

## Memorandum

Date November 1, 2022

To Allison Dahlin, MRPB Project Manager

From Amy Van Gessel and Stuart MacDonald (MMA)

Project John H. Stevens House

Regarding Fire Damage Condition Assessment

On August 30, 2022 a fire occurred on the eastern façade of the John H. Stevens House located in Minnehaha Regional Park causing damage from the first floor to the roof on the eastern facade. A second fire occurred on September 20, 2022 causing limited damage to the same eastern façade but isolated to the first floor. On October 1, 2022 a third fire occurred, this time causing extensive damage to the wall framing on the northern and eastern facades. The second floor structure and roof structure in this portion of the house also had widespread material loss and charring.

A previous condition assessment report was submitted by MacDonald & Mack Architects in November 2021. This report prompted a roof replacement project planned for fall of 2022. This work had not begun at the occurrence of the first fire and the project was suspended to be completed with future restoration efforts as a result of the fires.

Amy Van Gessel and Stuart MacDonald, with structural engineering assistance by Dave Macdonald of Mattson, Macdonald, & Young (MMY), performed assessments at the John H. Stevens House on August 30, September 20, and October 3-5, 2022. Following the October 5<sup>th</sup> meeting, MMY provided advisement on temporary shoring measures (memo attached) to be executed by the Minneapolis Park and Recreation Board carpenters in the interim. The purpose of this assessment is to document necessary immediate stabilization and weatherization efforts as a result of the fires (Phase I) and to document building conditions to aid in defining scopes, quantities, and timelines for future needed repairs (Phase II). A full assessment by MMY is attached to the end of this document.

The Stevens House is a contributing property within the nationally and locally listed Minnehaha Park Historic District.

Overall, the fire damage only occurred in the main portion of the house, none in the summer kitchen addition. This report will not be addressing remediation of smoke-related issues resulting from the fire, assessment of MEP systems, or providing any cost estimates. This report will be divided into *Phase I: Stabilization & Weatherization* and *Phase 2: Assessment of Fire Damage and Future Repairs*. Following the MMA assessment, photo key plans give context for photos.

## PHASE I: STABILIZATION & WEATHERIZATION

Recommendations are broken out as follows by building component. Temporary efforts described here will be coordinated with the temporary structural stabilization work.

### Site

- Remove debris along stone foundation which has built up from fire damage. Ensure ground surface is sloping away from foundation.
- Remove debris on walkway ramp.

### Wood Clapboard Siding

- Remove burnt portions of siding and trim on portion of north and east façades.
- Install plywood at removed areas and intact areas, indicated in blue in diagrams below. If building is to be moderately heated over the winter it may be advantageous to install building wrap over areas of plywood, overlapping surrounding siding approximately 6". Provide a single plywood piece to cover the eastern facade door and trim for easy removal and access into the house.



Photo 1 Eastern and northern facades.



Photo 2 Northern and western facades.

#### Wood Doors and Windows

- Windows on north and east facades and door on western façade will be covered with plywood as mentioned above.

#### Wood Shingle Roof

- Place plywood over roof openings and at roof eave (in blue in diagram below), see structural recommendations on S6.



**Photo 3 Eastern facade with Kitchen addition to left.**

- Affix tarp over entire roof, see structural recommendations on S6.
- The tarp should extend beyond the edge of the roof and wrap down face of the eave. The tarp should extend down the soffit to be affixed to the fascia (now plywood). See diagrams below, red indicates the tarp and dashed line indicates areas for attachment.



Photo 4 Eastern and northern facades.



Photo 5 Northern and western facades.

## PHASE II: FIRE DAMAGE AND FUTURE REPAIRS

Conditions are broken out as follows by area or room and further by building component. Condition photos at end of document. Of note, after the second fire a cleaning contractor removed a large portion of damaged interior finishes, mostly on the second floor. These recommendations take this completed work into consideration.

### EXTERIOR

#### Site, including Stoops, Ramp, and Porch

- Wooden east entry ramp has significant fire damage at the landing for the exterior door.
  - o Existing ramp slope is steeper than 1:20 required by current code. The existing ramp design was creating moisture issues where it meets the house (rotten siding and door framing). A compliant ramp can be looked at as part of the repairs.

*Recommendation: Repair and rebuild to achieve a compliant ramp and landing. Paint.*

#### Exterior Masonry

- Stone foundations are in good condition but do have soot residue present throughout the north and east façade of the main portion of the house.

*Recommendation: Cleaning stone with gentlest means possible. Cleaning agent to be reviewed by Architect.*

#### Walls - Wood Siding and Trim

- Siding and trim on the north and east façades have significant fire damage and should be removed during Phase I.
- Siding on western and south façade display some smoke and soot residue at joints.
- Paint on surrounding siding and adjacent facades generally in fair condition.

*Recommendation: Complete final structural modifications. Install insulation, sheathing, building paper, and siding to match surrounding on northern and eastern facades. Install new trim on windows to match existing, paint. Repaint entire affected north and east façades corner-to-corner. Clean western and southern façade siding and trim, repaint. This repainting work should be coordinated with siding repair and selective replacement for entire building if possible.*

#### Wood Windows & Storm Windows

- One single-hung window on east façade first floor was a total loss from the fire. The remaining single-hung window and storm window on the east façade first floor is in poor condition but requires closer inspection of parts to determine if full replacement is needed.
- One single-hung window and storm window on north façade second floor was a total loss from the third fire.
- One single-hung window and storm window on the south façade second floor did not sustain fire damage but is in poor condition. The window requires closer inspection of parts but noticeable smoke and soot residue is evident.

*Recommendation: Install new single-hung windows and storm windows to replace missing. Install in previous locations. Windows to match existing in material, profiles, hardware, size, and glass-light configuration (nine-over-six at the first floor and six-over-six at the second floor). Rehabilitate existing east façade window and storm window if damage is manageable, scrape and repaint.*

## Wood Doors

- Exterior doors at ramp entrance on east façade and entry door on west façade were damaged. Door frames are in okay condition.

*Recommendations: Replace doors and sills to match existing in material, design, hardware, and size. Paint. Patch door trim as needed, paint.*

## Wood Shingle Roof, Soffit, and Fascia

- Wood shingle roof on the main house sustained significant damage. Damage at the eastern eave extends to less than one foot inside the face of the exterior wall. The roof also has two major holes as a result of firefighting efforts. Refer to structural findings and recommendations for these areas and the overall roof structure.

*Recommendation: Complete final structural modifications at wall and roof. For roof – install new sheathing, underlayment, drip edge, and wood shingles to match existing. This work should be coordinated with roof replacement for entire roof. For soffit – reconstruct roof soffit to match surrounding. Install soffit vent. Paint.*

## INTERIOR (by room)

### Meeting Room - Basement Level

- Flooring
  - o Water damaged existing carpet and was removed by the cleaning contractor before the third fire.  
*Recommendations: If future plans for the space are to use it mainly as storage reinstalling carpet may not be necessary.*
- Walls
  - o Painted block foundation walls appear to be in very good condition and were not damaged.
- Ceiling
  - o Water used in fighting the fire damaged a large portion of the acoustic ceiling tiles. The framing also has begun to rust from the moisture exposure. Insulation at top of foundation wall has deteriorated. The ceiling was removed by the cleaning contractor before the third fire.  
*Recommendations: If future plans for the space are to use it mainly as storage reinstalling the acoustic ceiling tile system may not be necessary. It currently does conceal ceiling air ducts and other electrical wiring while also housing the lighting for the space.  
Install new insulation at top of foundation wall where it meets the wood structure. In addition, refer to structural findings and recommendations for first floor structure framing.*

### Door Landing at Stairs to Basement Level - First Floor

- Walls
  - o Plank wall was removed by the cleaning contractor before the third fire.  
*Recommendations: Install insulation in wall cavity. Provide replacement planks. Repaint. Reinstall existing fixtures on wall.*

### Parlor - First Floor

- Flooring
  - o Fire damaged the northeast portion of floor boards.

*Recommendations: Remove fire damaged portion. Complete structural modifications. Install plank flooring where missing. Match surrounding. Paint.*

- Walls
  - o North and east walls have significant fire damage. West wall has damage at northern corner.  
*Recommendations: Complete structural modifications. Install insulation in wall cavities. Replace all gypsum wall board on west, north, and east walls, corner-corner. Provide skim coat to match existing. Paint to match existing.*
- Wood Trim
  - o Trim was removed from both windows on south wall elevation.  
*Recommendations: Install wood trim and sill to match existing window on north elevation. Paint.*
  - o Baseboards were damaged.  
*Recommendations: Remove damaged portion. Install wood baseboard to match surrounding in dimension. Paint.*
- Ceiling
  - o All ceiling finish surfaces were removed by the cleaning contractor before the third fire.  
*Recommendations: Complete structural modifications. Install gypsum wall board. Provide skim coat to match existing. Paint to match existing.*

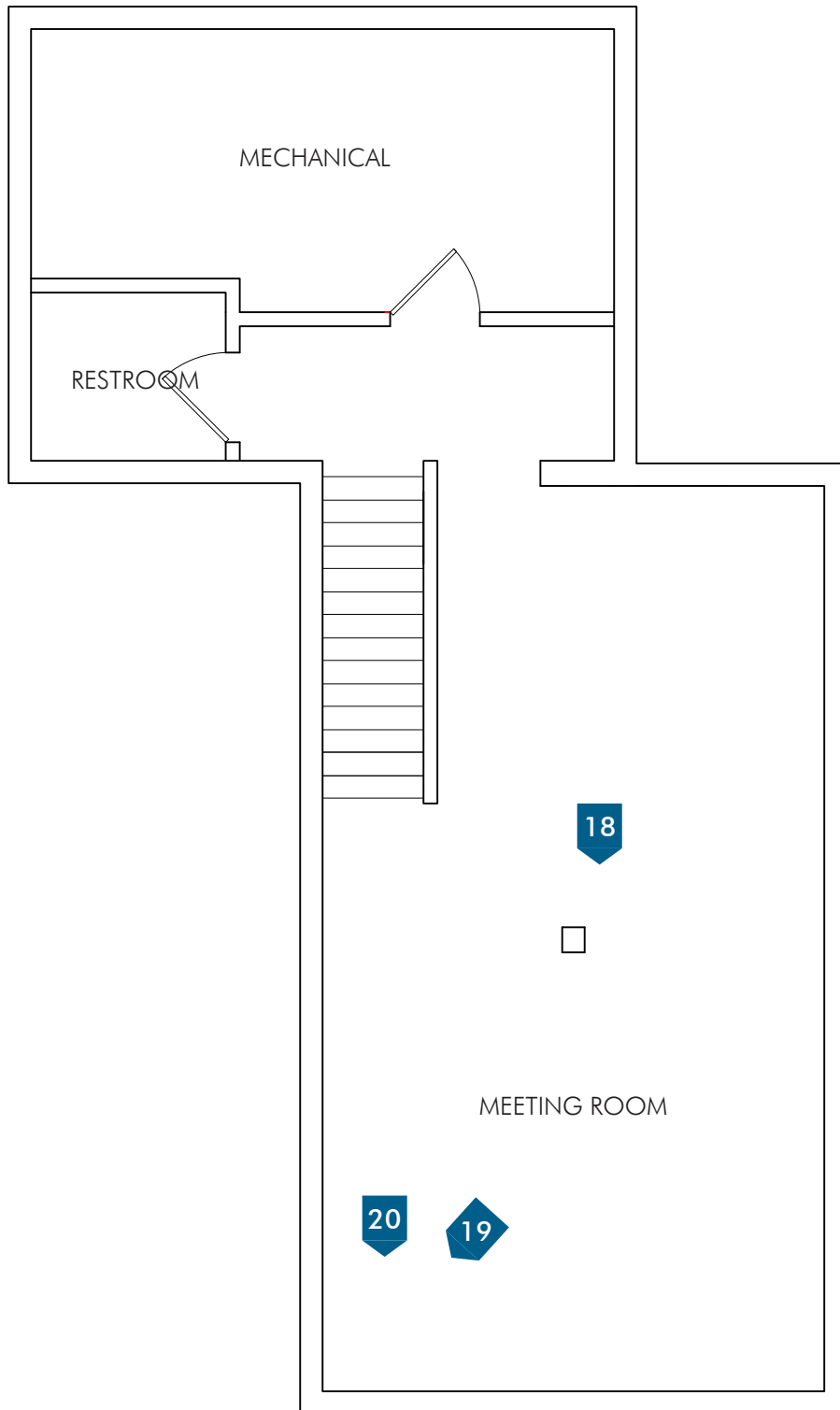
#### **Chamber 01 (south) and stair landing - Second Floor**

