

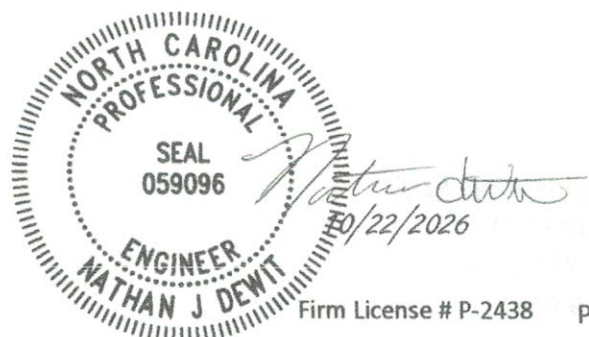
Date: October 22, 2026
Project: Hale Residence
Address: 6817 Oviedo Dr
Raleigh, NC 27603

Floor Support Systems Analysis

This report is prepared for Carolina Basement Systems (contractor) by FDN Engineering (engineer). Contractor performed inspection services at the property. SmartJacks are proposed for installation at the above referenced project. The floor support system is intended to stabilize and potentially lift the existing floor structure – reducing deflections in the floor and supporting the vertical loads tributary to the support. Load requirements for the systems were calculated at areas shown on the repair plan. Engineer performed design for the repair solution - see page 2 for engineering notes and results. See pages 3-4 for details of the floor support systems. See page 5 for a repair plan of the floor support systems on the structure.

To the best of my professional knowledge, the design of the floor support systems meets the structural requirements of the 2018 North Carolina State Building Code to the extent that it applies to our scope of work. Engineer is retained in a limited capacity for this project. No responsibility and/or liability is assumed by, nor shall be assigned to engineer for items beyond the proposed scope as shown herein. The specified areas of repair may not address all areas requiring attention.

Upon completion of the floor support systems, the contractor shall supply engineer a log of the installed repairs, as well as photos of completed work. Engineer will evaluate the field data and prepare a letter of completion, if necessary.



SmartJack Project Notes (contractor to inform engineer if discrepancies are found):

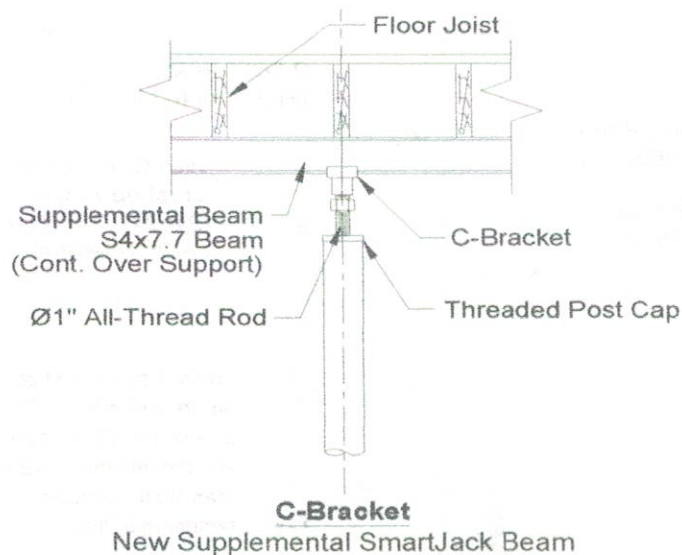
- A.1 Structure is one-story, residential with wood-frame floors.
- A.2 Soil load bearing capacity at the site is a minimum of 1500 psf, based on observation.
- A.3 Contractor shall use SmartJack model size SJ288.
- A.4 SmartJacks and supported beams assumed to carry interior load-bearing walls or columns.
- A.5 Contractor will install footings, SmartJacks, supplemental beams and all related components per the support manufacturer's installation instructions and according to their technical specs.
- A.6 Contractor to select support base plate from the details shown herein (based on field conditions).
- A.7 The design assumes the original structure was constructed of conventional means and methods.
- A.8 Where supplemental beams are specified, use S4x7.7 ASTM A572 Gr. 50 (or equal).
- A.9 Supporting a cantilever requires the beam to be continuous over the SmartJack support. The length of the cantilever may be up to the lesser of 50% of the adjacent beam span or 30 inches.

