Cool and Cobb Engineering Company

Date: 3/22/2023

Job: Donald Strand

Location: 401 NW Willow Dr.,
Lake City FL 32055

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 _37,330_ 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 based on a maximum 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.

3/22/2023
Kenneth F. Wheeler, P.E.
State of Florida
Professional Engineer No. 60417

Digitally signed by Kenneth F Wheeler
Date: 2023.03.22 16:03:51 -04'00'

This item has been electronically sealed by Kenneth F. Wheeler using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

203 W. Main St.
Avon Park, FL 33825
Office: (863) 657-2323
Fax: (863) 657-2324

Contractor: Solid Foundations

Cool and Cobb Engineering Company

Date: 3/22/2023

Job: Donald Strand

Location: 401 NW Willow Dr.,
Lake City FL 32055

CRAWL SPACE JACK DESIGN ANALYSIS

The load requirements for the Crawl Space Jacks designed to assist in supporting the identified areas of the subject residence were determined. The selected Crawl Space Jack locations and the specific Crawl Space Jacks are identified on the Jack Identification and Location Plan attached. The calculated total loads on the Crawl Space Jacks in the specific location, including both dead and live loads are documented in the attached table which is designated as Attachment "A". This Crawl Space Jack design is approved and certified as meeting all 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 and reduce deflection in beams. After completion of installation, Cool and Cobb Engineering Company shall be supplied with a log of the location of each Crawl Space Jack installed so they can evaluate the installation and prepare the "As Built" drawings.

General Notes:

1. A log of each Crawl Space Jack to be kept by Contractor.
2. Assumed allowable soil loading of 2,000 psf

3/22/2023

Kenneth F Wheeler, P.E.
State of Florida
Professional Engineer No. 60417

Digitally signed by Kenneth F Wheeler
Date: 2023.03.22 16:04:16 -04'00'

This item has been electronically sealed by Kenneth F. Wheeler using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

