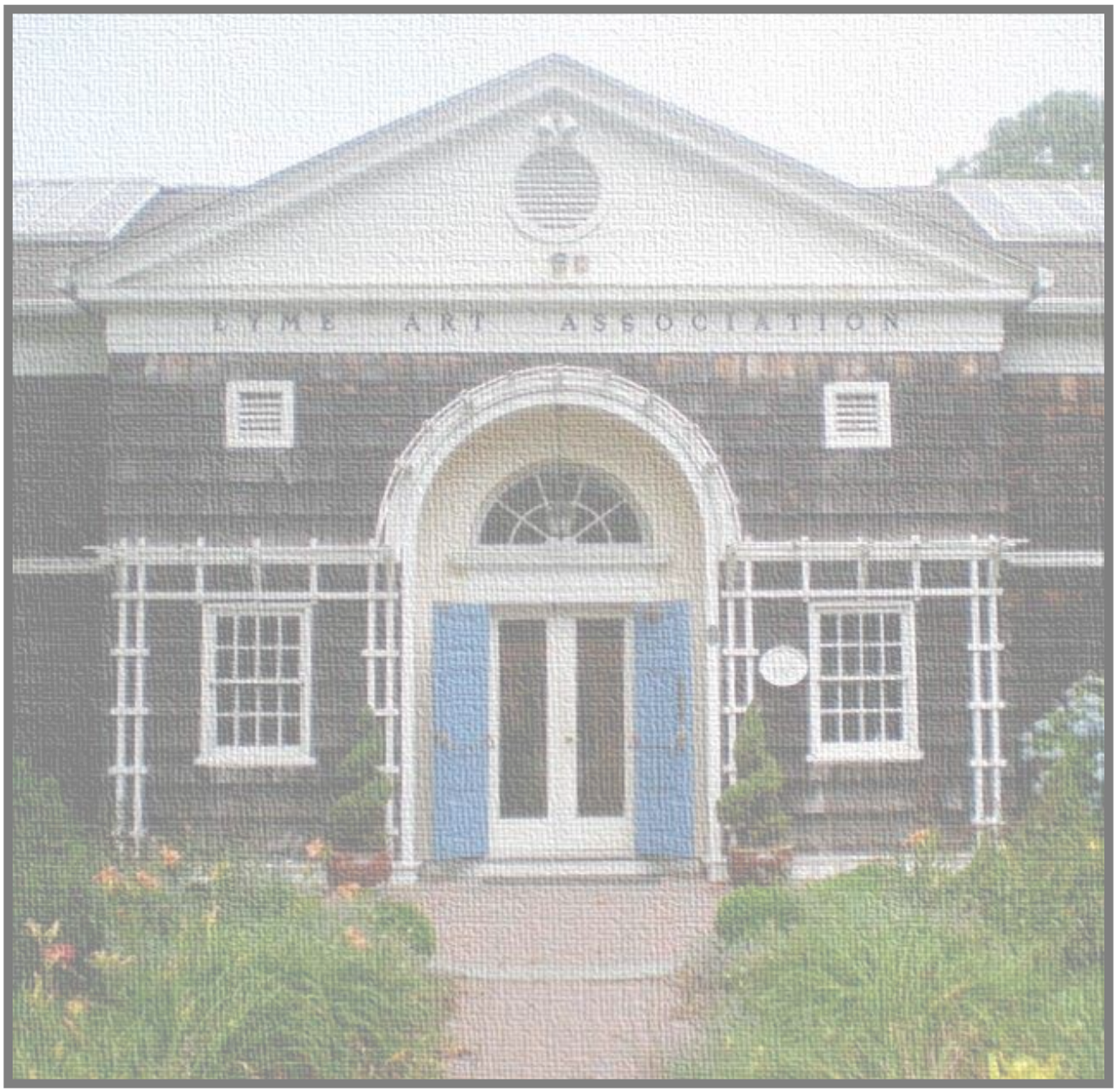
The Lyme Art Association, Old Lyme Connecticut

CONDITION ASSESSMENT STUDY



Compiled and Prepared by:

CENTERBROOK

Centerbrook Architects and Planners, August 30, 2013

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Introduction

In mid-2013, the Trustees of Lyme Art Association engaged a Team led by Centerbrook Architects and Planners to prepare a Condition Assessment Study of their building at 90 Lyme Street, Old Lyme Connecticut. The goal of the Study is to address urgent priorities, to capitalize on available funding sources for returning the facility to sound condition, and to plan for continued program growth.

The scope of the Study includes:

- Preparation of existing conditions drawings (3D Revit-based), including field measurement and verification
- Assessment of the building envelope, including Design Development level drawings
- Review of the building's mechanical, plumbing, electrical systems
- Review of the building's structural system and its conformance with the Building Code
- Review of interior finishes
- Code analysis, including Building, Fire Code, and Handicap Accessibility
- Investigation of feasibility of adding thermal insulation
- Schematic Design of an ADA compliant path from the parking area to the front door
- A prioritized list of work with timeline for repairs and an opinion of probable cost

No testing for hazardous materials has been undertaken as part of this study. The Lyme Art Association should engage an independent environmental testing agency to determine the presence of any such materials prior to initiating any repair, rehabilitation, or replacement projects.

Guidelines for the Treatment of Deteriorated Features

The National Park Service Guidelines are intended to promote responsible preservation practices that help protect cultural resources. They cannot, in and of themselves, be used to make essential decisions about which features of the historic building should be saved and which can be changed.

The Guidelines' four treatment approaches are **Preservation, Rehabilitation, Restoration, and Reconstruction**, outlined below in hierarchical order and explained:

Preservation emphasizes the retention of all historic fabric through conservation, maintenance and repair. It reflects a building's continuum over time, through successive occupancies, and the respectful changes and alterations that are made. It is the strictest level of treatment.

Rehabilitation emphasizes the retention and repair of historic materials, but more latitude is provided for replacement because it is assumed the property is more deteriorated prior to work. It allows latitude for the judicious use of man-made substitute materials.

Restoration focuses on the retention of materials from the most significant time in a property's history, while permitting the removal of inappropriate materials from other periods. It allows latitude for the judicious use of man-made substitute materials.

Reconstruction establishes limited opportunities to re-create a non-surviving site, landscape, building, structure, or object in all new materials. It allows latitude for the judicious use of man-made substitute materials.

Choosing the most appropriate treatment for a building requires careful decision-making about a building's historical significance, as well taking into account a number of other considerations:

Relative importance in history. Is the building a rare survivor or the work of a master architect or craftsman? Did an important event take place in it? Many buildings individually listed in the National Register often warrant Preservation or Restoration. But buildings such as The Lyme Art Association which contribute to the significance of a historic district but are not individually listed in the National Register more frequently undergo Rehabilitation.

Physical condition. What is the building's degree of material integrity? Has the original form survived largely intact or has it been altered over time? Preservation may be appropriate if distinctive materials, features, and spaces are essentially intact and convey the building's historical significance. For buildings such as The Lyme Art Association which require more extensive repair and replacement, and to which alterations or additions have occurred, Rehabilitation is probably the most appropriate treatment.

Mandated code requirements. Regardless of the treatment, code requirements will need to be taken into consideration. But if hastily or poorly designed, a series of code-required actions may jeopardize a building's materials as well as its historic character. Accessibility under the Americans with Disabilities Act of 1990 should be provided in ways that minimize material loss and visual change to a historic building.

These considerations lead us confidently toward the treatment **Rehabilitation** for LAA. Within

this definition, an assumption is made that some existing historic fabric has become so damaged or deteriorated over time that more **Repair** and **Replacement** will be required. These terms are outlined below:

Repair

Repair begins with the least degree of intervention possible such as patching, splicing, or otherwise upgrading damaged materials. But it also includes *limited* replacement in kind or with compatible substitute material. Although using the same kind of material is always the preferred option, substitute material is acceptable if it conveys the visual appearance of the remaining parts of the feature and finish.

Replacement

Replacement changes out an *entire* character-defining feature with new material because the level of deterioration or damage of materials precludes Repair. Like the guidance for repair, the preferred option is always replacement with the same material. But because this approach may not always be technically or economically feasible, provisions are made to consider the use of a compatible substitute material.

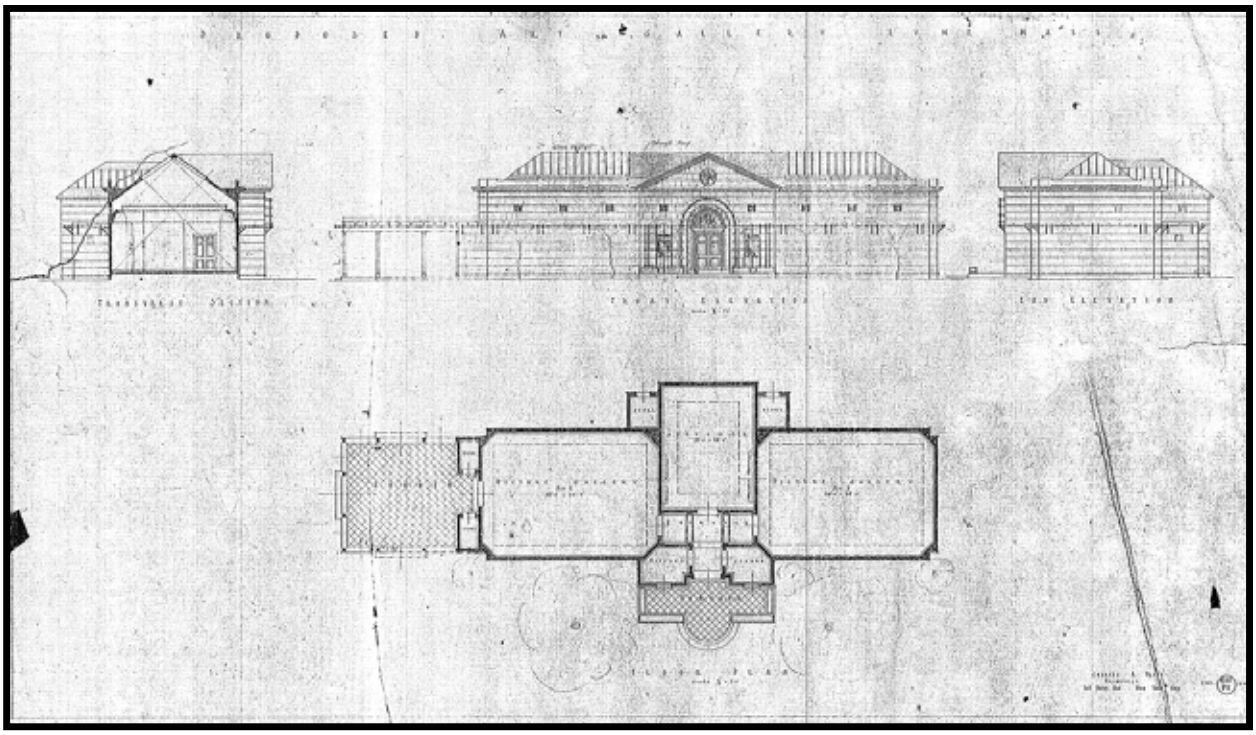
Building Background / History

The property is located at 90 Lyme Street, at the northwest corner of Lyme Street and Halls Road. The eastern boundary of the property fronts Lyme Street, and the southern boundary fronts Halls Road, both of which are also designated CT & US Highway 1. Consequently, State and/or Federal transportation agencies may have jurisdiction over certain traffic and drainage aspects on parts of the property that are within, or may affect, the highway or its Right-Of-Way. No analysis of relevant land-use regulations has been performed as part of this study, but the presence of a watercourse near the building suggest that coastal and inland wetlands regulatory agencies may have jurisdiction.

Although the building itself is not listed on the National Register of Historic Places, it is located within, and has been designated to contribute to the Old Lyme National Register Historic District, which is coterminous with The Old Lyme Local Historic District.

- The original part of the building was conceptually designed by well-known New York City architect Charles A. Platt, and was completed in 1921. It was, however, built with several deviations from Platt's original schematic plan and elevation drawing (dated "5-12-20"), most notably:
- The site's actual topography is not flat, but slopes markedly from east to west (front to back)
- The building has gabled roofs with soffited overhangs instead of inset hipped roofs fronted by a low balustrade
- The building lacks inset notches at its shingled outside corners
- The building lacks a 'Loggia', pergola, and storage rooms at its south end
- The building's wall-mounted trellis is limited to the projecting front portico, and does not extend around the entire building
- The building has a different front terrace, without planter walls
- The building has a larger Entrance Hall between the North and South Picture Galleries
- The building has a larger "Sketches" gallery (now called the Cole Gallery), which equals the size of the North and South Galleries, extending the building rearward about twice as far as Platt's original concept plan.

Since the surviving conceptual drawing is a record of Platt's original design intent, there exists a rare opportunity to realize missing or unbuilt aspects of the building which respect that intent or are otherwise in architectural harmony with it. Other portions of this report recommend that some apparently removed frieze and stringcourse trim elements be re-established. Additionally, if funding were available and if desirable to compliment LAA's programming goals, strong consideration should also be given to realizing certain unbuilt features. Possibilities include the trellis at the front of the building, or an adaptation of the loggia and pergola at the south end of the building. Any such decisions should be made in consultation with the recom-



Platt's original 1920 design for a "PROPOSED ART GALLERY LYME MASS" [sic]

The building has been altered and added to twice since the original 1921 building was completed:

- In 1938, an additional art gallery (now called the Goodman Gallery) was added to the rear of the building; it is constructed on stone piers without an enclosed basement. This gallery's interior detailing, area, and volume are virtually identical to the original three galleries on the main level, but for reasons unknown, it was constructed to have its floor two steps lower than the rest of the main level. More than a mere inconvenience, this misalignment may require an elevator or lift to be installed to comply with the Accessibility Code if renovations or alterations to the building are contemplated in the future. This topic is covered in detail later in this report.
- In 1978, an art instruction studio, a secondary entry, and interior stairways were added to the then unfinished lower level of the building. Also, portions of the crawlspace below the Front Entry and North Gallery were underpinned and excavated to create a full height basement storage area.
- Following flooding in 2011, the lower level of the building was renovated to include gallery space, office space, a catering kitchen, and generously sized (but not-quite ADA-compliant) bathrooms.

Narrative Building Assessment and Recommendations

The Building Condition Assessment took place during the months of July and August 2013, and was performed by:

- Centerbrook Architects and Planners (Architects and Project Managers)
- Champion Engineering (Structural Engineer)
- BVH Integrated Services (Mechanical, Electrical, and Plumbing Engineer)
- Phillip R. Sherman, P.E. (Building and Life Safety Code Consultant)
- Michael W. Joplin, (Consulting opinion on Construction Cost)

Centerbrook also met with Gregory Farmer, who represented the interests of The Connecticut Trust for Historic Preservation, to conduct a general visual review of the building.

In addition to visual observations and measurement of key building elements, hundreds of digital images were captured for reference and record, many of which are included in this report. All of the photographs will be made available upon request of Lyme Art Association, its agents, or grant-funding agency.

Measured drawings of the building were created, since no comprehensive existing documentation of the building existed. They represent the building 'as-is', and do not identify areas needing attention. They are not included as part of this report, but have been provided to Lyme Art Association.

Annotated drawings and photographs included in this report are presented solely to identify areas and elements of the building envelope in apparent need of repair, rehabilitation, or replacement. This report is not intended to describe the means, methods, or detailing of such repair, rehabilitation, or replacement. Those specifics will be included as part of a subsequent scope of work and documentation designated as "Phase 2" by Lyme Art Association.

Although the annotated drawings and photographs paint a clear picture of the building exterior's decaying condition and the nature of the work required to address it, following are some immediate general comments on the condition of key elements the exterior envelope:

Shingle Siding

Most of the 10-inch exposure shingle siding is between 75 and 92 years old and beyond its expected service life. It is in need of replacement due to decay and damage. On some building faces, an overwhelming majority of the shingles need to be replaced; these faces should be entirely re-shingled. However, on a few building faces 'only' a majority of shingles are decayed. In these situations, Greg Farmer indicated the CT Trust for Historic Preservation is keen to retain as much original material as possible, even if it results in a patchwork or banding of old and new shingles. Given the very dark patina the existing shingles have developed over many decades,

such a patchwork effect will be a visual aberration for many years. Attempting to stain the new shingles to match any remaining shingles is not recommended, since the visual results will inevitably be poor.

Ultimately, the decision whether to replace all or some of the shingles should be made by the Lyme Art Association in consultation with the recommendations of any grant-funding agencies that may become involved, and also informed by the practical input of a qualified building contractor.

Due to the large 10-inch exposure required to match the original shingle coursing, the replacement shingles may need to be custom-sourced to ensure that a triple overlap is achieved. Contemporary re-squared and re-butted red cedar shingles are typically 18" long, which would fall short of overlapping three times.

Exterior Painted Wood Trim

The water tables and skirt boards at the base of the shingle siding are the most extensively decayed trim elements. They should be replaced and properly flashed with prefinished aluminum flashing. Even if properly installed, flashed, and painted, their position the base of the wall and often very close to damp ground makes them susceptible to rapid decay. For this reason, Lyme Art Association should consider changing the water table's material to a man-made composite rather than wood. Since it will be painted, its appearance would be identical to wood. Greg Farmer indicated that the CT Trust for Historic Preservation might not agree, preferring that a 'traditional material' be maintained.

Ultimately, the decision whether to replace the rotted wood water tables (or any other rotted exterior painted trim) with a composite material should be made by the Lyme Art Association in consultation with any grant-funding agencies that may become involved in the project, and informed by the realities of LAA's ongoing maintenance and replacement costs.

With only several localized exceptions, the majority of the other painted wood trim on the building's façades, windows, doors, and roof edges requires rehabilitation involving scraping, patching, caulking, priming and painting, and not complete or partial replacement.

For unknown reasons (but perhaps cost-related), the frieze trim at the top of the wall and the string-course trim located mid-wall were not carried completely around the rear of the original 1921 construction. These architectural trim items were instead installed to merely turn the corner and terminate in a misaligned fashion, and the stringcourse is bluntly cut off without returning back to the wall. This has created an architecturally awkward condition that likely would not have been preferred by the building's original architect, Charles Platt. Since necessary re-shingling of the building provides a prime opportunity, strong consideration should be given to completing the frieze and string-course trim as would have been the original architectural intent.

Exterior Wood Ceilings

The ad-hoc assembly of painted boards and plywood which comprise the exterior ceiling & soffits at the underside of the Goodman Gallery is in very poor condition. As such, it should be replaced with exterior grade plywood or MDF sheathing, with all joints covered by wood battens, and sealed against the elements and vermin. Some of the plywood soffits appear to enclose ductwork serving Goodman Gallery. After removal of the decaying plywood, there may be an opportunity to inspect, repair, and insulate any ductwork that is damaged or that lacks insulation.

Roofing and Gutters

The existing asphalt/fiberglass roof shingles appear in good condition, perhaps just halfway through their assumed 30-year warranted lifespan. Care should be taken to protect the roofing from potential damage arising from any rehabilitation work done to the adjacent trim or skylight elements.

Gutters on the building are white finished aluminum “K” profile replacement-type gutters with rectangular downspouts. They appear to be functioning properly, but regular maintenance is required. There is clear evidence on some of the existing exterior trim that round downspouts were originally installed, leading us to believe they were connected to half-round gutters. Given the vintage of the building, these elements were probably copper. When/if the current K-gutters and downspouts need to be replaced again, strong consideration should be given to doing so with round & half-round profiles, their material to be determined, but preferably bright copper left to naturally patina.

Skylights

The skylights’ structure appears to be the original galvanized steel and appears in good condition. The skylights’ glazing appears to be original single-pane wire-reinforced textured glass, although several more recent replacement panes are present, showing different characteristics. The skylight’s exterior caps appear to be a more-recent aluminum extrusion.

From within the attic on a rainy day, no obvious skylight leaks were observed, but evidence of water-stains on adjacent roof framing was seen. Ongoing inspection and preventive maintenance of the skylights’ sealants and gaskets is required. Additional skylight recommendations appear in the portion of this report pertaining to thermal insulation.

Doors, Windows, Louvered Vents

The building has relatively few exterior doors, but most are in poor condition, are stylistically inappropriate, or should be changed completely due to Fire Safety Code egress requirements, as outlined below and elaborated on elsewhere in this report:

- Front Entry: Repair exterior storm door pair and permanently fix in open position; reconfigure the entry doors as single 36" outswing door to accommodate ADA entry requirements.
- Service Entry: OK
- Staff Entry: OK
- Exits from Goodman to Deck: At least one should become a single 36" outswing door.
- West Exit from Studio: OK
- North Exit near Studio: This is failing and stylistically inappropriate. Replace with traditional frame & panel door and divided lite transom.

