

September 15, 2020

John Russo
Russo Consulting, Inc

Re: Hadley Crossing - Garage Door Header Investigation
CDG Project Number 20066.00

INTRODUCTION

The buildings at Hadley Crossing in Oakdale, MN are wood framed, two-level townhomes. There are multiple buildings in this development, housing from 4-8 units each. The wood framing and headers over the garage doors are reportedly deteriorating. This report investigates the extent of deterioration, discusses the probable cause of the deterioration, and makes recommendations for repairs. Only the items discussed in this report were observed.

Figure 1 shows a site map of the properties and the addresses of the units where the headers were observed:





FIGURE 1: SITE MAP



Observations



The following are noted observations regarding the investigated issues of the building:

OBSERVATIONS	PHOTO
<p>1. The garage door header at some units has deteriorated due to water infiltration into the wall.</p>	
<p>2. The headers are constructed with (2) 1 3/4" x 14" LVLs.</p> <p>At the 4782 Unit, the outer LVL has severely deteriorated at the location of the deck railing post above. Minor deterioration of the inner header is also evident.</p>	



OBSERVATIONS	PHOTO
<p>3. The wood framing above the header also has a significant amount of deterioration, and needs to be replaced.</p>	
<p>4. The headers at randomly selected units throughout the development were investigated. A contractor assistance the investigation team with the removal and replacement of siding to observe the concealed framing.</p>	



OBSERVATIONS	PHOTO
<p>5. The wood framing is covered by fiber board sheathing. This sheathing was found to be damp in many locations.</p>	
<p>6. The wood framing and headers behind the damp sheathing was observed to have some deterioration.</p>	





OBSERVATIONS	PHOTO
7. The sheathing at some units appears to be dry and undamaged.	
8. A wood framed deck is constructed on the roof above the garages. The wood framing rests on the EPDM roofing membrane.	





OBSERVATIONS	PHOTO
9. Poor drainage under the decks is contributing to the growth of moss under some decks.	
10. The edge flashing extends beneath the membrane (see Photo 11). In most cases, the flashing is creating a lip at its back edge under the EPDM, which is inhibiting water flow. Water is accumulating behind this lip, and allowing moss to grow.	



OBSERVATIONS	PHOTO
11. The edge of the membrane is not adhered well in many locations.	
12. The edge of the membrane is not adhered well in many locations.	





OBSERVATIONS	PHOTO
13. The edge of the membrane is not adhered well in many locations.	
14. Holes in the edge flashing is allowing water infiltration.	



OBSERVATIONS	PHOTO
<p>15. The rubber boot around the deck rail posts is not installed well and has become loose, allowing water infiltration at many units.</p>	
<p>16. The rubber boot around the deck rail posts is not installed well and has become loose, allowing water infiltration at many units.</p>	



OBSERVATIONS	PHOTO
17. The EPDM membrane attachment at the walls has become loose in many locations.	
18. Some repairs appear to have been made with silicone sealant.	

DISCUSSION AND RECOMMENDATIONS

Deteriorated wood headers and framing over the garage doors were observed at some, but not all units. Only the units with decks over the garage roofs were investigated. The following is a summary of the units and observed deterioration:



ADDRESS	OBSERVED WET OR STAINED SHEATHING	OBSERVED DETERIORATED WOOD FRAMING	OBSERVED BREACH IN EPDM ROOFING
4782 Greenwich Rd N	Yes	Yes	Yes
4786 Greenwich Rd N	Yes	Yes	Yes
4803 Greenwich Trail N	Yes	Yes	Yes
4805 Greenwich Trail N	Yes	Yes	Yes
4919 Greenwich Ave N	Yes	Yes	Yes
4949 Greenwich Ave N	Yes	Yes	Yes
4963 Greenwich Ave N	No	No	No
4956 Greenwich Ave N	No	No	No
4926 Greenwich Ave N	Yes	Yes	Yes
4987 Greenwich Ave N	No	No	Yes (minor)

The garage door header framing of ten units were investigated. Seven of the ten units have some amount of evident water infiltration into the wall above the garage door. All of the units with observed water infiltration also have evidence of open seals in the EPDM roofing membrane above. Most of the observed deterioration appears to currently be significantly less than that observed at 4782 Greenwich Rd N.