203 W. Main St.
Avon Park, FL 33825
Office: (863) 657-2323
Fax: (863) 657-2324

Contractor: Solid Foundations

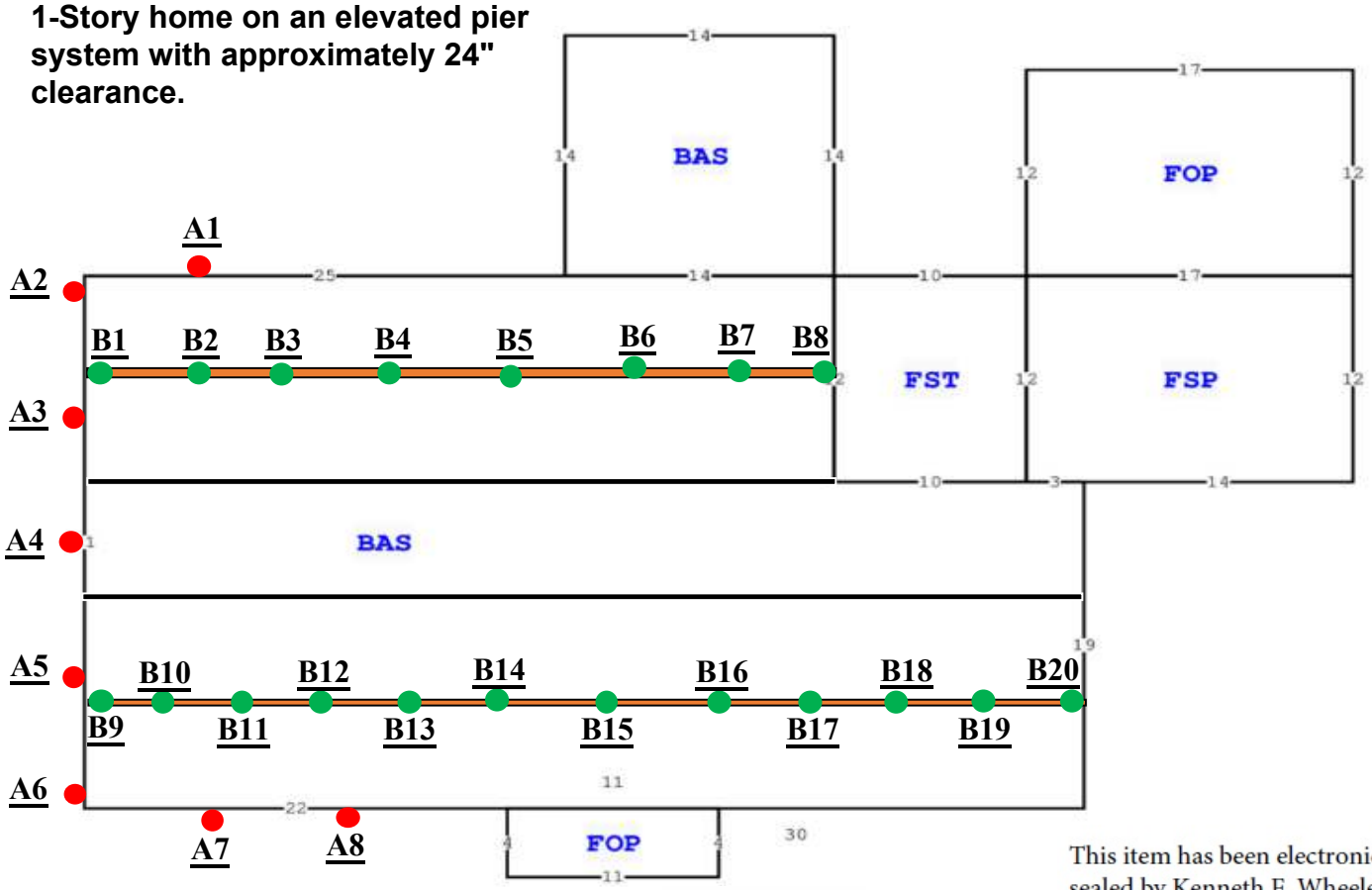
Solid Foundations
1910 SW Main Blvd
Lake City, FL 32025
855-227-0300
www.solidfoundations.com

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

CONTRACT DATE: 3/11/2023
SUBMITTED TO: Donald Strand
ADDRESS: 401 NW Willow Dr.
Lake City, Fl. 32055

EMAIL: jstrand65@gmail.com
Phone: 813-362-6440

1-Story home on an elevated pier system with approximately 24" clearance.



3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

Digitally signed by Kenneth F Wheeler
Date: 2023.03.22 16:04:36 -04'00'

This item has been electronically sealed by Kenneth F. Wheeler using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Push Pier Model 300: ●	Interior Pier: ●	NCFI-24-120 ■
Push Pier Model 250: ●	Low Profile Bracket: ●	NCFI-24-010 ■
Helical Pier: ●	Porch Bracket: ●	Existing Beams ■
Crawl Space Pier: ●	4x6 Wood Beam: ■	Floor Joist: ■

Cool and Cobb Engineering Company

Date:	3/22/2023
Job:	Donald Strand
Location:	401 NW Willow Dr., Lake City FL 32055

Attachment "A"

Total Load on Pile (Live Load + Dead Load)

PILE NO.	TOTAL CALCULATE LOAD
A1	12,000 lbs
A2	12,000 lbs
A3	8,400 lbs
A4	8,400 lbs
A5	8,400 lbs
A6	12,000 lbs
A7	12,000 lbs
A8	12,000 lbs
B1	970 lbs
B2	1,280 lbs
B3	1,280 lbs
B4	1,280 lbs
B5	1,280 lbs
B6	1,280 lbs
B7	1,280 lbs
B8	970 lbs
B9	1,400 lbs
B10	1,810 lbs
B11	1,810 lbs
B12	1,810 lbs
B13	1,810 lbs
B14	1,810 lbs
B15	1,810 lbs
B16	1,810 lbs
B17	1,810 lbs
B18	1,810 lbs
B19	1,810 lbs
B20	1,400 lbs

Digitally signed by Kenneth F Wheeler
Date: 2023.03.22 16:04:57 -04'00'

Maximum Total Load on Pile: 12,000.00 lbs

This item has been electronically sealed by Kenneth F. Wheeler using a digital signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

3/22/2023
Kenneth F Wheeler, P.E.
PE# 60417

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

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

3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

WHY CHOOSE A 2 SPEED DRIVE?

