

# DRAWING ON THE PAST - DESIGNING THE FUTURE



WESTPORT, NY



ROCHESTER, VT



SALISBURY, VT

FEBRUARY 1, 2017



# Vermont Integrated Architecture, P.C.



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# OVERVIEW

1. INTRODUCTION

2. CONTEXT

3. PROJECT  
APPROACH

4. CHALLENGES AND  
SOLUTIONS

5. RESOURCES



Waterbury Municipal Center



## OLD IS THE NEW NEW - THE NEW GREEN



Waterbury Municipal Center

## 2. CONTEXT



# SECRETARY OF THE INTERIOR'S STANDARDS FOR THE TREATMENT OF HISTORIC PROPERTIES

**PRESERVATION** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.

**REHABILITATION** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

**RESTORATION** depicts a property at a particular period of time in its history, while removing evidence of other periods.

**RECONSTRUCTION** re-creates vanished or non-surviving portions of a property for interpretive purposes.

The choice of treatment depends on a variety of factors, including the property's historical significance, physical condition, proposed use, and intended interpretation. Historic buildings are used as an example below. The decision-making process would be similar for other property types.

**Age – 50 years**

## 2. CONTEXT



# WHY IS IT IMPORTANT TO MAKE THESE BUILDINGS RELEVANT?

## A. CULTURE AND HERITAGE



WESTPORT TOWN HALL



PARK HOUSE, ROCHESTER VT.

## 2. CONTEXT



# WHY IS IT IMPORTANT TO MAKE THESE BUILDINGS RELEVANT?

## B. LEARNING FROM THE PAST



ROCHESTER PUBLIC LIBRARY

## 2. CONTEXT



WHY IS IT IMPORTANT TO MAKE THESE BUILDINGS RELEVANT?

