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2013

## Fuller Farmstead: Reuse & Rehabilitation Feasibility Report

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# The Fuller Farmstead

Reuse and Rehabilitation  
Feasibility Report

*Academic Partner:*  
School of Architecture, Art  
and Historic Preservation

*Community Partner:*  
The Barnstable Land Trust,  
Barnstable, MA

Fall 2013





# The Roger Williams University Community Partnerships Center

The Roger Williams University (RWU) Community Partnerships Center (CPC) provides project-based assistance to non-profit organizations, government agencies and low- and moderate-income communities in Rhode Island and Southeastern Massachusetts. Our mission is to undertake and complete projects that will benefit the local community while providing RWU students with experience in real-world projects that deepen their academic experiences.

CPC projects draw upon the skills and experience of students and faculty from RWU programs in areas such as:

- American Studies
- Architecture and Urban Design
- Business
- Community Development
- Education
- Engineering and Construction Management
- Environmental Science and Sustainability
- Finance

- Graphic Design
- Historic Preservation
- History
- Justice Studies
- Law
- Marketing and Communications
- Political Science
- Psychology
- Public Administration
- Public Relations
- Sustainable Studies
- Visual Arts and Digital Media
- Writing Studies

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## Introduction

The Fuller Farmstead, located along Route 149 in Marstons Mills—a village of Barnstable, Massachusetts—is a 19th century farmhouse, which was home to the Fuller family for over 140 years. Until 2012, the house maintained its original use as a residential structure. The building maintains a large array of the structure's original elements and aesthetic values contributing to the cultural value of the community.



## Methodology

The research presented in this report was done in fulfillment of course requirements for HP 681 - Historic Rehabilitation Workshop and HP 384 - Preservation Planning Workshop in the Roger Williams University (RWU) Historic Preservation program. The work has been completed through coordination with the RWU Community Partnerships Center. The outcomes presented in this report are the result of work completed from September to December 2013. Several site visits occurred.

The process adopted during this project was an approach used by design and preservation professionals planning for the rehabilitation of an historic structure. The methodology included:

- Site Investigation and Existing Conditions Documentation
- Historical Research
- Program Development
- Rehabilitation Plan



Shed interior.



# History and Significance

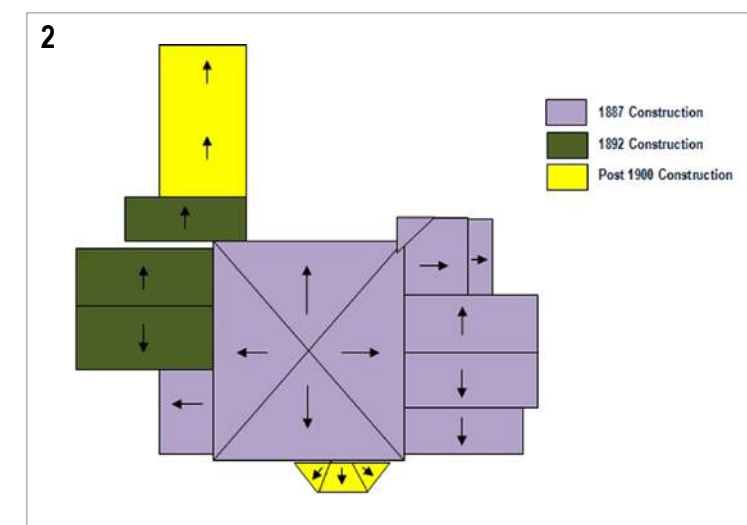
Fuller Farm, one of the last working farms on Cape Cod, was originally farmed by the Hamblin family in the early 19th century. The original homestead on the land was located to the northwest of the existing structure and was owned by Lewis Hamblin (1768-1838) and his wife Abigail. The land was divided between two of his sons, Stephen and Calvin Hamblin. Calvin's daughter, Olive B., later inherited both parcels of land left by her father and uncle.



According to *The Barnstable Patriot* newspaper, in September 1887, the house caught fire after Olive Hamblin left the iron on, and it was rebuilt by that November with the help of family and neighbors. In 1892, the south wing was constructed to create a dual occupancy home, which would be occupied by Calvin and his wife, while the north wing would be occupied by Olive's son Ansel Austin and his wife.

After Olive's death in 1909, Fuller Farm Estate was conveyed to Olive's husband, Ansel E. Fuller. Following his death in 1924, their three children, Ansel Austin, Calvin and Caroline, inherited the estate. Ansel Austin inherited the south parcel, Calvin inherited one acre of cranberry bog, and Caroline inherited one acre of bog. The siblings continued farming the land and maintained the cranberry bogs on the estate.

In 1944, Caroline conveyed her share of land to her brother Calvin, and Ansel Austin transferred his 2/3 land interest to his son Alfred and his wife Barbara. In



1959, Calvin died and his children, Carroll and Ada, became the sole heirs to his portion of the estate. In 1964, Carroll and Ada conveyed their third of the land to Alfred and Barbara Fuller.

In 1973, 1.7 acres of the waterfront area along Middle Pond were sold to Mark and Lilian Budd; however, by 1975, all land was sold to and owned by Alfred and Barbara Fuller. Alfred continued to run the farm until his death in 2002. In November 2012, The Barnstable Land Trust bought the property and 23+ acres from Barbara Fuller.

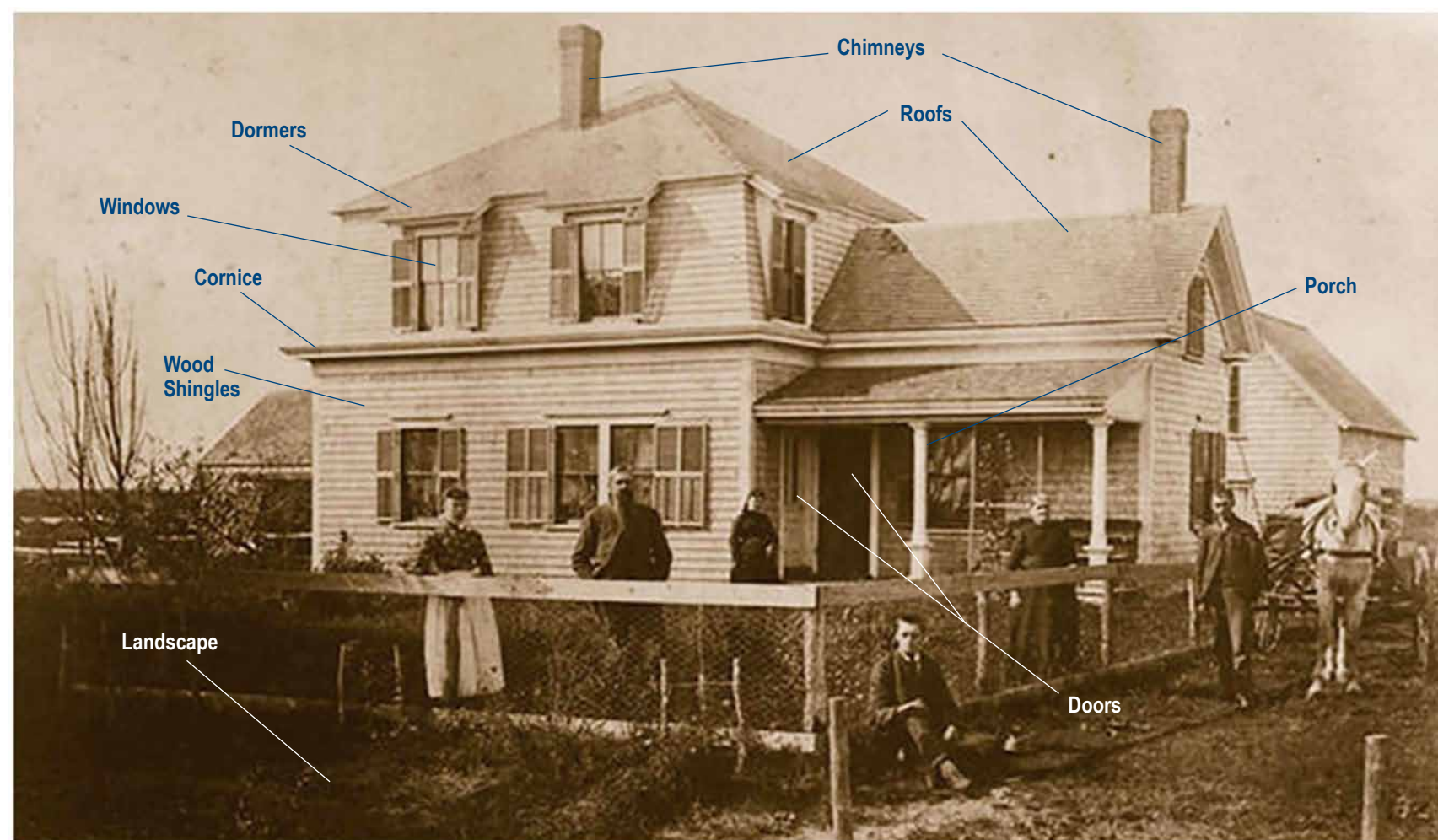
1. Archival photograph of Fuller family members courtesy Marstons Mills Historical Society.

2. Diagram showing the periods of construction to the house.

The period of significance for Fuller Farm is 1887 to 1950, reflecting the timeframe in which Fuller Farm was an active agricultural site.

Fuller Farm is situated on the scenic road leading into the village of Marstons Mills, an area in the 1920s and 1930s primarily known for its dairy farms and wildlife, such as flocks of wild turkey and bluebirds. The community recognizes the architectural style of Fuller Farm as a landmark along Route 149.

Fuller Farm was one of the first mansard-style roofed structures on Cape Cod, a building style unique to the area. The outer interior walls are architecturally significant as a reflection of the composite layering of lives that occupied the structure for over 120 years. Some of the character-defining features of the building are pointed out in this historic photo.



Ca. 1887: Courtesy of Marston Mills Historical Society.



## Existing Conditions

This two-story, mansard and gabled roofed, unpainted cedar shingled building, irregular in shape, was originally constructed in 1887 as a residential dwelling for the Fuller family.

The core square portion of the structure has a mansard roof with two two-story gabled wings extending north and south from the core. It features randomly spaced, rectangular shaped, two-over-two double-hung sash cylinder glass windows on the first and second floors: five on the north elevation, five on the south elevation, nine on the west elevation and seven on east elevation, with an additional four as part of a bay window.

The building has three brick chimneys (with two visible) and two exterior wood panel porches.

The interior space has a simple wooden staircase with alternating decorative railings. The floors are constructed with wood planks. The walls and ceilings have been covered with horsehair plaster over wood sheathing. The south side exterior façade has been altered with a still-existing addition that was added circa 1892.