FEATURES & BENEFITS

WIDER RANGE OF APPLICATIONS
- Offers the best of both worlds: high speed when you need it for those tricky jobs and high torque allowing you to take on that slightly larger job with the same equipment
- Install both small and larger piles with just one drive unit
- It's like owning 2 drives in 1

IMPROVED PRODUCTIVITY
- Use your drive with optimum RPM / Torque for various pile sizes
- Save time and maximize profits by installing smaller piers with more efficiency
  - Begin with high speed / low torque
  - Flick the switch to low speed, high torque to finish off

SIMPLE ELECTICAL CONNECTION
- Simple 12 or 24 volt coil, just requires connection
- Optional joystick switches, floor mounted switches & cigarette plugs available pre-wired to suit

Need Torque from a lower pressure? No problem.

Two pressure series are available to suit your requirements
Standard pressure series, for machines with 3500 PSI. Low Pressure series, for machines with 3000 PSI

PREMIUM ANCHOR DRIVES

	STANDARD PRESSURE - 3500 PSI	LOW PRESSURE - 3000 PSI	
MODEL	**12ADT**	**9ALT**	**12ALT**
Nominal Torque (FT LBS)	12,028	10,310	12,705
Max Pressure - Do Not Exceed	3500psi @ 29gpm	3000psi @ 27gpm	
Max Flow - Do Not Exceed	53gpm @1950psi	53gpm @1950psi	
Max Horse Power	60	60	60
Pressure Relief Valve	Included	Included	Included
Energy Control Valve	Included	Included	Included
Standard Output Shaft	2.5" Hex	2.5" Hex	2.5" Hex
Weight (lbs)	485	440	485
Overall Length (in)	39.3"	39.3"	39.3"
Diameter (in)	13.4"	13.4"	13.4"

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

3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

OUTPUT SPEED & TORQUE

12ADT - STANDARD PRESSURE - 3500 PSI

OUTPUT SPEED			OUTPUT TORQUE		
GPM	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED	PSI	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED
8	7	11	1,500	5,155	3,402
12	11	16	1,700	5,842	3,856
16	14	22	1,900	6,530	4,310
20	18	27	2,100	7,217	4,763
24	21	32	2,300	7,904	5,217
28	25	38	2,500	8,592	5,670
32	29	43	2,700	9,279	6,124
36	32	49	2,900	9,966	6,578
40	36	54	3,100	10,654	7,031
44	39	59	3,300	11,341	7,485
48	43	65	3,500	12,028	7,939

OPTIONAL EXTRAS

- Ryno Piling cradle
- Drive Linkages
- Excavator Mounts/Hitch
- Diggalign - Pile/Auger Alignment system
- Torque Monitoring - Pressure Differential Guage
- Torque Logic - Pile Alignment / Data Logging system

9ALT - LOW PRESSURE - 3000 PSI

OUTPUT SPEED			OUTPUT TORQUE		
GPM	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED	PSI	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED
8	7	11	1,000	3,437	2,268
12	11	16	1,200	4,124	2,722
16	14	22	1,400	4,811	3,175
20	18	27	1,600	5,499	3,629
24	21	32	1,800	6,186	4,083
28	25	38	2,000	6,873	4,536
32	29	43	2,200	7,561	4,990
36	32	49	2,400	8,248	5,444
			2,600	8,935	5,897
			2,800	9,623	6,351
			3,000	10,310	6,805