- Flooring
  - o Unclear extent of fire damage.  
*Recommendations: Remove fire damaged portions, if any. Complete structural modifications. Install plank flooring where missing or fire damaged. Match surrounding. Paint.*
- Walls
  - o All wall finish surfaces were removed by the cleaning contractor before the third fire.  
*Recommendations: Complete structural modifications. Install gypsum wall board on walls. Provide skim coat to match existing. Paint to match existing.*
- Wood Trim
  - o All baseboard trim and chair rails were removed by the cleaning contractor before the third fire.  
*Recommendations: Install wood baseboard to match existing in dimension. Paint. Install wood chair rail to match existing in dimension and profile. Paint.*
- Ceiling
  - o All ceiling finish surfaces were removed by the cleaning contractor before the third fire.  
*Recommendations: Complete structural modifications. Install insulation. Install gypsum wall board. Provide skim coat to match existing. Paint to match existing.*

#### **Chamber 02 (north) - Second Floor**

- Flooring
  - o Fire damaged the northern and eastern portion of floor boards.  
*Recommendations: Remove fire damaged portion. Complete structural modifications. Install plank flooring where missing or fire damaged. Match surrounding. Paint.*

- Walls
  - o North and east walls have significant fire damage. West wall has damage at northern corner. All wall finish surfaces were removed by the cleaning contractor before the third fire.  
*Recommendations: Complete structural modifications. Replace all gypsum wall board on south wall, corner-corner. Provide skim coat to match existing. Paint to match existing.*
- Wood Trim
  - o All baseboard trim and chair rails have been removed by cleaning contractor.  
*Recommendations: Install wood baseboard to match existing in dimension. Paint. Install wood chair rail to match existing in dimension and profile. Paint.*
- Ceiling
  - o All ceiling finish surfaces were removed by the cleaning contractor before the third fire.  
*Recommendations: Complete structural modifications. Install insulation. Replace all damaged portions of ceiling with gypsum wall board. Provide skim coat to match existing. Paint to match existing.*



**BASEMENT - PHOTO KEY PLAN**

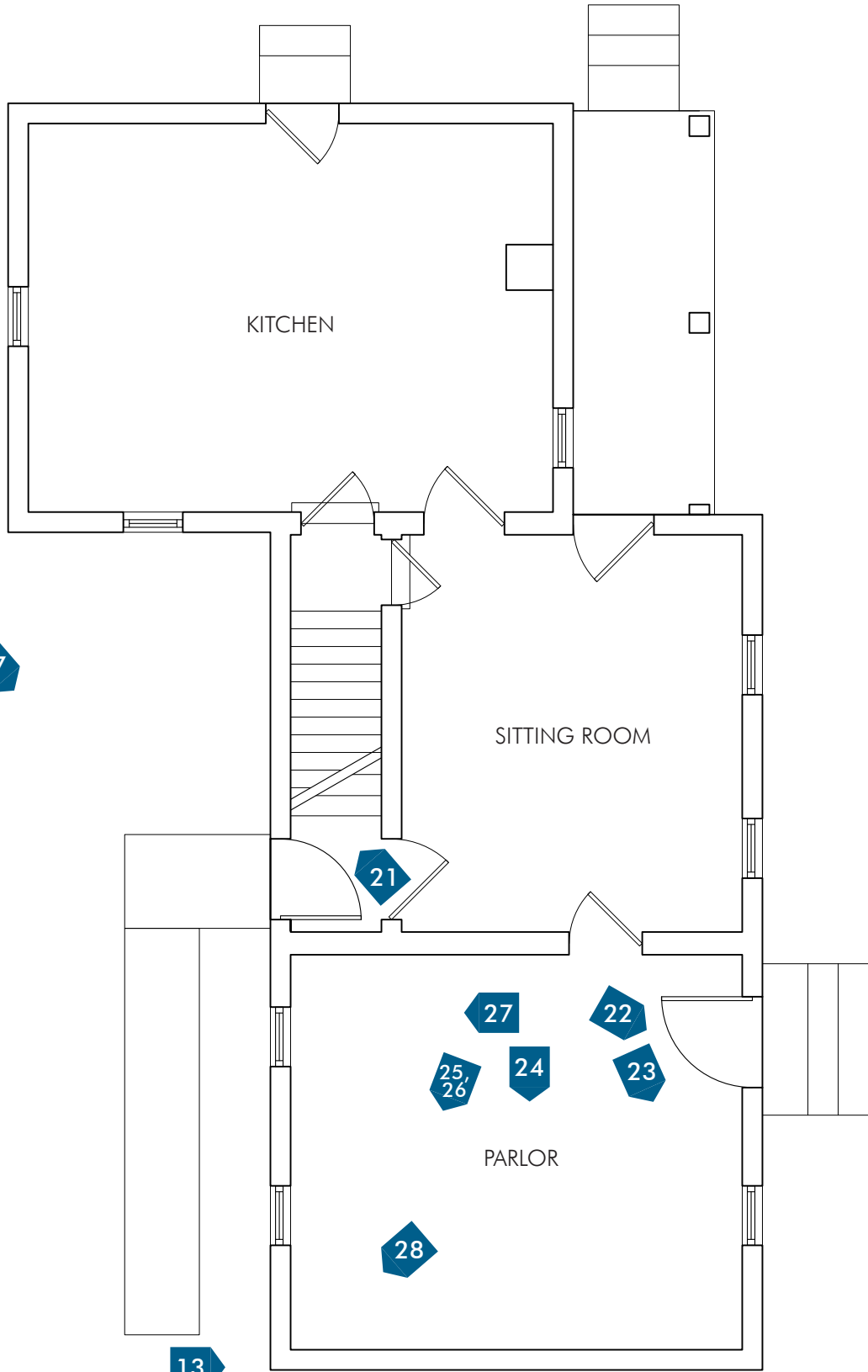
3/16" = 1'-0"



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PARLOR

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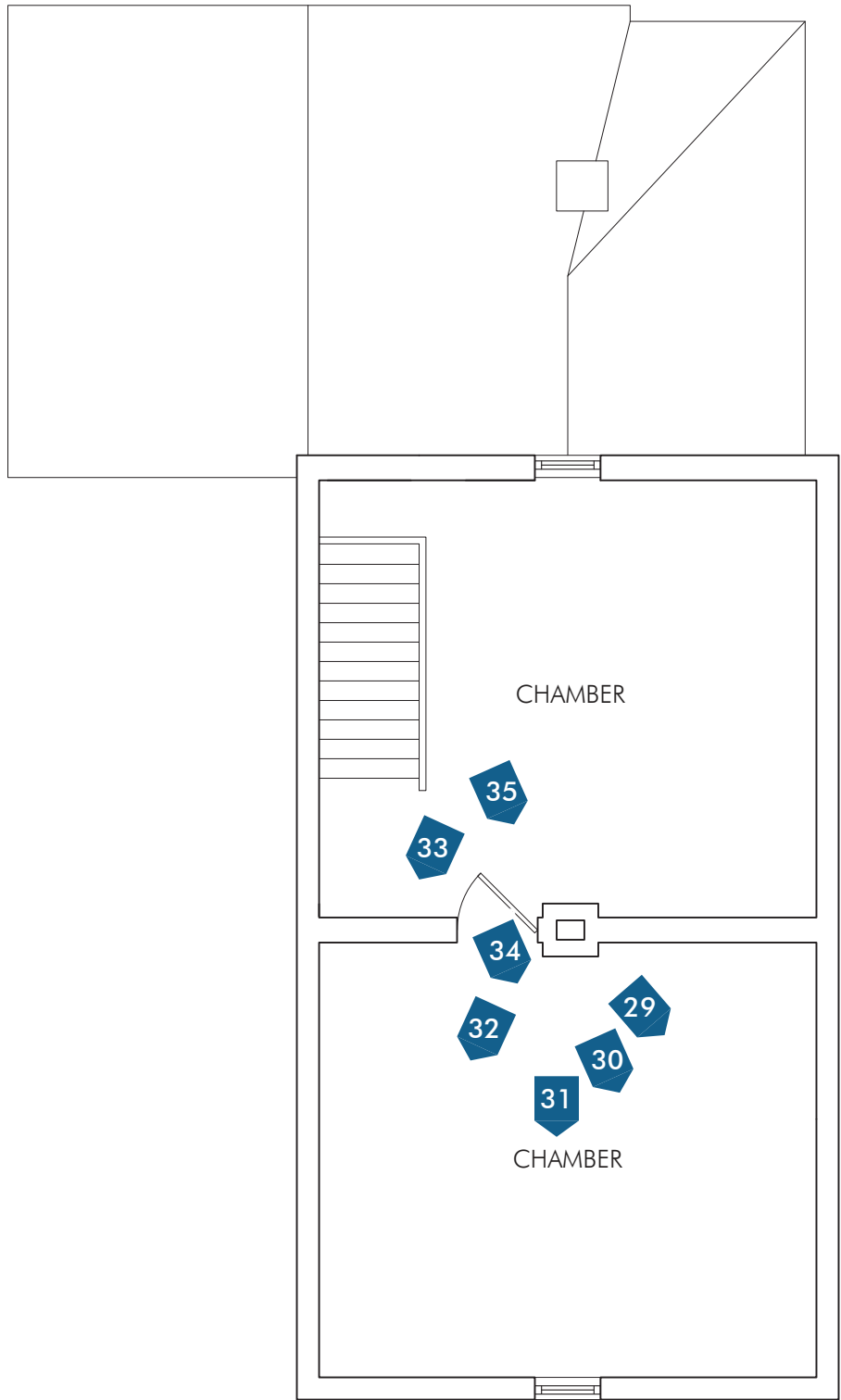
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FIRST FLOOR - PHOTO KEY PLAN

3/16" = 1'-0"



SECOND FLOOR - PHOTO KEY PLAN

3/16" = 1'-0"



CONDITION PHOTOS - Numbers are keyed on Photo Key Plans (dated 10-04-2022 after third fire)



Photo 6 West facade.



Photo 7 West facade.



Photo 8 South facade.



Photo 9 East facade.



Photo 10 East facade.



Photo 11 Northeast corner.



Photo 12 East elevation, looking south.



Photo 13 North facade.



Photo 14 East entry door.



Photo 15 Closeup of damage on NE corner.



Photo 16 North 2nd floor window.



Photo 17 East facade.



Photo 18 North elevation of basement meeting room.



Photo 19 NE corner of basement meeting room.