The interior first floor has been divided into 11 spaces, while the second floor has been divided into six spaces, including the two attics. On the



first floor, the living room has been altered with the addition of the bay window on the east elevation; however, it is unknown when this window was added to the property. The first floor contains no original wall coverings, only wallpapers dated from the 1920s. The second floor maintains the original plaster and painted walls. All the floors throughout the property have been covered with various type of secondary covering.

The site also has two out-buildings, including a privy and a shed. Both buildings are constructed of unpainted wood shingles. The shed was used in addition to the

barn (demolished in 1980) as a workspace. The privy was essential to the family before indoor plumbing was installed inside the main structure.

There are multiple site restraints on Fuller Farm, including the possible restraints via the southern abutment along Alpine Way, and the public view shed places an aesthetic restraint on the property. It is unknown what the soil and ledge properties are on the site and what impact any work on the site to include new septic or a basement would have on the water table.

The Fuller Farm site is on a level area with land gently sloping toward the west. There is a gentle rising (25 ft.) band between the house and the lake. The house has a variety of vegetation with a mix of brush and several mature trees. The house is currently in close proximity to the main road (approximately 35 ft.), and the southern bounds of the property are shared.



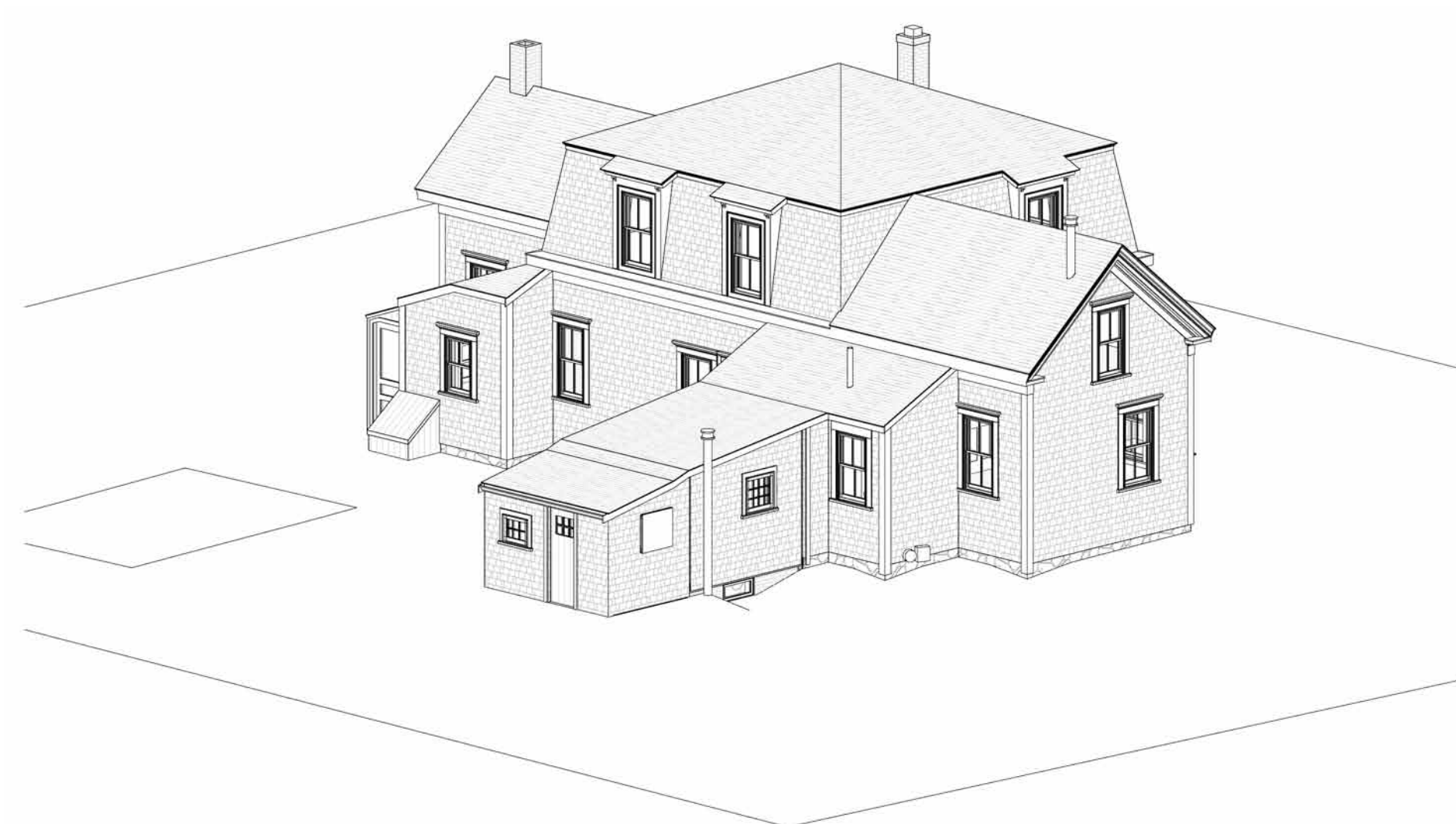
1. View of the Fuller Farm property.

2. Fuller Farm and its surrounding environment. Photo: Google Earth.

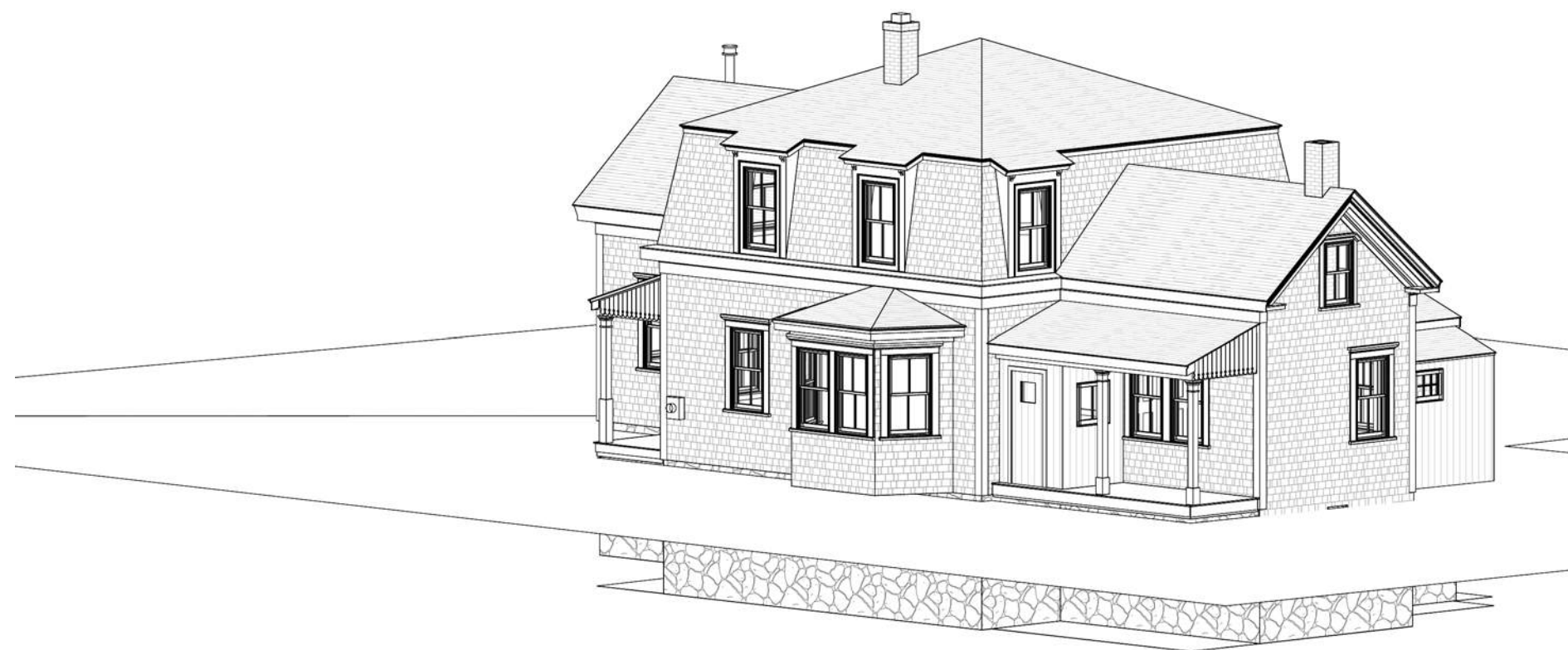


Southeast perspective.  
Model taken courtesy of:  
INTEGRATA Architecture  
& Construction.





Southwest perspective.  
Model taken courtesy of:  
INTEGRATA Architecture  
& Construction.



Northeast perspective.  
Model taken courtesy of:  
INTEGRATA Architecture  
& Construction.



# Existing Conditions

## Exterior

### Wood Shingle Siding

- Shingles are in poor or fair condition.
- Shingles are attached with machine-manufactured cut nails.
- Approximately 75-80% of the shingles are missing or have weather damage.
- Shingles on the second floor are rotting and in poor condition.
- There is no base trim or splash board.
- There is no vapor barrier between the shingles and sheathing.

### Exterior Architectural Trim

- Exterior trim shows signs of wood rot, extensive moisture damage and splitting.
- Evidence of damage from animal nesting is seen along the fascia on the roof line.
- Trim paint exhibits signs of wear and oxidation.
- First floor trim has little paint, while trim on the second floor has no paint.
- East elevation bead board is sinking and in poor condition.



1. 75-80% of the wooden shingles are damaged or missing.

2. Architectural trim shows wood rot, moisture damage, wear and oxidation.



## Porches

- East porch is missing trim boards.
- Porch indicates moisture and insect damage.
- Porch sills supported on concrete piers.
- Porch posts are missing ornamentation trim.



- Northeast pillar has holes approximately 1.5 inches in diameter.
- South porch failure to solitary porch post, sill and floor.
- South porch roof sags and pulls away approximately five inches from the structure.
- Porches have missing floorboards.
- Porches have enclosed entrances.

## Storm Windows

- Exterior wood sash storm windows are placed over windows.
- Storm windows show decay and failure, including: rotten sashes, broken glass and lack of glazing.
- Windows are not weather-tight or insulated.
- Two-over-two double-hung sash windows.
- Two-over-two double-hung sash windows have cylinder glass.
- All windows of this type on the structure show glazing failures, sash failures, broken panes and significant weathering.
- Sashes are in need of repair and rebuild.

- Northern elevation second-story window reflects sash deterioration from moisture seepage due to the chimney located immediately in front of the window opening.
- Eastern elevation second-story windows have broken glass and show significant moisture damage on the sills.

