

Cool and Cobb Engineering Company

Job: Michael Gooden
Location: 598 NW Brady Cir Lake City, FL 32025

Date: 6/18/2026
Project: 26-1231

HELICAL PILE DESIGN

Design Scope Notes:

1. This design is developed per field assessment and layout provided by licensed foundation contractor. Cool and Cobb Engineering Co. have not performed an on-site assessment of the structure.
2. Location and quantity of supplemental supports have been determined by owner/contractor agreement.
3. The design intent offers supplemental support to stabilize the existing foundation in depicted area(s) only and will reduce the total pressures on existing soils. The structure may require additional stabilization to other affected areas not addressed in this design.
4. This design is based on the estimated load of the structure placed on shallow soils. No deep soils geotechnical testing information was provided for this design.
5. Cool and Cobb is not responsible for on-site engineering evaluations or inspections. If on-site inspection is required, contractor to obtain an approved 3rd party to inspect and provide Cool and Cobb Engineering inspection certification details and report.
6. This design does not address any possible sink hole activity as defined in Florida Statute § 627.706.

General Notes:

1. Contractor to ensure all piles are installed in accordance with ICC ES AC 358.
2. The first pile installed on site will be considered a test pile. If the minimum psi is not achieved within **25'** or if voids or soft soil conditions are found, the contractor shall stop the installation and notify the engineer, for re-evaluation.
3. In the event stabilization results in any void below foundation, chemical grout should be applied to provide continuous support below concrete foundation and/or slab. Contractor should use caution as any lift could damage below slab utilities.
4. At completion of the installation, Cool and Cobb Engineering Co. shall be supplied with a signed and dated Installation Log to include final location, final depth, and installation torque psi of each pile along with any design changes (with reason for field changes), for Engineer approval and completion of the "As Built Certification".

LOADING ANALYSIS

The loadings were determined for each pile specifically. The support locations and type are provided in the attached plan. Calculated total loadings, including both dead and live loads are provided in Attachment "A". Based on the total loading requirements, the Dynamic Oil-SA7 driver is to be used to achieve a minimum gauge pressure of 1,000 psi, which will provide pile capacity, including 2 to 1 safety factor of 26,568 lbs., which is greater than the maximum calculated load of 10,500 lbs. which occurs on pile No. 1. This design is based on a maximum of 8' pile spacing with no piles under windows or door openings. Any piles installed less than 48" apart are to be battered 10° away from each other.

Contractor to certify installation meets above calculated psi by extending 2' past the design pressure, and a minimum pile depth of ten (10') feet which is certified as meeting the requirements of the Florida Building Code 2023, 8th Edition, and good standard engineering practice.

6/18/2026
Kenneth F. Wheeler, P.E.
State of Florida
Professional Engineer No. 60417

This item has been digitally signed and sealed by Kenneth F. Wheeler, P.E. on the date adjacent to the seal.

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Michael Gooden
598 NW Brady Cir
Lake City, FL 32025