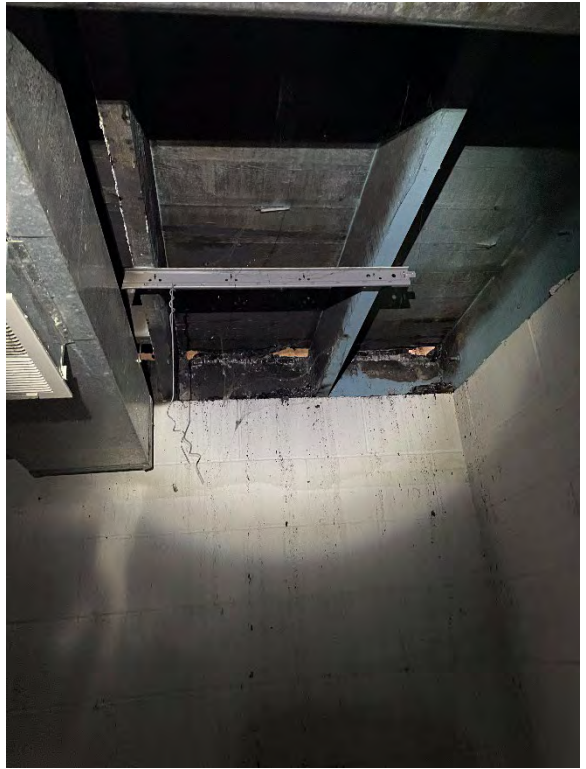


Photo 20 NE corner of basement meeting room



Photo 21 Stairwell wall.



Photo 22 Above west entry door.



Photo 23 Parlor NW corner.

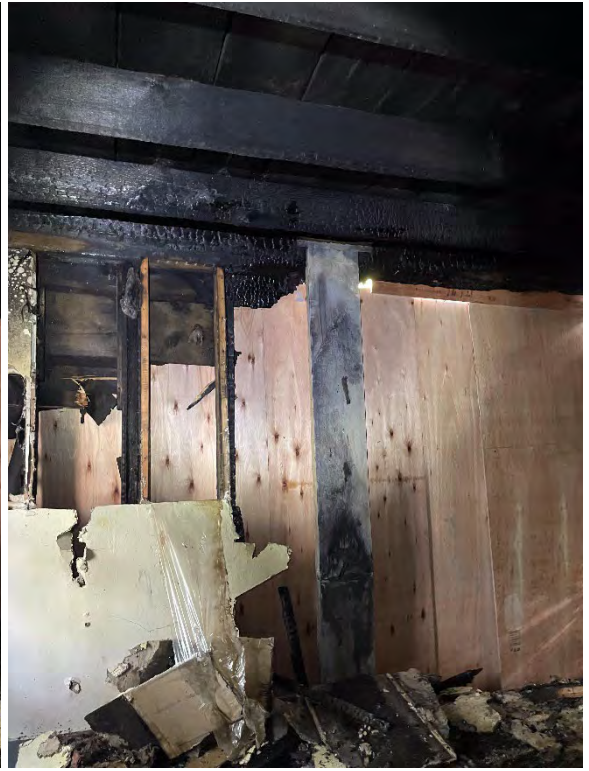


Photo 24 Parlor north elevation.



Photo 25 Parlor north elevation.



Photo 26 Parlor east elevation.



Photo 27 Parlor east elevation.

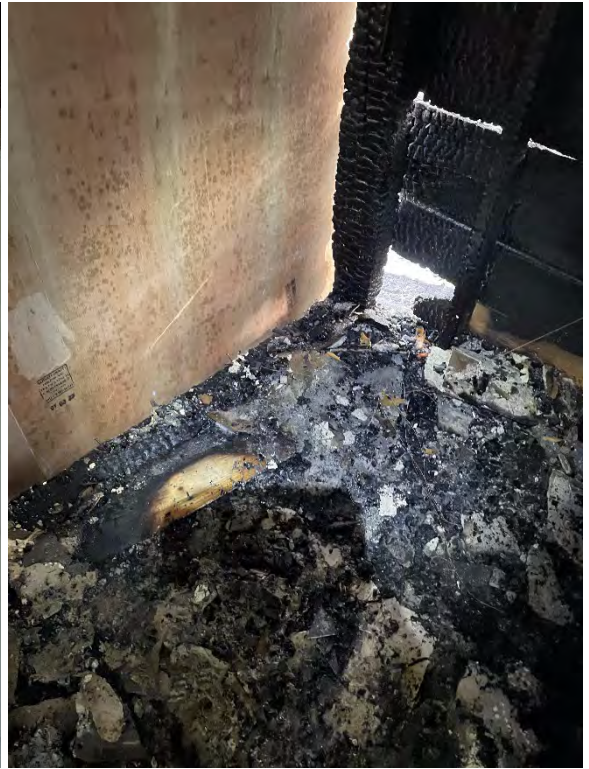


Photo 28 NE corner floor in Parlor.



Photo 29 North chamber west elevation.



Photo 30 North chamber looking north.



Photo 31 North chamber north elevation.



Photo 32 North chamber northeast corner.



Photo 33 North chamber east elevation.



Photo 34 North chamber floor condition.



Photo 35 South chamber chimney condition.

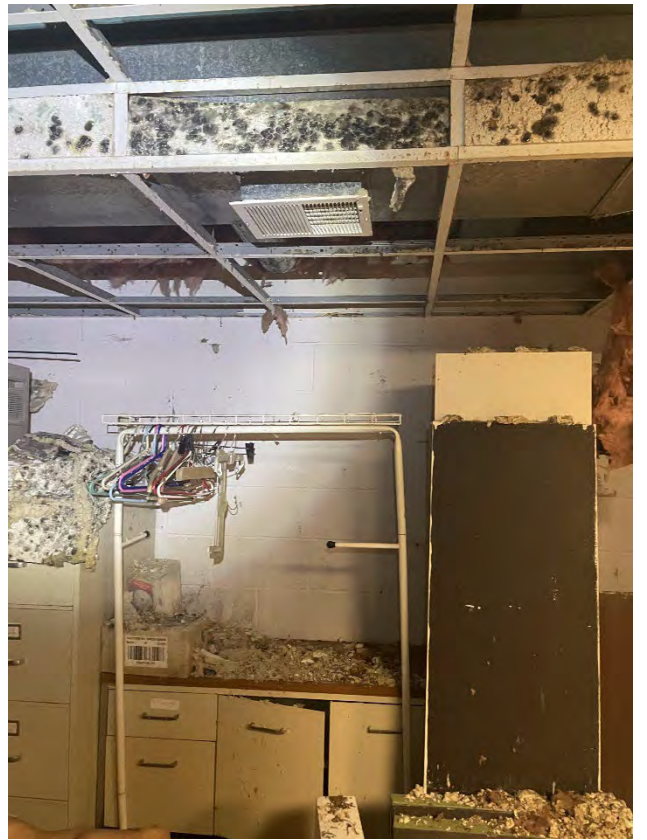


Photo 36 After third fire before plywood installation.

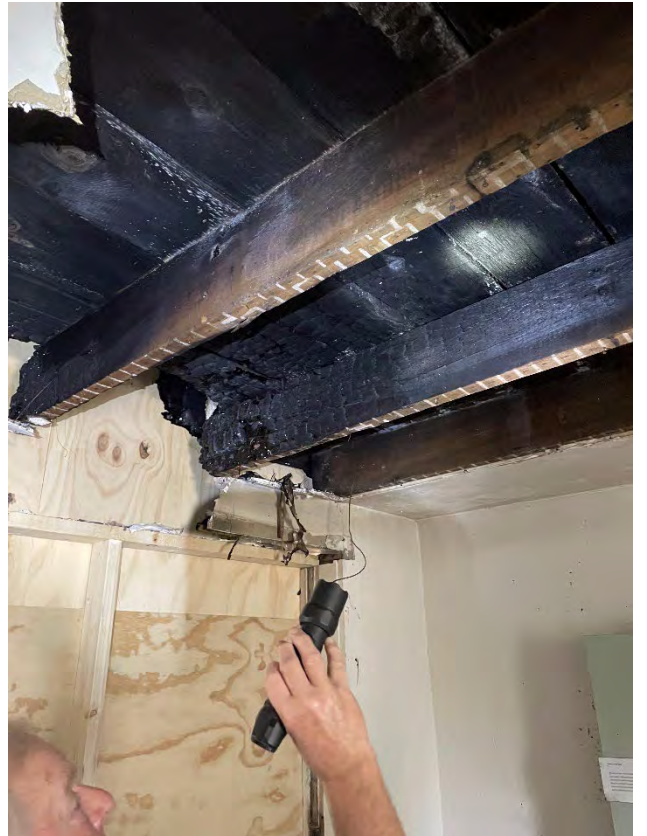
CONDITION PHOTOS – Photos NOT keyed to Photo Key Plans (dated 09-20-2022 after second fire)

