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Raleigh, NC 27615
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Maurie Phifer
Tar Heel Basement Systems
8005 Knightdale Blvd.
Knightdale, NC 27545

Re: Review of Proposed 1st Floor Framing Repairs — 678 Raven Rock Road, Lillington, NC 27546

Mr. Phifer,

At your request, Stonewall Structural Engineering (SSE) was consulted to review and provide recommendations for 1st floor framing repairs proposed by Tar Heel Basement Systems at the above referenced address. The purpose of the proposed 1st floor framing repairs is to address issues observed by Tar Heel Basement Systems while on-site 1/4/2025.

Conditions Evaluated

Based on the information provided by Tar Heel Basement Systems, we understand the subject structure to be a conventionally framed, detached, single-family residence with raised first-floor framing over a pier/girder foundation system (see pictures 1-2). Indicators such as “left,” “right,” “front,” and “back” are referenced as viewing the front of the home.



Picture 1 – Front of Home
(678 Raven Rock Road, Lillington, NC)



Picture 2 – Example of 1st floor framing

The following 1st floor framing issues were observed by Tar Heel Basement Systems while on-site.

1. Along the back girder line, the 2nd girder span from the left was reported to be deteriorated (see picture 3).
2. Joists along the aforementioned girder span in the back joist bay were also reported to be deteriorated (see picture 4).



Picture 3 – Deteriorated girder



Picture 4 – Deteriorated joists

In order to address the 1st floor framing issues noted above, Tar Heel Basement Systems has proposed the following 1st floor framing repairs:

1. The deteriorated girder span is proposed to be removed and replaced.
2. The deteriorated joists are proposed to be reinforced with an additional full depth continuous ply of 2x #2 Southern Yellow Pine (SYP) material.

Engineering Assessment and Recommendations

The deteriorated floor framing is the result of prolonged exposure to excess moisture in the crawlspace combined with potential wood destroying insect activity. It should be noted that detailed information for the attic framing and the layout of interior walls was not provided. As such, the attic framing of the home has been assumed to have a front-to-back orientation and be lapped over a load bearing wall that transfers to the subject deteriorated girder span proposed for replacement. Similarly, the existing floor joists have been assumed to carry typical floor loads only.

Based on our review of the information provided, the proposed 1st floor framing repairs are recommended to be installed as follows:

1. Remove and replace the above-noted deteriorated girder using full depth treated (3) 2x #2 SYP material with continuous span between existing masonry girder support piers.
 - a. Reinforce the midspan of the new girder using an IntelliJack support on a well-compacted 18"x18"x18" gravel footing (*See Detail 1*).
2. Reinforce each of the deteriorated joists noted above with an additional full depth ply of 2x #2 Southern Yellow Pine (SYP), fastened to the side of the deteriorated joists using (3) 10d common nails at each end and at 12" on center staggered top and bottom along the lengths of the joists. Sistered material should span continuously between end supports.

General Comments and Limitations

The determinations above were made in accordance with common engineering principles and the intent of the 2018 edition of the *North Carolina Residential Building Code*. Our review and assessment of the proposed 1st floor framing repairs was limited to the information provided by Tar Heel Basement Systems, and SSE was not consulted to visit the subject project site. As such, SSE is not liable for any issues arising beyond the scope of information provided to SSE. Should additional information become available, or if site conditions are found to vary from those reported, SSE is to be notified and consulted regarding possible impacts to the structure's integrity and/or the effectiveness of the recommendations presented.