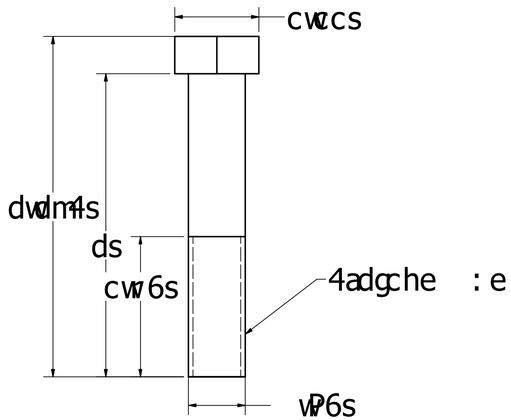
12ALT - LOW PRESSURE - 3000 PSI

OUTPUT SPEED			OUTPUT TORQUE		
GPM	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED	PSI	HI TORQUE LOW SPEED	LO TORQUE HIGH SPEED
8	6	9	1,000	4,235	2,795
12	9	13	1,200	5,082	3,354
16	12	18	1,400	5,929	3,913
20	14	22	1,600	6,776	4,472
24	17	26	1,800	7,623	5,031
28	20	31	2,000	8,470	5,590
32	23	35	2,200	9,317	6,149
36	26	39	2,400	10,164	6,708
40	29	44	2,600	11,011	7,267
44	32	48	2,800	11,858	7,826
48	35	53	3,000	12,705	8,385

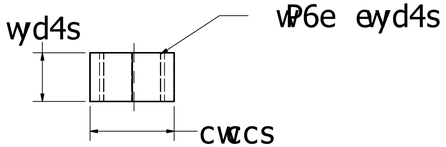
Output speed and torque specifications are THEORETICAL. Speed and torque output are dependent on the overall system efficiencies associated with the prime movers hydraulic system.
This document should be used for information and comparative purposes only. When determining criteria, & application specific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