SmartJack Analysis and Results:

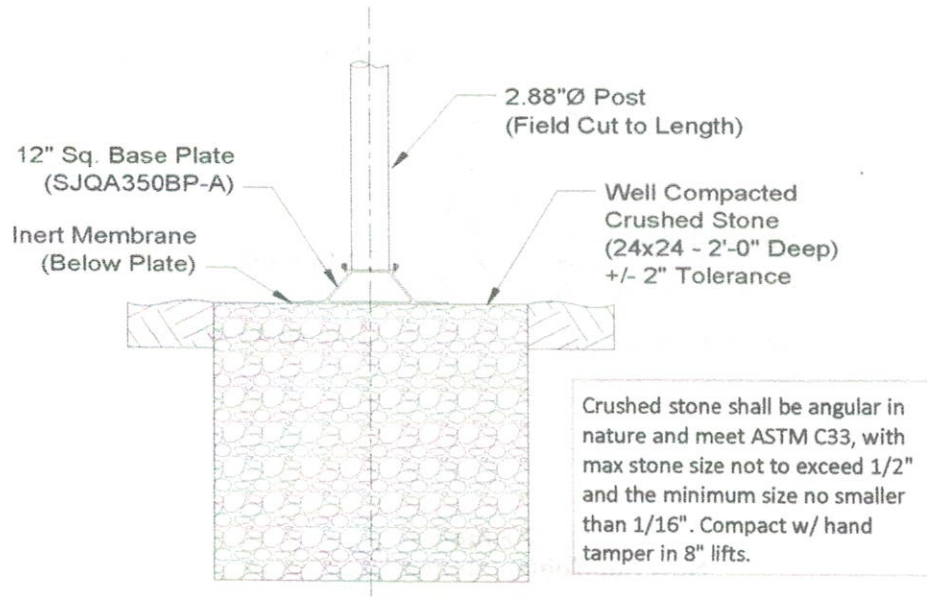
- B.1 Interior floor design load is 55 psf nominal load (15 psf DL + 40 psf LL), per Code.
- B.2 SmartJacks are designed to support axial compression load only; with a max height of 9'-0".
- B.3 Total load calculated on a SmartJack post is 2,600 lbs.
- B.4 SmartJack spacing along the supported beam (or tributary length) is typically 6'-0" O.C. (to nearest new or existing support) and shall not exceed 8'-0" O.C. unless noted otherwise on plans.
- B.5 The allowable load capacity of a SmartJack post and footing is 6,000 lbs.
- B.6 Locate supplemental beam in the middle one-third of the joist span, unless noted otherwise on plans. Place to best support framing and limit floor deflection.



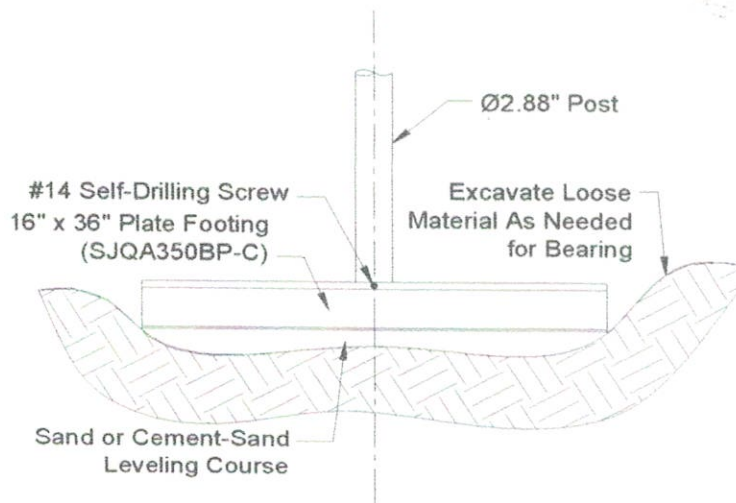
SmartJack Top Support Detail: Shown here is the SmartJack post top half and beam that supports the floor structure. All details shown are acceptable. See repair plan for location and orientation of beam. See manufacturer's tech. specs. and evaluation report for more information.



