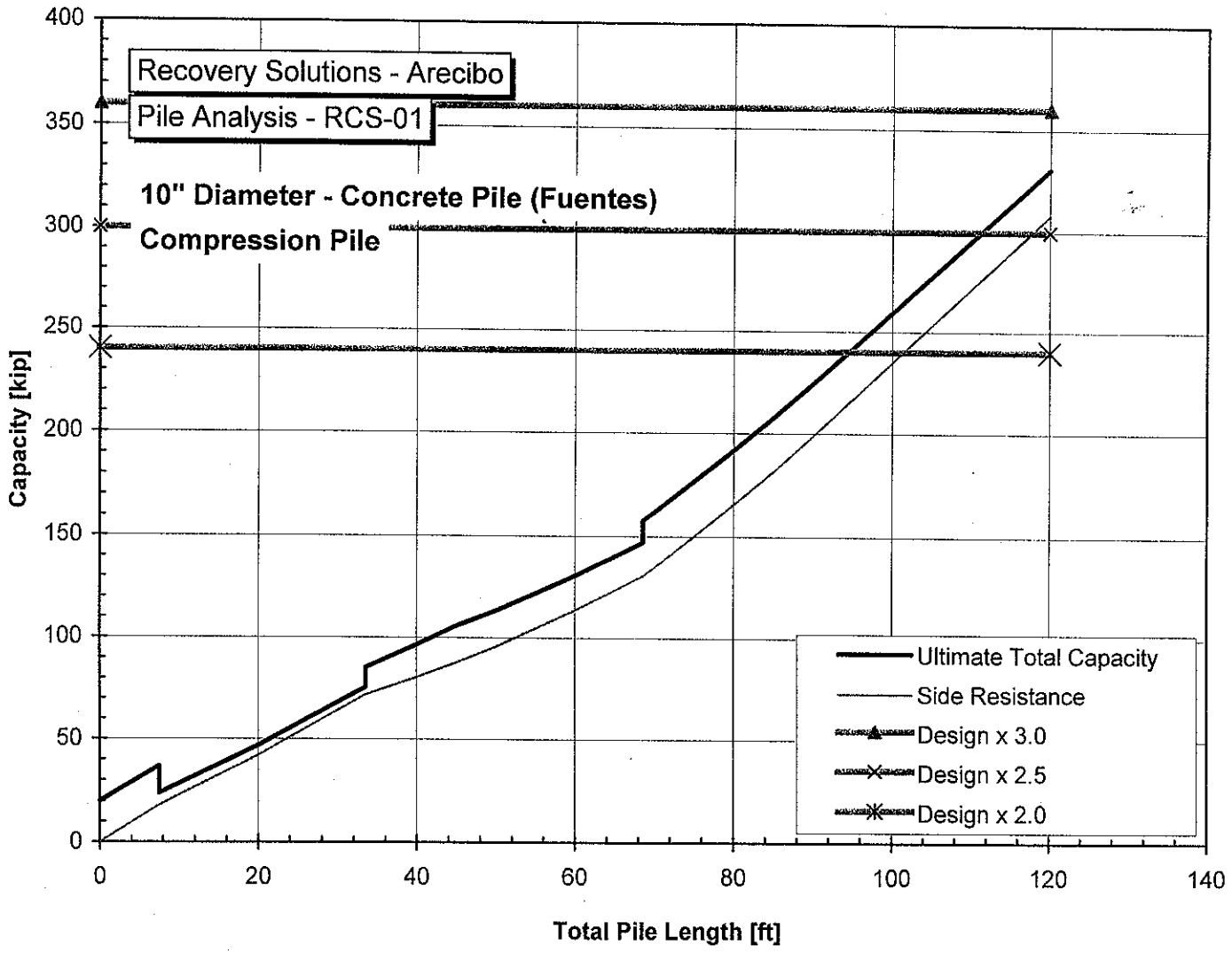
**Appendix C**
Static Pile Analyses

Capacity vs Total Pile Length

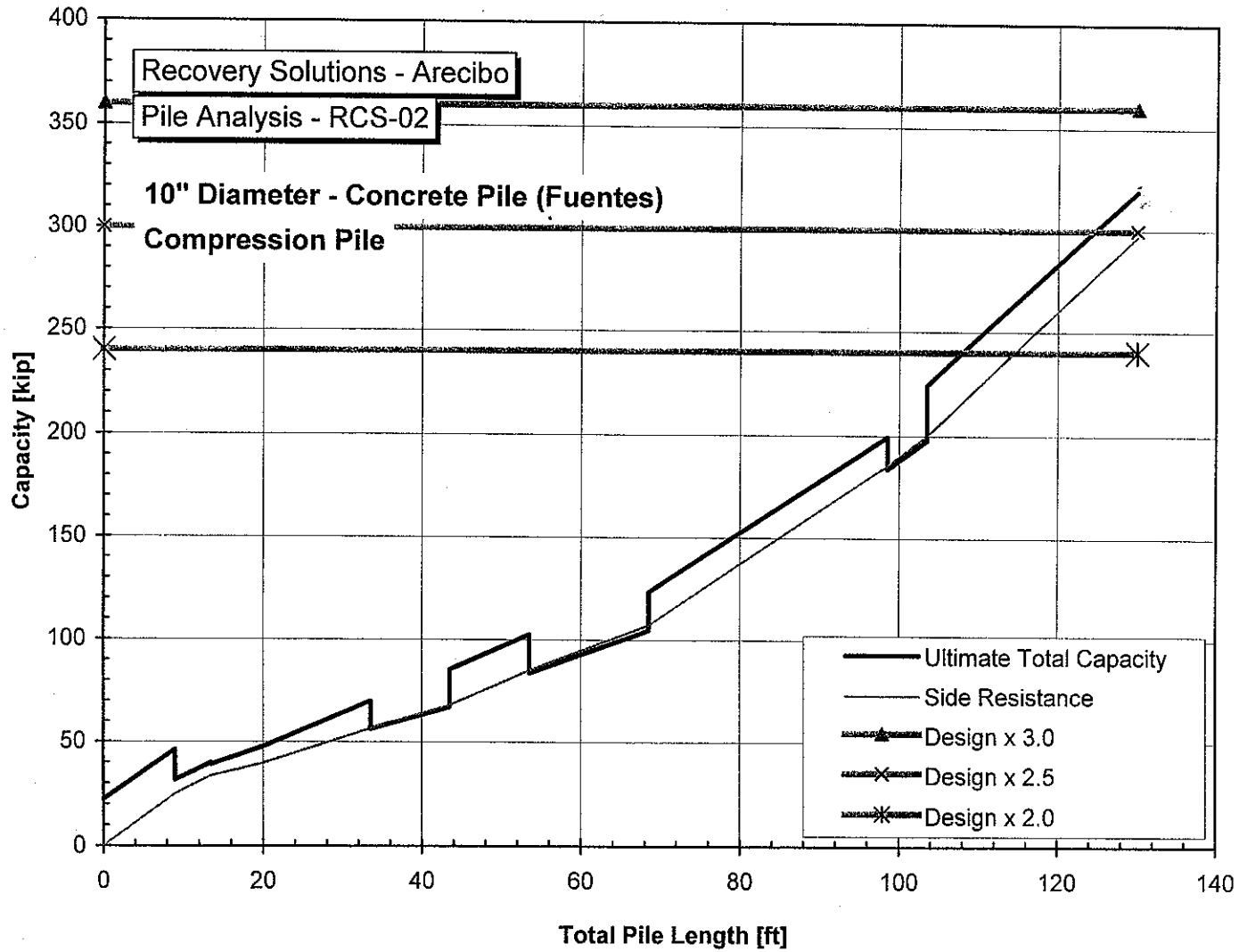



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

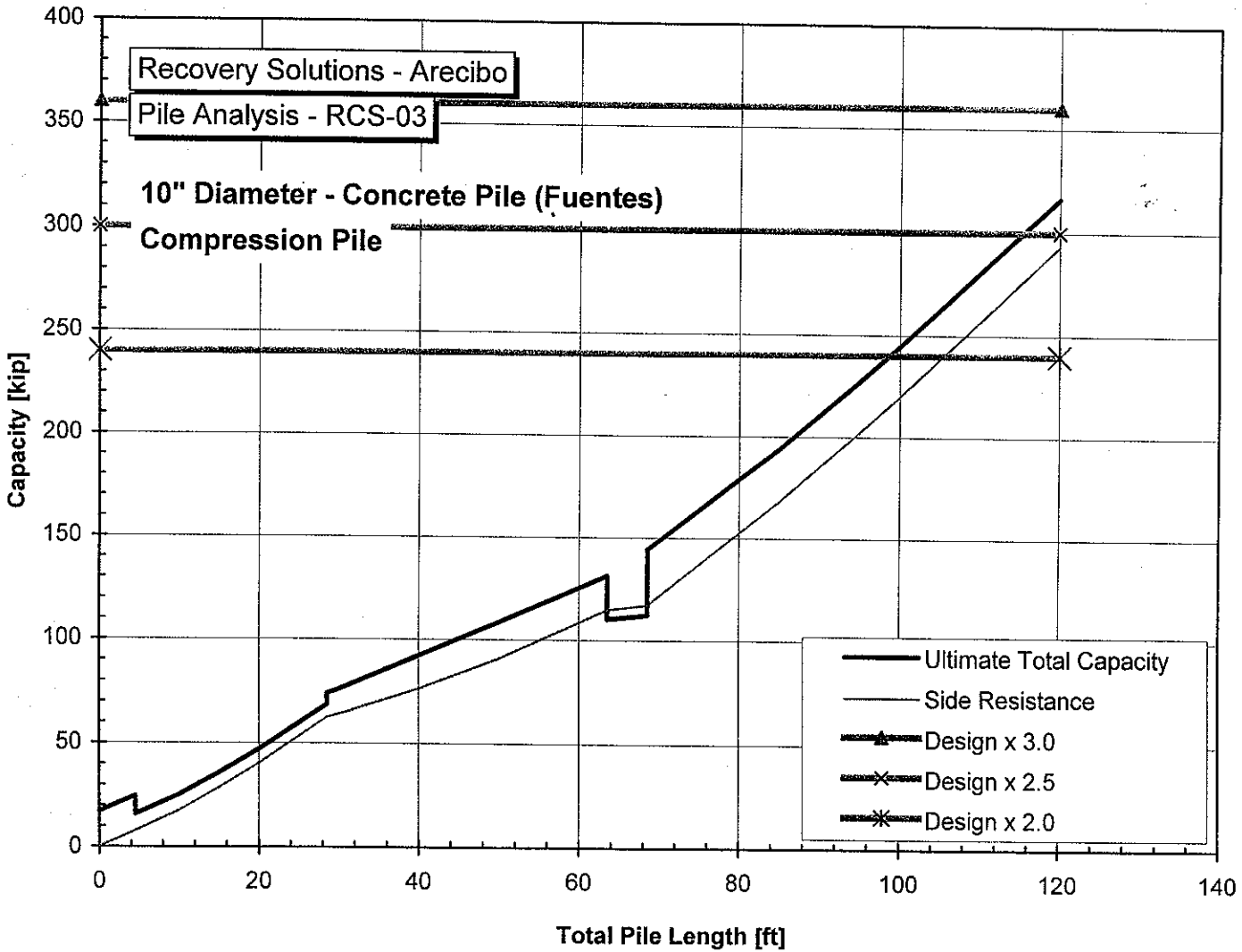



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

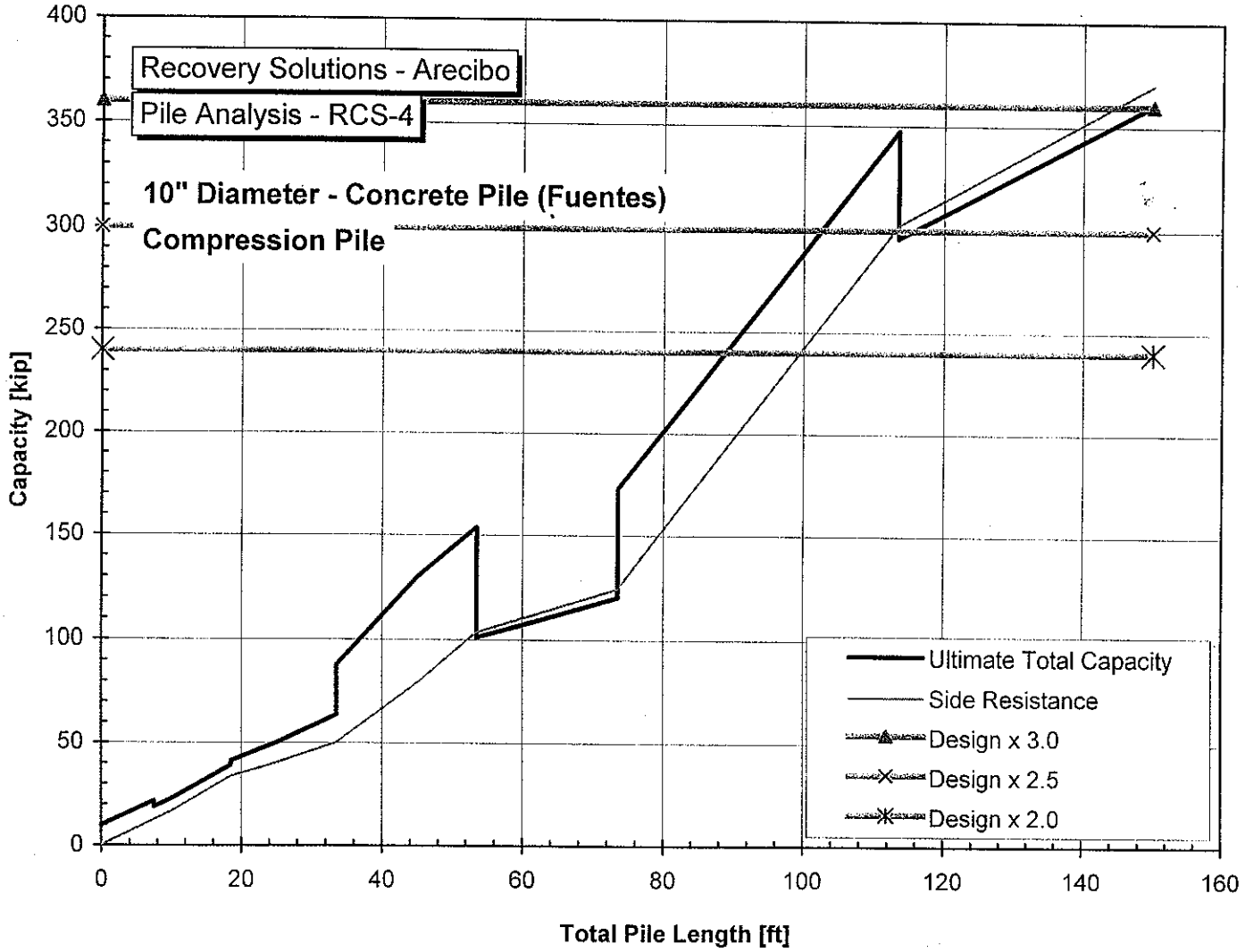



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