e e egsmlkrce&g
e: e9 a: "egsr4w64e
uv e ef e e& e9 "(m

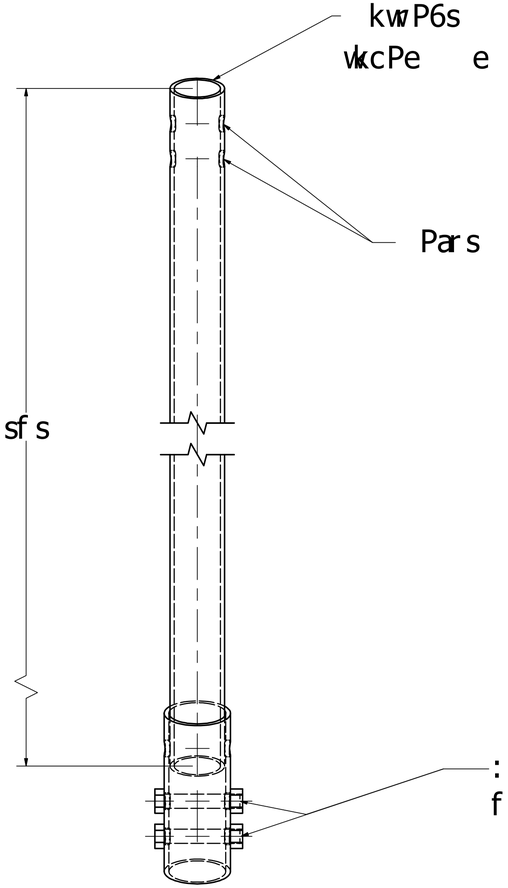
J



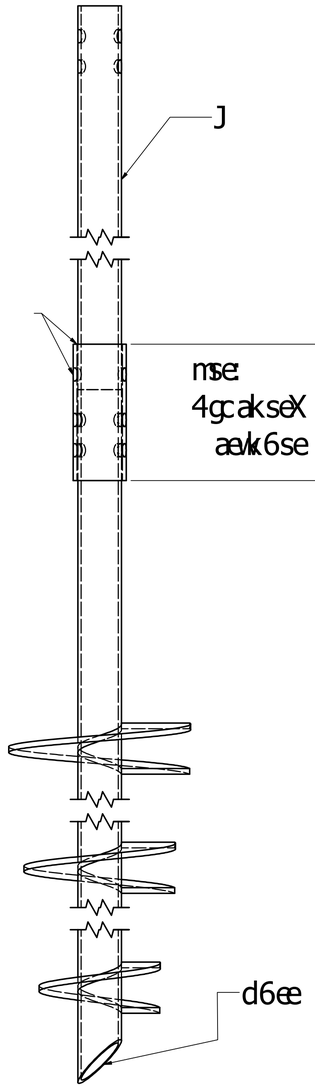
J
4ad dev



J
4ade



J



e
f

J	
e w	sfs
J4	4ys
J6	yhs
JP	rds

cw e: ev le ev le e: le e le el e ee e e w
kw e e e e el ef e e e e e e ef e6e: erhwe e e (rhe
4w e e e e e e e ef e6e: erhwe e e (erhe
dw e e e e e e ef ef6Pkle: e6hwe e e (yre w
6w e e e e ee e e e ee e e e w
yw: e be eedee e ev e e efJedkme: ere e e e e e efJemm6e: erw
Pwkhhhe eX e/e e e e e e e e e e le e e w
rwf e e e e e e e e e edee e ef eXcwaXcle:c e e e: g w

FOUNDATION SYSTEMS SUPPLY

2000 HELICAL DESIGN & MANUFACTURING

