STARK FOUNDATIONS

4400 NE 77th Ave, Suite 275
Vancouver, WA 98662
P: 360.566.7343

June 16, 2021

Project No.:21.201.TBS

Tonya Gunn
Tarheel Basement Systems
2910 Griffith Road
Winston-Salem, North Carolina 27103

RE: Foundation repair - 7905 Overhills Road, Spring Lake, North Carolina

PROJECT BACKGROUND

We understand that the structure is a single-family residence and has experienced settlement at the rear right corner of the house. A recent floor level survey (attached) indicates as much as ~1" of differential settlement may have occurred. It is our understanding that (3) 2 7/8 inch diameter push piers have been proposed to provide additional foundation support.

Image 1: Front Elevation

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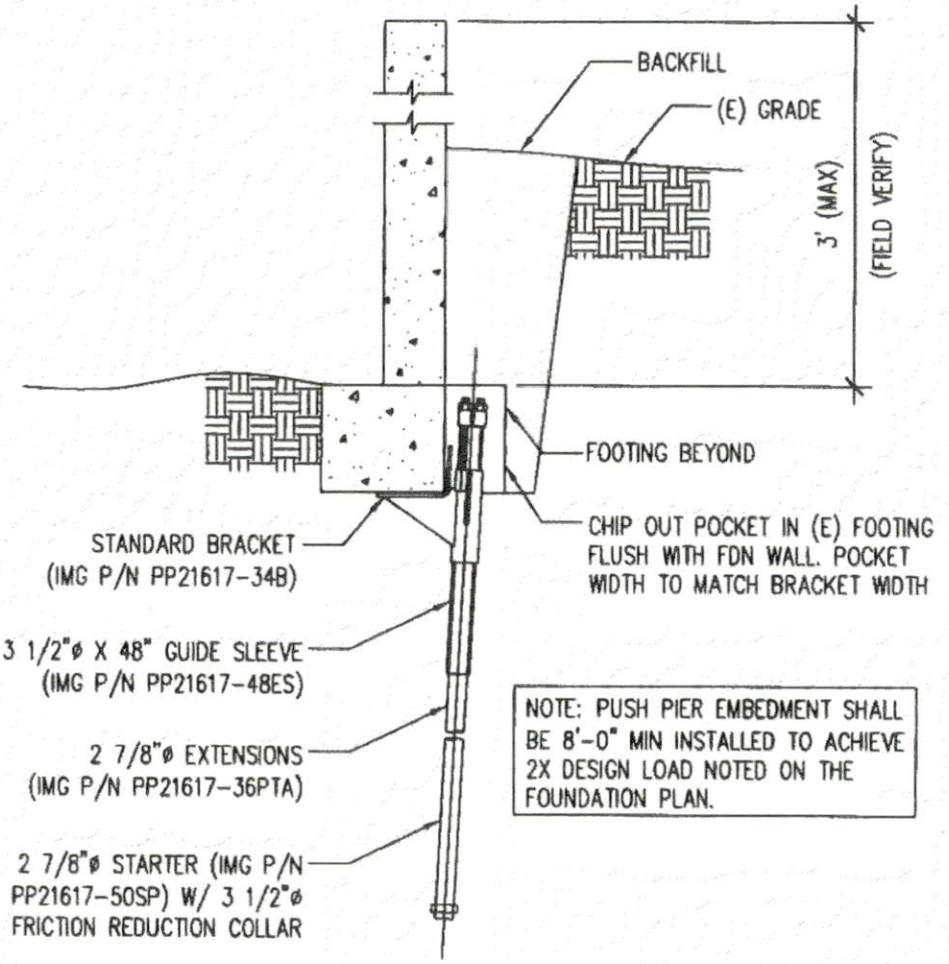
www.starkfoundations.com



1 2 7/8"Ø PUSH PIER DETAIL

STAMP

NORTH CAROLINA PROFESSIONAL SEAL 050105 ENGINEER NATHAN DANIEL WAYNE STARK

PROJECT

FOUNDATION REPAIR
HAIRE RESIDENCE
7905 OVERHILLS ROAD
SPRING LAKE, NC

CLIENT

TARHEEL
BASEMENT SYSTEMS
2910 GRIFFITH ROAD
WINSTON-SALEM, NC

FRONT ELEVATION

NO	REVISIONS	BY	DATE

ISSUED:	06.16.21	PROJ NO.:	21.201.TBS
DRAWN BY:	ZS	CHECKED BY:	DS

SHEET TITLE

DETAILS

SHEET NUMBER

S2.0

STARK FOUNDATIONS

PROJECT

Foundation Underpinning
7905 Overhills Road
Spring Lake, North Carolina

Date: 16-Jun-21
Designed by: ZS

Project No.: 21.201.TBS

Push Pier Design - Worst Case

Vertical Design Loads:

Tributary Widths:

Dead:

Roof =	8	ft	------->	120	plf
Third Floor =	0	ft	------->	0	plf
Second Floor =	0	ft	------->	0	plf
First Floor =	4	ft	------->	60	plf
Walls =	8	ft	------->	360	plf
Foundation Wall (height) =	3	ft	------->	300	plf
Soil (height) =	2	ft	------->	220	plf
			ΣDL =	1060	plf

Live:

Roof (snow) =	8	ft	------->	80	plf
Third Floor =	0	ft	------->	0	plf
Second Floor =	0	ft	------->	0	plf
First Floor =	4	ft	------->	160	plf
			ΣLL =	240	plf

Max Pier Spacing or Trib = 8.5 ft

Pier Working Loads:

P_{DL} =	9010	lbs
0.75*P_{LL} =	1530	lbs
Working Load, P_{TL} =	11000	lbs
Ultimate Load, P_{ULT} =	22000	lbs

Pier Design:

Pier Type: Push Pier

Bracket: PP21617-34 Bracket Cap = 29340 lbs Therefore OK Reference ICC report (attached)

Shaft Diameter: 2.875"

Installation Pressure, P:

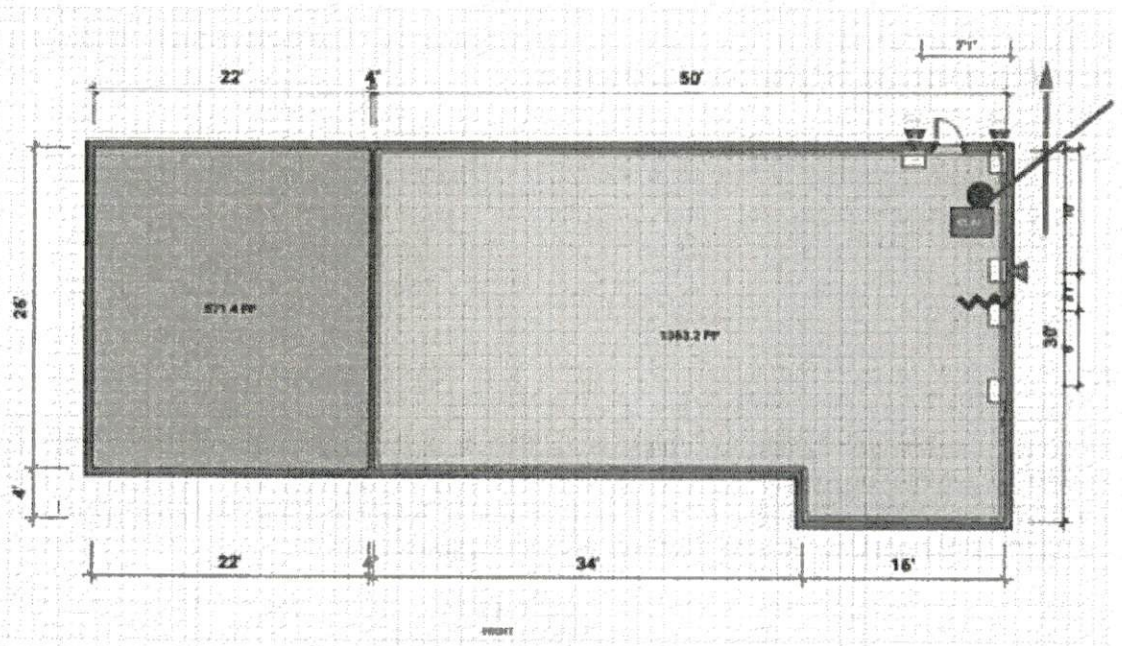
Q_{ult} = 2 (P_{TL})
22000 lbs

Q_{ult} = A_{cyl} (P) where A_{cyl} = working area of the dual bore installation

A_{cyl} = 9.62 in^2

Therefore, P_{REC} Q_{ult} / A_{cyl}
2300 psi

FLOOR LEVEL SURVEY



Facsimile

Note:

Contact Cindy Williams Permit Coordinator 919-341-8426 with any questions or payments.

To:

From: Matthew Volchko

Phone:

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Date: 06/25/2021

Pages: 6