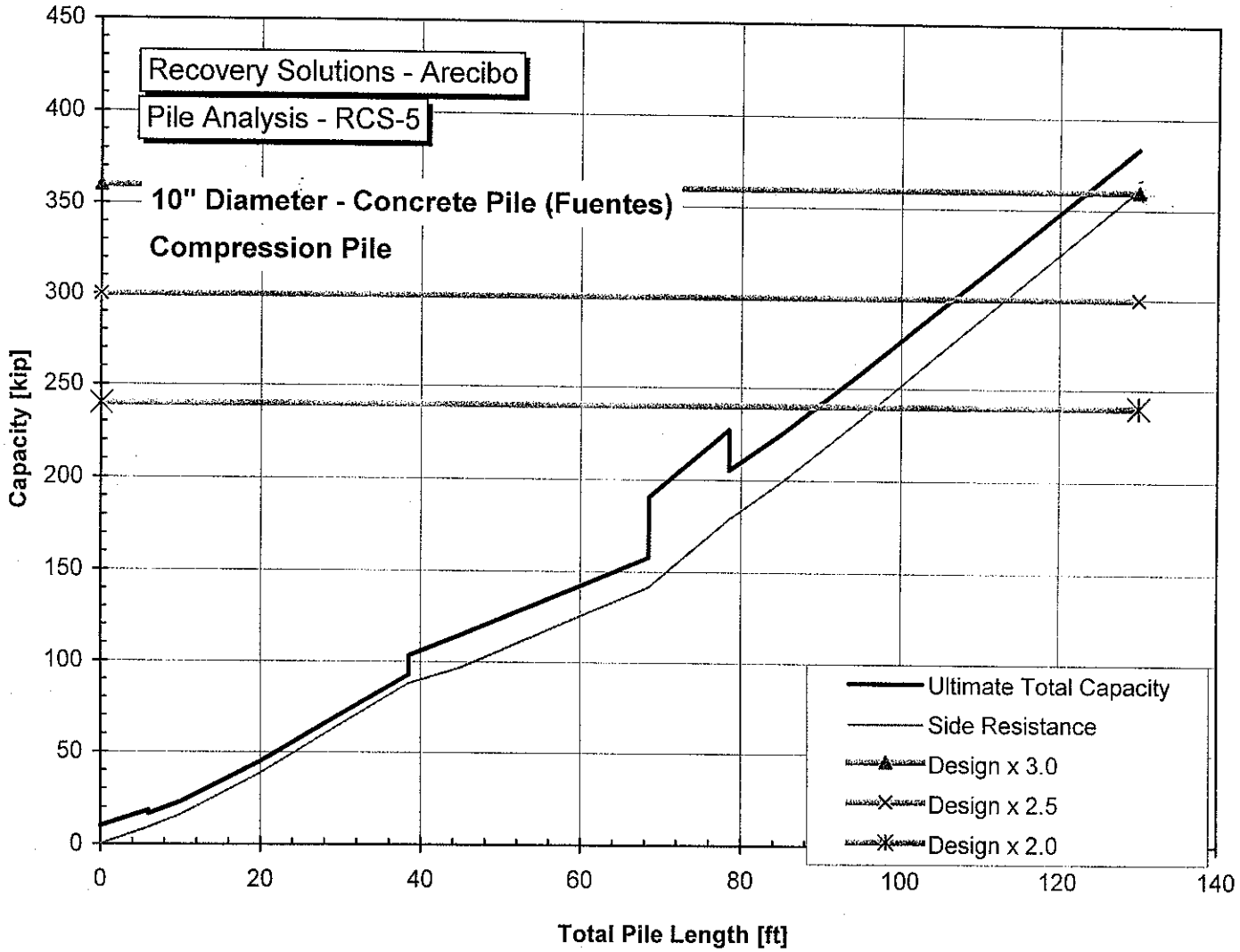



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

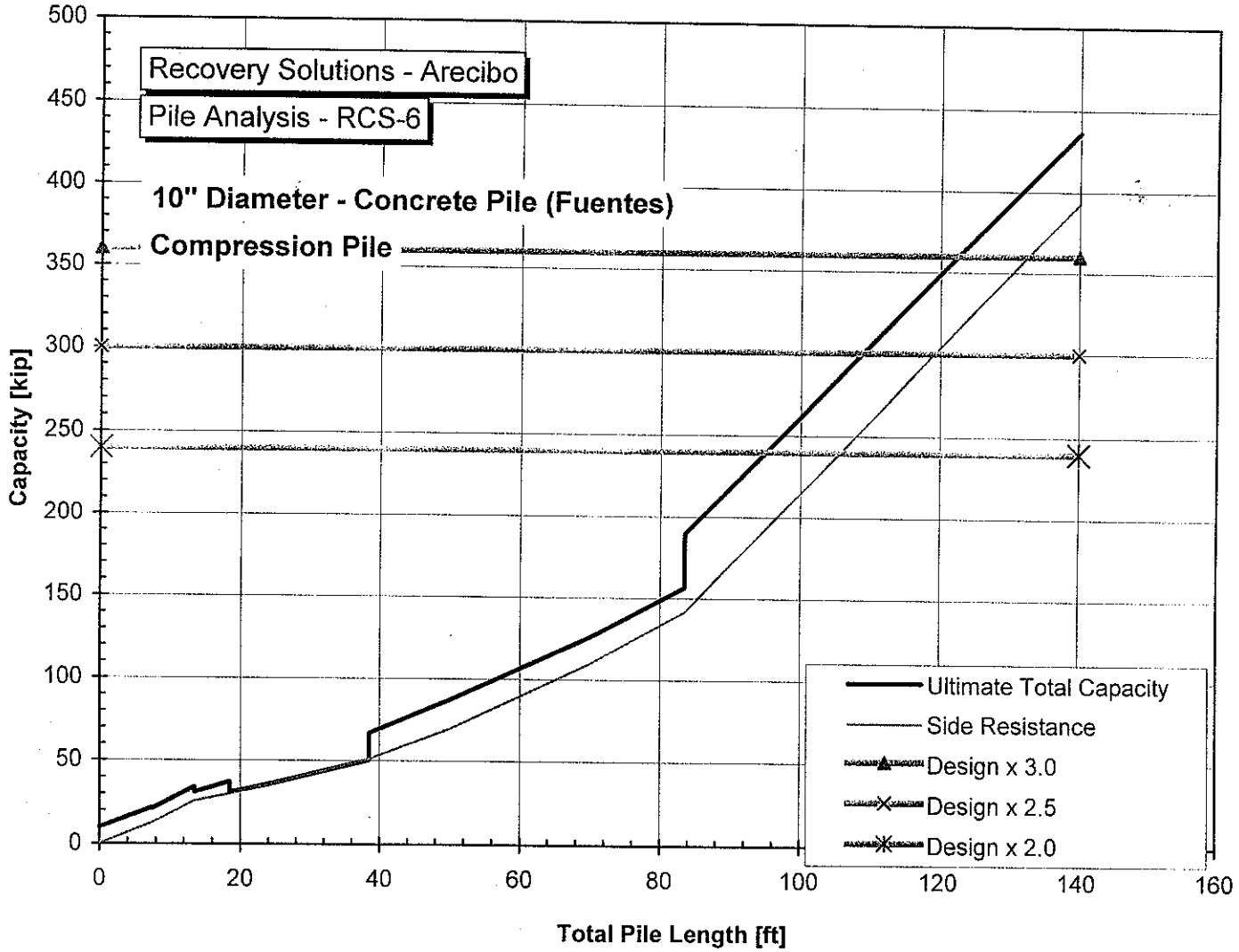



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

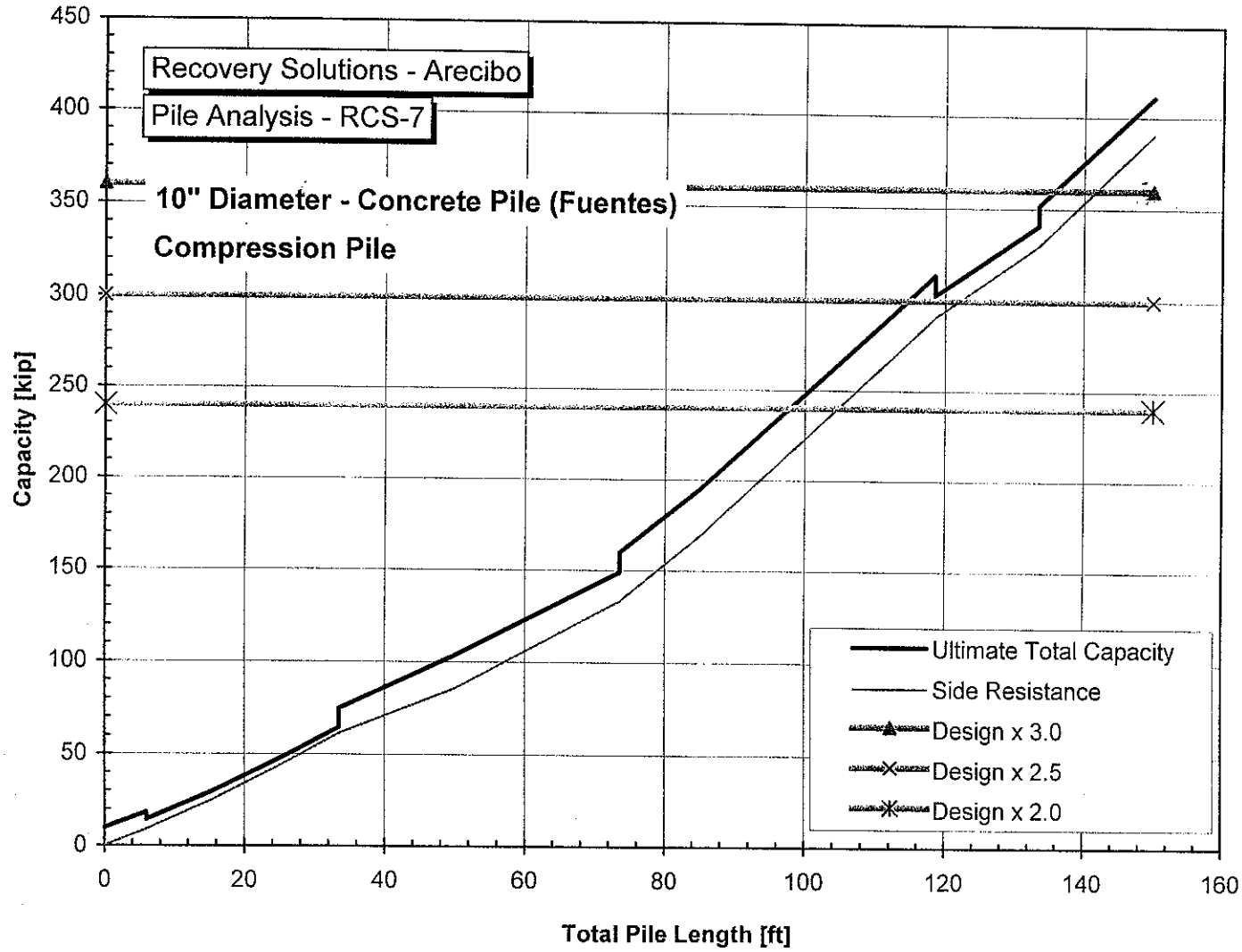



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

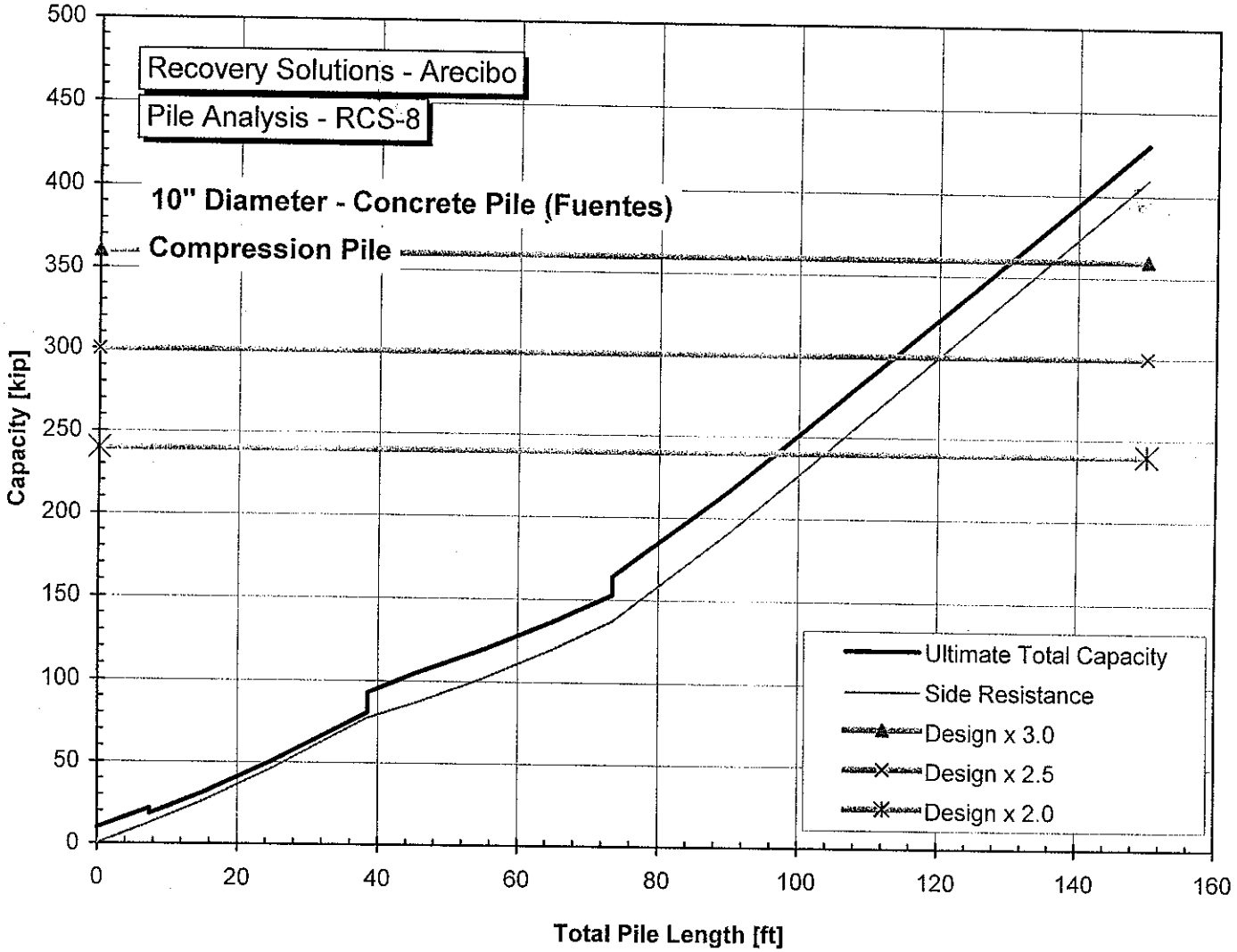



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

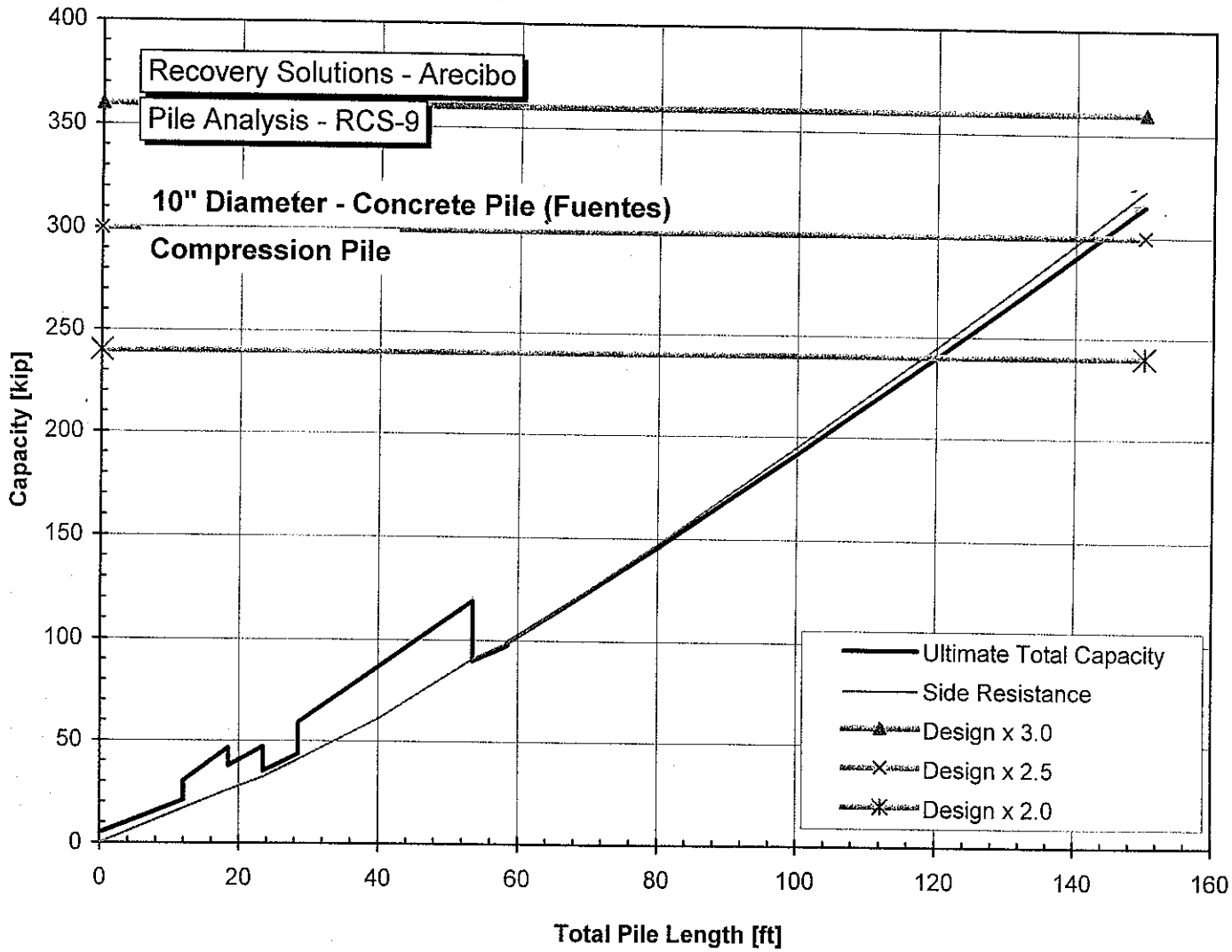