khhhe J :f eXJ z ef Xe f &f: z

J4le]6le]Pege]

Xf J	X f e/	X ze w	J
Pakhakhc P	f	X g146P	g

3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

FOUNDATION SYSTEMS SUPPLY

3 u	P&P	PqP	P P	P P
b3 3m	r gP	mP		
y3 3wg	m5P	wgP		
b3 3wg3w4	r gP	mP	wgP	
y3 3wg3w4	m5P	wgP	w4P	
y3 3m3wg3w4	m5P	mP	wgP	w4P

3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

wu C 3 3 3 3&x 3&w46u

4u 3 3q 93 3q 93 3 93 3 93 3 3 3 3 3 3 3 u

6u 3 3 3 3 3 3&x 3 3 3 3 3 3 3&x 3b3 3 mguB 3 3 =mg3

Su 3 3 3 3 3 3 3 3 3&x 3b3 3 mguB 3 3 =3mg3

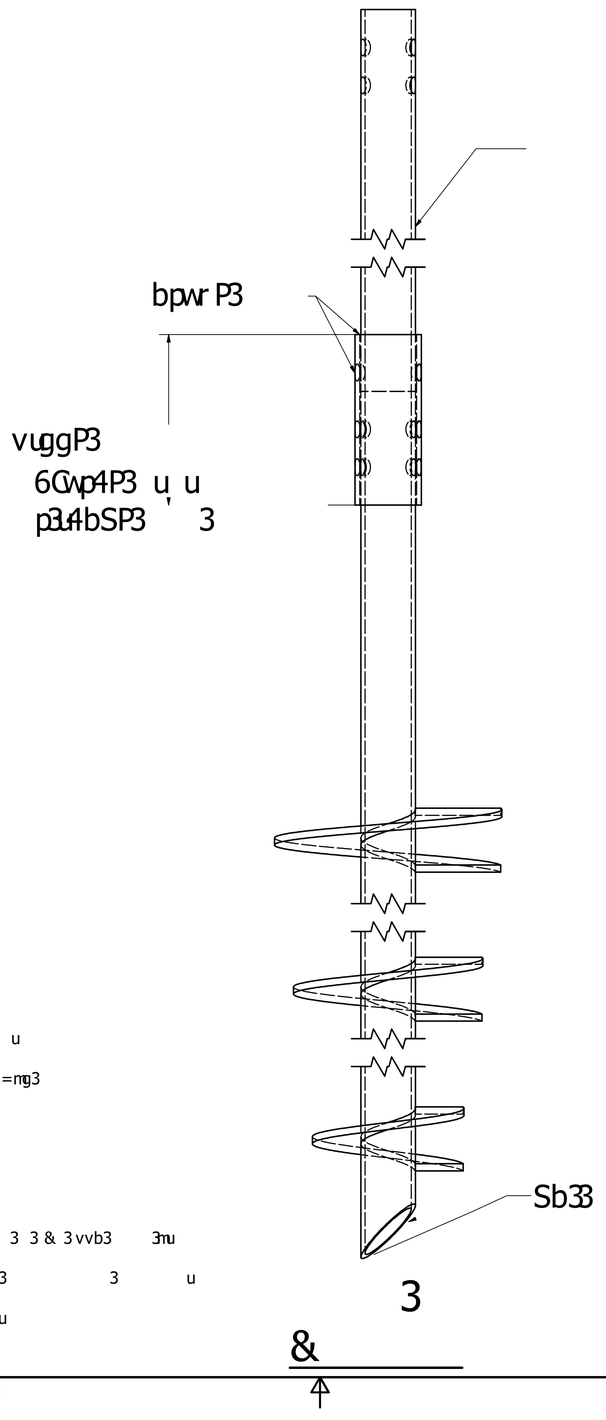
bu 3 3 3 3 3 3 3 3&x 3&by493 3bguB 3 3 =rm3 u