Contractor: Affordable Foundation Repair

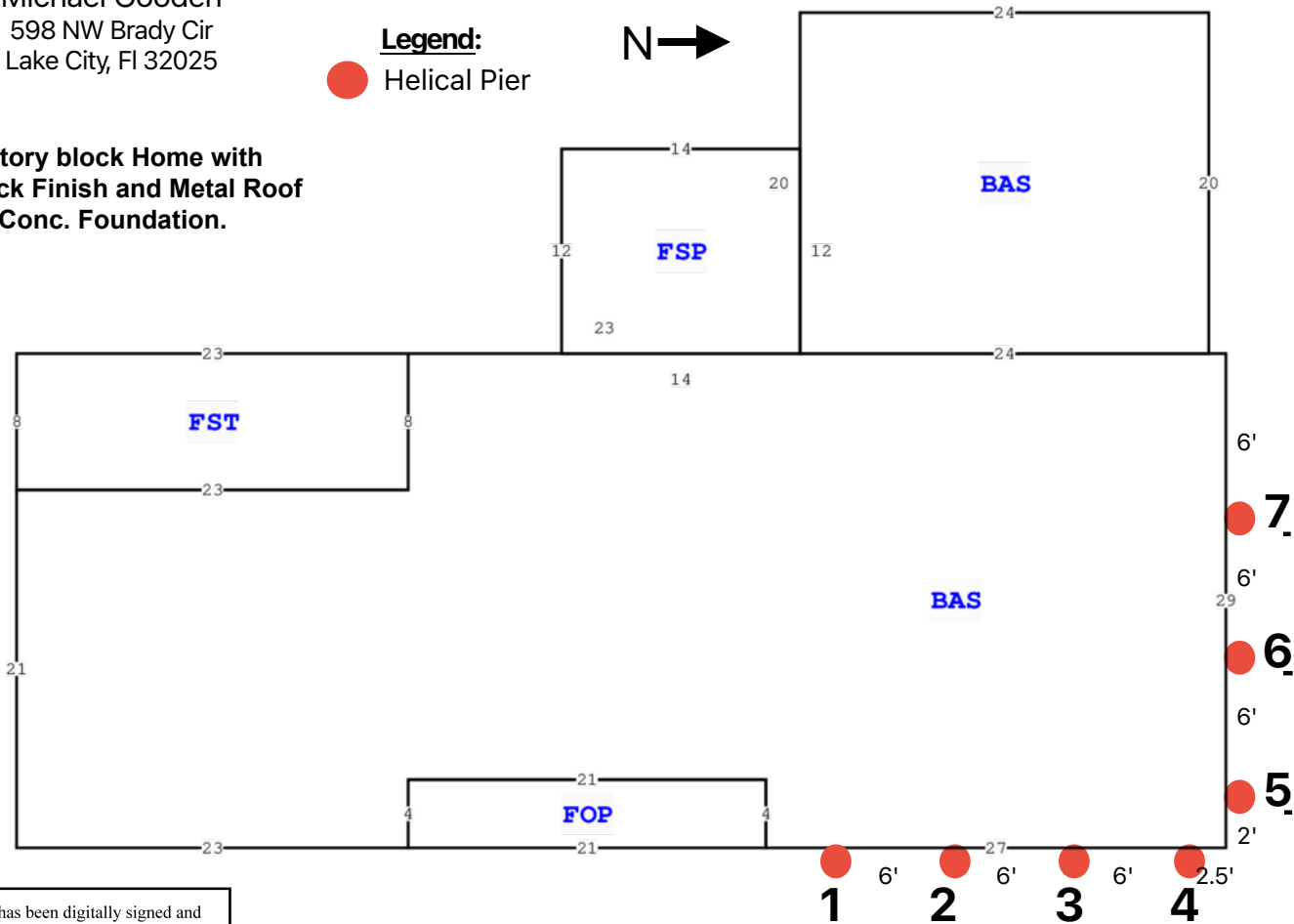
Legend:



Helical Pier



**1-Story block Home with
Brick Finish and Metal Roof
on Conc. Foundation.**



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Kenneth F. Wheeler, PE #60417
Cool and Cobb Engineering Co.
203 W. Main St.,
Avon Park, FL 33825

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Attachment "A"

Total Load on Support (Live Load + Dead Load)

SUPPORT NO.	TOTAL CALCULATE LOAD	
1	10,500	lbs
2	9,000	lbs
3	9,000	lbs
4	9,750	lbs
5	6,000	lbs
6	7,200	lbs
7	8,400	lbs

Maximum Total Load on Pile: 10,500 lbs

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

SA7-B

dinamic oil

 **7,381**
Max Torque (Ft-Lbs)

 **21**
Max Speed (RPM)

 **228**
Product Weight (LBS)

 **2,500**
Max Pressure (PSI)

 **25**
Max Flow (GPM)

 **2-6**
Machine Size (Tons)

SPECIFICATIONS

Motor Type: Single-Speed
Valves: Single CBV & CPR
Motor Ports: -12 JIC
Gearbox: Two Stage Planetary
Shaft Pullout: 12,900 Lbs

Max Pressure: 2500 PSI (172 Bar)
Max Flow: 25 GPM (94 LPM)
Overall Height: 33" (838 mm)
Diameter: 9.5" (241 mm)
Connection Pin: 45 mm



SA7 TORQUE CHART

Pressure PSI	Torque Ft-Lbs
1500	4,428
1700	5,019
1900	5,609
2100	6,199
2300	6,790
2500	7,381

SA7 SPEED CHART

Flow GPM	High Speed RPM
10	8
15	12
20	16
25	21

IMPERIAL PERFORMANCE DATA

SA7 TORQUE CHART

Pressure Bar	Low Torque Nm	High Torque Nm
103	6,004	
117	6,804	
131	7,605	
144	8,406	
158	9,206	
172	10,007	

