Gill Engineering Services, Inc.

426 SW COMMERCE DR. SUITE 130-M ~ LAKE CITY, FLORIDA ~ 32025 ~ 386.590.1242

2/25/2022

Matt and Lena Brinkley 2054 SW Salem Rd Lake City, FL

## DRAFT COPY FOR REVIEW ONLY

#### **SUBJECT:**

Structural Audit Repair Recommendations Lake City, FL

#### Mr. Brinkley,

On February 7, 2022, per your request, Gill Engineering Services, Inc. (GES) conducted a structural audit of the abovementioned project. The scope of work includes a structural compliance review of the permitted drawings, identifying not compliant areas, and recommending repaisr to bring noted areas into FBC compliance.

#### Information / Scope:

GES was asked by the owner to review the current work in progress of the interior structural framing and address issues regarding the lack of any interior wall and post footing.

Prior the conducting the audit, the concrete and building footer were poured. The scope of work does not include verification of the poured footings or the installation of the pre-engineered metal frame and walls.

#### **Listed Noted Items:**

As stated by client, the concrete floor was poured without interior wall or columns footings. The permitted drawings require interior bearing wall and column footings. Listed below are structural items that needs addressing. Refer to marked up "Interior Footer and Beam Plan" for wall, beams, and column designation.

#### Concrete and Related Materials:

 Bearing wall referenced "BW1" requires an interior footer as noted on the permitted plans. Client drilled a hole through the concrete adjacent to the demonstrate an average slab depth of 4". The plans require a minimum depth of 12" under the wall.

#### **Recommended correction:**

A new 12" deep x 12" wide footing is required under the full length of the wall. Temporarily support the attached floor trusses and remove the current wood framed wall. Saw cut and remove slab. Pour new interior footing as shown on Detail 2 Sheet S-301 of permitted drawings.

2. Column reference R des Fot Val Environment and support post.

#### **Recommended correction:**

Temporary support the LVL end, remove the column, and break out concrete. Pour a new 30"x30"x12" footing and install new 6x6 post. Refer to Sketch S-001

3. Column reference "C2" does not have an adequate footing and support post.

#### **Recommended correction:**

Same as noted above.

4. Bearing wall referenced "BW2" requires interior footing as detailed on plans.

#### **Recommended correction:**

Same as item 1 (BW1).

5. Bearing walls BW3, BW4, BW5, and C3 require interior footings. The plans call for the walls to be wood framed. The constructed walls are 8" CMU fully grouted.

#### **Recommended correction:**

Possible two options:

- (a) Temporary support floor trusses as needed and remove existing CMU wall. Saw cut floor and pour new interior footing for bearing wall. Refer to SK-002 for suggested footing size and reinforcing.
- (b) Underpin the bearing walls BW3, BW4, and BW5. Refer to a Foundation Underpinning Contractor for guidance.

#### Wood framing components:

1. The 24" LVL Girder (G1) has been notched at the member end. The notch has compromised the load capacity of the girder. The span will require shortening and re-supporting

#### **Recommended correction:**

The notch needs to be removed. Shorten the length of the beam and support with new column. Refer to Repair sketch detail S-003

2. The wood trusses are bearing directly on the CMU wall. Bottom of the trusses must not be in contact with the CMU wall DRAFT COPY

# Recommended correction REVIEW ONLY

Re-set trusses and provide a minimum of 2 layers of 30# felt between the CMU wall and bottom of truss chord.

- 3. Owner to verify the (2) ply 14" LVL bearing on the CMU wall is pressure treaded. If not, separation between the two is required.
- 4. The LVL ends bearing on the exterior wall (wood framed) requires jack studs directly under the LVL beam.

### **Recommended correction:**

Add additional 2x studs under LVL beam. Refer to Sketch S-004

5. Owner shall install all necessary straps, ties, and bracing as noted on noted on permitted drawings and required per the Florida Building Code.

Non-structural items:

- 1. Emergency Escape and Rescue Openings Emergency Escape and Rescue Openings shall have the bottom of clear opening no greater than 44 inches measured from the floor.
- 2. Stairs Maximum riser height shall be 7 <sup>3</sup>/<sub>4</sub>" maximum and 4" minimum.