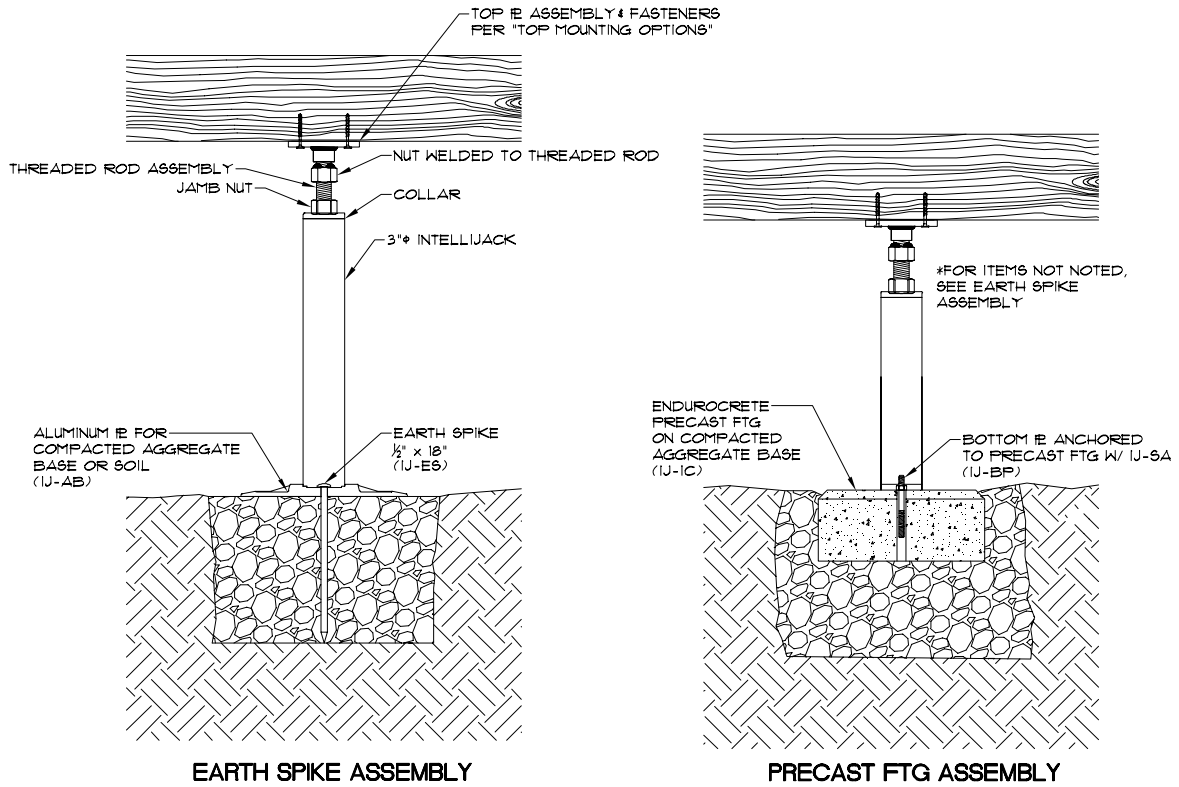
Sequencing, and means and methods of construction are considered to be beyond the scope of this report. A qualified contractor is to provide adequate temporary shoring prior to cutting or removing any structural load-bearing elements. All work is to conform to applicable provisions of current building standards. Please feel free to contact us should you have any questions or concerns regarding this matter.

Sincerely,
Matthew C. Murphy, PE, CWI, PE
Stonewall Structural Engineering, PLLC
Lic. #P-0951

