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April 17, 2014

Ms. Bette Marvin
Cameron Holdings, LLC
4121 Okemos Road, Suite 17
Okemos, MI 48864
bettemarvin@nanr.net

RE: 202 E Washington, Ann Arbor, Michigan

Dear Ms. Marvin,

I met with you and several others earlier this week at 202 E Washington, Ann Arbor, Michigan. Concerns had been expressed about the structural integrity of the main floor window frames.

Along the north side of the building, the bottom members (the nom. 2x sill plate) of the wood framing below the large storefront glass panels has shifted outward toward the street significantly. Similar movements were observed elsewhere, but not to the extreme condition observed at the western most bay of the north elevation. I have attached a sketch of a cross section through this north wall that describes the existing construction of the windows. Construction along the west wall is similar, but the windows and stone sill are bearing on a steel beam as the basement extends further west below the sidewalk above. The elevation of the exterior sidewalk varies slightly around the perimeter of the building, but is relatively close to the bottom members of the wood window frames (less than 6" at most).

I suspect the nominal 2x sill plates at the bottom of the window framing are deteriorating from their close exposure to grade and thus snow and other moisture sources. The panel with the extreme lean may also be deteriorating due to its proximity to the radiator hidden in the wood display box at this window bay. Unfortunately, direct access to the structural bottom plates of the window framing could not be obtained during my site visit to confirm the deterioration of the wood. When probed from the exterior, there were several locations where a screw driver tip could penetrate the wood sill up to 3/8 of an inch.

The window framing is supported on the nom. 2x sill plate up to the lintel above. The top 2x plate above the smaller basement windows spans between the vertical window panel members that then bear on the nominal 2x sill plates. Should the sill plates fail, the vertical members will settle or shift as well, removing support for the top 2x plate that directly supports the large glass storefront panels.

Your building superintendant commented that the movement has increased since the road construction that occurred in 2013 at this main intersection. Settlement of the brick pavers in the adjacent sidewalk was also noted. On the interior, limited access was obtained to the interior side of the window framing. Along the north wall, where access was made, efflorescence and rusting of the steel floor joists was observed. Both observations indicate water is penetrating the wall structure. This water penetration should be stopped as soon as possible to prevent further deterioration of the floor joists.

Further selective demolition to allow for full access to the wood framing would be beneficial to fully assess the cause for the movement and determine how the frames are anchored to the structure below.

Regardless, though, rebuilding of the window frames is recommended, especially where the frames have shifted significantly. Considering the proximity to final grade on the exterior, I recommend the frames be rebuilt with treated lumber or other non-deteriorating material. Profiles and sizes of members can be matched to meet any historic district requirements. Use of the treated wood may be problematic if the treated wood is in any contact with any existing steel (at building columns? near joists or beams? fasteners for existing framing?) as the treated wood will corrode the steel. Painting of the treated wood would be required regularly (annually?) as well. Window frames are now available in other materials that may service this area of the building in a more economical manner and still provide the historic profiles desired. I refer you to Quinn Evans Architects and your window supplier to determine the best solution that will fit your needs.

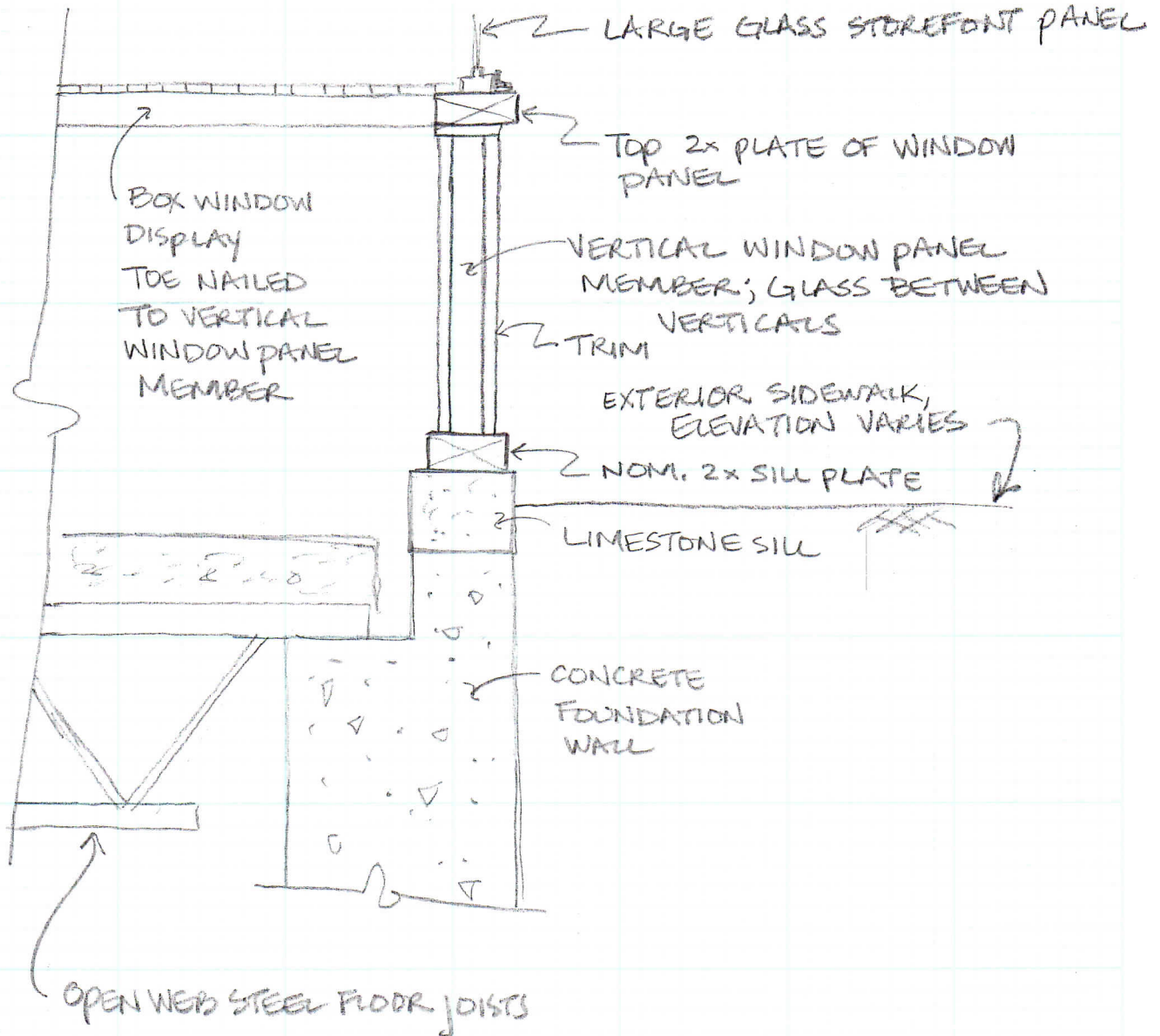
I trust that this serves your needs at this time. Should you have any questions or concerns, please do not hesitate to call or email.

Respectfully,



Cheryl Early, P.E.
Associate Engineer

cc: Jan Evans @ janevans@nanr.net
Ilene Tyler, FAIA @ ityler@quinnevens.com



TYPICAL CROSS SECTION THRU BASEMENT WINDOWS

NO SLABE