## **Inspection Photos:**



Insufficient Wall Footing (BW1)



Insufficient Beam Column and Footing (C2)



Insufficient Beam Column and Footing (C1)



Unsupported CMU walls (BW3, BW4, and C3)

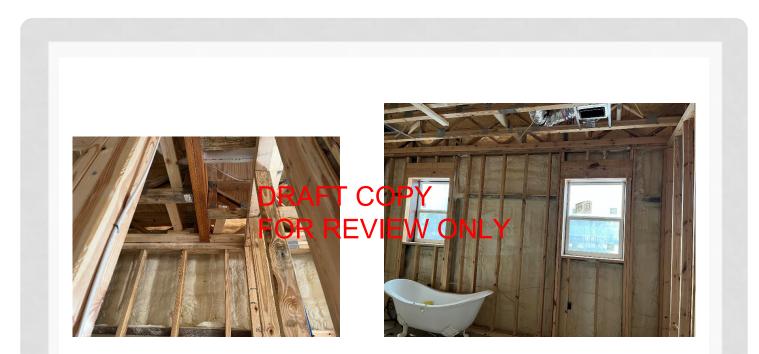


Notched Girder (G1)



Floor Truss bearing on CMU wall

February 25, 2022 Page 4



This structural audit addresses only items observed during the site visit and any items not mentioned do not necessarily means that they meet all the Florida Building Code requirements. Owner shall contact Engineer of Record for any discrepancies or conflict on the permitted plans.

References:

Marked up "Interior Footer and Beam Plan" – 1 page Brinkley Residence Plans / Pournelle Company – 10 pages Sketches: S-001 New Column Footing S-002 Interior Wall Footing S-003 24" LVL Beam Support S-004 Wall Reinforcement

Thank you,

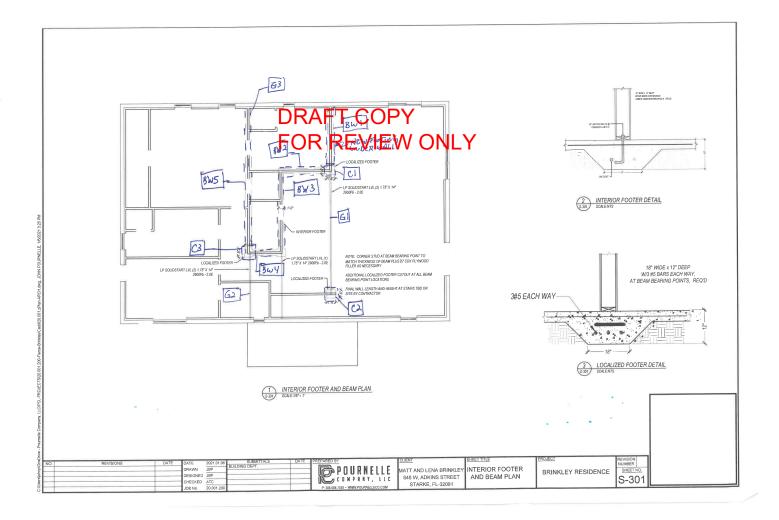
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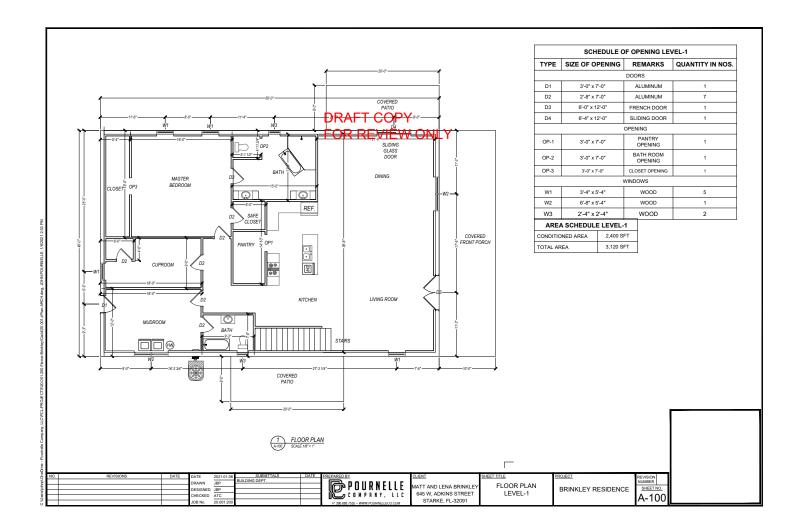
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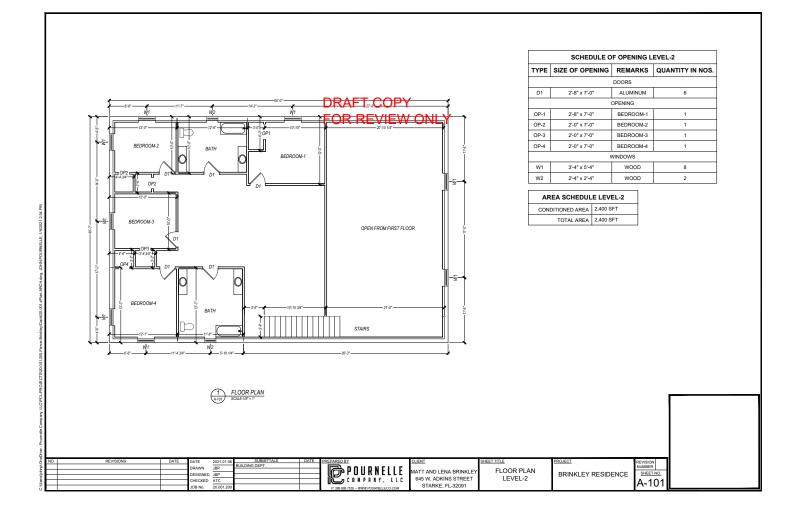