SA7 SPEED CHART

Flow LPM	Speed RPM
37	8
56	12
75	16
94	21

METRIC PERFORMANCE DATA

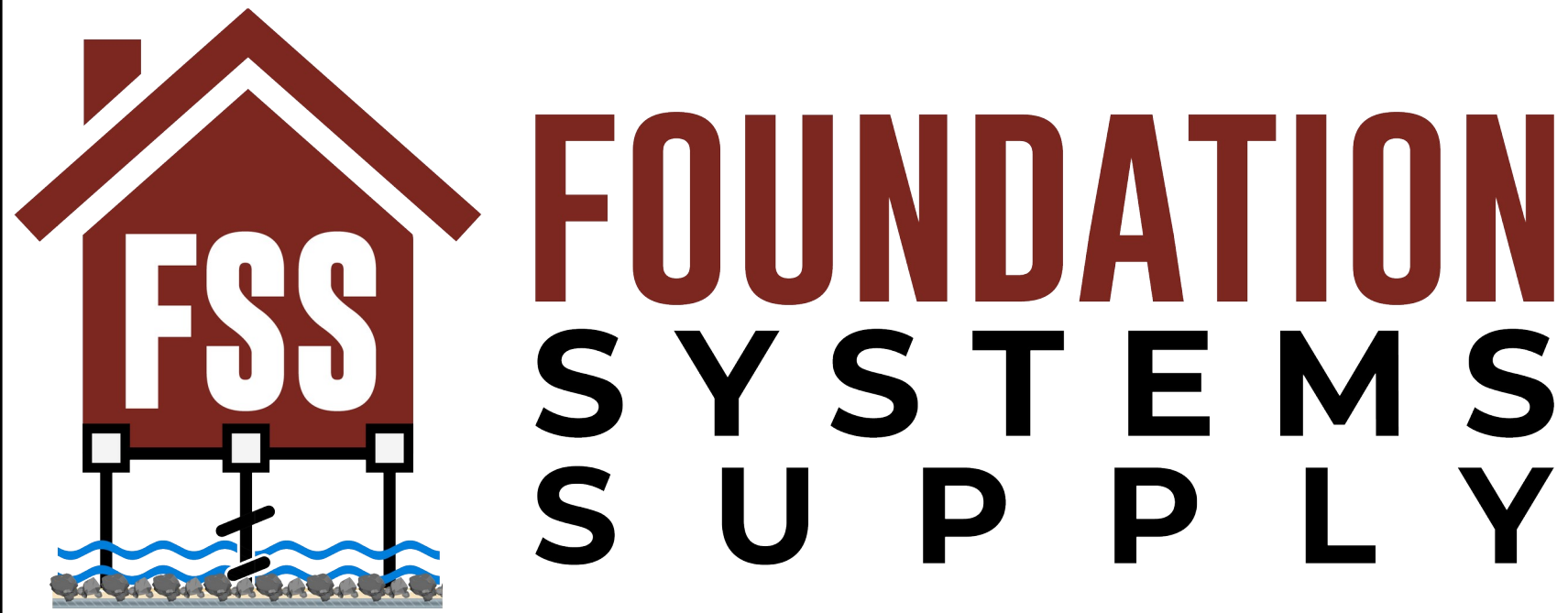
Maximum efficiencies have been applied to the torque and speed charts. **Values are NOT listed at 100% theoretical.** Speed and torque output are dependent on the overall system efficiencies associated with the prime movers hydraulic system. This document should be used for information and comparative purposes only.