The building has relatively few windows:

- Two original sash windows flanking the front door need reglazing and rehabilitation of certain parts of their frames and sills.
- Casement windows installed near the 1978 Staff Entry are functional but stylistically inappropriate. Consider replacing with divided lite sash units.
- Picture/Hopper windows at Studio are failing and stylistically inappropriate. Consider replacing them with divided lite sash units. Also, please see the Structural Report.

The building has numerous small, white-painted louvered vents positioned high and low on the exterior walls. In addition to their past purpose of ventilating interior spaces by convection, they are important design elements in the composition of the façades of the original building and its 1938 addition. As such, even though the vents which are located at the base of the exterior walls no longer perform any useful function, they should be retained and rehabilitated. Vents which are positioned high on the exterior walls still provide useful airflow into the un-insulated attic during warm seasons but are a thermal liability in winter. Because of this, most of the vents have a hinged damper meant to be closed in winter, but some are damaged or missing. Some insect/bird screening is missing, too. It is questionable whether to assume LAA staff will routinely close the dampers in winter, given difficult access into the attic and poor maneuverability once inside it.

In another section of this report, various options for insulating the attic or isolating it from heated spaces are reviewed; if certain of those options are acted upon, the high vents can be left either permanently open or closed.

Foundations and Piers

The building's stone and mortar foundations appeared in good condition. A few areas requiring minor mortar repointing are present, and general cleaning is recommended.

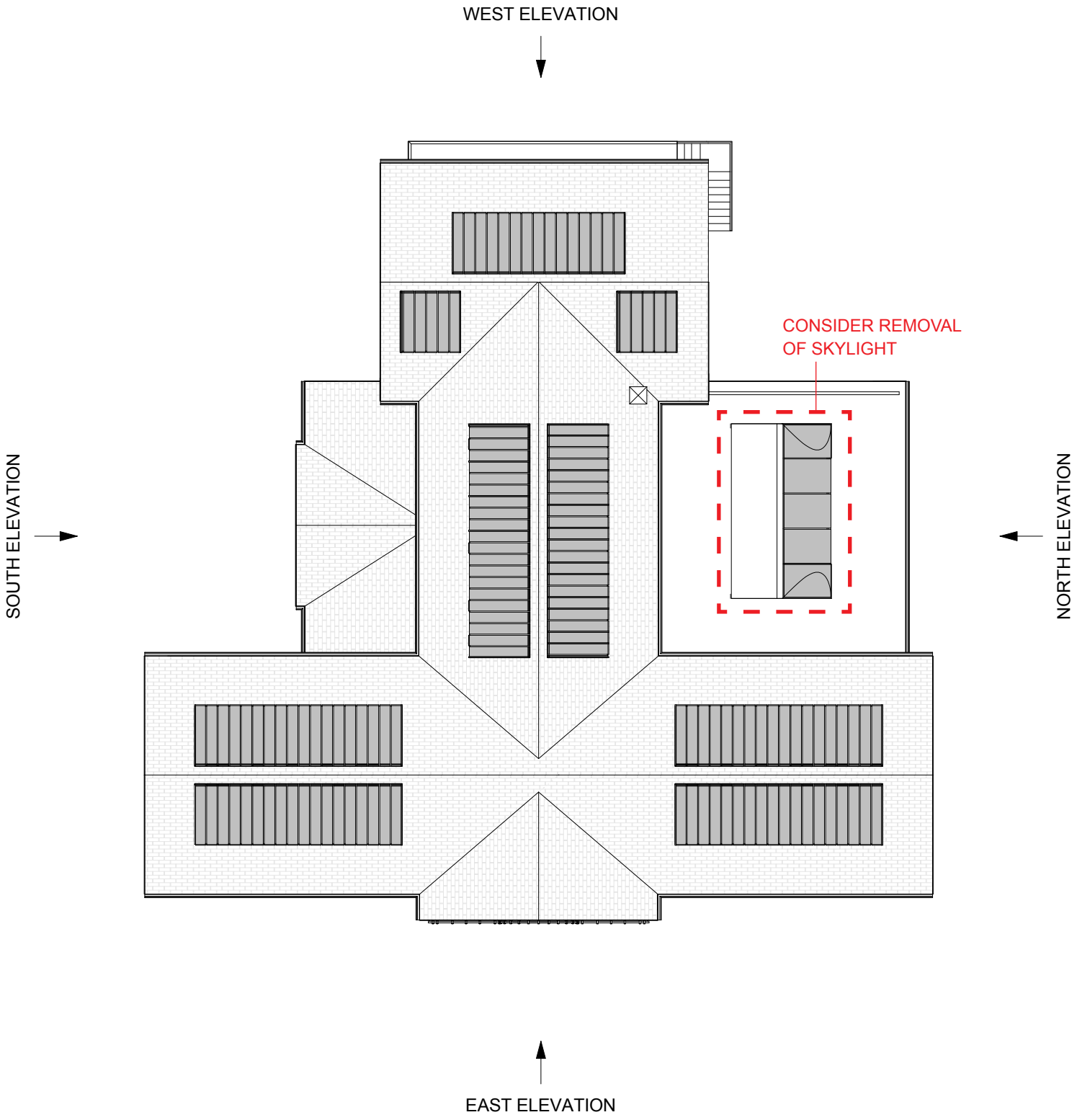
At the planting beds flanking the main entrance, the height of grade is too near the top of the foundation wall and quite close to wood trim and siding. This is causing accelerated rot and decay of the wood trim, and may at times permit water to enter over the top of the foundation wall, endangering the wall's structural wood sill. In conjunction with other potential changes to provide an accessible pathway in this general area, the plants should be removed and grade should be lowered as much as possible, ideally at least 8 inches below the wood trim at the base of the wall.

The cement parging at the Art Instruction Studio is cracked and water-stained, likely from rain-water splashing at grade near the base of the wall. In addition to crack repair, the Studio's existing gutter system should be inspected for proper functioning. After cleaning the stains/mildew, options for mitigating this issue include:

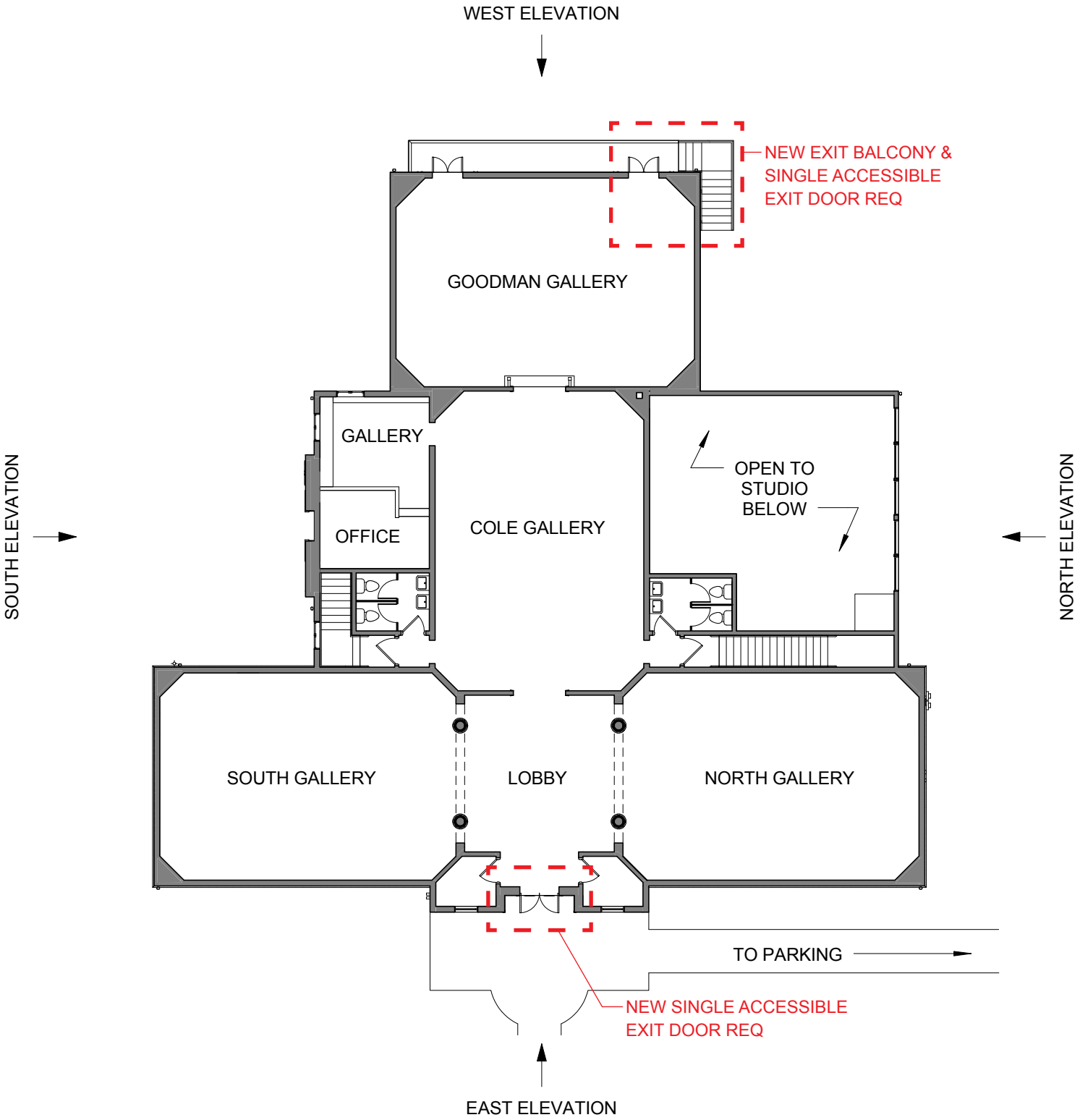
- Applying a semi-solid stain product to the repaired parging, then sealing it.
- Extending the shingle siding or other facade treatment downward toward grade.