Continued water infiltration will continue to deteriorate the framing over the garage doors if not corrected. The recommended repairs are as follows:

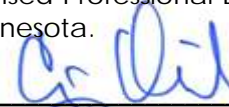
1. Inspect the EPDM roofing at the edge of the decks on all units. Reseal all loose edges, disconnected wall flashing, and railing post boots. Replace missing or broken collars on rail post bases to shed water away from the boot seals.
2. At any unit that has EPDM repairs, remove the siding and inspect for water staining or dampness in the fiber board sheathing.
3. At any unit with water staining or damp sheathing, remove the sheathing to inspect the wood framing.
4. At any unit with deteriorated wood framing, make repairs using the details shown on the attached drawings SSK 01, SSK 02, and SSK 03. These drawings show the existing conditions, an option for replacing the headers with wood LVLs, and an option for replacing the headers with a steel beam, if desired.
5. Reassembly of the walls should include house wrap and ½" CDX plywood sheathing.

Please contact me with any questions.

Very truly yours,
 Collaborative Design Group, Inc.


 Craig Milkert, PE
 Principal

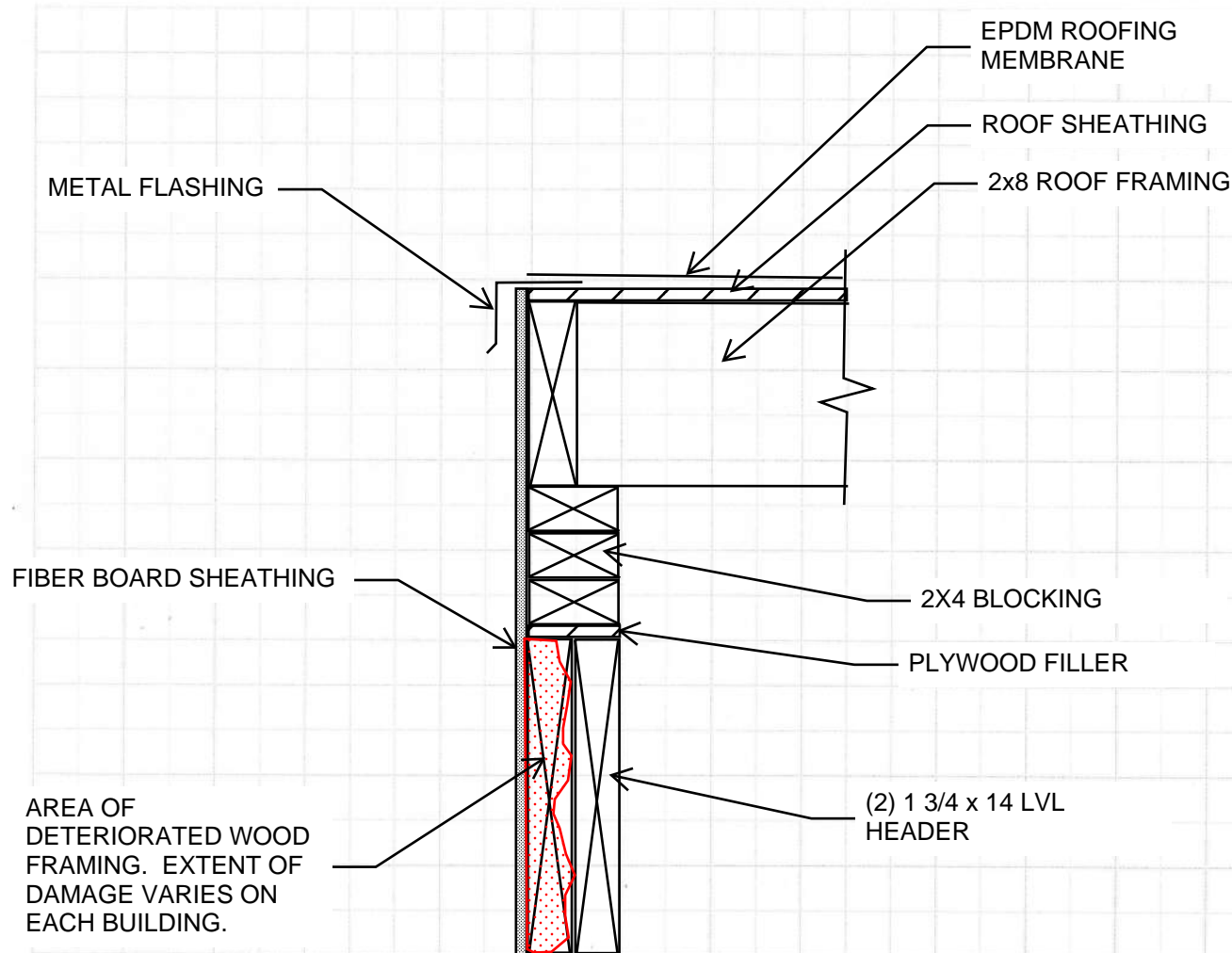
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Signature: 
 Name: Craig Milkert, PE
 Date: 9/15/2020 License Number: 18360