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

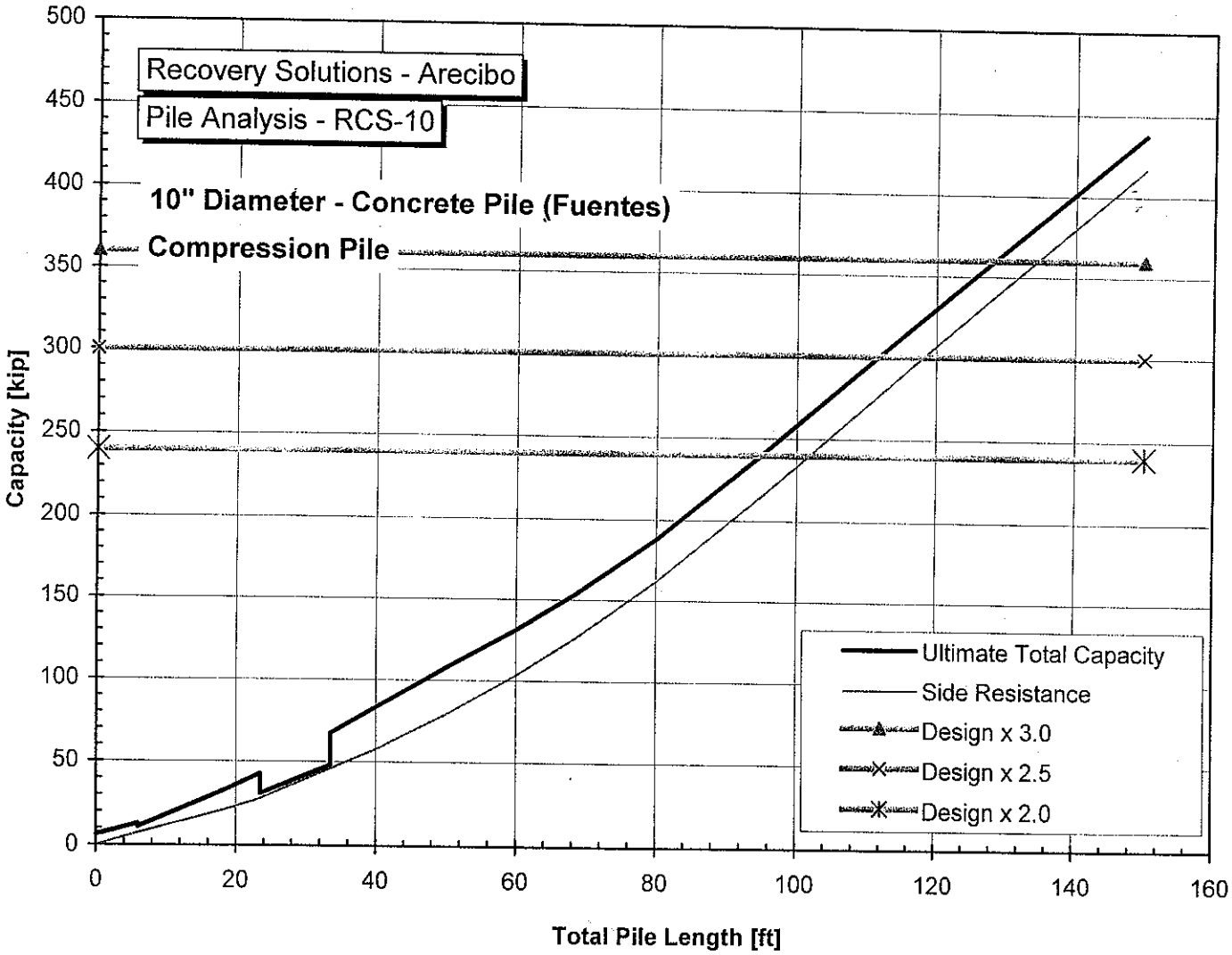



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

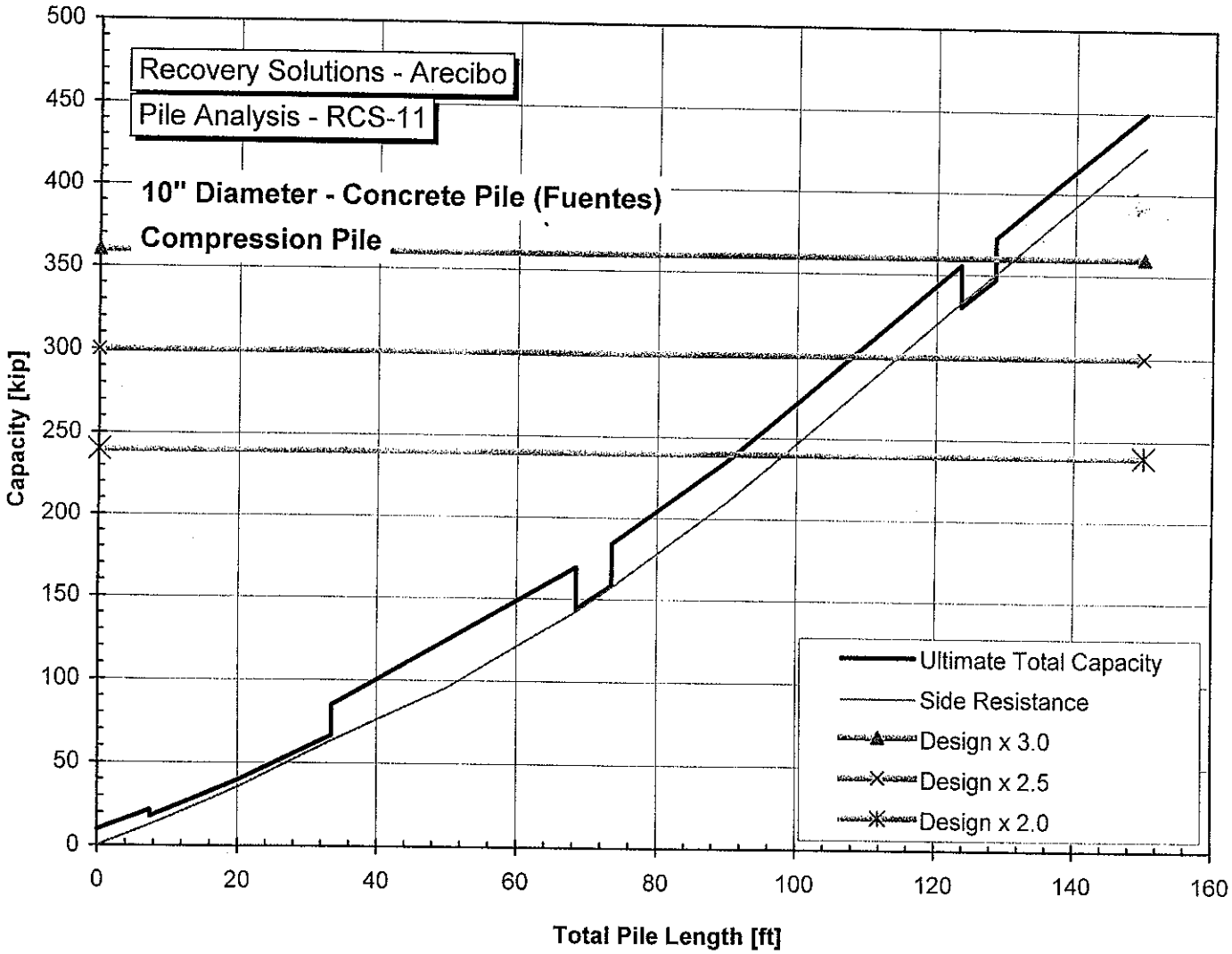



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

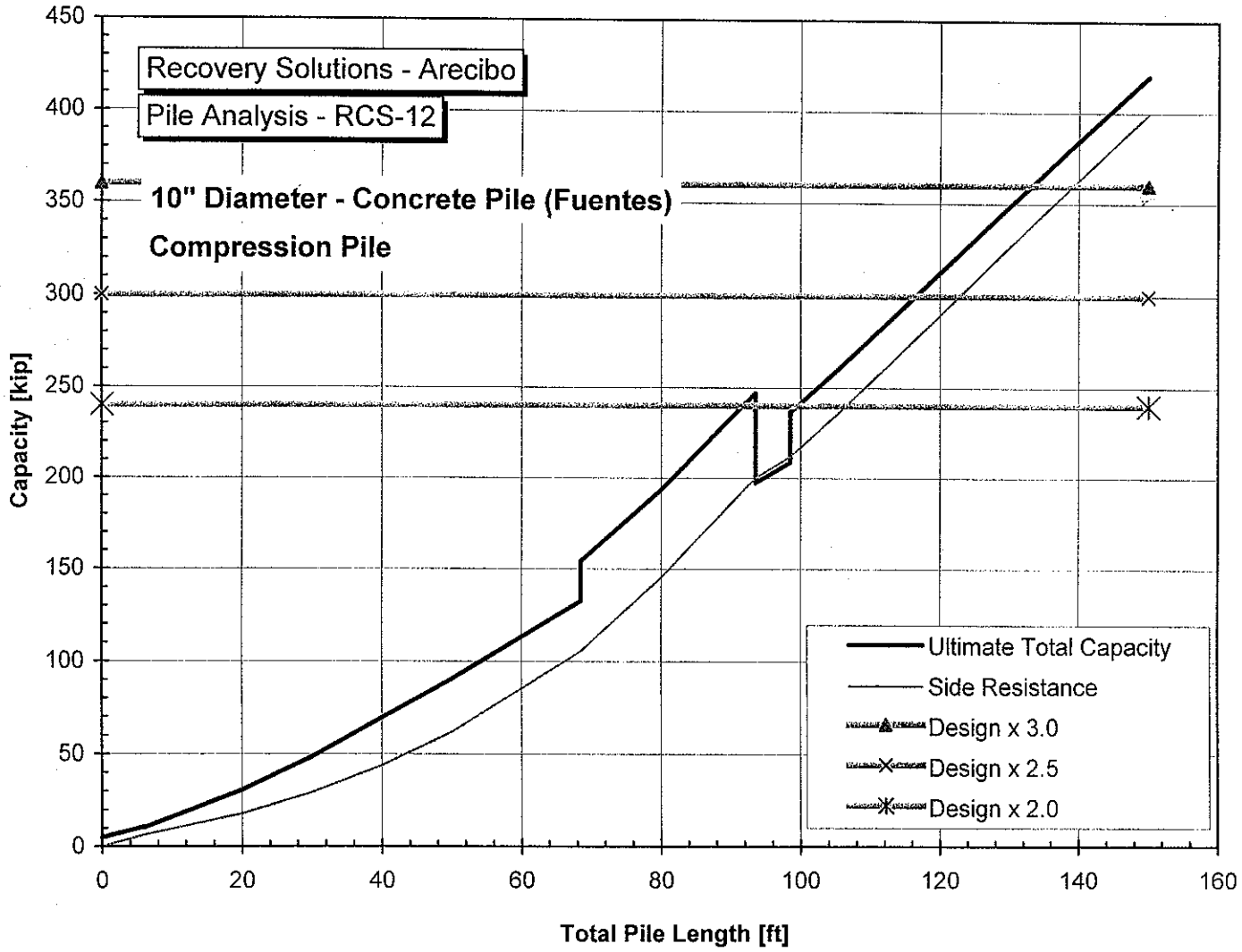



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

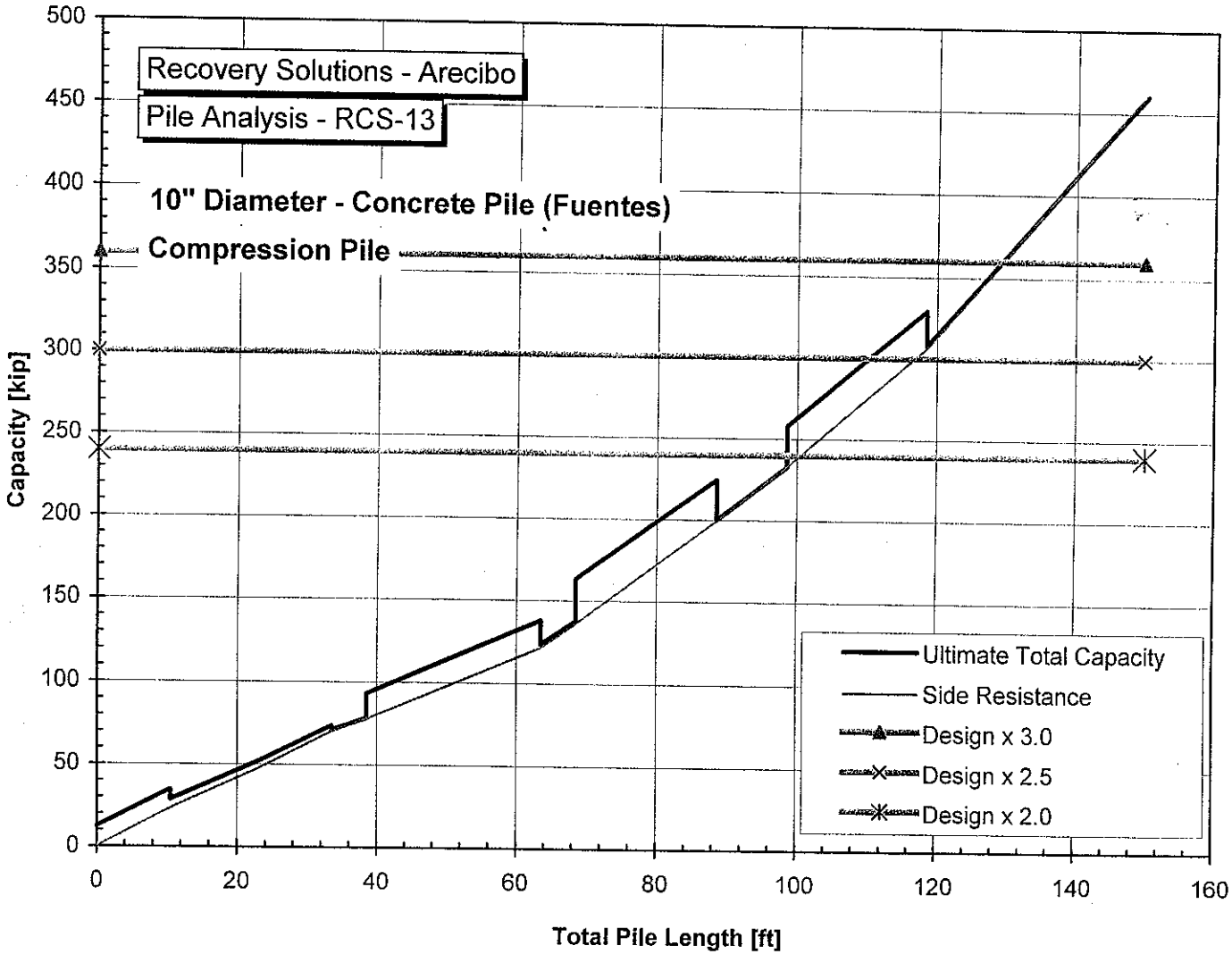