C. WE DON'T BUILD THINGS THE WAY THEY USED TO - COST



McKim, Mead and White Drawings of UVM, Slade Hall



# WHY IS IT IMPORTANT TO MAKE THESE BUILDINGS RELEVANT?

## D. EMBODIED ENERGY



University of Vermont- Slade Hall

## 2. CONTEXT



# WHY IS IT IMPORTANT TO MAKE THESE BUILDINGS RELEVANT?

## E. OFTEN ON THE BEST SITES



Town of Shelburne Historic Town Hall



## CONTEXT IN VERMONT

### A. OFTEN OWNED AND OCCUPIED BY MUNICIPALITIES AND NON-PROFIT ORGS



Waterbury Municipal Center - Historic Janes' House Before Construction

## 2. CONTEXT



## CONTEXT IN VERMONT

### B. COMMERCIAL STRUCTURES



Middlebury Eye Associates

## 2. CONTEXT



## CONTEXT IN VERMONT

### C. HOUSES/ FARM STRUCTURES IN USE

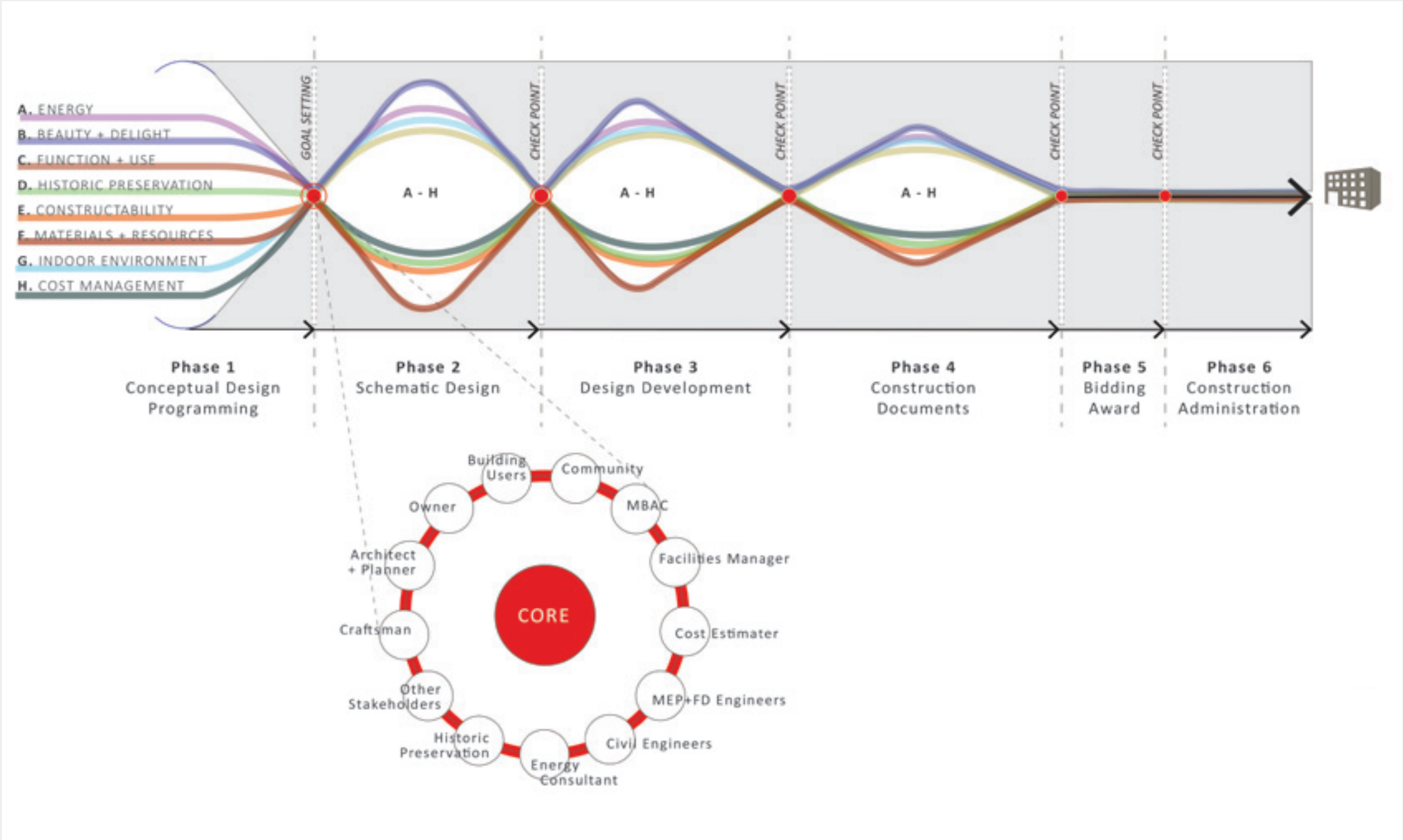


Island Arts' Barn

## 2. CONTEXT



# ASSEMBLING THE RIGHT TEAM



## 3. PROJECT APPROACH



## ESTABLISHING A SHARED VISION APPRECIATING AND RESPECTING THE PAST - DEFINING THE FUTURE



8 North Street (BCH) Under Construction