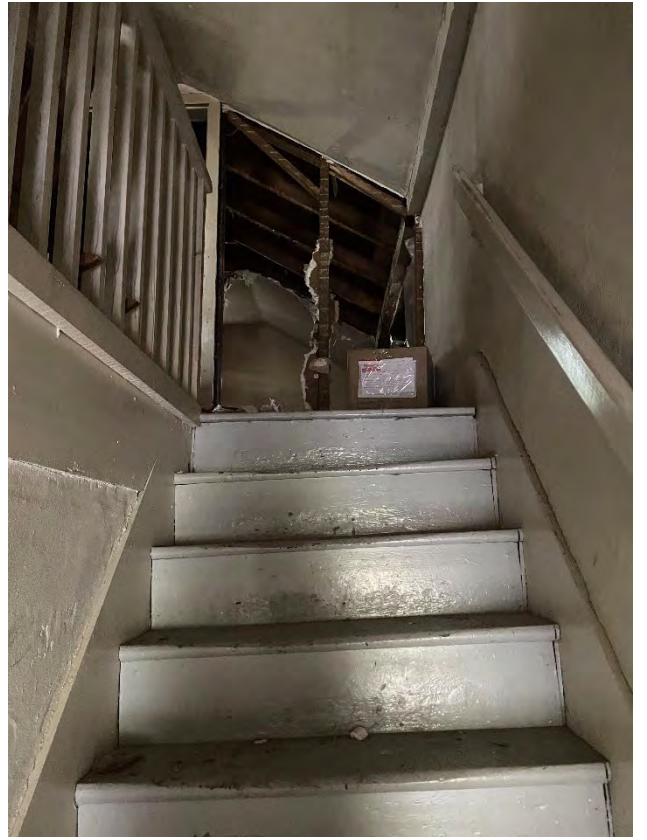


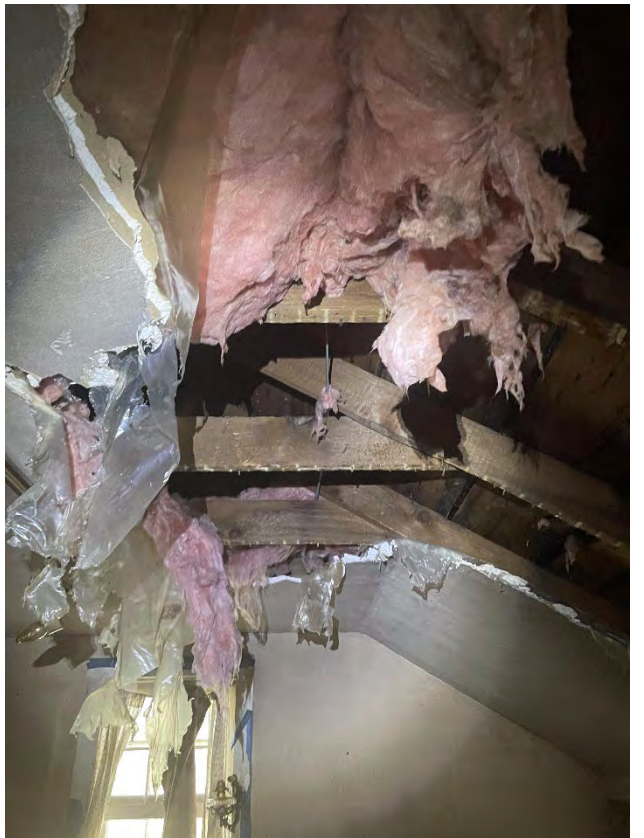


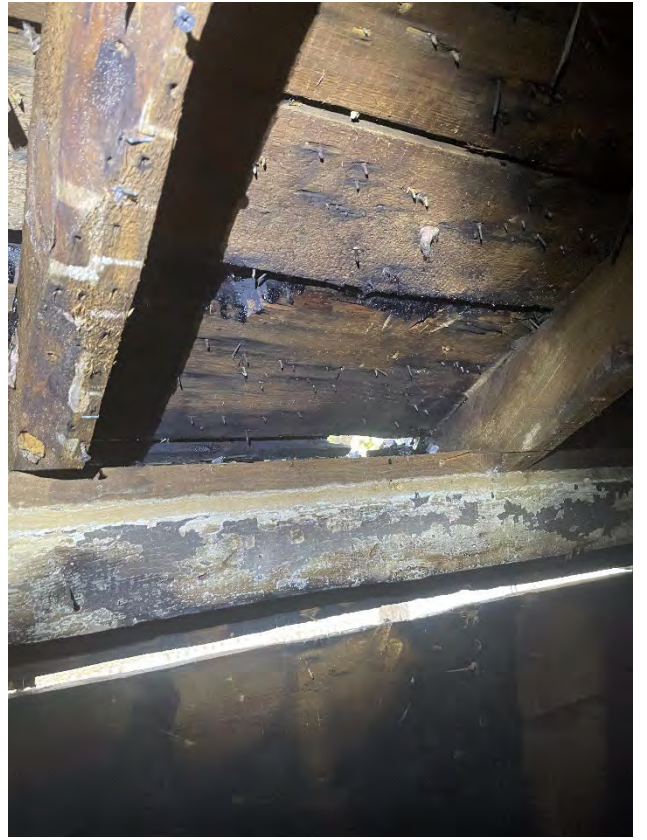


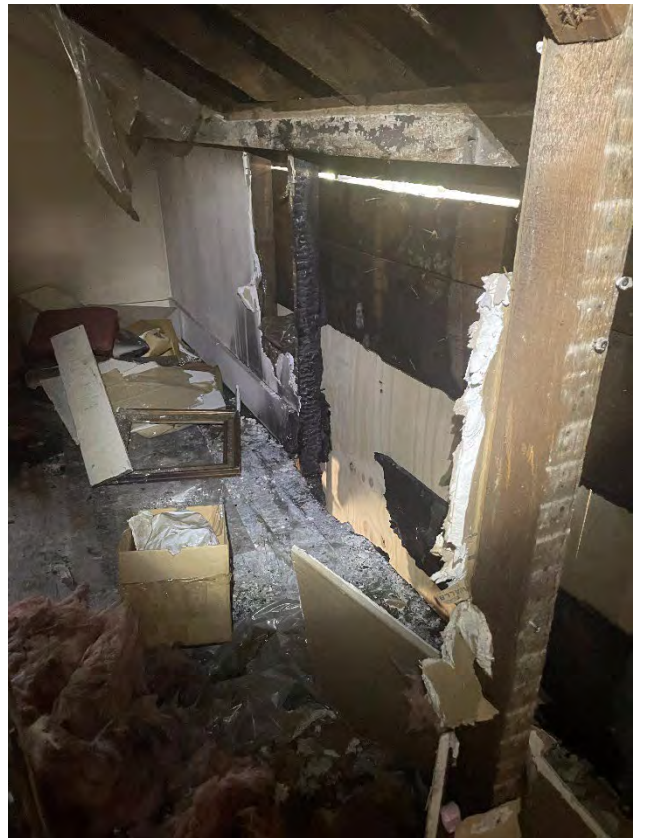
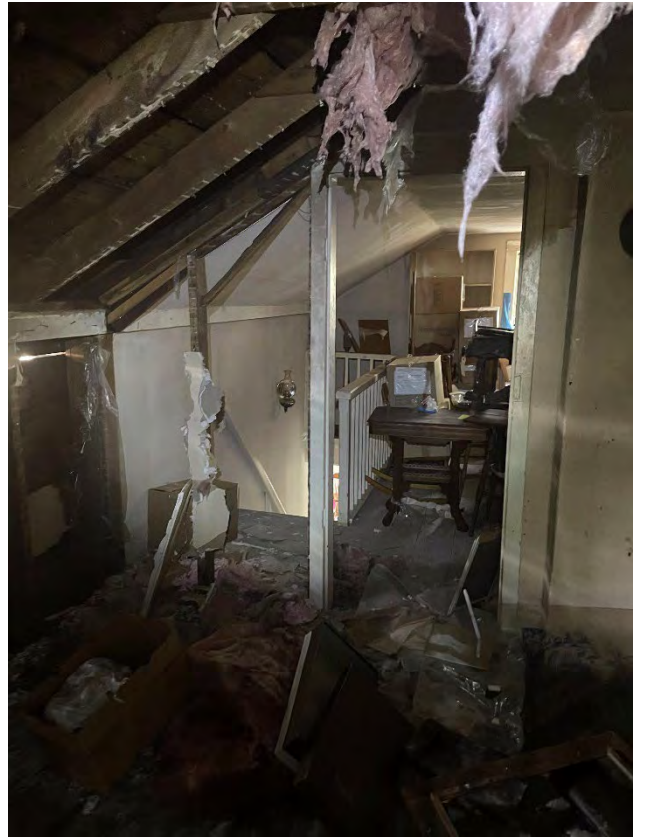














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October 26, 2022

Amy Van Gessel  
MacDonald and Mack Architects  
3101 East Franklin Avenue  
Minneapolis, Minnesota 55406

Re: Condition Assessment and Stabilization Recommendations  
John H. Stevens House, Minnehaha Park  
4901 Minnehaha Avenue So, Minneapolis, MN

Dear Amy:

As requested, I have visited the John H. Stevens house on several occasions during the months of August through October of 2022. I have observed the condition of the building, damage to the structural system and have considered the appropriate measures for stabilization. The following is a summary of my findings and recommendations:

### **Purpose**

The historic John H. Stevens house, located in Minnehaha Park, Minneapolis has suffered the effects of three separate fires. Each fire has cause damage to the structure, the third fire resulting in considerable damage to the north half of the two-story wing. Mattson Macdonald Young, Inc has been retained to perform an assessment of the existing structure, identify the extent of the damage and recommend repairs, bracing and shoring to stabilize the structural elements that have been compromised. The design team has been asked to stabilize and protect the building until permanent repairs can be undertaken. It is anticipated that the permanent repairs may be started in 2023.

### **Existing Structure**

The building is a wood frame structure built in 1849. The building footprint is approximately 40' x 30' with a main two-story section and a one-story kitchen wing. The construction of the above grade superstructure appears to be original and consists of dimension lumber floor joists, roof rafters and wall studs. The walls are balloon framed at the two-story section. The building has a basement level under the full footprint of the enclosed structure. The basement is recent construction consisting of CMU foundation walls and presumably poured concrete footings.

### **Observed Conditions**

Prior to the fire, it appears that the building structure was in good condition. Some roof and exterior finish repairs were planned for the coming year as part of a normal maintenance program for the building. The first two fire events caused only superficial damage to the building structural system; the loss of several east wall studs, loss of some wall sheathing and damage to three floor joists. The third fire event cause considerably more damage to the structural elements. The damage from that fire has affected the structure of the two-story section, mostly limited to the north half of the building. The south half of the two story and the kitchen wing have suffered smoke and water damage but the structural elements have remained unharmed.

### **Condition Assessment**

The following condition assessment concerns the north half of the two-story section. The attached drawings ES-1 thru ES-4 help illustrate the observed conditions.

#### **First Floor Framing**

The first-floor framing is relatively intact with only minor damage.

- The timber sill at the base of the east and north walls is damaged and will need to be replaced.
- The floor joists are unaffected, but it is likely that the joist hangers for several joists, connecting to the north wall timber sill have been compromised. Re-attachment of the joists to the sill or direct bearing on the foundation wall will need to be established.
- Drawing ES-1 illustrates the first-floor framing condition.

#### **Second Floor Framing**

The second-floor framing has suffered considerable damage.

- Six 2x8 floor joists are damaged and will need to be replaced or reinforced.
- Numerous wall studs at the east and north wall are damaged or completely missing. These will need to be replaced or reinforced.
- Approximately 30% of the floor sheathing is damaged. This sheathing will need to be replaced.
- Drawing ES-2 illustrates the second-floor framing condition.

#### **Roof Framing**

The roof framing has suffered considerable damage.

- Nearly all of the trussed rafters at the north half of the two-story building section are damaged. These will need to be replaced or reinforced.
- Numerous wall studs at the east and north wall are damaged or completely missing. These will need to be replaced or reinforced.
- Drawing ES-3 illustrates the roof framing condition.

### **Roof Deck**

The roof deck has suffered considerable damage.

- Approximately 80% of the roof deck sheathing is damaged.
- Emergency personnel have cut two rough openings through the roof.
- All of the roof sheathing at the north half of the building and a small section in the south half will need to be replaced.
- Drawing ES-4 illustrates the roof deck condition.

### **Temporary Shoring**

As a result of the fire and the desire to save the building, Mattson Macdonald Young, Inc (MMY) has recommended immediate temporary shoring to protect the most threatened parts of the structure. A copy of the October 6<sup>th</sup> memo prepared by MMY describing the immediate temporary shoring is attached to this report (Attachment A). The attached sketch TS-1 illustrates these shoring recommendations.

### **Stabilization Efforts**

While the temporary shoring provides immediate support of the most threatened parts of the building and provides protection for workers making repairs, a more long-term solution for the building is needed.

It is our understanding that permanent repairs may not be undertaken until the following year, or later when repair funds can be acquired. For this reason, a shoring and bracing scheme has been designed to protect and stabilize the building for a longer period of time. The attached drawings S1 through S7 illustrate work to stabilize and protect the building.

- The longer-term stabilization illustrated on the drawings consists primarily of replicating the temporary shoring described on drawing TS-1 on the west side of the building, adding diagonal bracing, replacing damaged and missing wall studs, reinforcing the roof members, providing wall bracing and new wall sheathing. This work has been designed to support the normal design loads for the roof and floors and provide lateral resistance to wind loads.
- One drawing (S6) also illustrates a method of protecting the roof with a waterproof covering and a method of securing the covering for a more extended period of time.

## Summary

Based on the observations made at the site, a considerable portion of the north half of the two-story building, above grade, will need repair, reinforcement or enhancement of the existing structural elements. The building foundations and basement area are relatively unharmed by the fire. Smoke and water damage have affected most of the building spaces. Immediate temporary shoring is needed to protect the most at-risk elements and provide protection for workers undertaking repairs.

Longer term stabilization efforts as described above, in the attached drawings and in conjunction with recommendations from other team members should be undertaken as soon as possible. These stabilization and protection measures should not be considered permanent repairs.

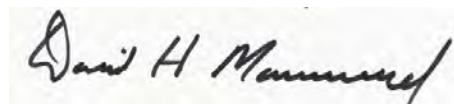
Permanent repairs to allow occupancy of the building and use as an interpretive site should be considered, designed and undertaken within the next two years.

## Limiting Conditions:

The opinions and recommendations contained in this report are based on visual observation of the building. No attempt was made to perform an exhaustive investigation of all conditions and building elements. It is possible that conditions exist that cannot be discovered or judged as a result of this limited nature of investigation. The work provided in the preparation of the report concerns the structural system only and is not intended to address mechanical, electrical or plumbing systems, fire protection or handicap accessibility. The owner is encouraged to discuss these items with a building official or other design professionals for guidance and recommendations.

If you have any questions concerning the above, please do not hesitate to contact me.

Sincerely  
Mattson Macdonald Young, Inc.



---

David H. Macdonald P.E.

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.



---

David H. Macdonald P.E.

10/17/2018

MN Reg. No. 14751



John H. Stevens House  
View from the southwest corner. The one-story kitchen wing in the foreground, the two-story section in the background.



View from the northeast corner. The fires have originated near this corner. This photo is after the second fire event.