## Chimney

- Chimneys consist of two brick and one stove pipe.
- Chimney in northern ell shows signs of cracking and moisture damage.
- Chimney on southern ell is missing above the roof line.
- Flashing around all chimneys is in poor condition.
- Both brick chimneys show signs of being rebuilt within the last ten years; however, the mortar used looks to be Portland cement, which will cause brick deterioration and cracking.
- The profiles of the rebuilt chimneys are not true to the profiles indicated in the historic 1890 photo.



1. East porch sills are supported by concrete piers.
2. Storm windows show decay and failure.
3. Chimney in northern ell shows signs of cracking and moisture damage.





## Foundation

- The foundation includes round poles, roughly 10" tall and 8" in diameter, which are embedded within the walls. It is unknown how deep the poles run.
- Poles are located midway across the foundations walls and at the corners, but it is not apparent if the poles actually help support the structure.
- Currently, the sills rest unattached upon the poles.
- Foundation poles are extremely decayed.
- There is a hole approximately 10" wide from ground level to sill, located immediately below the double-hung windows in the central part of the western wall. This appears to have been made as an access path.
- The foundation has a point of failure in the southwest corner. Signs indicate that part of the foundation was removed to allow access under the new wing of the house. This hole is currently covered with rotting plywood.

## Asphalt Shingle Roof

- Roof consists of three-tab asphalt shingles in fair condition.

- Roofline has medium eave overhang, boxed cornice returns with a wide band of trim that meets with soffit and decorative molding.
- Flashing on west elevation near chimney needs to be replaced along the bricks.
- Asphalt roofing on west elevation is in good condition.
- Asphalt shingles on east elevation are in good condition.
- Branch impaled through lining is causing damage in the north ell.

## Exterior Ells

- Southwestern ell constructed at three different times.
- Moisture and weather have damaged the third part of the ell.
- Separation of second section of ell reveals horizontal planning.
- Southwest corner indicates structural failure.
- Window missing and replaced with plywood.
- Foundation consists of fieldstone, brick and cinder blocks.
- Second and third ells are in poor condition.



1. The exterior ell on the western elevation was constructed at three different times.

2. Portions of the south west corner foundation were removed, and the hole is covered with rotting plywood.



### Gutters

- Extending cornice along second-story mansard roof has plain surface.
- Uncertain if cornice boards conceal gutter system on east elevation of mansard roof.
- No indication of gutter or downspout system on other elevations.

### Landscape

- Landscape well maintained except for east elevation facing the road.
- Trees overlap and hit the roof and porch.
- Trees have growth and fungicides on them.
- Foundation of original barn still exists on the property.
- Other outbuildings include a shed and privy with wood shingles.
- Farmland and landscape are located west of the structure.



### Paint

- Paint exists on trim/cornice, doors and original shutters but is in poor condition.
- Paint predates 1970.



1. Cornice board may conceal gutter system.

2. East elevation has an overgrowth of trees with some hitting the house.



# Existing Conditions

## Interior

### Paint

- Unsure if interior paint is lead based.
- Paint can currently be found on some walls, trim and doors, but it is in poor condition and should be removed.

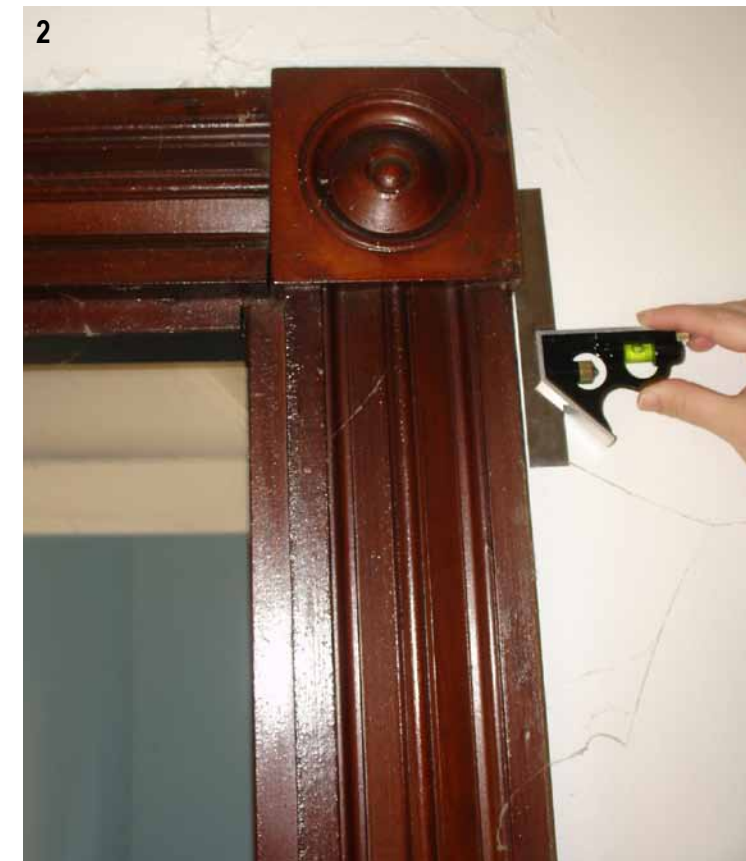
### Walls and Ceiling

- The ceiling and walls, with the exception of the north kitchen, show extensive cracking and multiple repairs to the plaster.
- Ceilings exhibit calcification and peeling of the paint over an estimated 80% of their surface.
- Walls have multiple layers of wallpaper, which has separated from the plaster in many areas.
- Ceiling in almost all rooms shows past history of water staining and cracking of the plaster.
- Northeast corner of the kitchen shows serious water damage. There is evidence of current interior water damage that has detectable moisture.



### Woodwork

- Significant interior woodwork along the exterior walls on the first floor.
- Window, castings and wainscoting is factory milled and originally varnished.
- Approximately 75% of architectural trim is covered with multiple layers of paint, which has alligatored with extensive peeling.
- First and second floor trim is painted flat swan board that shows varying stages of failure, including moisture damage and wear.



1. Walls have multiple layers of wallpaper; some areas exhibit water stains.

2. Interior contains original trim woodwork.

## Floors

- Interior of the structure is comprised of wood plank floors.
- Floors have been layered with various forms of coverings, including: carpet, paint, linoleum and varnish finishes.
- Unfinished natural wood planks lie underneath the coverings; they appear to be in good structural condition in the areas investigated. All coverings on the first floor will need to be removed in order to fully assess condition of the natural wood planks.
- On the second floor, coverings are in poor condition and need to be removed.

## Main Staircase

- There are 12 steps from the first floor to the second floor.
- Discoloration of the floor varnish indicates there were once treads on the steps.
- The staircase has a wraparound banister with two different style railings that create a pattern.
- The banister is in excellent condition.



- The staircase has one newel post and a hand-rail; both appear to be in good structural condition.
- Stairs are constructed of wood planking.

1. Main staircase on first floor shows discoloration.

2. Unfinished wood planks with secondary floor covering above.





## Electrical System

- The electrical system reflects different generations of wiring.
- The panel is a 150 amp maximum panel.
- The circuit panel is of the round glass fuse type, with large block main fuses.
- There are broken fuses in some circuit areas and fuses missing in others.
- The branch wiring is of three different vintages: cloth (possible), metal sheathed and Romex style.
- It's not possible to determine if any of the wire consists of aluminum rather than copper.

## HVAC System

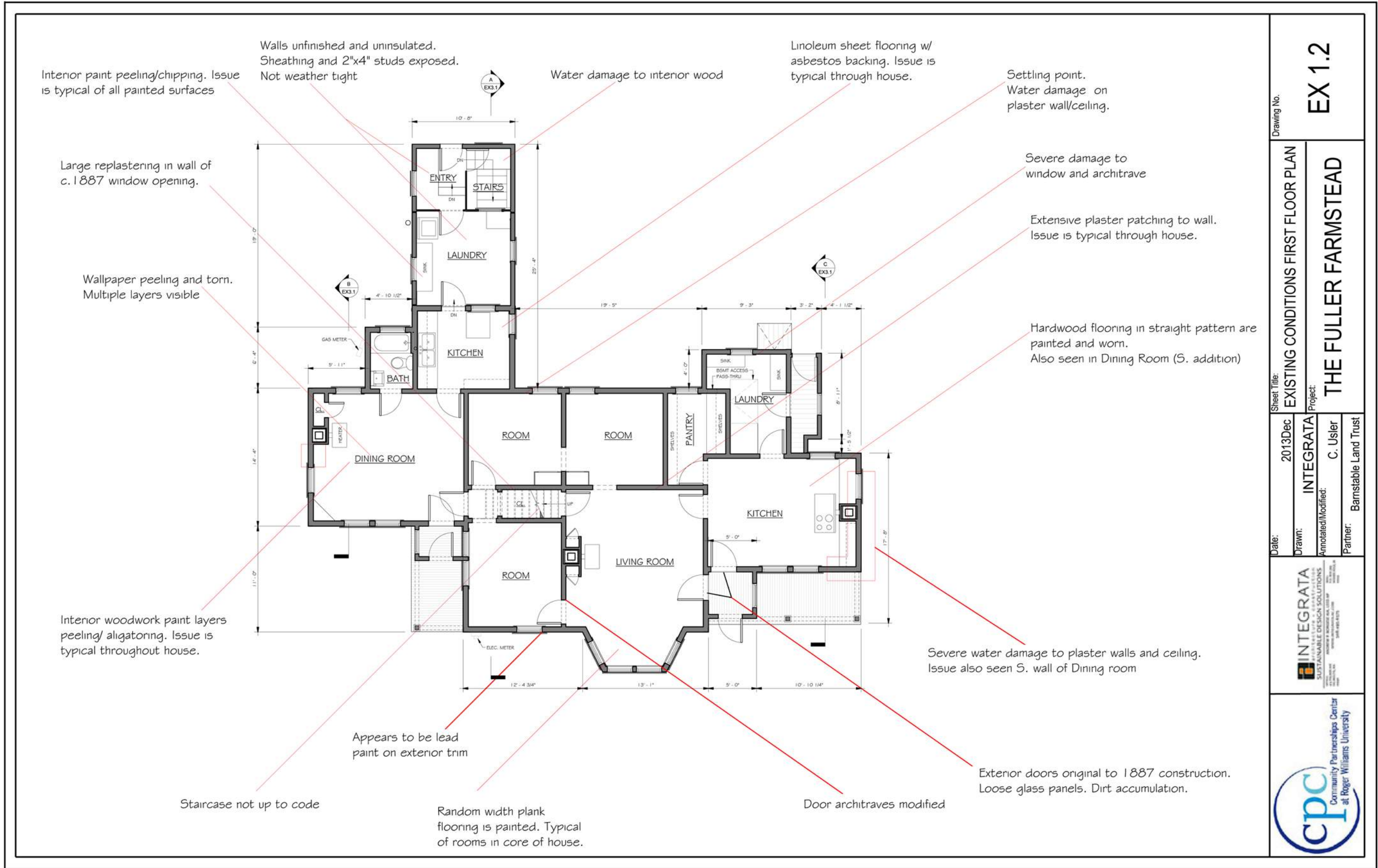
- Domestic hot water is supplied by a gas hot water heater.
- There is no indication of drainage in the basement area.
- Heater appears new.