RECOMMENDED PRIME MOVERS



6/18/2026
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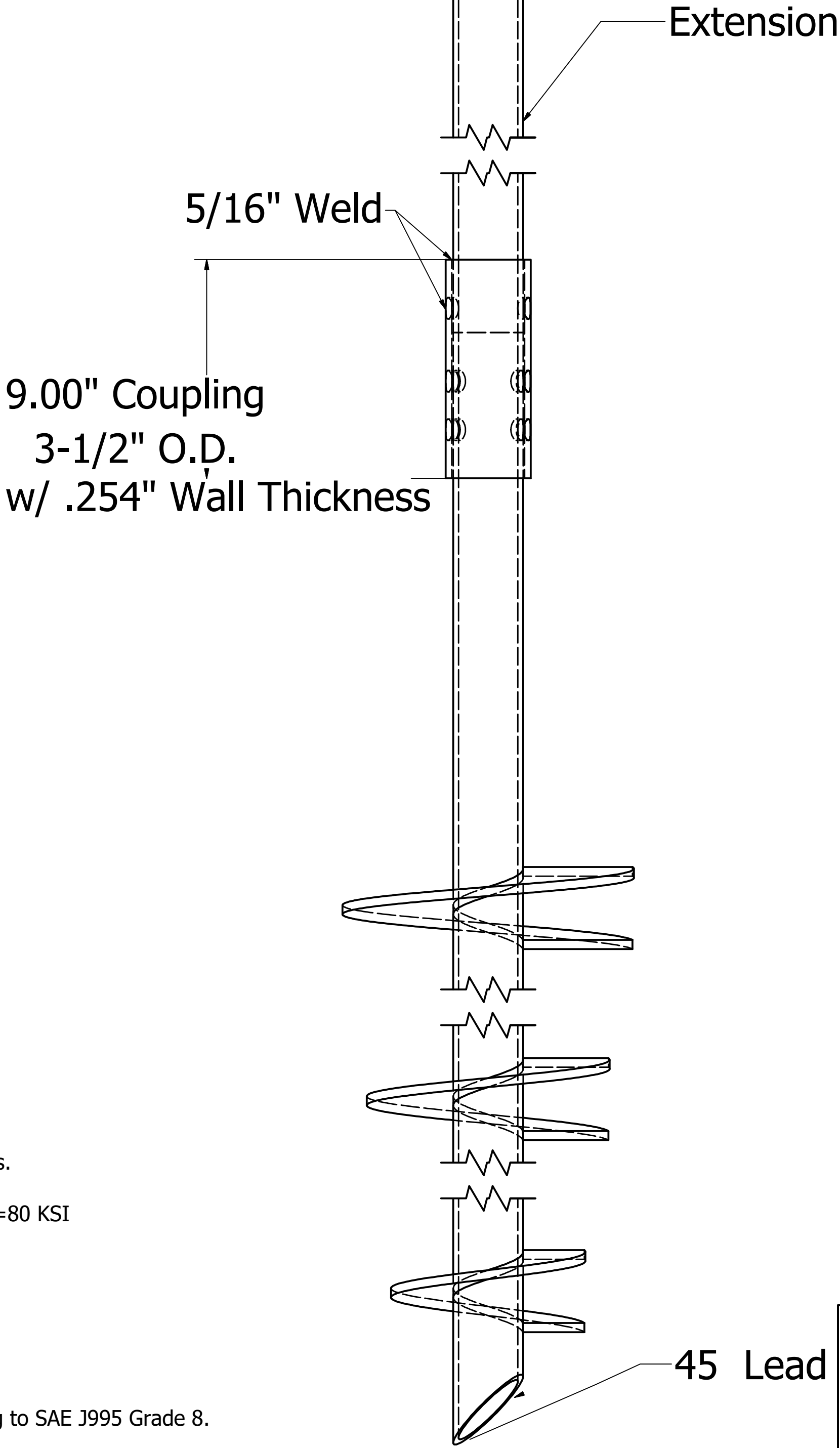
Leads

Leads				
Part NO.	"A"	"B"	"C"	"D"
L5 NG 8	60"	8"		
L7 NG 10	84"	10"		
L5 NG 10 12	60"	8"	10"	
L7 NG 10 12	84"	10"	12"	
L7 NG 8 10 12	84"	8"	10"	12"