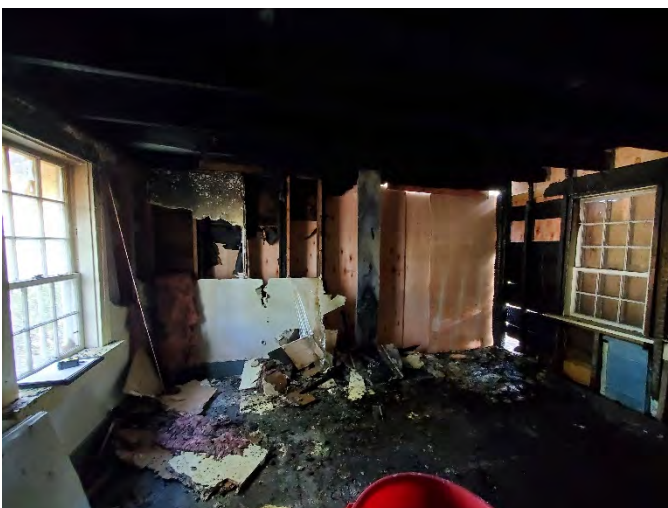
View from the northeast corner after the third fire. This fire has damaged a considerable portion of the north half of the two-story section.



View at the first floor within the two-story section after the second fire. Damage was limited to several of the east wall studs and approximately three second floor joists.



View of the second floor and roof framing within the two-story section after the second fire. Fire damage affected only the roof eave and east wall studs. The roof framing was relatively unharmed.



View at the first floor within the two-story section after the third fire. The east and north wall were severely damaged and most of the second-floor framing was affected.



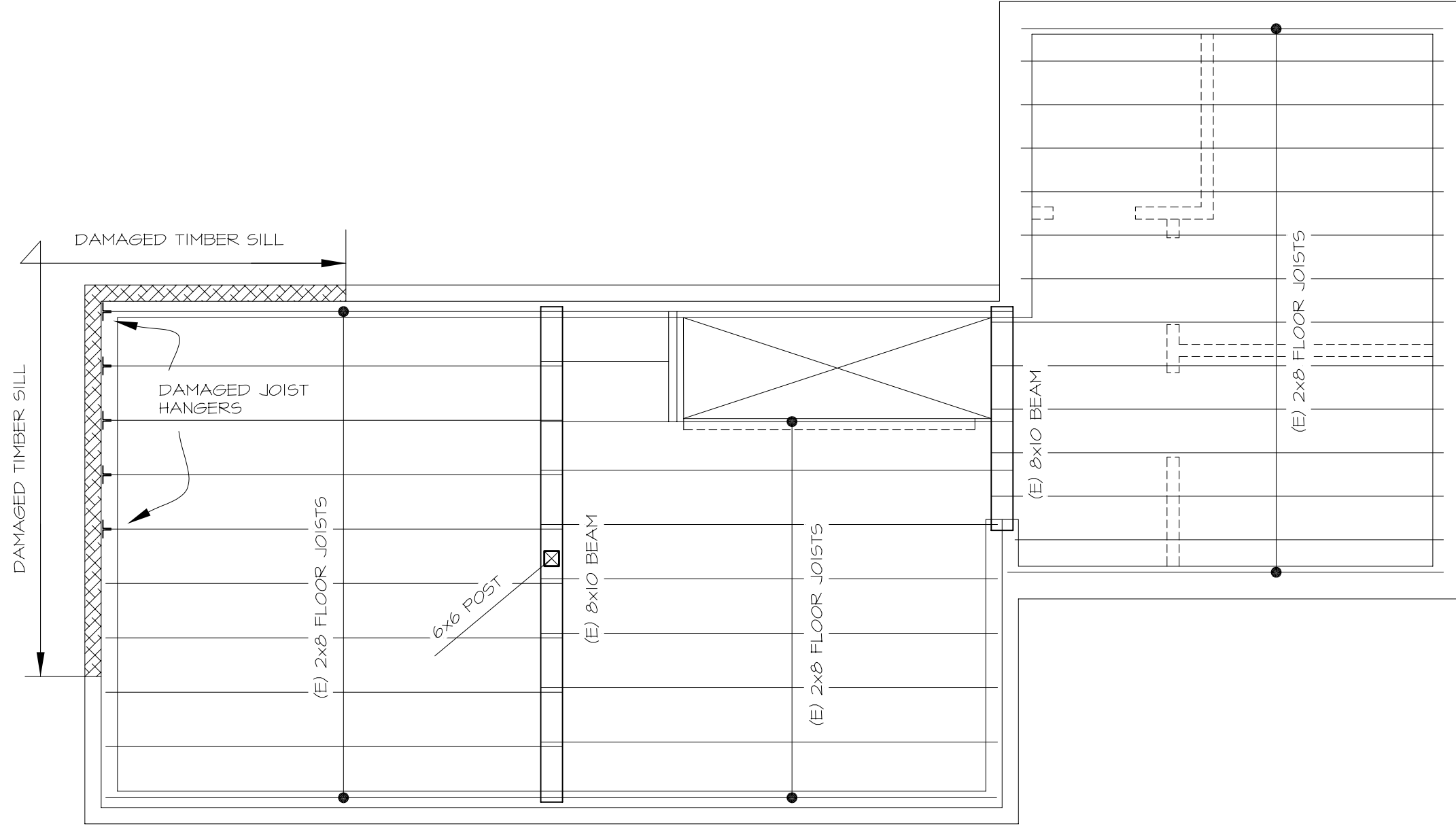
View within the first floor near the northeast corner illustrating the damage to the wall and second floor framing.



View within the second floor near the northeast corner illustrating the damage to the wall and roof framing. Nearly all of the roof framing and roof sheathing was affected. The wall studs at the east and north walls were also severely damaged.



The fire has damaged the timber sill at the base of the walls but the first-floor framing, basement and foundations have been relatively unaffected.



1  
ES-1

1st FLOOR FRAMING CONDITION AND OBSERVED DAMAGE

1/4" = 1'-0"

NORTH

DAMAGE OBSERVED:

- FIRE DAMAGED TIMBER SILL AT NORTH AND EAST WALL.
- COMPROMISED JOIST HANGERS AT NORTH WALL.

Project No. 22296

Date 10/10/22

Drawn By dhm

Mattison Macdonald Young  
structural engineers

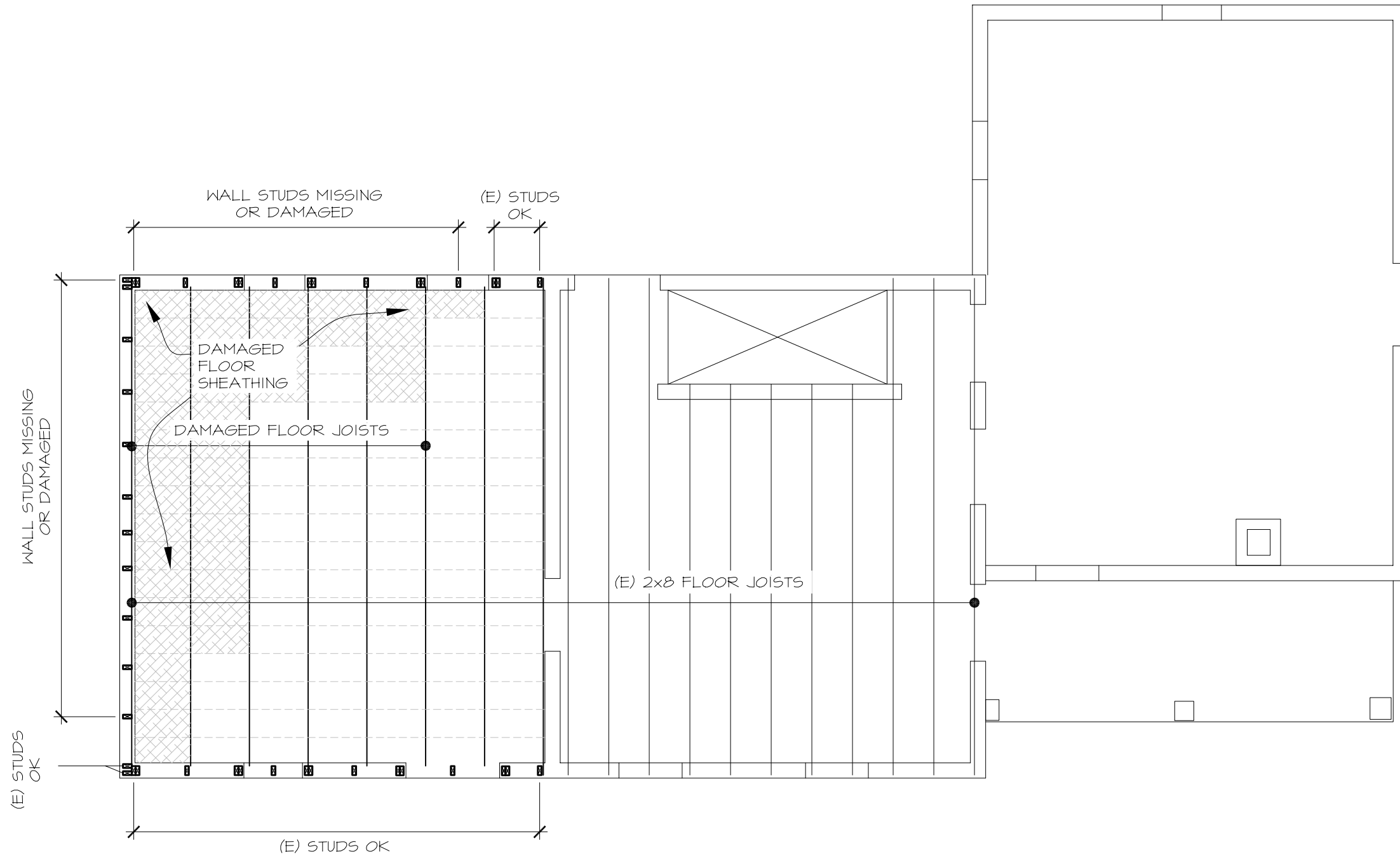
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John H. Stevens House  
Minnehaha Park, Minneapolis

Existing Conditions

ES-1



1  
ES-2

### 2nd FLOOR FRAMING CONDITION AND OBSERVED DAMAGE

1/4" = 1'-0"

NORTH

DAMAGE OBSERVED:

- FIRE DAMAGED WALLS STUDS AT NORTH AND EAST WALL.
- FIRE DAMAGED FLOOR JOISTS.
- FIRE DAMAGED FLOOR SHEATHING

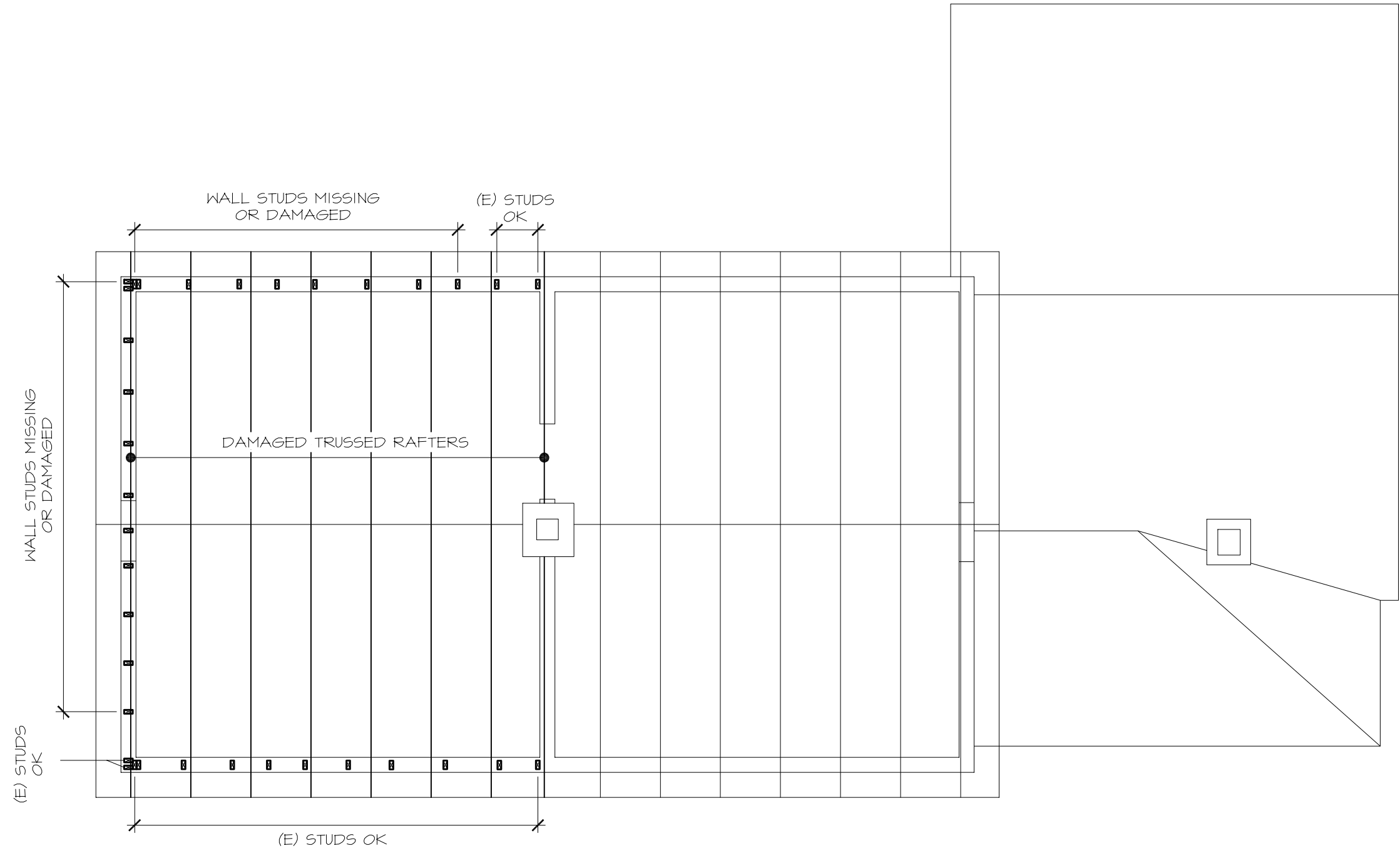
Project No. 22296  
Date 10/10/22  
Drawn By dhm

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John H. Stevens House  
Minnehaha Park, Minneapolis  
Existing Conditions

ES-2



1  
 ES-3

**ROOF FRAMING CONDITION AND OBSERVED DAMAGE**

1/4" = 1'-0"



- DAMAGE OBSERVED:
- FIRE DAMAGED WALLS STUDS AT NORTH AND EAST WALL.
  - FIRE DAMAGED TRUSSED RAFTERS
  - REFER TO ES-4 FOR ROOF SHEATHING

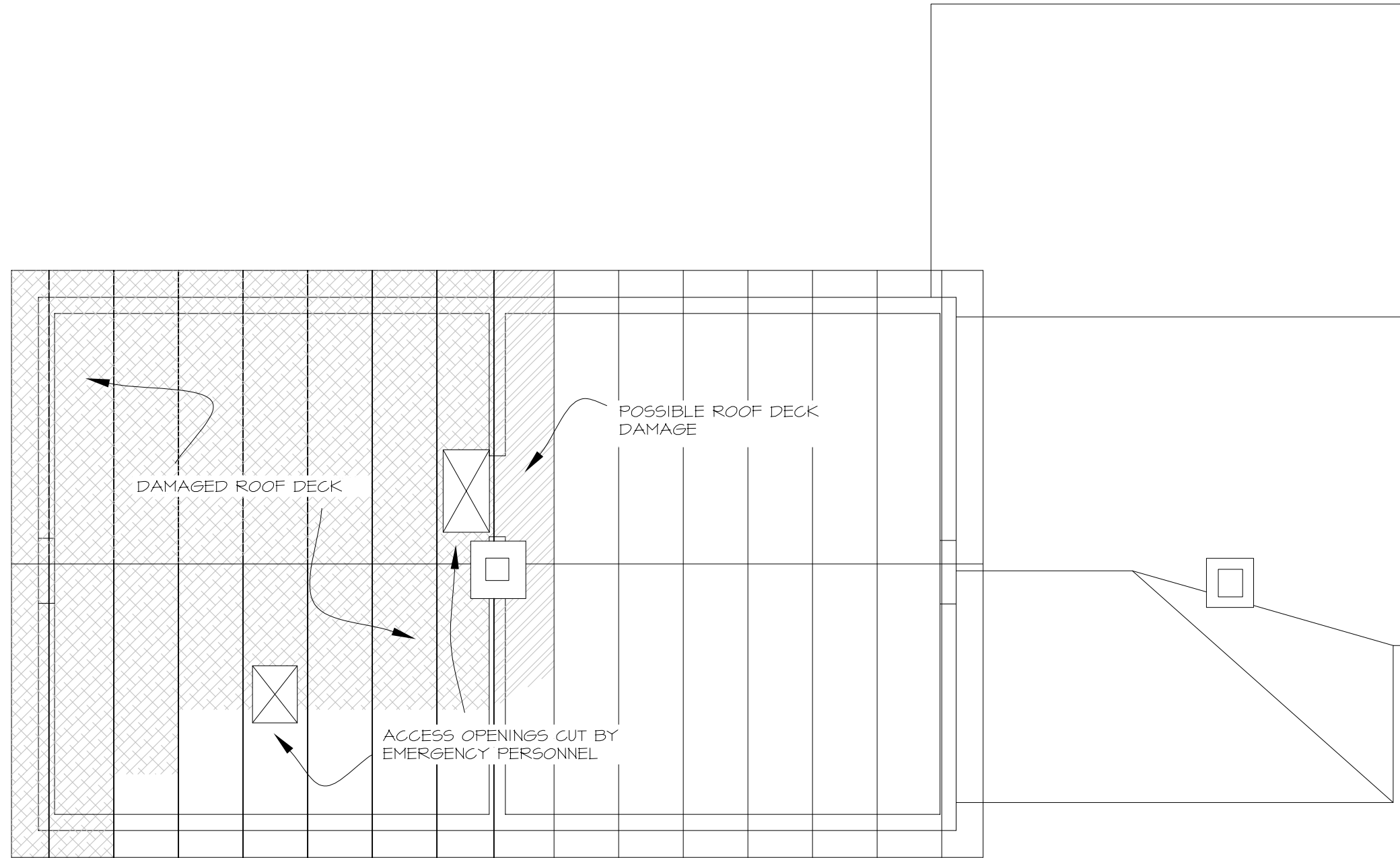
John H. Stevens House  
 Minnehaha Park, Minneapolis  
 Existing Conditions

ES-3



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Project No. 22296  
 Date 10/10/22  
 Drawn By dhm



1
ES-4
**ROOF DECK CONDITION AND OBSERVED DAMAGE**
1/4" = 1'-0"

DAMAGE OBSERVED:

- FIRE DAMAGED ROOF SHEATHING.
- OPENINGS CUT IN ROOF.
- REFER TO ES-3 FOR ROOF FRAMING.

John H. Stevens House  
Minnehaha Park, Minneapolis

Existing Conditions



Mattison Macdonald Young  
**structural engineers**

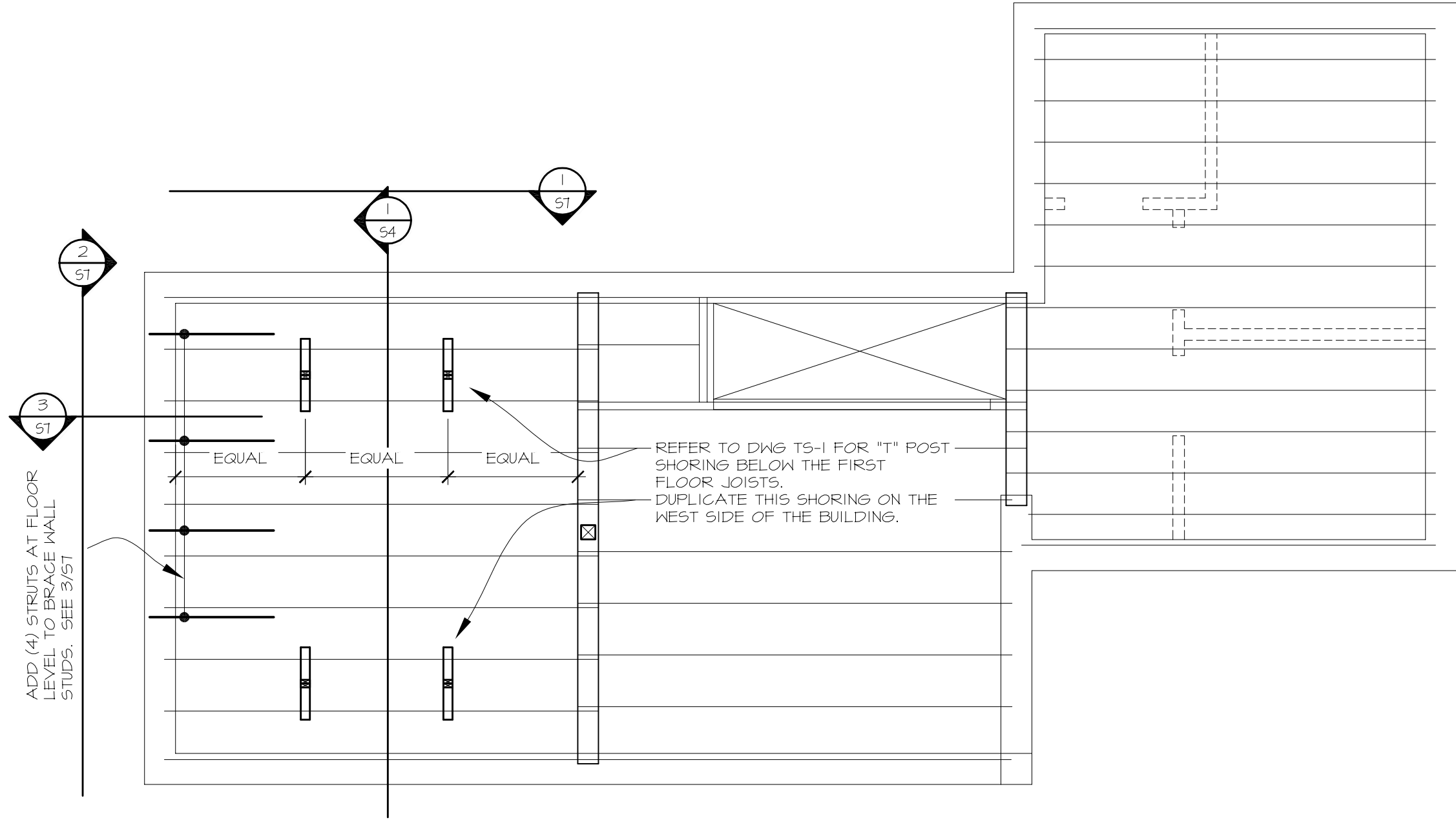
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Project No. 22296