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

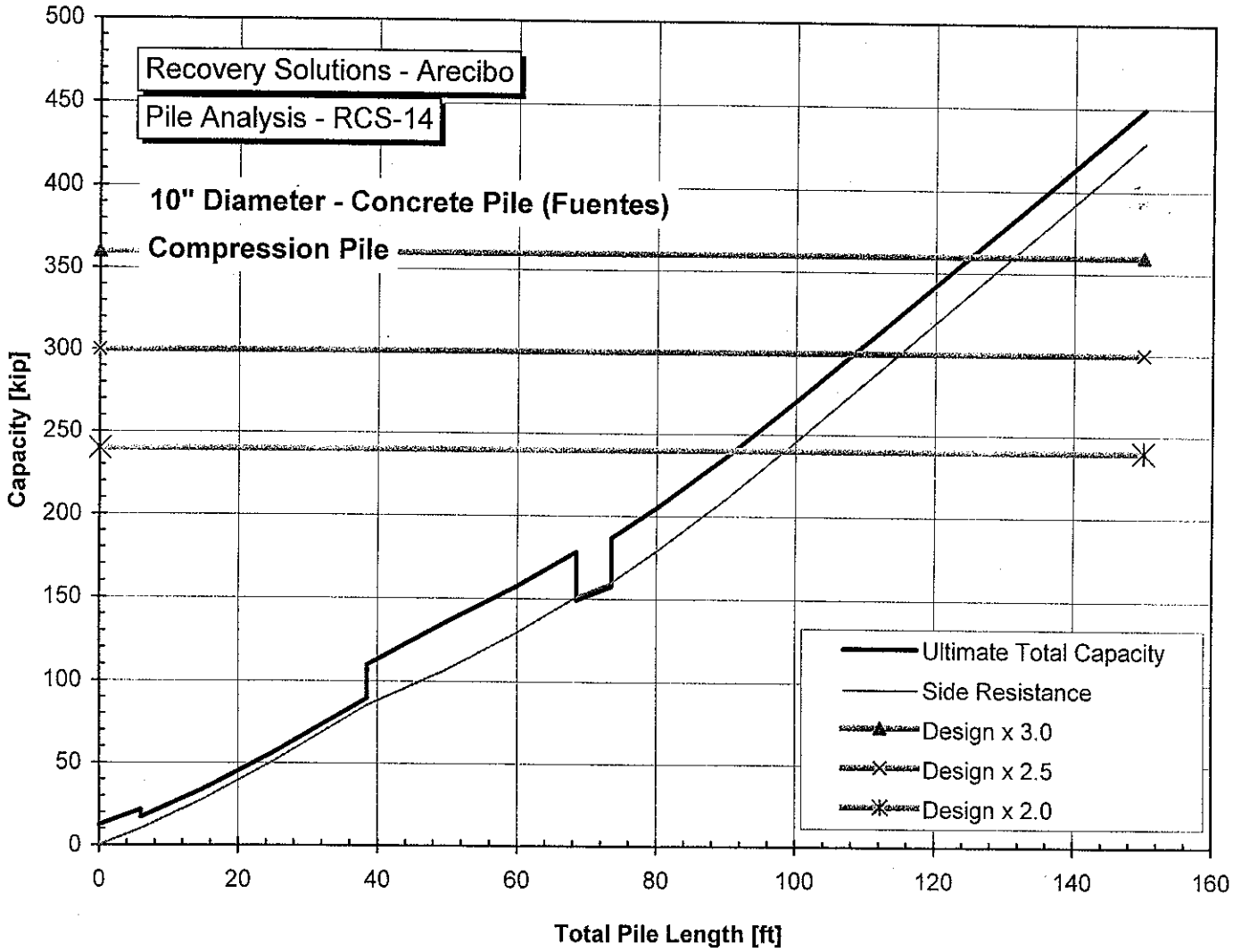



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

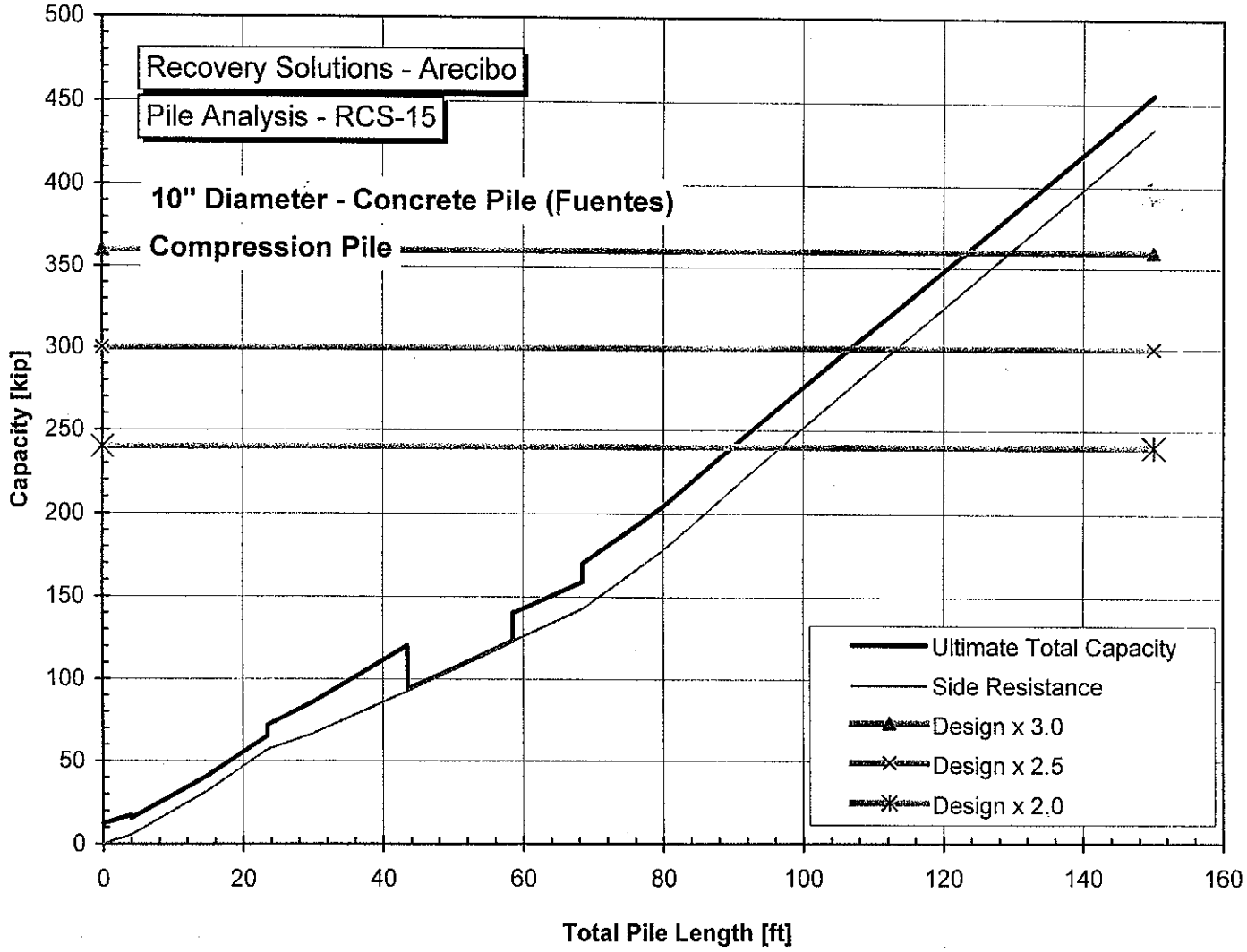



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

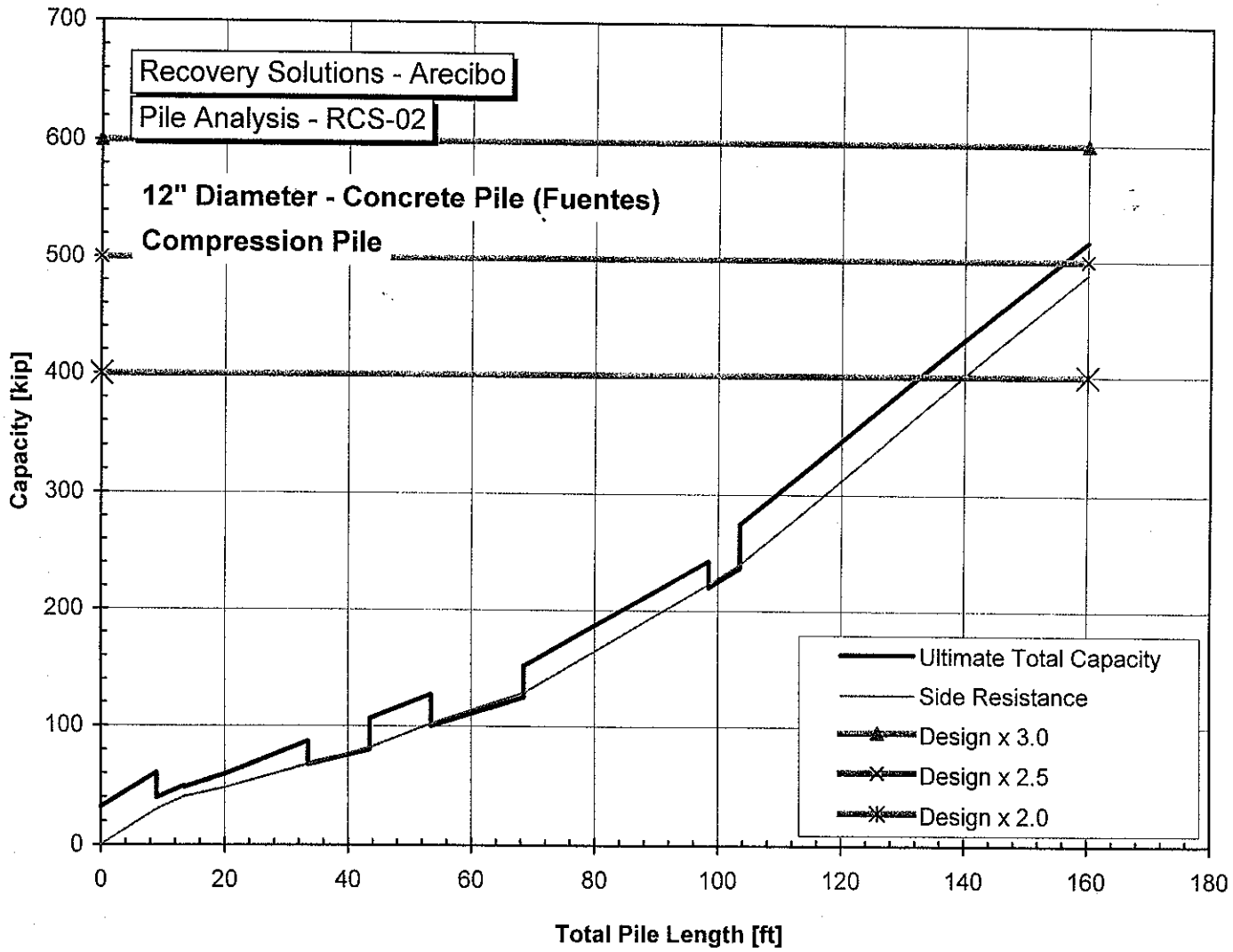



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 10 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