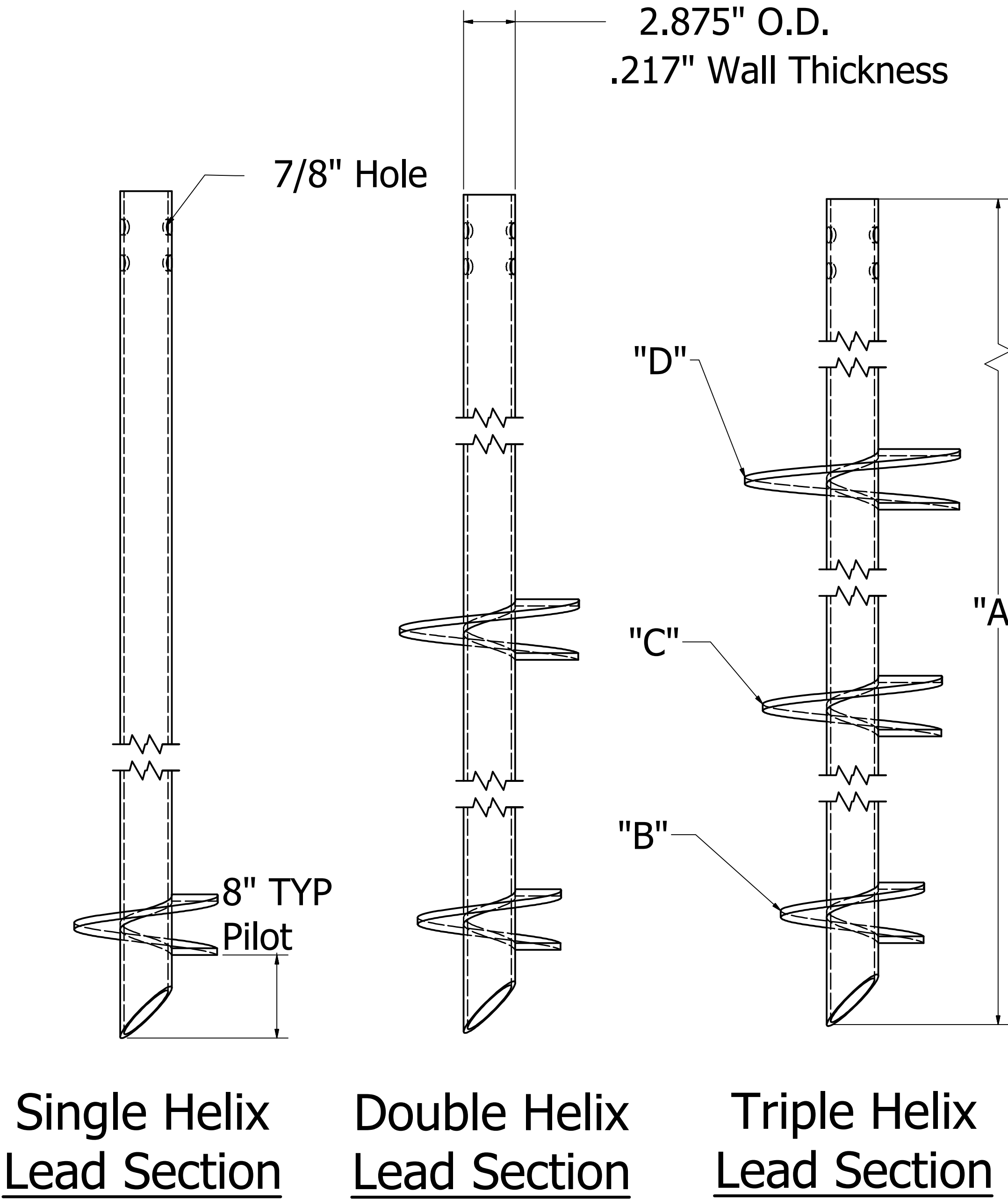
6/18/2026
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-NOTES-

- 1. Hot-dipped galvanized in accordance with ASTM A123.
- 2. New Construction Bracket, Repair Bracket, Shaft Coupler, Lead Shafts, and Extensions have a nominal wall thickness.
- 3. Helical pile lead Shafts and Extensions Are carbon steel piles that conform to API 5 CT L80. Minimum yield strength=80 KSI
- 4. Shaft couplers are carbon steel pipes that conform to API 5 CT L80. Minimum yield strength= 80 KSI
- 5. Helix plates are carbon steel plates conforming to ASTM A572, Grade 50. Minimum yield strength=68 KSI.
- 6. Nominal spacing between helical plates is three times the diameter of the preceding helix plate.
- 7. Coupling bolts: diameter X 4 long Hex Bolt conforming to SAE J429 Grade 8 with matching hex nuts conforming to SAE J995 Grade 8.
- 8. 2000 Helical Design & Manufacturing has industry recognized written quality control for all incoming materials, and manufacturing processes.
- 9. All welding to be done by welders certified under Section 4 of the AWS D1.1/D1, 1M Structural Welding Code-Steel.