Graphic Assessment and Recommendations

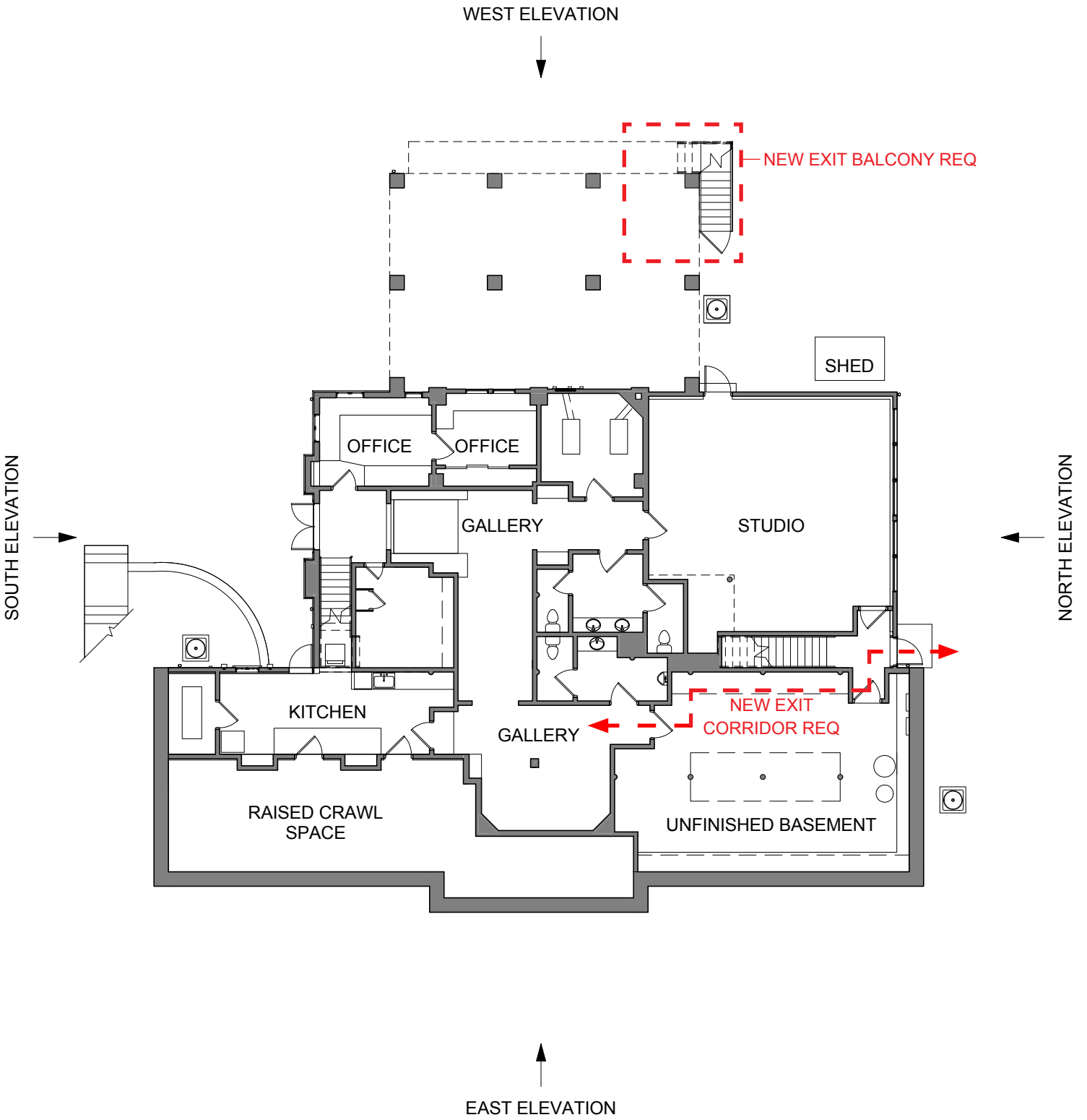
ROOF PLAN


WEST ELEVATION
CONSIDER REMOVAL
OF SKYLIGHT
SOUTH ELEVATION
NORTH ELEVATION
EAST ELEVATION

MAIN FLOOR PLAN

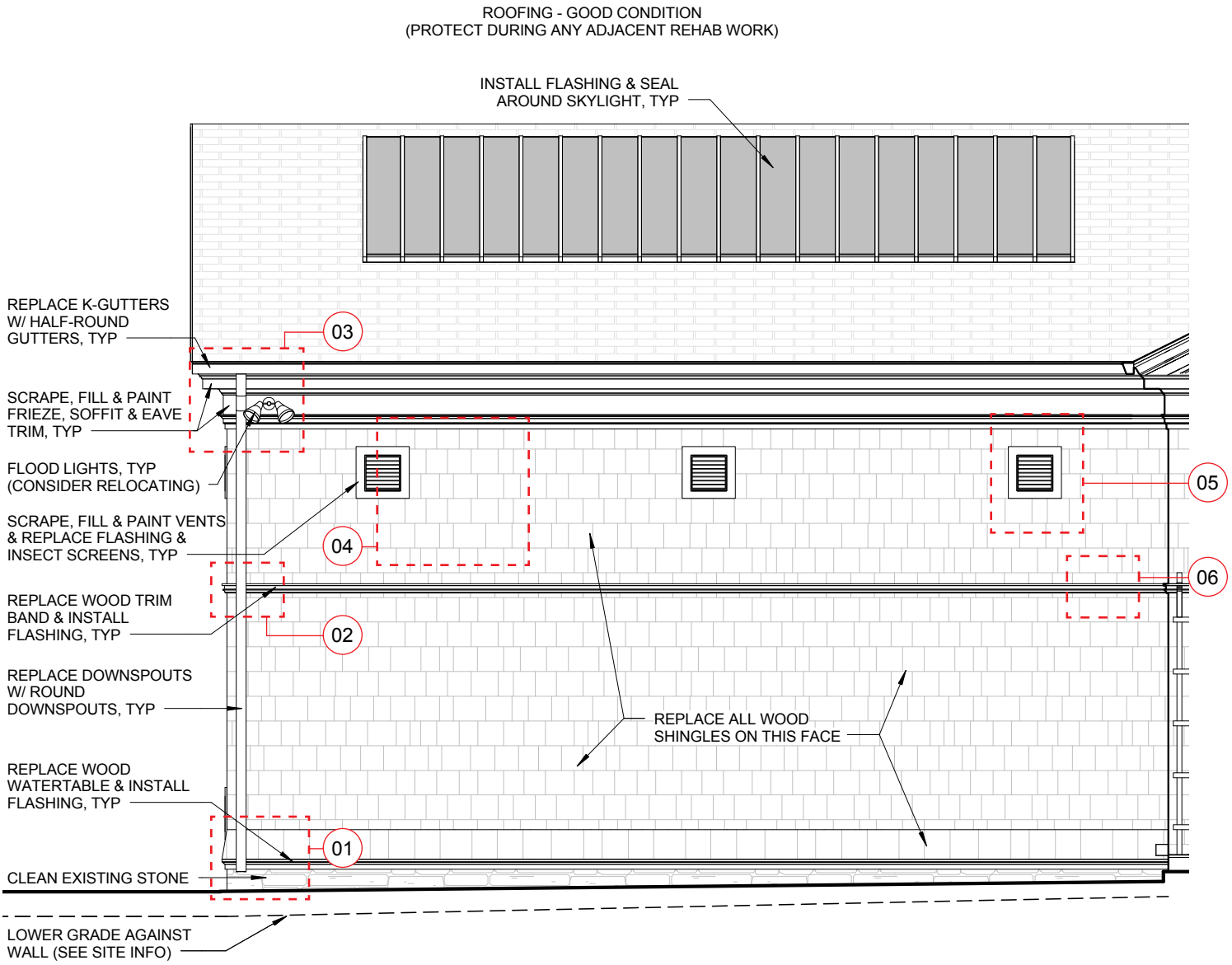


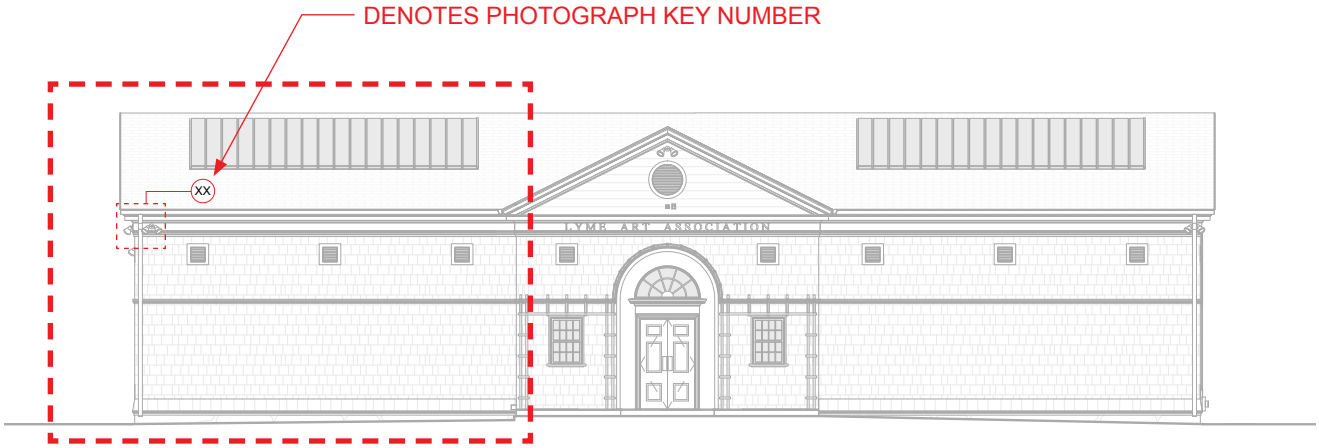
LOWER FLOOR PLAN



EAST ELEVATION

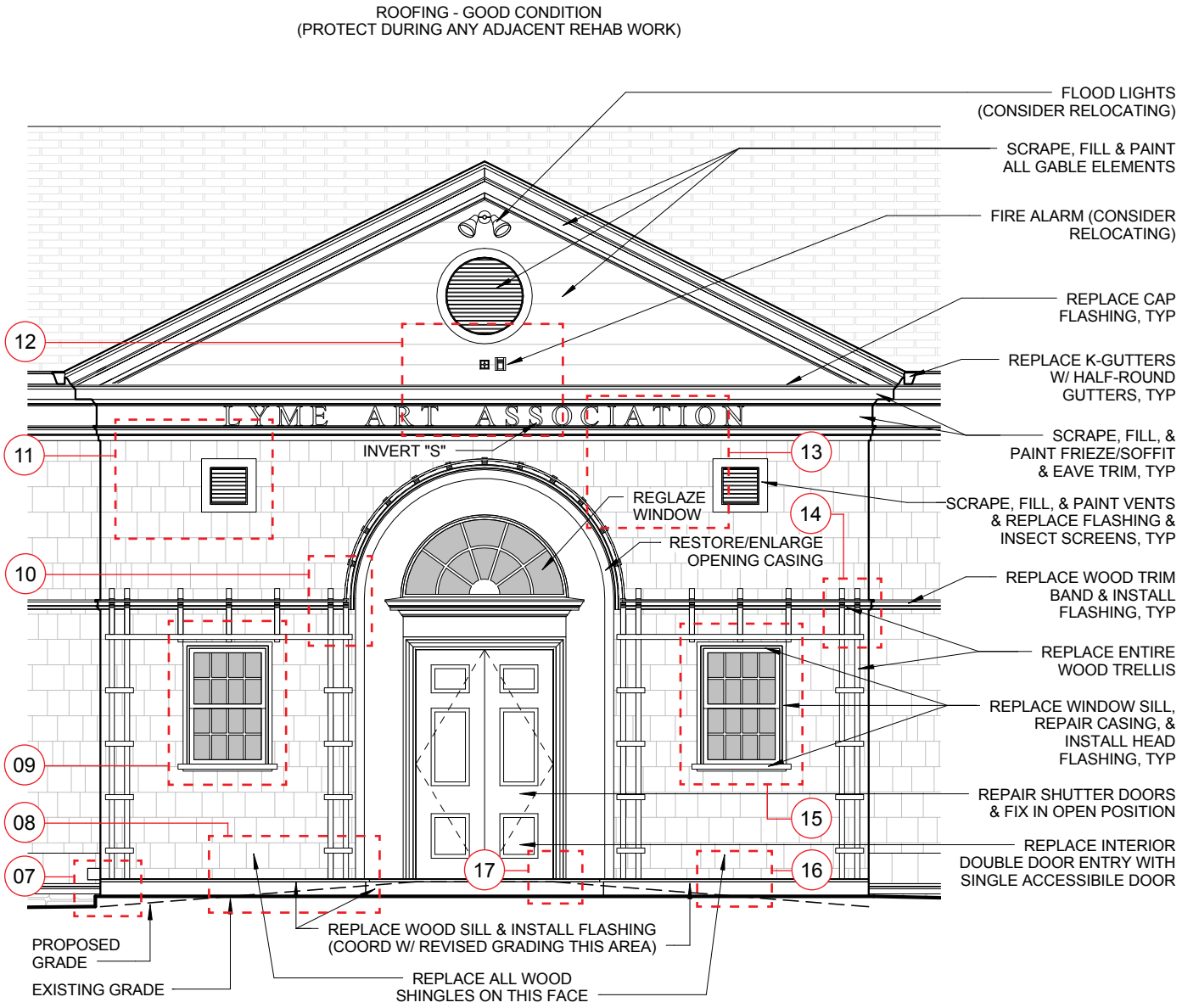
- E1 (left) -

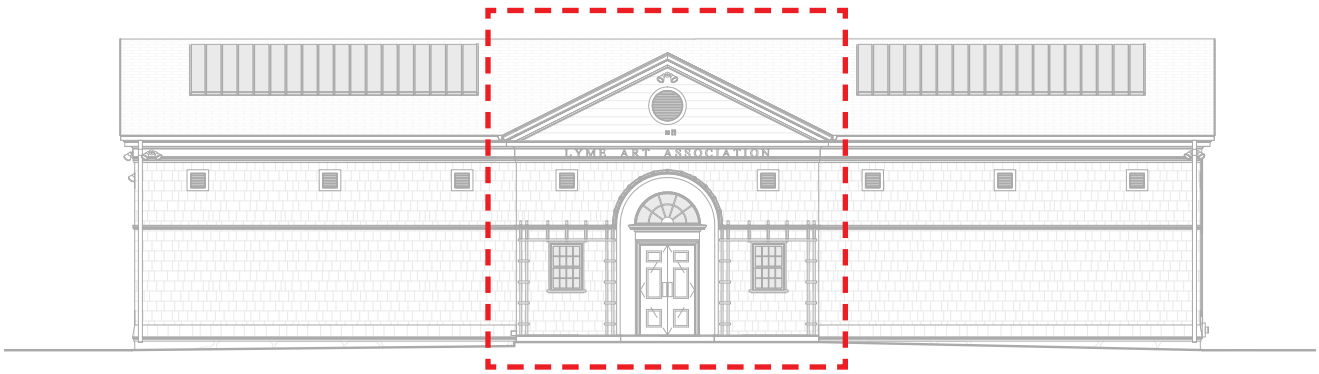




EAST ELEVATION

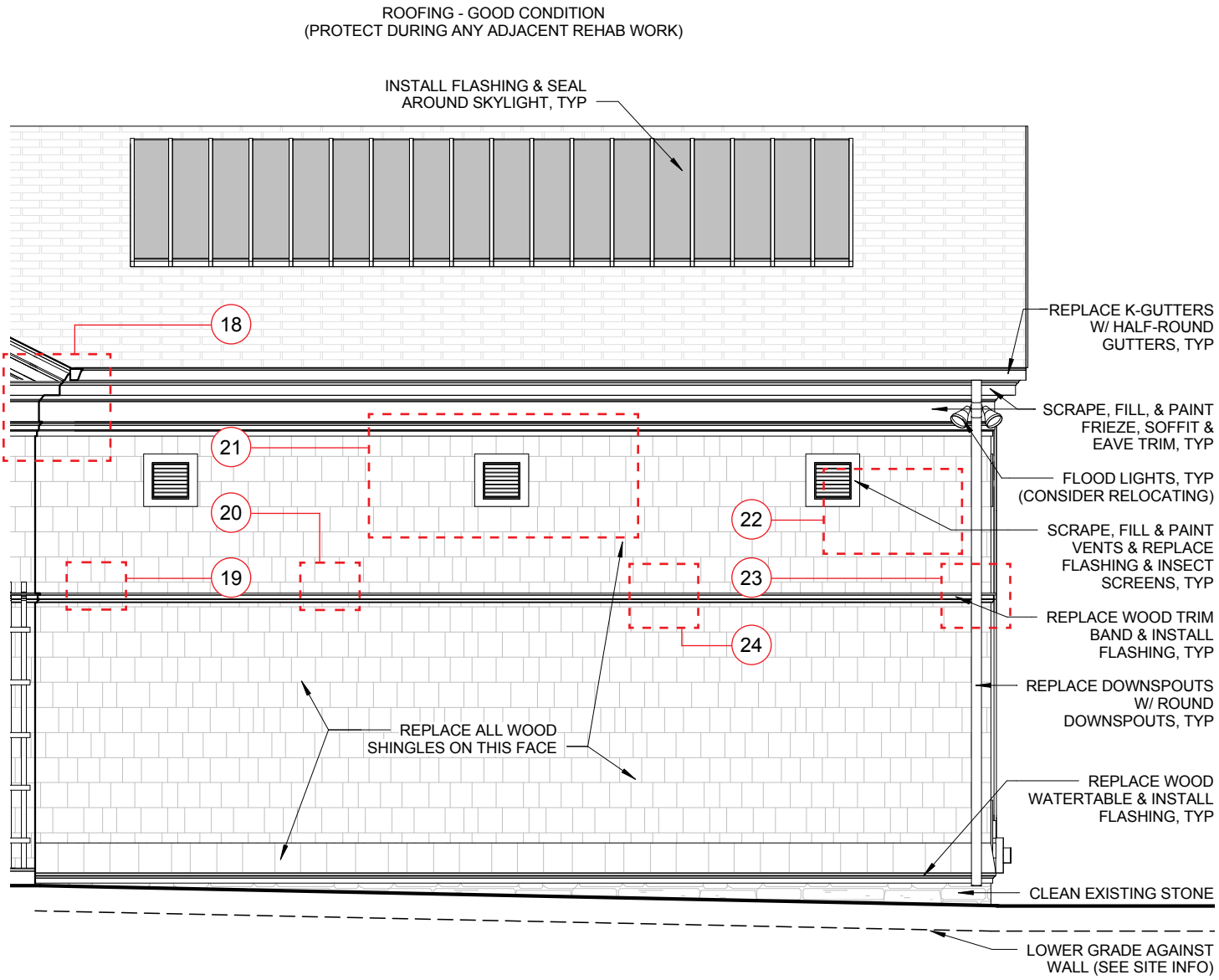
- E2 (center) -





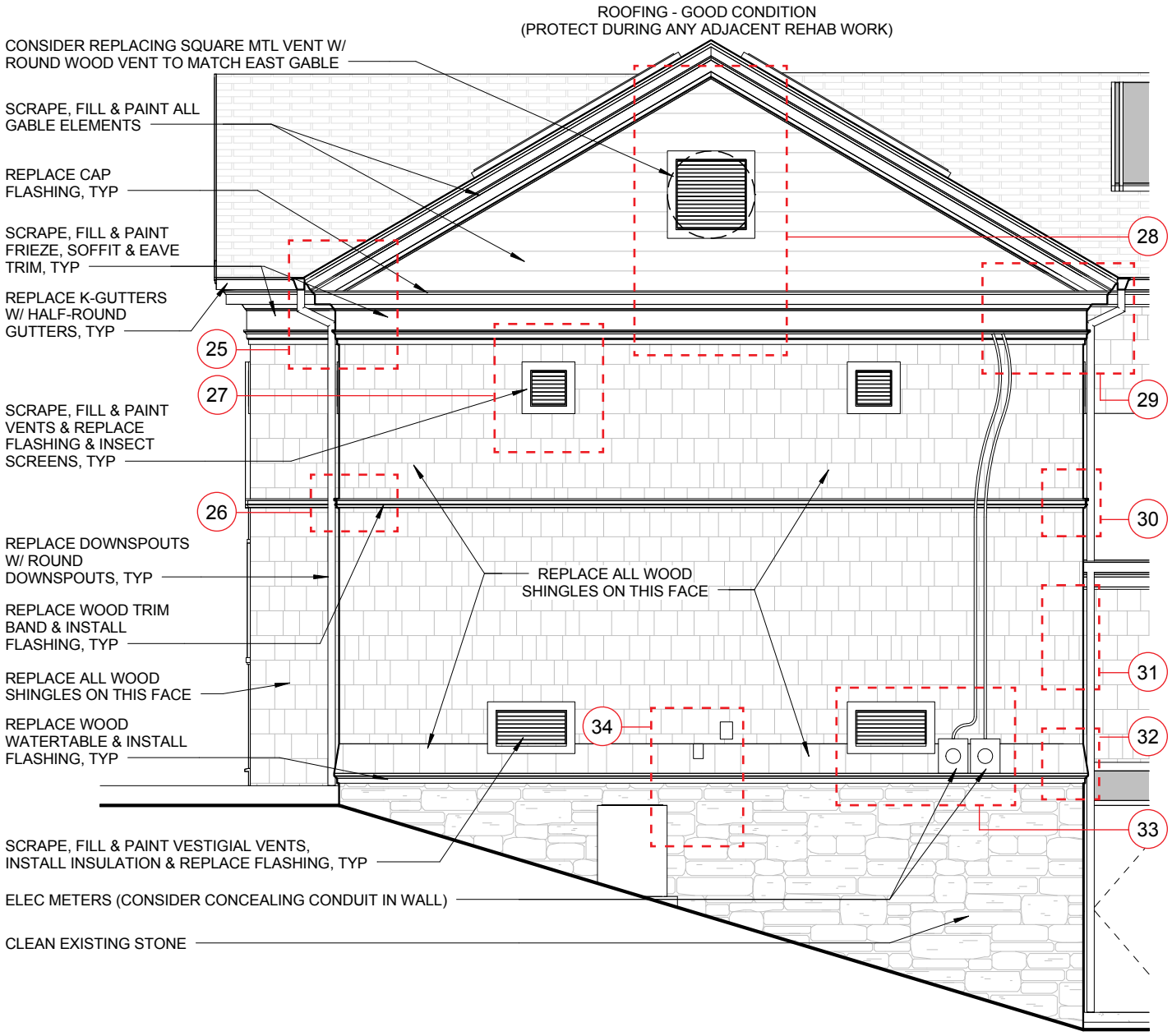
EAST ELEVATION

- E3 (right) -



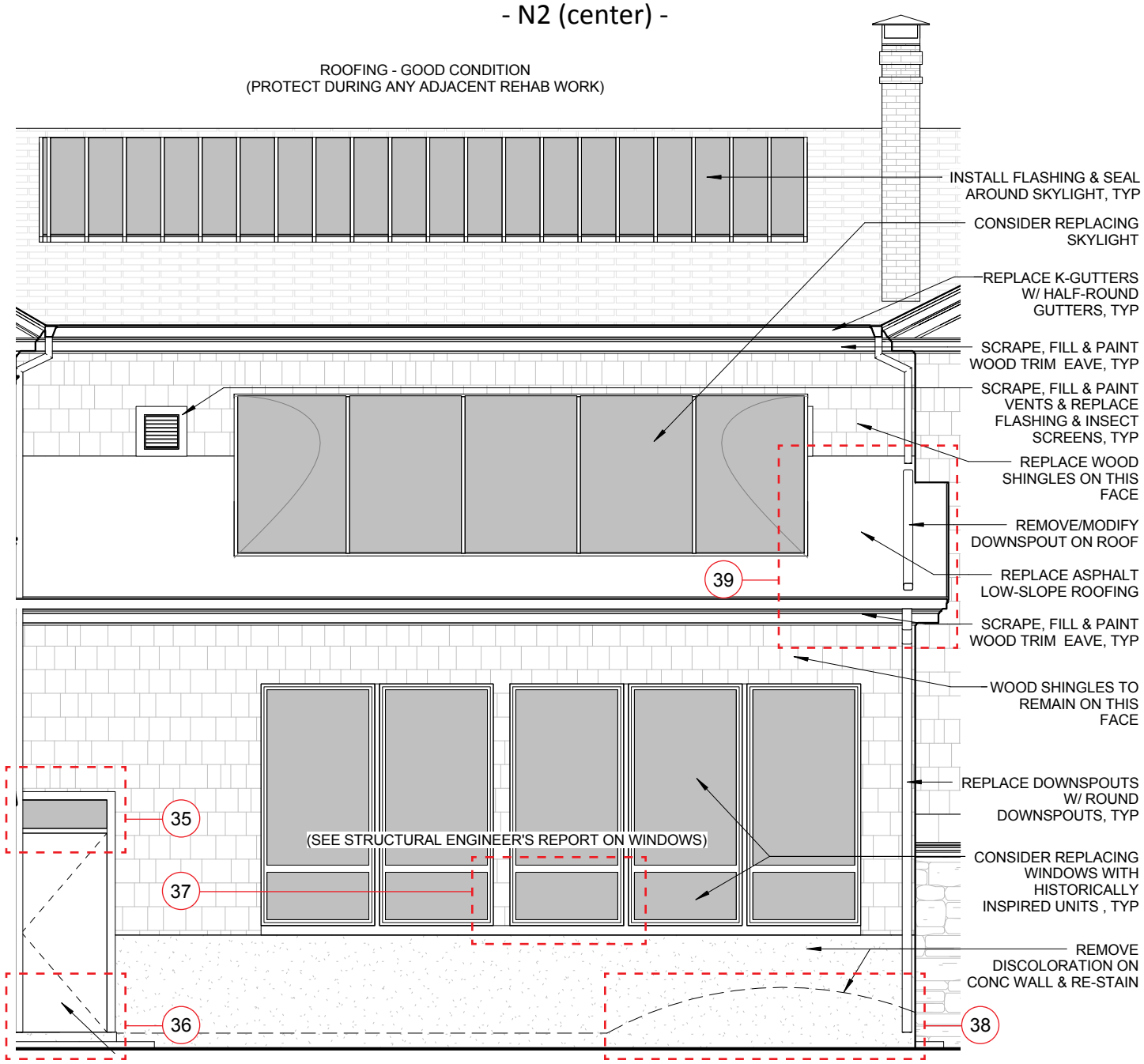
NORTH ELEVATION

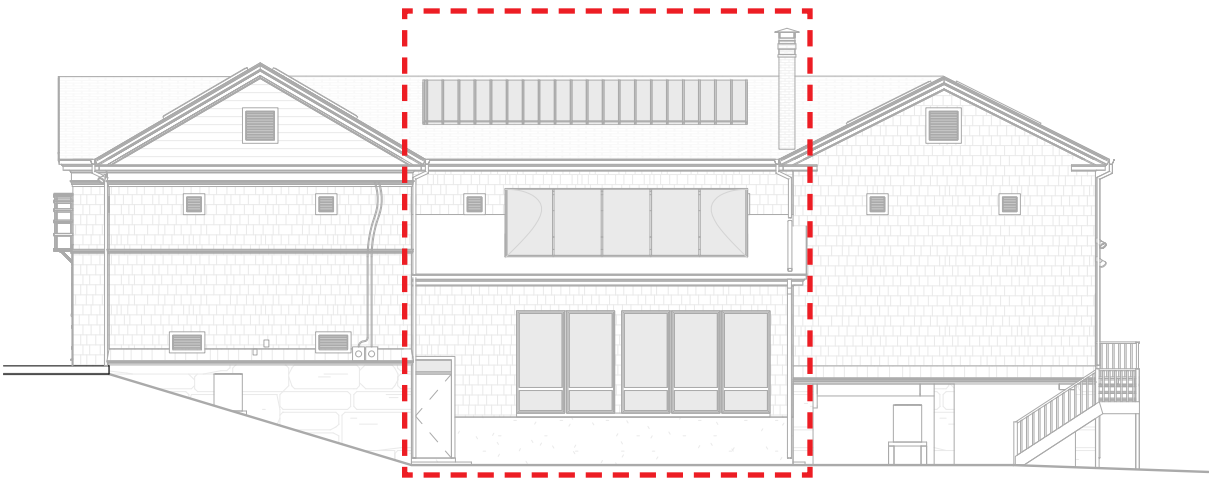
- N1 (left) -



NORTH ELEVATION

- N2 (center) -

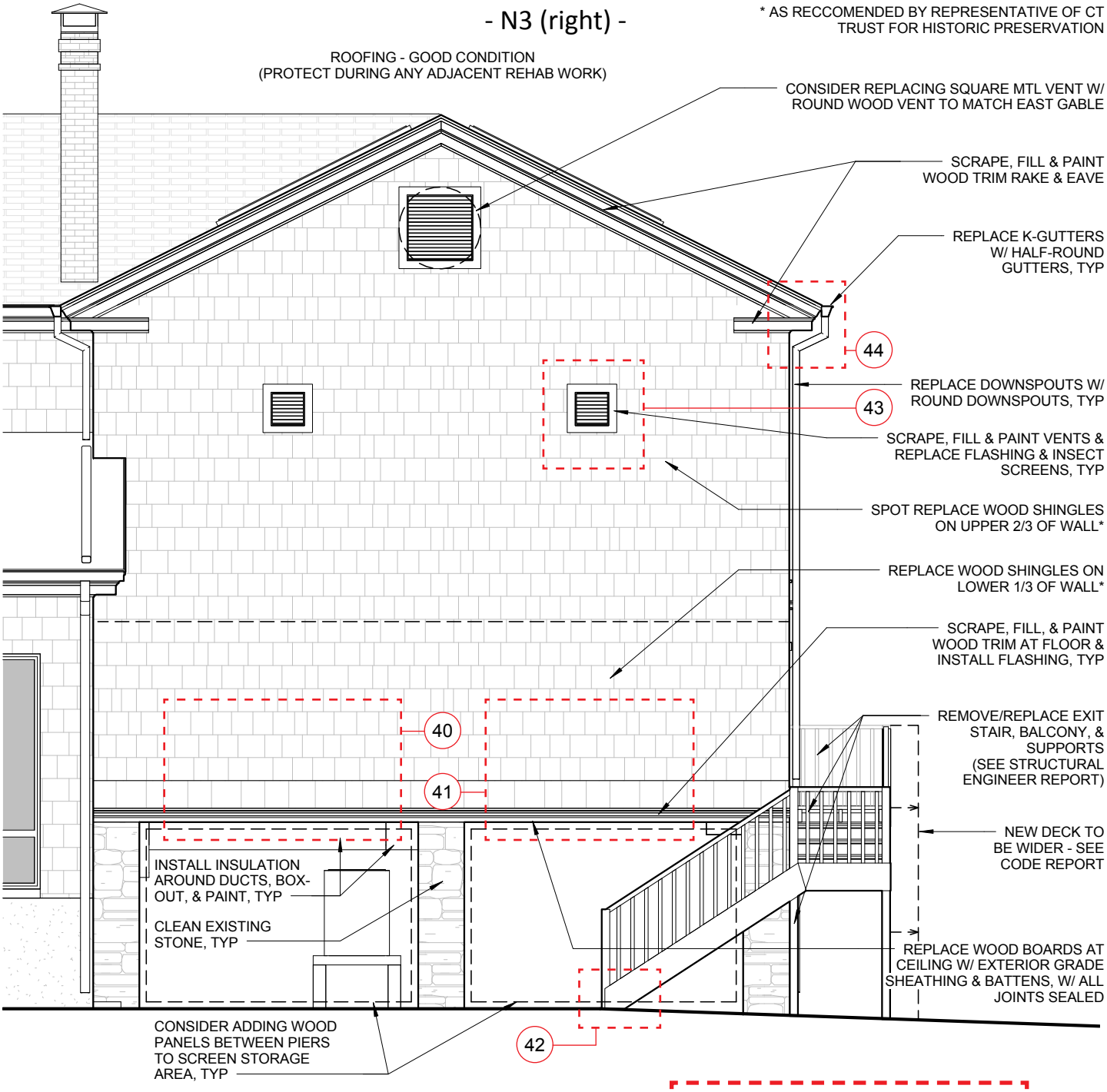




NORTH ELEVATION

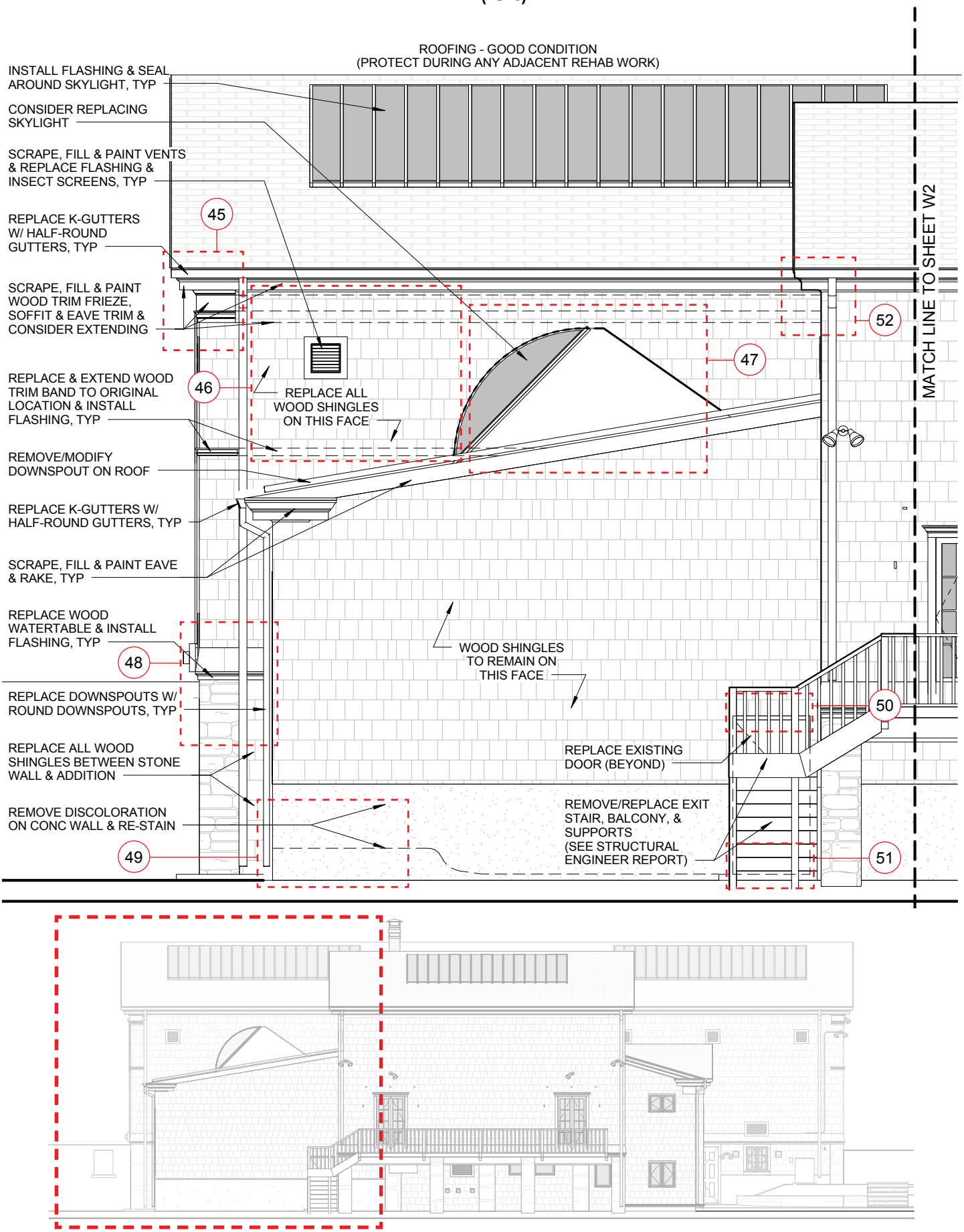
- N3 (right) -

* AS RECCOMENDED BY REPRESENTATIVE OF CT TRUST FOR HISTORIC PRESERVATION



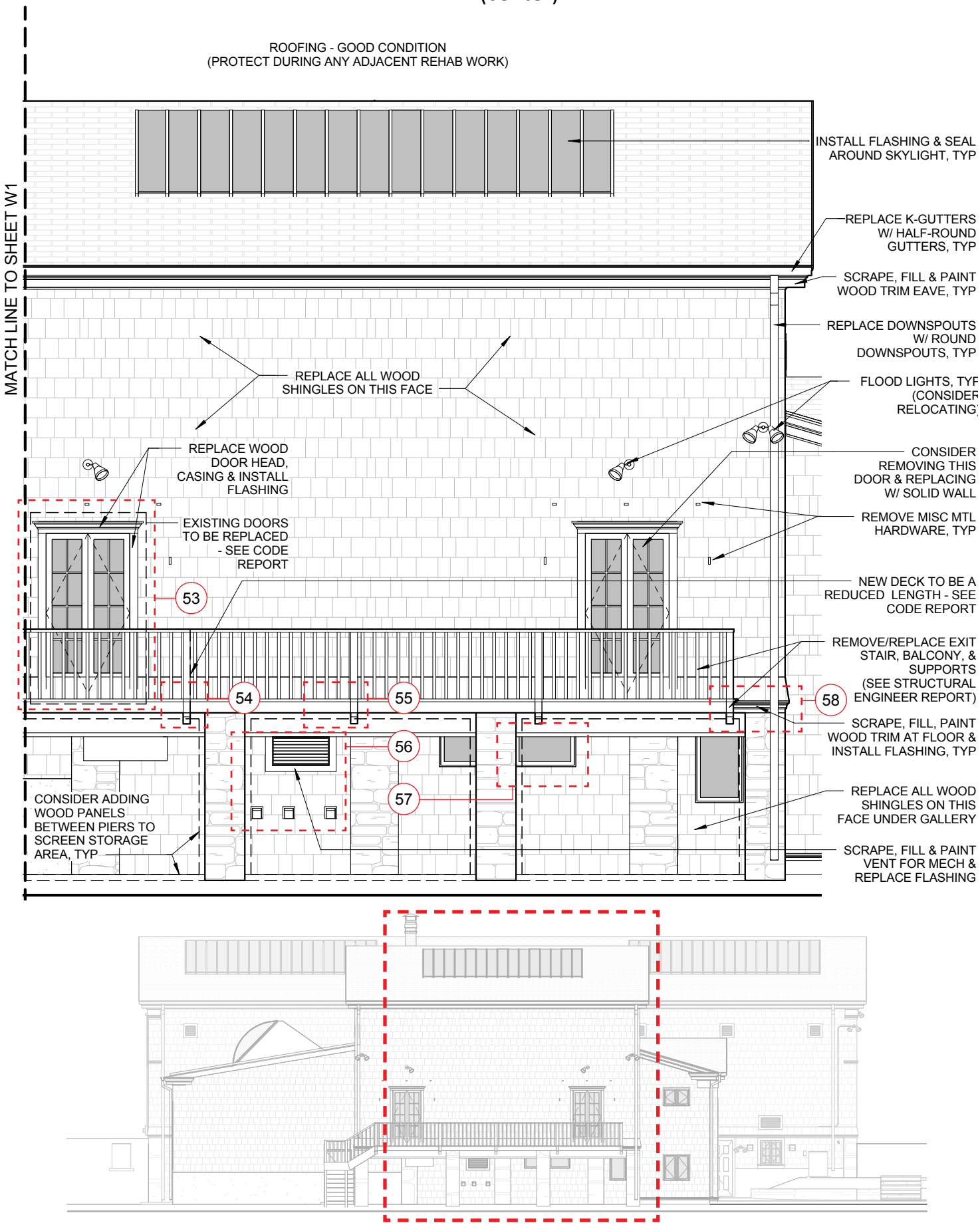
WEST ELEVATION

- W1 (left) -



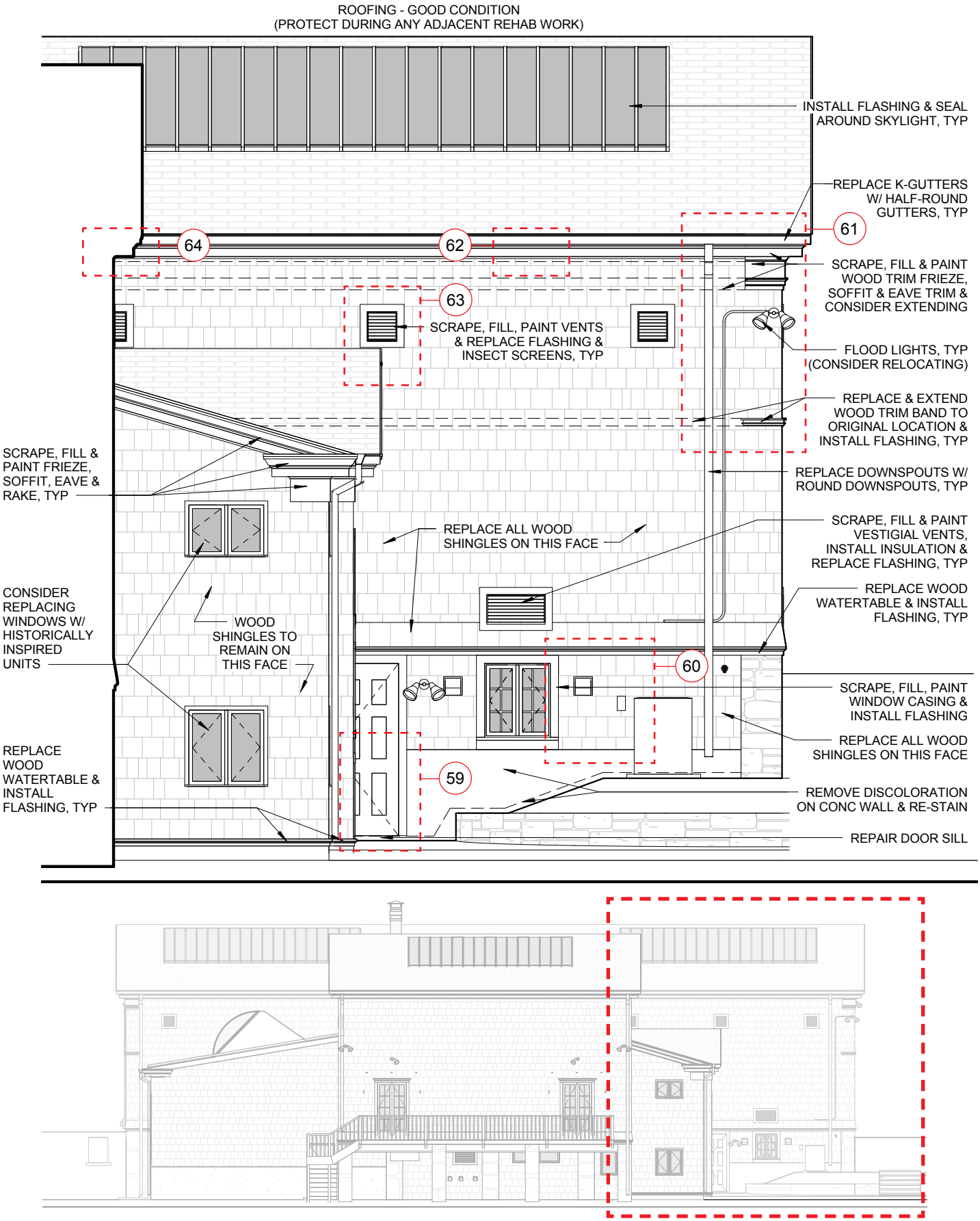
WEST ELEVATION

- W2 (center) -



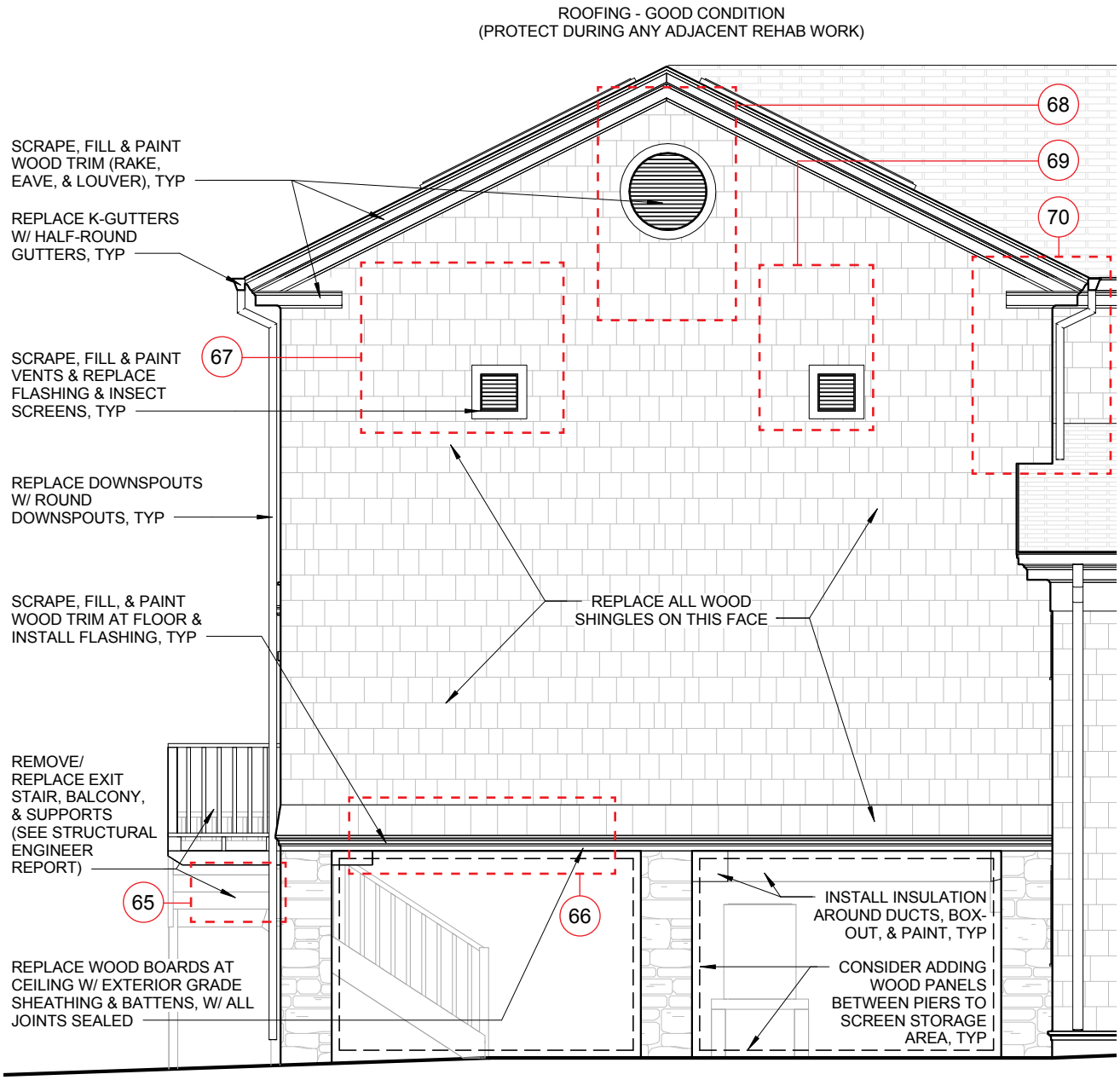
WEST ELEVATION

- W3 (right) -



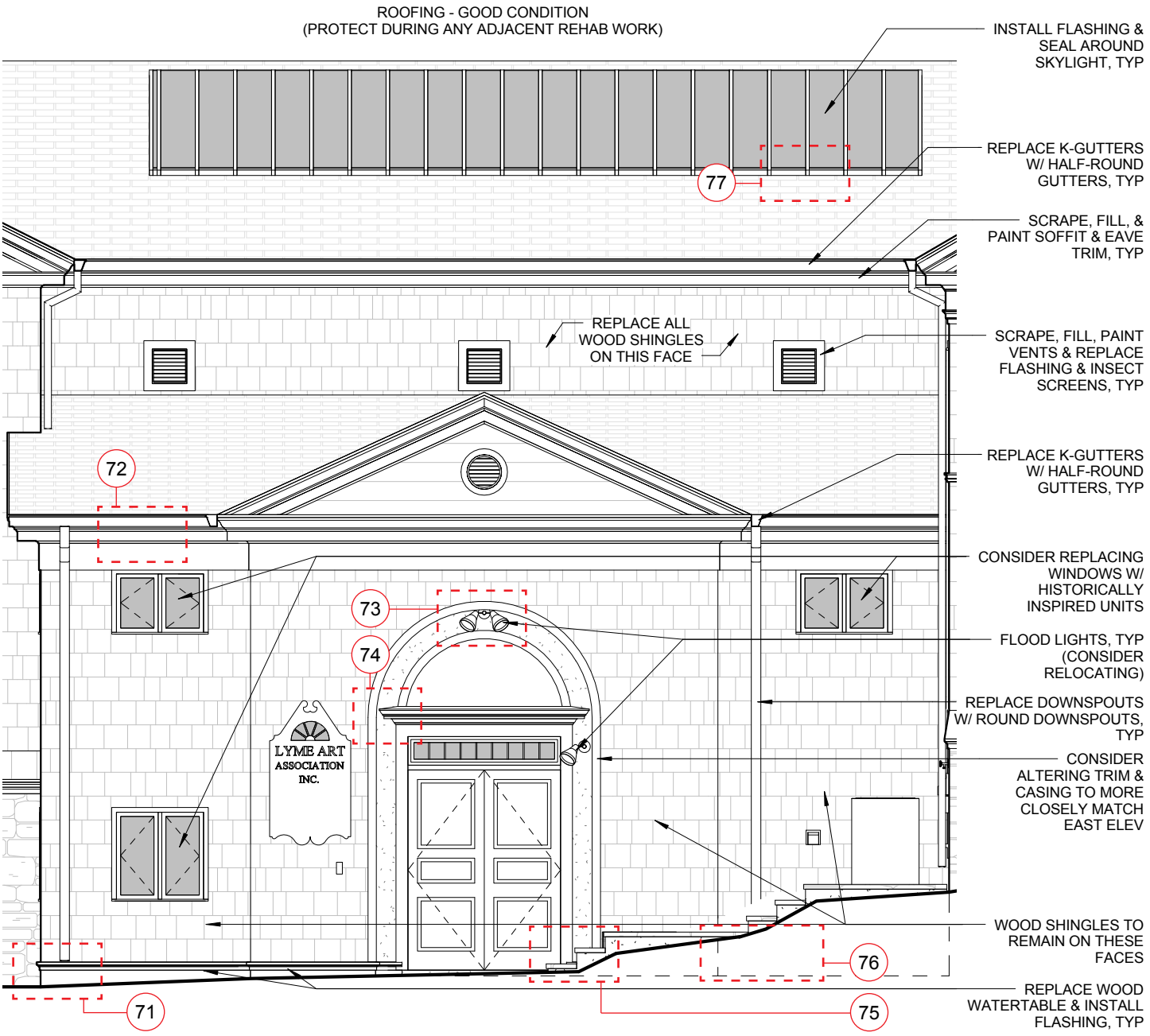
SOUTH ELEVATION

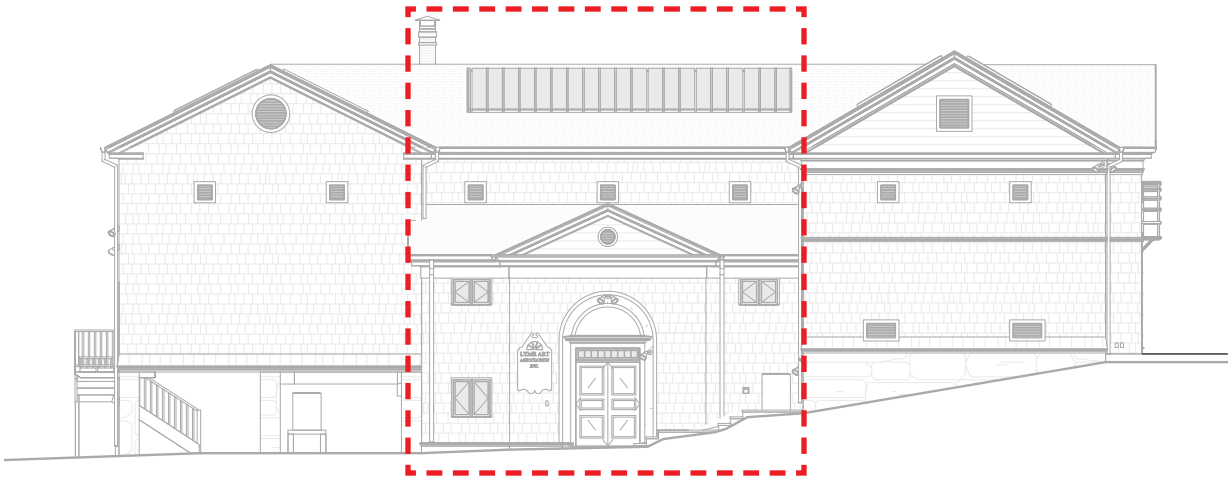
- S1 (left) -



SOUTH ELEVATION

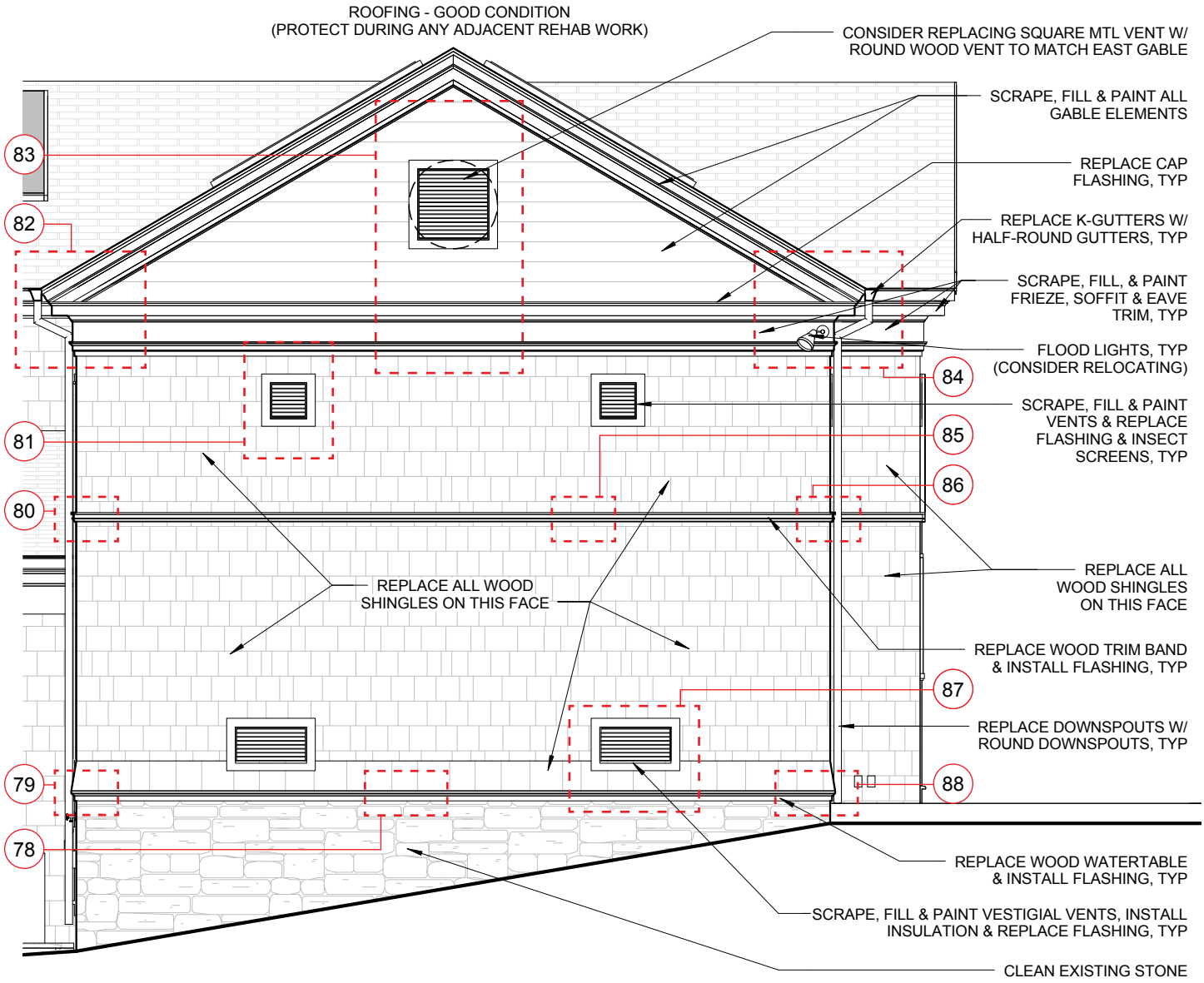
- S2 (center) -

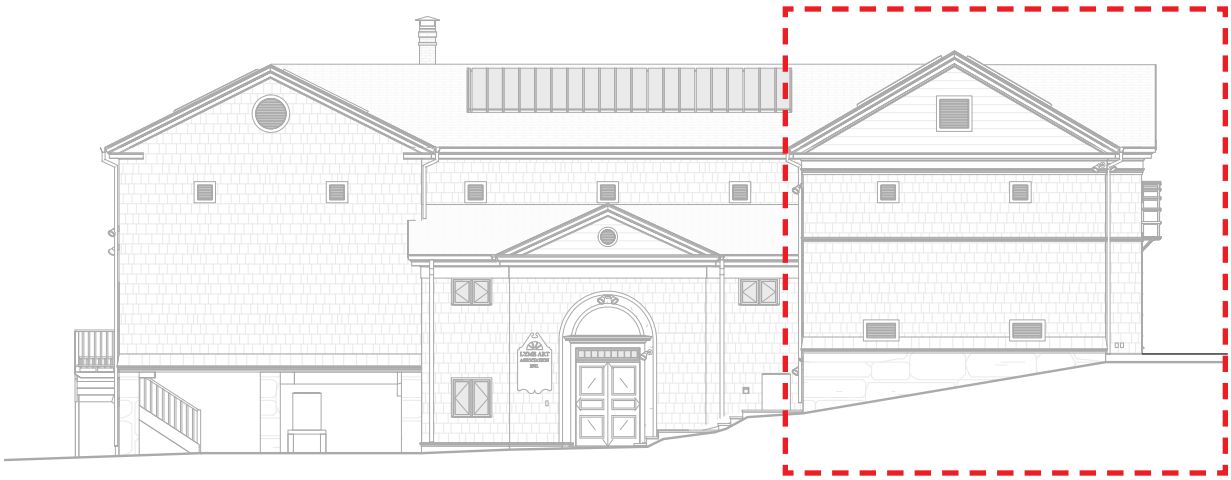




SOUTH ELEVATION

- S3 (right) -





Opinion of the Feasibility of adding Thermal Insulation

Existing Insulation

Except for portions of the attic floor (which is the main floor ceiling) where an uneven and haphazard installation of approximately 6" of fiberglass batt insulation can be observed, the main floor of the building appears to lack a continuous insulation envelope. Rudimentary drawings for *"Proposed Additions & Alterations to the Lyme Art Gallery to create a new Art Academy"* (undated, but presumed to be for the 1978 additions), indicate some insulation was to have been installed in areas affected by that work, such as the painting studio, the southwest entry, and the floor of the 1938 Goodman Gallery. The presence of any such insulation has not been visually verified, but given the date of construction, it is reasonable to assume insulation was installed.

Ceilings and Roofs

Because heat rises, most of a building's heat loss occurs through ceilings and roofs. So while it is beneficial that some insulation is currently in place in the attic floor, it also must be recognized that the four large gallery spaces which comprise the majority of the main floor have single-sheet acrylic laylights covering 50% of their ceiling areas. These laylights provide the galleries with filtered natural light from the skylights in the roof above them, but they are gaping holes into the un-insulated attic space above them - - an attic space seasonally either exceptionally hot or almost as cold as the outdoor winter air.

In summer, the existing ventilation fans in some of the gable ends may help to mitigate extreme heat buildup in the attic, but the laylights nonetheless radiate heat downward into gallery spaces below them, a costly burden to the air-conditioning system. On winter nights & overcast days, warm air in the galleries rises and is conducted directly through the laylights into the much cooler attic.

Potential options to improve the building's thermal efficiency exist, but they may be marginally effective, costly, architecturally unacceptable, or all three. In order of effectiveness:

1. Install closed-cell spray-foam insulation to the underside of the roof and to gable-end walls

This will reduce heat radiating through solid portions of the roof, which contributes to overheating the attic in summer. But it must be recognized that skylights still comprise about 30% of the total roof area over the main floor, so adding spray-foam insulation alone is not effective.

The Building Code would likely require that the otherwise exposed spray foam have a barrier to flame spread applied to it, adding cost.

Although a relatively low cost option, this option's summertime effectiveness may be marginal, and its wintertime effectiveness may be negligible. It might best be combined with the following option 2.

2. Apply heat-rejecting film to the underside of the existing skylight glass

This will reduce the solar heat radiating through the skylights, which contributes to overheating the attic in summer.

Technically specialized films are available that reject significant amounts of solar heat-gain wavelengths while still allowing a high percentage of visible light to pass through. These films are not obviously tinted like sunglasses, but may appear somewhat reflective.

Since most of the existing skylight glass is slightly ripple-textured, suitability of the applied film must be confirmed.

