



Louisiana Department of Transportation
Federally funded project
Installed Eight (8) Friction Piles
over eight (8) miles for Monopoles
standing 65' - 110' tall



DESIGN | ENGINEERING | TESTING

The Open-End Friction Pile Products were designed, engineered, and field tested by DiGioia Gray Consulting Engineers and Scientists. Their team conducted stringent field tests to verify and validate design values of the products.

Design Criteria - ANSI/TIA-222-G

300'	ASCE 7-16 Ultimate Wind Speed (No Ice)	114 mph
	Wind Speed (Ice)	40 mph
	Design Ice Thickness	1.00 in
	Structure Class	III
300'	Risk Category	III
	Exposure Category	C
	Topographic Category	1

Load Case Reactions

Description	Axial (kips)	Shear (kips)	Moment (ft-k)	Deflection (ft)	Sway (deg)
3s Gusted Wind	84.27	58.95	8213.39	16.52	10.4
3s Gusted Wind 0.9 Dead	63.35	59	8066.27	16.14	10.13
3s Gusted Wind&Ice	120.83	16.12	2469.35	5.35	3.4
30' Service Loads	70.26	15.34	2133.06	4.39	2.73

Base Plate Dimensions

Shape	Diameter	Thickness	Bolt Circle	Bolt Qty	Bolt Diameter
Round	74"	2.5"	68.25"	24	2.25"

Each pile is designed specifically for the structural loads and detailed subsurface information gathered to ensure the soils are conducive for installations.

FIC technical sales and design team work closely with our clients in design development to gather all essential subsurface information. This information will be used for the feasibility analysis to ensure successful installation where designed into the project specifications.

The subsurface information is utilized in design to optimize the steel sections required and the most efficient size, shape, and depth of the pile required.

The designers then prepare shop drawings to be used for fabrication and assembly of the product.

FABRICATION

The Open-End Friction Pile is fabricated and assembled by Fabricated Steel Solutions LLC (FSS). The piling is produced from the specific structural steel elements determined in the engineered design. FSS is a member of AISC and operates under AISC prescribed procedures.

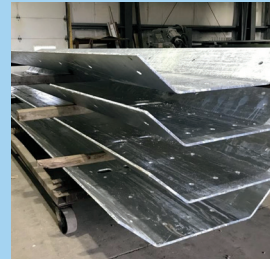
70,000sq ft facility - 25 ton capacity

State of the art laser/drilling tables 12' & 60'

Two (2) 29' Tandem 1100-ton Press Brakes Providing 2200-tons

Total bending length: 58'

FSS delivers the highest level of quality assurance, adhering to AISC Quality Procedures



Steel is formed then hot-dipped galvanized. Other additional protective coatings can also be applied.

Fabricated Steel Solutions

Base Material:

Typical Plate Products: Structural A-572

Grade-50 to Grade-75

Material Thickness: 1/2" to 1"

ASSEMBLY

After galvanizing, the Friction Pile is assembled with each bolt torqued to the engineered specification.

Fabricated Steel Solutions complies with all Buy American Programs.



DELIVERY

The Friction Piles can be shipped via truck, rail, or barge from FSS in Pittsburgh to the job site.

Driving Attachment

Friction Piles may be delivered with the Driving Attachment already bolted and safely secured.

The bolt diameter and bolt pattern of the Driving Head plate match both the FIC base plate and the base plate of the top structure.

INSTALLATION

The Open-End pile can be installed with a MobilRam, Hanging Vibratory Hammer from a crane or excavator.

The appropriate equipment for the project will be determined by the specific site conditions, soil conditions, and site access.



Hanging Vibratory Hammer - Crane



Hanging Vibratory Hammer - Excavator

ACTUAL PROJECT INSTALLATION TIMES

Friction Pile Length	Install Time (Minutes)
19-5'	11.00
27-5'	47.05
31-5'	33.55
19-5'	31.46
31-5'	31.00
27-5'	33.55
19-5'	10.53
27-5'	37.56