



Strength and **Durability** for **Life**®



Thrust Restraint Design for Ductile Iron Pipe

Type of Fitting:

Vertical Up Bend

Angle of Bend:

45 deg.

Diameter of Bend:

36 in.

Laying Condition:

Type 5

Soil Designation:

Clay 1

Depth Cover:

6 ft.

Design Pressure:

150 psi

Safety Factor:

1.5

Vertical Up Bend

Unit Frictional Force: 1,202 lbs/ft

Unit Bearing Resistance: 3,480 lbs/ft

Required restrained length on both sides of fitting:

L = 37 ft

Polyethylene Encased L = 42 ft