SmartJack Base Detail: Shown here is the SmartJack bottom half and footing. Multiple base conditions have adequate capacity to support the load. All below variations shown are structurally acceptable and may be used at the contractor's discretion based on site access conditions.



Base Plate Over Crushed Stone



Steel Plate Footing

LEGEND:



Indicates SmartJack
and Mark Number



Supplemental Beam



Existing Main Beam



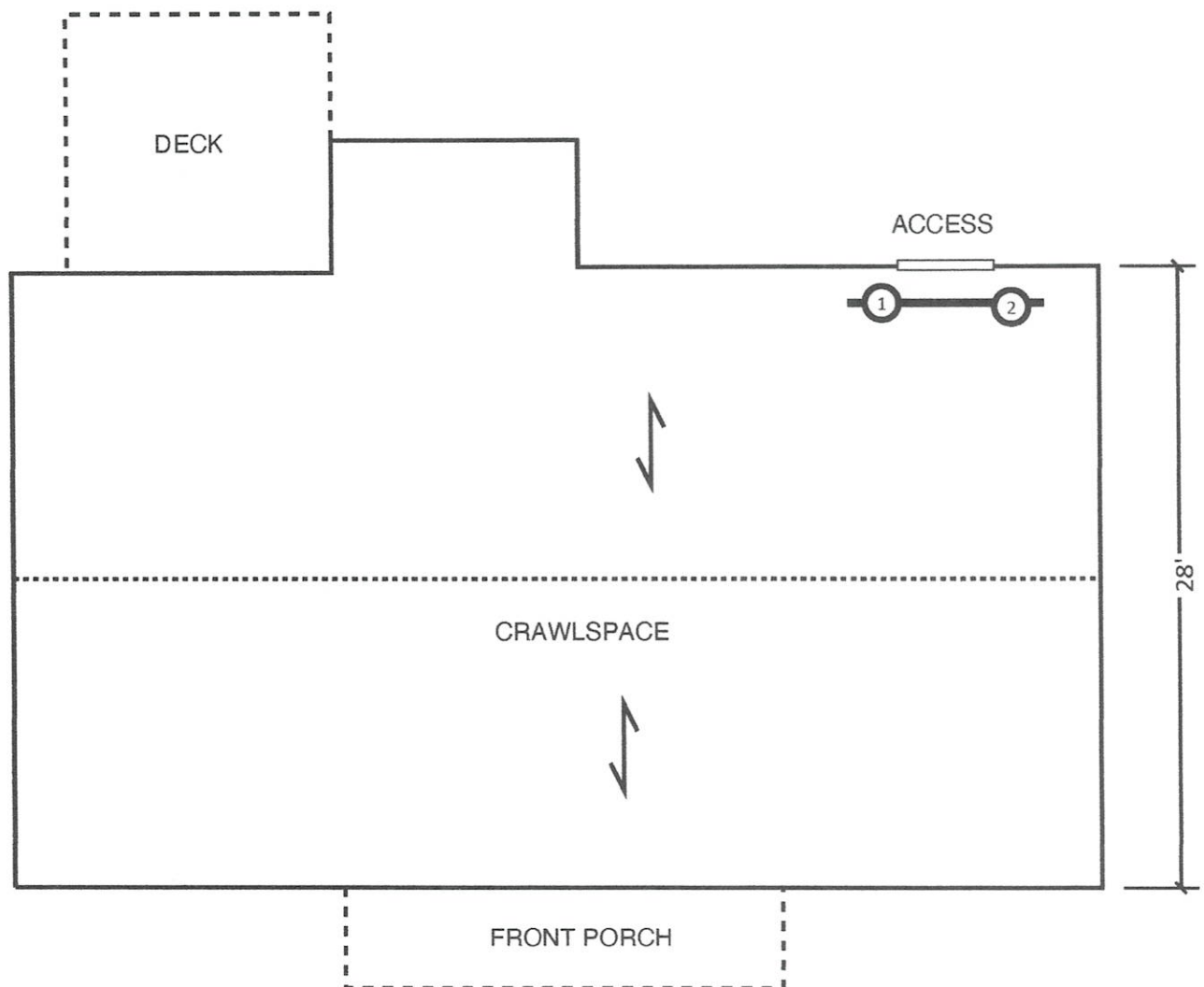
Span Direction



Existing Pier

SmartJack Notes:

1. Residential construction, one-story.
2. Layout of (2) SmartJacks Model SJ288 w/ 6'-0" between supports (typ), 8'-0" (max).
3. Install per SmartJack manufacturer's instructions and technical specifications.
4. Notify engineer of discrepancies between plans and site before proceeding.



REPAIR PLAN



DRAWING NOT TO SCALE

Project:

Hale Residence
6817 Oviedo Dr
Raleigh, NC 27603

FDN Engineering, PLLC

2412 N 179th St.
Omaha, NE 68116
(402) 739-9642



Nathan J Dewit
10/22/2026

Firm License # P-2438

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10-20-26

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PR334748

Job location:
6817 Oviedo Dr
Raleigh, NC 27603

Project Summary

Permanently Stabilize Floors	\$4,280.80
Total Investment	\$4,280.80
Total Contract Price	\$4,280.80
Deposit Required - 30%	\$1,284.24
Deposit Paid - ACH	\$1,284.24
Amount Due Upon Installation	\$2,996.56

Customer Consent

Any alteration from the above specifications and corresponding price adjustment (if necessary) will be made only at the Customer's request or approval. Completing the work in this Proposal at the time scheduled is contingent upon accidents or delays beyond our control. This Proposal is based primarily on the Customer's description of the problem. This Proposal may be withdrawn if not accepted by the Customer within 15 days.