Waterbury Municipal Center Under Construction

### 3. PROJECT APPROACH



# REMEMBER IT'S COMPLICATED COLLECTIVE WISDOM AND INTEGRATED PROCESS REQUIRED TO SOLVE PROBLEMS



Project Kick-Off at VIA's Office

## 3. PROJECT APPROACH



## PERMITTING & APPROVALS

- LOCAL
- ACT 250
- ACCESSIBILITY
- HISTORIC REGISTER



Waterbury Municipal Center Site Plan

## 3. PROJECT APPROACH



## WORKING WITH HP PROFESSIONALS

- STATE
- HP CONSULTANT



Westport, NY Town Hall

## 3. PROJECT APPROACH



## BIGGEST CHALLENGES



Rochester Park House



Cornwall Town Offices



Waterbury Municipal Center



UVM Slade Hall



Ilsley Library



Westport Town Offices



Writer's Studio

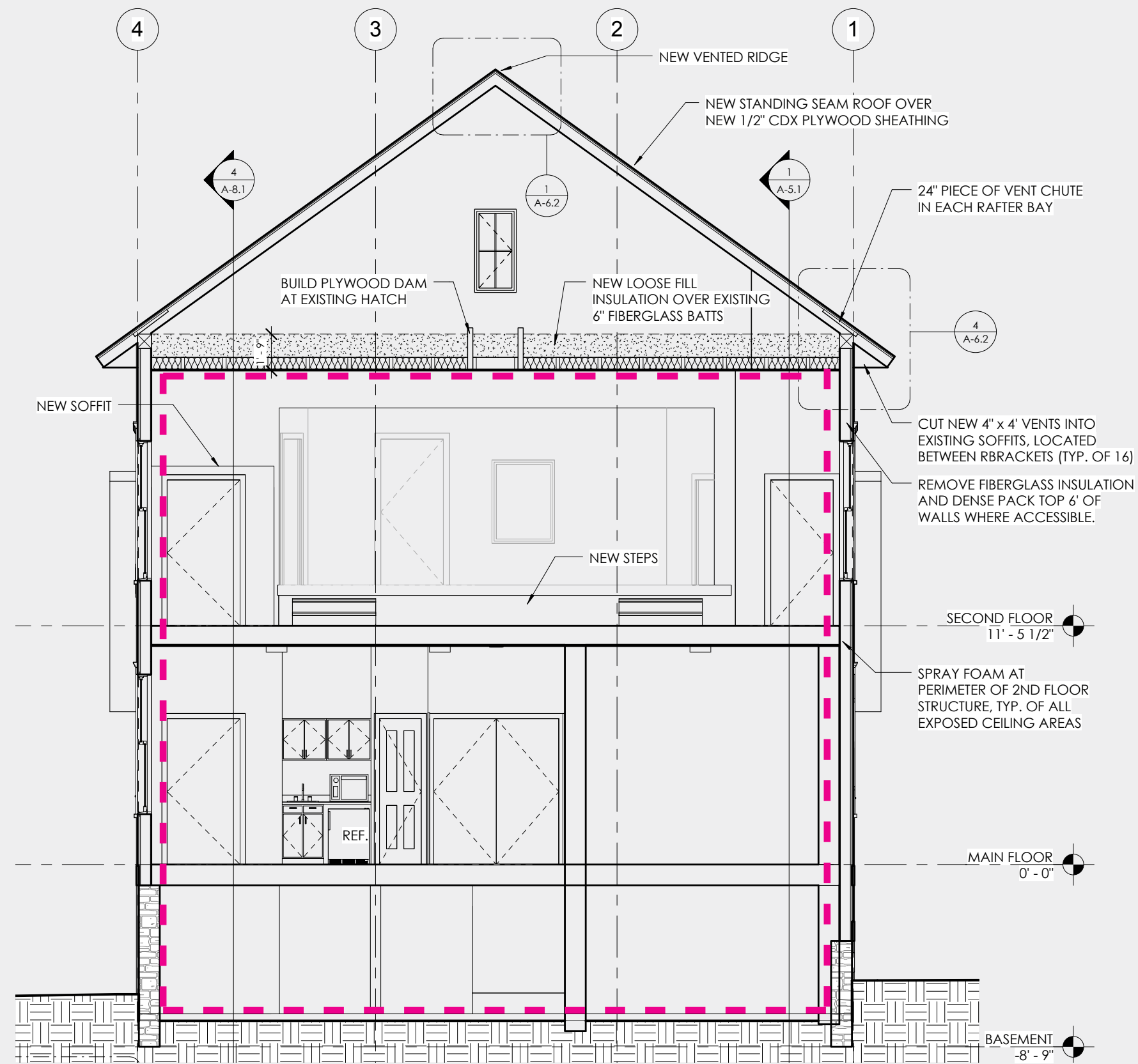


Bristol Co-Housing

## 4. CHALLENGES AND SOLUTIONS



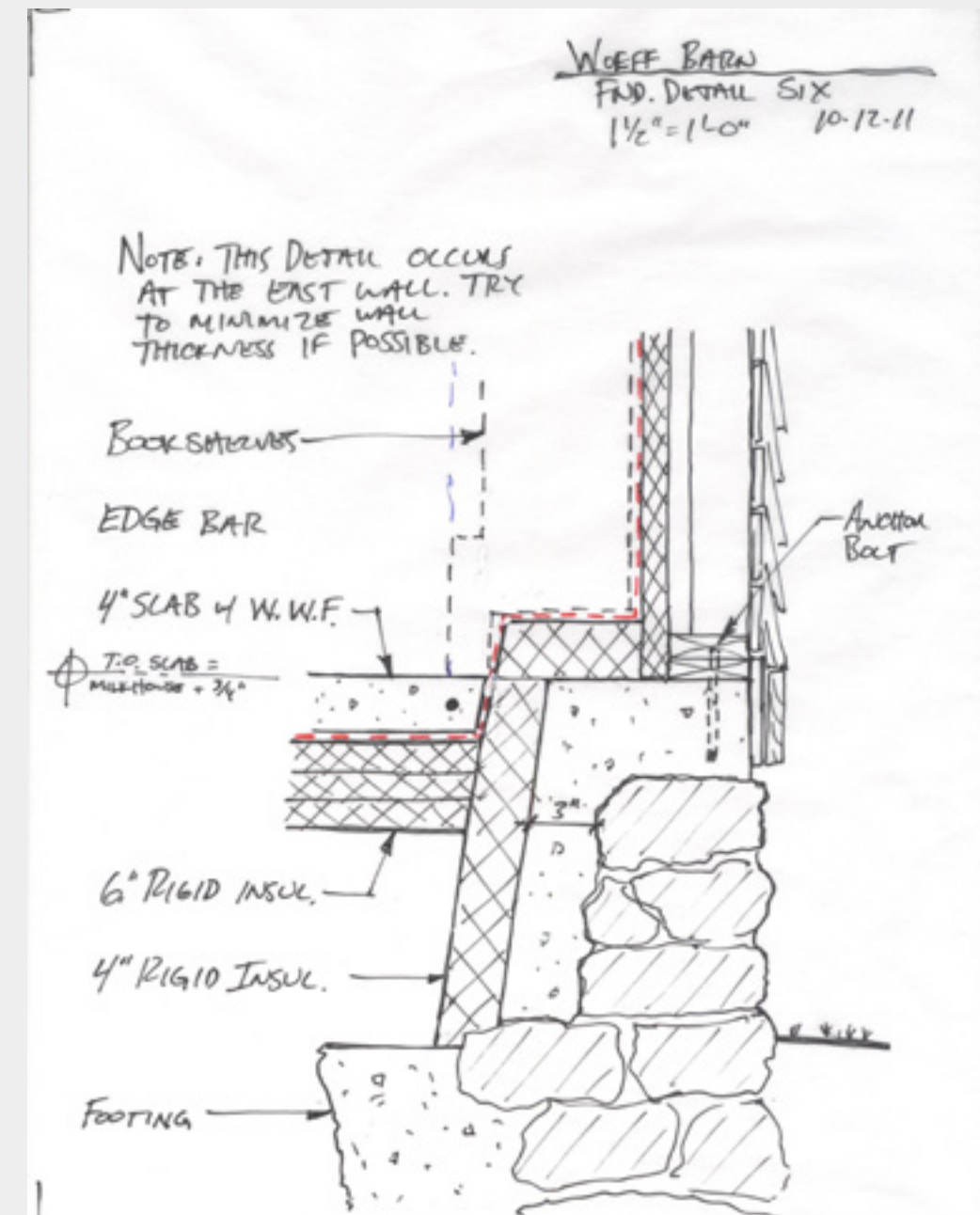
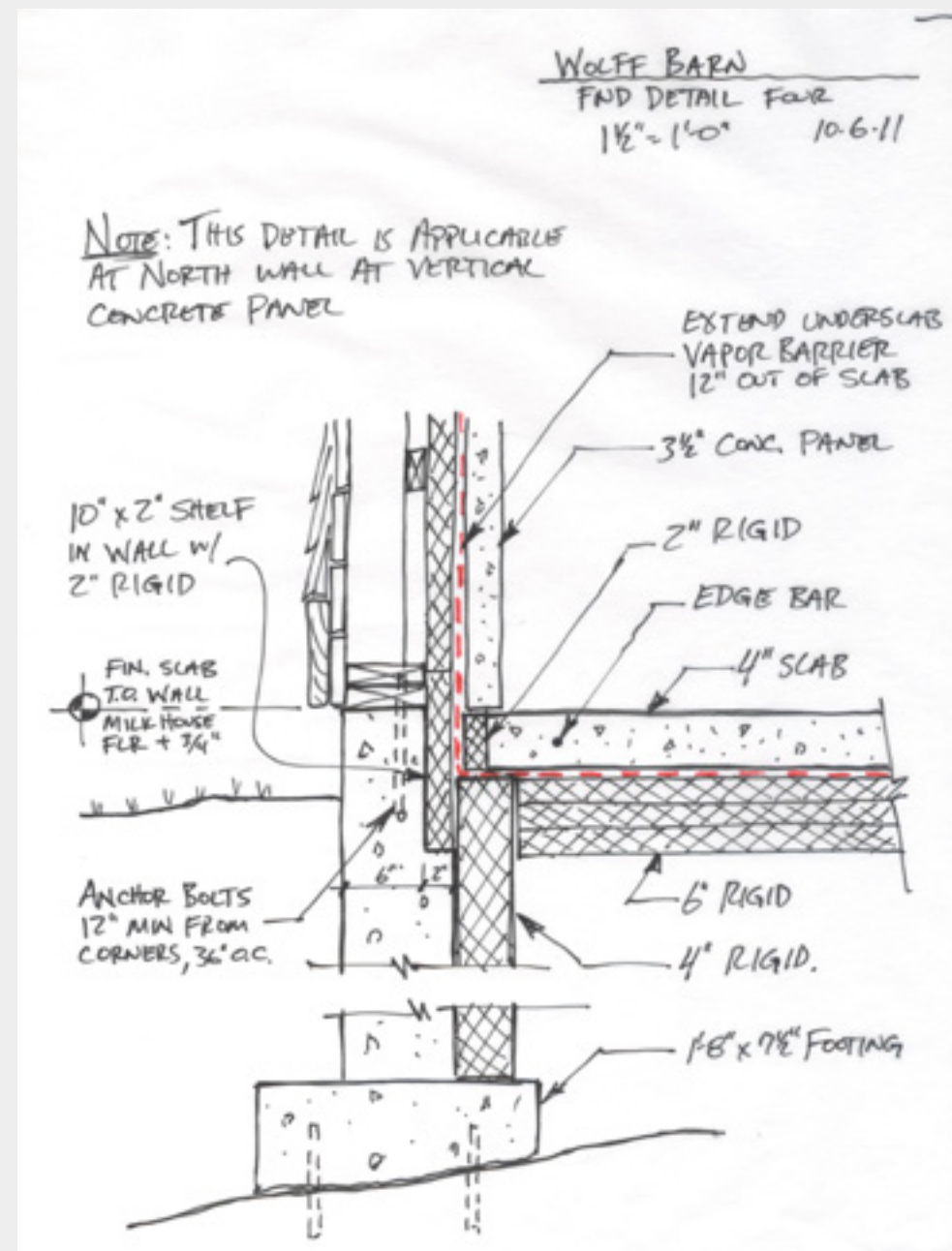
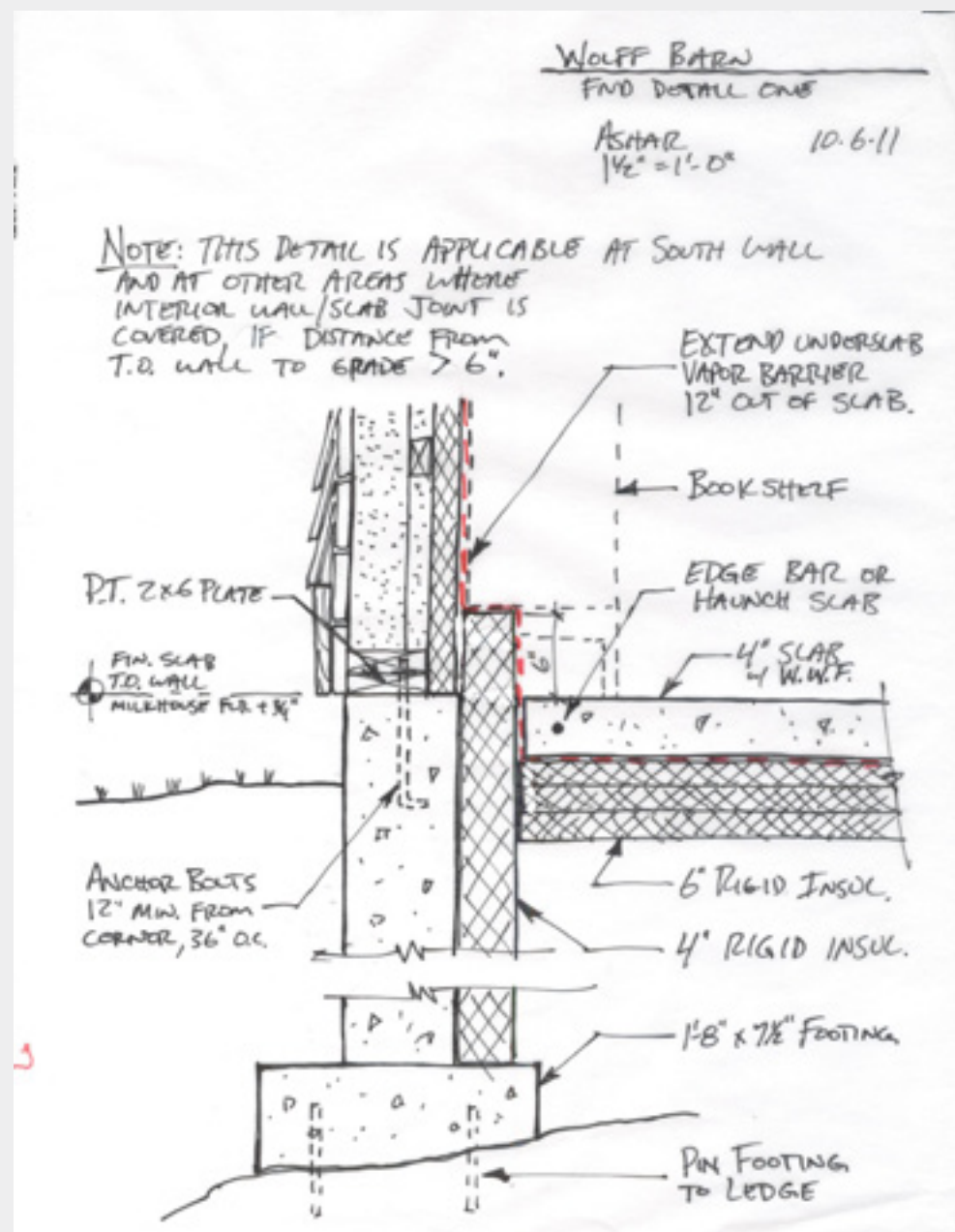
# CONTINUOUS ENVELOPE