- Lack of window coverings in area creates excessive moisture and temperature change.
- Gas lines are disconnected and not capped.
- An old well pump is located in the basement but has no D.C. motor and is not wired. Condition or size of the well area cannot be determined.



1. Gas hot water heater appears to be new.

2. Electrical panel is 150 amp maximum.



Drawing No.

EX 1.2

Sheet Title: EXISTING CONDITIONS FIRST FLOOR PLAN

Project: THE FULLER FARMSTEAD

Date: 2013Dec

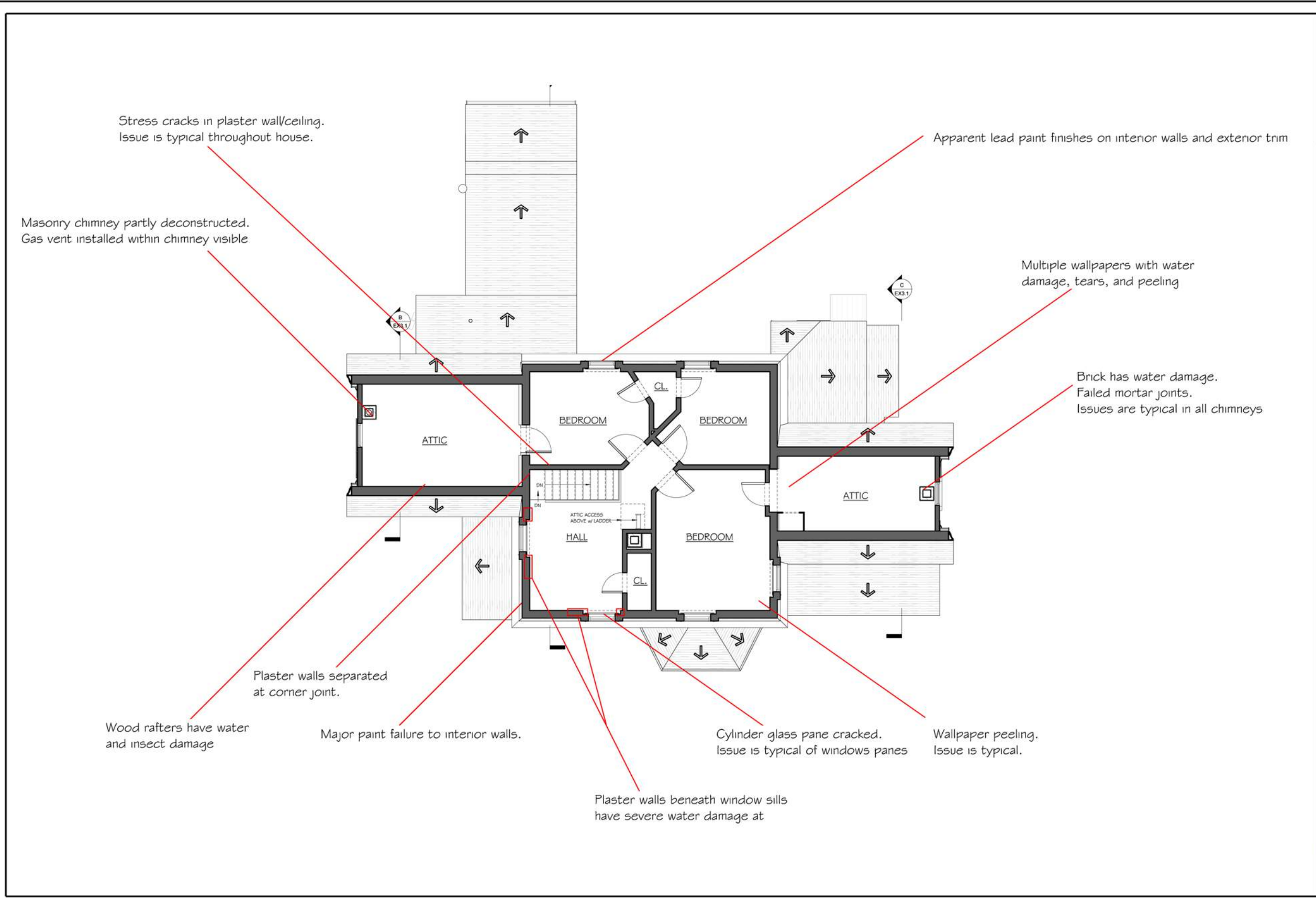
Drawn: INTEGRATA

Annotated/Modified: C. Usher

Partner: Barnstable Land Trust



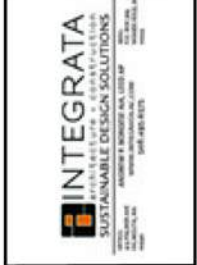




Drawing No.  
**EX 1.3**

Sheet Title: **EXISTING CONDITIONS SECOND FLOOR**  
Project: **THE FULLER FARMSTEAD**

Date: 2013 Dec  
Drawn: **INTEGRATA**  
Annotated/Modified: **C. Usler**  
Partner: **Barnstable Land Trust**



Windows have failing glazing putty and paint. Cylinder glass panes loose and/or cracked. Sash has loose and separating joints. Sash cords broken. Typical.

Masonry chimney stack has poor repair work.

Chimney top c. 1887 has been removed. Typical.

3-tab asphalt shingles are recent and in good condition. Typical.

Masonry chimney has water damage to brick and failing mortar joints. Accumulation of bio. growth, dirt, etc. Typical.

Cornice has extreme water damage and decay. Typical

Sheet metal fastened over cornice

Decorative trim weathered, damaged, improperly repainted. Typical

Trim and raking boards have crazing, peeling, and loss of paint. Soffit has hole and other damage

Cedar shingle siding (5"x6" exposure) is weathered, broken, cracked, cupping, or missing. Typical.

Wood trim is has water damage, holes, flaking paint and dirt accumulation. Typical.



Cedar shingle siding is recent.

Decking weathered & is not supporting load.

Porch detaching from house.

Storm Windows have rotting frames. Many also have crack panes of glass. Not weather tight - some barely attached. Typical.

Wood band board and decking has water damage, bio. growth and is significantly decayed. Typical.

Wooden porch posts are weathered, damaged, have failing paint and separating joints. Typical.

Drawing No.

EX 2.1

Sheet Title: EXISTING CONDITIONS EAST ELEVATION

Project: THE FULLER FARMSTEAD

Date: 2013Dec

Drawn: INTEGRATA

Annotated/Modified: C. Usler

Partner: Barnstable Land Trust





Window has total failure of glazing putty and paint. Cylinder glass panes have cracks. Accumulation of bio. growth, dirt and other natural elements on glass panes and along sill. Not weather tight. Typical.

3-tab asphalt shingles are recent and in good condition. Typical.

Masonry chimney stack has poor repair work.

Brick chimney has failing mortar joints. Accumulation of bio. growth, creosote, and dirt. Typical.

Improper flashing installation

Sheet metal fastened over cornice

Significant water damage. Cedar shingles damp and decaying.

Cedar shingle siding (5"x6" exposure) is weathered, broken, cracked, cupping, or missing. Typical.

Decorative trim weathered, damaged, improperly repainted. Typical.

Some panes have been replaced with sheet glass.

Storm Windows have rotting frames. Many also have crack panes of glass. Not weather tight - some barely attached. Typical.

Corner post bottom severely damaged and decaying

No foundation. Wood supports are decaying and cinderblocks crumbling

Wooden porch posts are weathered, damaged, have failing paint and separating joints. Typical.

Wood band board and decking has water damage, bio. growth and is significantly decayed. Typical.

Trim and raking boards have crazing, peeling, and loss of paint. Soffit has hole and other damage

Lean-to exterior beadboard has bio. growth and decay.

Wood framing members are decaying. Currently sagging and has no structural integrity.

SECOND FLOOR PLAN  
9' - 3 1/2"

FIRST FLOOR PLAN  
0' - 0"



Drawing No.

EX 2.2

Sheet Title: EXISTING CONDITIONS NORTH ELEVATION

Project: THE FULLER FARMSTEAD

Date: 2013 Dec

Drawn: INTEGRATA

Partner: Barnstable Land Trust



# Applicable Regulations

## Local Regulations

Residential Land Uses comprises the majority of Barnstable’s land area. According to zoning regulations, the current site must be analyzed for inappropriate use allowances, redevelopment permitting, open space and recreation needs and heritage preservation. Depending on the location, the expansion of existing residential development is limited by mandatory compliance with state and federal nitrogen discharge.

According to Barnstable’s Comprehensive Plan, community gathering spaces (village greens, common space and meetinghouses) that have witnessed historic and cultural gatherings that have shaped our history should determine if additional protections are needed. This can be figured through a mechanism such as securing landmark status or other similar processes.

Middle Pond was identified as the favorite view. The Town-owned lands that provide scenic views of the open rural character reminiscent of the old Marstons Mills are identifying features of this village and, indeed, of the whole town.

From Barnstable Comprehensive Plan: “At village meetings, residents expressed the opinion that they wanted the village to retain its rural and historic character. Protection of old farms is of concern to longtime residents, many of whom do not wish to see the old farmlands subdivided and developed. Residents do not want to see widening of historic roads.”

### **Cape Cod Commission:**

- Significant natural resources
- Wellhead protection areas
- Area pertaining directly to drinking water supply

### **Regional Land Use Vision:**

- Resource protection area

*Areas designated on the Regional Land Use Vision Map that warrant protection and where additional growth is not desired due to the presence of one or more sensitive resources. These resources shall include at a minimum...historic districts... Resource Protection Areas may also include but not be limited to wetlands, vernal pools, protected open space, and designated districts of Critical Planning Concern (DCPCs).*

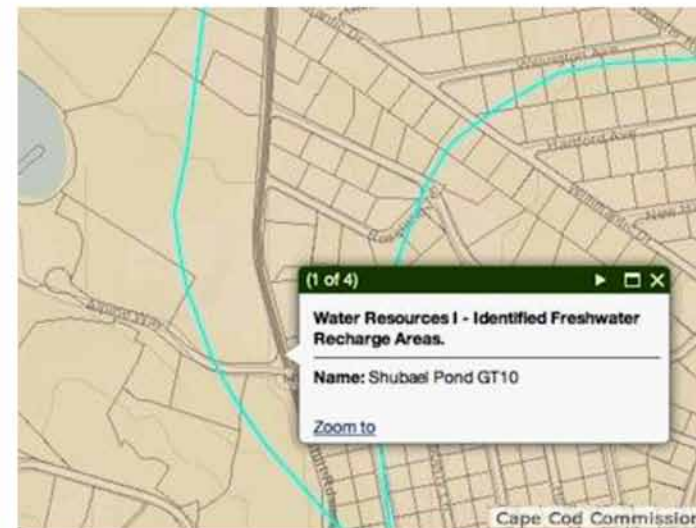
- Water Resources I
- Identified Freshwater Recharge Areas
- Watershed to Ponds
- Water Resources II
- Final US EPA TMDL Approval



Southern boundary road of the Fuller Farm property.



