

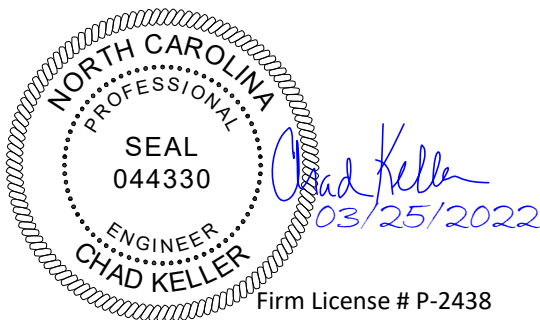
Date: March 25, 2022
Project: Laws Residence
Address: 2247 Old Buies Creek Rd
Angier, NC 27501

Helical Pier Foundation Support System Analysis

This report is prepared for Southeast Foundation Repair (contractor) by FDN Engineering (engineer). Helical piers are specified for installation at the above referenced project. The foundation support system is intended to stabilize and potentially lift the existing foundation structure – reducing pressure on existing soils. Load requirements for the helical piers were calculated at areas identified by the contractor. See page 2 for engineering analysis assumptions and results. See page 3 for details for the helical pier foundation supports. See page 4 for a layout of the supports proposed by contractor on a footprint of the structure.

To the best of my professional knowledge, belief, and opinion, the design of the helical pier support system meets the structural requirements of the 2015 International Residential Code to the extent that it applies to our scope of work. The helical pier foundation support system is a supplemental stabilization system to the existing structure.

Upon completion of foundation support system, the contractor shall supply engineer a log of the installed locations, depth, and final torque of the helical piers. Engineer will evaluate the log and prepare a letter of completion for closeout.



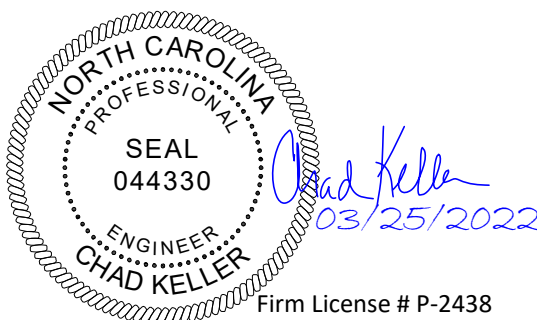
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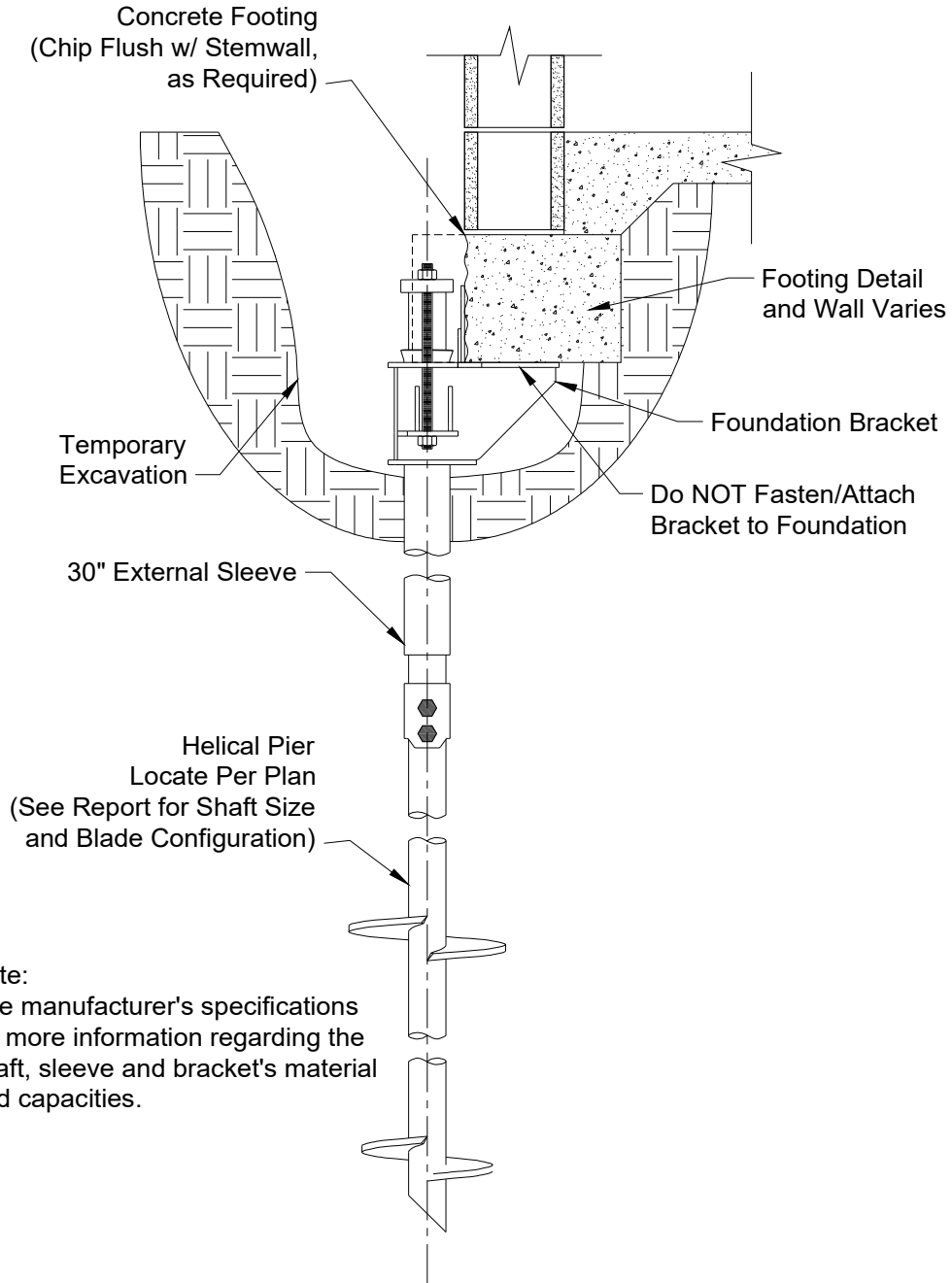
Helical Pier Project Assumptions (contractor to confirm assumptions):