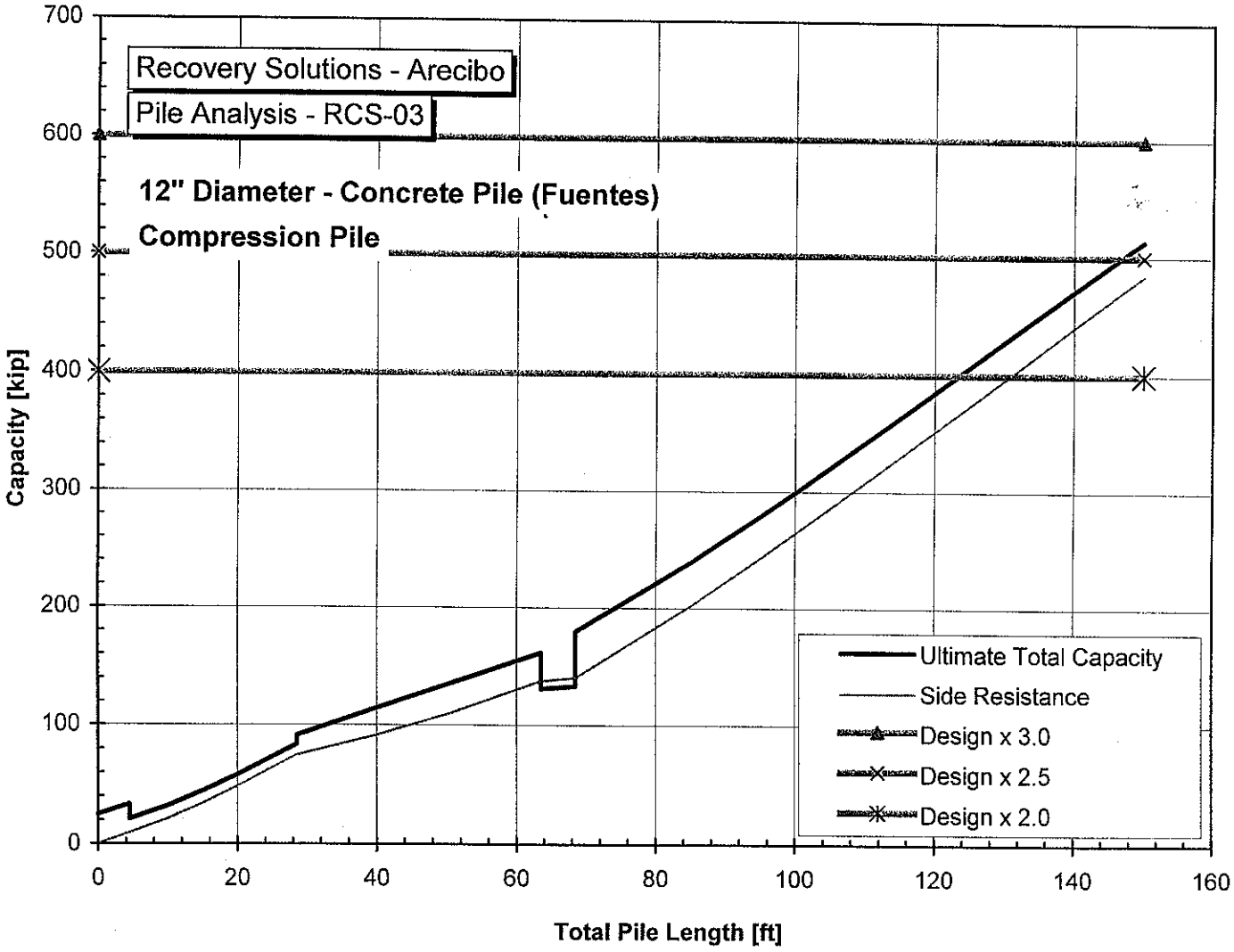



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

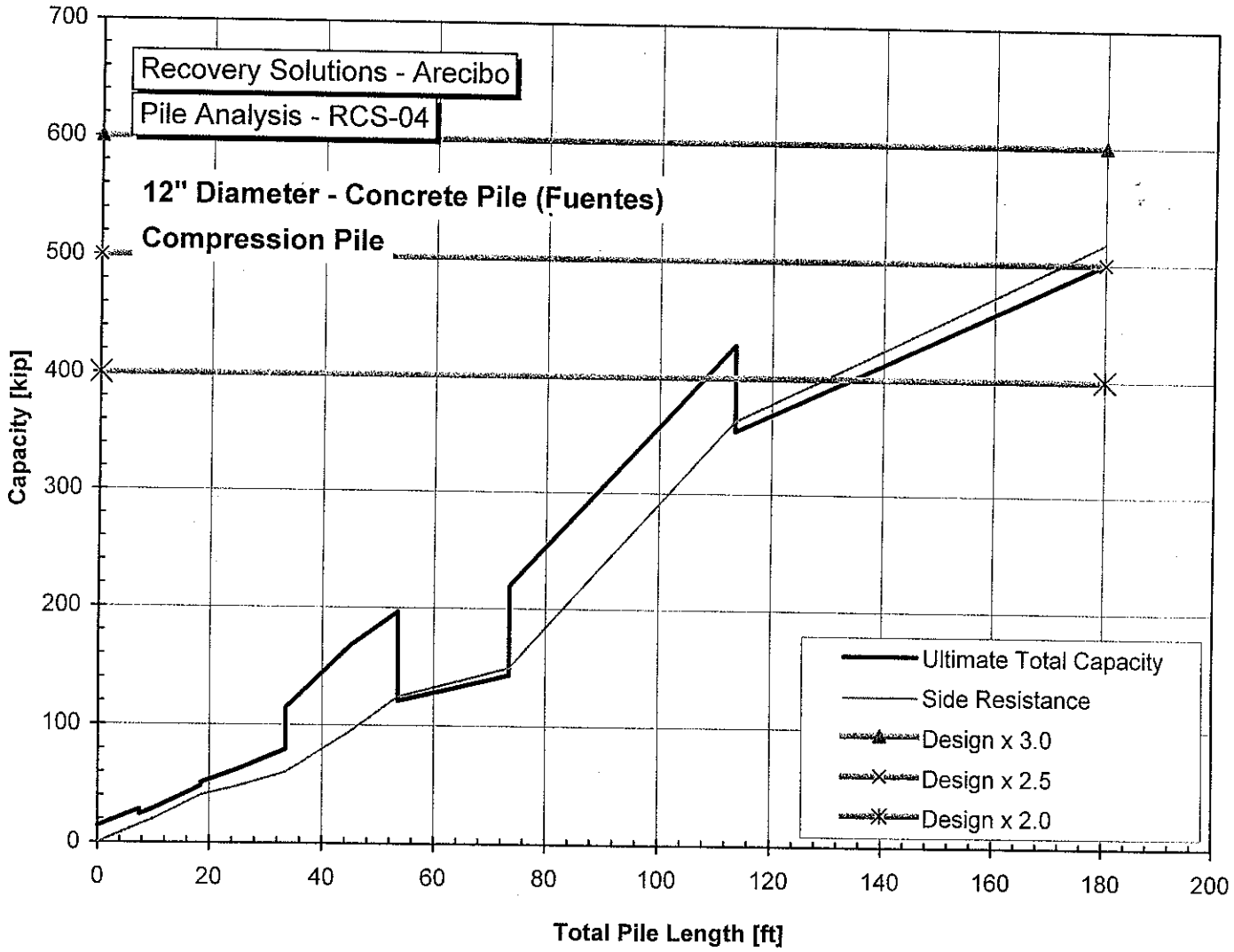



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

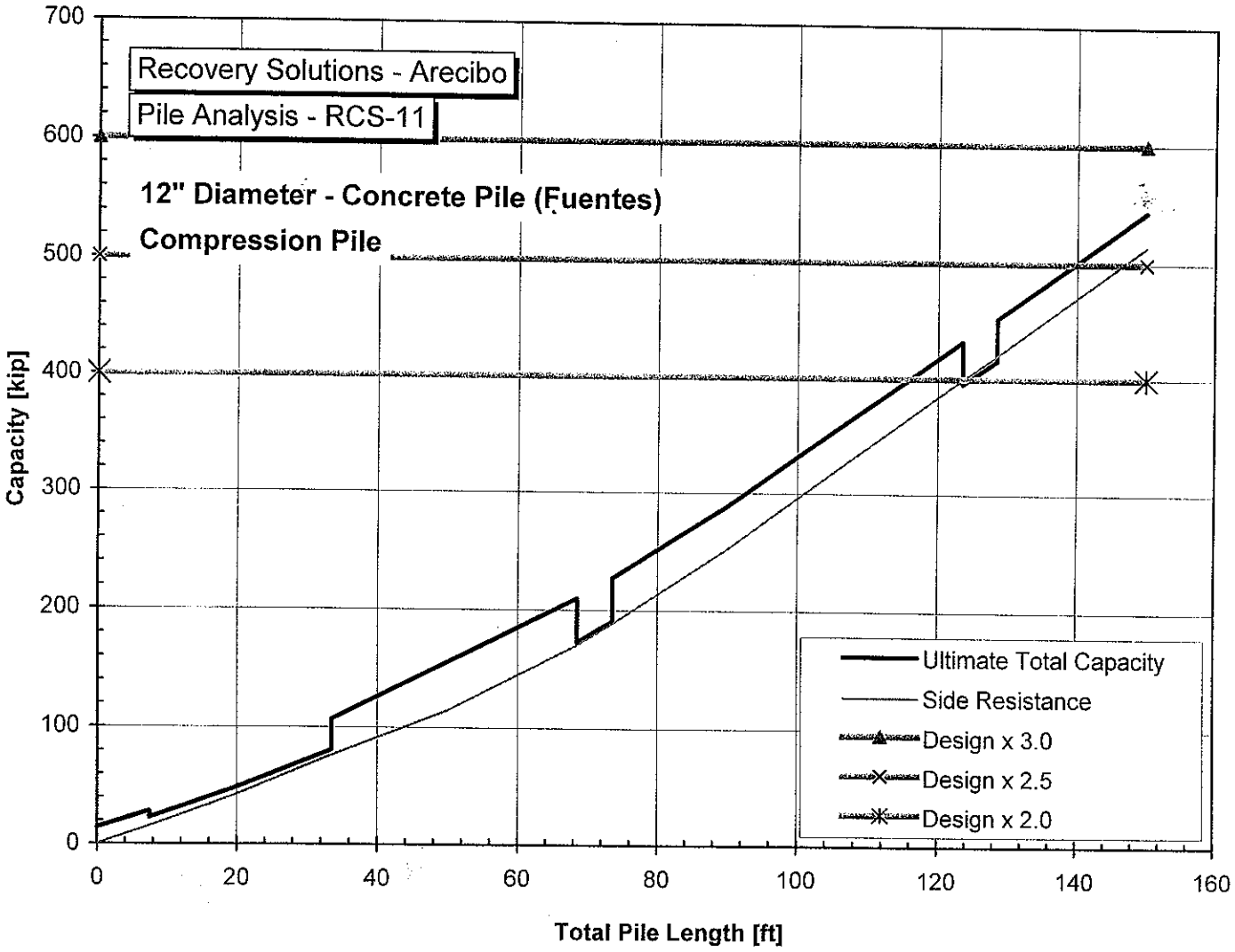



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

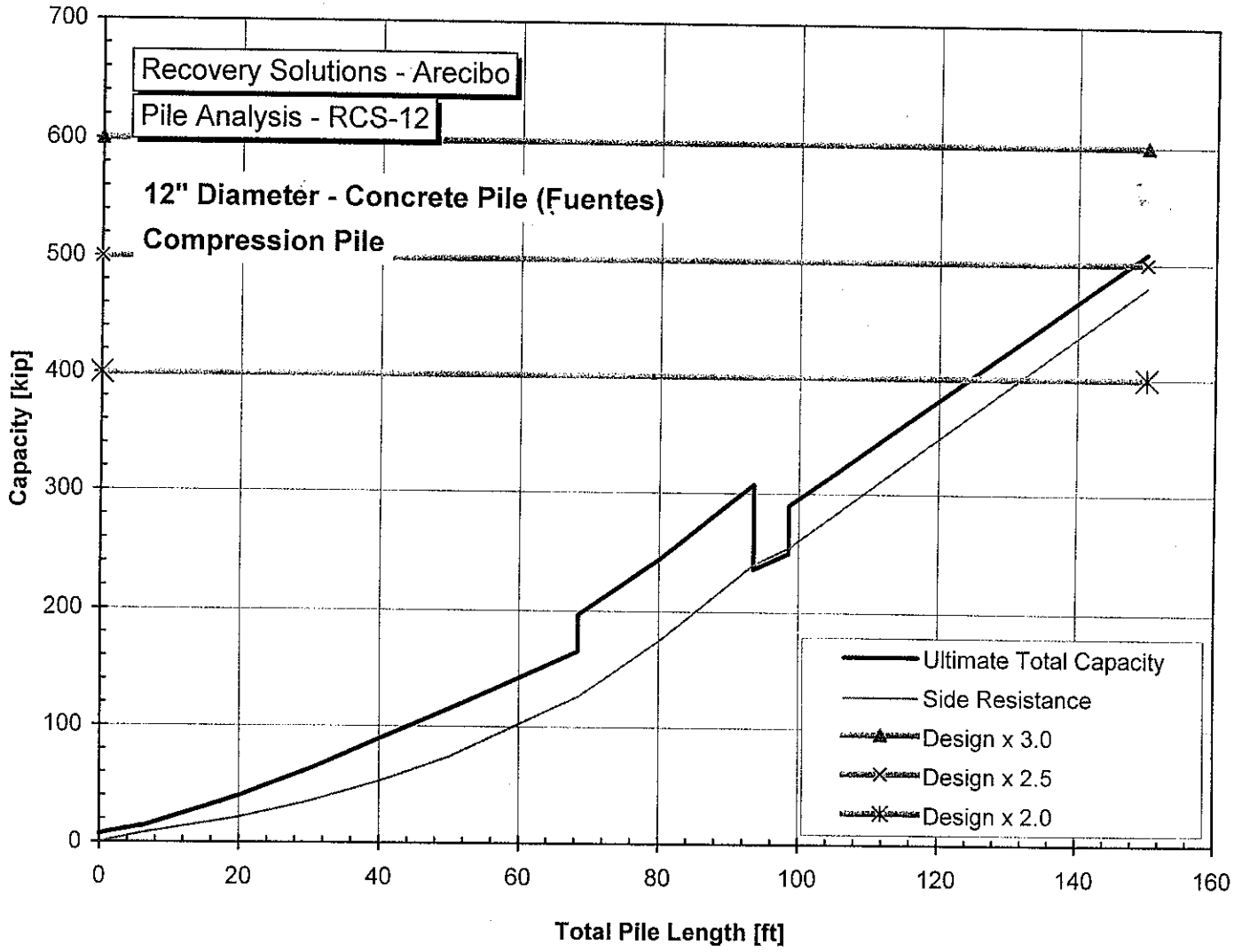



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

