

**Newburyport Historical Commission  
DEMOLITION PERMIT APPLICATION (Step 1)**

Property Address: 195 High Street

Applicant: Preservation Timber Framing, Inc.

Address: P.O. Box 28, Berwick, ME 03901

Phone: 207-698-1695 Email: arron@preservationtimberframing.com

Owner (if different) Stephen DeLisle and Brin Stevens

Year built: 1792 Area (sq. ft.): 600 ground floor

Architectural style: Vernacular

- The structure is:
- A principal structure which is in whole or in part 75 or more years old
  - An accessory structure 100 or more years old
  - Listed on the National Register of Historic Places
  - Previously designated by the Commission to be a significant building

Structure type: Residential:  Single Family  Two-Family  Multi-Family

Outbuilding:  Specify: Garage/Carriage Barn

Commercial:  Specify: \_\_\_\_\_

Institutional:  Specify: \_\_\_\_\_

A Form B survey is:  attached  not available

- Demolition type:
- Full Building Demolition?
  - Partial Building Demolition?
  - Roof Line Change?

Additional information describing request:  
Take down, restore and replace. Temporary removal from the situs.

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

Owner's Signature (if different) Stephen DeLisle Date 10/8/19

CITY OF NEWBURYPORT, MA  
**ZONING DETERMINATION**

APR# \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_ Zoning District(s): \_\_\_\_\_

Request: \_\_\_\_\_

**ZONING BOARD REVIEW REQUIRED**

**Variance**

- Dimensional Controls (VI)
    - Lot Area
    - Lot Frontage
    - Lot Coverage
  - Open Space
  - Height
  - Lot Width
- |                                     |                                    |                                    |
|-------------------------------------|------------------------------------|------------------------------------|
| <input type="checkbox"/> Front Yard | <input type="checkbox"/> Side Yard | <input type="checkbox"/> Rear Yard |
|-------------------------------------|------------------------------------|------------------------------------|
- Parking (VII)
- Modification

**Sign Variance**

- Signs (VIII)
  - Type
  - Lighting
- Size
- Location

**Other**

\_\_\_\_\_

**Special Permit**

- Table of Use Regulations (V.D) #: \_\_\_\_\_
- Spacing (VI.D)
- In-Law Apartment (XIIA)
- Bonus for Multifamily Developments (XVI)
- Personal Wireless Communication Services (XX)
- Demolition Control Overlay District (XXVIII)\*
- Wind Energy Conversion Facilities (XXVI)
- Other \_\_\_\_\_

**Special Permit for Non-Conformities**

- Extension or Alteration (IX.B.2)
    - Parking
    - Upward Extension
    - Open Space
    - Height
    - Lot Area
    - Use
  - Rear Yard
  - Lot Coverage
  - Side Yard
  - Lot Frontage
  - Front Yard
- Over 500 sf. increase (IX.B.3.c)
  - Plum Island Overlay District (XXI-G-3)
    - FAR
    - Lot Coverage
  - Height
  - Setbacks
  - Open Space

**PLANNING BOARD REVIEW REQUIRED**

**Special Permit**

- Table of Use Regulations (V-D) # \_\_\_\_\_
- One residential structure per lot (VI.C)
- Open Space Residential Development (XIV)
- Water Resource Protection District (XIX)
- Federal Street Overlay District (XXII)
- Courts and Lanes (XXIII)
- Waterfront West Overlay District (XXIV)
- Towle Complex Redev. Overlay District (XXV)
- Downtown Overlay District (XXVII)\*
- Other \_\_\_\_\_

**Special Permit for Non-Conformities**

- Extension or Alteration (IX.B.2)
    - Parking
    - Upward Extension
    - Open Space
    - Height
    - Lot Area
    - Use
  - Rear Yard
  - Lot Coverage
  - Side Yard
  - Lot Frontage
  - Front Yard
- Over 500 sf. increase (IX.B.3.c)

**Smart Growth District (XXIX)**

- Plan Approval

**Site Plan Review (XV)**

- Major
- Minor

**HISTORICAL COMMISSION REVIEW REQUIRED**

- Demo. Delay
- \*Advisory Review

**CONSERVATION COMMISSION REVIEW REQUIRED**

\_\_\_\_\_  
Newburyport Zoning Administrator

\_\_\_\_\_  
Date

# 195 HIGH ST

**Location** 195 HIGH ST

**MBLU** 37/ 8/ //

**Owner** DELISLE STEPHEN G

**Assessment** \$731,300

**PID** 2189

**Building Count** 1

## Current Value

Assessment		Land	Total
Valuation Year	Improvements		
2019	\$416,500	\$314,800	\$731,300

### 1 Map Links

All locations identified on Google, Yahoo, and Bing maps are approximate and may not be exact

Go To Google Maps

(<http://maps.google.com/?q=195 HIGH ST NEWBURYPORT, MA>)

Go To Yahoo Maps

(<http://maps.yahoo.com/#q=195%2>)

Go To Microsoft Bing Maps

(<http://www.bing.com/maps/?q=195 HIGH ST NEWBURYPORT, MA>)

## Owner of Record

**Owner** DELISLE STEPHEN G  
**Co-Owner** BRIN E STEVENS T/E  
**Address** 195 HIGH ST  
 NEWBURYPORT, MA 01950

**Sale Price** \$500,000  
**Certificate**  
**Book & Page** 34244/0542  
**Sale Date** 07/27/2015  
**Instrument** 10

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
DELISLE STEPHEN G	\$500,000		34244/0542	10	07/27/2015
SULLIVAN BRIAN O	\$0		28261/0584	1A	01/22/2009
SULLIVAN GEO A	\$0		4038/ 99		

## Building Information

### Building 1 : Section 1

**Year Built:** 1790

**Living Area:** 2,768

Building Attributes	
Field	Description
Style	Old Style Colonial
Model	Residential
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Clapboard
Exterior Wall 2	

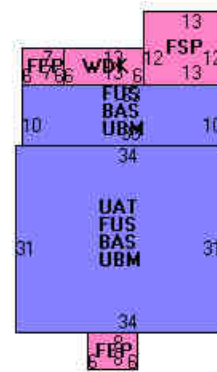
Roof Structure:	Gable/Hip
Roof Cover	Slate
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Pine/Soft Wood
Interior Flr 2	Hardwood
Heat Fuel	Oil
Heat Type:	Steam
AC Type:	None
Total Bedrooms:	4 Bedrooms
Total Bthrms:	2
Total Half Baths:	0
Total Xtra Fixtrs:	
Total Rooms:	9 Rooms
Bath Style:	Average
Kitchen Style:	Average

### Building Photo



(<http://images.vgsi.com/photos/NewburyportMAPotos//\01\00\0>)

### Building Layout



(<http://images.vgsi.com/photos/NewburyportMAPotos//Sketches/>)

Building Sub-Areas (sq ft)			Legend	
Code	Description	Gross Area	Living Area	
BAS	First Floor	1,384	1,384	
FUS	Upper Story, Finished	1,384	1,384	
FEP	Porch, Enclosed	90	0	
FSP	Porch, Screened	156	0	
UAT	Attic	1,054	0	
UBM	Basement, Unfinished	1,384	0	
WDK	Deck, Wood	78	0	
		5,530	2,768	

### Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
FPL3	FIREPLACE 2 ST	1 UNITS	\$3,300	1

## Land

### Land Use

**Use Code** 1010  
**Description** SINGLE FAM  
**Zone** R2

### Land Line Valuation

**Size (Acres)** 0.72  
**Depth** 0  
**Assessed Value** \$314,800

## Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR4	GAR W/LFT AVE			630 S.F	\$6,400	1

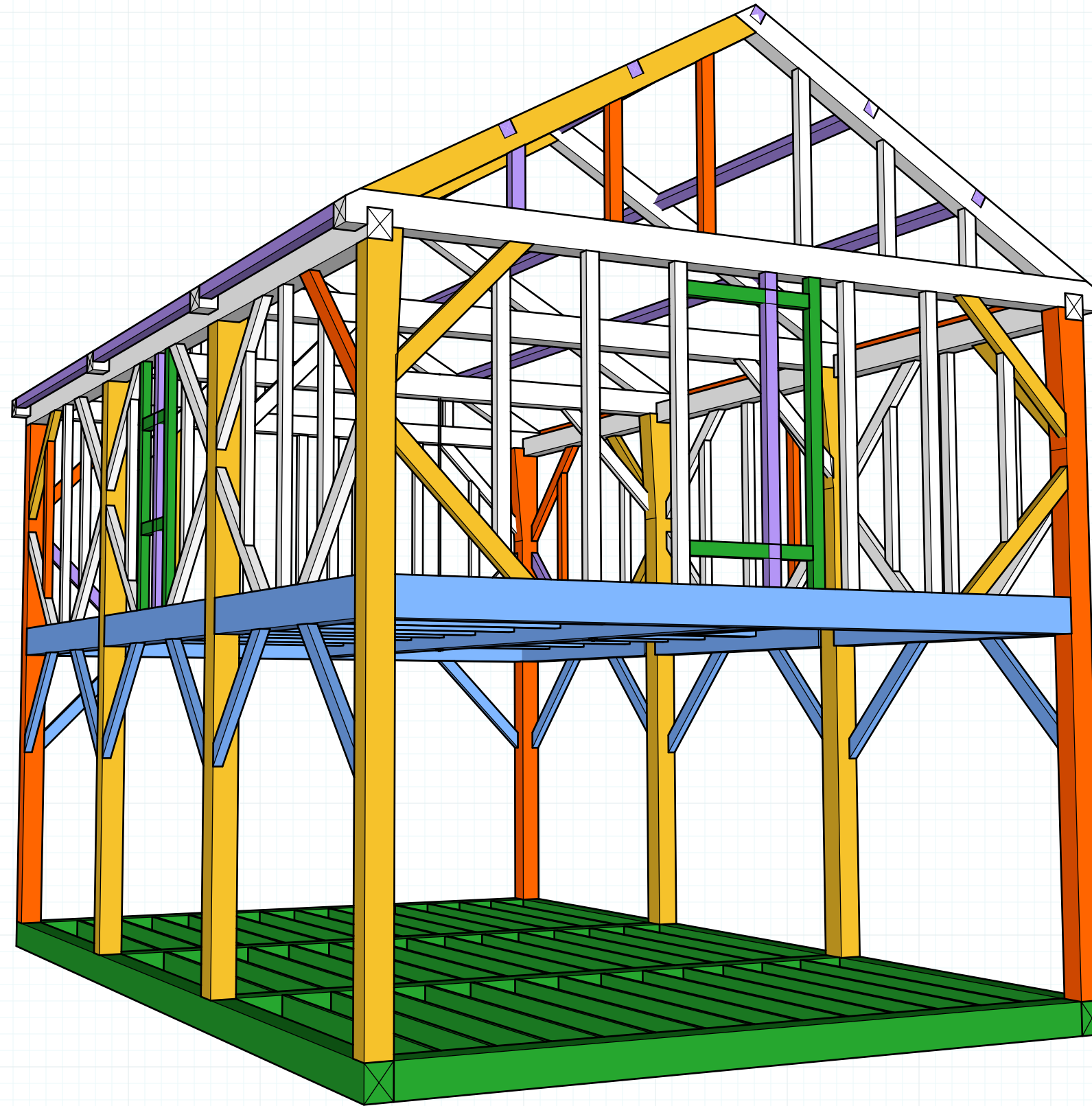
## Valuation History

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$279,500	\$300,100	\$579,600