1. Structure is one-story, residential with wood-framed floor & brick-veneer walls.
2. Contractor will install helical piers, brackets, and all related components per the support manufacturer's current installation instructions and technical manual, and according to the latest ICC-ES AC358.
3. Helical piers shall have a center-to-center spacing at the helix depth of at least three (3) times the diameter of the largest helix plate.
4. Pier is not installed in recently backfilled sites, in bedrock soils, or where there is possible sinkhole activity.
5. When the product is installed in a soil where the conditions are considered corrosive to steel, adequate protection to the exposed steel must be provided.
6. The capacity of the existing foundation and supported structure has not been checked and is assumed to be adequate to transfer the design loads to the helical pier support system.
7. Where voids are created below structure during lifting, fill with flowable cementitious material.

Helical Pier Analysis Notes and Results:

8. All design loads are based on guidance from the applicable building code.
9. Helical piers are designed to support axial compression load only.
10. Maximum, worst-case, total load on a helical pier is **11,200 lbs** (allowable stress combinations).
11. We recommend installation of piers with a 2-7/8" diameter shaft (HP287) with 8" and 10" diameter (minimum) helix plates.
12. Minimum helical pier tip depth is 10 ft.
13. An installation torque of **2,500 ft-lbs** should be applied to achieve an allowable capacity greater than the total load.
14. Do not place pier directly under door/window. Notify engineer if foundation is cracked between piers.
15. Helical pier spacing along the foundation shall not exceed 6'-0" O.C. and 2-ft from a corner, typically.
16. A factor of safety of 2.0 is typically used to calculate the allowable soil bearing capacity.
Geotechnical testing information was not provided for this design.





