(64)

Cool and Cobb Engineering Company

Date: 1/15/2021

Job: Mike House

Location: 228 SE Oak Hill St.

Lake City, FL 32025

PILING DESIGN ANALYSIS

The load requirements for the pilings designed to assist in supporting the identified areas of the subject residence were determined. The selected piling locations and the specific piling are identified on the Pier Identification and Location Plan attached. The calculated total loads on the piles in the specific location, including both dead and live loads are documented in the attached table which is designated as Attachment "A". Based on the total load requirements for each of these piles, the 12ALS driver is to be employed. The 12ALS torque driver should be employed with a selected gauge pressure of 1,000 psi, which will provide pile capacity, including the 2 to 1 safety factor of 24,000 lbs. which is greater than the maximum calculated total load of 12,000 lbs. which occurs on the pile identified as no. 1. Based on this analysis, the use of the 12ALS torque driver for the piles with a specific gauge pressure of 1,000 psi and a minimum depth of 10' is approved and certified as meeting all of the requirements of the Florida Building Code 2020 7th Edition, and good engineering practice. This is not to be the primary support structure, but a supplement support to assist in support of the weight of the structure, which will reduce the total pressure on the existing soils. After completion of installation, Cool and Cobb Engineering Company shall be supplied with a drilling log of the location and depths of each pile installed so they can evaluate the installation and prepare the "As Built" drawings.

General Notes:

1. All piles to be installed in accordance with ICC ES AC 358
2. A log of each pile to be kept by Contractor noting depth and final torque installed for each pile.
3. Minimum pile depth to be 10'-0".
4. All pile calculations are done using a maximum standard spacing of 8'-0".
5. Helical piles installed less than 48" apart are to be battered 10° away from each other.
6. This design is based on the loads of the structure placed on the shallow soils under the structure.
7. No deep soils geotechnical testing information was provided for this design.
8. This design does not address any possible sink hole activity as defined in Florida Statute § 627.706.

1/15/2021
Carl Cool, P.E.
State of Florida
Professional Engineer No. 16921

COLUMBIA COUNTY BUILDING DEPARTMENT
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PLANS EXAMINER

203 W. Main St.
Avon Park, FL 33825
CA No. 29713
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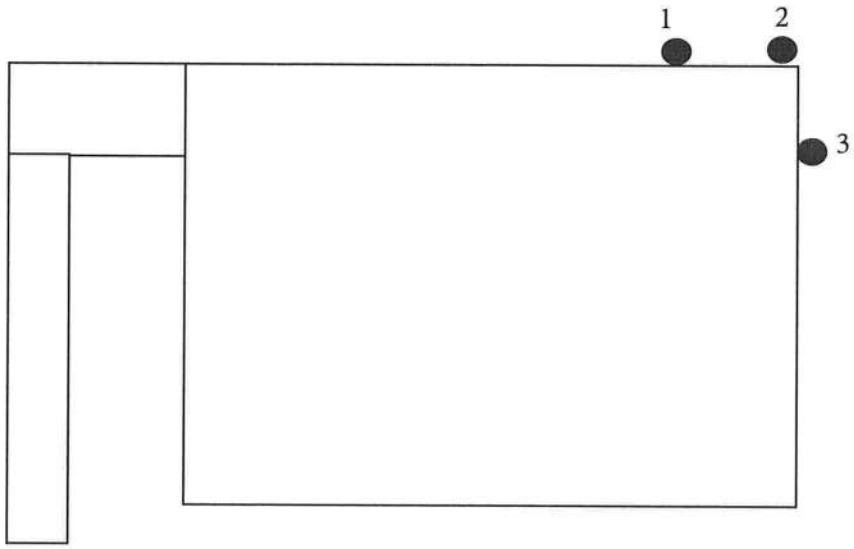
Fax: (863) 657-2324

Solid Foundations
2704 SW Main Blvd
Lake City, FL 32025
855-227-0300
www.solidfoundations.com

SF Representative: Jimbo Willis
Cell: (386)288-3240
Email: Jimmie@solidfoundations.com

CONTRACT DATE: 1/7/2021
SUBMITTED TO: Mike House
ADDRESS:

EMAIL:
Phone:



Push Pier Model 300: ●	Interior Pier: ●	Polyurethane 700: ■
Push Pier Model 250: ●	Low Profile Bracket: ●	Polyurethane 430: ■
Helical Pier: ●	Porch Bracket: ●	Windows/Doors: ▬
Crawl Space Pier: ●	R&R Concrete ☐	Floor Joist: ▬

1/15/2021
Carl E. Cool, P.E.
PE# 16921

Cool and Cobb Engineering Co.
203 W. Main St.
Avon Park, FL 33825

Cool and Cobb Engineering Company

Date:	1/15/2021
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Location:	228 SE Oak Hill St.
	Lake City, FL 32025

Attachment "A"

Total Load on Pile (Live Load + Dead Load)

PILE NO.	TOTAL CALCULATE LOAD
1	12,000 lbs
2	12,000 lbs
3	12,000 lbs

Maximum Total Load on Pile: 12,000.00 lbs

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PLANETARY ANCHOR DRIVES
9,000 FT LBS - 12,000 FT LBS