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## Front Iso

not to scale



**PTF**

**PRESERVATION TIMBER FRAMING**  
P.O. Box 28  
Berwick, ME 03901  
[www.preservationtimberframing.com](http://www.preservationtimberframing.com)

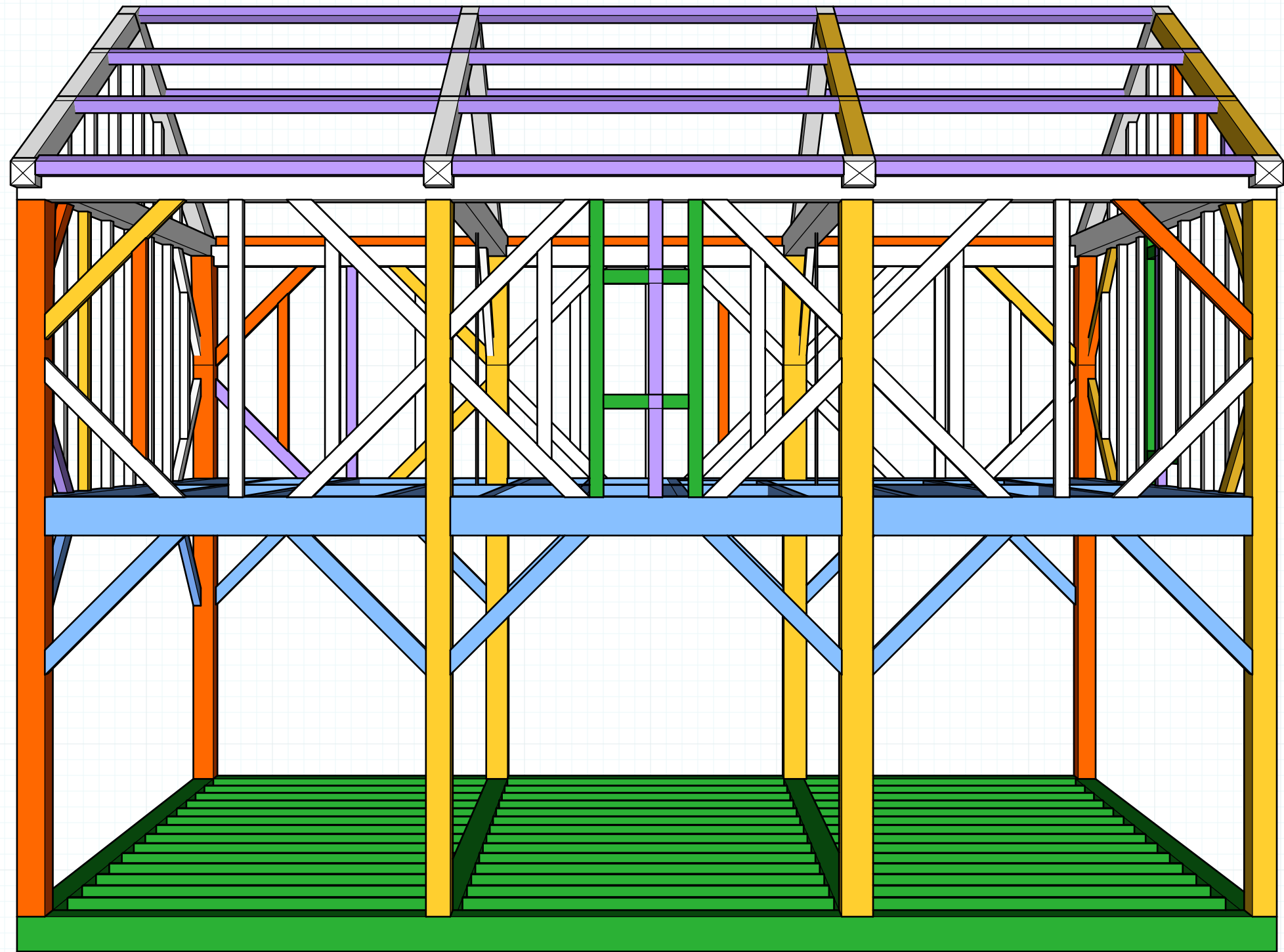
**ARRON STURGIS**  
Office - 207.698.1695  
Cell - 603.781.5725  
[arron@preservationtimberframing.com](mailto:arron@preservationtimberframing.com)

**Delisle Barn**  
Brin Stevens and Stephen Delisle  
195 High St  
Newburyport, MA

**02.1.2019**  
Issue 001  
Jessica MilNeil

# Left Iso

not to scale



## COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing

PTF

02.1.2019  
Draft: 001  
Jessica MilNeil

Delisle Barn  
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195 High St  
Newburyport, MA

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P.O. Box 28  
Berwick, ME 03901  
207 698 1695

