

January 5, 2017

Mr. Bryan Bauder
BKB Construction
424 Eagle Lane
Corvallis, MT 59828

Re: Site Observation (2nd)
North Valley Public Library
208 Main St.
Stevensville, Montana 59870

Bryan,

On Wednesday, January 4, 2017, a representative from Eclipse Engineering made a site visit to the above stated address. The purpose of the visit was to investigate the condition of the roof framing after an issue with a roof beam (excessive deflection) was found during renovation.

Background & Observations

The building is partial one story and partial two story. The structure is concrete, brick and wood frame construction. The area in question is a one story flat roof with wood rafters and beams. There are three bays of 2x rafters with an approximate 10 ft. span and a fourth with approximately 19 ft. span that were visible at the time of the site visit. The built up beams are supported by a concrete or CMU pier on one side and steel posts on the other. This area is next to and nearly identical to the area referenced in our previous letter. The beam in question, the first beam back from the wall on Main street side, supporting approximately 15 ft. of tributary load, has approximately 3 inches of deflection at mid-span. For this beam the current code allows only 1 ¼ inch of deflection. The other beams, all apparently in good condition, are supporting 10 tributary load. These beams span approximately 19 ft. As these other beams were not visible at the time of the observation, I will wait to hear back from you regarding their condition.

Conclusions/Recommendations:

The 19 ft. rafter span is too long for 2x8's at 24" on center. Add (sister) 1 ¾"x 9 1/2" LVL rafters to each 2x8 rafter spanning 19 ft. Use appropriate Simpson hangers at the new beam. Nail existing rafter and new rafter with (3) 16d nails per 12".

Although the beam in question, (3) 2x10's, has not failed, the large deflection is a definite concern and it is recommended that it be replaced with a new (3) 1 ¾" x 11 7/8" LVL beam.

Attach all new and existing rafters to this beam with Simpson hangers. If required, the beam may be notched to match the bearing conditions of the existing (3) 2x10 beam, do not notch with a square cut, ref. detail A.



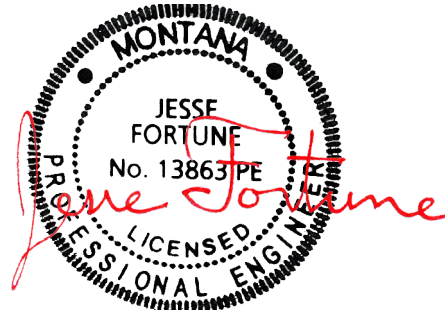
PUBLIC AREA WHERE BEAM IS LOCATED



Eclipse Engineering has reviewed the specific elements identified above only and takes no responsibility for any other element or the remainder of the existing structure.

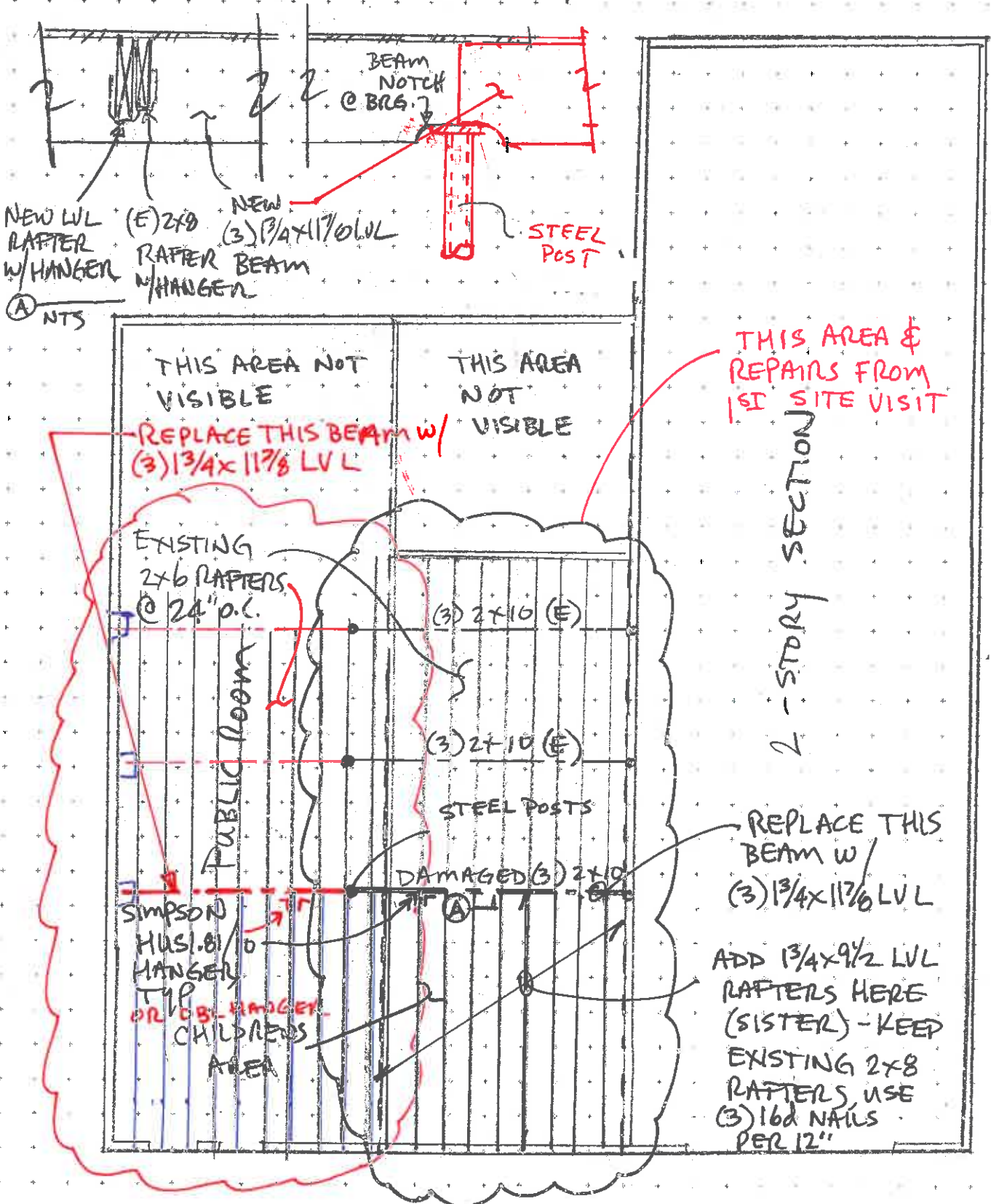
Sincerely,
Eclipse Engineering, Inc.

Lynn Gmeiner
Project Engineer



1/9/2017

Attech: Partial framing plan and detail



PARTIAL FRMG. PLAN - NOT TO SCALE