## Cape Cod Commission Regional Policy Plan 2009: Regulatory Maps



Barnstable County, Mass, Zoning Map:  
<http://www.town.barnstable.ma.us/gis/maps/TOWNZONE.pdf>

Cape Cod Commission Reg Maps:  
<http://cccommission.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=19cb46823afd4225b04d45604934a8c1>

# Program Needs

## Program Space Needs – Phase 1

Barnstable Land Trust has identified the following as their program needs for the first phase of the project.

- 10 total work stations with computer access.
- Private office spaces for:
  - Executive Director (space for intimate conversations).
  - Assistant Director (near office management/reception).
  - Director of Development (space for extra visitor).
  - Land Management (work table, 2-4 filing cabinets, two computer work stations).
  - Office Manager (reception/general office space).
- Meeting room for 25-30 people.
- Handicapped accessibility for bathrooms and forms of egress.
- Clearly defined entrance.

- Small kitchen or lunch area.
- Basement space (new foundation under main structure).
- Outdoor plumbing.
- Storage space for small equipment.
- Outbuildings: privy and shed.

## Program Space Needs – Phase 2

Barnstable Land Trust has identified the following as their program needs for the second phase of the project:

- Meeting space for 100 people.
- Apartment for property caretaker/intern.

| Recommended Area                        | Current Area (Sq. Ft.) | Current Room  | BLT Program Requirements   |
|---|------------------------|---|--|
|   |                        |   | 10 total work stations with computer access  |
| 100-150/160 sq. ft.                     | 215 sq. ft.            | NW Bedroom & SW Bedroom                                 | Executive Director Office (1 chair for visitor and small meeting table for 2-3 people) |
| 75-150 sq. ft.                          | 102 sq. ft.            | SE Room   | Assistant Director   |
| 75-150 sq. ft.                          | 154 sq. ft.            | NE Bedroom  | Director of Development  |
| 192 sq. ft.                             | 204 sq. ft.            | Dining Room   | Land Managment   |
| 131 sq. ft.                             | 201 sq. ft.            | NW 1 / SW 1 and pantry area                             | Office Manager, Reception, General Office Space  |
| * 3 waiting room seats (2 at 2 sq. ft.) |                        |   |  |
| * Space for writing and typing          |                        |   |  |
| * Space for filing                      |                        |   |  |
| 128 sq. ft. (16 sq. ft. per)            | 96 sq. ft.             | SE Hall & Closet Space                                  | Small Meeting/Workspace (6-8 people)   |
| 750 sq. ft.                             | 314.38 sq. ft.         | Living Room / North West when needed                    | Meeting Room (25-30 people)  |
| 31 sq. ft.                              | 31 sq. ft.             | Current Bathroom  | Handicapped (unisex) Bathroom  |
| 65 sq. ft.                              |                        | Incorporated into Meeting Room Space (org. living room) | Library  |
| * 3 bookshelves                         |                        |   |  |
| * 11 sq. ft. and workspace              |                        |   |  |
|   | TBD                    | West Elevation  | Clearly Defined Entrance   |
| 132 sq. ft.                             | 240 sq. ft.            | N Kitchen & N Laundry                                   | Small Kitchen/Lunch Area   |
| 1,100 sq. ft.                           | 999.68 sq. ft.         | Basement to be constructed under current building       | Basement Space (presentation preparation, storage)                                     |
| n/a                                     | Shed: 280 sq. ft.      |   | Outbuildings (privy, shed)   |
| na/a                                    | Privy: 49.82 sq. ft.   |   | Outbuildings (privy, shed)   |
|   |                        |   | Outdoor Plumbing (Landscaping & Maintenance, Outdoor Shower)                           |
|   |                        |   | Storage Space: Small (shovels, rakes, equipment)                                       |
| <b>2,924 sq. ft. (+/- 200 sq. ft.)</b>  | <b>2556 sq. ft.</b>    |   | <b>TOTAL</b>   |

Square footage allocation for program space.



# Precedent Study

## Kirchplatz Office and Residence

*Architect:* Oppenheim Architecture & Design,  
Swiss Studio Huesler Architekten  
*Images:* Courtesy of thisispaper.com



This 1743 farmhouse located in northern Switzerland was rehabbed into office space. Architects constructed an addition on the rear of the original structure to increase the mixed-use ability and to not disturb the view of the historic building from the street. Interior walls were removed to create better flow and functionality of the space for office and meeting use. The architects utilized sustainable practices and materials through salvage of historic fabric and energy efficient technology.

Views from the street and rear of the building show how the new addition was created without hindering appreciation of the historic architecture.



1,2. Office and meeting spaces.

3. View from the rear of the building shows the success of the new addition without hindering appreciation of the historic architecture.

## Bradley House

*Architect:* Uihlien-Wilson Architects

*Images:* Courtesy of Houzz.com and Brass Light Gallery

An 1860s farmhouse in Milwaukee, Wisconsin, was renovated on the property of the Lynden Sculpture Garden. Maintaining a large portion of the existing structure, while integrating sustainable building practices, allowed architects to create a new public space, which included a conference room, a large classroom/studio, a gallery and a glassed-in function area overlooking the patio.

Design challenges included the integration of a modern HVAC system, providing ADA accessibility and incorporating historic fixtures into an energy-efficient LEED building. The architect focused on sustainability for the property through the use of new technology and repurposing and recycling materials.

While additions were made to the house in the 1960s, Uihlien-Wilson Architects still needed to annex more space to the house to accommodate the required programming for the Lynden Sculpture Garden.



1,2. Exterior views of Bradley House.

3. Materials and fixtures exemplify the efforts to maintain the character of the original structure while looking bright and updated.



# Rehabilitation Plan

## Wood Shingles

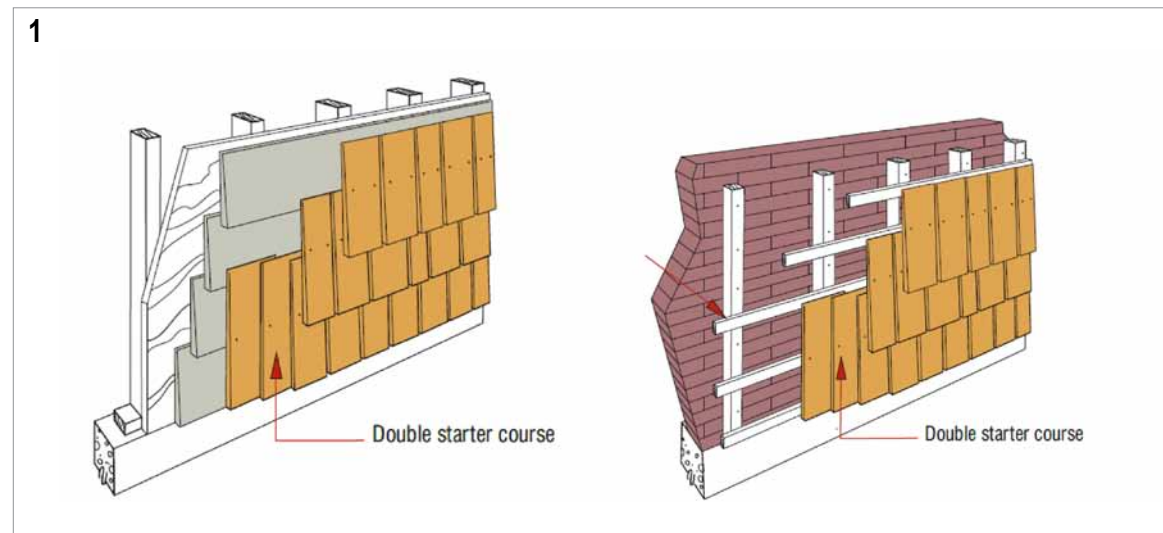
- Remove existing shingles.
- Replace damaged shingles in original starter course.
- Add layers of rosin paper (Trimaco Red Rosin Paper) to help with sheathing and contracting of shingles.
- Install new cedar shingles
  - **Option 1:** Cedar Shingle Panes: Shakerstown Webster Gray 004-ST semi-transparent cedar shingle panels.

- **Option 2:** Maibec Individual Eastern White Cedar Shingles.

- Shingles should be stained to match north elevation.

## Exterior Architecture Trim

- Replace sections where there is wood rot, extensive moisture damage and splitting.
- If a section has less than 20% rot, remove the damaged portion, seal with an epoxy-based sealer, fill, sand and finish.



1. Diagram of cedar shingle application.

2. Animal nesting holes to be sealed.

- If section has more than 20% rot, remove the damaged portion, attach new material with replacement wood – either salvaged or new.
- Seal all animal nesting and bird holes with Dutchman Patch.
- Remove loose, flaking or checking paint by removing surface edges. Using two coats of primer, apply a white final coat with latex satin finish paint.

**Option 1:** Procure salvaged trim elements from a restoration yard, such as Rudy's Brooklyn Restoration Supply in Brooklyn, CT. The utilization of salvaged trim elements will assure a correct dimensional match and, more importantly, provide older growth and stronger trim elements.

**Option 2:** The second option is to procure Appearance Grade Softwoods, Finish A Select. This will prove a knot and check-free face surface and the exclusion of sap wood. It will give the replacement trim a longer life in an exterior environment.

### Porches

- Reattach south porch to main structure.
- Replace porch sills with dimension lumber.
- Remove “chicken coop” entrance on east and south porch.
- Rehabilitate porch columns.
- Reattach/fabricate original porch ornamentation.
- Replace floors with similar wood planks.
- Stain/paint trim same as exterior.

### Storm Windows

- Remove storm windows and replace according to National Park Service Preservation Brief 9.
- Recommended products to replace existing storm windows include interior storms, ScreenItAgain or interior press-in-place snap-in storms.

### Windows

- Remove and repair sashes from windows.
- Repair sashes by repining loose cross rails, meeting rails, muntins and top rails.
- Scrape and repair wood deterioration on casings.