## 4. CHALLENGES AND SOLUTIONS



## WRITER'S STUDIO - MANY CONDITIONS

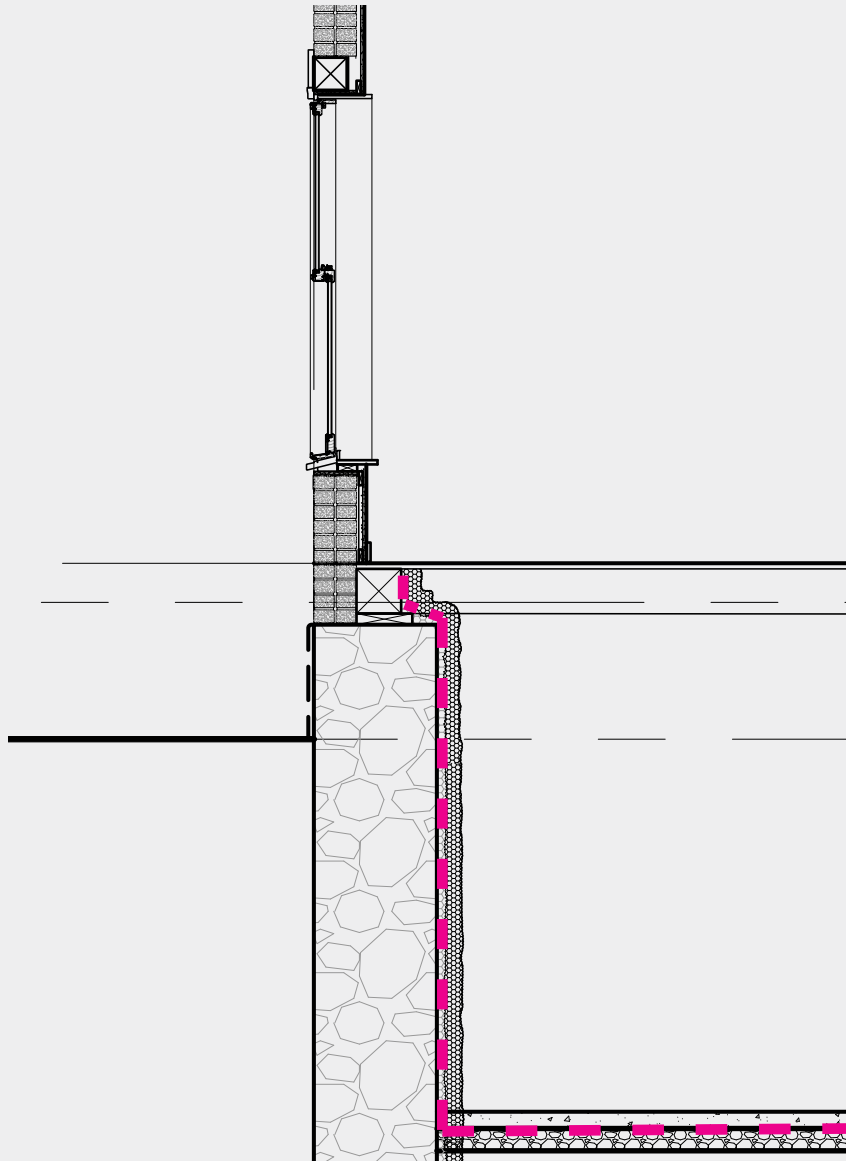


## 4. CHALLENGES AND SOLUTIONS



# FOUNDATION

## WATERBURY MUNICIPAL COMPLEX (JANES' HOUSE)

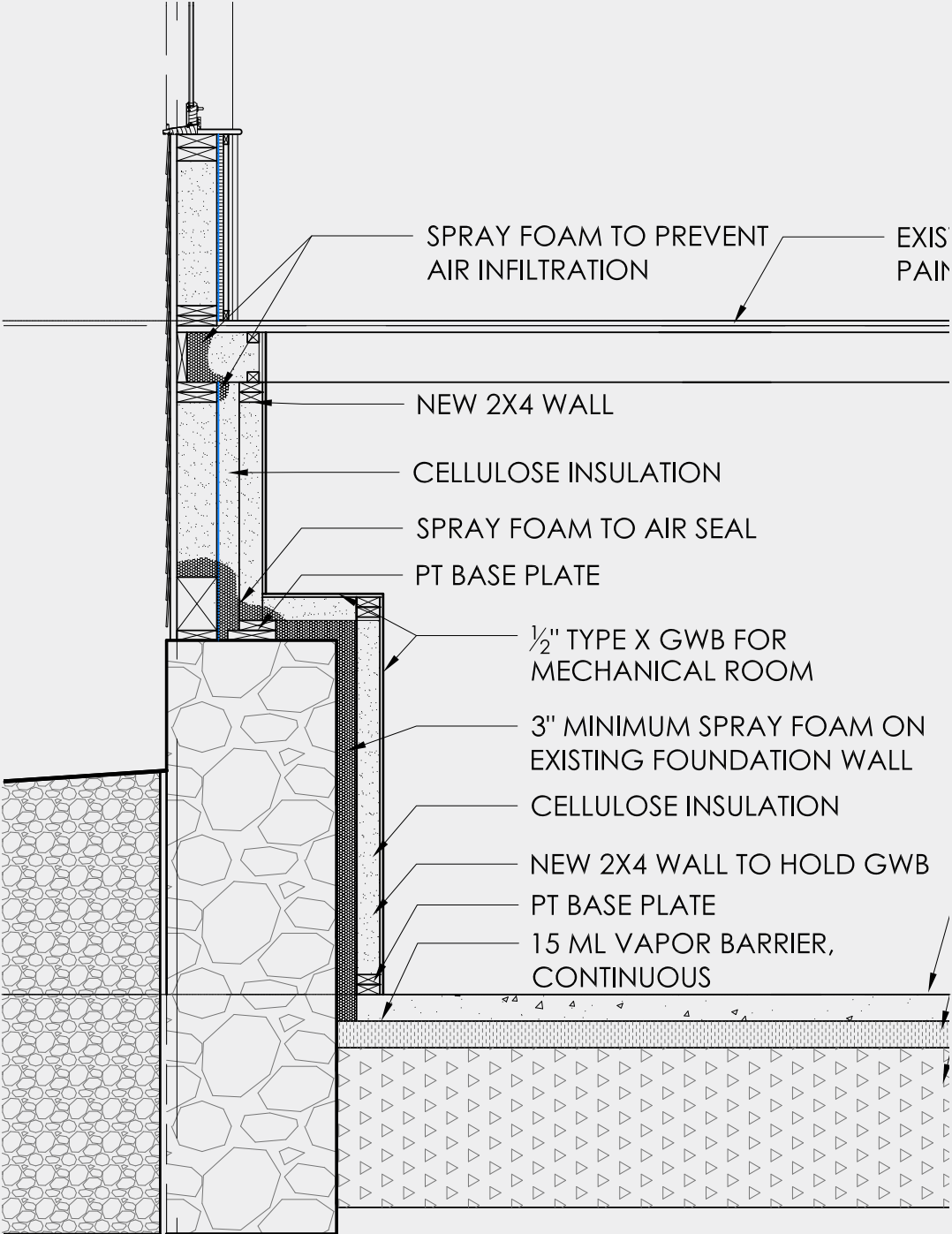