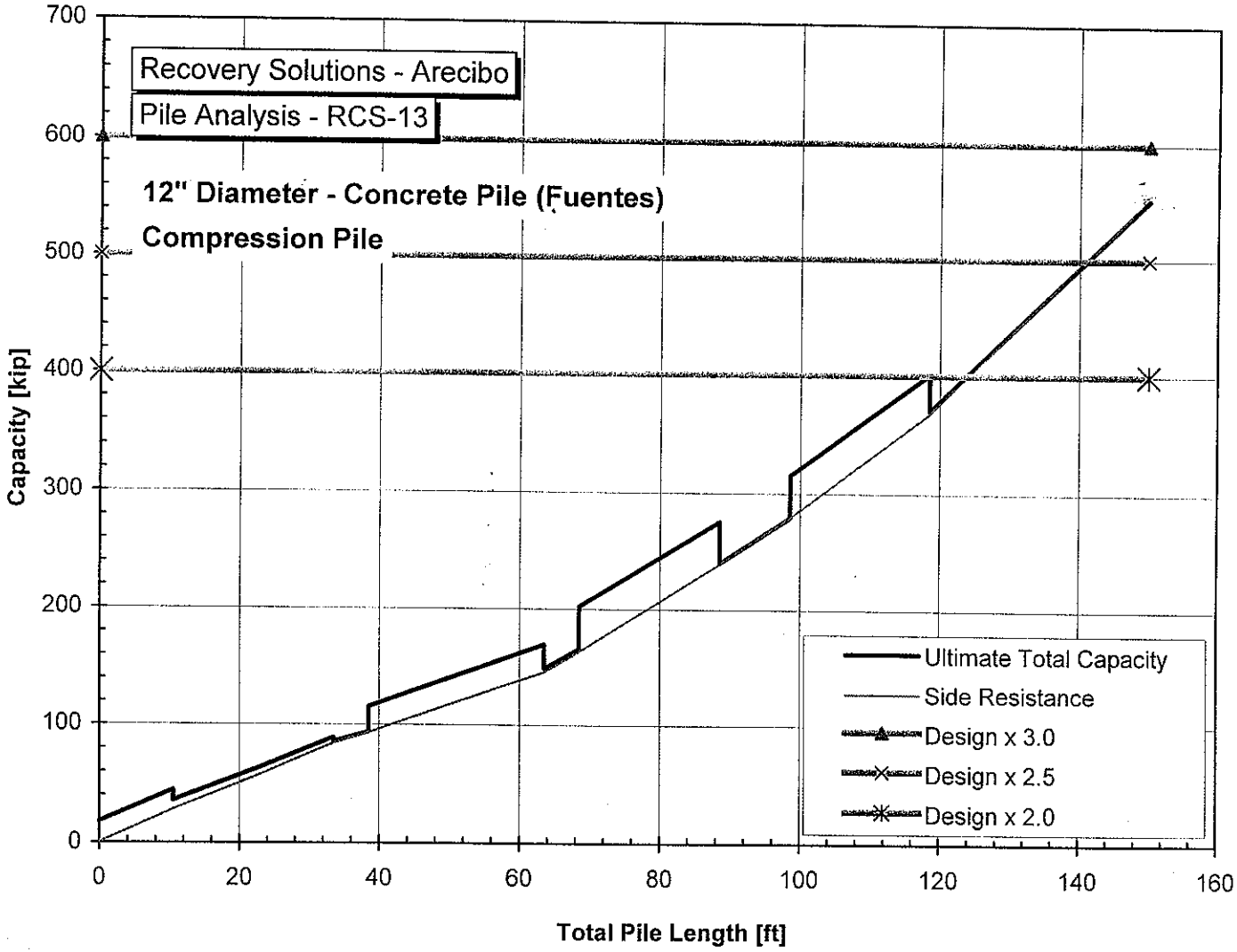



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

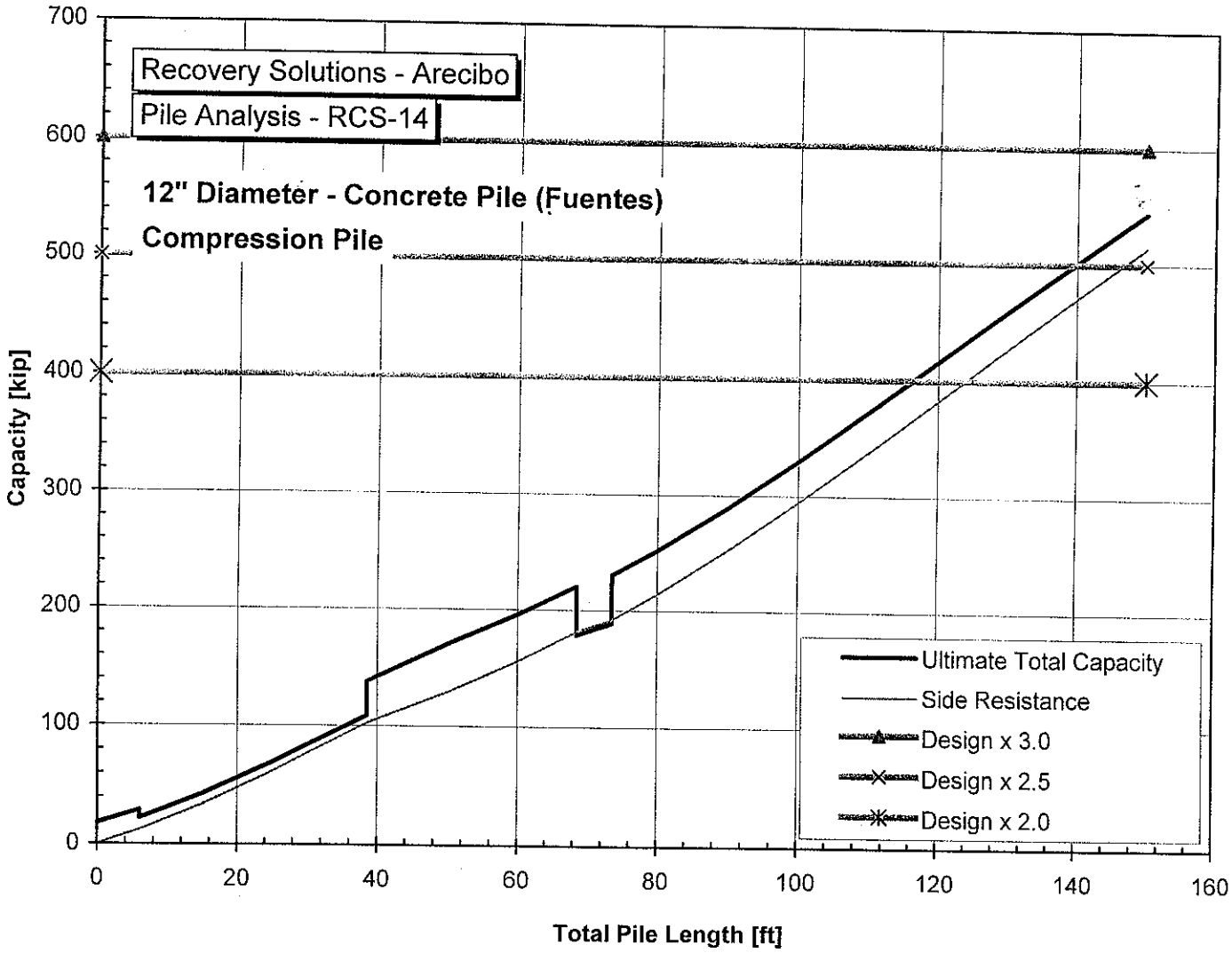



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

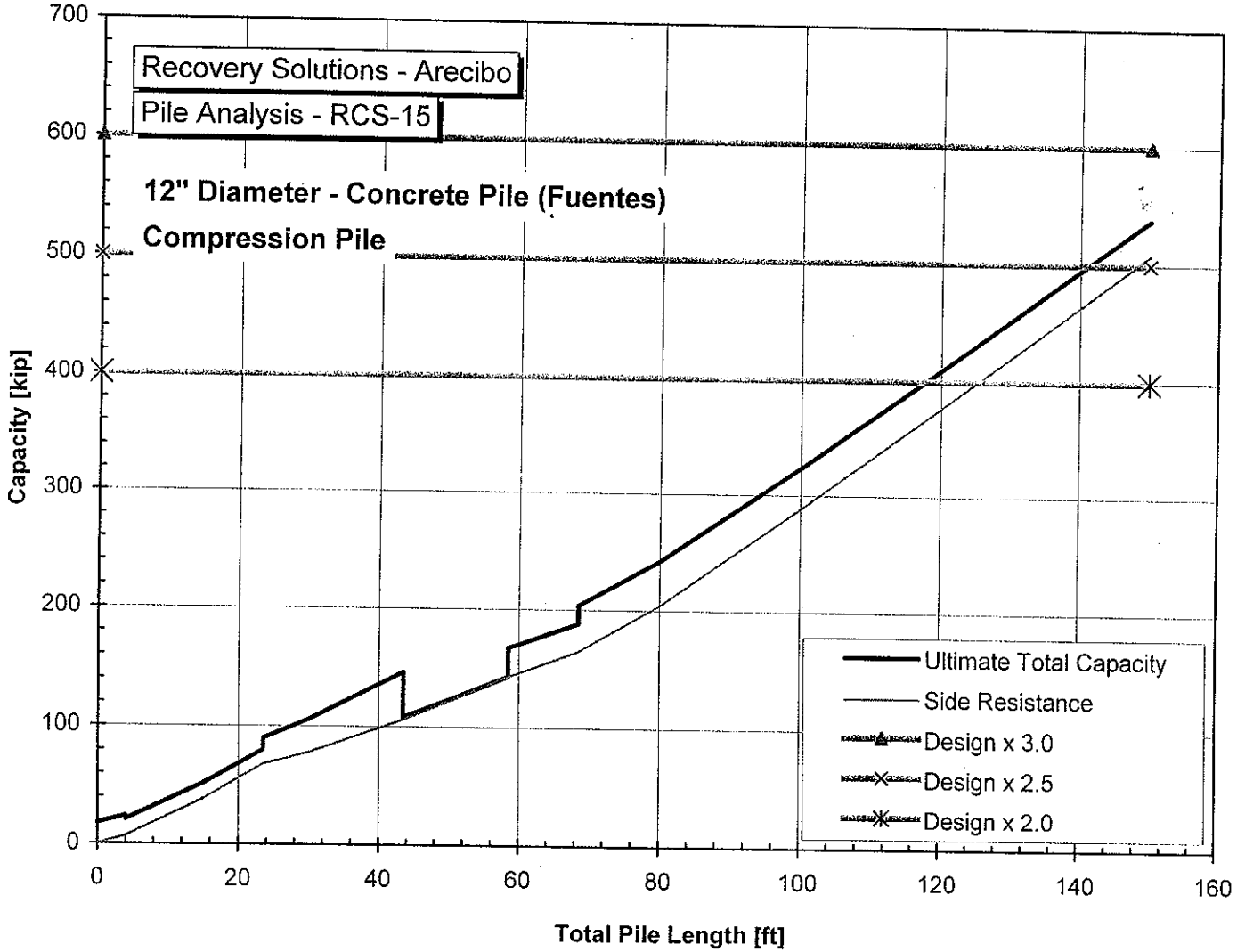



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

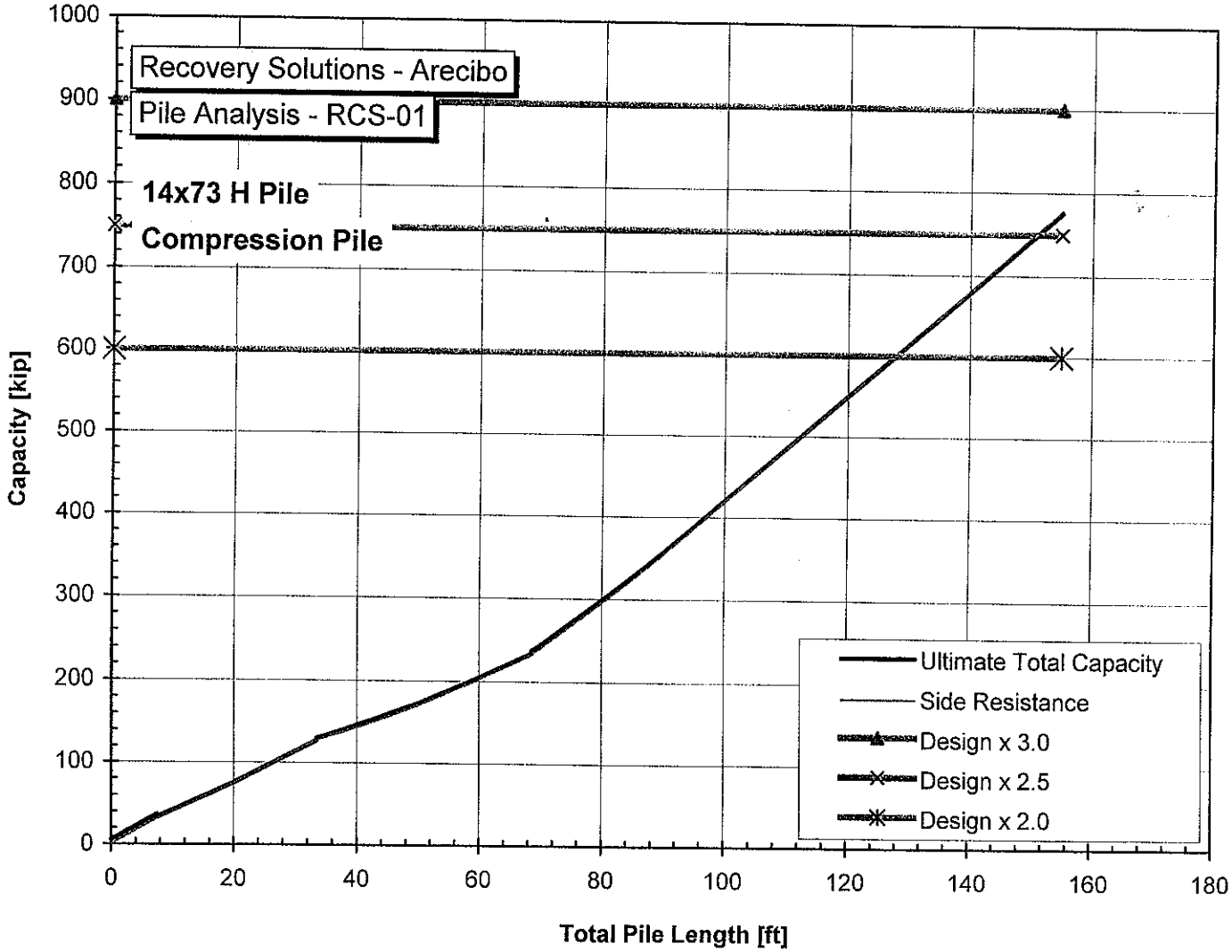



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