Date 10/10/22

Drawn By dhm

ES-4



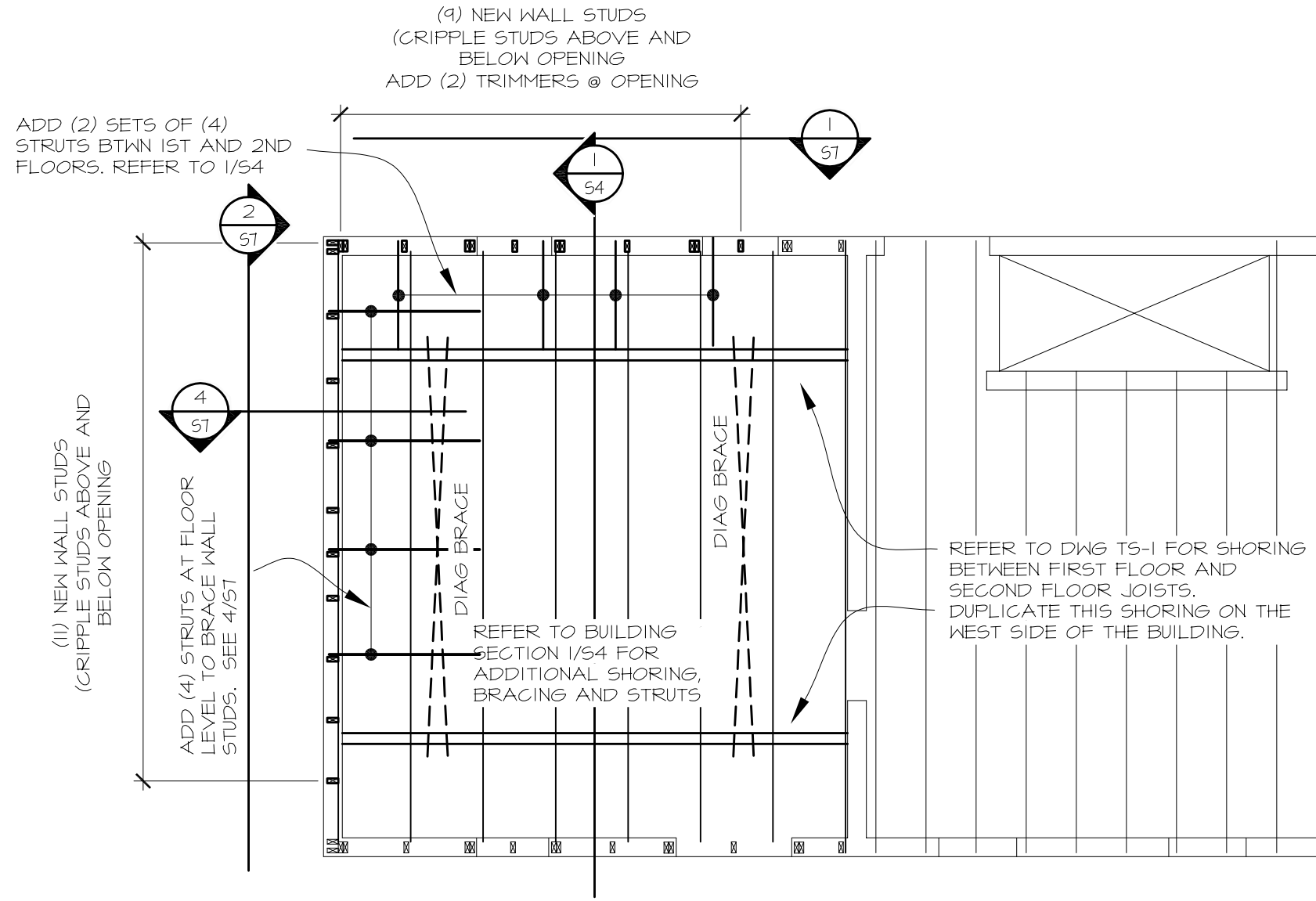
1 57 1st FLOOR STABILIZATION 1/4" = 1'-0" NORTH

John H. Stevens House  
 Minnehaha Park, Minneapolis  
 Repair and Stabilization



Mattison Macdonald Young  
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1 2nd FLOOR STABILIZATION  
52 1/4" = 1'-0"



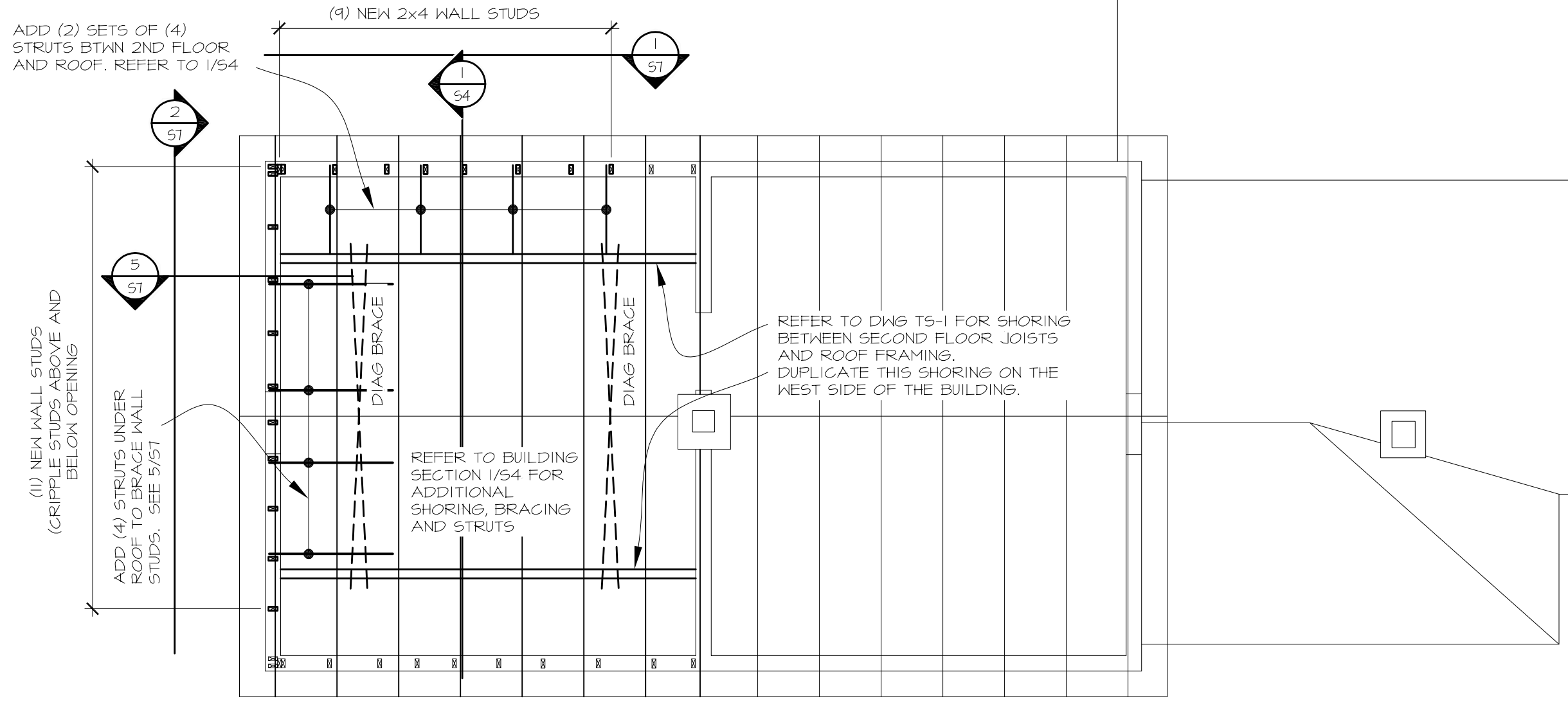
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1  
53

ROOF LEVEL STABILIZATION

1/4" = 1'-0"



