March 4, 2025 Project No. 25-1301

W. Harrison Welch , PE
Stonewall Structural Engineering, PLLC
9203 Baileywick Rd. #200
Raleigh, NC 27615
(919)407-8663

Nathan Seeley
Tar Heel Basement Systems
8005 Knightdale Blvd.
Knightdale, NC 27545

Re: Structural Observation — *174 Nature Trail Road, Dunn, NC 28334*

Mr. Seeley,

At your request, on February 21, 2025 we performed an on-site visual inspection and review of the structural plan proposed by *Tar Heel Basement Systems* for the first-floor framing repair work at the Dunn residence noted above. The structure is a conventionally framed, detached, single family residence with raised first-floor framing over a pier/girder foundation system with perimeter masonry foundation walls (*see picture 1).*

Our observations are listed below. Indicators such as “left,” “right,” “front,” and “back” are referenced as viewing the front of the home.

PROPOSED FLOOR FRAMING REPAIR

- Trim separation was noted along the front wall of the kitchen (*see picture 2*).
  - Investigation from within the crawlspace revealed that the left (2) spans of the rear girder and (5) joists starting 8’ from the left foundation wall, extending to the right, were deteriorated beyond the salvageable limits *(see pictures 3-4)*.
- Soft and bouncy floors were noted in the living room.
  - Investigation from within the crawlspace revealed that the left (2) spans of the front girder and (5) joists starting 16’ from the left foundation wall, extending to the right, were deteriorated beyond the salvageable limits *(see pictures 5-6 for examples)*.
  - Further investigation revealed that the leftmost 20’ of joists in the middle joist bay were deteriorated beyond the salvageable limits.

We recommend the following work be performed by a qualified general contractor *(see repair schematic at end of this report):*

1) 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.
2) Remove the above-noted significantly deteriorated portions of the girders and replace using full depth treated (3)2x10 #2 SYP (rear girder) or (2)2x10 #2 SYP (front girder) material with continuous span between existing masonry girder support piers.
    a) Reinforce each girder bay using an IntelliJack support on a well-compacted 18"x18"x18" gravel footing. Jacks should be located within the middle 1/3 of each girder span and at the approximate locations shown in the attached repair schematic *(see detail 1).*

The above-listed determinations were made in accordance with common engineering principles and the intent of the 2018 edition of the *North Carolina Residential Building Code.* Sequencing, and means and methods of construction are considered to be beyond the scope of this report. 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.

Inspection performed by:
Will Rogers

Sincerely,
W. Harrison Welch, PE
Stonewall Structural Engineering, PLLC
Lic. #P–0951

03/04/2025

PICTURE ADDENDUM

Picture 1 – 174 Nature Trail Road, Dunn, NC 28334

Picture 2 – A view of trim separation in the kitchen.