DocuSigned by:

William Brown

Authorized Signature

CA33214ED033B4FF...

Date

10/20/2026

Acceptance of Contract— I am/we are aware of and agree to the contents of this Proposal, the attached Job Detail sheet(s), and the attached Limited Warranty, (together, the "Contract"). You are authorized to do the work as specified in the Contract. I/we will make the payment set forth in this Contract at the time it is due (upon completion of "scope of work"). If the agreed upon project detailed (2) or more scopes of work, I/we will pay Carolina Basement Systems upon completion of each scope of work within the Contract. I/we will pay your service charge of 1-1/3% per month (16% per annum) if my/our account is 30 days or more past due, plus your attorney's fees and costs to collect and enforce this Contract. Due to the nature of the worked performed by Carolina Basement Systems, the homeowner is responsible for marking privately owned utility lines. Carolina Basement Systems is not liable for any damaged utility line is left unmarked.

Signed by:

Customer Signature

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Date

10/21/2026

Customer was presented a full solution but has opted to install a partial solution at this time.

Initial

Initial

Initial

Job Details (Continued)

Specifications

1) Install SmartJack support system to stabilize floor joist or beams as shown on drawing. 2) Obtain engineering report and permits for necessary for repair work. 3) Install steel supplemental beam where indicated on the drawing.

Product List

Permanently Stabilize Floors

SmartJack	2
Engineering Report/Permit, Residential	1
Steel Supplemental Beam - 10', 3" Steel I-Beam	1 Each