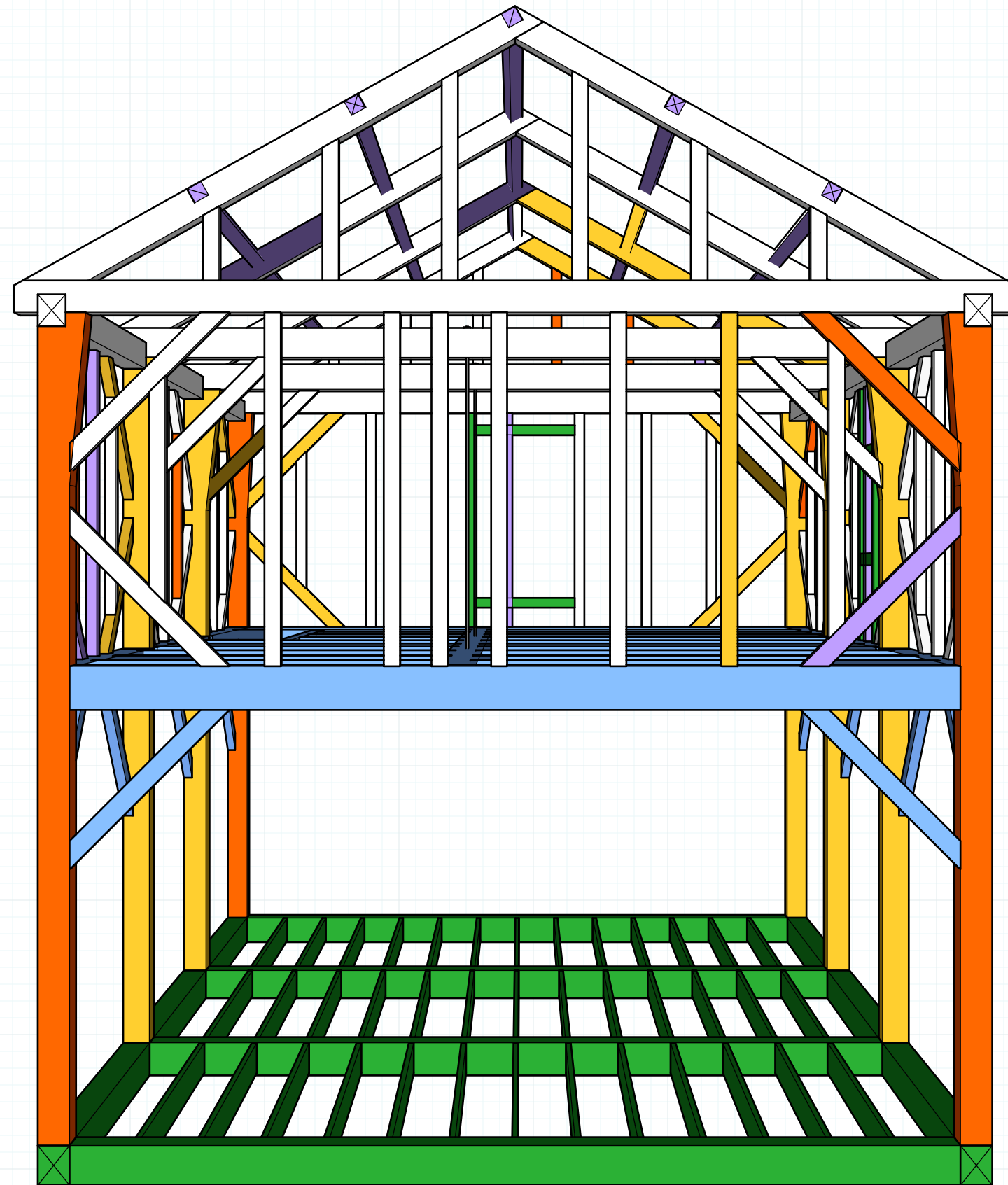
# Rear Iso

not to scale



## COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing



02.1.2019  
Draft: 001  
Jessica MilNeil

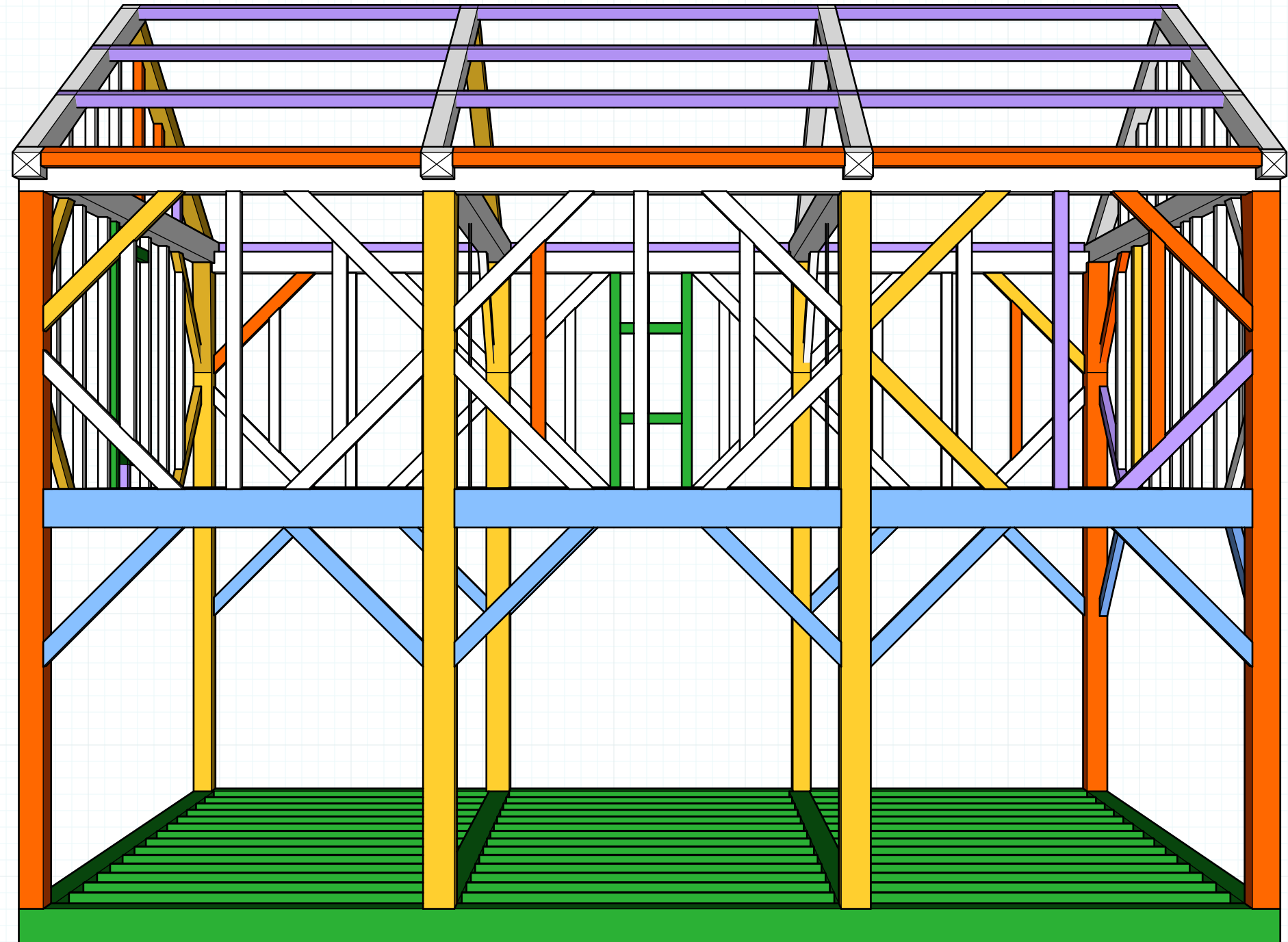
Delisle Barn  
Brin Stevens and Stephen Delisle  
195 High St  
Newburyport, MA

PRESERVATION TIMBER FRAMING  
P.O. Box 28  
Berwick, ME 03901  
207 698 1695



# Right Iso

not to scale



## COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing

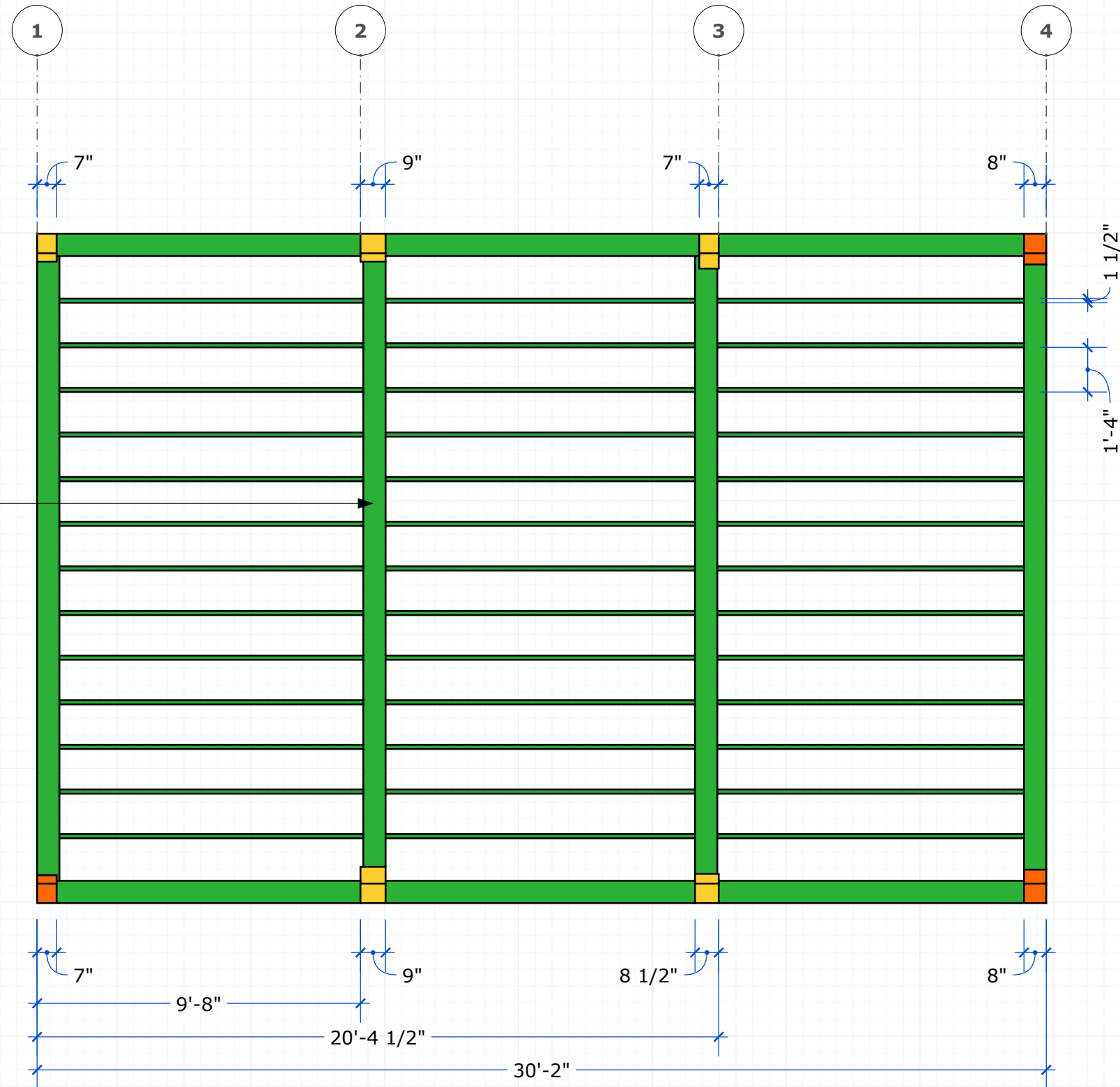
02.1.2019  
Draft: 001  
Jessica MilNeil

**Delisle Barn**  
Brin Stevens and Stephen Delisle  
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Newburyport, MA

**PRESERVATION TIMBER FRAMING**  
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207 698 1695

**Sill Level**

1/4" : 1'



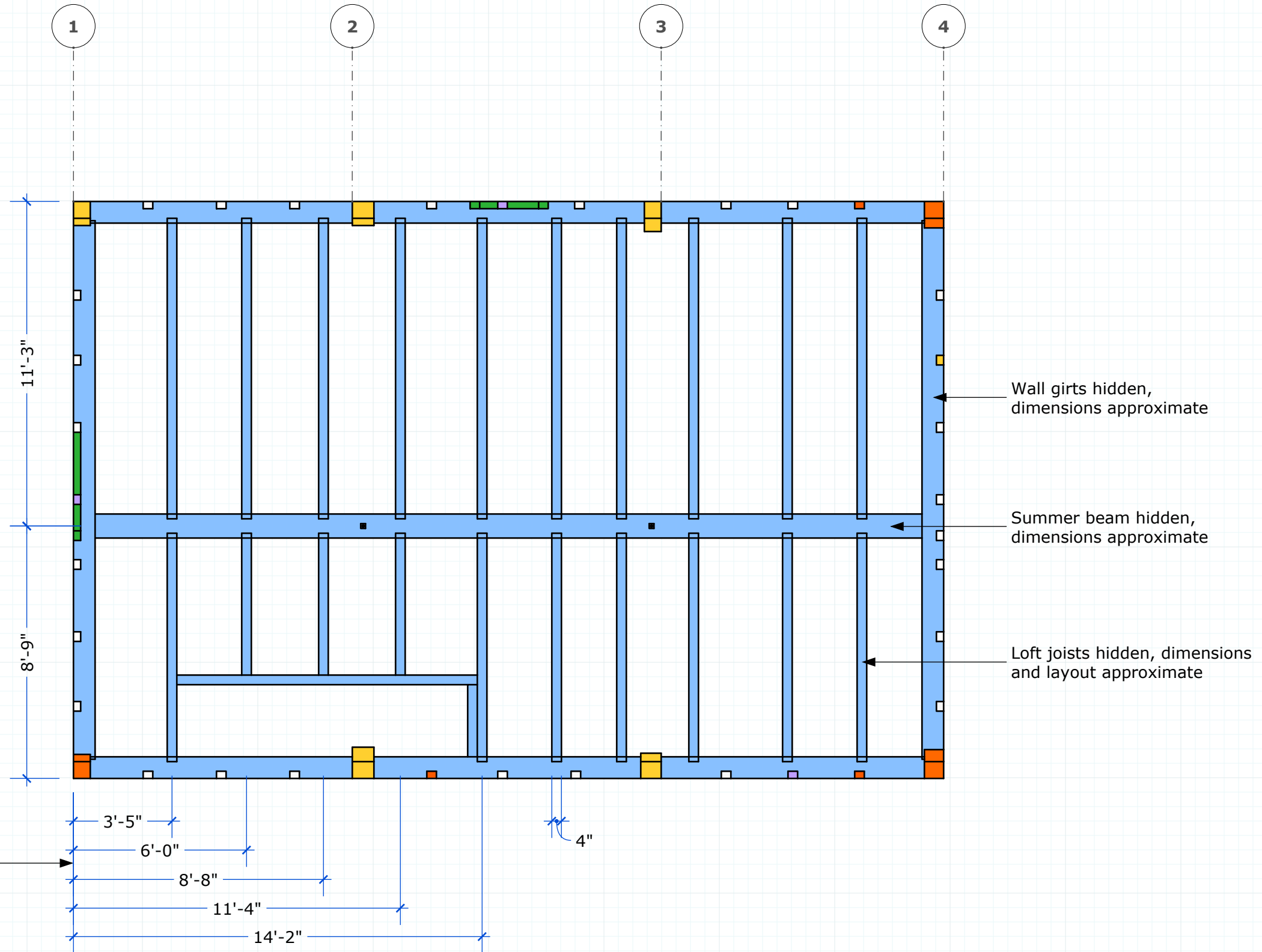
Undercarriage will need to be replaced. New concrete slab is one option. A combination timber/conventional floor is modeled: timber sills, timber girts aligned with bents, and KD joists on hangers

**COLOR CODE**

- Replace
- Repair
- New
- Hidden
- Missing

# Loft Level

1/4" : 1'



## COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing

PTF

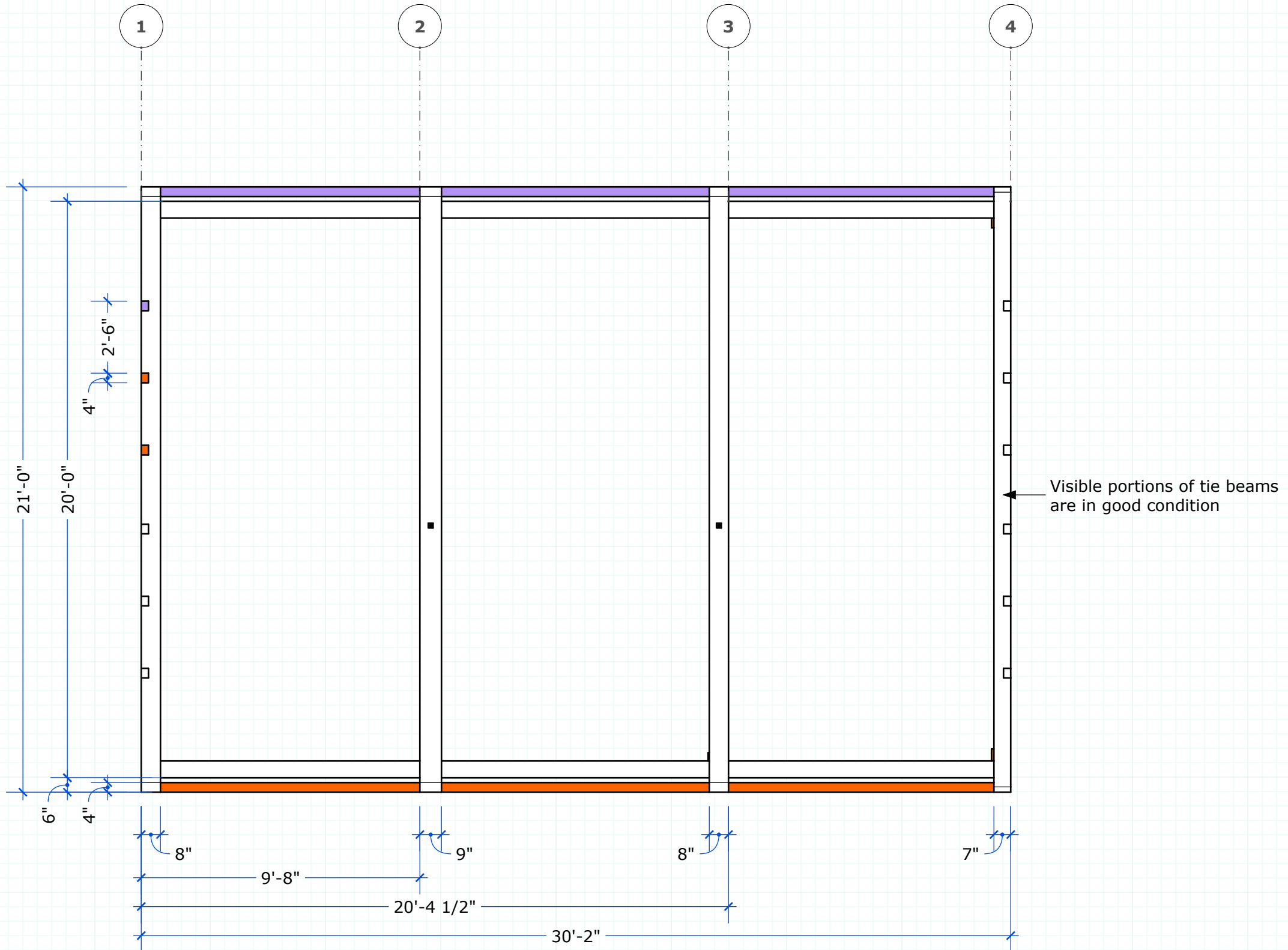
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# Tie Level

1/4" : 1'



## COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing

PTF

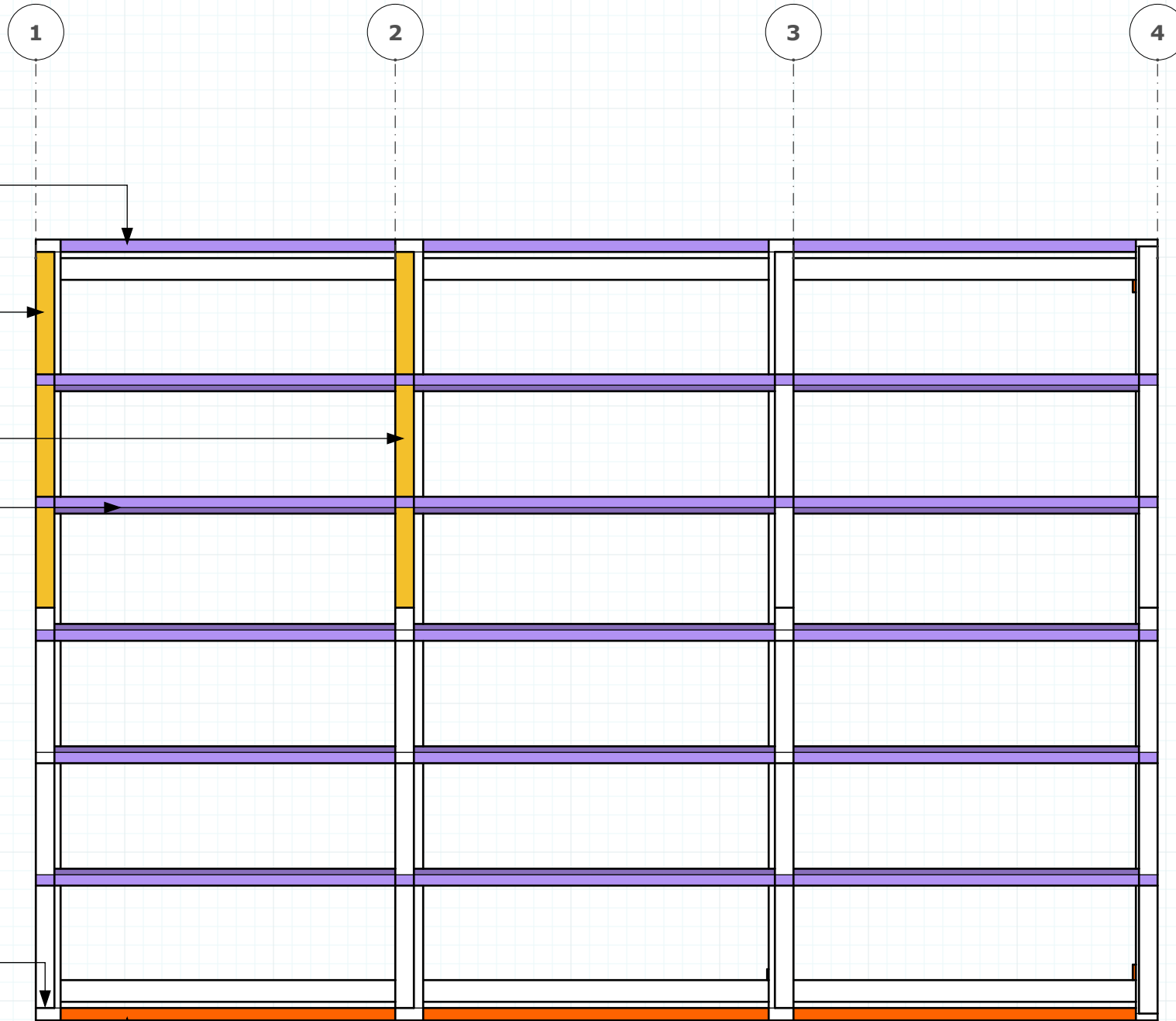
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**Roof Level**

1/4" : 1'



**COLOR CODE**

-  Replace
-  Repair
-  New
-  Hidden
-  Missing

**PTF**

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Jessica MilNeil

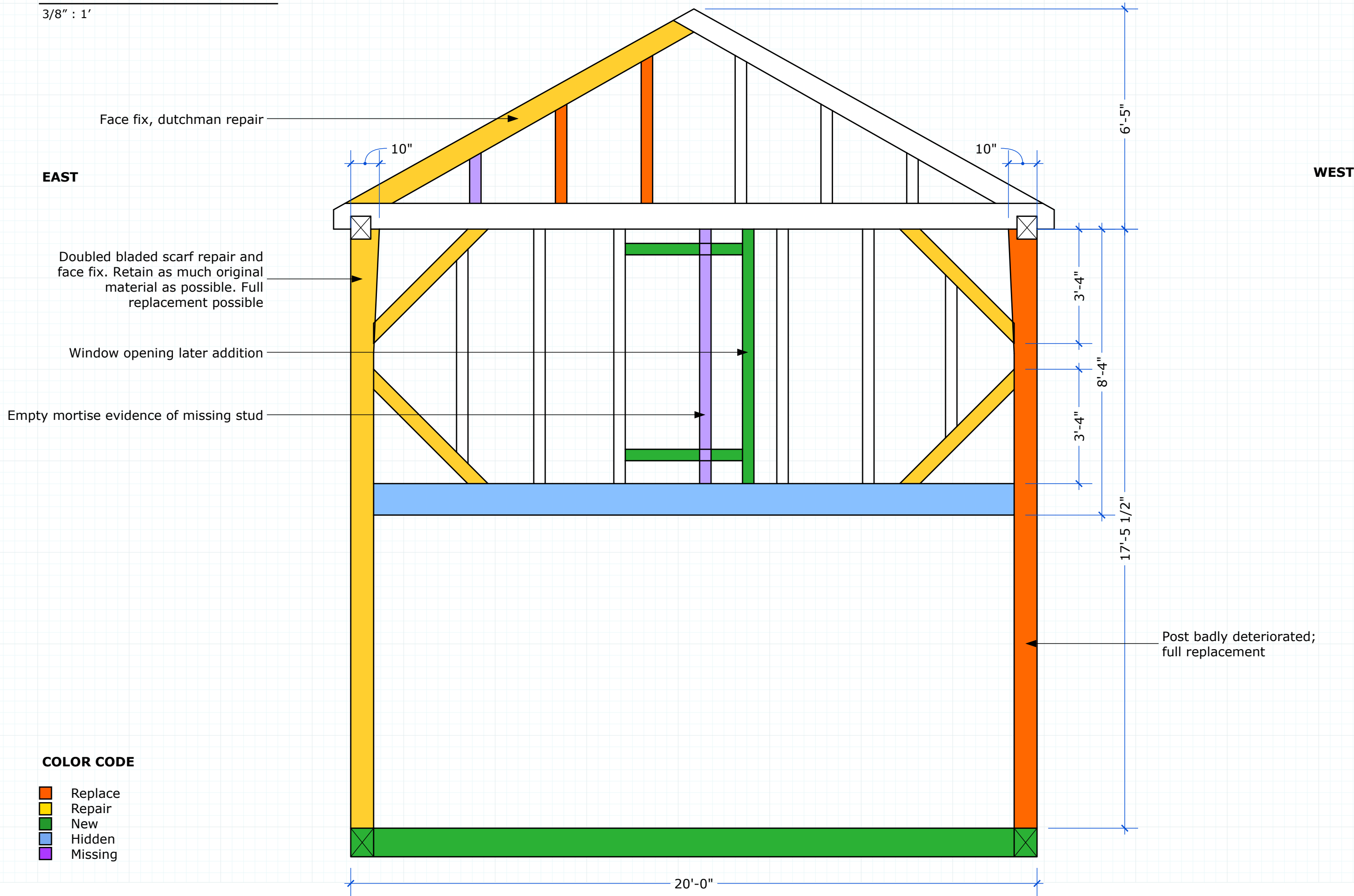
**Delisle Barn**  
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195 High St  
Newburyport, MA