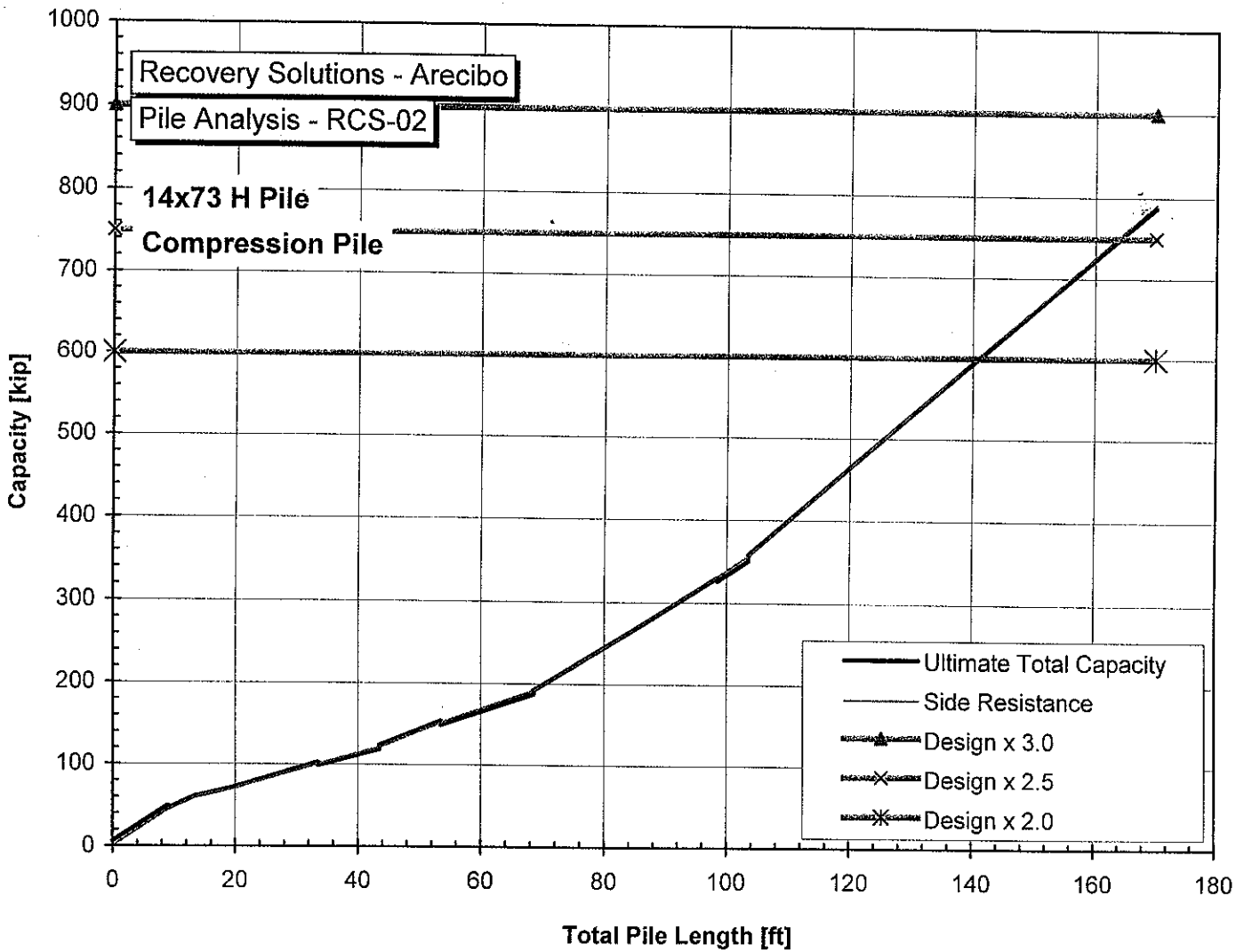



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

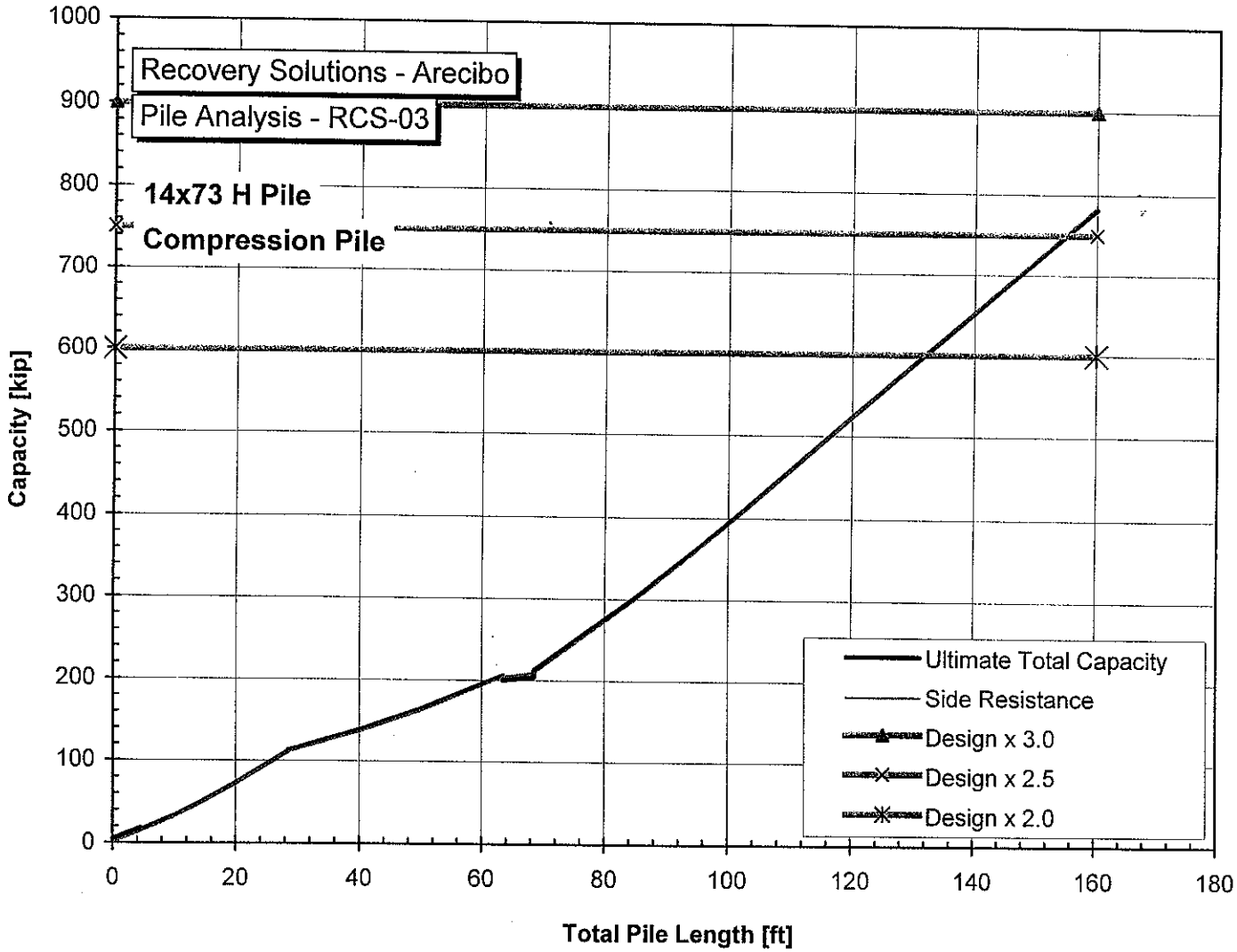



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

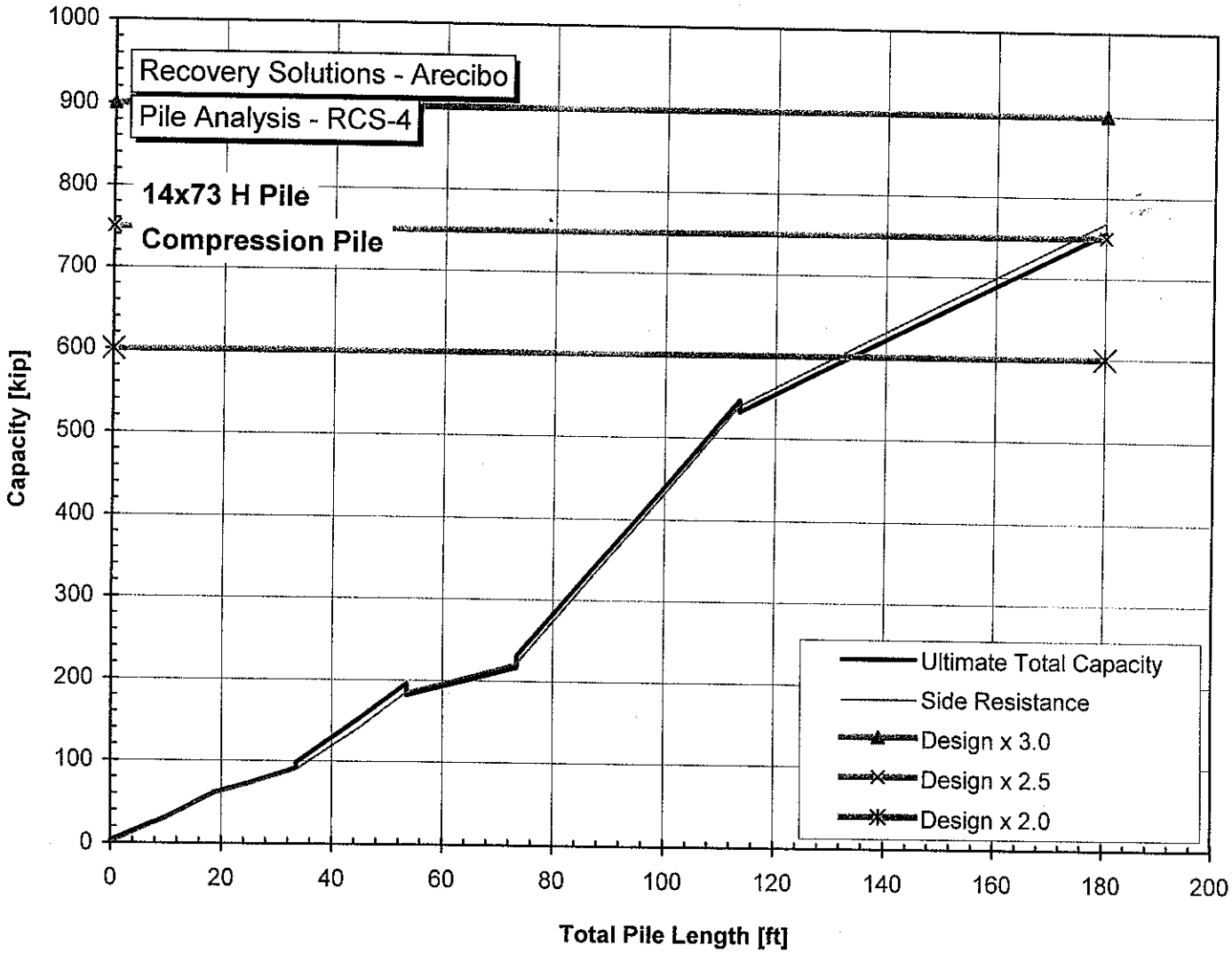



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

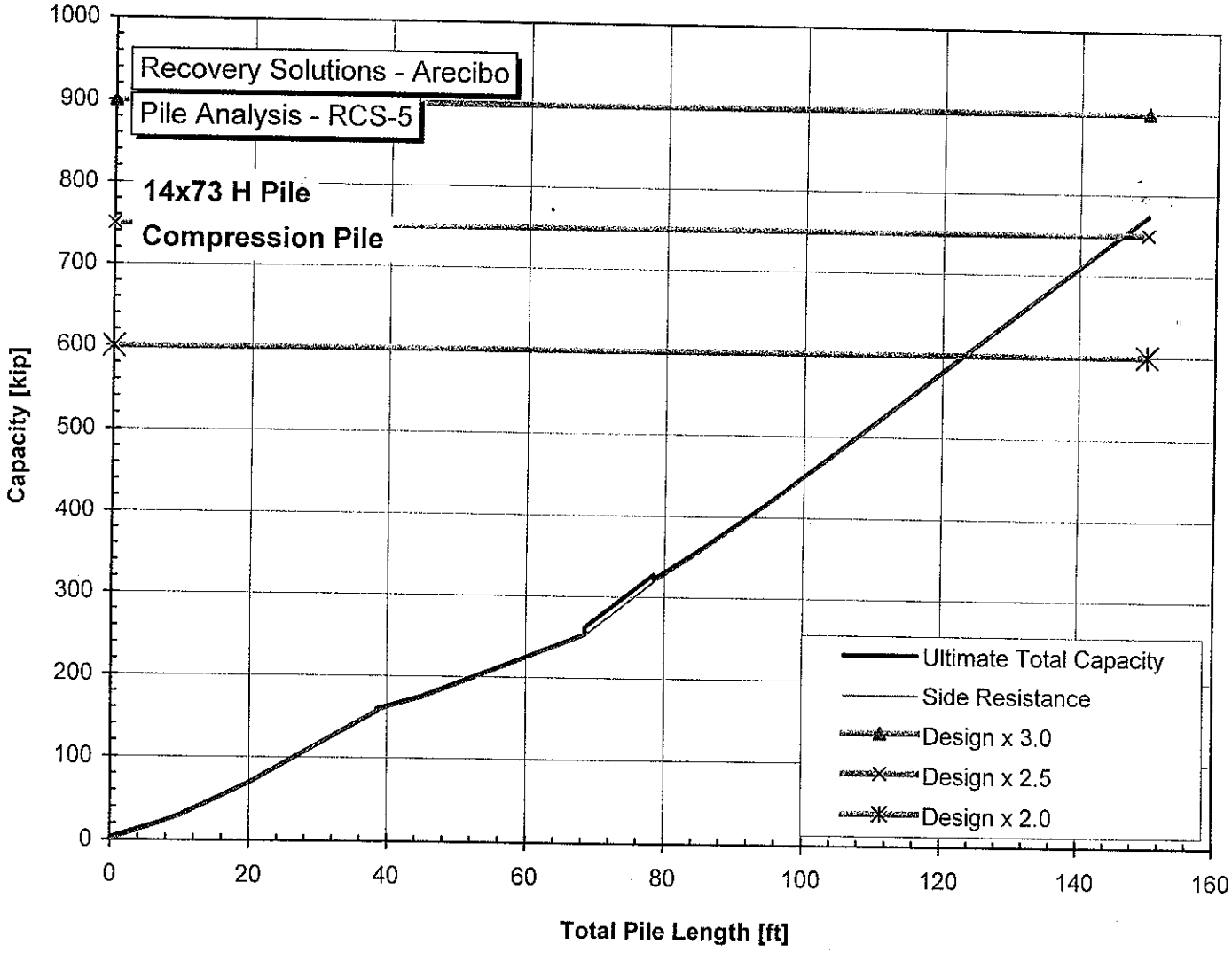



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