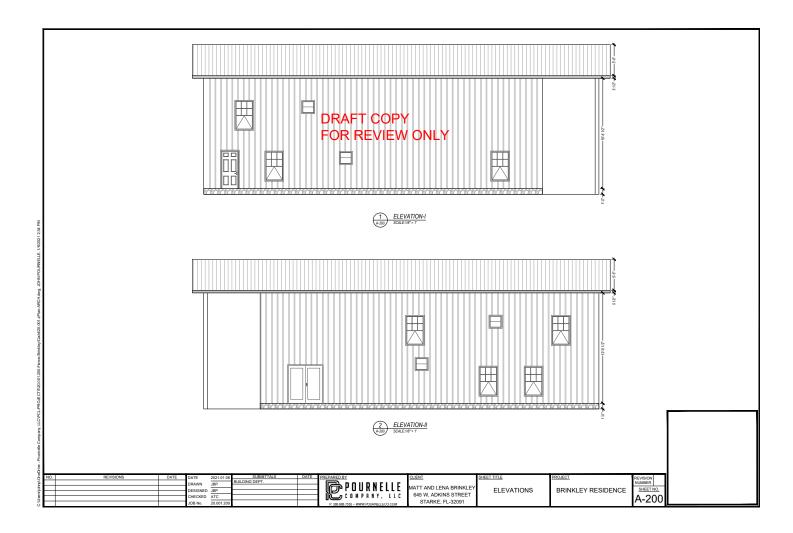
February 25, 2022 Page 5

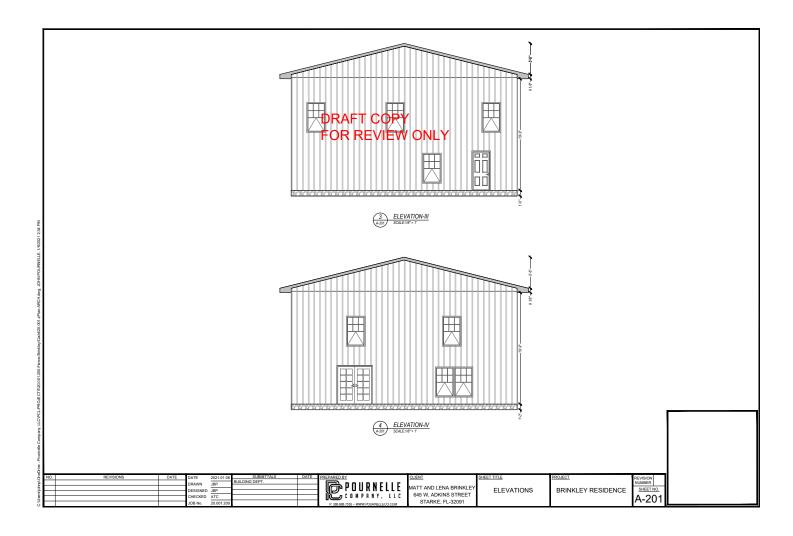


#### STATE CODES: FLORIDA Sheet List Table 7TH EDITION (2020) FLORIDA BUILDING CODE RESIDENTIAL 7TH EDITION (2020) FLORIDA BUILDING CODE ENERGY CONSERVATION Sheet Number Sheet Title A-000 COVER PAGE A-10 FLOOR PLAN LEVEL-1 GENERAL NOTES: A-101 FLOOR PLAN LEVEL-2 -ALL WORK SHALL BE IN ACCORDANCE WITH THE 2017 EDITION OF FLORIDA BUILDING CODE, AS ADOPTED AND SUPPLEMENTED BY LOCAL REGULATIONS. A-20 ELEVATIONS A-201 ELEVATIONS DRAFT COPY STRUCTURAL NOTES S-300 -VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO INTERIOR FOOTER PLAN AND DETAIL COMMENCEMENT OF CONSTRUCTION. NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR INCONSISTENCIES. S-301 FOR REVIEW ONLY S-302 STRUCTURAL DETAILS -NO CHANGES OF INFORMATION SHOWN ON THESE DRAWINGS SHALL BE MADE WITHOUT THE SPECIFIC PRIOR WRITTEN APPROVAL OF THE ENGINEER. E-400 ELECTRICAL PLAN LEVEL-1 **BRINKLEY RESIDENCE** E-401 ELECTRICAL PLAN LEVEL-2 -THE ENGINEER SHALL BE NOTIFIED OF ANY PROPOSED - THE ENGINEER STALL BE NOTIFIED OF ANY FROMOSED MODIFICATIONS - DEMOLITION SHALL INCLUDE REMOVAL, TRANSPORT AND DISPOSAL OF ALL WASTE MATERIAL RELATED TO