

Structural Engineer's Final Report

Note that the structural engineer has requested to the board that their company name and contact information not be included so that they do not receive emails and phone calls from homeowners so this is a copy of their final report.

September 14, 2026
Park East Square Homeowners Association
1075 Monroe Drive
Boulder, CO 80303
Attention: Brent Chapman

PK No.: 26-061

Re: Roof Sheathing Evaluation
Park East Square Townhome
Boulder, Colorado.80303

Mr. Chapman;

At your request we evaluated the roof sheathing at five of the fifty-five Townhomes in Park East Square in Boulder, Colorado. We were informed that the Park East Square Homeowners Association plans to reroof all 55 buildings. The asphalt shingles which were installed in 2015 were discovered to be defective. The shingles manufacturer offered to replace the defective shingles free of charge, labor excluded. The shingle supplier will warranty the replacement shingles for 40 years if an additional layer of sheathing is installed over the existing sheathing, or if all existing roof sheathing is removed and new sheathing installed. The purpose of our report is as follows:

- Address the structural capacity of the existing roof framing to support an additional layer of 19/32 inch thick plywood or OSB roof sheathing placed over the existing roof sheathing.
- Address the condition of the existing sheathing and whether any existing damage such as delamination could present future problems after a new sheathing layer and new shingles are installed.
- Comment on the attic ventilation.

Summarized below are our field findings, recommendations, and conclusions:

Field Findings and Recommendations:

On August 17, 2026 we walked the roof surface of five buildings to evaluate the extent of soft spots present in the existing sheathing. The buildings were:

1189 Monroe Drive
1176 Monroe Drive
4150 Monroe Drive
4330 Monroe Drive
4145 Monroe Drive

On August 17 and 18, 2026, and September 8 and 9, 2026 we observed the sheathing and wood trusses from the attic spaces in the following units:

1189 Monroe Drive Units A and D

1176 Monroe Drive Units A and D

4150 Monroe Drive Units A, B, C, D

4330 Monroe Drive Unit C

4145 Monroe Drive Units A, B, C, D

Brent Chapman accompanied me while we walked the roofs. Our cursory survey revealed a limited number of soft spots. A soft spot was an area where the roof sheathing deflected noticeably greater than typical under the weight of a footstep. Soft spots may represent sheathing delamination, weakening from exposure to water, or noticeable deflection at a plywood joint. The survey was not comprehensive. It provided a representative sample of the condition of the existing sheathing. The survey alerted us to potential areas to examine further from within the attic space. The average number of soft spots identified per building was approximately 6. Of the 32 soft spots identified approximately six felt significantly weakened. These locations were typically limited in area.

Based on our observations within the attic spaces the sheathing appeared in generally good condition. (Photo A) The term generally good refers to the lack of warping, rot, delamination and evidence of water intrusion (discoloration). In a limited number of areas there was evidence of water staining and warping. The sheathing should be removed and replaced in these areas when reroofing occurs.

The wood trusses were in good condition. There was no evidence of wood rot at the top chords of trusses.

Our roof walk identified significantly weakened sheathing in Unit A at 4145 Monroe Dr. The attic survey revealed that this unit had been damaged by a fire and previously repaired. (Photo B) We estimate that an area of approximately 75 square feet had visual water staining. Staining was visible on the sheathing and top chords of the trusses. The damaged sheathing in this area should be removed and replaced. The sheathing at several locations in Unit A at 1176 Monroe Drive revealed warping of the plywood. Several plywood joints were displaced relative to each other. At this unit more existing sheathing will require removal and replacement than typical.

Typically, the attic survey indicated that the existing plywood sheathing was in good condition. We expect that this is a good representation of most of the townhome buildings.

Conclusions:

The additional weight of the GAF Class 4 shingles and the 19/32-inch roof sheathing is structurally acceptable. The wood trusses can adequately support this load. The Class 4 shingles weigh approximately 2.8 pounds per square foot (PSF). These shingles may be slightly heavier than the asphalt shingles currently in place. The additional sheathing weighs 1.8 PSF.

We recommend inspecting the plywood sheathing after removing the existing shingles. The existing plywood sheathing should be removed and replaced where it exhibits significant deflection (soft spots), water staining, delamination, or warping. This should take place prior to adding the second layer of sheathing. The roofer should identify these locations and then have Park East Square HOA confirm these locations. We estimate that a limited number of locations, approximately 10% of the roof area will require sheathing replacement.

We recommend that the top chords of roof trusses be inspected for potential water damage (rot) where damaged plywood sheathing is replaced. If there are concerns, we are available to observe these conditions and supply repairs if required.

The new plywood overlay should be placed on dry existing sheathing. It should not be placed on existing sheathing which is wet. Plywood joints should be staggered from existing plywood sheathing joints. 1/8-inch gaps should be provided between the sheets of new plywood. The new layer of plywood should be nailed to the wood trusses with 10d (.148-inch diameter) nails at 6 inches on center at plywood edges and at 10 inches on center in the field.

A qualified roofing contractor should provide appropriate attic ventilation. The area of ventilation required should meet 1 square foot for every 150 square feet of attic space. The ventilation openings are the clear area provided (gross area of vent minus screens and louvers). Soffit intake vents should be combined with roof exhaust vents placed in the upper third of the roof. A clear space should be provided between the attic insulation and the roof sheathing at soffit vents so that they operate without blockage. For deep attic insulation, baffles can be provided to allow for unobstructed air flow.

Existing gable vents do not need to be removed but they may not qualify as meeting code requirements for ventilation. If gable vents are supplied on both sides of the attic and near the top of the attic they do qualify toward meeting minimum ventilation requirements. The attics in B and C units do not occur on each side. Most of the existing attic vents are placed lower than near the top of the attic. They do provide additional ventilation but should not be counted toward minimum area requirements. They may remain in place.

Incidental Damage Noted:

Incidental damage not related to the purpose of this report was noted in some units. These should be repaired.

4150 Unit A. One broken truss diagonal member should be repaired. Missing screen on one gable vent.

4150 Unit D. Cut top chord on one truss should be repaired.

1176 Unit D. Three trusses require repair for cut or removed diagonal truss members.

1176 Unit A. One gable vent had louvers locked shut.

4150 Unit B. No screen on gable vent.

Sincerely,

Structural Engineering, Inc.