COLLABORATIVE DesignGroup, inc.

HADLEY CROSSING
PROJECT NAME GARAGE DOOR HEADER REPAIR
PROJECT NO. 20066.00
SUBJECT EXISTING CONDITIONS
SHEET NO. SSK-01 OF
PREPARED BY CRAIG MILKERT DATE 9/15/2020
CHECKED BY DATE



SSK-01 EXISTING CONDITIONS

NOTES:

1. ROOF INSULATION, IF PRESENT, IS NOT SHOWN IN THIS DETAIL.
2. VINYL SIDING AND INTERIOR FINISHES ARE NOT SHOWN IN THIS DETAIL.
3. EXISTING CONDITIONS MAY VARY SLIGHTLY BETWEEN BUILDINGS.

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.

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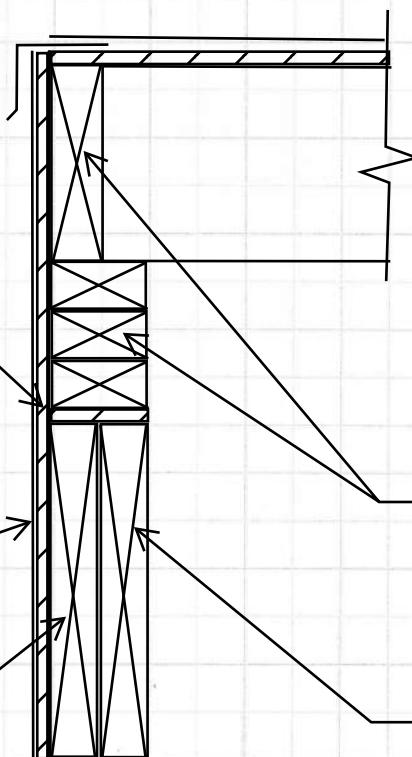
COLLABORATIVE DesignGroup, inc.

HADLEY CROSSING
PROJECT NAME GARAGE DOOR HEADER REPAIR
PROJECT NO. 20066.00
SUBJECT REPAIR OPTION 1
SHEET NO. SSK-02 OF
PREPARED BY CRAIG MILKERT DATE 9/15/2020
CHECKED BY DATE

COMPLETELY REMOVE
FIBER BOARD
SHEATHING TO EXPOSE
ALL FRAMING.
INSTALL NEW 1/2" CDX
PLYWOOD SHEATHING
AFTER FRAMING IS
REPAIRED

INSTALL NEW
HOUSEWRAP.