Typical Pier Assembly



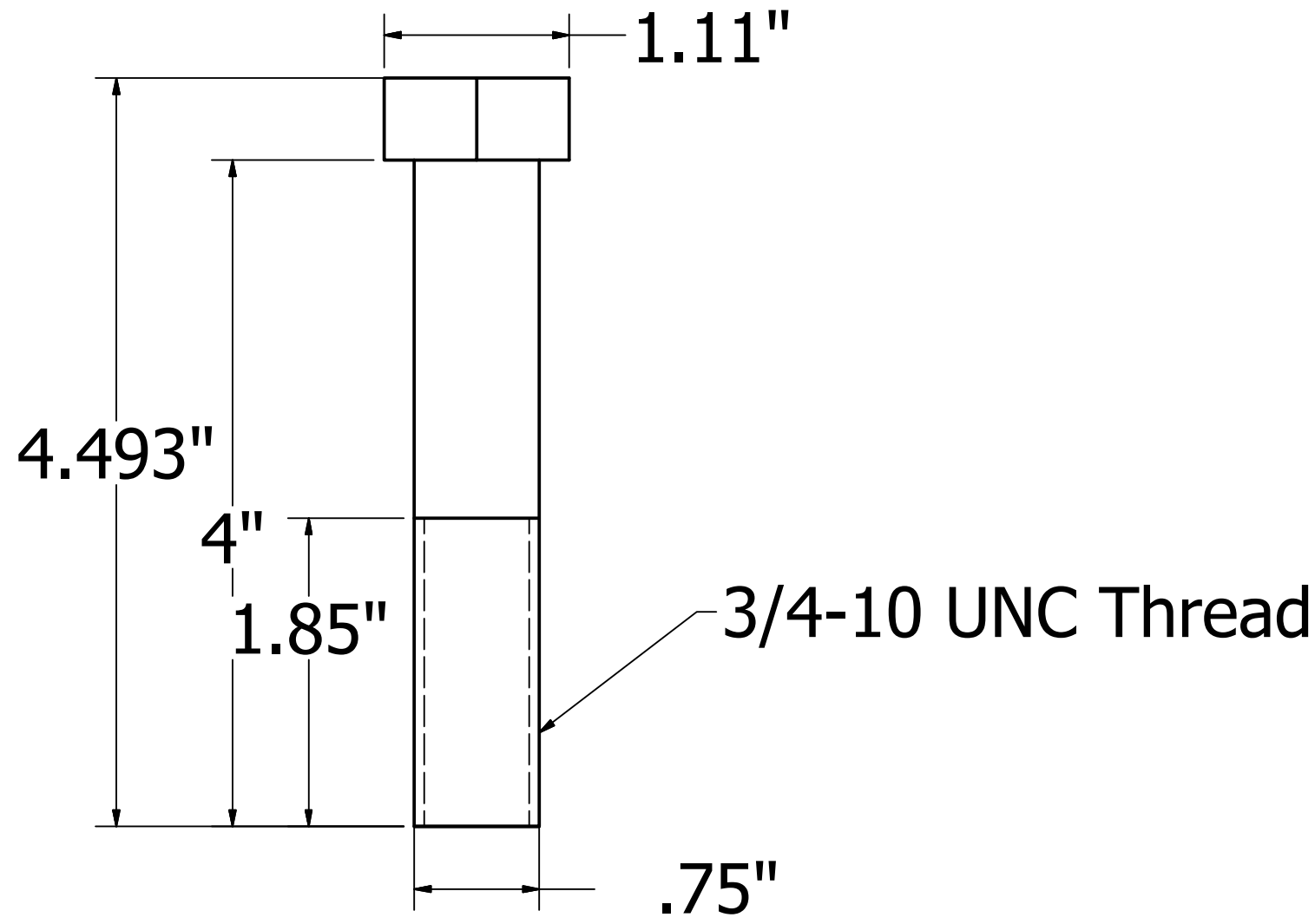
2000 HELICAL DESIGN AND MANUFACTURING

L5, L7 - Leads

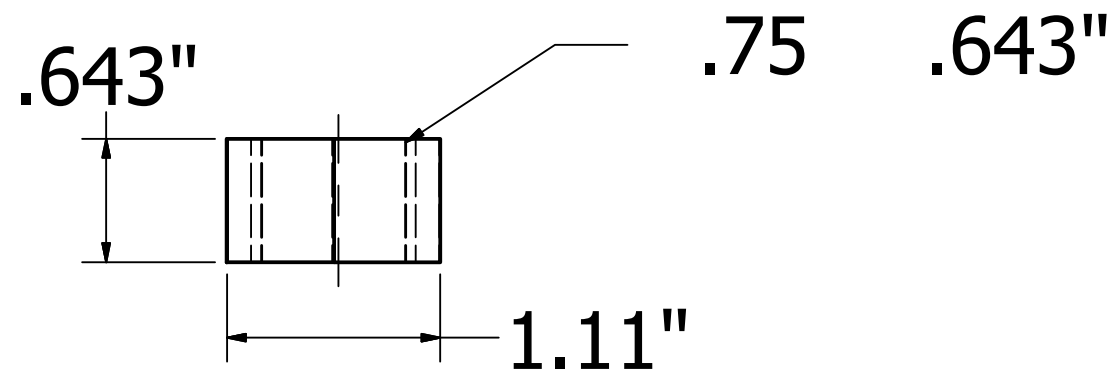
DATE 7/12/2017	DRAWN BY AK	DWG NO. HDM-5781012	REV -
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Torque Strength Rating - 9,281 Ft-Lbs
Ultimate Capacity (Tension/Compression) - 83.53 Kip
* Based On A Torque Factor (Kt)=9