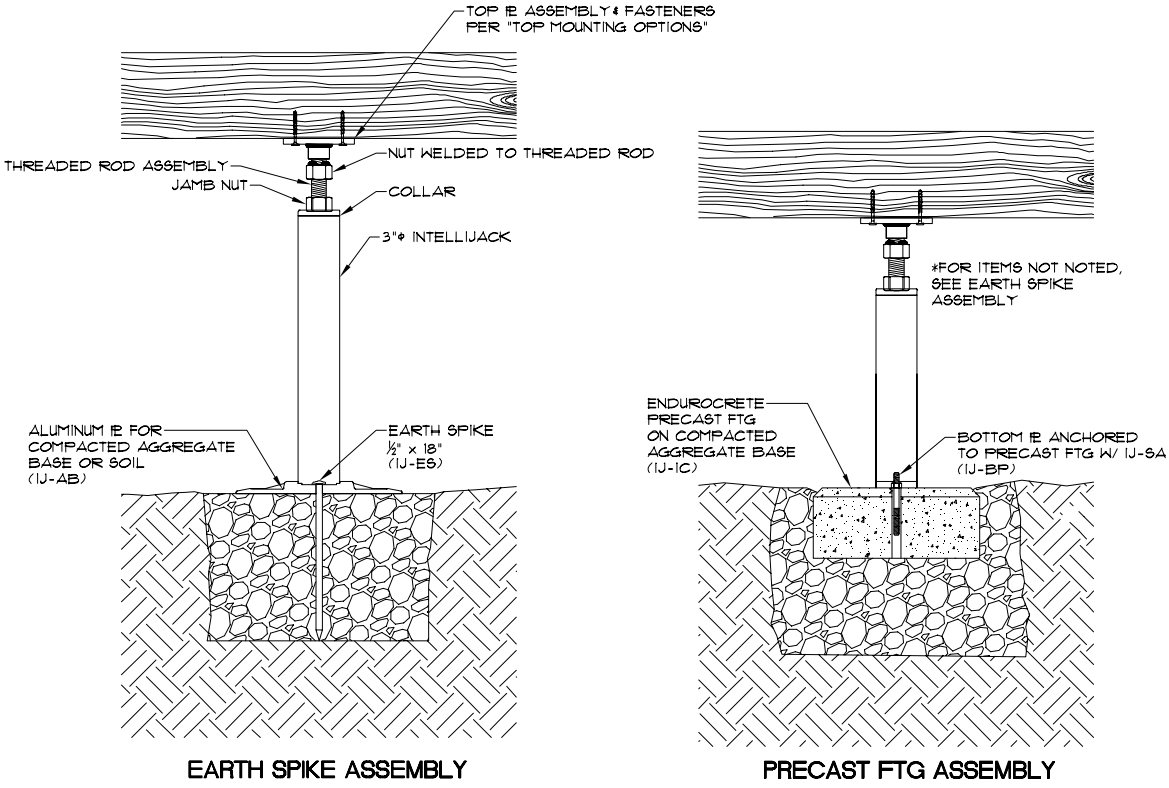
Picture 3 – Example of a deteriorated girder

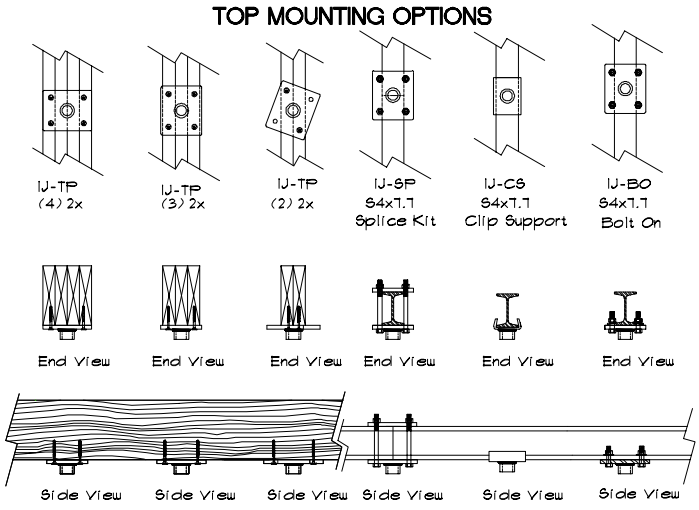
Picture 4 – An example of a deteriorated joist

Picture 5 – An example of a deteriorated girder.