CONSTRUCTION TO AN APPROVED DISPOSAL FACILITY. -ALL STRUCTURAL ELEMENTS ARE DESIGNED TO SUSTAIN SPECIFIED DEAD AND LIVE LOADS IN COMBINATION SO AS TO 囲 囲 PRODUCE THE MOST CRITICAL CONDITIONS. SEE BELOW CRITERIA. 展開 DESIGN CRITERIA WIND LOAD DESIGN 120 MPH EXPOSURE RISK CATEGORY FIRST FLOOR LIVE LOAD FIRST FLOOR DEAD LOAD C II PLANS PREPARED FOR: " 40 PSF 10 PSF MATT AND LENA BRINKLEY 645 W, ADKINS STREET ROOF LIVE LOAD 20 PSF STARKE, FL-32091 ROOF DEAD LOAD INNER PRESSURE COEFFICIENT IMPORTANCE FACTOR MEAN ROOF HEIGHT 20 PSF -0.18 1.0 10 FT COMPLIANCE STATEMENT THE STRUCTURE ILLUSTRATED IN THESE PLANS MEETS ALL STRUCTURAL REQUIREMENTS FOR THE 2017 FLORIDA BUILDING CODE AND WIND LOAD ANALYSIS TO SATISFY A 120MPH WIND ZONE. THE DRAWINGS HEREIN ARE ONLY APPLICABLE AT THE LOCATION SPECIFIED BY THE PARCEL I.D. 24-4S-15-00383-107. THESE DRAWINGS ARE ARE NOT VALID FOR CONSTRUCTION ELSEWHERE CONSTRUCTION DOCUMENTS PLANS PREPARED BY: REVISIONS ENGINEER OF RECORD: NO. DESCRIPTION DATE BY 17627 89TH ROAD, MCALPIN, FLORIDA 32062 P:386.688.7555 WWW:POURNELLECO.COM COMPANY NUMBER: L20000107644 ADAM T. COLLINS FLORIDA P.E. REGISTRATION NO. 75584 Date: 2021.01.06









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