



## 02 / DEEP FOUNDATIONS

# Pin piles

Small-diameter steel pipe piles driven in connected sections with compact equipment.

## How the technique works

A compact excavator supports a hydraulic impact-driving head. The starter pipe advances into the ground; successive pipe extensions connect above grade and continue the same pile. The original starter moves deeper with every installed section.

## How the foundation carries load

Axial resistance depends on the ground and the engineered contribution of shaft resistance and toe resistance. Steel pipe, connections and the final cap or bracket must transmit the design loads. Pipe stability and lateral response are separate design checks.

## Where it applies

New foundations, additions and engineered underpinning where small equipment and sectional handling suit the access constraints. Feasibility depends on ground, loads, adjacent structures, vibration limits and the available driving system.

## What it offers

Compact installation and short sections simplify handling in restricted working areas. Extensions allow progressive installation without mobilizing a large piling rig. Impact noise and vibration must still be evaluated and managed for the site.

### One starter plus four extensions

The illustration uses a 7 ft starter and four 7 ft extensions, for 35 ft installed length. Illustrated pipe OD: 2 7/8 in. Pipe wall, steel grade, connections and capacity follow the approved design.



## CONSTRUCTION METHOD

# Construction sequence

General procedure. Geometry and parameters follow the approved project.

## 01 Preparation and setting out

Review geotechnical information, utilities, pile layout, access and vibration-sensitive neighbors. Verify the platform, pipe specification, driving head, lifting arrangements and the approved connection detail.

## 02 Drive the 7 ft starter

Position and align the starter. Lower the arm and impact head while driving the first section. Control alignment, engagement of the driving head, penetration and the response of nearby ground and structures.

## 03 Connect the 7 ft extensions

Hold the installed shaft stationary, raise the arm and add the next pipe section. Inspect each approved splice before driving resumes. Four extensions give illustrated toe depths of 14, 21, 28 and 35 ft.