Extensions



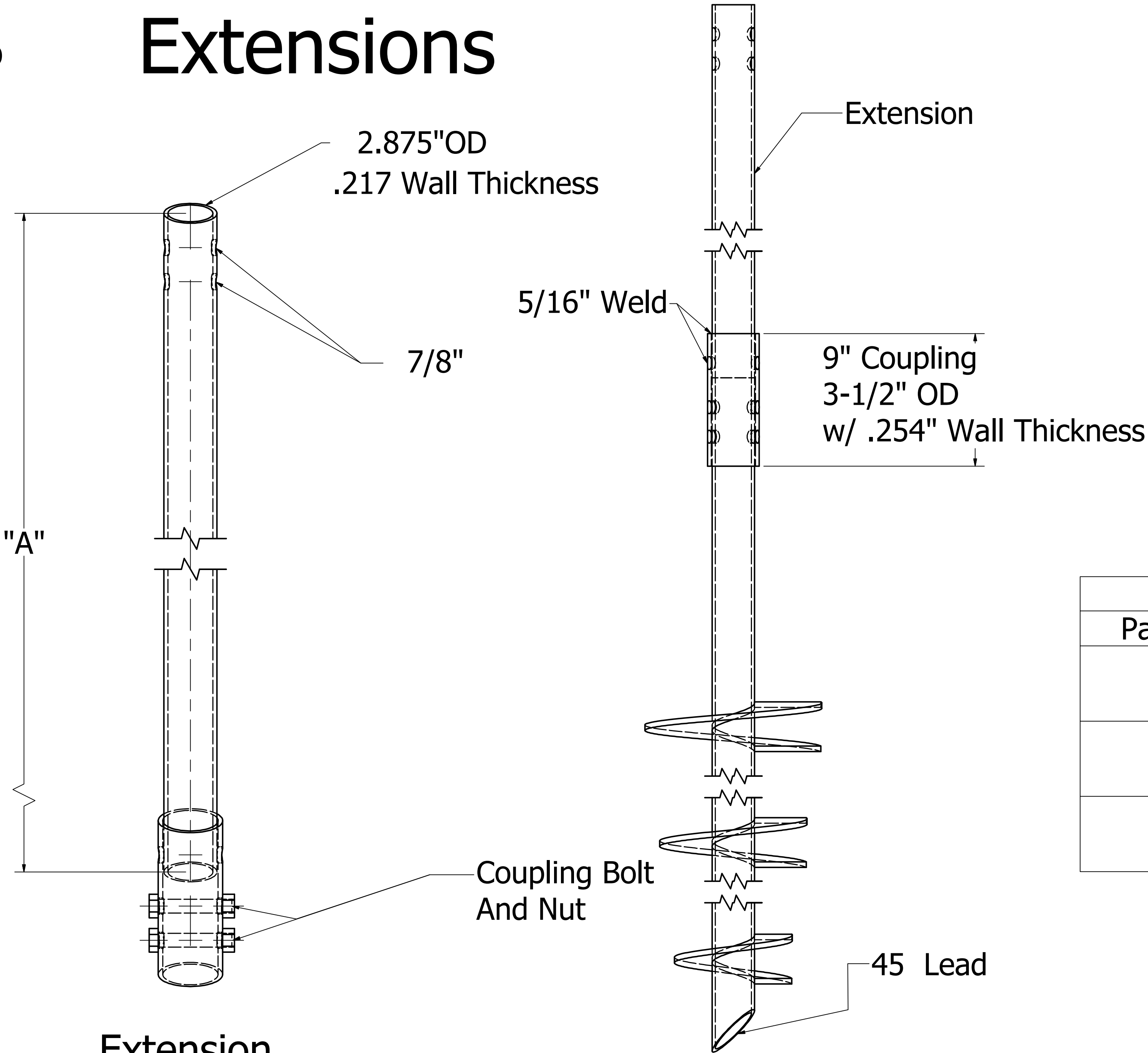
Extension
3/4x4 Bolt



Extension
3/4 Nut

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Extension

Extension	
Part NO.	"A"
E3	36"
E5	60"
E7	84"