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**Bent 1**

3/8" : 1'



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**Bent 2**

3/8" : 1'

Reference face shown; bent 2 is referenced to front gable

**EAST**

**WEST**

Original flying purlin replaced with KD,  
tie beam ends bolstered with KD

Tie beams run by plate,  
joined by flying purlins

Tie rod hangs from tie beam,  
supports summer beam

No girts or joists in line with bent.  
Joists run next to posts

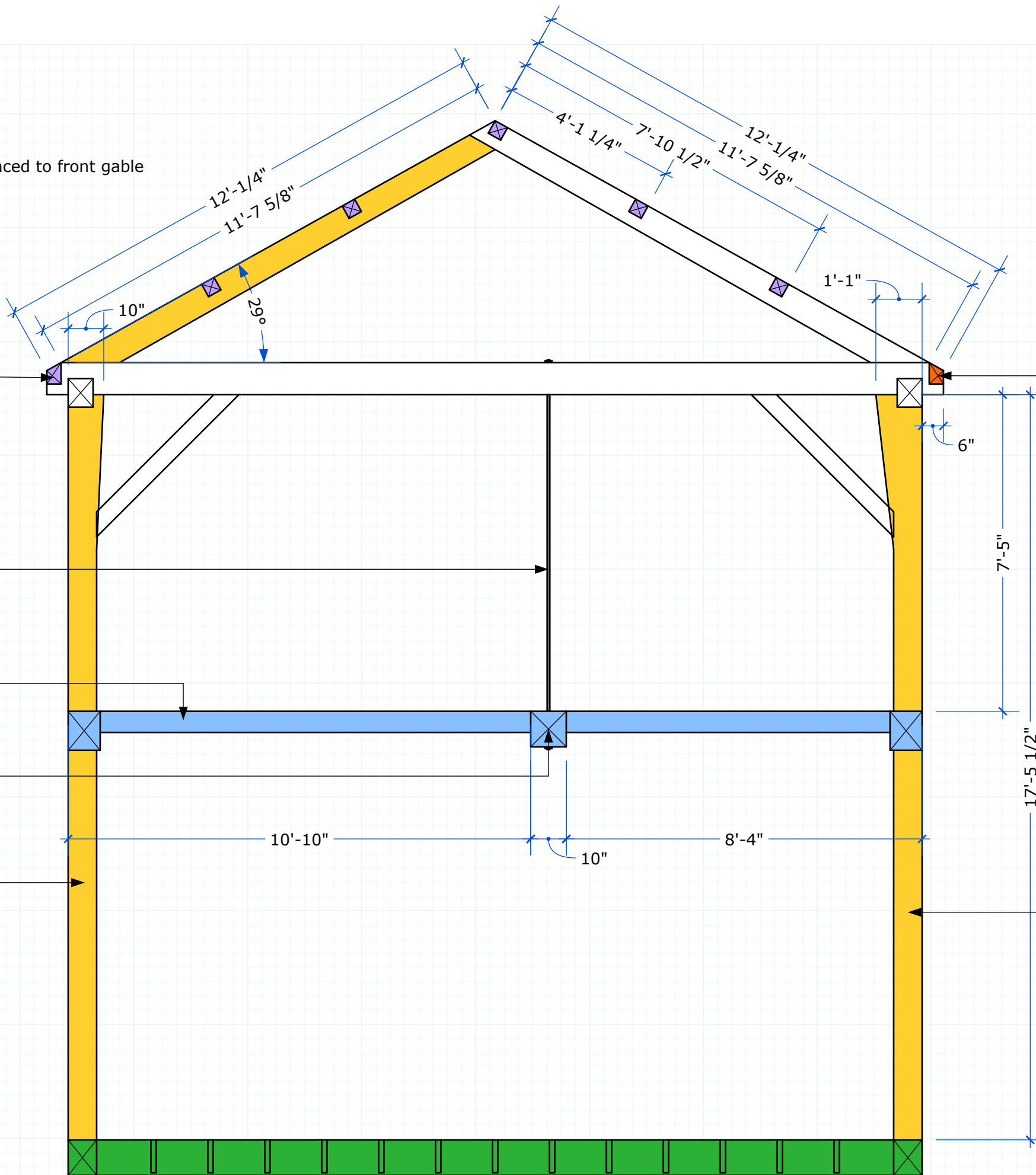
Loft joists land on eave girt and central  
summer beam; dimensions approximate

Face fix, dutchman repair, possible scarf fix

Face fix, dutchman repair,  
possible scarf repair

**COLOR CODE**

- Replace
- Repair
- New
- Hidden
- Missing



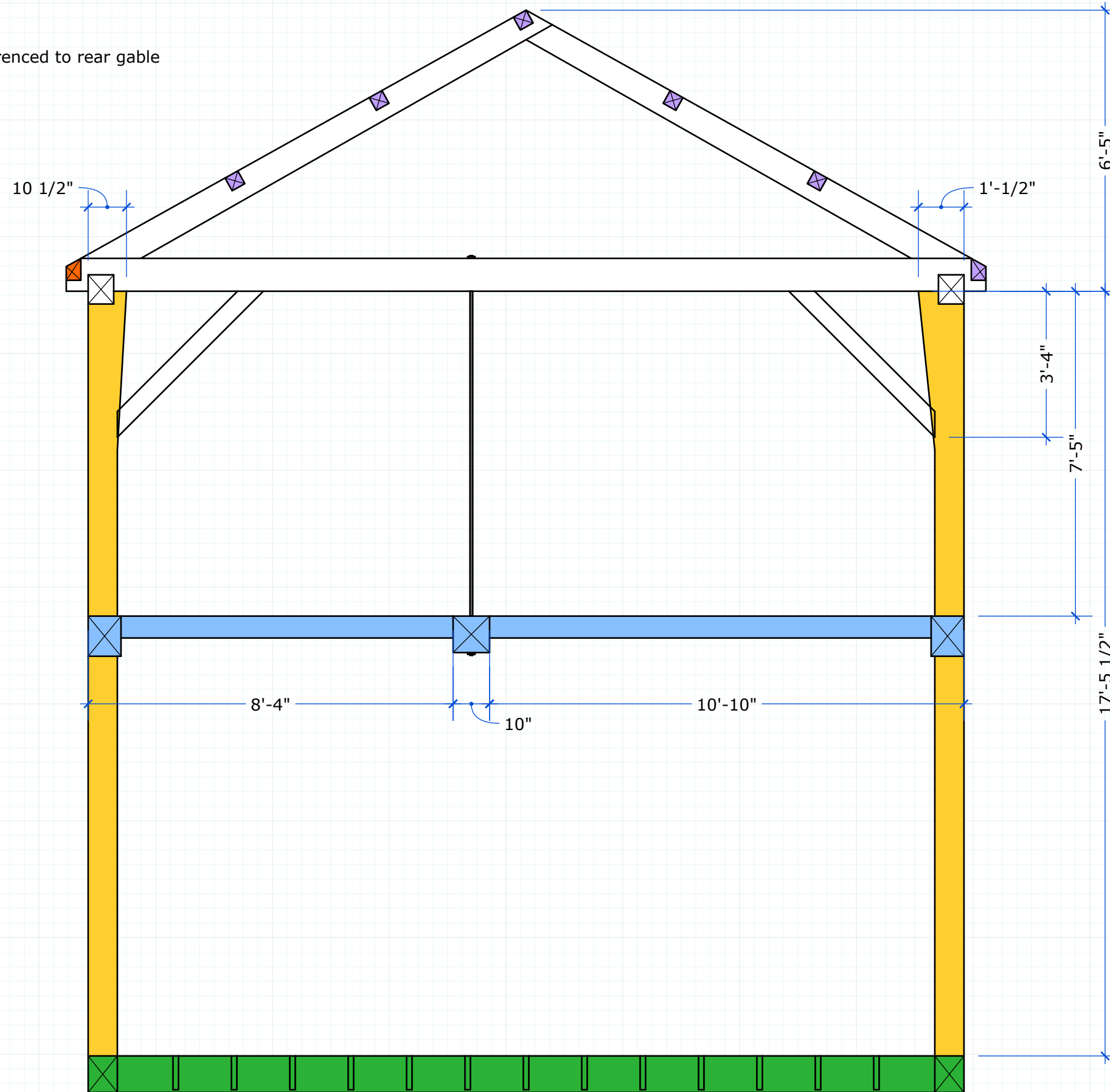
### Bent 3

3/8" : 1'

Reference face shown; bent 3 is referenced to rear gable

WEST

EAST



#### COLOR CODE

- Replace
- Repair
- New
- Hidden
- Missing

PTF

02.1.2019  
Draft 001  
Jessica MilNeil

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195 High St  
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11

