

# DAVID CHOI AND ASSOCIATES, INC.

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## STRUCTURAL ENGINEERS

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# EXHIBIT C

October 10, 2018

Tiffany Perez  
One Nine Architecture  
18201 West McDermott  
Irvine, CA 92614

**Subject: Existing Structural Conditions of Stand Alone Garage**  
**Project Information: Correa Residence Garage**  
**1634 Grand Ave. Long Beach, CA 90804**  
**DCA Job Reference No: 18-273**

Dear Client;

This letter is in regards to the structural adequacy of the existing framing and foundation conditions to the above referenced garage. DCA was out on site on October 3<sup>rd</sup>, 2018 to observe and review the existing garage conditions, which was originally built in 1924, and to provide a letter stating my findings. The existing garage is approximately 18'-0" x 18'-0" in size and the construction of the garage consists of 2x4 roof rafters at 32" oc spacing, 1x6 flat sheathing as the horizontal diaphragm, 2x4 studs at 16" on center and one 2x8 beam running in east west direction (opposite direction of roof rafters) at approximately the midspan of the garage so the roof rafter span is approximately 9'-0" long. The 2x8 beam is approximately 18' long. The clear height of the garage is approximately 7'6". The existing foundations are assumed to be conventional continuous footings around the perimeter walls, 12" deep x 12" wide. Since no destructive testing or x rays were done, DCA recommends that a licensed general contractor drill some deep holes to field verify the size and depth of any existing continuous footings.

Here are the areas where I have concerns which are listed below:

- The existing 2x4 roof rafters are overstressed in bending by 200% per current building codes. There was at least one roof rafter that was cut into two pieces that needs to be addressed. DCA recommends to strengthen existing rafter and to add more new rafters in between.
- The existing 2x8 beam is severely overstressed in bending by about 500%, overstressed in shear by 280% and over three times the deflection limit per current building codes.
- The exiting roof rafter to wall connection is inadequate. There is an existing 1x6 continuous ledger, nailed into each stud, which supports the roof rafters directly above. There is no current adequate lateral shear transfer from the existing horizontal roof sheathing to the bearing walls.
- On the north side of the existing garage, the adjacent neighbor's lot is approximately 14" higher than the Correa's garage slab so any rain runoff or irrigation runoff leads directly into the north side of the garage wall, which is causing a major waterproofing issue since the existing garage does not have an existing concrete stem wall. DCA recommends to add a new concrete stem/retaining wall at the lower 18" of the north garage wall.
- There is a fair amount of termite damage and dry rot damage thru out the garage framing. DCA recommends to remove any members with termite or dry rot damage and replace with new members designed up to current codes.

DCA Proposal

Project: Correa Residence Garage

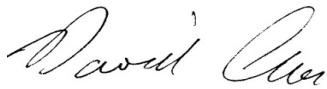
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- There is a small roof leak at the north/east end of the roof. DCA recommends to remove existing roofing, repair leak and put back to current code standards.
- There is no plywood on any of the existing walls. Interior finish is exposed studs, no only lateral system is assumed existing stucco to support garage during an earthquake. This is severely lacking when comparing to current codes. DCA recommends that new plywood sheetrock be added all around the existing garage to adequately resist current code lateral forces.

Overall, DCA feels that the above referenced garage should be completely redone from foundation up based on the current condition of the garage.

Please do not hesitate to call me with any questions or concerns. 714.928.1287.

Respectfully,



David Choi, S.E.

President

**DAVID CHOI AND ASSOCIATES, INC.**