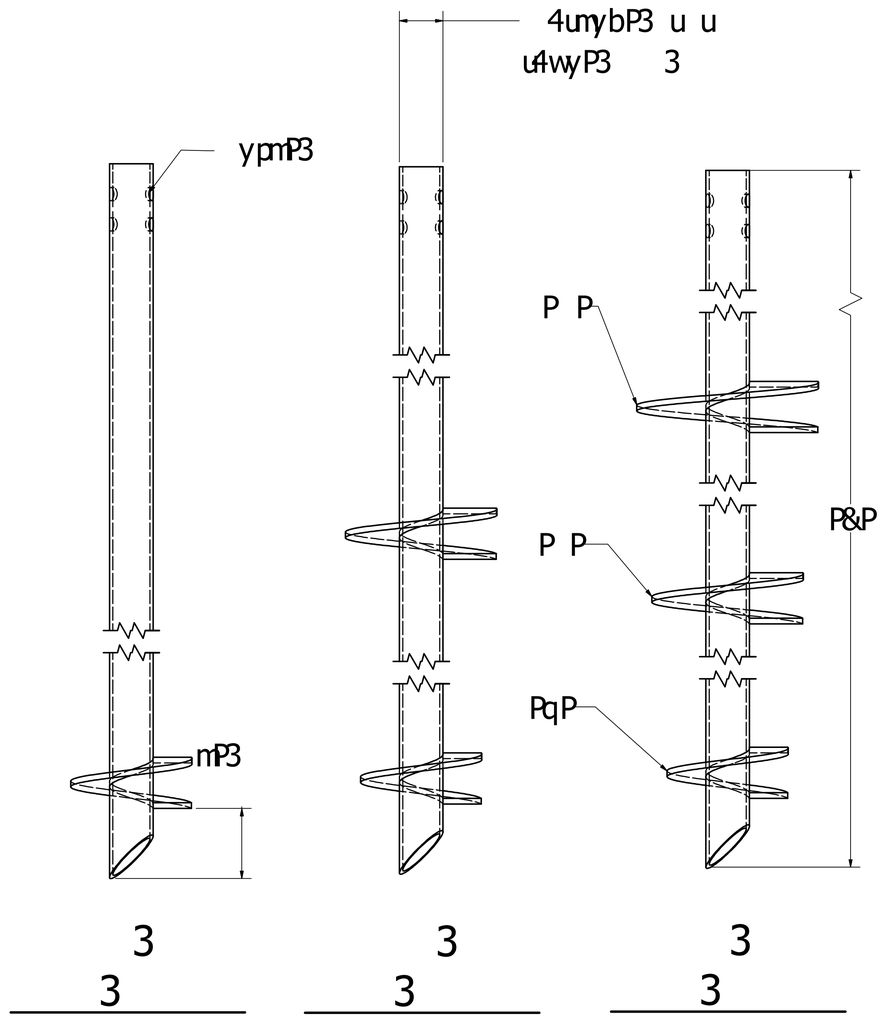
ru 3 3 3 3 3 3 3 3 3 3 3 3 3 u

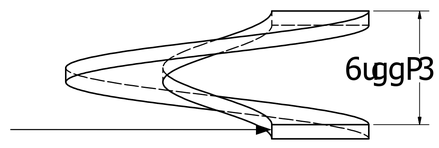
yu 3 z 3 3 3533 3 3q 3 3 3 & 3 S4v3 3m3 3 3 3 3 3 3 & 3 vvb3 3mu

mu4ggg3 3 3h3 3 3 3 3 3 3 3 3 3 3 3 93 3 3 u

vu& 3 3 3 3 3 3 3 3 3 3 3 3 3 3&x 3 wuwp w93w 3 3 3 C u

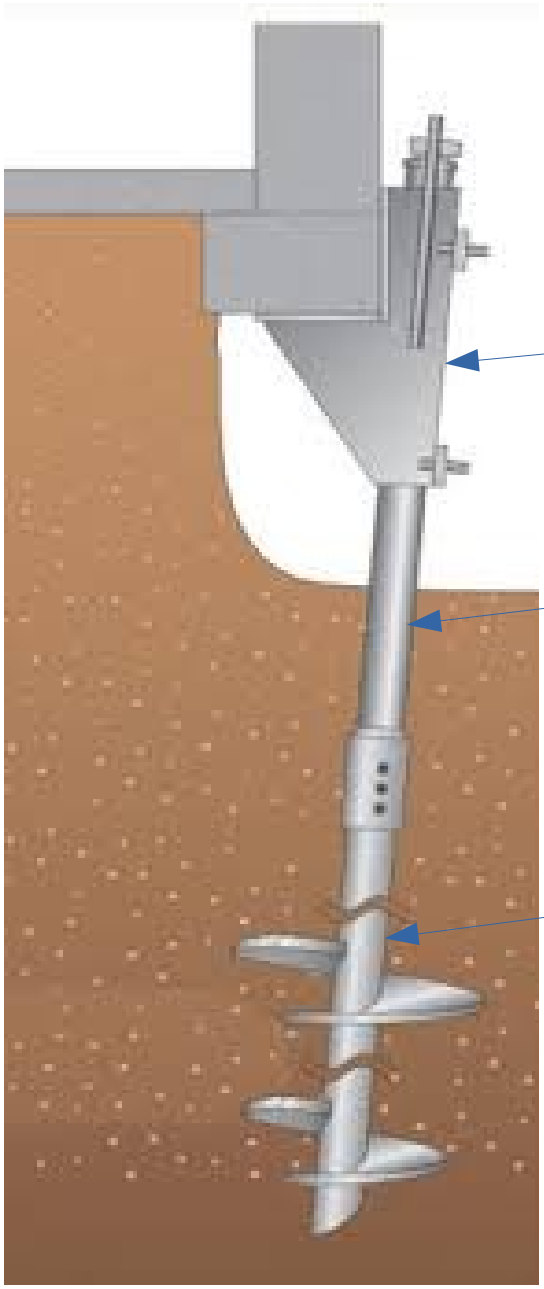






b93 y33

&	& 3q	3 u	C
ypv4p4gwy	&	Cbymwgw4	



A A

A

A

/ / /O / .