For best effectiveness, this option can be used in conjunction with the previously outlined spray-foam between the sloping roof rafters option.

This is a relatively low cost option with noticeable summertime benefits.

3. Install new insulated translucent Laylights and/or insulated translucent Skylights

Standard systems in custom configurations are available from companies such as Kalwall which typically use about 4 inches of a super-insulating translucent gel material sandwiched between two translucent fiberglass sheets. It allows abundant, nicely diffused light to penetrate into the spaces below it.

The most thermally effective application would be for the laylights. Careful detailing would be required to respect their current configuration and appearance.

The thicker insulated skylight units would present a visibly higher-profile on the roof than do the current low-profile galvanized steel-framed skylights, which might be objectionable. More study is required to determine if this would be a meaningful factor.

Insulated translucent glazing is a relatively high first cost but with great year-round benefits, including potential improvement to the currently rather bright level of light in the galleries.

4. Install new Skylights in Art Instruction Studio

As noted in other parts of this report, theses skylights are stylistically inappropriate. Informal discussions with users of the studio space indicate that while the north-facing windows admit excellent daylight, the skylights admit too much overhead light and are more appropriate for a sculpture studio than for a painting & drawing studio. Thermally, the skylights perform very poorly, negatively affecting occupant comfort year-round. Strong consideration should be given to changing, replacing, or upgrading them.

Walls, Windows & Doors

Unlike ceilings and roofs, comparatively less heat-loss occurs through the vertical surfaces of a building. Windows and doors are the biggest culprit, mostly due to air leakage rather than thermal conductivity. But since Lyme Art Association has relatively few windows and doors, we will first focus on the large expanses of presumably un-insulated walls of the main floor, that is, the original 1921 building and subsequent 1938 addition. For reference, we have estimated the existing walls to have a Thermal Resistance or 'R-Value' of about R-5 (higher is better).

Since much of Lyme Art Association's exterior siding will be removed and replaced as part of an ongoing exterior envelope rehabilitation effort, an opportunity exists to install thermal insulation either *within* the wall cavity or *to* the wall's outside face. Alternatively, if replacement of the interior finishes of the main level galleries were to occur, insulation could be applied to the interior of the wall. Following is an elaboration of these options.

1. Install loose-fill insulation to the existing wall cavity

Insulation such as non-combustible rock-wool, dense-packed cellulose, or fiberglass can be blown through new access holes bored in the building's exterior substrate wall sheathing. The holes can be easily patched and ultimately covered by new shingle siding.

The wall's 'R-Value' would increase approximately to between R-15 and R-18, depending on the type of insulation used (fiberglass has a higher R-Value).

However, introducing any form of loose-fill insulation into the wall cavity of an antique building may do more harm than good. Under certain but not uncommon atmospheric winter conditions, the new insulation places the Dew Point- the temperature at which invisible airborne water vapor condenses back into liquid water somewhere in the middle of the insulation within the wall. That liquid water can collect, leading to sagging, ineffective insulation, decay of the wall's wood structure, and possible mold growth. Moreover, should LAA ever decide to upgrade its mechanical systems to "Museum Standard" quality which provide more stable, higher humidity levels, the vapor retarder/dew point issues would be exacerbated.

The only reliable technique to avoid the 'dew point dilemma' is to limit the amount of water vapor from within the building that permeates into the insulated wall cavity. This is typically accomplished by installing a continuous interior vapor retarder (stout plastic sheeting) underneath the interior wall finishes. It is very simple to install a vapor retarder in new construction or if all interior wall surfaces (e.g. plaster or sheetrock) are removed as part of an extensive interior renovation project. But as neither is the case with Lyme Art Association, installing an effective, continuous interior vapor retarder may be impractical.

2. Install 1" or 1½" rigid foam insulated sheathing panels below the new shingles

After the existing decayed shingle siding is removed and repairs are made to the substrate wall sheathing and wall & window trim elements, rigid foam insulation panels with a sealed, nailable outer face is adhered to the existing sheathing. The new shingle siding is then installed on top of this *"outsulation."*