### 4. CHALLENGES AND SOLUTIONS



# FOUNDATION

## WESTPORT FOUNDATION

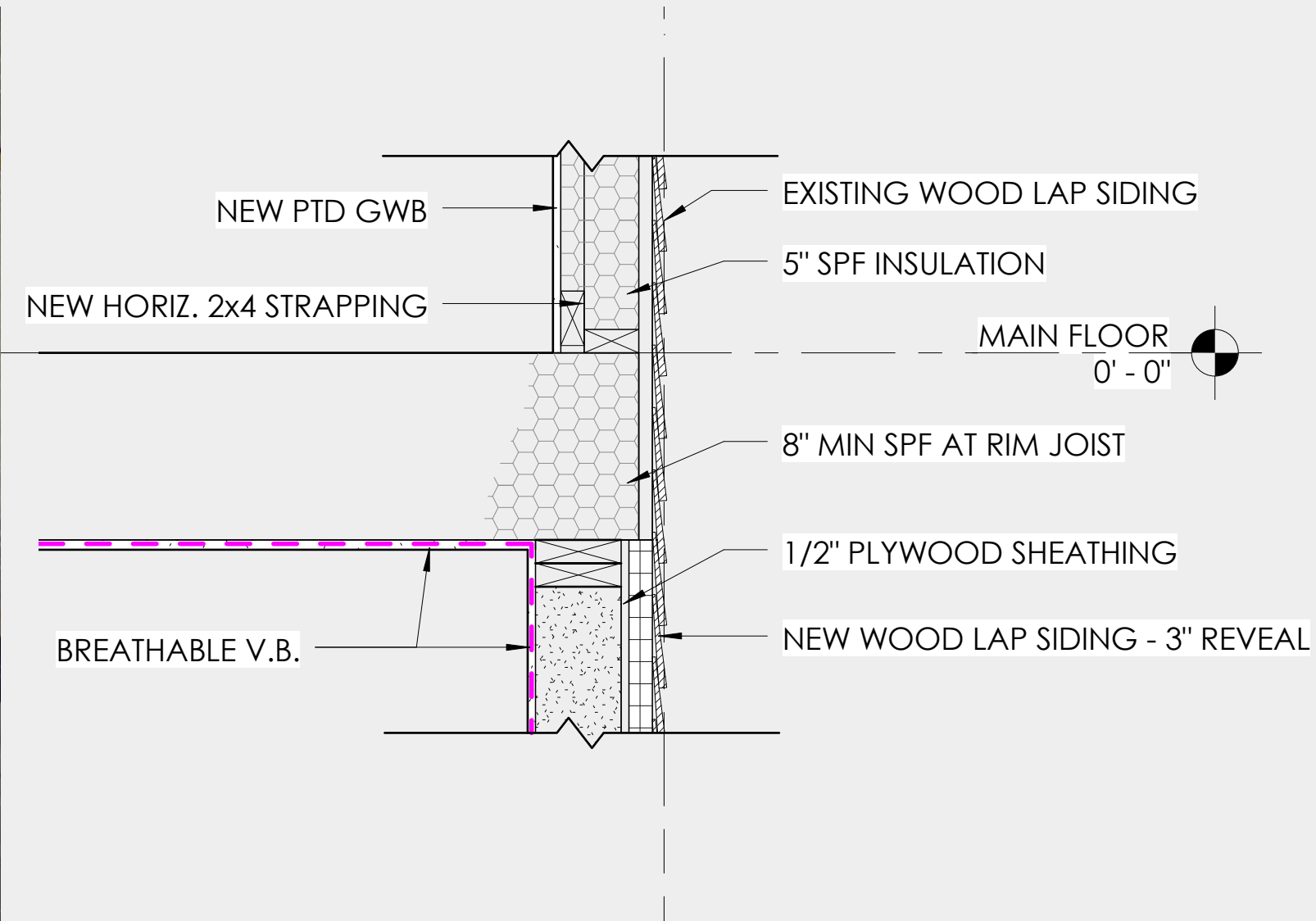


### 4. CHALLENGES AND SOLUTIONS



WALLS

CORNWALL - RIM JOIST

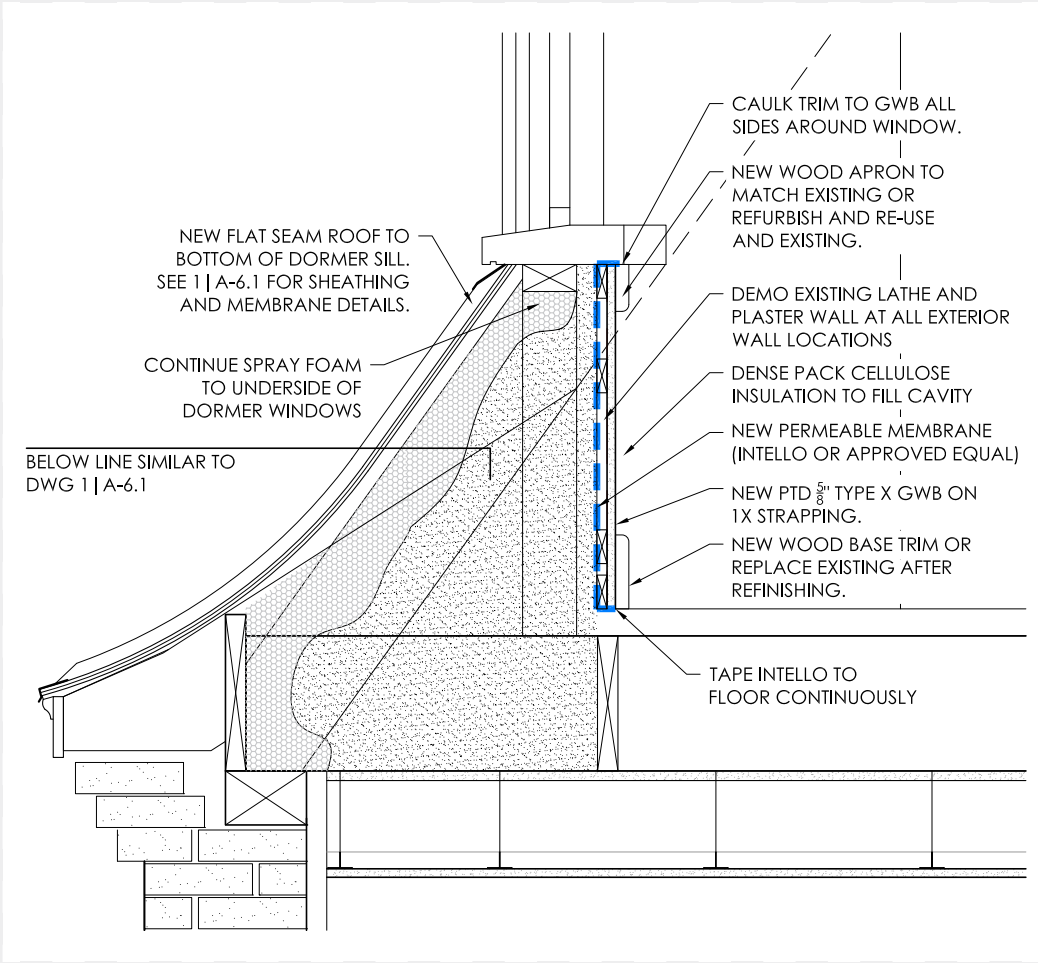
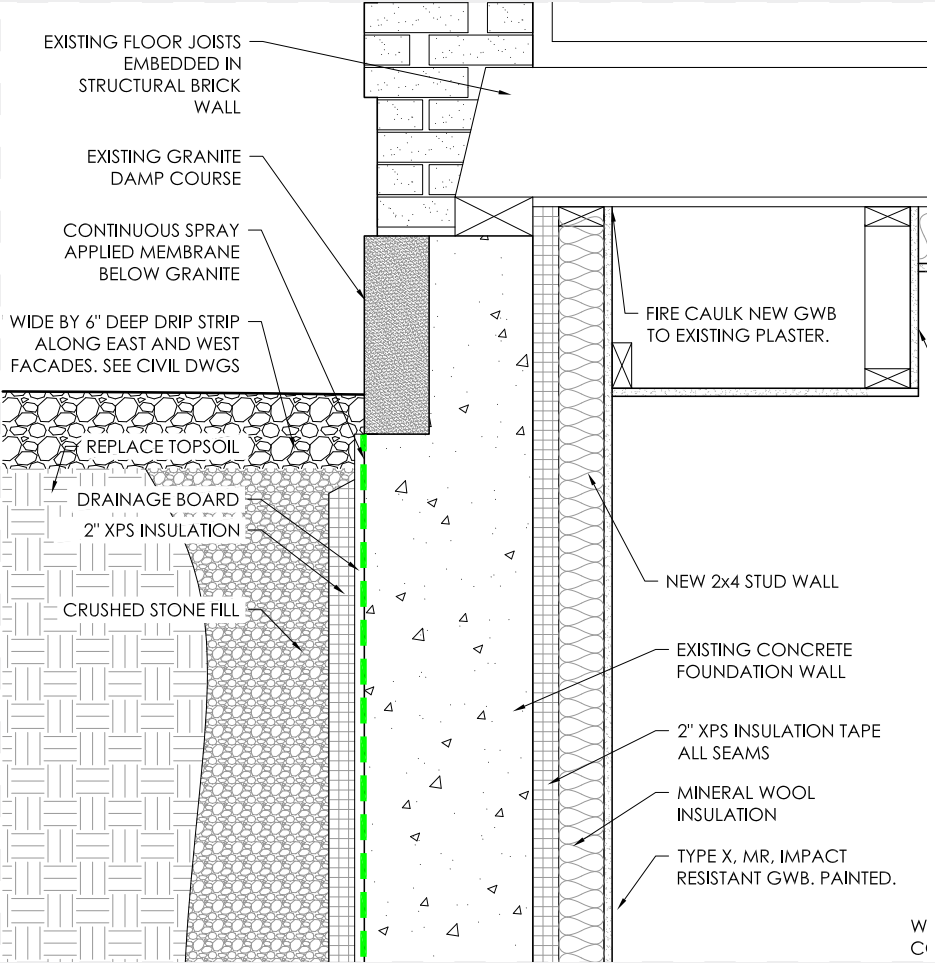
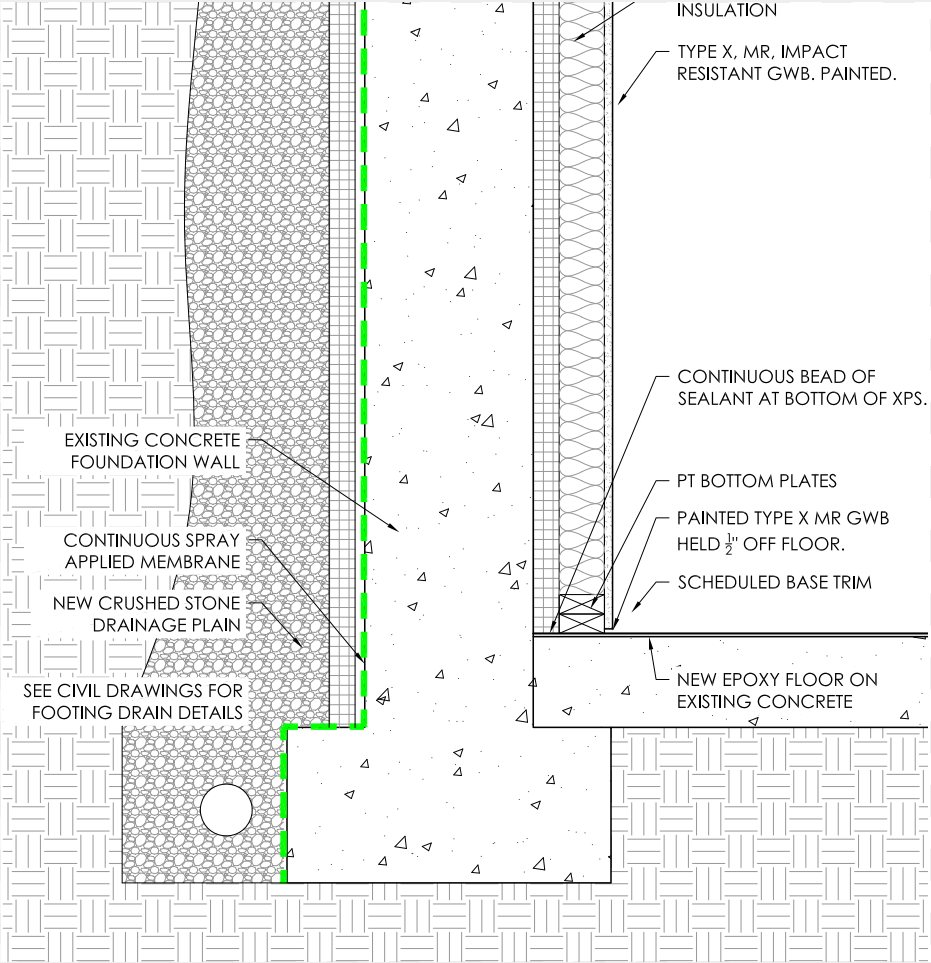