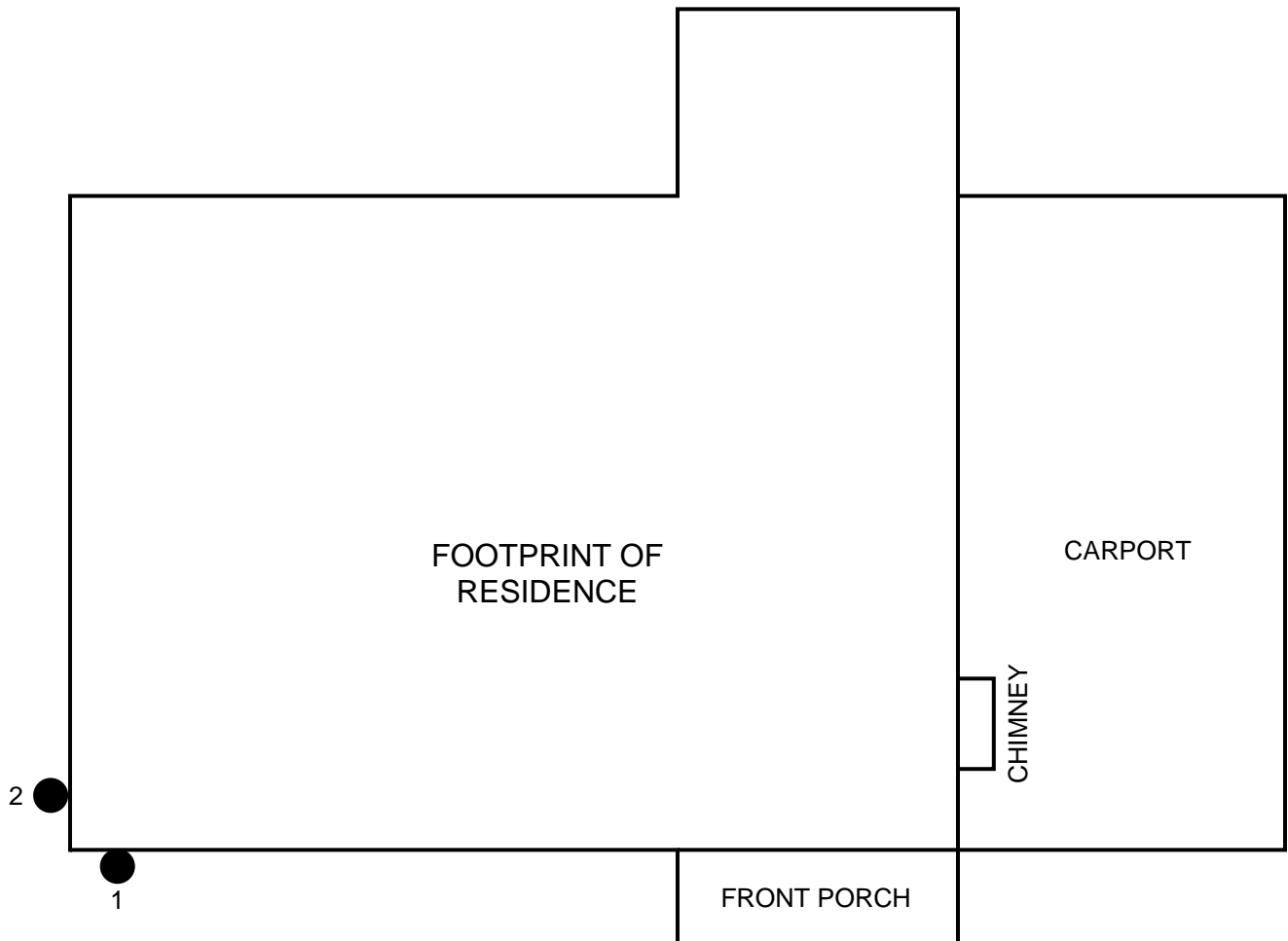
HELICAL PIER TO FOUNDATION DETAIL

LEGEND:

● Indicates Helical Pier and Mark Number

Helical Pier Notes:

1. Residential construction, one-story.
2. Layout of (2) Helical Piers, Model HP287 for fndn support - 10'-0" min depth.
3. Installation torque of **2,500 ft-lbs.**
4. Install per helical pier manufacturer's instructions and technical specifications.
5. Do not place pier under wall opening without spreader beams.
6. Notify engineer if design assumptions are discovered inaccurate.



DRAWING NOT TO SCALE



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