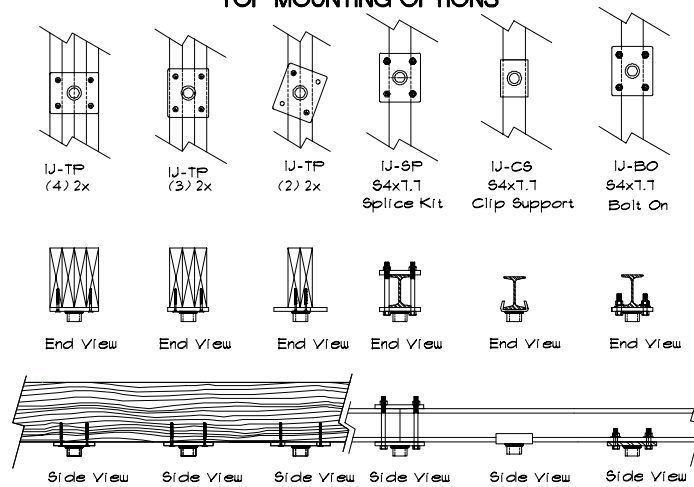


02-21-2025

DETAIL ADDENDUM



TOP MOUNTING OPTIONS



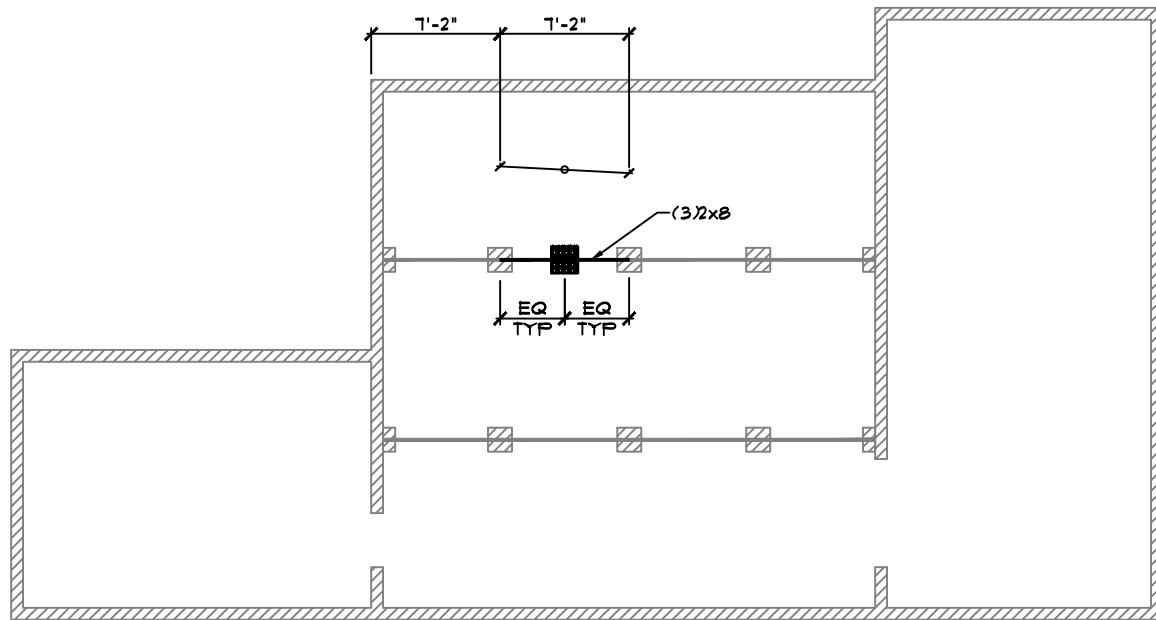
Detail 1 – IntelliJack Specifications

NOTES

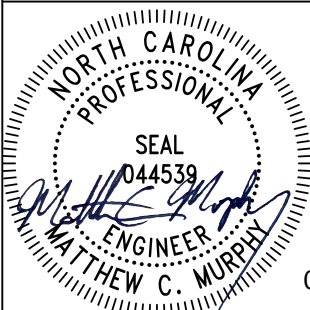
1. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO PERFORMING WORK. NOTIFY ENGINEER IF CONDITIONS IN FIELD VARY FROM THOSE DEPICTED.
2. ASSUMED SOIL BEARING CAPACITY 2,000 psf. CONTACT SOILS ENGINEER IF UNSUITABLE BEARING SOILS ENCOUNTERED.
3. ALL NEW WOOD FRAMING TO BE #2 SOUTHERN YELLOW PINE OR BETTER U.O.N.
4. SEE REPORT FOR ADDITIONAL NOTES & DETAILS

LEGEND

- INDICATES INTELLIJACK SUPPORT ON WELL-COMPACTED 18"x18"x18" GRAVEL FTG PER REPORT & ATTACHED DETAILS
- INDICATES (N) GIRDER PER REPORT
- ⊖ INDICATES PORTION OF (E) JOISTS AT 16" O.C. TO BE REINFORCED PER REPORT



FRONT



02-21-2025

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First-Floor Framing Repairs		
Tar Heel Basement Systems 678 Raven Rock Road Lillington, NC 27546		
SCALE:	NTS	JOB #:
DRAWN BY:	NFP	25-1295
DATE:	2025.02.21	SHEET #: SK1