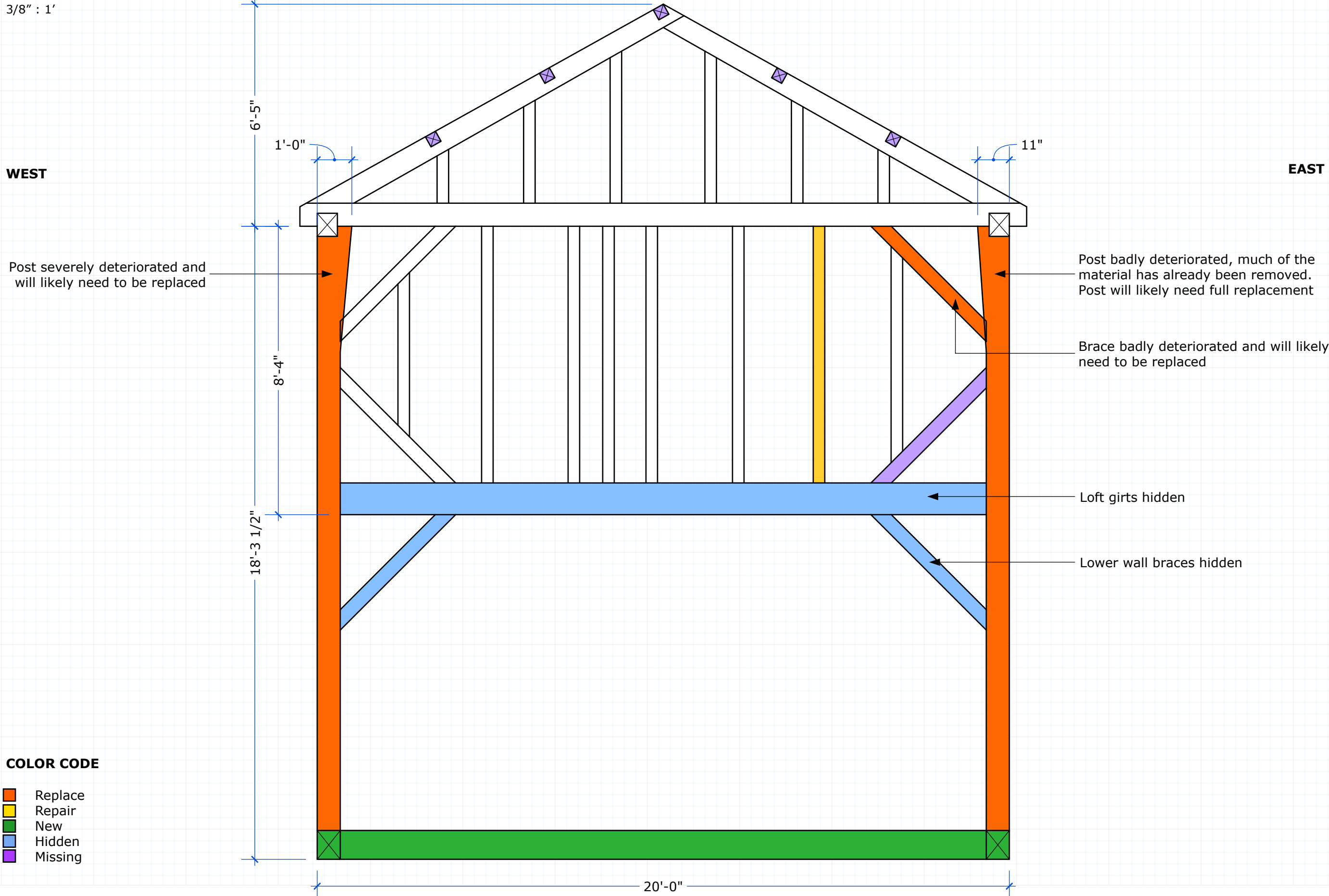


**Bent 4**

3/8" : 1'

WEST

EAST



Post severely deteriorated and will likely need to be replaced

Post badly deteriorated, much of the material has already been removed. Post will likely need full replacement

Brace badly deteriorated and will likely need to be replaced

Loft girts hidden

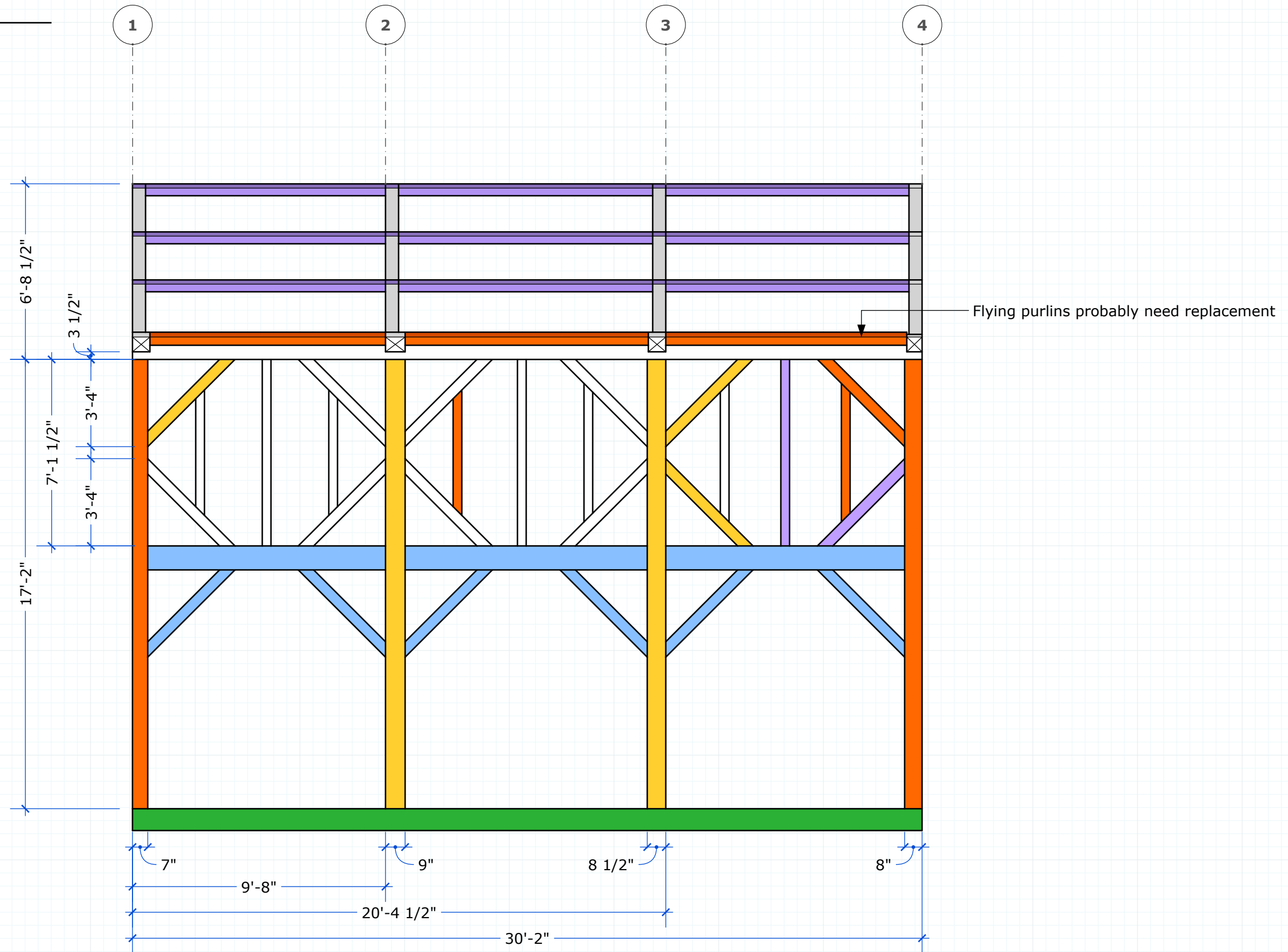
Lower wall braces hidden

**COLOR CODE**

- Replace
- Repair
- New
- Hidden
- Missing

**East (Right) Eave**

1/4" : 1'

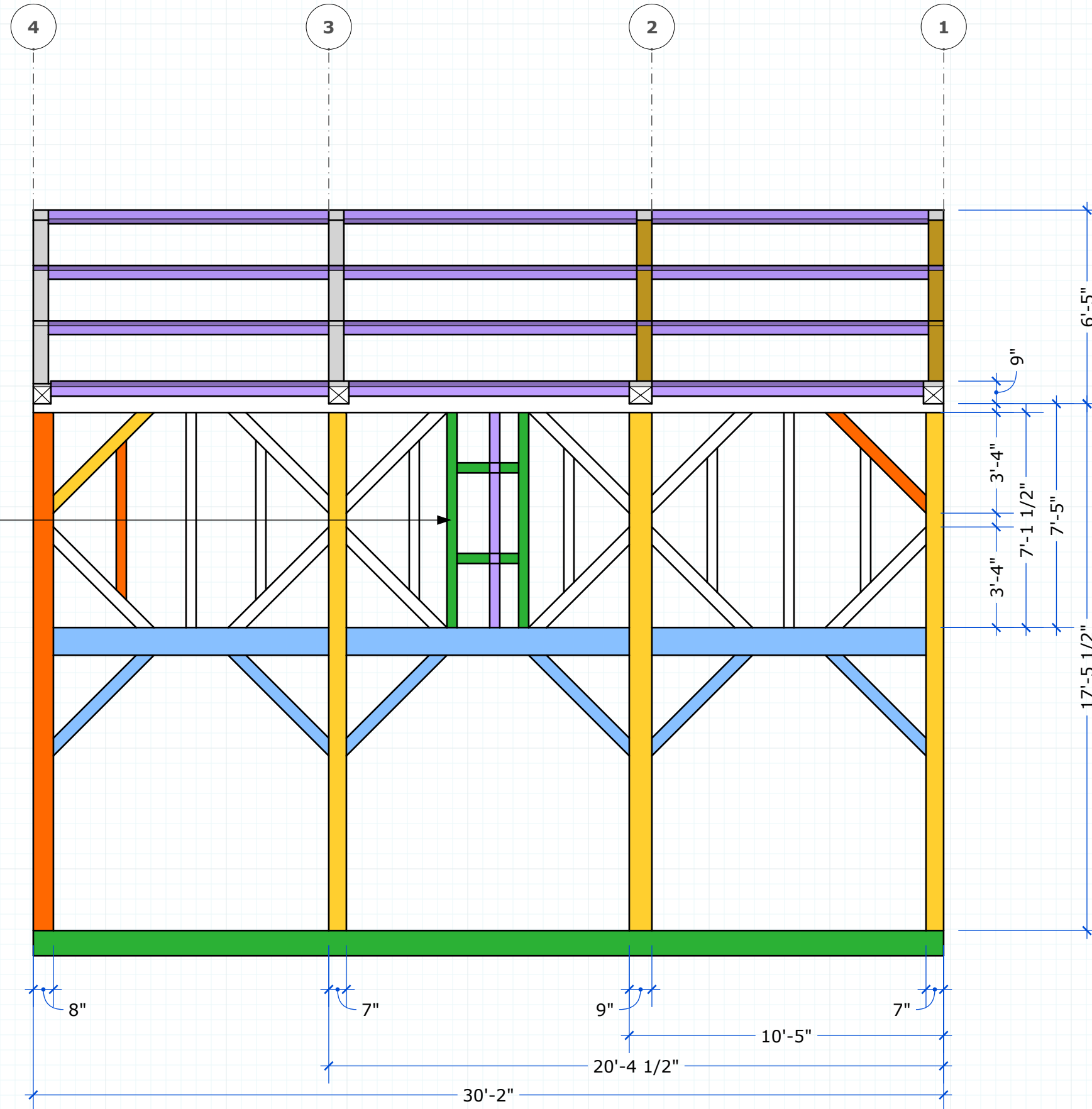


**COLOR CODE**

- █ Replace
- █ Repair
- █ New
- █ Hidden
- █ Missing

**West (Left) Eave**

1/4" : 1'



Later window addition; original stud location indicated by mortise

**COLOR CODE**

- Replace
- Repair
- New
- Hidden
- Missing

# 195 High Street, City of Newburyport

04/25/2019



Data Sources: Produced by Merrimack Valley Planning Commission (MVPC) using data provided by the City of Newburyport & MassIT/MassGIS. MVPC AND THE CITY OF NEWBURYPORT MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, CONCERNING THE ACCURACY, COMPLETENESS, RELIABILITY, OR SUITABILITY OF THESE DATA. THE CITY OF NEWBURYPORT AND MVPC DOES NOT ASSUME ANY LIABILITY ASSOCIATED WITH THE USE OR MISUSE OF THIS INFORMATION.