- Reconstruct missing wood portions with epoxy filler.
- Re-glaze panes and replace glass with period glass.
- Conform to correct putty bevel.
- Reassemble sashes in jams.
- Use unobstructed wood lugs at corners of sash and jam.
- Prime and paint window sashes to match exterior trim



1. South porch roof needs to be reattached to main structure.

2. Wood window sashes need to be repaired.



## Chimney

- Rebuild chimneys to current building code.
- New chimneys should match the 1887 profile of the property.
- Install new lead flashing.
- Dismantle north chimney to first floor, restack the bricks and installing new mortar.
- Rebuild south chimney to roofline.



## Foundation

- Program calls for a new foundation to be installed under the main structure to create a basement.
- Rubble façade should be added to replicate the original appearance.
- Replace wooden poles at corners/midpoints with concrete piers.
- Restack and recement stones.
- Fill access holes with stone/concrete that match the exterior of the structure.
- Recement and restack foundation at southeast corner.
- Construct angle iron frame with metal doors on southwest corner.

## Asphalt Shingle Roof

- Replace cupped or curled shingles with like shingle material.
- Check security and integrity of valley flashing.
- Replace and repair damaged or loose shingle pieces.

## Exterior Ells

- Second and third section of ell will be demolished.
- Retain first section of the ell, which has the fieldstone foundation.
- Install windows in remaining ell with matching windows from the rest of the structure.
- First section of the ell should be replanked and reshingled in line with the existing exterior structure.



1. North chimney should be dismantled and restacked with new mortar.

2. Restack and recement foundation stones.

3. Replace some roof shingles and check the integrity of the flashing.

## Gutters

- Check to see if gutters exist behind cornice/trim.
- If gutter systems are hidden, rebuild gutter system to include downspout and splash blocks.
- If there is not an existing gutter system, install profile wood gutters on second story of mansard roof in four corners.
- Install straight gutter runs in four corners of the wings and porches.



- Recommended product includes Intext Millwork Solutions PVC gutter systems. They have the aesthetic appeal of wood gutters with the benefit of added strength and durability. These gutters weigh less and have a carrying capacity greater than a standard wood gutter.

## Landscape

- Trim tree branches to eliminate trees rubbing on roof, gutters or wood trim, which will prevent further damage to the structure.
- Examine roots of trees on east elevation and remove those whose roots could potentially cause problems for the property or foundation.
- Remove shed due to structural failure.
- Privy should be moved and repurposed according to the new program requirements.

## Interior Lead Paint

- Paint should be evaluated, and lead paint should be removed according to EPA guidelines.

## Walls and Ceilings

- Damaged walls should be stripped, removing loose or broken plaster.
- Gypsum plaster should be used according to Brief 21, Repairing Historic Flat Plaster.
- Structural cracks at stairs should have interior studs braced and plastered.



1. The shed on the property needs to be removed due to structural failure.

2. Damaged wallpaper to be removed and replaced. Ceiling cracks to be repaired.

- Wallpaper should be removed from the north kitchen due to moisture damage.
- New lathe and plaster should be installed to match original materials and application.
- Use new wallpaper coverings that reflect the aesthetic of the samples taken from the property.
- Current wallpapers that can be restored should be kept.

## Interior Woodwork

- Original varnish trim should be stripped of paint and cleaned with wood rejuvenator.
- Remaining woodwork should be carefully stripped of paint, and a primer and base coat should be applied.
- Woodwork that has moisture damage should be replaced with matching dimensional lumber to match the existing woodwork.



### Interior Floors

- Secondary floor coverings should be removed from all floors on the first and second floor.
- Wood floors should be cleaned with a mild detergent.
- Raised nails should be reset.
- The defining feature of floors in this house is the original wood and finish, therefore all coverings should be removed and should not be replicated in the redesign.

### Main Staircase

- Stairs must be brought to current building code requirements.
- Stairs, railings and banisters should be cleaned with finish rejuvenator and refinished with varnish.

### Electrical System

- Existing fuse box should be replaced to code with a 250 amp circuit breaker pane.
- All non-code compliant wiring should be updated to meet current building codes.
- Wires should be snaked along existing channels to locations where power is to feed interior walls.

### HVAC

- The gas line should be replaced and brought up to code.
- Domestic water lines should be replaced.
- New HVAC system should incorporate two-part hot water with forced air system unit in the basement and attic area.
- New HVAC system will remove intrusion of ductwork in living areas.
- Piping will need to be added to new attic unit.
- Air cavities between chimney stacks and interior walls will need to be created.

### Outbuildings

#### *Privy:*

- Retain privy as is, fixing shingles as needed.
- Repurpose space as a tool shed or outdoor shower.

#### *Shed:*

- Existing shed should be removed due to structural safety concerns.
- Removal of the shed will improve the view shed of the property.



Wood floors and banisters need to be cleaned and refinished.

# Proposed Design

## Atrium Addition

A new atrium has been proposed to accommodate the needs of the Barnstable Land Trusts proposed programs. The atrium would provide a well-defined, ADA accessible entrance to the building. Design of the new atrium would apply to the Secretary of the Interior's Standards for new exterior additions to historic properties. It is recommended that the atrium be constructed on the west façade, after the demolition of 2/3 of the southwest ells.

Proposed addition should be constructed from glass and metal framing, finished with wood, to mimic the existing wood on the property. Proposed design will not change the view of the building from the street, which as been identified as an important landmark along route 149. Single-story construction will not detract from the view shed from the second floor western elevation windows, nor interrupt the mansard roofline.

## Interior Glass Wall Partitions

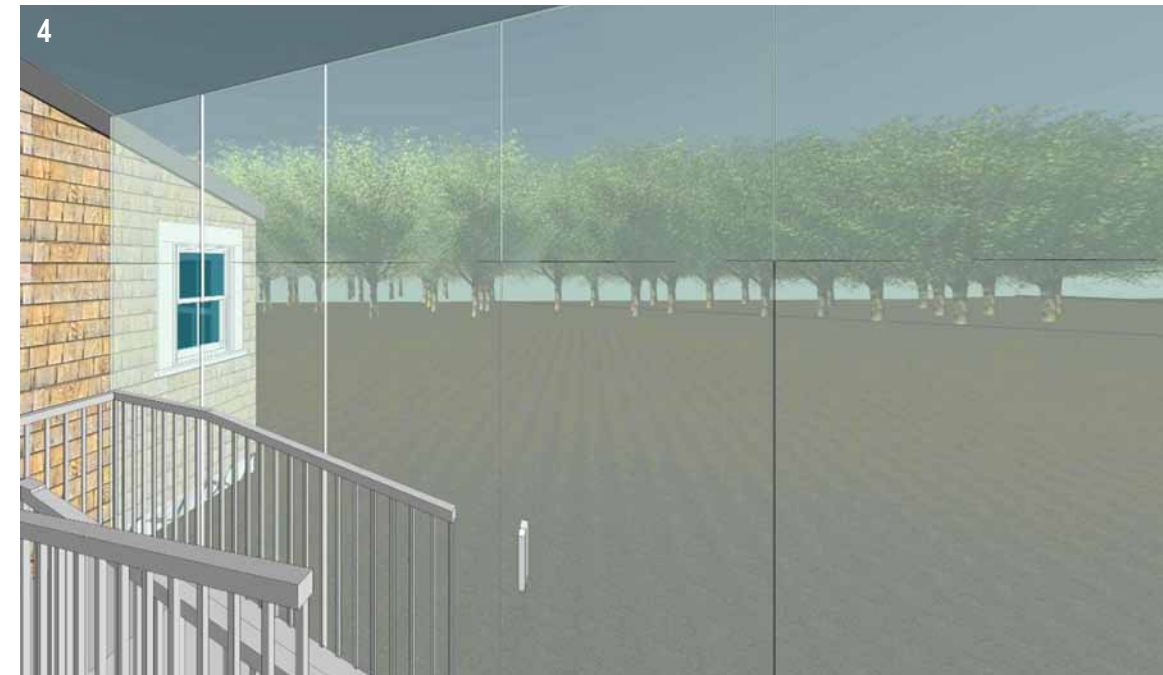
Solutions for dividing space inside the property to provide privacy and meeting space could include the addition of interior glass wall partitions.

The addition of glass wall partitions would allow for the option of creating meeting spaces and an open environment when needed. Proposed examples include partitions for the Executive Director's office, reception and meeting room.