OUTPUT SPEED & TORQUE

9ADS - STANDARD PRESSURE - 3500 PSI				12ADS - STANDARD PRESSURE - 3500 PSI			
OUTPUT SPEED		OUTPUT TORQUE		OUTPUT SPEED		OUTPUT TORQUE	
GPM	RPM	PSI	FT-LBS	GPM	RPM	PSI	FT-LBS
8	9	1,500	3,905	8	7	1,500	4,945
10	12	1,700	4,425	10	9	1,700	5,605
12	14	1,900	4,945	12	11	1,900	6,265
14	16	2,100	5,465	14	13	2,100	6,925
16	19	2,300	5,990	16	15	2,300	7,585
18	21	2,500	6,510	18	17	2,500	8,245
20	24	2,700	7,030	20	19	2,700	8,905
24	26	2,900	7,550	24	20	2,900	9,565
26	28	3,200	8,070	26	22	3,200	10,225
28	31	3,300	8,590	28	24	3,300	10,880
30	33	3,500	9,100	30	26	3,500	11,500
32	38			32	30		
34	40			34	32		
36	42			36	33		
38	45			38	35		
40	47			40	37		
42	49			42	39		
44	52			44	41		
46	54			46	43		

9ALS - LOW PRESSURE - 3000 PSI				12ALS - LOW PRESSURE - 3000 PSI			
OUTPUT SPEED		OUTPUT TORQUE		OUTPUT SPEED		OUTPUT TORQUE	
GPM	RPM	PSI	FT-LBS	GPM	RPM	PSI	FT-LBS
8	7	1 000	3 298	8	6	1 000	4 148
12	11	1 200	3 957	12	9	1 200	4 978
16	15	1 400	4 617	16	12	1 400	5 808
20	19	1 600	5 276	20	15	1 600	6 637
24	22	1 800	5 936	24	18	1 800	7 467
28	26	2 000	6 596	28	21	2 000	8 296
32	30	2 200	7 255	32	24	2 200	9 126
36	33	2 400	7 915	36	27	2 400	9 956
40	37	2 600	8 574	40	30	2 600	10 785
44	41	2 800	9 234	44	33	2 800	11 615
48	42	3 000	9 893	48	35	3 000	12 445

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CA No. 29713
PE No. 16921

Carl E. Cool, P.E.
P.E. No. 16921
Date: 1/15/2021

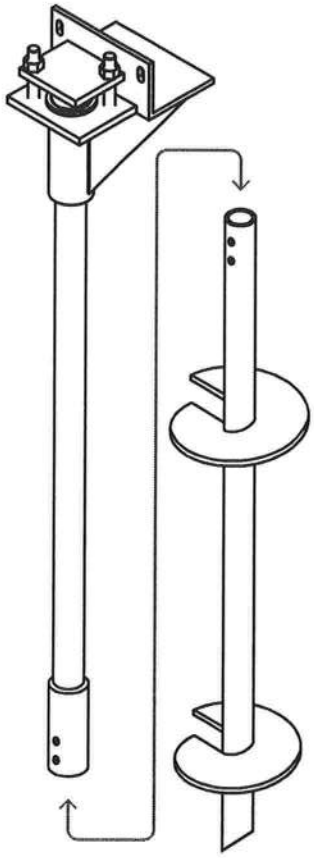
Output speed and torque specifications are THEORETICAL. Speed and torque output are dependent on the overall system efficiencies associated with the prime movers hydraulic system. This document should be used for information and comparative purposes only. When determining criteria, & application specific information is required, please contact DIGGA.

TMG MANUFACTURING

Helical Pier System

Lift Brackets

TMG Manufacturing offers 2 different foundation brackets designed to meet the needs of any foundation support application. Choose between our heavy duty lift bracket or our medium duty lift bracket. All of our brackets are made from high-tensile strength steel and comprised of CNC machined parts, ensuring precision and accuracy. In addition, all brackets are robotically welded guaranteeing a quality product every time. All brackets have been field and lab-tested and can be powder-coated or galvanized.

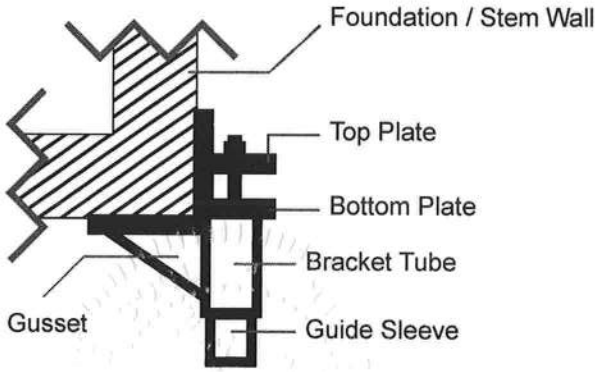


Product	Capacity
Standard Duty Lift Bracket	45 kips
Heavy Duty Lift Bracket	70 kips

Helical Piers

TMG manufactures various sized helical underpinning pipe. Helical pipe can be ordered with single, double or triple helixes, with 8", 10" or 12" blades (or a combination of each). The helical pipe is made of 2.875" O.D. schedule 40 or schedule 80 pipe with two bolt holes and an outer nipple connector. Helical extensions are also available. Standards lengths are 4', 5', 6' and 7'. Optional powder-coating or galvanization available.

Product	Wall Thickness	Outside Diameter	Tensile Strength (lbs)	Yield Strength (lbs)
Helical Starter	.217"	2.875"	14,500	262,000
Helical Starter	.308"	2.875"	16,900	276,400
Helical Extension	.217"	2.875"	14,500	262,000
Helical Extension	.308"	2.875"	16,900	276,400



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