- Municipal Boundary
- Roads
  - Interstate
  - Major Road
  - Local Road
- Parcels
- Paved
- Unpaved
- Hydrographic Featu
  - Streams
  - Stream
  - Intermittent Stre

Legend

1:1,200



# DeLisle Barn

Existing Conditions Assessment Photo Documentation

By Arron Sturgis | January 29, 2019

POWERED BY





📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Front Gable:**  
**Large entry door and concrete ramp is not original to the structure.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

## **Rear Gable:**

**This two story carriage shed sits at grade. The clapboards and trim are not original.**

3



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Left Side Eave (as viewed from the driveway):  
The asphalt roof is near its end of life. Gutters  
are not functional. Clapboards are not original  
and covered in lead based paint. A beautiful  
timber frame is hidden beneath a much later  
exterior.**





📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Corner boards show signs of decay and animal damage. Water penetration is prevalent at the base of the barn where grade has built up over time and covered the sills. This has caused structural decay in the sills and post feet.**

5



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Right rear corner of the barn is buried below the ground leaving it rotten and settled. The foundation along this side of the barn is minimal at best and does not adequately support the barn.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Severe decay of much newer trim elements, including this corner board, indicate continued water penetration inside the building.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Extensive sill damage and post foot damage is evident behind the decayed exterior siding and sheathing.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

### **First Floor:**

**The bead board ceiling and walls hide a much earlier timber framed structure. This bead board was likely added in the first part of the 20th century. The barn frame is 18th century. This garage space is very functional for storage.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**A very nice staircase rises from the first floor to the loft space above. The ceiling is fully clad in bead board and hides original loft framing timbers. The garage door was added much later.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**The loft upstairs reveals the original timber frame complete with continuous tie beams and principal rafters. The tie beams are fully braced and cross over the continuous top plate and flared post at each bent. This english form of timber framing is prevalent during the 18th and early 19th century in New England. The barn is both authentic and very early. Very few of these structures have survived in Newburyport.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**This barn is very strong. It hosts ascending and descending braces which stiffen the frame tremendously. It also hosts both heavy timber posts with studs between in each bay. This is structural redundancy at its best. The top plate runs the full length of the barn eave wall. The tie beams are continuous. The entire frame is sheathed with wide pine boards that are beveled along both edges and fit together so tightly that they can shed water without exterior siding. Common purlins have been removed between principal rafters and plywood has replaced vertical sheathing boards.**





📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Some powder post beetle damage is present in the frame, but it is not a structural issue. Water damage in the corner posts, however, will require their in kind replacement. As much of the original frame as possible will be saved and repaired as necessary.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**This is a close up of the wonderful beveled sheathing that embraces the frame. In this photo, two original wrought nails penetrate through the sheathing and once fastened to an interior stud that has since decayed. The beveled sheathing remains viable despite the stud being rotten and missing.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**So much of this frame is original and remains viable and beautiful. In this photo, one of the interior posts hosts the marriage marks and lay out lines placed there by the original builder. These marks indicate the position of framing parts in the overall timber structure. Posts are hand hewn while the braces are up and down sawn. Saw mills were available for the smaller timber elements very early on in Newburyport. It is common to see hewn and sawn timbers in the same structure.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**A principal rafter engages the continuous tie beam. Close inspection reveals the original purlin pockets in the rafter since replaced with dimensional lumber and metal hangers. The tie beam crosses over the flared post and the dropped eave wall top plate creating the "English Tying Joint" so prevalent in the 18th century.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**A close up view of the English tying joinery including the post top, top plate, and tie beam. The rafter is also at the top of the photograph. A wooden peg secures the post top to the tie beam.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**A close up view of the hand hewn post with its marriage mark indicating the position of the sawn brace that engages it. The peg hole reveals a missing peg.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**Another close up of the English joinery in this wonderful barn. The hewing marks are very apparent and some tooling marks are visible in the tie beam.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**The interior tie beams accept vertical rods that support the loft floor framing. This framing is hidden by bead board below. These rods are added later to this frame to allow for open space on the first floor level.**





📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**The bead board ceiling and the beams they clad are supported with vertical rods from above.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**The level of damage in the corner posts require in kind replacement. Sheathing and braces can be saved and repaired.**



📍 195 High St | Newburyport, Massachusetts 📅 Nov 6, 2018 👤 Jessica MilNeil

**New sheathing in this corner indicates long term water damage and the brace has rotted away from the corner post. Attempts were made to fill in the rot with new materials, but it is time to replace in kind and make the structure sound again.**



## EXISTING CONDITIONS ASSESSMENT

### DeLisle Barn

Brin Stevens and Stephen DeLisle  
195 High St  
Newburyport, MA

Performed and Prepared By:

Arron Sturgis and Jessica MilNeil  
Preservation Timber Framing, Inc.  
P.O. Box 28,  
Berwick, ME

Inspected - November 6, 2018  
Report Completed: January 30, 2019

## Architectural Description

The DeLisle Barn is one of the oldest extant carriage barns in Newburyport, Massachusetts. Paneled entirely in beadboard on the first floor level, it looks like a typical Victorian carriage barn. Climbing the stairs to the loft level reveals the late 18<sup>th</sup> century frame in all its hewn glory. Upstairs, the frame is remarkably intact.

To a timber framer, the braces are its most notable attribute. Almost all the original braces are in place, and there are a lot of them. Each of the posts contains a pair of braces ascending to the plate, a pair of braces descending to the loft girts, and a brace extending to the tie beam. There may be an additional pair of braces below the loft girt, hidden behind that bead board. The descending braces are those that extend from the post to the loft girt. They are rare and lend the barn exceptional resilience and strength. Descending braces are more commonly found in church towers and steeples, where they help the building withstand high wind loads.

The frame is “English” in that the tie beam, plate and post are connected by a joint designed prior to the American Revolution. The English tying joint is one of the strongest in timber framing; frequently, we will assess barns where the foundation has completely crumbled but the tying joinery at the eave has held the rest of the frame intact. Given the condition of the frame below the loft girts, this frame may become my new example of the strength of the English tie. With an “English tie”, the posts are flared at the top to carry the plate and accept the tie beam. The plate runs parallel to the eave, connecting the bents laterally, and resting upon the exterior half of the eave wall posts. The top of the post is so wide, up to 13 inches in this barn, that the interior half of the post extends up past the plate and joins to the tie beam with a teasel tenon. The tie beam runs parallel with the gable, it ties the eave walls together at the plate, preventing them from spreading under the outward thrust of the rafters. The underside of the tie beam is cut into a half dovetail, and performs a mechanical task in tension that contemporary builders assign to metal fasteners. The plate accepts the tie in a half-dovetail-shaped mortise.

Principal rafters tenon into either end of the tie beam, and connect at the apex of the building in a pinned bridle joint. The principal rafters are tapered, reflecting the original taper of the tree, and reducing weight at the top of the roof. There are a couple little design choices that set these rafters apart. The rafters terminate about four inches in-board of the end of tie beam; the rest of the tie was shaved down to reflect the slope of the roof. Placing the rafters in-board of the tie beam end protects the joinery from the inevitable water infiltration at the cornice. Additionally, the rafter tenon is pinned at the tie beam, creating a rigid triangle. The rafters were once connected to one another with a series of horizontal purlins. These were removed during a prior repair phase, but their cogs, or open-topped mortises, are visible between the hangers holding the replacement purlins cut from 2x8 KD (kiln-dried lumber).

After the onslaught of beetles, woodpeckers and squirrels, only the rinds of posts remain. PTF is like a waiter, loitering by the posts and asking, “You finished with that?” In some places, prior efforts to stabilize the posts are visible, where KD was stuffed into the void. Although the condition of the posts is dispiriting, the rest of the barn is quite significant and well-worth repairing. We will recommend traditional repairs that preserve the maximum amount of original material. Most of the frame that is visible will remain unchanged. New, in-kind repair material will be located in the portion of the barn where the posts are currently hidden anyways.

PRESERVATION TIMBER FRAMING, INC., P.O. BOX 28, BERWICK, ME 03901  
Office: (207) 698-1695 Cell: (603) 781-5725 E-mail: arron@preservationtimberframing.com

The barn is visible behind the house in an 1851 map of Newburyport, it is drawn a little northwest of its current location, but there is no reason to believe that the map depicts a different building. The front elevation and gable roofline is visible in a birdseye view map from 1880. It seems that the barn was built concurrently with the house, or in the decade following. As a pair, they are an important architectural artifact for Newburyport. It is significant that the property contains so much original material from its early buildings.

*End of Section*

## Existing Conditions Report

### Exterior

PTF was initially contacted to repair the roof where an errant limb had punctured it. The roof shingles are growing some moss, but the roof does not appear to be leaking inside and is not an immediate concern.

On the left eave, the gutter was full of organic material and drooping away from the building. The cornice appears to have been replaced in the 21st century, but it is already taking on water and pushing off paint. If the underlying framing is sound, the trim can be scraped and repainted. However, the source of moisture should be addressed. Gutters should be installed with a gap between the backside of the gutter and the fascia so that if the gutters are full of debris or water, they overflow onto the ground rather than into the cornice. These gutters may have been installed with an overflow gap, but that may have also filled up over time. The gutter no longer maintains an even slope and should be replaced.

The raking cornice is not original and the replacement does not appear to reflect the original design. Although it is not in critical condition, the cornice may be replaced with the rest of the cladding and trim. It will need to be removed where an adjacent rafter is repaired. Cornice trim can be approximated using old photographs or documentation of similarly aged barns in the area. The Newburyport Preservation Society and Historic American Building Survey (HABS, online) will be helpful resources.

The corner boards and casings have been ravaged by a pantheon of pests. Each of the corners exhibit multiple holes above and below the loft level. Sometimes, this deterioration doesn't extend through the sheathing. From the interior investigation, it does not appear that our posts have been so lucky. None of the trim appears to be original, nor does any of it appear to be viable. The replacement of trim in its entirety presents an opportunity to research which profiles are historically appropriate. Off-the-shelf molding profiles are determined by national trends and economies of mass milling. Custom moldings are not always significantly more expensive. They are usually thicker and cut from higher quality wood. Custom profiles can have deeper radiuses, if the trim on your barn was molded at all. Replacing the cornice, casings and corner boards will have a significant impact on restoring the historic appearance of your carriage barn.

The clapboards are flaking badly and the lower courses are wet and rotting. Their lengths indicate that none of the claps are original. Original clapboards would be less than 4' long, skived on the ends and secured with wrought or cut nails. Given the level of deterioration in the posts, the clapboards will need to be stripped from the building. It will be most efficient to replace them entirely. The replacement clapboards should be vertically sawn, 90% heartwood, Eastern White Pine, with two coats of primer and paint.