Picture 6 – An example of a deteriorated joist

DETAIL ADDENDUM





Detail 1 – Intellijack Installation Specifications

NOTES

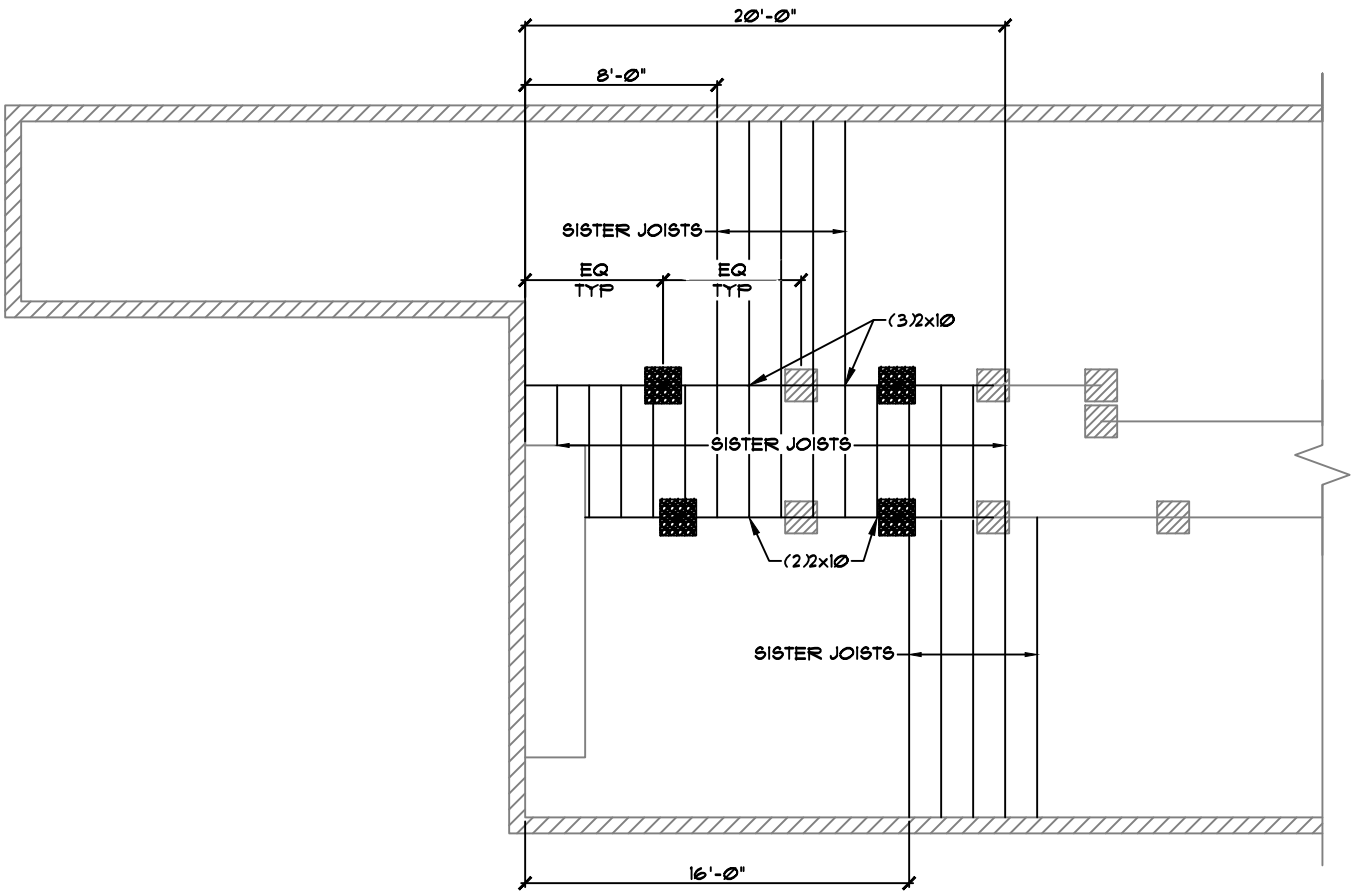
1. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO PERFORMING WORK.
2. ASSUMED SOIL BEARING CAPACITY 1,500 psf. CONTACT SOILS ENGINEER IF UNSUITABLE BEARING SOILS ENCOUNTERED.
3. ALL NEW WOOD FRAMING TO BE #2 SOUTHERN YELLOW PINE OR BETTER U.O.N.
4. SEE REPORT FOR ADDITIONAL NOTES & DETAILS

LEGEND

INDICATES INTELLIJACK SUPPORT ON WELL-COMPACTED 18"x18"x18" GRAVEL FTG PER REPORT & ATTACHED DETAILS

INDICATES (E) FDN WALL

INDICATES (E) MASONRY PIER



FRONT

NORTH CAROLINA PROFESSIONAL SEAL 053889 ENGINEER J. HARRISON WELCH

03/04/2025

STONEWALL
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First Floor Framing Repair

Nathan Seeley
174 Nature Trail Rd
Dunn, NC 28334

SCALE:	NTS	JOB #:	25-1301
DRAWN BY:	N.F.P.		
DATE:	2025.03.03	SHEET #:	SK1