The wall's 'R-Value' would increase approximately to between R-9 and R-12, depending on the thickness of the rigid foam insulation itself (½" or 1").

The aforementioned Dew Point would occur within the foam insulation layer, but that notional point is now on the *exterior* of the wall cavity, well way from the water vapor emanating from within the building, and away from the structural parts of the wall. Further, the rigid foam is unaffected by moisture.

Effectively adding 1" or 1½" to the outside dimensions of the building will also influence how all the painted wood trim (water tables & skirt boards, window & door trim, stringcourses, and friezes) is re-installed or adjusted, as all these trim items, too, will need to push outward one inch. This operation may seem daunting, and there are surely many details to be carefully considered, but it is a relatively common practice. Given the magnitude of exterior siding and trim replacement indicated by this Assessment, we think this option is worth further study and consideration.

Historic preservation grant-funding agencies may have their own opinions, pro & con, so they should remain involved in any decisions to move ahead with this "outsulation" approach.

3. Combine options 1 & 2 above: Blown-in Insulation <u>plus</u> Rigid Foam outsulation

Although this option seems attractive since it would yield a relatively high 'R-Value', our analysis indicates that the dew point would occur within the insulated wall cavity. Without a continuous interior vapor retarder, potentially damaging condensation issues would likely occur.

4. Install 1" rigid foam insulation sheets at the interior surfaces of the walls

For aesthetic, maintenance, or potential fire-code reasons, it may be ultimately decided that the stretched-canvas interior wall surfaces in the main floor galleries should be removed or replaced. Although this would be a significant undertaking, it would present an opportunity to apply rigid foam insulating sheets to the walls' existing interior substrate, presumed to be wood boards applied to the wall studs (verification is required). The insulation would be covered with 1/2" plywood and paintable drywall. In conjunction with this, details of how interior painted wood trim abuts the modified wall surfaces will need to be carefully studied and detailed, both in terms of historical/architecture correctness, and to facilitate recurrent re-painting of the gallery walls.

5. Windows in Art Instruction Studio

As noted in other parts of this report, the large expanse of glass on the north wall of the Studio is potentially structurally unsound and also stylistically inappropriate. Thermally, these windows perform very poorly, both due to the minimal airspace between their panes of glass, and also due to installation-derived air leaks. This negatively affects occupant comfort year-round. Strong consideration should be given to replacing these windows.

6. Doors

Install low-expanding spray-foam insulation at any readily accessible gaps and voids in the exterior wall, particularly door and window perimeters.

As noted on other parts of this report, the front entry doors, and rear exit doors from the Goodman Gallery should be replaced and reconfigured to comply with imperative Fire Safety Code egress requirements. Their replacement door units should perform considerably better.

Summary

the various means of improving the thermal performance of the building involves many variables including performance, practicality, risk, and cost. The pros and cons of each option, *or combinations thereof*, must be fully evaluated and prioritized in the context of any other building rehabilitation projects which are being considered.

Concepts for an Accessible Path from existing Parking to Front Entry

As previously noted in this report, Lyme Art Association's Front Entry doors are required to be reconfigured to comply with imperative Fire Safety Code egress regulations. Complementing that work, barrier-free, ADA-compliant ingress & egress must be provided.

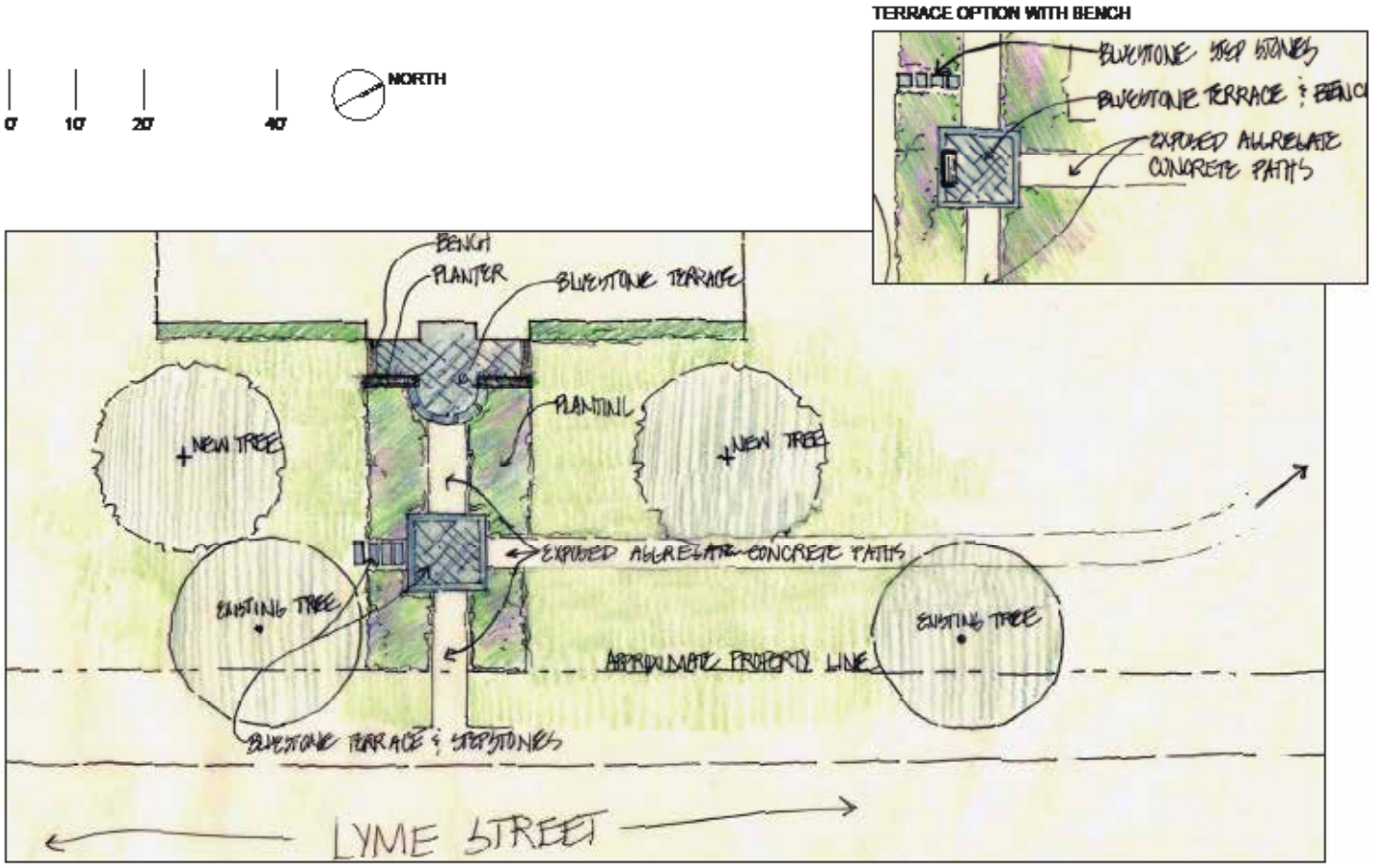
The existing asphalt pathway leading to the front entry currently skirts very close by the face of the building. It is non-accessible both due to steepness in some portions, and because it does not ascend to a high enough elevation to match the main floor of the building (a single step of approximately 6 inches is present in front of the doors).

A new accessible path will have to be somewhat longer in length to achieve the required steepness limits of a sloping path without handrails (anything steeper than 1:20, or 5%, is technically a 'Handicap Ramp' and would necessitate a visually overwhelming assemblage of ramps and handrails in front of the building.