The large central front door is a later renovation. The original door header may have been that height, but we expect that the door only extended as far as the central carrying timber. The large central window and left eave window are also later. There were no clues in the framing that indicated earlier window openings; that evidence may have been eliminated when the large front window was installed. After the clapboards are removed, it will be easier to see where windows may have been from patches in the sheathing.

## **Undercarriage**

At some point, the undercarriage framing of the barn was filled in and covered with a concrete slab. The site was not properly prepared and the concrete is now heaving and cracking. The entire undercarriage will need to be demolished. The top of the slab is uneven and is 7-8" above the top of the original sill and bottom shoulder of the posts. The sills were rotted before the concrete was poured, and they have been intermittently replaced and used as concrete forms. The concrete will need to be excavated, and a new foundation frost wall will need to be dug and poured. Drainage will be laid, and then the site will be filled and compacted before a new slab can be poured. Once the concrete is set, new timber sills can be cut and installed.

## **Frame**

The timber frame is a turn of the 19th century scribe rule frame. The major framing members are hewn; the minor braces are mostly sawn. There is record of a sawmill in Newbury by the middle of the 18th century, so access to sawn timber was established prior to the 1800s. The English Tying Joint is an 18th century design, but the joint was still being cut through the first quarter of the 19th century. Hewing was much more common in the 18th century, but large timbers were still being hewn through 1850. Whether or not a frame is hewn has a lot to do with the capacity of the local sawmill and the capital available to the landowner. Given the location of this barn and the proximity of a number of sawmills, the hewn surfaces skew the building's date earlier. We were not able to examine fasteners during this visit, but the presence of a lot of wrought nails would date this building prior to 1800.

The tie beam overhangs the plate by about a foot, and the ends of the tie beams are connected by flying purlins. The overhang protects the wall by placing the drip edge farther away from the foundation. The ends of the tie beam are more prone to deterioration, especially if the cornice is not maintained, but the sills and post feet are better protected. The rafter heels terminate 4 inches inboard of the end of the tie beam and are well protected. They join the tie in a pinned mortise and tenon. The rafters are in good condition given the water infiltration elsewhere, thanks to this design. The flying purlin is typically considered a later design innovation, but a cursory investigation of HABS reveals a similar overhang, with flying purlin, in the Benjamin Pierce House, c. 1802, Beverly, MA and the General Benjamin Hawkes House, c. 1801, Salem, MA.

This roof is sometimes called a principal rafter, principal purlin roof, which means it has large timber rafters, which create the roof pitch, connected by a series of horizontal purlins. In a 20th century re-roofing, the purlins were eliminated entirely. Their empty mortises are visible behind the joist hangers. Previously, the roof contained only a pair of purlins on each pitch in each bay, and the roof may have sagged under snow loads. Beyond its function, a roof frame has a big impact on the interior aesthetics of a historic timber frame. Depending upon budget, and the final use of the loft level, it may make sense to restore the timber purlins, and add infill timber purlins to improve roof strength.

We were not able to observe the top face of the rafters, which typically receives the brunt of any water infiltration. Two of the eight principal rafters have visible pest damage on their interior faces; they will require scarf repairs to replace their feet. We anticipate that at least one additional rafter will require a major fix or full replacement.



Down bracing adds a lot of stiffness to the walls, and is indicative of an older origin. In our experience, down bracing was more common in the 18th century than in the 19th. It is one of the things that make the building stand out from the myriad of barns we assess. It was a smart choice, given the full height of the second floor. About half of the down braces are either absent or badly deteriorated; they should be replaced.

The second floor framing system is unique. A longitudinal carrying timber runs down the center of the building connecting the gable end girts. It is 10" x 10" in section and has been hung from the two interior tie beams with a couple of 1" diameter steel rods. It is unusual to hang a floor from the tie beam without the help of a truss. A series of heavy floor joists extend from the eave girts and land on the carrying timber. From the ground floor, the timber can be seen in the ceiling, cased in beadboard. It appears to have been hung after the beadboard was installed because the washers and nut have been applied over the surface of the beadboard. Previously, the carrying timber was probably supported by a pair of interior posts. The current support system does not appear to be adequate. At the front gable, which is better supported than the center bents, the floor is two inches lower than the eave less than 9' away. In the center bents, the distance between the carrying timber and tie beam should be stable, but the whole assembly sags with the weight of the floor. Before the building is repaired, a level survey should be performed to establish how far the posts and loft floor are out of level. An interior post on the first floor might be helpful to support the loft above.

The posts are in bad shape and have been for a long time. Efforts to stem the tide of rot, ants and woodpeckers are apparent in various repairs that we would consider only stabilization, and temporary. We did not remove much beadboard or siding, partly because we do not think that limited level of investigation would change our assessment. The four corner posts will need to be replaced in full and the four mid-eave posts will require long scarf repairs located at or above the loft. We recommend that the repairs preserve the maximum original material, designing the scarf based on the rotten material excised from the timber. Studs will also need to be repaired along the wall perimeter. Traditional repairs using in kind materials will provide structural and historic integrity.

*End of Section*

## Conclusion

The DeLisle Barn has remarkable architectural integrity; the frame contains most of its original parts and pieces and the loft looks much as it did at the turn of the 19th century. The building itself is a valuable example of an English-style carriage barn. In context with the house, the property is an important artifact for Newburyport. It is rare for utilitarian buildings such as these to remain, much less remain so unchanged, especially in an area under continuous development pressure. The ties are in good condition, as are the plates. All of the original rafters are in place. The bracing is remarkable, and indicative of the level of craftsmanship with which it was constructed. Unfortunately, the posts are in poor condition and have borne the brunt of repairs that were insensitive to the barn's historical significance. Typically, changes to these barns obliterate their history. Fortunately, this barn has survived the test of time.

Standing in the loft, and observing the marks of the builder's tools, we are connected to their thinking and their labor. In order to preserve the barn properly, it should be dismantled, so that the posts can be fully repaired. While dismantling the building may seem daunting, this was a common approach for the original builders in their own era. Timber frames were frequently disassembled, moved and reused. For practical purposes, colonial builders needed to conserve the energy embodied in these timbers. For PTF, we recommend dismantling only when it is the best choice for the building. This approach has been successful in preserving other historic barns throughout New England.

We recommend a traditional approach to repairs, preserving original material wherever possible, and honoring the original builders' intent. The extent of damage to the plates and to the posts justifies the effort behind a full disassembly. This makes the timber frame repairs more efficient and assures the elimination of completely rotten elements. It will also allow for easier access to the undercarriage and significantly reduce excavation and foundation costs.

All of the posts require a tall repair or full replacement. We were not able to inspect the loft girts, but we expect that half of them will require face repairs at least. At least two of the eight rafters require a scarf fix. Many of the braces will be replaced, in identical species and dimension. At least a quarter of the beadboard will need to be removed in order to repair the posts. In order to level the loft floor and reinforce it to accommodate living or office space, the beadboard ceiling will need to be removed. Given the extent of these repairs alone, it will be more economical and efficient to dismantle the timber frame than to repair it standing. Excavation of the existing undercarriage and pouring a new foundation will be significantly less expensive as a result of this temporary disassembly.

Dismantling the frame is not only economical, it offers a number of advantages over standing repair. The entire frame will be exposed, and can be repaired thoroughly. No rot or pest infestation will be left uncovered. The loft floor can be rebuilt level, incorporate the original framing, and support contemporary floor loads. If desired, the beadboard can be reinstalled on the ground floor. Lastly, reassembly offers the opportunity to replace dimensional roof purlins with timber ones. Improving the roof assembly isn't a reason to dismantle, but it is an opportunity created by the process.

This recommendation is not made lightly, dismantling a building is a significant undertaking and is a lot to endure, but we are confident that the gains far outweigh the risks. By the time it is finished, this approach will be less expensive than an in situ repair, take less time, and result in a longer-lasting

PRESERVATION TIMBER FRAMING, INC., P.O. BOX 28, BERWICK, ME 03901  
Office: (207) 698-1695 Cell: (603) 781-5725 E-mail: arron@preservationtimberframing.com

barn. We take a traditional approach to repairs; we preserve original material wherever possible, and honor the original builders' intent. The following are our recommendations, in order of expediency and priority.

*End of Section*

## **Repair Recommendations**

### **Disassembly: \$48,053.00**

Remove all cladding, sheathing, roofing, document fasteners and trim. Disassemble beadboard. Tag, measure and update model of frame. Disassemble frame. Demolish concrete and undercarriage.

- Remove clapboards, sheathing and roofing.
- Document trim details and shadow lines. Document fasteners, especially any wrought nails.
- Carefully remove beadboard and de-nail for later use.
- Update frame model and tag frame.
- Un-pin, disassemble frame.
- Transport all frame parts and sheathing to shop for repair.
- Demolish concrete floor and foundation and discard.
- Design loft floor frame and supports to accommodate code requirements for office and living space.

### **Frame Repair: \$52,473.00**

- Cut new perimeter sills.
- Reproduce four corner posts.
- Repair four eave posts.
- Reproduce braces that are missing or damaged.
- Repair eave girts, as necessary.
- Repair loft joists between bents.
- Install tension connections at interior loft girt connections at posts.
- Replace flying purlins, as necessary.
- Repair two rafter feet with scarf repairs.
- Repair wall studs around perimeter.
- Create door posts.
- Create window studs and headers.
- Cut new replacement purlins; sixteen purlins, each two bays long.
- Cut new ground floor posts to support carrying timber.

### **Reassembly: \$111,566.00**

- Excavate and pour perimeter footer and frost wall.
- Pour a new concrete floor pad.
- Install new perimeter sills.
- Reassemble frame with crane.
- Sheath frame and roof.
- Install doors, windows, cornice, rakes, window casings and corner boards.
- Install asphalt roof.
- Install vertical grain radially sawn pine clapboards primed all sides.
- Install interior beadboard.
- Create white oak ramp from driveway to barn.

### **Total Project Cost: \$212,092.00**

Exclusions:

- Wiring and lighting
- Plumbing
- Exterior Painting by Owners/others.
- Paving/driveway.
- Landscaping after finish grading and seed.
- Interior alterations/upgrades (to be determined).

Moving Forward:

While it may be unorthodox to dismantle this frame in order to save it, it is not without historic precedent. We feel confident this approach is the most thorough and cost effective way to save your historic structure.

Once this work is completed, we will work closely with you to determine the best end use for the barn for your family. It will be a wonderful living/work space for you and its preservation will contribute to the efforts you have already made on your home and property. That said, it is a significant investment. We are happy to sit down with you and determine the best way forward with your budget in mind. There are ways to utilize your sweat equity combined with our expertise to reduce costs. Please consider this report as a beginning to a more in depth discussion about how to save and best use your barn. We look forward to working with you and thank you for the opportunity to study this wonderful building.

Respectfully Submitted,

Arron J. Sturgis  
Jessica MilNeil  
Preservation Timber Framing Inc.  
[www.preservationtimberframing.com](http://www.preservationtimberframing.com)