Typical Pier
Assembly

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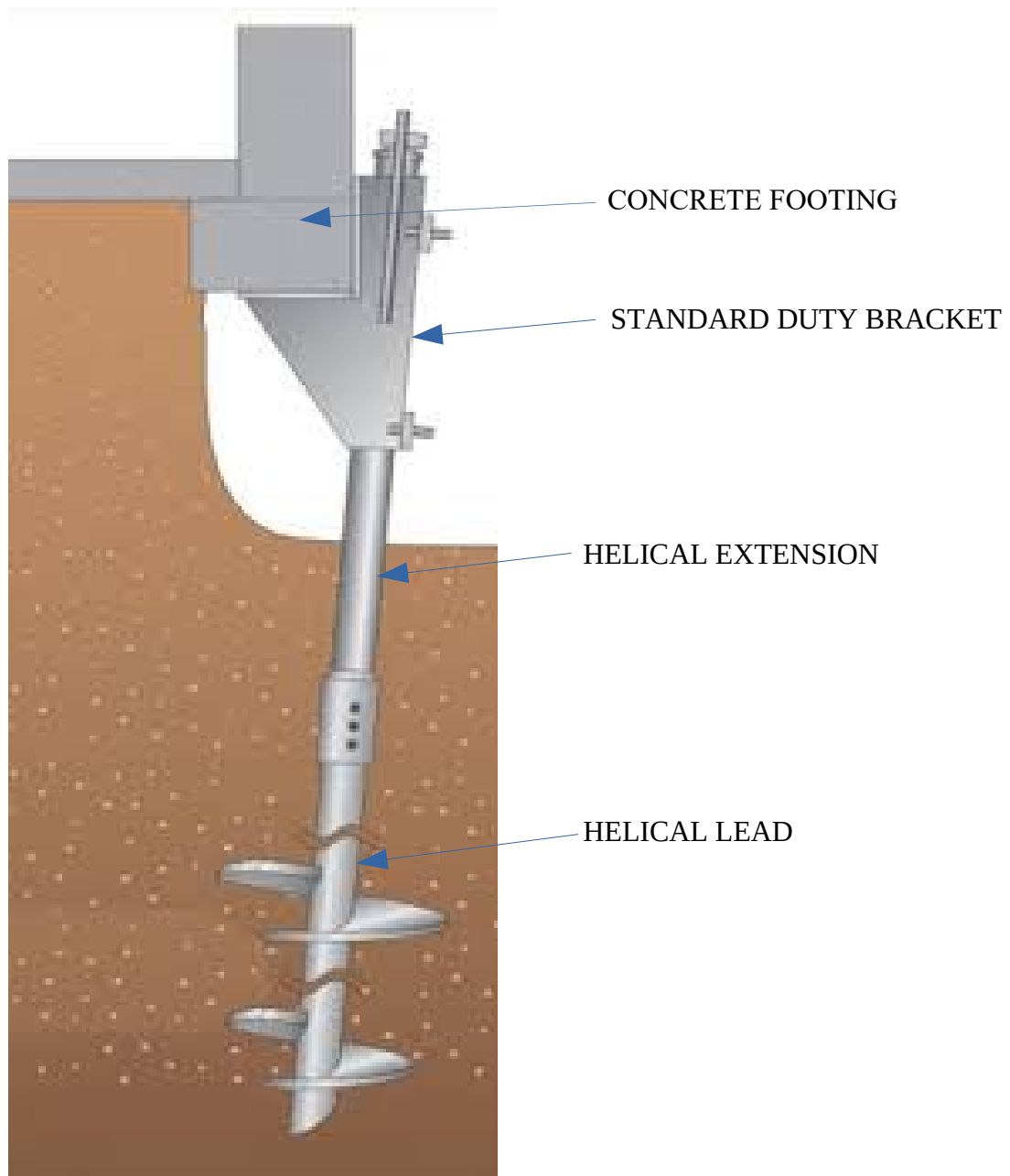
FOUNDATION
SYSTEMS
SUPPLY



2000 HELICAL DESIGN AND MANUFACTURING

E3, E5, E7 - Extensions

DATE	DRAWN BY	DWG NO.	REV
7/20/2017	AK	HDM-E357	-



STANDARD DUTY BRACKET (35 KIPS)

HELICAL LEAD – 7' with 10"/12" Flights, 2 7/8" OD, .217 Wall
(MAXIMUM TORQUE NOT TO EXCEED 10,000 FT LBS. ULTIMATE CAPACITY IS 72 KIPS)

HELICAL EXTENSION – 7', 2 7/8" OD, .217 Wall



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