A new accessible sloping path would need to move farther away from the face of the building. The following drawing conceptually depicts such a path, shown enhanced with additional terrace areas to facilitate public gathering during Gallery events.

Other options for improving pedestrian and vehicular movement through the property may be studied as part of a future Site Master Planning effort.

Accessible Pathway Schematic Plan



Relevant Code Highlights

A technical analysis of Building Code, Fire Safety Code, and Accessibility Code issues and implications was produced by Philip R. Sherman, P.E. a Fire Protection and Building Code Consultant. It is attached herein as an Appendix. Following is an executive summary of its key content (please see the report for a full list of issues and items).

Building Code

Provided the building is legally occupied and maintained in a safe and sanitary condition, new building code requirements will apply only when work is undertaken that affects the access to, or usability of, an area of primary function.

Work limited to the exterior envelope does not appear to trigger ADA requirements.

Certain interior alterations which could occur in the future may trigger new building code requirements.

Fire Safety Code

The following items may be required regardless of other work being done. But as the existing conditions may have been approved by authorities having jurisdiction (AHJ's) during past alterations, they should be reviewed with the current local Fire Marshal:

- Provide a one-hour rated enclosure at the Boiler/Furnace Room.
- Provide a one-hour rated enclosure for the two largest lower level storage rooms.
- Provide continuous access to both exits at the lower level by connecting the gallery corridor to the north exit by means of a rated corridor. Egressing through the Studio or the Basement Storage Room are not permitted.
- Provide a legal exit from the Goodman Gallery. The existing pair of doors are non-compliant, and the deck & exterior stairs are not wide enough, and lack legal guardrails & handrails. See also Structural Engineer's report of the failing condition of the deck and stairs.
- Remove exit signs from the upper level of the two interior stairs, which are not currently legal exits. They will not be required exits after legal exit from the Goodman Gallery is established.
- Provide compliant handrails at the interior steps between the Cole and Goodman Galleries. The steps themselves are OK.
- Provide a legal exit at the front door. This will involve installing a single outswing door of at least 36" in width, and fixing the pair of exterior wood shutter doors in their open position. See also the related item below regarding barrier-free access to the front door.
- The painted fabric wall finish over an unknown substrate in the main floor galleries may not comply with the required 'Class C' combustibility requirements. Formally testing this fabric may be a very costly undertaking, so LAA should enter into discussions with the local Fire Marshall about it.

Accessibility Code

As the existing conditions may have been approved by AHJ's during past alterations, they should be reviewed with the current local AHJ. At the AHJ's discretion, some of the following items may be considered "Readily Achievable" and may be required to be corrected regardless of any other work being performed:

- Provide striped, signed accessible parking.
- Provide an accessible route from the parking area to the front door.
- Provide a barrier-free front entrance (e.g. no step up into the building).
- Provide accessible bathrooms. The existing bathrooms fall short of legal clearances in a variety of ways. The facility currently has a surplus of one male toilet/urinal and at least two lavatories (sinks), removal of which may help enable required clearances to be achieved.
- Track lighting in the lower level gallery is less than 80" from the floor and protrudes away from the wall by more than four inches.
- A section (length and location TBD) of the Kitchen countertop is required to be accessible (e.g. lower).
- Several areas on the lower level floor have small steps and abrupt transitions.
- Some interior door hardware is not lever type.
- An elevator is required; but this, especially, is unlikely to be considered "readily achievable."

Connecticut Energy Code

As part of a general review of the building's existing mechanical, electrical, and plumbing systems, a review of Code issues was produced by Gregory H. Van Deusen, P.E. of BVH Integrated Systems. The Building Systems Report is attached herein as an Appendix. Following is an executive summary of its key content:

- Since the building is in, and contributes to, a Local & National Historic District, it is exempt from the IECC.
- The building is fed by two electric services and exterior meters. This is not normally allowed by the power company.
- Installation of wiring within, and leading to & from the Electrical Panels, is poorly organized and unprofessional looking. It could be a 'red flag' to any Electrical inspector.

Connecticut Structural and Building Code:

As part of a general review of the building's existing structural systems, an analysis of the Structural/Building Code issues was produced by Laura E. Champion, P.E. of Champion Engineering, LLC. The Structural Report is attached herein as an Appendix. Following is an executive summary of its key content:

- As previously outlined in a memorandum to Lyme Art Association, the existing rear deck and stair are in immediate danger of failing due to advanced structural decay. Also, as outlined above, these elements shall be reconstructed and reconfigured to comply with the egress requirements of the Fire Safety Code.
- Based on the drawings for the 1978 additions, the roof rafters above the South Stair and Entry may be undersized. Further investigation and analysis is required.
- Based on the drawings for the 1978 additions, and especially cracks in its ceiling finish, the roof rafters above the Art Instruction Studio may be undersized. Further investigation and analysis is required.
- The north wall of the Art Instruction Studio, including its windows, probably does not comply with current wind load requirements. Assuming it is deflecting excessively under wind load, it may be contributing the aforementioned ceiling cracks. Further investigation and analysis is required.
- Although the floor joists of the North and South Galleries are OK, the beam which supports them at mid-span needs to be reviewed for sufficient shear- stress capacity to support the code-required live loads. Further investigation and analysis is required.

Philip R. Sherman, P.E.

Fire Protection Engineering and Building Code Consulting

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August 13, 2013
Proj: 1692.01

Centerbrook Architects & Planners
67 Main Street
Centerbrook, CT 06409

Attention: Mr. Charles G. Mueller, AIA ALA

Re: Lyme Art Association
90 Lyme Street
Old Lyme, Connecticut
Limited Code Summary
Revision One

Dear Mr. Mueller:

This letter will set forth a code summary for the above project, identifying the primary code issues involved. My work is based on preliminary drawings dated July 12, 2013 and a site visit on July 15, 2013. The project involves work on the exterior cladding for the building, and an understanding of potential code issues that may arise during future interior renovation projects. At this time, future projects are not believed to include additions or changes of occupancy.

Code references are in the endnotes.

Applicable Codes

The following codes apply to this project. Note that Connecticut expects to update their codes at the end of 2015, with possible electrical code update sooner, so depending on the project construction schedule this analysis may need to be revised.

- 2003 International Building Code portion of the 2005 State Building Code, State of Connecticut with 2009 amendments.
  - As there are no changes of occupancy proposed, there does not appear to be any particular benefit to using the International Existing Building Code, therefore the

project will be permitted under CSBC Chapter 34. The work will comply with the code, without requiring other elements to be brought up to code.[1]

- Work limited to exterior cladding does not appear to trigger ADA requirements.

- Interior alterations that affect the access to, or the usability of, an area of primary function, require that the path of travel to the altered area, including the plumbing fixtures serving those areas, be accessible, up to 20% of the cost of the alterations to the primary function area. All interior spaces in the building are considered primary function areas, except storage, MEP spaces and restrooms. Note that installation of new windows may be seen as an alteration to a primary function area.[2]

- Provided the building is legally occupied, and maintained in a safe and sanitary condition, the building code applies only when work is performed.[3]

- 2003 International Plumbing Code with 2005 and 2009 Connecticut amendments
- 2003 International Mechanical Code with 2005 and 2009 Connecticut amendments
- 2009 International Energy Conservation Code with 2011 Connecticut amendments
- 2005 National Electrical Code with 2005 and 2009 Connecticut amendments
- 1996 ASME A17.1 Safety Code for Elevators and Escalators with 1997 and 1998 addenda (if required)
- 2003 ANSI A117.1 Accessible and Usable Buildings and Facilities with 2005 and 2009 Connecticut amendments
- 2005 Connecticut State Fire Safety Code with 2009 amendments
  - Parts I, II and III apply to the work.
  - Parts I, II and IV apply to existing elements to remain.
    - Parts I, II and IV of the fire safety code apply whether or not there is work performed.
- 2010 Connecticut State Fire Prevention Code
- 2010 Americans with Disabilities Act Standards for Accessible Design
  - Work limited to exterior cladding does not appear to trigger ADA requirements.

- Interior alterations that affect the access to, or the usability of, an area of primary function, require that the path of travel to the altered area, including the plumbing fixtures serving those areas, be accessible, up to 20% of the cost of the alterations to the primary function area. All interior spaces in the building are considered primary function areas, except storage, MEP spaces and restrooms.[4]

- The owner also has an obligation to correct "readily achievable" obstacles to accessibility. This is a subjective term that is a function of the difficulty of the correction and the financial resources of the owner.[5]

- Occupational Safety and Health Administration

- Other codes and standards are in effect as referenced by the above documents.

- Local Zoning Regulations

Occupancy Classification

- The building is a non-separated mixed occupancy structure.

- The lower level consists of Group A-3 gallery and studio, Group B offices and Group S-1 storage.

- The upper level consists of Group A-3 gallery space.

General

The building has a footprint area of about 5,100 sf, is legally a two story structure, is not sprinklered and is of Type V-B construction. Interior stairs are partially separated by non-rated construction, but are not required for egress. Calculated occupant loads are 49 persons on the lower level, and 128 on the upper level. Three exterior doors to grade serve the lower level. The upper level is served by the main front door and an exit over the rear deck leading to an outside stair. The basement restrooms are partially accessible, but most other building elements are not accessible.

Fire Safety Code

These items are required to be corrected regardless of any other work being done.

- Confirm that interior stairs, not used for egress, are separated at one level by one half hour rated construction, 1/2" gypsum board, or similar construction.[6]

- If oil tank capacity is more than 660 gallons, provide three hour rated separation.[7]

- Provide one hour rated enclosure for boiler/furnace room.[8]

- Provide one hour rated separation for two large storage rooms.[9]
- Provide continuous access to two exits at lower level by connecting gallery corridor to the exterior door at the north by a corridor.
  - As the existing conditions may have been approved during past alterations, this issue should be reviewed with the local fire marshal.
- Provide compliant exit discharge paths from exterior exit doors to public way.[10]
- Review exit signage, normal and emergency lighting for all rooms requiring two exits, corridors, and exterior routes. Remove exit signs from interior stairs and upgrade other elements as required.[11]
- Provide exit from rear of upper level through complaint width door with panic hardware, deck with legal guard, and compliant outside stair.[12]
- Provide compliant handrails on all interior stairs and steps.[13]
- Provide compliant exit door at upper level front, with legal landings, swinging in the direction of egress.[14]
- Verify all interior finish in rooms is Class C, all interior finish in corridor is Class B. Given the painted linen or canvas wall finish, with an unknown substrate, it is likely that the existing finish does not comply.[15]

Accessibility

As indicated above:

- Some of these items may be considered readily achievable and be required to be corrected regardless of other work being performed.
- Other items may be triggered by the 20% path of travel upgrade requirement, depending on the scale of the alteration.
- Within these requirements, the following accessibility issues were identified:
  - Provide accessible parking.[16]
  - Provide accessible route from parking to front door.[17]
  - Provide accessible front entrance.[18]
  - Provide compliant accessible restrooms. Probably best to consolidate rooms to one male and one female restroom.[19]

- Provide compliant horizontal routes[20]
    - Several areas have steps.
    - Existing lighting in the galleries is less than 80" from the floor and protrudes more than four inches.
    - Some interior hardware is not lever type.
    - Service counters and the like are required to be accessible.
- An elevator is required[21]

Please review this information and call with any questions.

Yours truly:

Philip R. Sherman, P.E.

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Endnotes

1. CSBC 3403.1
2. CSBC 3409.6
3. CSBC 102.6, 3401.2
4. 28 CFR Part 36.403
5. 28 CFR Part 36.304
6. CSFSC Part IV 8.6.8, 13.3.1
7. 1992 NFPA 31 2-4.1
8. CSFSC Part IV 13.3.2.1(1)(a)
9. CSFSC Part IV 13.3.2.1(1)(b)
10. CSFSC Part IV 7.7
11. CSFSC Part IV 7.9, 7.10
12. CSFSC Part IV 7.2.1, 7.2.2

13. CSFSC Part IV 7.2.2.4.1
14. CSFSC Part IV 7.2.1
15. CSFSC Part IV
16. CSBC 1106
17. CSBC 1104.1
18. CSBC 1105
19. CSBC 1109.2
20. CSBC 1104.3
21. CSBC 1104.4

CONDITIONS ASSESSMENT

Lyme Art Association
Lyme, Connecticut

August 27, 2013

BVH Project No. 21-13-108

BVH INTEGRATED SERVICES, P.C.

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Lyme Art Association
Lyme, Connecticut

August 27, 2013

BVH Integrated Services, P.C. visited the Lyme Art Association (LAA) on July 12, 2013 to review the existing mechanical and electrical systems in the building. The purpose of this study is to evaluate the systems' condition, capacity, and conformance with the Connecticut State Building Code, and to assist in the prioritization of recommended work. Due to the historic nature of the building, it is exempt from the International Energy Conservation Code.

GENERAL

The building's envelope, given its age, is not particularly energy-efficient and therefore some improvements may be recommended, within limitations imposed by the historic nature of the building.

Wooden louvered vents on the exterior of the building were noted. They appear to be part of an in-wall natural ventilation system which has now been abandoned and which would not be appropriate for reuse, except that vents opening into the attic may help with attic ventilation.

Louvered Vents

o

FIRE PROTECTION SYSTEMS

The building is not equipped with a fire protection system.

PLUMBING SYSTEMS

The domestic water system is fed from an on-site well, piped into the basement mechanical area. The well system is equipped with a diaphragm expansion tank and water softening system which are both in good condition, and the system appears to be adequate for the building.

Domestic Water System

The piping was not tested for lead-bearing solder, but lead-bearing solder can be expected given the vintage of the building. In general, although old, the domestic water distribution piping was in fair condition.

A plumbing fixture count was not performed by BVH, but it was noted that the toilet rooms are not ADA-compliant.

The building was equipped with several sump pumps at the lower level; these pumps seemed to be for the collection of groundwater. We were not able to determine where these pumps discharged. One of these sumps located in the boiler room, received flow from an unknown location. In general, we recommend that dye tests are performed to ensure that there are no interconnections between the sanitary sewage and groundwater systems.

Non-ADA Fixtures

The lower level studio has a two-bay service sink. The faucet sets are not equipped with vacuum breakers, which are recommended to minimize the chance that paints or chemicals can be drawn into the potable water system.

Sump with Unknown Inlet

Service Sink in Lower Level Studio

HVAC SYSTEMS

Of the mechanical and electrical systems in the building, the air conditioning system is in the best condition. The building is served by three (3) split air conditioning systems with relatively new fan coil units, condensing units, and ductwork. The systems appear to be appropriately sized and reasonably zoned. Each zone is equipped with a programmable thermostat. There are a total of three (3) grade-mounted condensing units located around the building.

Each condensing unit is piped with refrigerant piping to fan coil units located in the lower level of the building.

Condensing Unit

Fan Coil Unit

It should be noted that much of the newer supply air ductwork was not insulated, and insulating this ductwork is recommended. The lack of insulation and associated vapor barrier had caused noticeable condensation damage below the ducts, and also reduces the cooling capacity in rooms near the end of the duct runs. It is recommended that all supply ductwork be thermally insulated with a vapor barrier.

Insulated Ductwork

In buildings without natural ventilation, code requires that outdoor air be brought into the building mechanically. Although the exact quantity of outdoor air could not be determined, the system was equipped with a small energy recovery unit which is an energy-efficient way to introduce outdoor air into a building.

The building is heated with two (2) oil-fired appliances, both located in the boiler room. One portion of the building was served by an oil-fired furnace that had been retrofitted with a DX cooling coil. Although the furnace was older, it appeared to be in good operating condition.

Energy Recovery Unit

Oil-Fired Furnace

The remainder of the building was heated by an oil-fired cast-iron hot water boiler. This boiler appeared to be in good condition. Both the furnace and the boiler were equipped with ducted combustion air to the oil burner.

Oil Fired Boiler

The boiler system was divided into four (4) circulator zones, which we consider to be sufficient for a building of this size.

4-Zone Circulators

The boiler and furnace were vented into a common breeching and into a masonry chimney. The condition of the chimney was not investigated, but periodic inspection by a chimney specialist is recommended.

Combined Breeching

Fuel for the boiler and furnace is provided by a 275-gallon indoor tank, which appeared to be in good condition.

The lower level studio is the one part of the building with an HVAC system in poor condition. There doesn't appear to be any ventilation into the space, as the underslab ductwork system seems to have failed perhaps due to ductwork collapse.

275 Gallon Fuel Oil Tank

Floor Grille in Lower Level Studio

The lower level studio also has large inefficient windows which also reduce its comfort and energy efficiency. Hot water baseboard radiation located under the windows offsets the heat loss from the space, but it is in poor condition due to corrosion and physical damage.

Although the majority of the hot water piping system was copper, flexible PEX tubing was utilized for the last several feet before a connection. This tubing is rated to a maximum of 180 deg. F, so the hot water setting should be kept below this limit. Of particular concern was the use of spring clamps on the connections of the PEX tubing to the copper tubing. These clamps are not sufficiently robust, and consideration should be given to replacing them with stainless steel screw clamps to reduce the chance that a clamp will fail and cause significant water damage.

Radiator in Lower Level Studio

Although the HVAC systems were reported to keep spaces reasonably comfortable, temperature control could be improved by comfort rebalancing the system after the supply ductwork has been insulated and/or after additional thermal insulation is installed in the building. It was reported that the systems serving the upper level galleries may have difficulty maintaining the cooling setpoint in particularly hot weather. This may be partly alleviated by improving the thermal insulation of the building, imposing the thermal insulation of the ductwork, and by utilizing more efficient lighting sources.

PEX Tubing Clamps

ELECTRICAL SYSTEMS

In general, the electrical system at the Lyme Art Association is in poor condition. The building is fed by two (2) 200-amp 240-volt single phase electric services and exterior meters. It is unknown why there are two electric services into a single building, as this is unusual and not normally allowed by the power company.

Two Electric Meters

The arrangement of the system is that one meter serves "Main Panel A" and the other meter serves "Main Panel B." Main Panel A subfeeds another 200-amp panel labeled Panel 'C' located in the boiler room. The panels are in poor condition, with numerous double breakers and abandoned breakers. No outdated "Knob and tube wiring" was observed, and it appears that most of the wiring in the building is Type NM (Romex). Even so, wire management is poor.

There is a small central fire alarm system in the building, and smoke detectors were noted in selected locations.

Two Electric Services

Pull stations and fire alarm are also located in selected locations, but depending on the results of the code analysis, consideration should be given to installation of a more robust fire alarm and detection system.

Area Smoke Detector

Pull Station and Horn/Strobe

In areas of the lower level that have been recently renovated, the lighting systems are a combination of track and ceiling-mounted lighting and are in good condition, although they are too low to comply with accessibility codes. It may be impractical to raise the fixtures, but replacing the lamps with cooler-running LED lams may reduce the potential burn hazard.

Lower Level Lighting

Upper Gallery Lighting

In older areas of the building, the lighting systems are not energy efficient nor up to current standards for gallery lighting. Upgrading the lighting with modern LED fixtures should be considered.

The building appears to be equipped with proper emergency egress lighting and exit signage. A battery-inverter system located in the boiler room appeared to be non-functional, and it is presumed that local battery packs are used for back-up power on emergency fixtures.

Newer Emergency Egress Lighting

Champion Engineering LLC

8 Novelty Lane, Essex, CT 06426
C: 860-388-7576 O: 860-767-2217 F: 888-450-1670
championengineeringllc@gmail.com

August 14, 2013

Charles Mueller, AIA, ALA
Centerbrook Architects & Planners, LLP
67 Main Street
Centerbrook, CT 06409

Re: Lyme Art Association
90 Lyme Street
Old Lyme, CT 06371

Chuck,

Champion Engineering LLC completed a visual walk-thru as a preliminary assessment of the existing building's structural condition on July 10, 2013. The purpose of the assessment is to determine priority of work required and apply for grants to fund the work while maintaining the building's Historic Preservation. The visual assessment was limited due to existing finishes concealing most of the building's wood framing.

In summary, the building's structural wood frame appears to be in good structural condition, except at the rear stair where decay/rot has occurred and requires reinforcing and repair. The exterior of the building appears in poor condition with areas of decay/rot along base of the exterior wall and areas of exterior wall where wood siding needs to be replaced. Below are the findings of the visual structural condition assessment.

VISUSAL OBSERVATIONS AND PRELIMINARY ANALYSIS

General

The walk-thru is based on visual observations and existing drawings provided by the Owner of the 1920 original building and 1930's Addition. The building is a one and half-story wood framed building with full basement and a small crawl space area along the front of the building. The First Floor is primarily gallery spaces and has 1 ½ story vaulted ceiling spaces with openings to roof skylights. The basement is open to grade at the rear of the building.