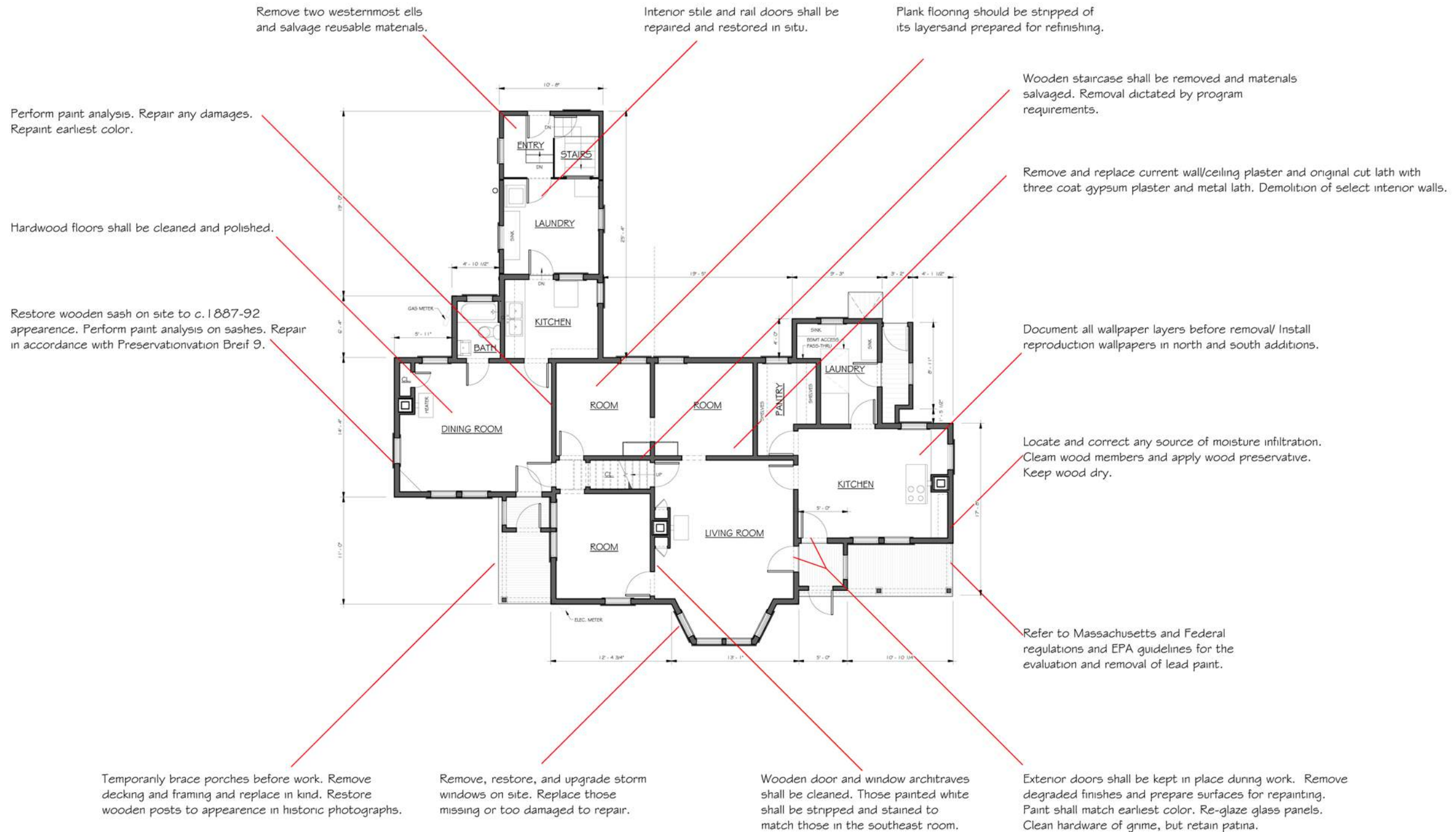


1-3. Sample of atrium and glass wall partitions, courtesy of Solar Innovations Inc.

4. Proposed view from the atrium.







Drawing No.

R 1.1

Sheet Title: REHABILITATION FIRST FLOOR PLAN

Project: THE FULLER FARMSTEAD

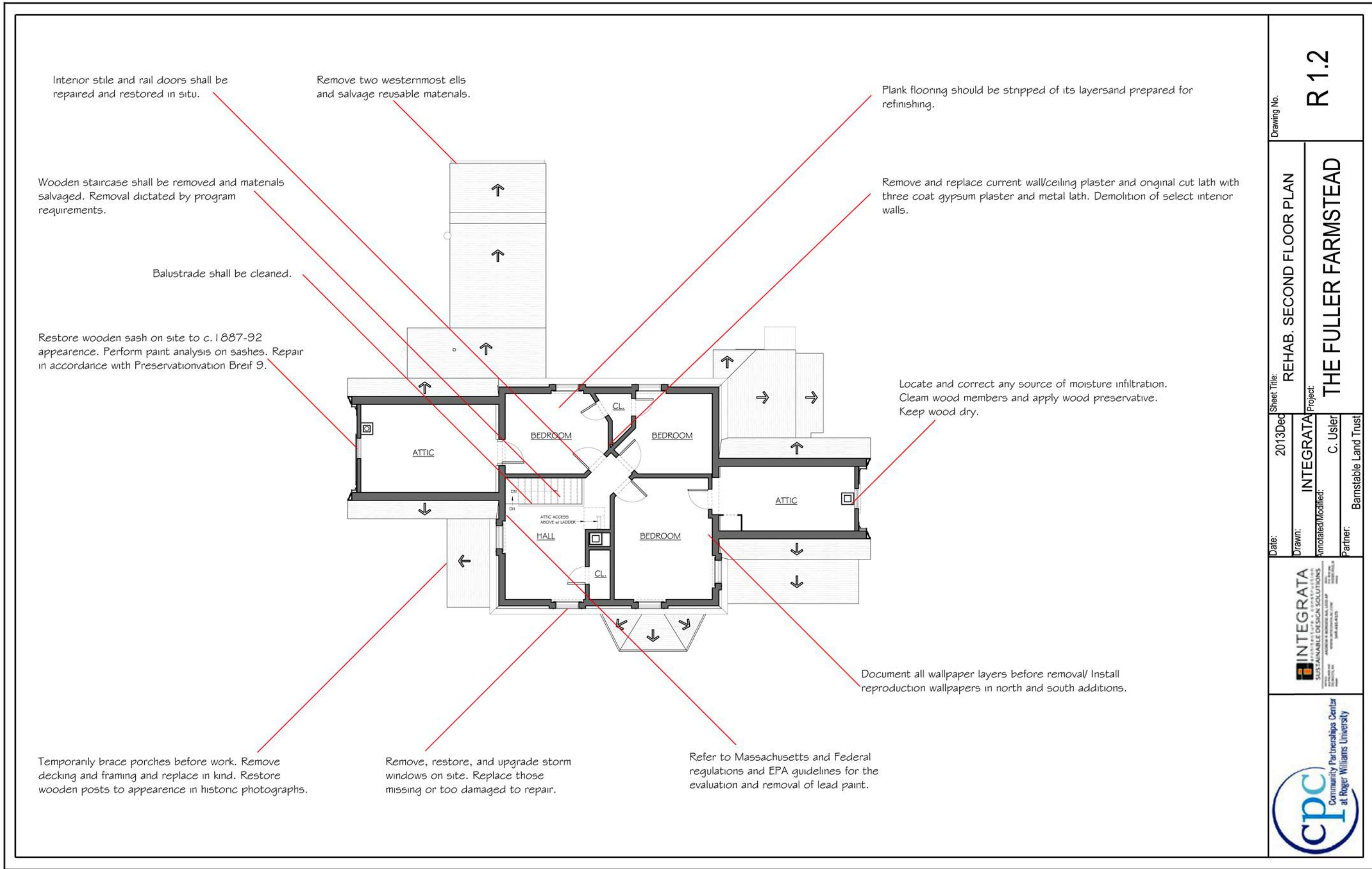
Date: 2013 Dec

Drawn: INTEGRATA

Annotated/Modified: C. Usler

Partner: Barnstable Land Trust





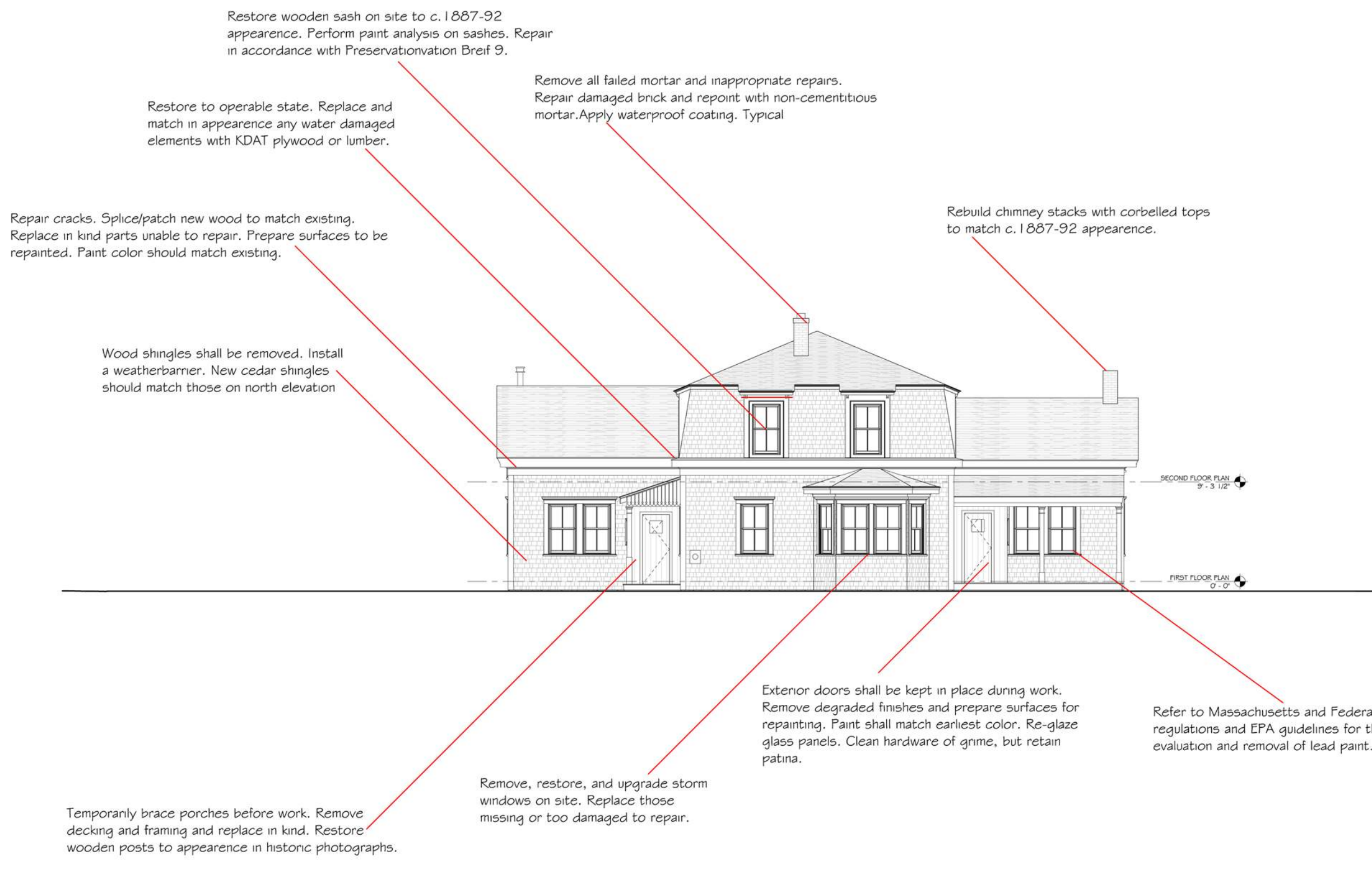
Drawing No. **R 1.2**

Sheet Title: **REHAB. SECOND FLOOR PLAN**  
 Project: **THE FULLER FARMSTEAD**

Date: 2013 Dec  
 Drawn: **INTEGRATA**  
 Annotated/Modified: **C. Usler**  
 Partner: **Barnstable Land Trust**







Restore wooden sash on site to c. 1887-92 appearance. Perform paint analysis on sashes. Repair in accordance with Preservation Brief 9.

Restore to operable state. Replace and match in appearance any water damaged elements with KDAT plywood or lumber.

Remove all failed mortar and inappropriate repairs. Repair damaged brick and repoint with non-cementitious mortar. Apply waterproof coating. Typical

Repair cracks. Splice/patch new wood to match existing. Replace in kind parts unable to repair. Prepare surfaces to be repainted. Paint color should match existing.

Rebuild chimney stacks with corbelled tops to match c. 1887-92 appearance.