REPLACE THE ENTIRE
OUTER 1 3/4X14 LVL IF
ANY DETERIORATION IS
OBSERVED. CONNECT
TO INNER LVL WITH 10d
NAILS, 3 ROWS AT 16"
OC.



REPLACE ALL
DETERIORATED
BLOCKING OR
FRAMING (TYP.)

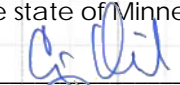
REPLACE THE ENTIRE
INNER 1 3/4X14 LVL IF
ANY DETERIORATION IS
OBSERVED.

SSK-02 REPAIR OPTION 1

NOTES:

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3. EXISTING CONDITIONS MAY VARY SLIGHTLY BETWEEN BUILDINGS.
4. SEE SSK-01 FOR INFORMATION NOT SHOWN.
5. REMOVE ALL DETERIORATED WOOD FRAMING AND SHEATHING.
6. SHORE ROOF FRAMING AS REQUIRED PRIOR TO REMOVING HEADER.
7. REPLACE STRUCTURAL MEMBERS AS INDICATED.
8. REPLACE SIDING AND INTERIOR FINISHES AS REQUIRED.

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.

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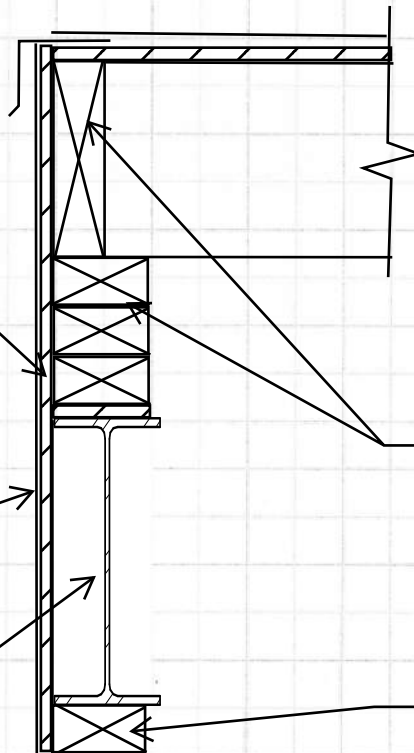
COLLABORATIVE DesignGroup, inc.

HADLEY CROSSING
PROJECT NAME GARAGE DOOR HEADER REPAIR
PROJECT NO. 20066.00
SUBJECT REPAIR OPTION 2
SHEET NO. SSK-03 OF
PREPARED BY CRAIG MILKERT DATE 9/15/2020
CHECKED BY DATE

COMPLETELY REMOVE
FIBER BOARD
SHEATHING TO EXPOSE
ALL FRAMING.
INSTALL NEW 1/2" CDX
PLYWOOD SHEATHING
AFTER FRAMING IS
REPAIRED

INSTALL NEW
HOUSEWRAP.

REPLACE THE WOOD
HEADER WITH STEEL
W12X14. BEAR
MINIMUM 3" ON WOOD
STUDS ON EITHER SIDE
OF OPENING.



REPLACE ALL
DETERIORATED
BLOCKING OR
FRAMING (TYP.). ADD
BLOCKING AS
REQUIRED TO
ACCOMMODATE STEEL
BEAM

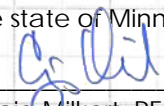
BOLT NEW 2X4
BLOCKING TO BOTTOM
FLANGE FOR
ATTACHMENT OF
FINISHES.

SSK-03 REPAIR OPTION 2

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5. REMOVE ALL DETERIORATED WOOD FRAMING AND SHEATHING.
6. SHORE ROOF FRAMING AS REQUIRED PRIOR TO REMOVING HEADER.
7. REPLACE STRUCTURAL MEMBERS AS INDICATED.
8. REPLACE SIDING AND INTERIOR FINISHES AS REQUIRED.

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