4. CHALLENGES AND SOLUTIONS



# WALLS

APPROACH VARIES PER BUILDING TYPE  
UVM - SLADE HALL

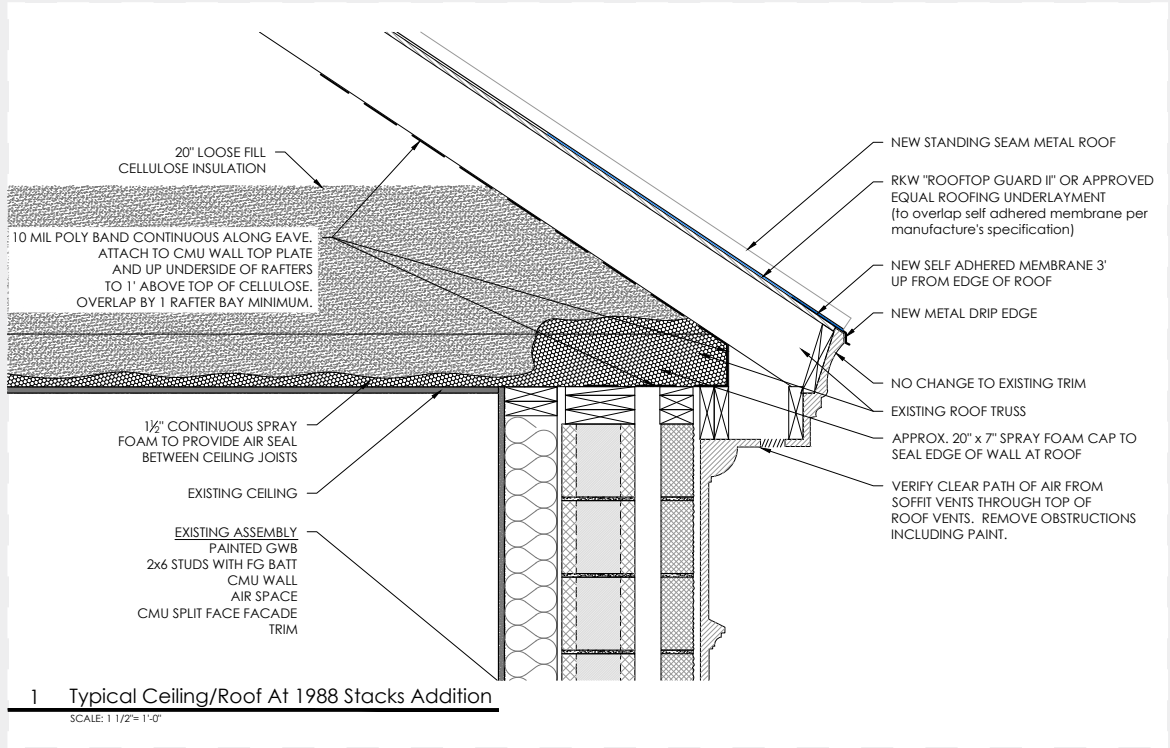


## 4. CHALLENGES AND SOLUTIONS



# ATTIC

## THE PINCH POINT



IIsley Library

## 4. CHALLENGES AND SOLUTIONS



ATTIC  
THE PINCH POINT



Ilisley Library

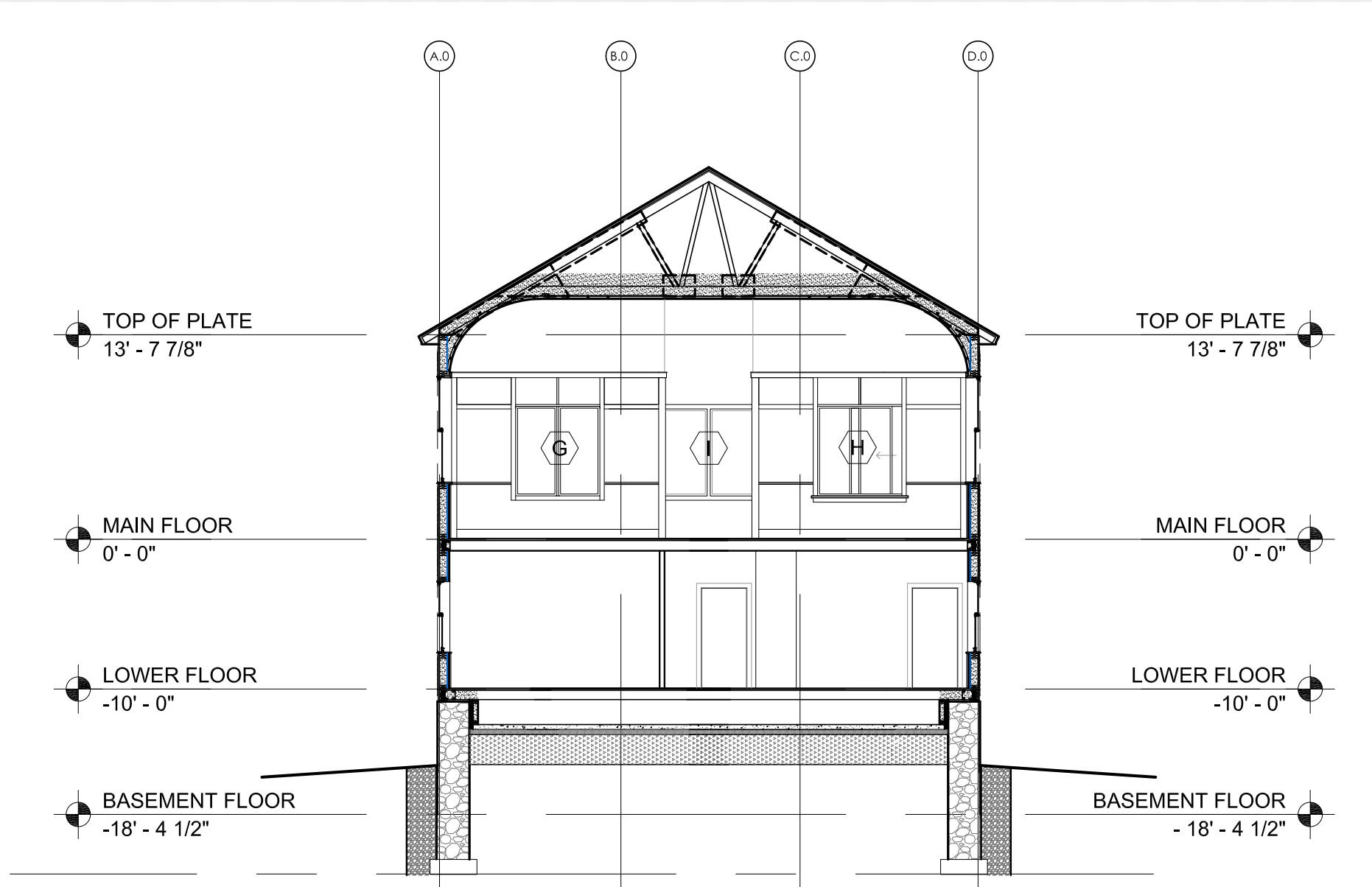
4. CHALLENGES AND SOLUTIONS





# ATTIC

## THE PINCH POINT - ADDED STRUCTURE



Technical drawing of the attic structure showing insulation, trusses, and tension ties. The drawing includes labels for DENSE PACK CELLULOSE INSULATION, EXTEND OF ROAM INSULATION, SEE STRUCTURAL DRAWINGS FOR TRUSS AND RAFTER REINFORCING, REMOVE EXISTING TENSION TIES, GWB TO REPLACE EXISTING COVERED CEILING BACK FRAME AS NEEDED TO SUPPORT, HORIZ. STRAPPING TO FOLLOW CURVED PROFILE OF WOODEN TRUSSES. CLEAR ADDL. DEPTH OF SISTERED LVL, GWB, NEW HEADER AS NEEDED TO ACCOMMODATE GWB ON WALL AND CURVED CEILING, and WOOD HEAD AND JAMB RETURN.