Wood shingles shall be removed. Install a weatherbarrier. New cedar shingles should match those on north elevation

SECOND FLOOR PLAN  
9' - 3 1/2"

FIRST FLOOR PLAN  
0' - 0"

Temporarily brace porches before work. Remove decking and framing and replace in kind. Restore wooden posts to appearance in historic photographs.

Remove, restore, and upgrade storm windows on site. Replace those missing or too damaged to repair.

Exterior doors shall be kept in place during work. Remove degraded finishes and prepare surfaces for repainting. Paint shall match earliest color. Re-glaze glass panels. Clean hardware of grime, but retain patina.

Refer to Massachusetts and Federal regulations and EPA guidelines for the evaluation and removal of lead paint.

Drawing No.

R 2.1

Sheet Title: REHABILITATION EAST ELEVATION

Project: THE FULLER FARMSTEAD

Date: 2013Dec

Drawn: INTEGRATA

Partner: Barnstable Land Trust



Restore wooden sash on site to c. 1887-92 appearance. Perform paint analysis on sashes. Repair in accordance with Preservation Brief 9.

Remove all failed mortar and inappropriate repairs. Repair damaged brick and repoint with non-cementitious mortar. Apply waterproof coating. Typical

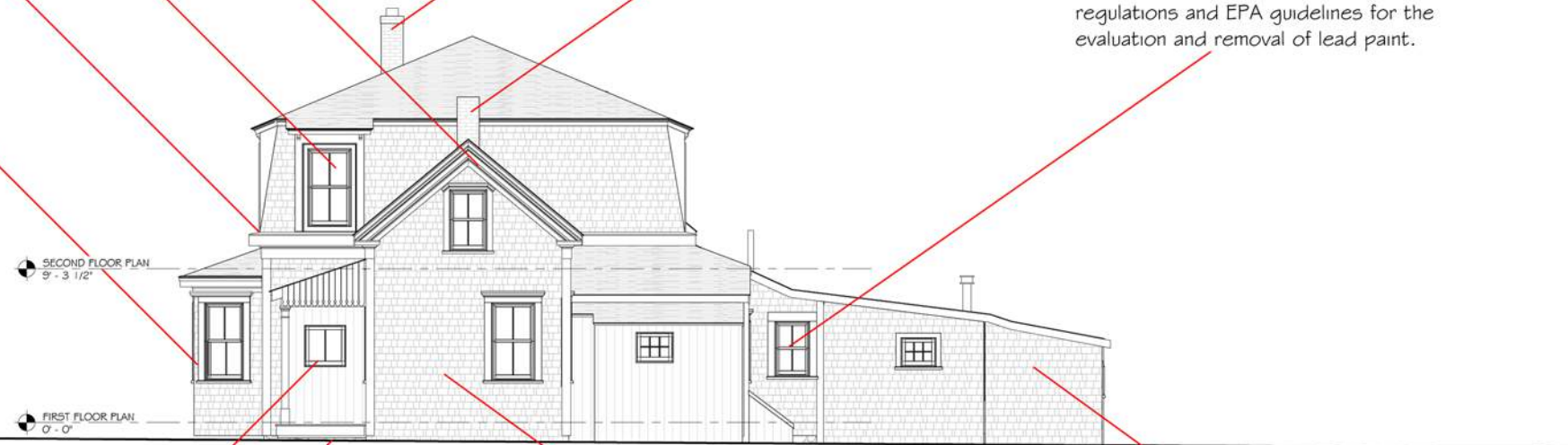
Restore built-in cornice system to operable state. Replace and match in appearance any water damaged elements

Repair cracks in wood trim. Splice/patch new wood to match existing. Replace in kind parts unable to repair. Prepare surfaces to be repainted. Paint color should match existing.

Rebuild chimney stacks with corbelled tops to match c. 1887-92 appearance.

Remove, restore, and upgrade storm windows on site. Replace those missing or too damaged to repair.

Refer to Massachusetts and Federal regulations and EPA guidelines for the evaluation and removal of lead paint.



Exterior doors shall be kept in place during work. Remove degraded finishes and prepare surfaces for repainting. Paint shall match earliest color. Re-glaze glass panels. Clean hardware of grime, but retain patina.

Wood shingles shall be removed. Install a weatherbarrier. New cedar shingles should match those on north elevation

Remove two westernmost eels and salvage reusable materials.

Temporarily brace porches before work. Remove decking and framing and replace in kind. Restore wooden posts to appearance in historic photographs.

Drawing No.

R 2.2

Sheet Title: REHAB. NORTH ELEVATION

Project: THE FULLER FARMSTEAD

Date: 2013Dec

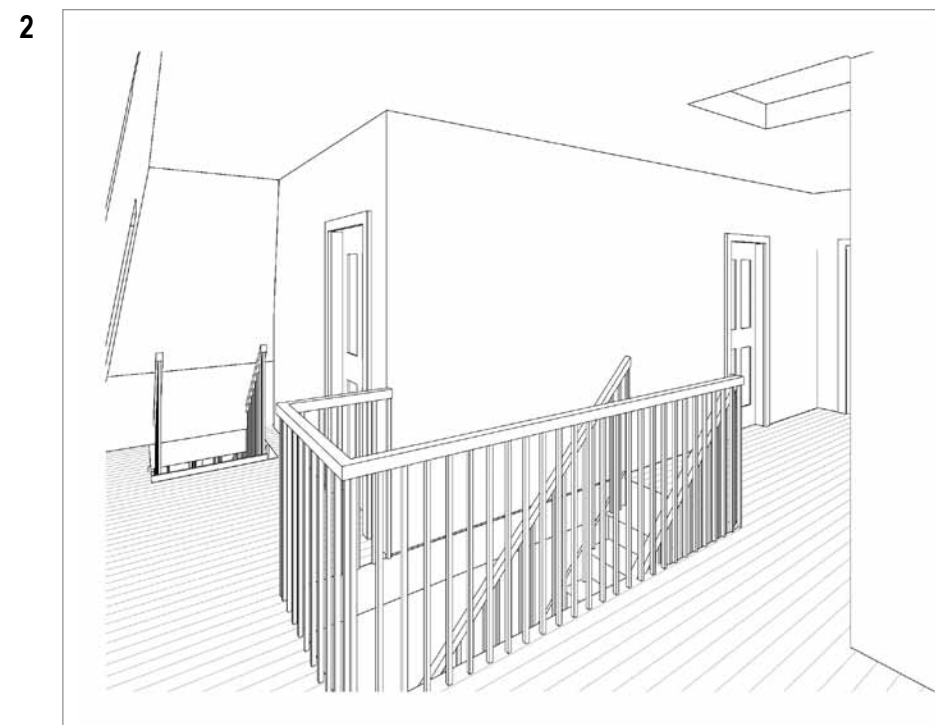
Drawn: INTEGRATA

Partner: C. Usler

Partner: Barnstable Land Trust



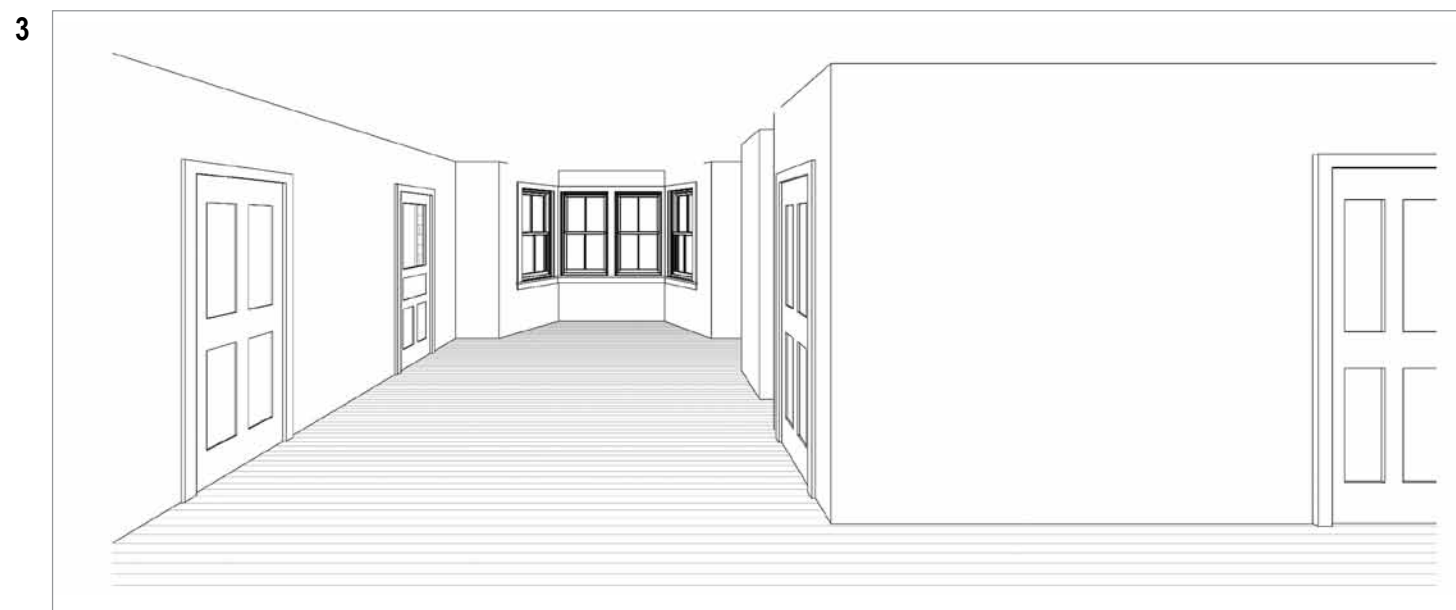




1. Proposed perspective.

2. Proposed staircase from second floor landing.

3. Proposed meeting room space.







Western elevation

## Conclusion

The existing conditions and recommendations in this document were developed at the suggestion of the Barnstable Land Trust (BLT). Collaboration between the student team and members from BLT resulted in the development of programs and rehabilitation plans for the future use of Fuller Farm and the surrounding property.

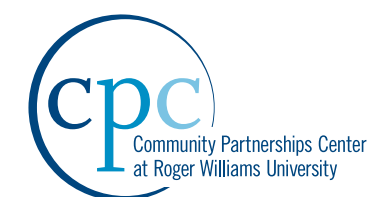
The student team suggests the following rehabilitation items as having the highest priority for rehabilitation:

1. Windows
2. Moisture
3. Foundation
4. Structural issues
5. Site drainage and gutter systems

The student team suggests the following rehabilitation items as having a lower priority for the rehabilitation of the property:

1. Electrical/mechanical system
2. Wallpaper conservation
3. Trees on site and landscaping
4. Critter damage repairs to the exterior trim
5. Porches





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