Roof Framing

The existing gable shaped roof above the Gallery Spaces is supported by heavy timber and steel trusses spanning the width, approximately 24 ft. and about 12 ft. o.c. supporting roof purlins, planking, and plywood deck. The roof appears to have been reinforced. No structural distress was visible. See Photos 1-2. The existing Gallery ceiling has numerous cracks with the majority located at the corners of the rooms. These cracks appear to be caused from general building expansion and movement. See Photos 7-8.

The lower single slope roof framing on either side of the Gallery Spaces is concealed with existing ceiling finishes, but based on Owner supplied drawings these roofs are framed with 2x6 wood rafters at 16" o.c. It appears that these rafters may be undersized and further investigation is required to determine their live load capacity.

The Art Studio addition roof is framed with a rafter and beam system. The existing ceiling indicates a dropped beam is supporting roof rafter system. There are numerous cracks, see Photos 9-10, in the existing ceiling and further investigation is needed to verify roof framing and to determine roof live load capacity. The walls in this space are framed with large openings which probably do not meet the current wind loads. If the wind loads are causing excessive deflection of the exterior walls, this may also be causing the existing ceiling to crack.

Gallery Floor Framing

The existing Gallery Floor framing is visible from the basement's Art Storage room. The existing wood joists are 2x10 at 16" o.c. and typically span the width of the Gallery Floor above with a center row of 6x8 wood beams supported by columns and/or piers. The joists at each end are supported on the exterior foundation walls. See Photos 3-4. The joists have capacity to support the Connecticut Building Code Live Load of 100 Pounds per square foot (PSF) required for Gallery floor spaces. The existing center row has been reinforced and the existing wood beams need to be reviewed for sufficient shear capacity to support the required floor live loads.

Basement and Foundation

The existing stone foundation wall appears to be in good condition. The original 1920 basement has been lowered by underpinning the existing foundation wall with concrete and masonry block, see Photo 5. The front of the building has a crawl space which was probably the depth of the original basement area. The drawings indicate this basement work was done with the 1930's addition. The exposed slab on grade appears in good condition. There are two open sump pits in the Boiler Room which should have covers to decrease moisture and vermin infestation, See Photo 6.The exterior face of the foundation wall appears in good condition and local repointing of wall is required. The rear portion of the property and building is located in Zone X Floodway adjacent to FEMA Flood Zone AE at Elevation 9. This zone has 0.2% annual chance of flooding more than 1 foot. Exterior rear siding should be located above potential flood elevations to minimize future moisture damage, see Photo 14 for existing rear wall moisture damage.

Exterior Wall

The existing exterior wall is wood framed bearing wall that bears on the foundation wall. In many areas along the front of the building, there is not sufficient distance between the exterior wall and existing grade. This has caused areas of decay/rot along the exterior wall's trim at the base of the shingle siding wall (this trim element is called a water table). All decayed/rotted exterior wall elements need to be replaced. No interior decay/rot was observed at the structural wall sills, but there is a possibility that the exterior face side of the wall or sills may have decay/rot as a result of being located adjacent to the decayed/rotted water tables. If the existing wall sills have decay/rot then they will need to be replaced and existing grade needs to be lowered to provide adequate separation between wood framing and grade. See Photos 11-14.

The rear Gallery wood stair exit needs immediate repair and shall be temporary shored until reinforced and/or replaced. See Photo 15-16.

CODE ISSUES AND UPGRADES

This review was performed using the current 2009 State of Connecticut Code (IBC 2003); a new updated proposed Connecticut Building Code is scheduled to be adopted in 2015 using IBC 2012. The next Phase should review the structure with anticipation of this Code being adopted.

The current required live loads are as follows:
Floor Live Load –Lobby, Foyer, Stairs, and Gallery Spaces 100 PSF, required to meet Code in areas of renovation or if found deficient.
Roof Live Load- minimum Snow Live Load 30 PSF, required to meet Code in areas of renovation or if found deficient.
Wind Load (North of I 95) – 115 MPH, 3 sec gust, not required to meet Code, but any modifications shall not reduce and weaken the existing lateral system
Seismic Load- Upgrade not required unless change of use

The local jurisdiction may require upgrades depending upon amount of renovation/repair.

RECOMMENDATIONS AND PRIORITIZATION

The Table below lists the structural recommendations and associated prioritization based on urgency of work[1] and Standard for Preservation and Guidelines for Preserving Historic Buildings.[2]

Issue	Description	Urgency [1]	HP Guideline[2]	Comment
1	Rear Gallery Stair Exit	Immediate	Stabilize, Repair, and Replace	See Memo dated 7/12/2013 also
2	Exterior Wall Siding and Trim	Necessary	Replace	
3	Studio Art Roof and Ceiling	Necessary	Repair	As required to meet Building Code Roof Snow

				Live Load
4	Side Gallery Low Roof Framing	Necessary	Repair	As required to meet Building Code Roof Snow Live Load
5	Gallery Floor Beams	Necessary	Repair	As required to meet Building Code Floor Live Load
6	Gallery Ceiling Cracks	Cosmetic	Repair	

Notes:

1. Prioritization of structural work item as to urgency of work to be done is generally arranged as follows:
   Immediate- in danger of failing
   Urgent- should be done within 1 year to maintain integrity
   Necessary-accomplish within 3 year period but not currently urgent
   Maintenance-issue to be addressed within a 3-8 year period
   Cosmetic – Improvement to general building aesthetics
2. The National Park Service Guidelines for structural systems per Standards for Preservation and Guidelines for Preserving Historic Buildings has following approach:
   Stabilize - Stabilizing deteriorated or damaged structural system as preliminary measure, where necessary, prior to undertaking appropriate preservation work.
   Protect and Maintain-Protecting and maintaining structural system by using non-destructive techniques.
   Repair-Repairing the structural system by augmenting or upgrading individual parts or features.
   Replace-Replacing in kind those portions or features of structural system that are extensively deteriorated or missing to provide minimum loadbearing capacity.

In summary, we recommend that in the next Phase a more detailed structural survey and analysis be performed to determine if any structural load deficiencies exist in the structural framing.

Please contact me with any questions/issues.

Yours truly,

Laura E Champion

Laura E. Champion, P.E.
Principal
Champion Engineering LLC

Attachments- Photos 1-16

PHOTOS OF EXISTING STRUCTURAL WOOD FRAMING

Photo 1- Existing Wood and Steel Truss Over Gallery Space

Photo 2-Existing Roof Wood framing between between Gallery Trusses

Photo 3- Existing Gallery floor joists at Center row beam and column

Photo 4- Existing Gallery floor framing at exterior foundation

Photo 5 – Existing Foundation Wall that has been underpinned And lowered in 1930's.

Photo 6 – Existing open sump pit in basement

PHOTOS OF EXISTING CEILING CRACKS

Photo 7- cracks at joint

Photo 8- cracks at from skylight corner

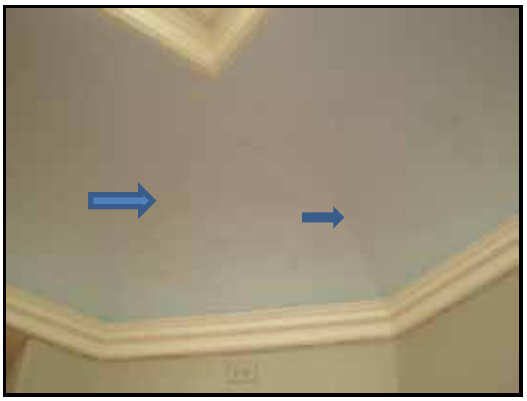


Photo 9- Cracks at Studio Art beam

Photo 10- Studio Art Ceiling

PHOTOS OF EXISTING EXTERIOR WALLS DECAY/ROT AND MISSING EXTERIOR SIDING

Photo 11- Exterior Trim rot at Grade

Photo 12- Exterior wall damage at Exterior wall And Foundation

Photo 13- Exterior Wall shingles missing

Photo 14- Exterior window trim and wall requiring repair from moisture damage.

LOCATION OF DECAY AT EXISTING REAR GALLERY BALCONY EXIT THAT REQUIRES SHORING

Photo 15 –Existing Rear Gallery Stair that requires immediate and urgent shoring and repair

Photo 16 Area of major rot

END OF REPORT

Prioritized List of Work, Costs, and Timeline

EXTERIOR REHABILITATION								
Priority	**Item**	**Cost Range**				**Duration**		
1	Replace Shingle Siding	$ 85,000	to	$ 100,000				
1	Repair/Rehab/Replace Painted Wood Trim	$ 25,000	to	$ 40,000				
1	Reglaze & Repair 1921 wood Windows and Vents	$ 10,000	to	$ 15,000				
1	Repair/Rehabilitate Front Entry Trellis	$ 3,000	to	$ 4,000				
1	Relocate plants away from East façade	$ 2,000	to	$ 3,000				
2	Repair, Clean and re-Stain Concrete at Studio	$ 2,000	to	$ 3,000				
2	Replace North Exit Door and Transom	$ 3,000	to	$ 4,000				
2	Replace Studio Windows w/ divided lite units	$ 10,000	to	$ 15,000				
2	Extend Freize & Stringcourse trim to rear of 1921	$ 3,000	to	$ 4,000				
	Total	**$ 143,000**	**to**	**$ 188,000**		**3 mo.**	**to**	**4 mo.**

CODE ISSUES: BUILDING, ACCESIBILITY, FIRE								
Priority	**Item**	**Cost Range**				**Duration**		
1	Create legal Front & Back Door Egress	$ 12,000	to	$ 15,000				
1	Rebuild/Reconfigure Deck & Egress Stairs	$ 10,000	to	$ 12,000				
1	Create simple Accessible Path from Parking	$ 15,000	to	$ 25,000				
1	Create corridor to lower floor north exit	$ 5,000	to	$ 7,000				
1	Handrails at steps from Cole to Goodman	$ 1,000	to	$ 2,000				
2	Reconfigure Bathrooms to comply w/ ADA	$ 10,000	to	$ 25,000				
2	Provide legal exit discharge paths to public way	$ 7,000	to	$ 15,000				
???	Replace Canvas Wall Finish at Galleries	?	to	?				
2	Upgrade misc. Door Hardware to Lever-type	$ 1,000	to	$ 2,000				
2	Provide ADA-compliant Kitchen Service Counter	$ 3,000	to	$ 5,000				
2	'Raise' Track Lights in lower level Gallery (LED)	$ 5,000	to	$ 10,000				
3	Rectify various lower level steps & transitions	?	to	?				
3	Install an Elevator or Lift	$ 75,000	to	$ 125,000				
	Total	**$ 144,000**	**to**	**$ 243,000**		**3 mo.**	**to**	**4 mo.**

POTENTIAL ENHANCEMENTS								
Priority	**Item**	**Cost Range**				**Duration**		
1	Replace Laylights w/ insulated units	$ 100,000	to	$ 150,000				
1	Add Skylight Film	$ 2,000	to	$ 3,000				
2	OUTsulate Walls (ext. applied, + trim work), **OR:**	-	to	$ 25,000				
2	INsulate Walls (blown-in loose fill)	$ 10,000	to	-				
2	Replace/relocate Exterior Floodlights	$ 1,000	to	$ 7,000				
2	Reconfigure or remove Studio Skylight	$ 2,000	to	$ 8,000				
2	Add panels between piers under Goodman	$ 5,000	to	$ 8,000				
3	Extend Trellis along entire east façade	$ 7,000		$ 10,000				
3	Insulate Roof above Attic (spray foam)	$ 5,000	to	$ 10,000				
3	Replace Gutters/Downspouts w/ 1/2-round alu.	$ 5,000	to	$ 6,000				
3	Replace Windows at/around South Entry	$ 3,000	to	$ 5,000				
3	Replace Trim at Southwest Entry (match Front)	$ 2,000	to	$ 3,000				
3	Replace Main Roof Skylights	$ 75,000	to	$ 125,000				
?	Reconfigure Site Circulation- Roads, Pkg. & Paths	TBD	to	TBD				
	Total	**$ 217,000**	**to**	**$ 360,000**		**?**	**to**	**?**

BUILDING SYSTEMS UPGRADES								
Priority	**Item**	**Cost Range**				**Duration**		
1	New electric service	$ 4,000	to	$ 6,000				
1	New electrical distribution	$ 15,000	to	$ 20,000				
1	New branch circuiting and devices	$ 15,000	to	$ 20,000				
1	Insulate supply ductwork	$ 1,000	to	$ 2,000				
1	Replace PEX tubing clamps	$ 500	to	$ 500				
2	New lighting in selected locations	$ 5,000	to	$ 75,000				
2	Additional smoke detectors	$ 2,000	to	$ 3,000				
2	ADA upgrades to plumbing fixtures	$ 3,000	to	$ 25,000				
3	Faucets with vacuum breakers	$ 500	to	$ 500				
3	New HVAC in lower studio	$ 10,000	to	$ 15,000				
	Total	**$ 56,000**	**to**	**$ 167,000**		**2 mo.**	**to**	**3 mo.**

Photographs

PHOTO - 01

East Elevation - E1 (left)

Rotted watertable trim in need of Replacement. Consider using decay-resistant substitute material. Note rectangular downspouts which are not original.

PHOTO - 02

East Elevation - E1 (left)

Decayed mid-wall stringcourse trim in need of Rehabilitation and Repair. Note rectangular downspouts which are not original.

PHOTO - 03

East Elevation - E1 (left)

Frieze, soffit, and cornice trim in need of Rehabilitation and Repair.
Consider changing and/or relocating flood lights.

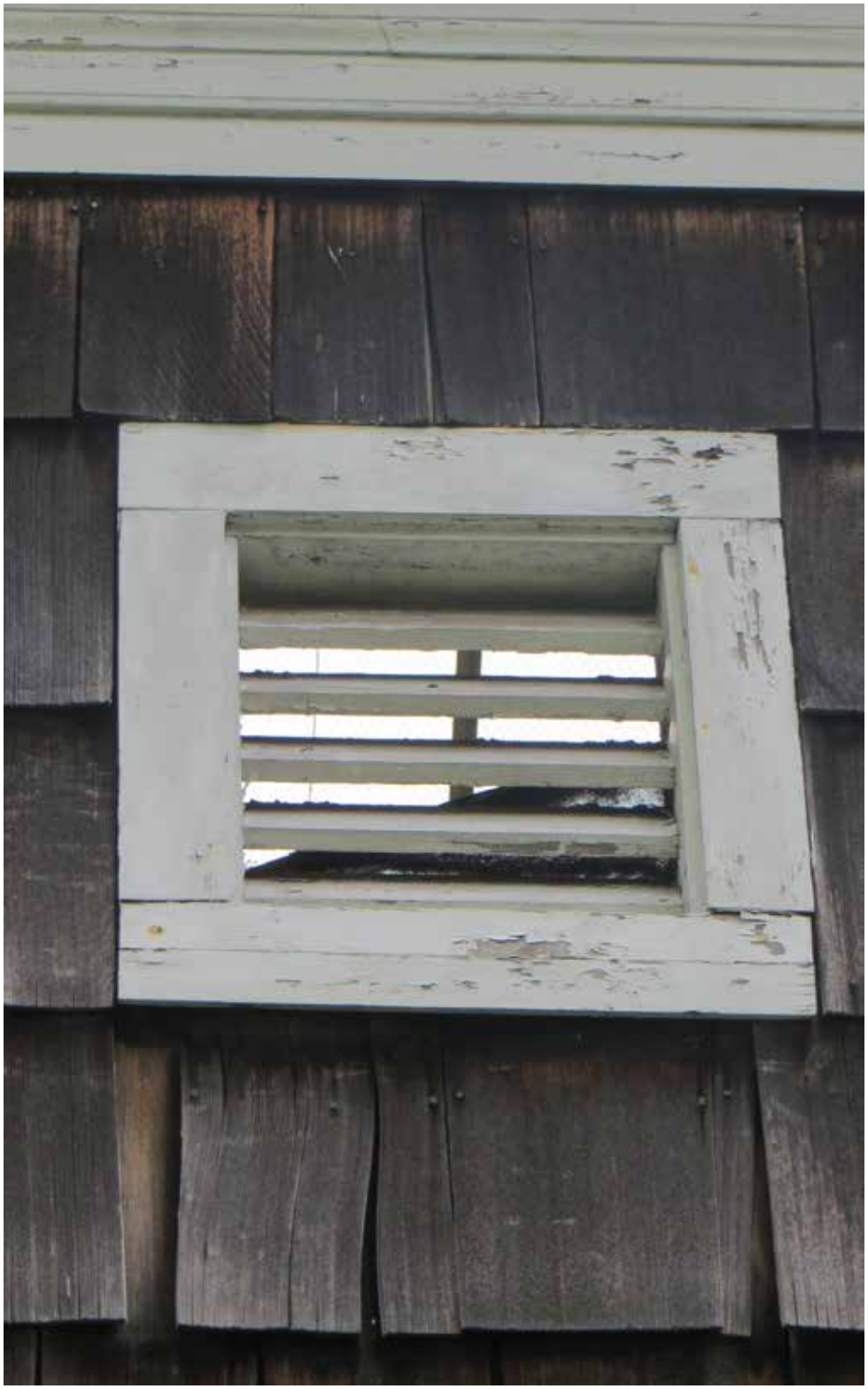
PHOTO - 04

East Elevation - E1 (left)

Shingle siding in need of Replacement in-kind.
Upper-wall louvered vent in need of Repair and Rehabilitation.

PHOTO - 05

East Elevation - E1 (left)



Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 06

East Elevation - E1 (left)

Mid-wall stringcourse in need of Rehabilitation and Repair. Note scalloped cutout where original round downspout was once present.

PHOTO - 07.1

East Elevation - E2 (center)

Rotted watertable trim in need of Replacement. Consider decay-resistant substitute material.

PHOTO - 07.2

East Elevation - E2 (center)

Rotted watertable trim in need of Replacement- consider decay-resistant substitute material.

PHOTO - 08.1

East Elevation - E2 (center)

Shingle siding in need of Replacement.
Decayed watertable trim in need of Rehabilitation and Repair.

PHOTO - 08.2

East Elevation - E2 (center)

Shingle siding in need of Replacement.
Decayed watertable trim in need of Rehabilitation and Repair.
Trellis in need of Repair and Rehabilitation.

PHOTO - 09.1

East Elevation - E2 (center)

Window in need of Rehabilitation and Repair.

PHOTO - 09.2

East Elevation - E2 (center)

Window in need of Rehabilitation and Repair.

PHOTO - 09.3

East Elevation - E2 (center)

Window sash in need of Rehabilitation as part of the re-glazing process.

PHOTO - 09.4

East Elevation - E2 (center)

Window in need of Rehabilitation and Repair.

PHOTO - 10.1

East Elevation - E2 (center)

Trellis in need of Rehabilitation and Repair.

PHOTO - 10.2

East Elevation - E2 (center)

Trellis in need of Rehabilitation and Repair.

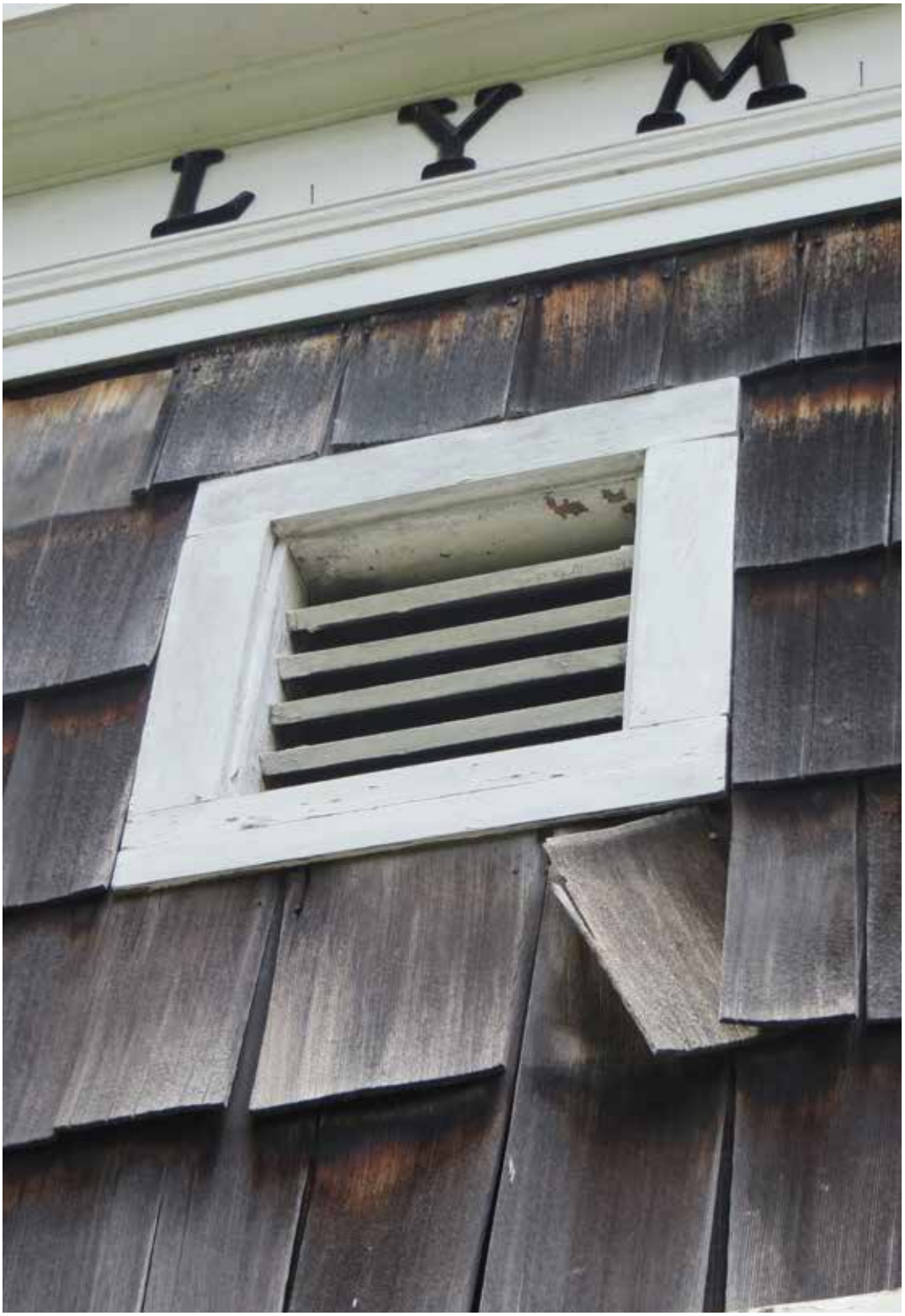
PHOTO - 11.1

East Elevation - E2 (center)

Shingle siding in need of Replacement.