5 Photo of Existing Rafter

7 Previous Barrel Vault Ceiling

6 Previous Barrel Vault Ceiling

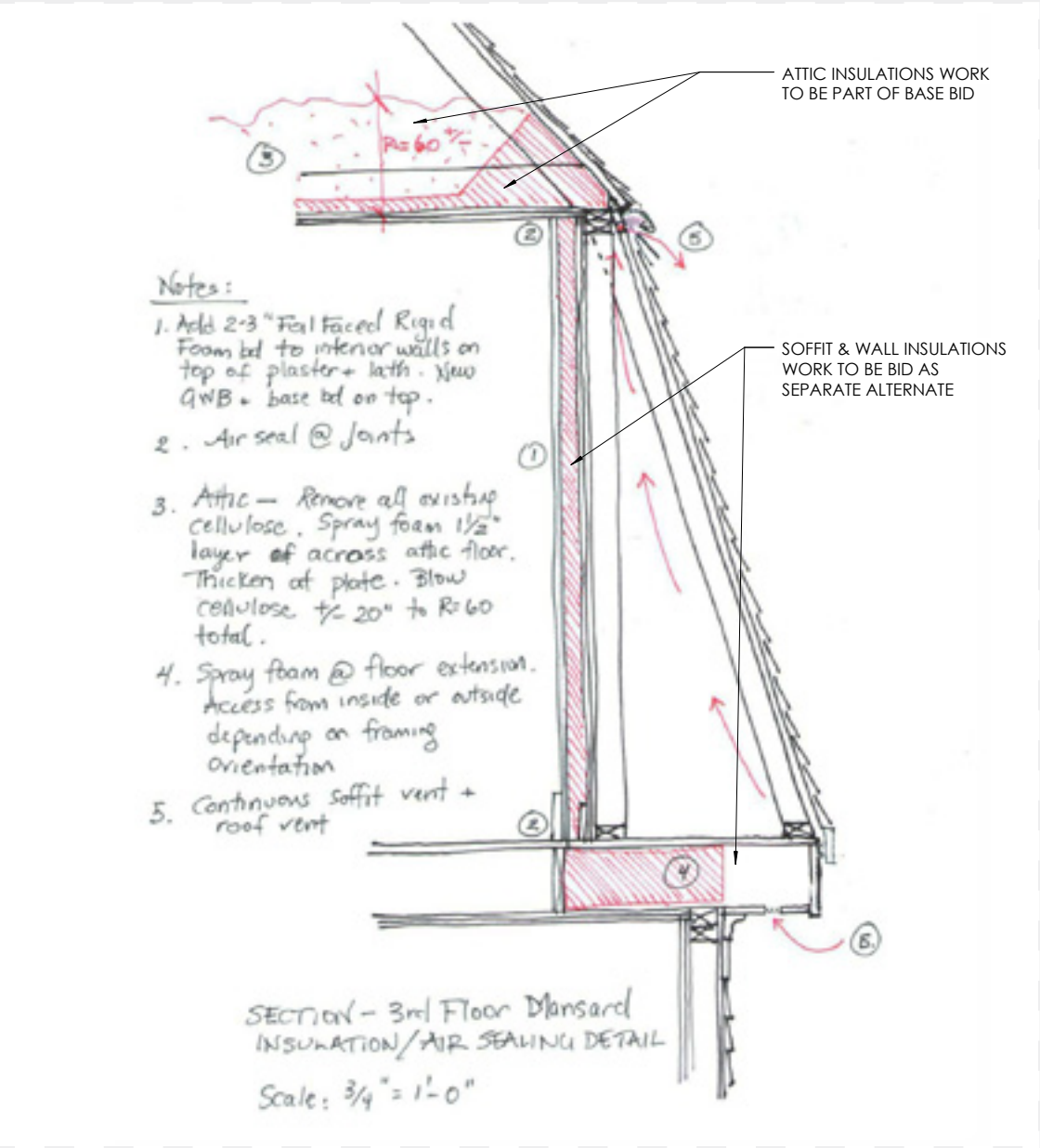
Westport Town Hall

### 4. CHALLENGES AND SOLUTIONS



# ATTIC

## THE PINCH POINT



Rochester Park House

### 4. CHALLENGES AND SOLUTIONS



# WINDOWS

SOME CASES ARE EASIER



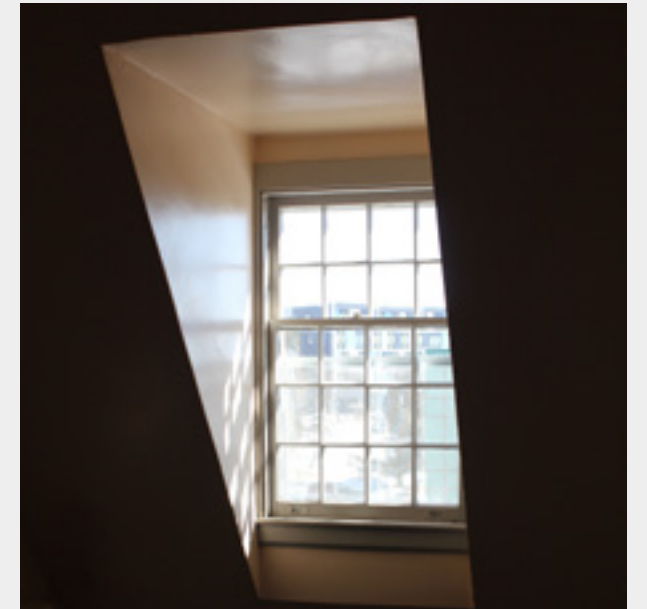
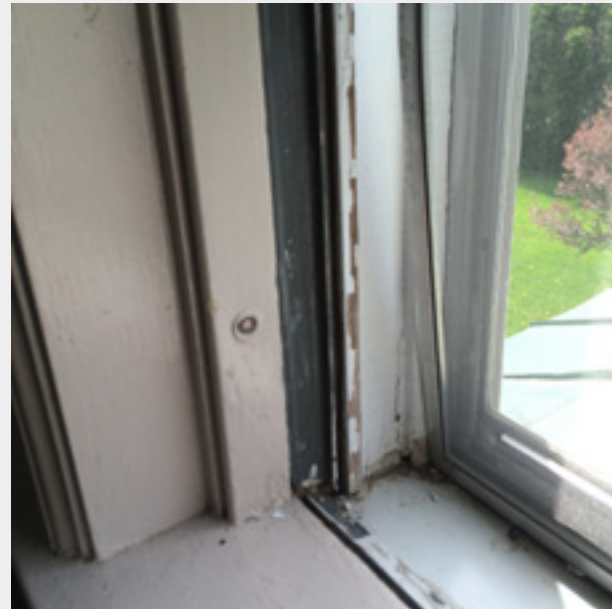
Rochester Park House

## 4. CHALLENGES AND SOLUTIONS



# WINDOWS

SOME CASES ARE MORE TRICKY



University of Vermont- Slade Hall

## 4. CHALLENGES AND SOLUTIONS



# WINDOWS

## SOME WINDOWS ARE ESPECIALLY SPECIAL



NOTE LOWER SASH WOULD HAVE A SCREEN FOR AT LEAST SOME OF THE YEAR

**1 Marvin Replacement Window**  
SCALE: 1" = 1' - 0"

PROS:

- Preserves function and overall aesthetics of original design intent.
- Matches proposed replacement windows on the rest of the building for unified composition.
- Good energy performance while being operable.
- Easy maintenance in the future.
- Each pane of glass reads separately like on the original window.
- Window could be preserved/recycled for another use

CONS:

- The artifact of the original window is removed.
- The check rail is slightly wider.
- Window pane sizes change slightly.
- Depth of muntin bar on the interior side of the glazing decreases.

== == == SIGNIFIES LOCATION OF STORM IN OPEN POSITION  
NOTE LOWER SASH WOULD HAVE A SCREEN FOR AT LEAST SOME OF THE YEAR

**2 OPERABLE ALLIED STORM WINDOW**  
SCALE: 1" = 1' - 0"

PROS:

- The artifact of the original window is preserved in place.
- The window remains operable. This storm will be better looking than the one that is currently on the building.

CONS:

- The most expensive option.
- The storm window creates a unified plane of glare that could disrupt the view of the preserved window.
- When the storm window is in the up position it creates two wide horizontal lines. When the storm is left open while the original sash is closed, the look is clunky.
- Operability is compromised because two sashes need to be opened and closed.

**3 SINGLE LITE ALLIED STORM WINDOW**  
SCALE: 1" = 1' - 0"

PROS:

- The artifact of the original window is preserved in place.
- Simple lines of the storm panel only interrupt the depth of the originally designed assembly.

CONS:

- The second most expensive option.
- The storm window creates a unified plane of glare that could disrupt the view of the preserved window.
- Potential for condensation between windows could lead to increased rot of the restored original sash
- Requires additional mechanical ventilation (extra cost).

**4 EXISTING WINDOW**  
SCALE: 1" = 1' - 0"

PROS:

- Lovely window; beautifully proportioned and crafted.

CONS:

- Contaminated with lead and asbestos.
- Does not keep out the weather:
  - Major source of air leakage.
  - Thermal performance of single pane glass no longer acceptable.
- Very expensive to rehabilitate.

Note: Rebuilding the window with 8-Glass has been deemed unacceptable during previous conversations.

PLEASE NOTE THAT THE DOOR AND "HOOD" WILL BE RESTORED PER THE ORIGINAL DRAWINGS.

Four photographs showing different views of the building's entrance and windows. The first shows a side view of the entrance with a green door and a small balcony. The second shows a close-up of a large arched window. The third shows a close-up of the entrance with a green door and a small balcony. The fourth shows a close-up of a large arched window.

An architectural drawing of the building's entrance and windows, showing the details of the door, the balcony, and the windows.

University of Vermont- Slade Hall

## 4. CHALLENGES AND SOLUTIONS



WINDOWS



Waterbury Municipal Center



Before



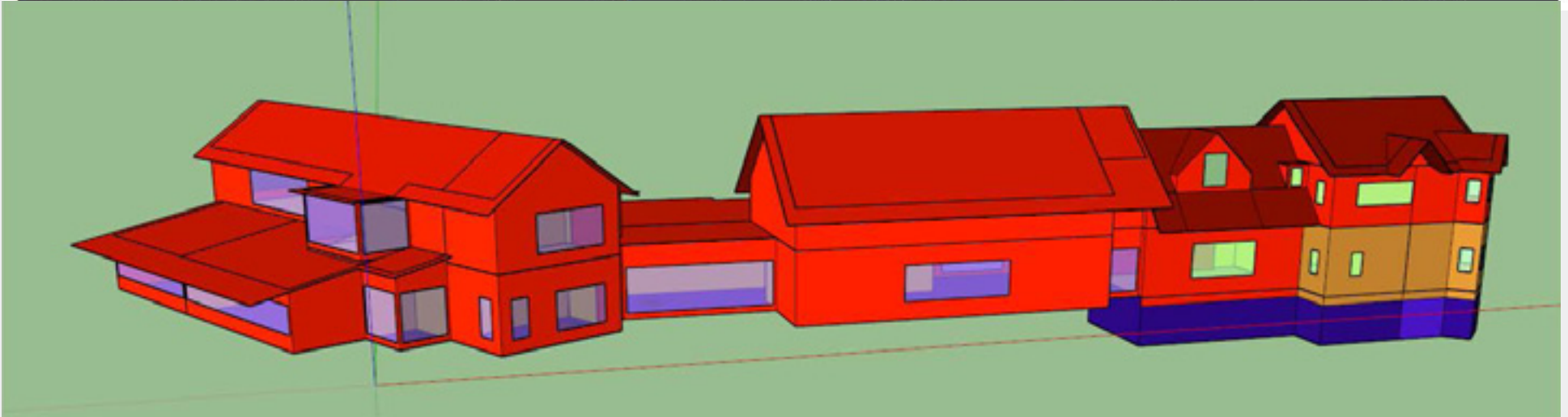
After

4. CHALLENGES AND SOLUTIONS



# ENERGY MODELING

Building Envelope (Construction Assemblies)										
Name	Description	Base Building U-Factor (Btu/h-ft <sup>2</sup> -F)	Base Building Envelope R-Value	Improved Envelope U-Factor (Btu/h-ft <sup>2</sup> -F)	Improved Building Envelope R-Value	Code Max U-Value	Gross Area (ft <sup>2</sup> )	Window Area (ft <sup>2</sup> )	Net Area (ft <sup>2</sup> )	Window To Wall Ratio
Old Underground Floor Construction	Existing Concrete Floor	F-Factor 0.73	N/A	F-Factor 0.73	N/A	F-Factor 0.73 (pre-existing construction)	1,821	-	1,821	N/A
Concrete Wall	Existing Concrete Wall with R-20 Added Insulation	U = 0.269	2	0.043	23.0	U = 0.269 (pre-existing construction)	261	43	218	17%
Existing Brick Wall	Existing Brick Wall, wood framing, air cavity, plaster	U = 0.24	N/A	0.240	4.2	U = 0.24 (pre-existing construction)	1,177	104	1,073	9%
Existing Ext Wall Construction	Second floor wall construction on original building - wood siding, wood framing - infilled with insulation	U = 0.26	N/A	0.043	23.4	U = 0.26 (pre-existing construction)	3,251	316	2,935	10%
Existing Roof	Existing Roof on original building - proposed addition of R-60 Insulation	U = 0.288	N/A	0.016	62.4	U = 0.288 (pre-existing construction)	2,333	-	2,333	N/A
Ext Wall Construction	Exterior wall for new building - proposed R-40 construction. Final wall details to be determined.	U = 0.049	R-20	0.023	43.3	U = 0.049	9,836	2,217	7,619	23%
Old Underground Wall Construction	Existing Concrete Wall with R-20 Added Insulation	C-Factor 0.048	N/A	C-Factor 1.14	N/A	C-Factor 0.048 (pre-existing construction)	1,278	-	1,278	N/A
Roof Construction	Roof Construction for New building - metal surface, proposed R-60 construction - final details not yet determined	U = 0.023	R-30	0.016	62.4	U = 0.032	9,012	-	9,012	N/A
Thick Concrete Wall	Existing Concrete Wall, 2' exterior stone with R-20 Added Insulation	U = 0.269		0.043	23.2	U = 0.269 (pre-existing construction)	88	-	88	N/A
Underground Floor Construction	Slab fully insulated with R-20 under slab	F-Factor - 0.480	N/A	F-Factor - 0.261	N/A	F-Factor - 0.480	7,947	-	7,947	N/A