/ / / / / / X / / X /

/ / / X / / X /

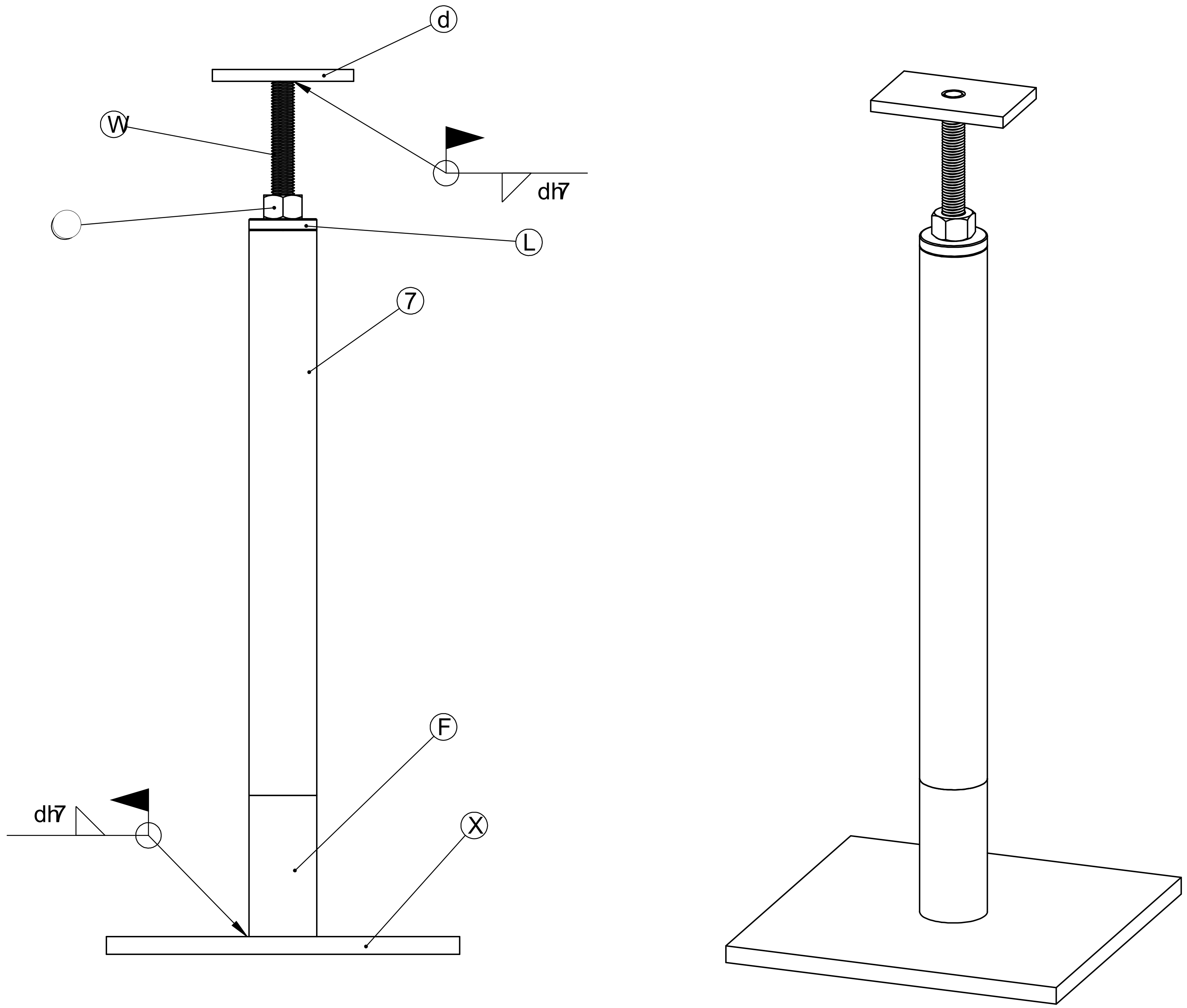
A A A A A
A A

3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

V t t

t i	t		i
d	sdWsd t	7 t tL"t tFhJ tt t	d
X	sdWsX t	dWt tdW't tFhJ t t	d
F	sdWsF	tL" tXiWt t7r	d
7	sdWs7 t	tX7" tXiWt t7r	d
W	sdWsW t	d t tdX t t	d
L	sXWsdr FXs dr r r t	t	d
K	dsJt	dsJt	d



3/22/2023
Kenneth F. Wheeler, P.E.
PE #60417

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

FOUNDATION SYSTEMS SUPPLY

sdW s

VdVdX V tdt tc