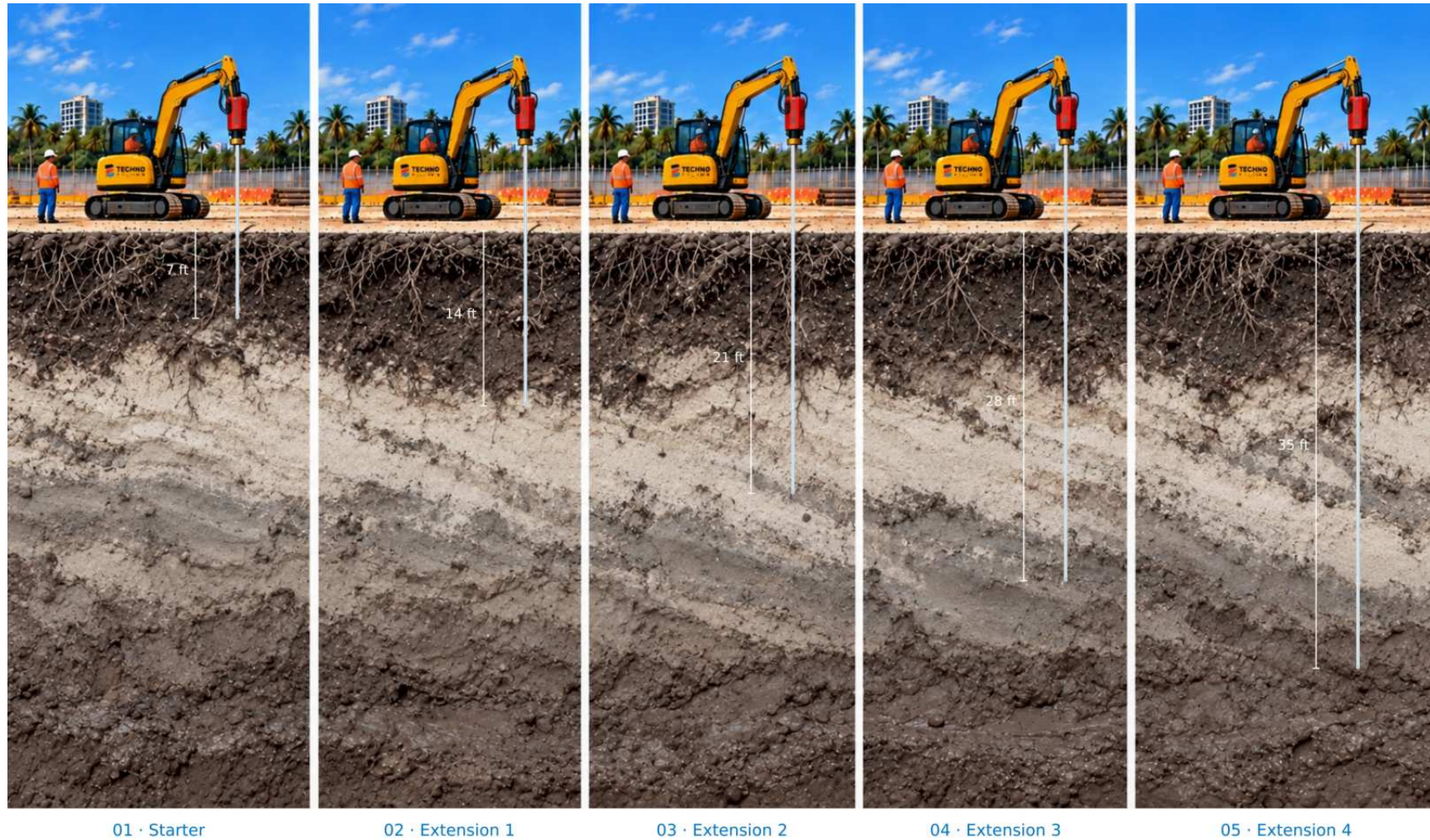
## 04 Apply termination criteria

Use the project-specific driving and depth requirements. Record the driving system and observations needed for interpretation. Hard contact or slow penetration alone does not establish capacity; apply the defined contingency procedure.

## 05 Finish and verify

Complete the specified cap or bracket and final elevation. Preserve pile ID, pipe/connection identification, installed length, driving observations and incidents. Perform the agreed test-pile and acceptance program.

## Pin piles



7 ft per section · shaft OD 2 7/8 in

The installation procedure follows the approved project design. Illustrated profiles do not replace the geotechnical report.



## SELECTION AND SITE CONDITIONS

# Application criteria

Evaluate the ground, equipment and restrictions together.

## Actual Florida ground

Evaluate soft soils, wet silts, mud, sands, groundwater and variability from the project investigation. Assess obstructions or buried construction materials that can obstruct or deflect a slender pipe.

## Pipe and connection design

Specify outside diameter, wall thickness, steel grade, connection resistance, corrosion allowance and the final load-transfer detail. The illustrated OD and section length do not define an approved load capacity.

## Driving and capacity

Ground resistance, equipment energy, alignment and pipe behavior affect installation. Define measurable termination criteria for the chosen driving system. Verification may require test piles and static load tests selected by the engineer.

## Vibration, access and stability

Review impact vibration and noise near existing structures or sensitive equipment. Confirm headroom, equipment reach, utilities and platform stability. Very soft ground can require additional checks on shaft stability and buckling.

## Project information

Provide location, soil report, layout, loads, final pile-head detail, settlement criteria, access/headroom, neighboring structures and schedule. Identify vibration restrictions before choosing the installation method.



## QUALITY AND TRACEABILITY

# Installation controls

One traceable record per pile or test, from setting out to acceptance.

## Before driving

Verify pipe dimensions and condition, connections, pile positions, equipment and platform. Define inspection, driving records, termination and contingency procedures.

## Driving observations

Record installed length, alignment, penetration and driving observations for the identified hammer or impact tool. Document interruptions, pipe damage, unexpected resistance and changes in the ground response.

## Splices and head completion

Inspect each approved connection before driving the next 7 ft section. Check final elevation and the specified cap or bracket. Preserve material and pile identification through completion.

## Test piles and load tests

Techno Piling offers pin-pile test installations and load testing. Coordinate test location, maximum load, loading direction, reaction system, independent displacement references and acceptance criteria with the engineer.

## Safety and traceability

Maintain utility clearance, stable working areas and exclusion zones around lifting and impact operations. Control vibration where specified. Deliver installation records, incidents, final geometry and test results.

### Discuss your project

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Applicable project references: ASTM D1143/D1143M (compression), D3689/D3689M (tension), D3966/D3966M (lateral).