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S3



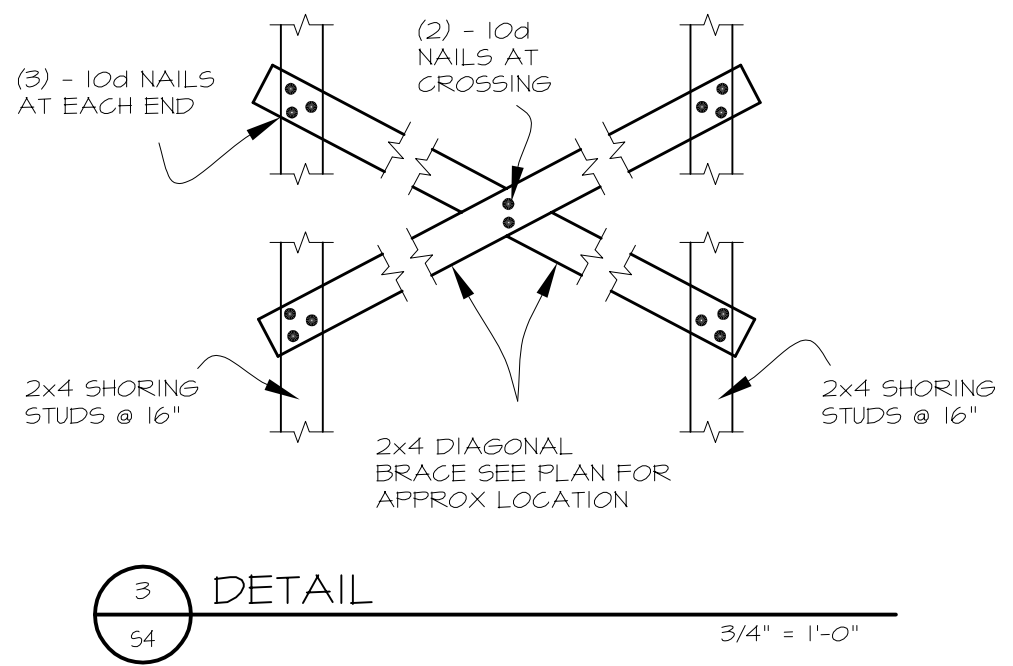
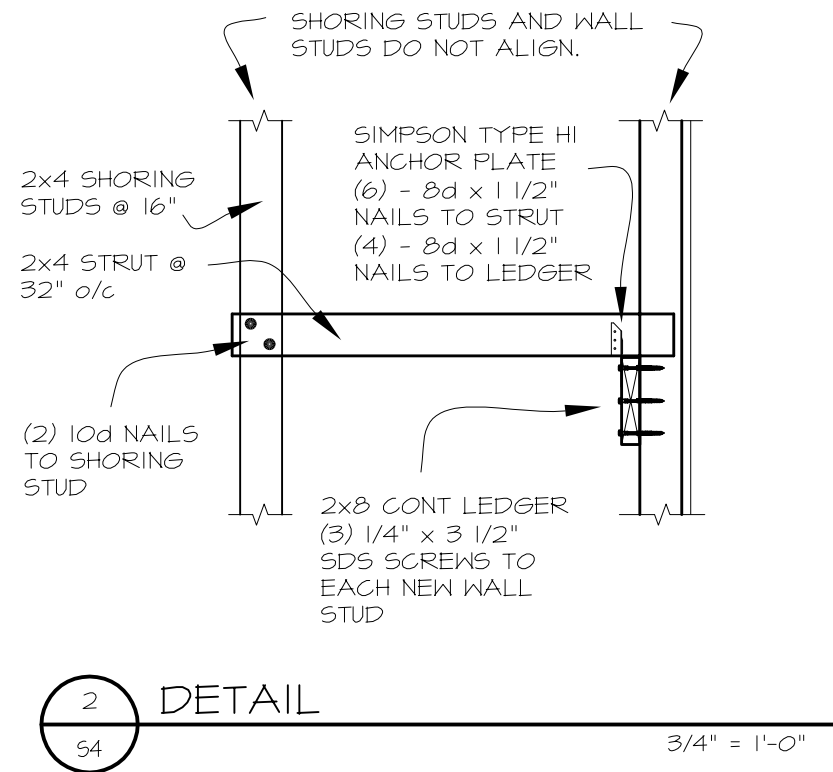
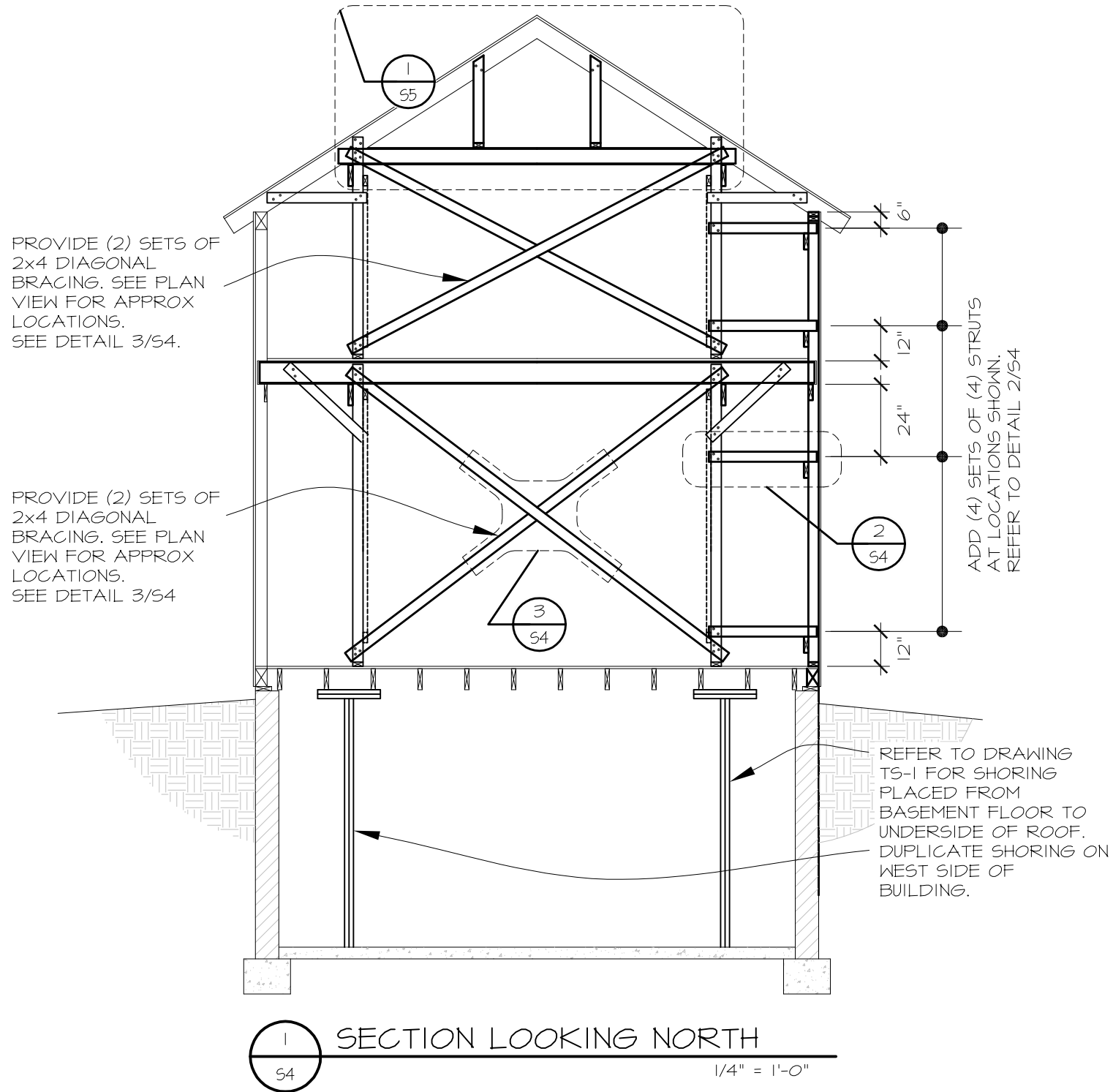
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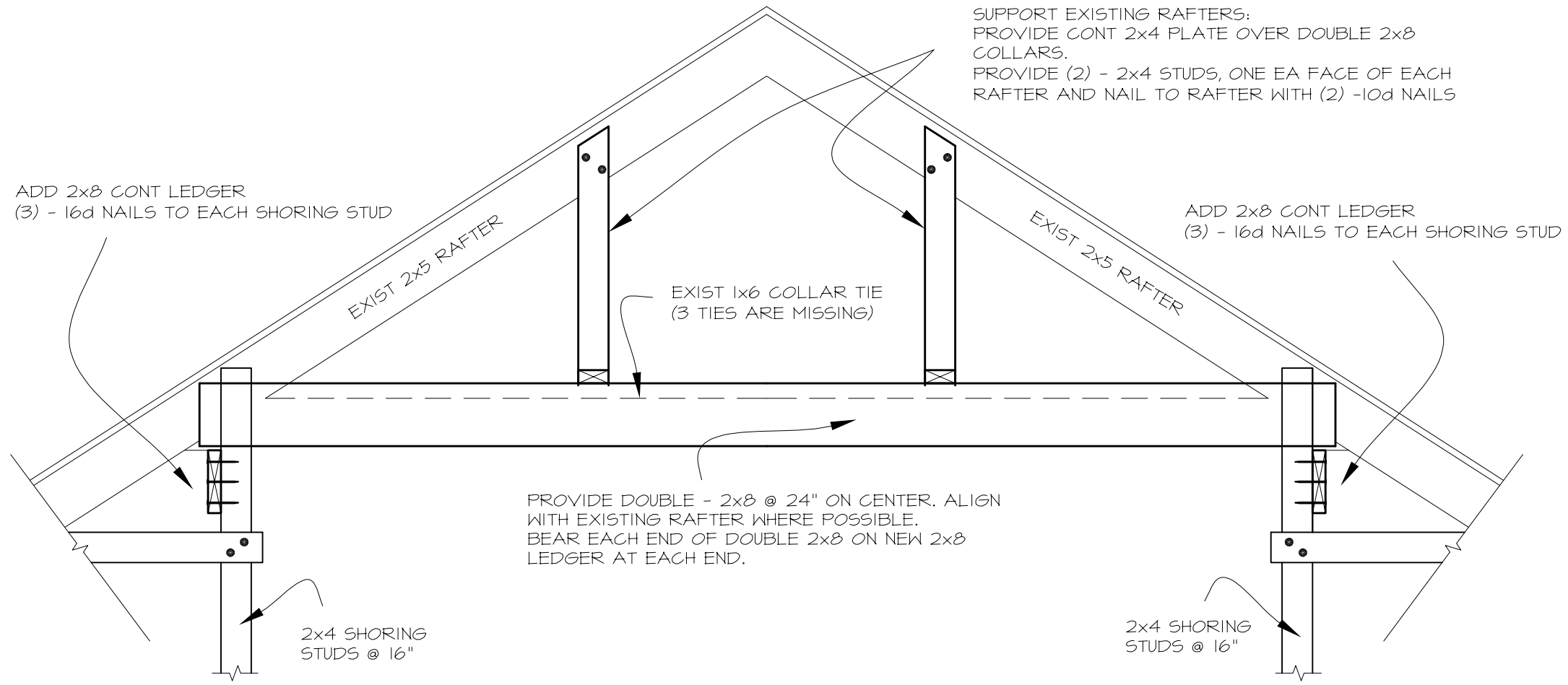


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1  
56

DETAIL

3/4" = 1'-0"

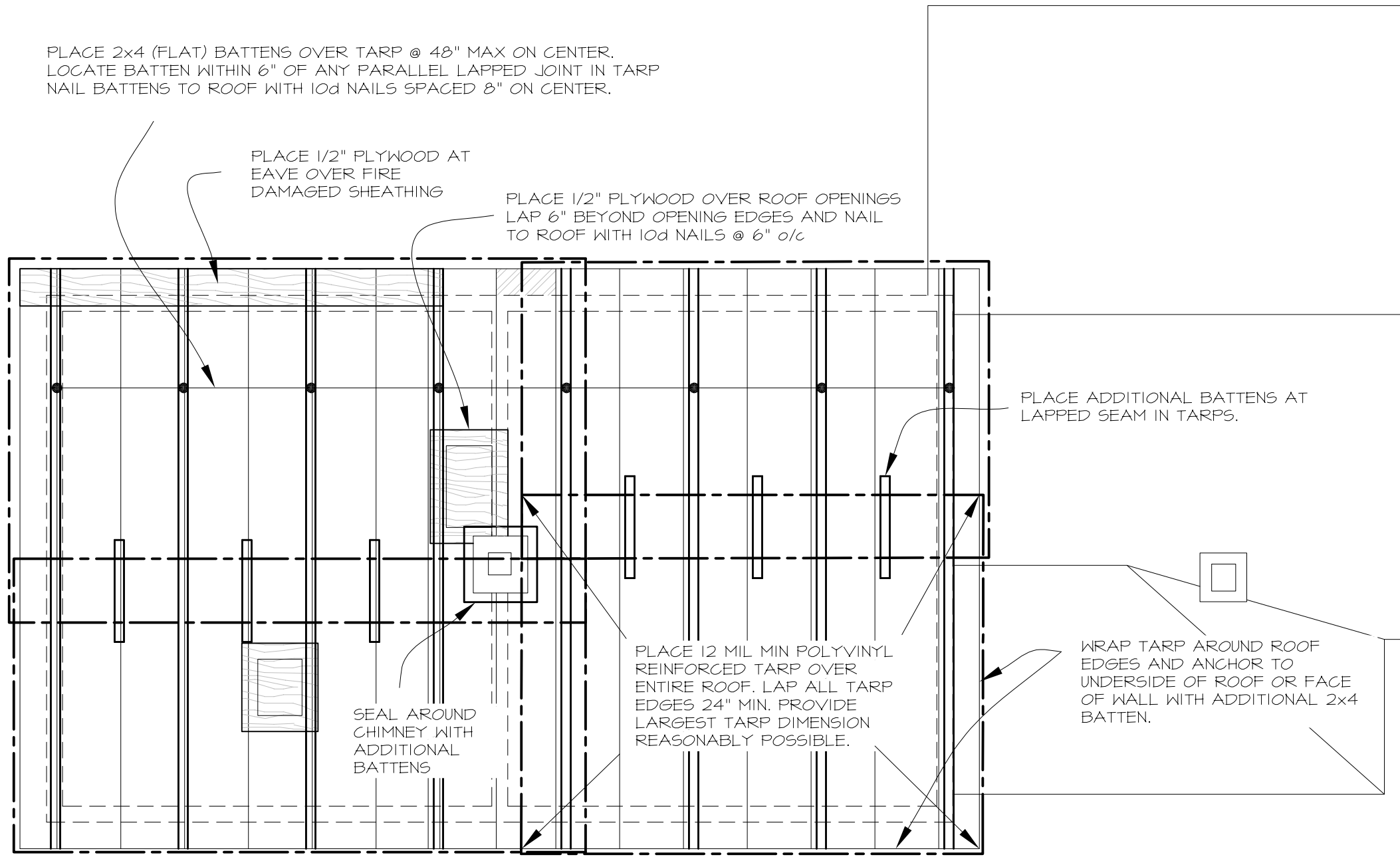
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S5



PLACE 2x4 (FLAT) BATTENS OVER TARP @ 48" MAX ON CENTER. LOCATE BATTEN WITHIN 6" OF ANY PARALLEL LAPPED JOINT IN TARP. NAIL BATTENS TO ROOF WITH 10d NAILS SPACED 8" ON CENTER.

PLACE 1/2" PLYWOOD AT EAVE OVER FIRE DAMAGED SHEATHING

PLACE 1/2" PLYWOOD OVER ROOF OPENINGS LAP 6" BEYOND OPENING EDGES AND NAIL TO ROOF WITH 10d NAILS @ 6" o/c

PLACE ADDITIONAL BATTENS AT LAPPED SEAM IN TARPS.

SEAL AROUND CHIMNEY WITH ADDITIONAL BATTENS

PLACE 12 MIL MIN POLYVINYL REINFORCED TARP OVER ENTIRE ROOF. LAP ALL TARP EDGES 24" MIN. PROVIDE LARGEST TARP DIMENSION REASONABLY POSSIBLE.

WRAP TARP AROUND ROOF EDGES AND ANCHOR TO UNDERSIDE OF ROOF OR FACE OF WALL WITH ADDITIONAL 2x4 BATTEN.

1 ROOF DECK PROTECTION  
56 1/4" = 1'-0"



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