PHOTO - 11.2

East Elevation - E2 (center)



Shingle siding in need of Replacement.
Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 12

East Elevation - E2 (center)

Frieze, soffit, cornice, and gable wall siding in need of Rehabilitation. Note rusted flashing in need of Replacement.
Note 2nd letter “S” in need of inverting/straightening.
Consider relocating/replacing fire alarm & strobe devices (subject to Fire Marshal approval).

PHOTO - 13

East Elevation - E2 (center)

Shingle siding in need of Replacement.

PHOTO - 14

East Elevation - E2 (center)

Trellis and mid-wall stringcourse trim in need of Rehabilitation and Repair.
Note exposed electrical conduit- consider running concealed within wall.

PHOTO - 15.1

East Elevation - E2 (center)

Window sash in need of Rehabilitation as part of re-glazing process.

PHOTO - 15.2

East Elevation - E2 (center)

Window in need of Rehabilitation and Repair.
Warped & twisted sill in need of Replacement.

PHOTO - 15.3

East Elevation - E2 (center)

Window in need of Rehabilitation.
Crudely patched hole to be addressed as part of re-siding operation.

PHOTO - 16

East Elevation - E2 (center)

Rotted watertable trim in need of Replacement- consider decay-resistant substitute material.

PHOTO - 17

East Elevation - E2 (center)

Exterior shutter-doors in need of Rehabilitation and Repair.
Inner doors, frame, and sill to be modified as part of Fire Safety Code and Accessibility Code-related reconfiguration of Main Entry.

PHOTO - 18

East Elevation - E3 (right)

Frieze, soffit, and cornice trim in need of Rehabilitation.

PHOTO - 19

East Elevation - E3 (right)

Mid-wall stringcourse in need of Rehabilitation and Repair. Note scalloped cutout where original round downspout was once present.

PHOTO - 20

East Elevation - E3 (right)

Damaged /decayed shingle siding in need of Replacement.

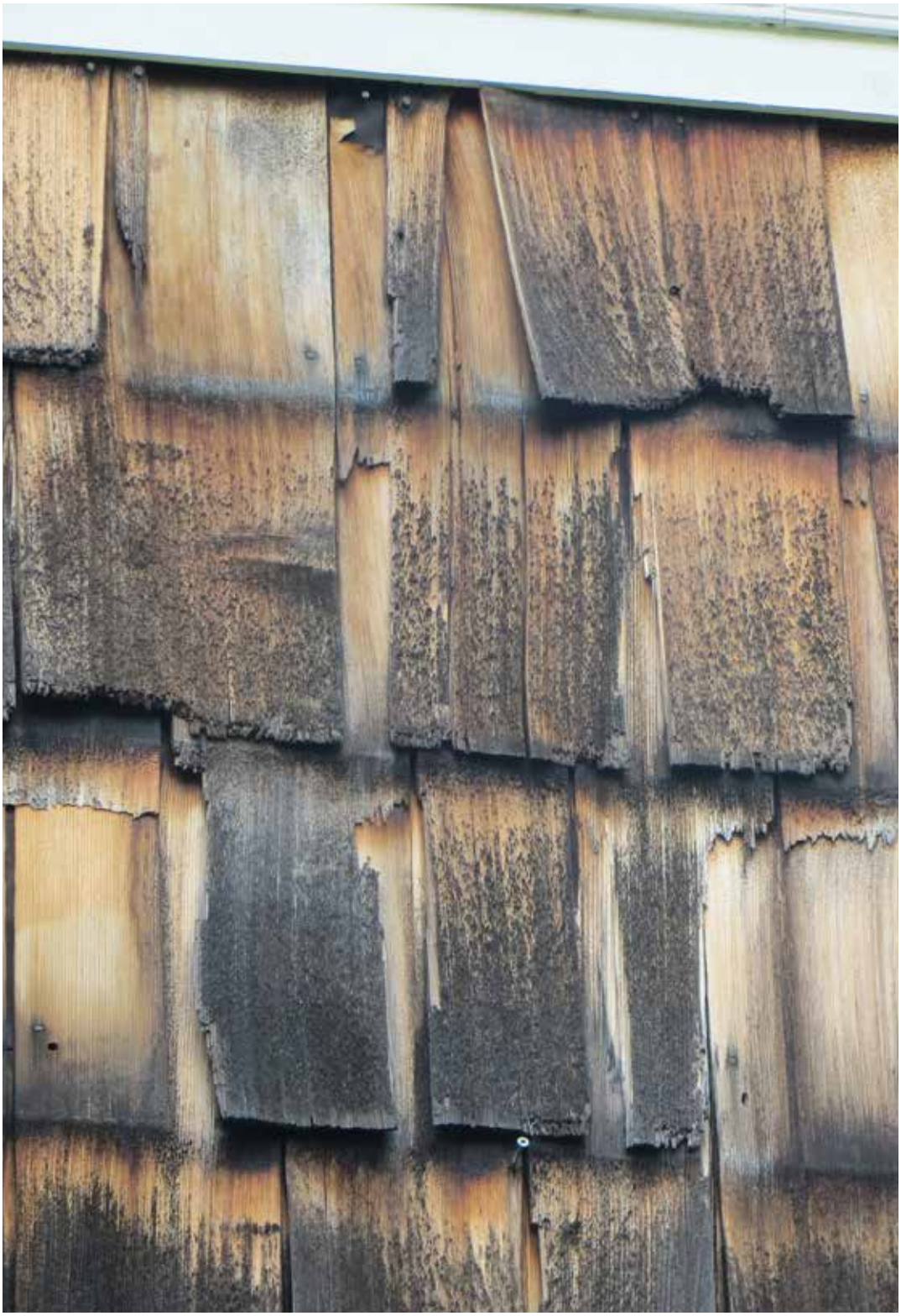
PHOTO - 21.1

East Elevation - E3 (right)

Damaged /decayed shingle siding in need of Replacement.
Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 21.2

East Elevation - E3 (right)



Damaged /decayed shingle siding in need of Replacement.

PHOTO - 22

East Elevation - E3 (right)

Damaged /decayed shingle siding in need of Replacement.

PHOTO - 23

East Elevation - E3 (right)

Decayed mid-wall stringcourse in need of Repair.

PHOTO - 24

East Elevation - E3 (right)

Decayed mid-wall stringcourse in need of Rehabilitation and Repair.

PHOTO - 25

North Elevation - N1 (left)

Frieze, soffits, cornices in need of Rehabilitation.

PHOTO - 26

North Elevation - N1 (left)

Mid-wall stringcourse trim in need of Rehabilitation.

PHOTO - 27

North Elevation - N1 (left)

Upper-wall louvered vent in need of Rehabilitation and Repair

PHOTO - 28.1

North Elevation - N1 (left)

Gable-end frieze, soffits, cornices, and siding in need of Rehabilitation.
Note rusted flashing in need of Replacement.
Consider replacing square metal louver with round wood louver to match original (powered ventilation can remain / be adapted.

PHOTO - 28.2

North Elevation - N1 (left)

Gable-end frieze, soffits, cornices, and siding in need of Rehabilitation. Note rusted flashing in need of Replacement.

PHOTO - 29

North Elevation - N1 (left)

Gable-end frieze, soffits, cornices, and siding in need of Rehabilitation.
Note rusted flashing in need of Replacement.
Consider consolidating Electrical Service entrance and concealing its feed.

PHOTO - 30

North Elevation - N1 (left)

Damaged and missing mid-wall stringcourse trim in need of Rehabilitation and Repair.
Consider extending stringcourse around entire west face of original 1921 building.

PHOTO - 31

North Elevation - N1 (left)

Holes/damage in siding to be addresses as part of the shingle Replacement operation.

PHOTO - 32

North Elevation - N1 (left)

Decayed watertable trim, further compromised by ferrous metal attachment hardware, in need of Rehabilitation or Repair.

PHOTO - 33

North Elevation - N1 (left)

Lower-wall louvered vent in need of Rehabilitation and Repair, including internal ‘blanking-off’. Consider consolidation of Electric Meters and concealment of its feed.

PHOTO - 34

North Elevation - N1 (left)

Re-configure A/C electrical feed and Telephone/Data feed for enhanced security/safety, and for overall neater appearance.

PHOTO - 35

North Elevation - N2 (center)

Lower level north Exit Door (and Transom) in need of Replacement to provide code-legal egress, and to address thermal, and appearance issues.

PHOTO - 36.1

North Elevation - N2 (center)

Condensate drain near lower level north Exit Door may no longer be in service; if so, it can be abandoned & removed. If not, options may exit to manage the condensate within the building.

PHOTO - 36.2

North Elevation - N2 (center)

Lower level north Exit Door in need of Replacement to provide code-legal egress, and to address thermal, and appearance issues.

PHOTO - 37.1

North Elevation - N2 (center)

Vinyl hopper windows and sill at Art Instruction Studio in need of Replacement to address water-intrusion, thermal, and appearance issues.

PHOTO - 37.2

North Elevation - N2 (center)

Vinyl hopper windows and sill at Art Instruction Studio in need of Replacement to address water-intrusion, thermal, and appearance issues.

PHOTO - 38

North Elevation - N2 (center)

Water-stained concrete parging at Art Instruction Studio in need of cleaning, Repair, and re-finishing with solid-body penetrating stain. Additionally, drainage issue require further investigation and resolution.

PHOTO - 39

North Elevation - N2 (center)

Ad-hoc surface-mounted rainwater conductor atop Art Instruction Studio roof.

PHOTO - 40.1

North Elevation - N3 (right)

Decayed shingle siding in need of Replacement.
Wood trim in need of Rehabilitation.

PHOTO - 40.2

North Elevation - N3 (right)

Decayed shingle siding in need of Replacement.
Wood trim in need of Rehabilitation.

PHOTO - 40.1

North Elevation - N3 (right)

Wood / plywood ceiling and soffit below Goodman Gallery in need of Replacement.

PHOTO - 41.1

North Elevation - N3 (right)

Wood / plywood ceiling and soffit below Goodman Gallery in need of Replacement.

PHOTO - 41.2

North Elevation - N3 (right)

Wood / plywood ceiling and soffit below Goodman Gallery in need of Replacement.

PHOTO - 42

North Elevation - N3 (right)

Rotted stair from outdoor deck in need of Replacement and reconfiguration due to Fire Safety Code egress requirements.

PHOTO - 43

North Elevation - N3 (right)

Shingle siding in need of Replacement.
Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 44

North Elevation - N3 (right)

Soffit and cornice trim in need of Rehabilitation and Repair.

PHOTO - 45

West Elevation - W1 (left)

Frieze, soffit and cornice trim in need of Rehabilitation and Repair.
Consider extending Frieze around existing rear face of original 1921 building.

PHOTO - 46

West Elevation - W1 (left)

Soffit and cornice trim in need of Rehabilitation and Repair.
Upper-wall louvered vents in need of Rehabilitation and Repair.
Shingle Siding in need of Repair or Replacement.

PHOTO - 47

West Elevation - W1 (left)

Ad-hoc flashing at end wall of skylight at Art Instruction Studio. Consider removal of these skylights.

PHOTO - 48

West Elevation - W1 (left)

Damaged mortar near lower level north exit door requires re-pointing.

PHOTO - 49

West Elevation - W1 (left)

Water-stained concrete parging at Art Instruction Studio in need of cleaning, Repair, and re-finishing with solid-body penetrating stain. Additionally, drainage issue require further investigation and resolution.

PHOTO - 50

West Elevation - W1 (left)

Exit door from Art Instruction Studio in need of Replacement.
Exposed low- and line-voltage wiring should be concealed or abandoned if no longer in use.

PHOTO - 51

West Elevation - W1 (left)

Exit door from Art Instruction Studio in need of Replacement. Fire Safety Code requires a paved pathway leading to a ‘public way’.

PHOTO - 52

West Elevation - W1 (left)

Soffit and cornice trim in need of Rehabilitation and Repair.

PHOTO - 53.1

West Elevation - W2 (center)

Doors leading from Goodman Gallery to outdoor deck are not Fire Safety Code compliant and in need of Replacement and reconfiguration to serve as a legal exit.

PHOTO - 53.2

West Elevation - W2 (center)

Trim at doors leading from Goodman Gallery to outdoor deck in need of Rehabilitation and Repair.

PHOTO - 53.3

West Elevation - W2 (center)

Outdoor deck and railing at rear of Goodman Gallery is structurally failed and in need of complete reconfiguration to serve as a legal exit way.

PHOTO - 53.4

West Elevation - W2 (center)

Outdoor deck and railing at rear of Goodman Gallery is structurally failed and in need of complete reconfiguration to serve as a legal exit way

PHOTO - 54

West Elevation - W2 (center)

Outdoor deck and railing at rear of Goodman Gallery is structurally failed and in need of complete reconfiguration to serve as a legal exit way

PHOTO - 55

West Elevation - W2 (center)

Outdoor deck and railing at rear of Goodman Gallery is structurally failed and in need of complete reconfiguration to serve as a legal exit way

PHOTO - 56

West Elevation - W2 (center)

Siding, Louvers, and vents below Goodman Gallery are in need of Rehabilitation and Repair, and potential reconfiguration

PHOTO - 57

West Elevation - W2 (center)

Thru-wall A/C unit in need of professional reinstallation for neat appearance and to deter vermin infestation.

PHOTO - 58.1

West Elevation - W2 (center)

Wood trim at rear of building near outdoor deck in need of Rehabilitation. When deck is reconfigured and rebuilt, the trim can be extended and cohesively integrated.

PHOTO - 58.2

West Elevation - W2 (center)

Watertable trim in need of Rehabilitation and Repair. Consider decay-resistant substitute material. Note rectangular downspouts which are not original.

PHOTO - 59.1

West Elevation - W3 (right)

Door from Catering Kitchen in need of replacement. Consider decay-resistant substitute material for sill and trim.

PHOTO - 59.2

West Elevation - W3 (right)

Door from Catering Kitchen in need of replacement. Consider decay-resistant substitute material for sill and trim.

PHOTO - 59.3

West Elevation - W3 (right)

Door from Catering Kitchen in need of replacement. Consider decay-resistant substitute material for sill and trim.

PHOTO - 60

West Elevation - W3 (right)

Electrical and Refrigerant Feeds to A/C Condenser should be run concealed below grade to deter potential damage and vandalism.

PHOTO - 61.1

West Elevation - W3 (right)

Mid-wall stringcourse trim in need of Rehabilitation and Repair.
Consider extending stringcourse around entire west face of original 1921 building.

PHOTO - 61.2

West Elevation - W3 (right)

Frieze & mid-wall stringcourse trim in need of Rehabilitation & Repair. Consider extending frieze and stringcourse around entire west face of original 1921 building.

PHOTO - 62

West Elevation - W3 (right)

Soffit and cornice trim in need of Rehabilitation and Repair.

PHOTO - 63

West Elevation - W3 (right)

Shingle siding in need of Replacement.
Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 64

West Elevation - W3 (right)

Soffit and cornice trim in need of Rehabilitation and Repair.

PHOTO - 65

South Elevation - S1 (left)

Rotted stair from outdoor deck in need of Replacement and reconfiguration due to Fire Safety Code egress requirements.

PHOTO - 66.1

South Elevation - S1 (left)

Wood ceiling below Goodman Gallery in need of Replacement.

PHOTO - 66.2

South Elevation - S1 (left)

Wood ceiling below Goodman Gallery in need of Replacement.

PHOTO - 66.3

South Elevation - S1 (left)

Wood ceiling below Goodman Gallery in need of Replacement.

PHOTO - 67.1

South Elevation - S1 (left)

Badly deteriorated shingle siding in need of Replacement.

PHOTO - 67.2

South Elevation - S1 (left)

Badly deteriorated shingle siding in need of Replacement.

PHOTO - 68

South Elevation - S1 (left)

Badly deteriorated shingle siding in need of Replacement.
Original round louvered attic vent in need of Rehabilitation.

PHOTO - 69

South Elevation - S1 (left)

Badly deteriorated shingle siding in need of Replacement.
Upper-wall louvered vent in need of Rehabilitation and Repair.

PHOTO - 70

South Elevation - S1 (left)

Badly deteriorated shingle siding in need of Replacement.

PHOTO - 71

South Elevation - S2 (center)

Watertable trim in need of Repair or Replacement- consider decay-resistant substitute material. Note rectangular downspouts which are not original.

PHOTO - 72

South Elevation - S2 (center)

Frieze, soffit, and cornice trim in need of Rehabilitation.

PHOTO - 73

South Elevation - S2 (center)

Insect infestation and floodlights at Southwest Entry. The architectural detailing of this 1970's addition is clumsy and inappropriate; strong consideration should be given to modifying it to more closely match the detailing of the original Main Entry.

PHOTO - 74

South Elevation - S2 (center)

Southwest Entry. The architectural detailing of this 1970's addition is clumsy and inappropriate; strong consideration should be given to modifying it to more closely match the detailing of the original Main Entry.

PHOTO - 75

South Elevation - S2 (center)

Watertable trim elements at Southwest Entry are very close to grade, promoting decay and damage. Consider a decay-resistant substitute material.

PHOTO - 76

South Elevation - S2 (center)

Watertable trim elements and shingle siding near Southwest Entry are very close to grade, promoting decay and damage. Consider a decay-resistant substitute material.

PHOTO - 77

South Elevation - S2 (center)

Single-pane Skylights at the main roof are nearing the end of their expected service life, and in need of Repair or Replacement. Ongoing inspection and maintenance is required.

PHOTO - 78

South Elevation - S3 (right)

Watertable trim in need of Repair or Replacement. Consider using a decay-resistant substitute material.

PHOTO - 79

South Elevation - S3 (right)

Watertable trim in need of Repair or Replacement. Consider a decay-resistant substitute material.

PHOTO - 80

South Elevation - S3 (right)

Mid-wall stringcourse trim in need of Rehabilitation or Repair.

PHOTO - 81

South Elevation - S3 (right)

Upper-wall louvered vent in need of Rehabilitation or Repair.

PHOTO - 82

South Elevation - S3 (right)

Frieze, soffit, and cornice trim in need of Rehabilitation and Repair. Consider replacing or relocating floodlights.

PHOTO - 83

South Elevation - S3 (right)

Rusted flashing in need of Replacement.
Consider replacing square metal louver with round wood louver to match original (powered ventilation can remain / be adapted.

PHOTO - 84

South Elevation - S3 (right)

Frieze, soffit, and cornice trim in need of Rehabilitation and Repair. Consider replacing or relocating floodlights.

PHOTO - 85

South Elevation - S3 (right)

Mid-wall stringcourse trim in need of Rehabilitation or Repair.

PHOTO - 86

South Elevation - S3 (right)

Mid-wall stringcourse trim in need of Rehabilitation or Repair.

PHOTO - 87

South Elevation - S3 (right)

PHOTO - 88

South Elevation - S3 (right)

Rotted Watertable trim in need of Replacement. Consider decay-resisitent substitute material