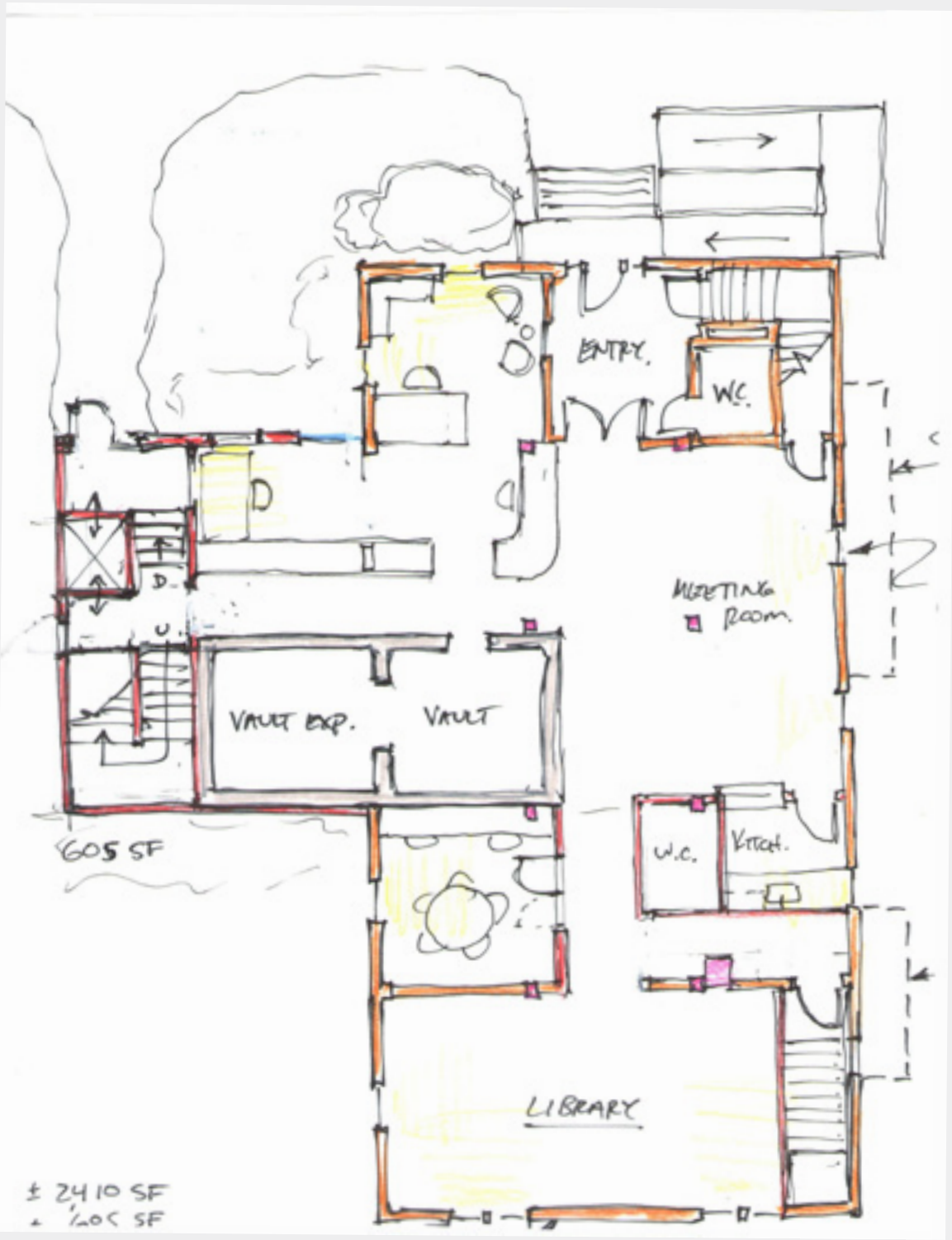


ENERGY MODEL AND IMAGE PROVIDED BY SECOND LAW ENERGY MODELING

## 4. CHALLENGES AND SOLUTIONS



# COST ESTIMATING



CORNWALL TOWN OFFICES

## 4. CHALLENGES AND SOLUTIONS



# CHARACTER AND APPEARANCE

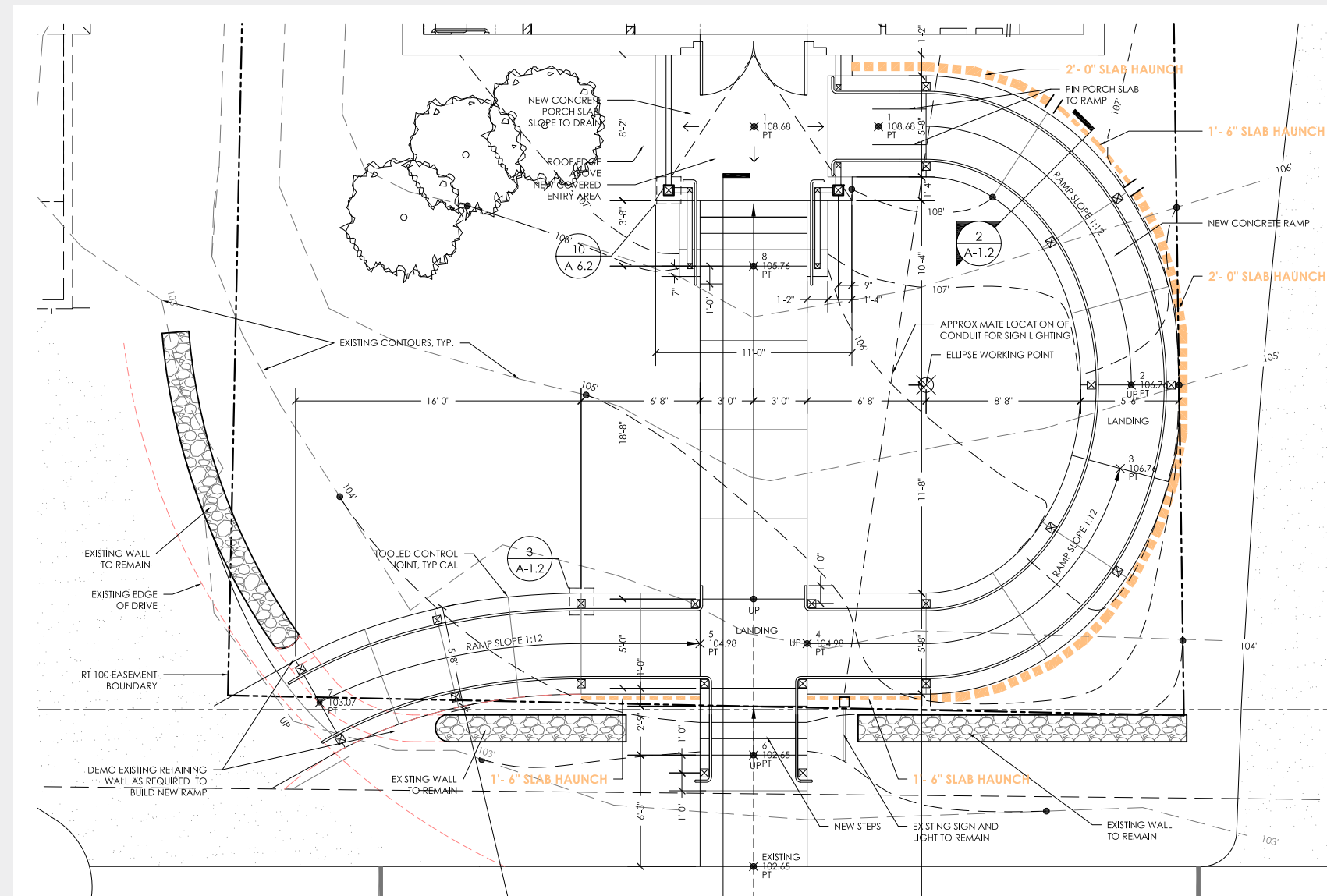


Shelburne Historic Town Hall

## 4. CHALLENGES AND SOLUTIONS



**ACCESSIBILITY**  
ROCHESTER LIBRARY

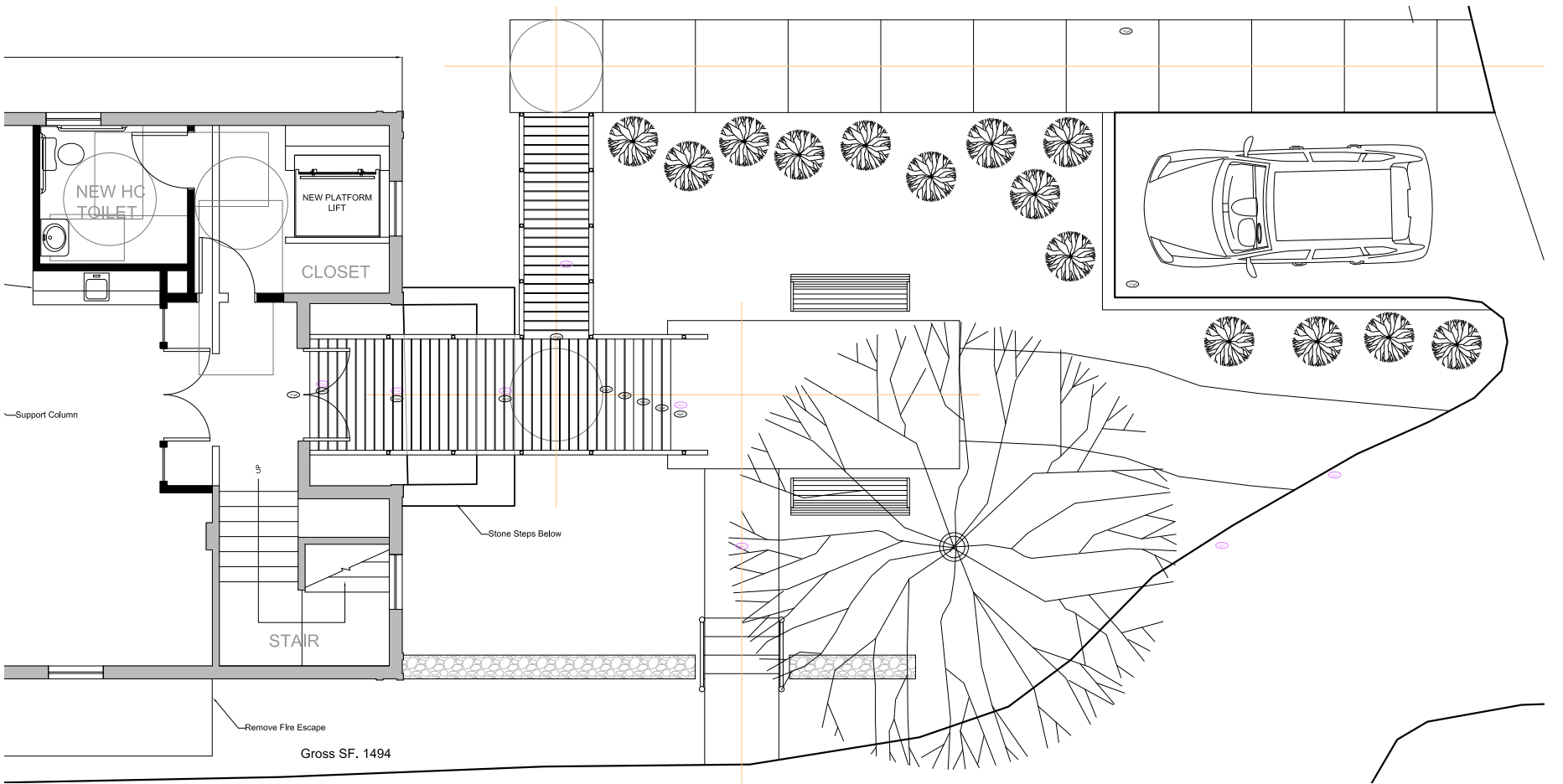


## 4. CHALLENGES AND SOLUTIONS



# ACCESSIBILITY

## SALISBURY TOWN HALL

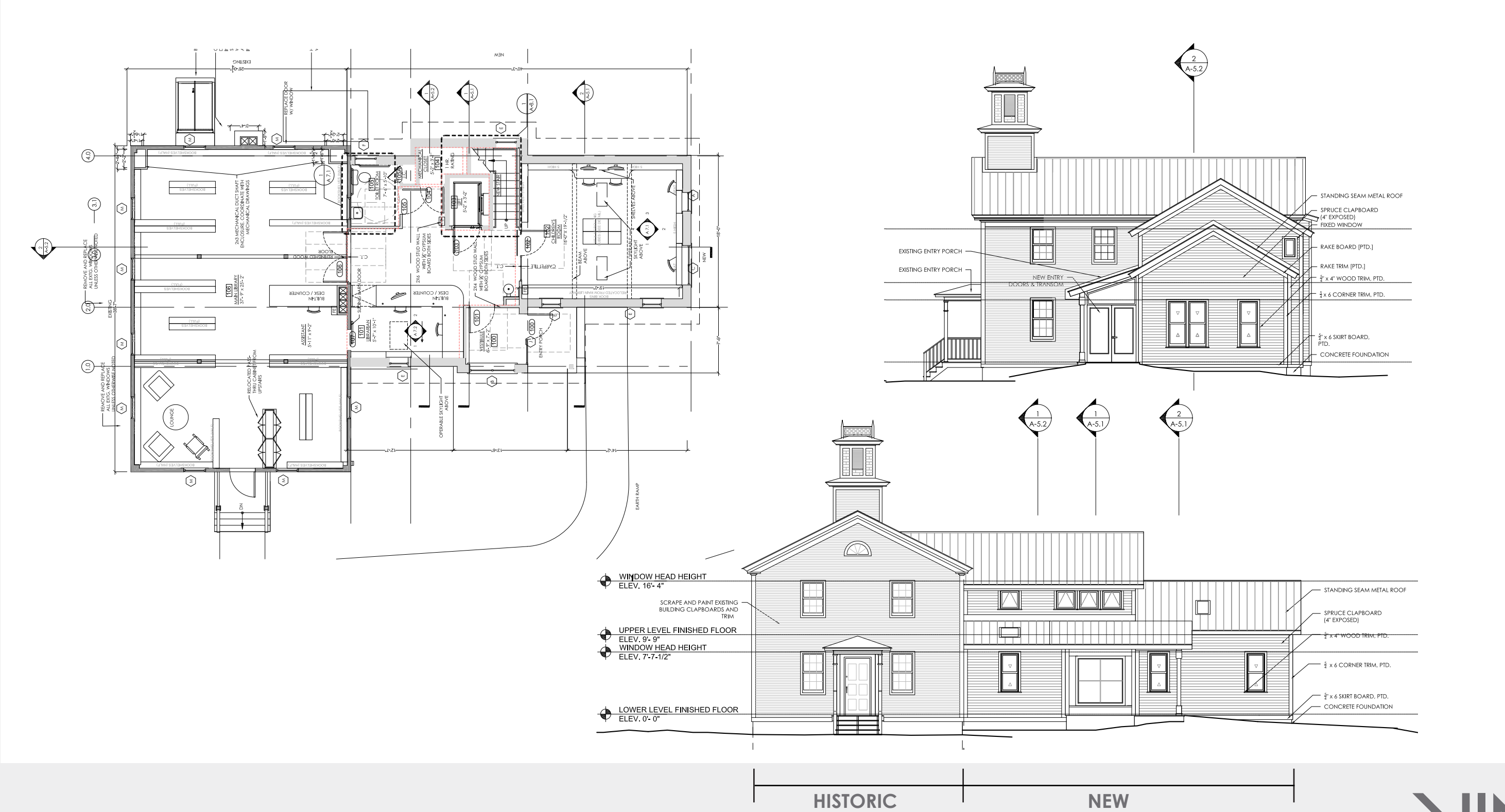


### 4. CHALLENGES AND SOLUTIONS



# ACCESSIBILITY

## JERICHO LIBRARY

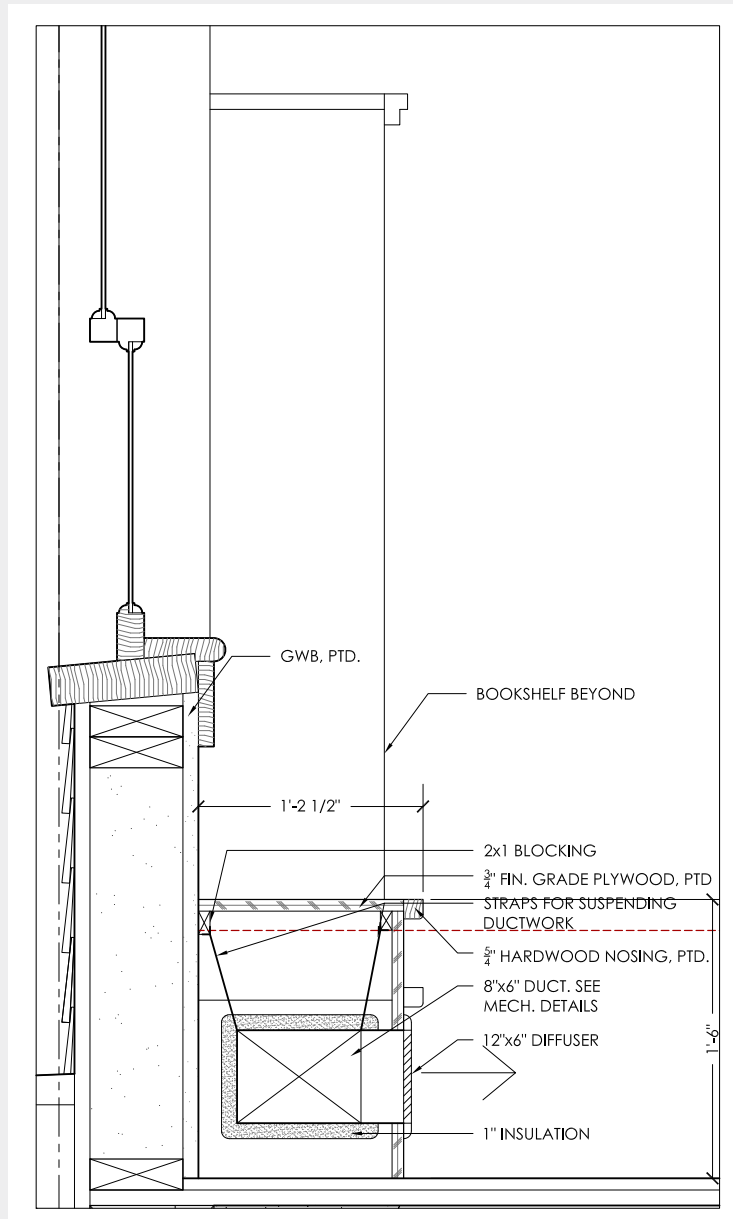


## 4. CHALLENGES AND SOLUTIONS



# BUILDING SYSTEMS

## RETROFIT: WHERE DOES IT ALL GO?



Rochester Library

## 4. CHALLENGES AND SOLUTIONS



## BUILDING SYSTEMS RETROFIT VS. NEW



## 4. CHALLENGES AND SOLUTIONS



## BUILDING SYSTEMS

REMOVING OLD SYSTEMS BEFORE INTRODUCING NEW



Slade Hall Steam Heat Removed



Waterbury-Janes' House New HVAC

## 4. CHALLENGES AND SOLUTIONS



## FUNDING SOURCES

- COMMUNITY DEVELOPMENT BLOCK GRANTS
- HISTORIC PRESERVATION TAX CREDITS
- CULTURAL FACILITIES GRANTS



Jericho Library Studies

## 5. RESOURCES



## RESOURCES

- Division of Historic Preservation  
<http://accd.vermont.gov/historic-preservation>
- Preservation Trust  
<http://www.ptvermont.org/>
- Secretary of the Interior's Standards  
<https://www.nps.gov/tps/standards.htm>
- Local Historical Societies & People
- Local Crafts-people



Jericho Center Library





Questions?

THANK YOU!