency to replace any rotted sill plates, joists, install additional Lally columns, or repair existing stone wall	$20,000

Projected Project Cost	$274,010 (+20,000)

Option 4: Same as 3 but spin 180 degrees.

Step	Description	Amount
1	Detach existing sill plates and prepare for building move	$6,500
2	Lift structure on to crib piles and replace onto new foundation	$107,360
3	Excavate and pour foundation with bulkhead door and full basement. No Brick face required.	$110,500
5	Reattach building to new sill plates and install new bulkhead door and staircase.	$7150
6	Backfill and grade existing basement and new foundation	$32,500
7	Contingency to replace any rotted sill plates, joists, install additional Lally columns, or repair existing stone wall	$20,000
Projected Project Cost		$284,010 (+20,000)

CNE Train Station – Lakeville CT

Date: 1/10/23

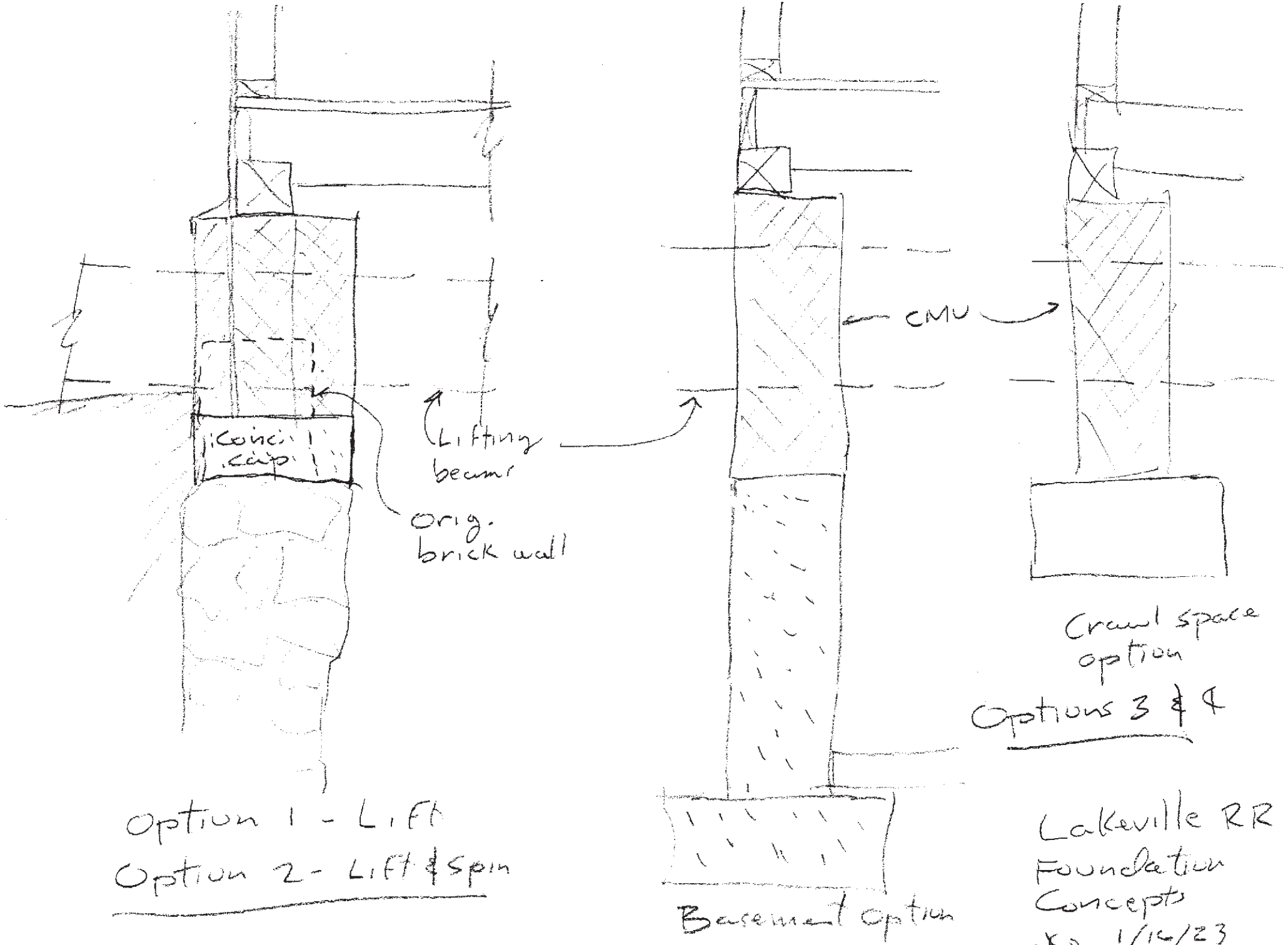
Project Summary:

Option	Description	Amount (Less Contingency)
1	Raise the building approx. 18-24" onto brick faced, cmu walls built on the existing stone walls.	$105,690
2	Same as 1 but, raise and spin the building 180 degrees	$142,610
3	Move the building straight back onto a new foundation with basement.	$274,010
4	Same as 3 but, spin building 180 degrees	$284,010
Note: A $20,000 contingency to replace any rotted sill plates, joists, install additional Lally columns, or repair existing stone wall should be added to the above numbers		

Thank you very much for the opportunity to present this preliminary plan and estimate. Please let us know if we've met your design intent or if there are some alterations you'd prefer.

Sincerely,

Tom Rutledge



Option 1 - Lift

Option 2 - Lift & spin

Basement option

Crawl space option

Options 3 & 4

Lakeville RR
Foundation
Concepts
JG 1/16/23

APPENDIX D: MECHANICAL, ELECTICAL AND PLUMBING (MEP) SYSTEMS ASSESSMENT

acorn Consulting Engineers Inc.
— Mechanical • Electrical Engineering for Building Systems —
P.O. Box 311 • FARMS VILLAGE PLAZA • 244 Farms Village Road
West Simsbury, CT 06092 • (860) 651-1949 • fax (860) 651-1957

Lakeville Train Station
MEP Systems Capital Needs Assessment
Salisbury, CT

By: W. Mark Gendron, P.E.
01/20/2023

HVAC Systems

The building is heated only and does not have cooling or mechanical ventilation systems. Cast iron steam radiators are located in each room and are fed from a boiler in the basement. The boiler is an oil-fired cast iron sectional "Weil McLain" model #P-SGO-3, three section boiler, 0.95 gal/hr oil input, 114 MBH gross output. The steam system is two-pipe using a gravity condensate return system piped directly to the boiler. The heating system is in poor condition, inefficient, and antiquated and is recommended to be replaced.

We recommend either an all-electric heat pump or LP gas fired central air systems. Ductwork is proposed to run through the basement to floor diffusers to deliver heated or cooled air. Ventilation is recommended by adding an energy recovery ventilator that can exhaust from bathrooms and other spaces and supply air to the propose air system. If heat pumps systems are chosen, we recommend envelope improvement such as energy efficient windows and doors, roof insulation, and wall insulation. We also recommend a free standing dehumidification for the basement for building preservation.

Plumbing & Fire Protection Systems

Piping systems appear to be cast iron waste piping and copper water piping in fair condition. The electric water heater (19 gallon / 2.5kW) is located in the basement and appears in fair condition. We recommend replacement or small under counter on demand electric unit for the bathroom lavatory.

The bathroom serving the auditorium should be assessed for ADA accessibility. Fixtures, in general, are antiquated but in fair to poor condition. We recommend fixture replacement with more modern accessible and water conserving fixtures.

The oil piping is in fair condition and the tank appears free from leaks. We recommend removal of the oil tank and piping to a more modern heating system.

The building does not have a fire protection sprinkler system. We recommend a fire protection sprinkler system to protect property and life although not needed per code. An alternate less expensive approach would be a full smoke and heat detection monitored fire alarm system.

Electrical Systems

The electrical service appears to have been upgraded at some point to 200 amps, single phase. The system will support the added cooling loads recommend under the HVAC section of this report. Circuitry is run using NM cable (branded Romex) an appears appropriate for the type of construction with some of the cable runs needuing

added supports as not to hang below the joists. All devices such as wall switches and receptacles should be replaced as they are beyond their useful life, and some are surface mounted.

The distribution panel and breakers are in good condition and may remain. There is generator fuse panel on the first floor that is configured to be connected to a plug-in generator. We recommend this be replaced with an automatic transfer switch and residential grade transformer in the 15-25 kW range depending on the HVAC system chosen.

The lighting fixtures are incandescent or florescent lamped type and beyond useful life. We recommend replacing with energy efficient LED lamped fixtures. Any fixtures deemed "historic" could be rebuilt if desired.

The building does not have life safety systems such as exit signs, emergency lighting, or fire alarm systems. Code would require exit signage and emergency lighting for a public assembly or business use occupancy. The fire alarm system is not required but would be recommended in lieu of any proposed sprinkler system for building protection.

End of MEP Report (see pictures)

Figure 1 -Boiler

Figure 2 - Electric Panel


Figure 3 - Cast iron radiator & Generator Fuse Panel

Figure 4 - Water Heater

Figure 5 - Typical Interior Lighting

Figure 6 - Typical Exterior Lighting