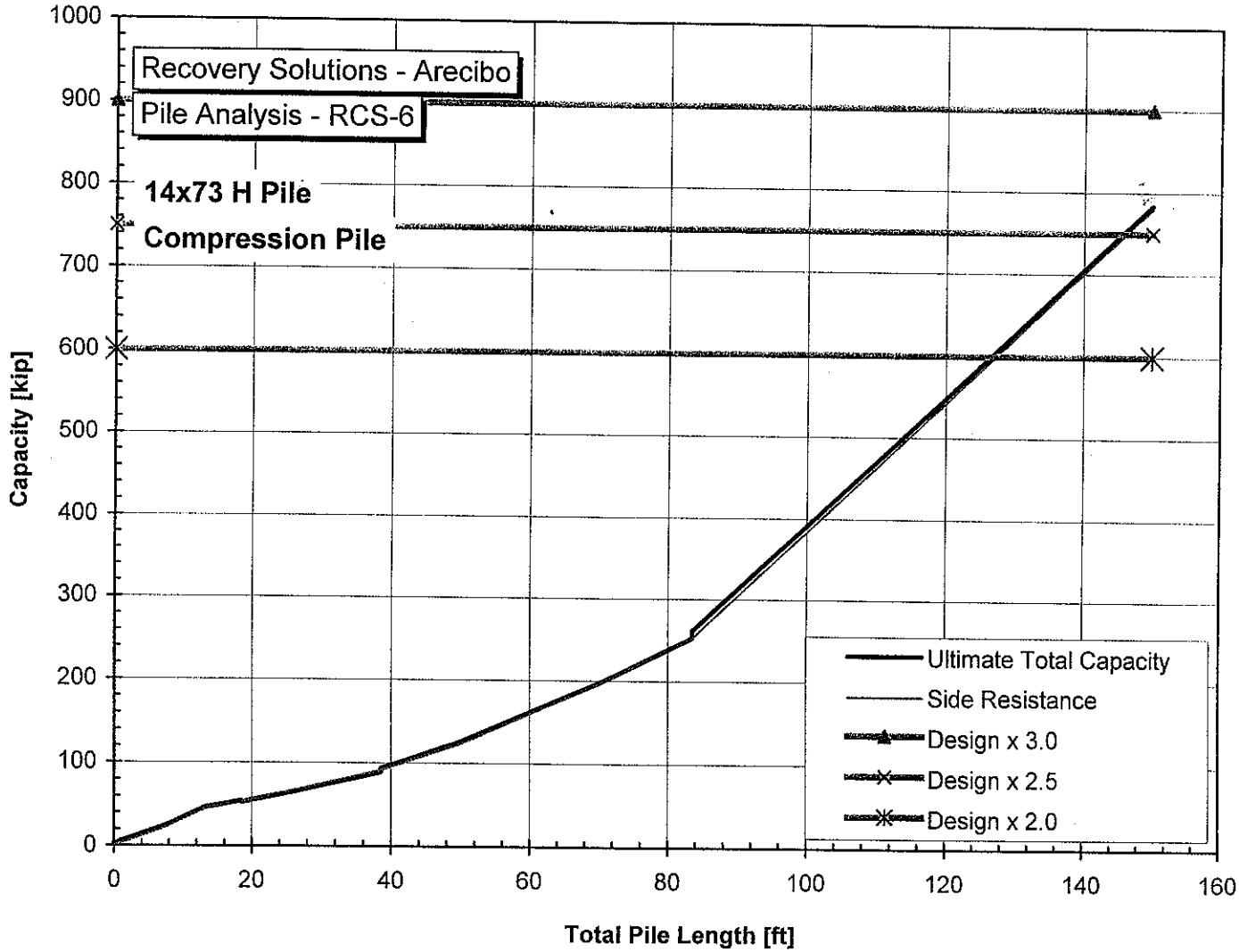



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

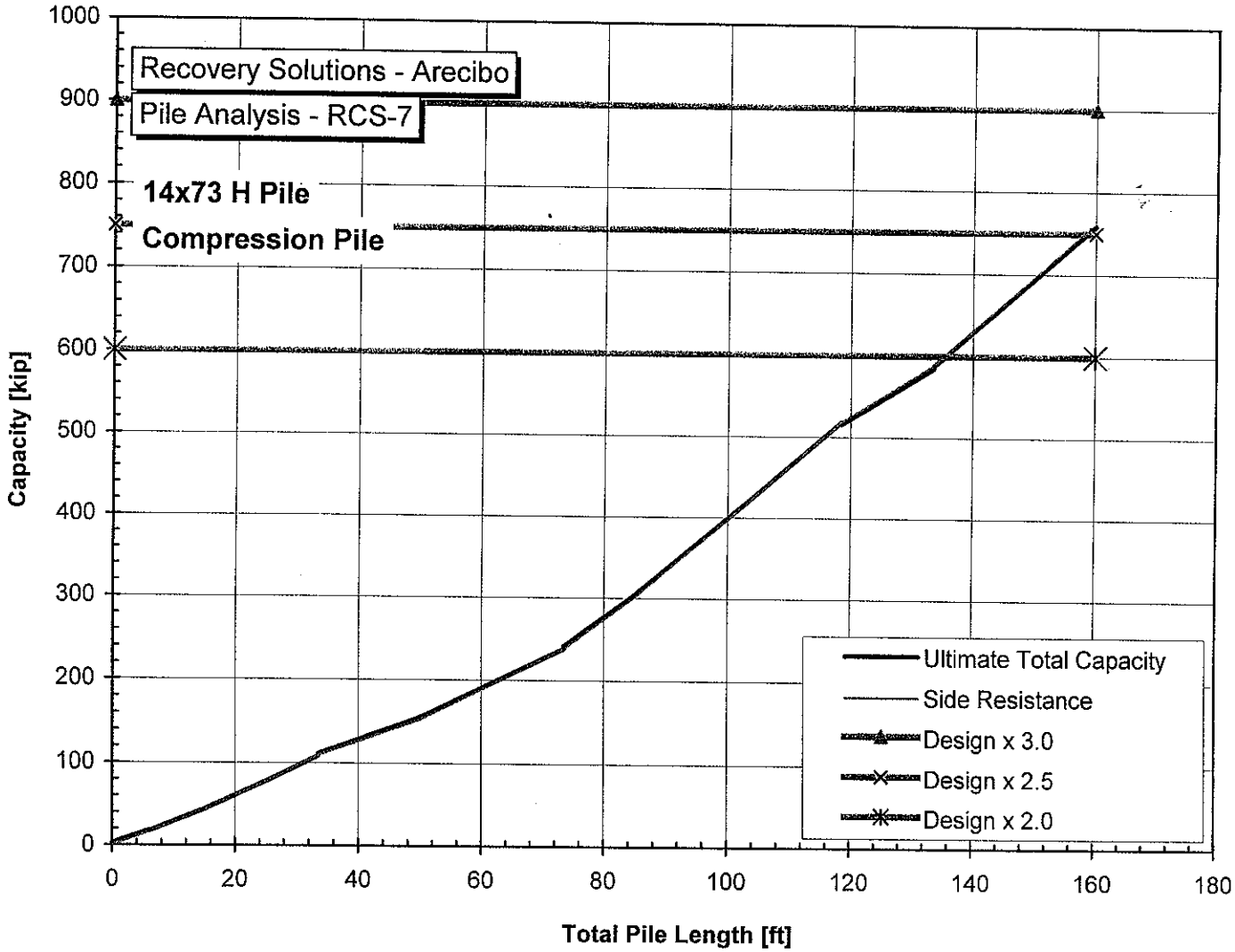



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

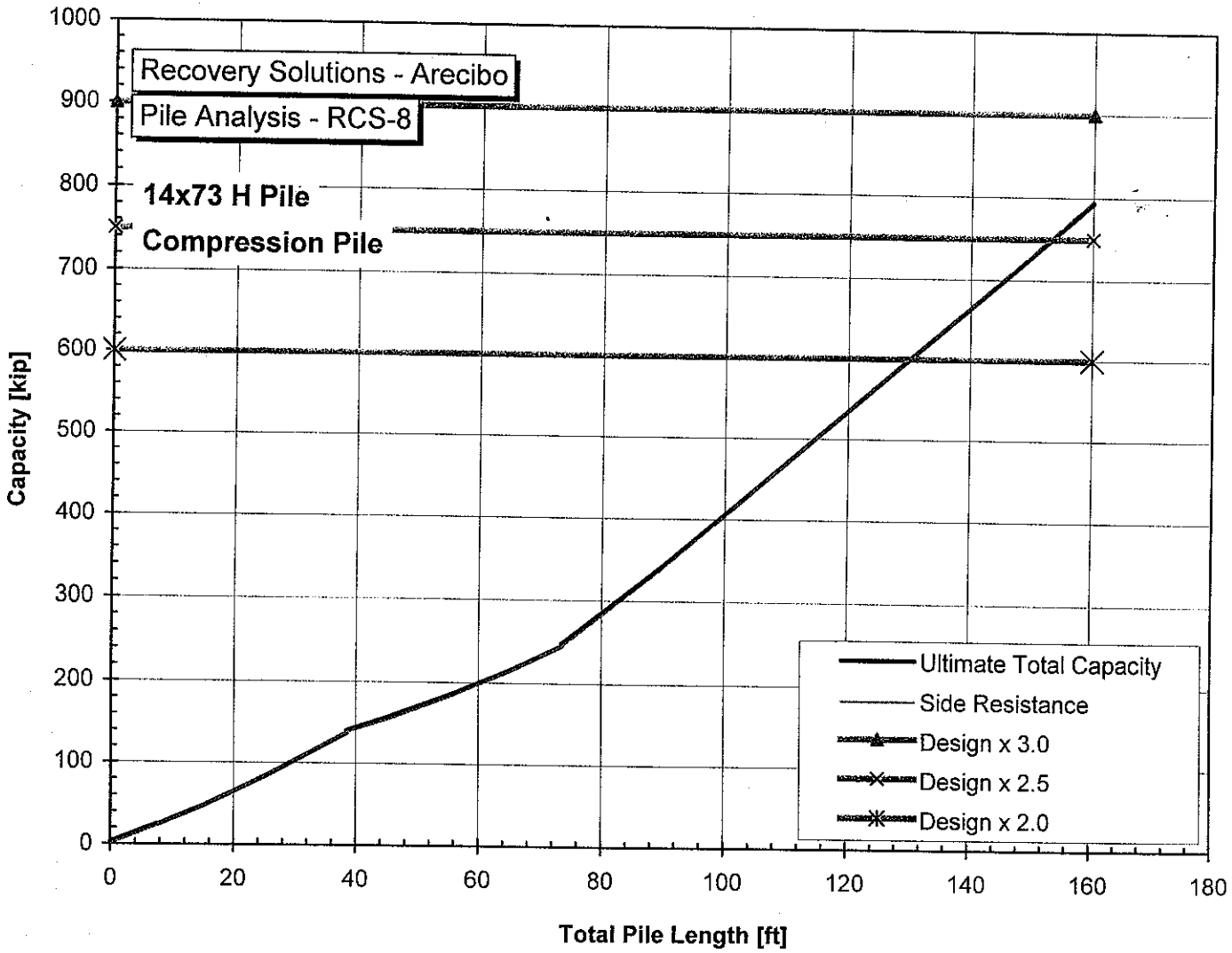



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

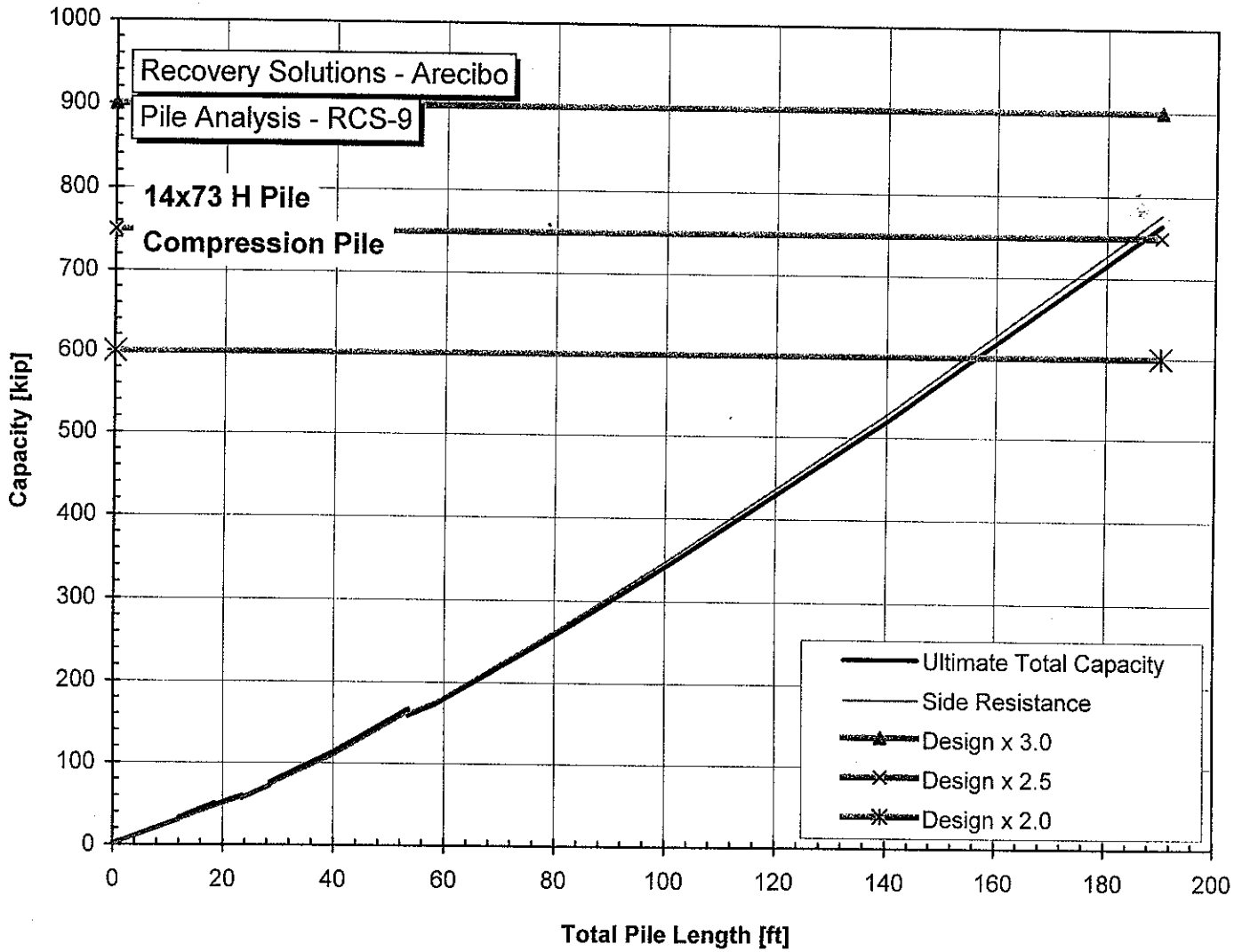



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

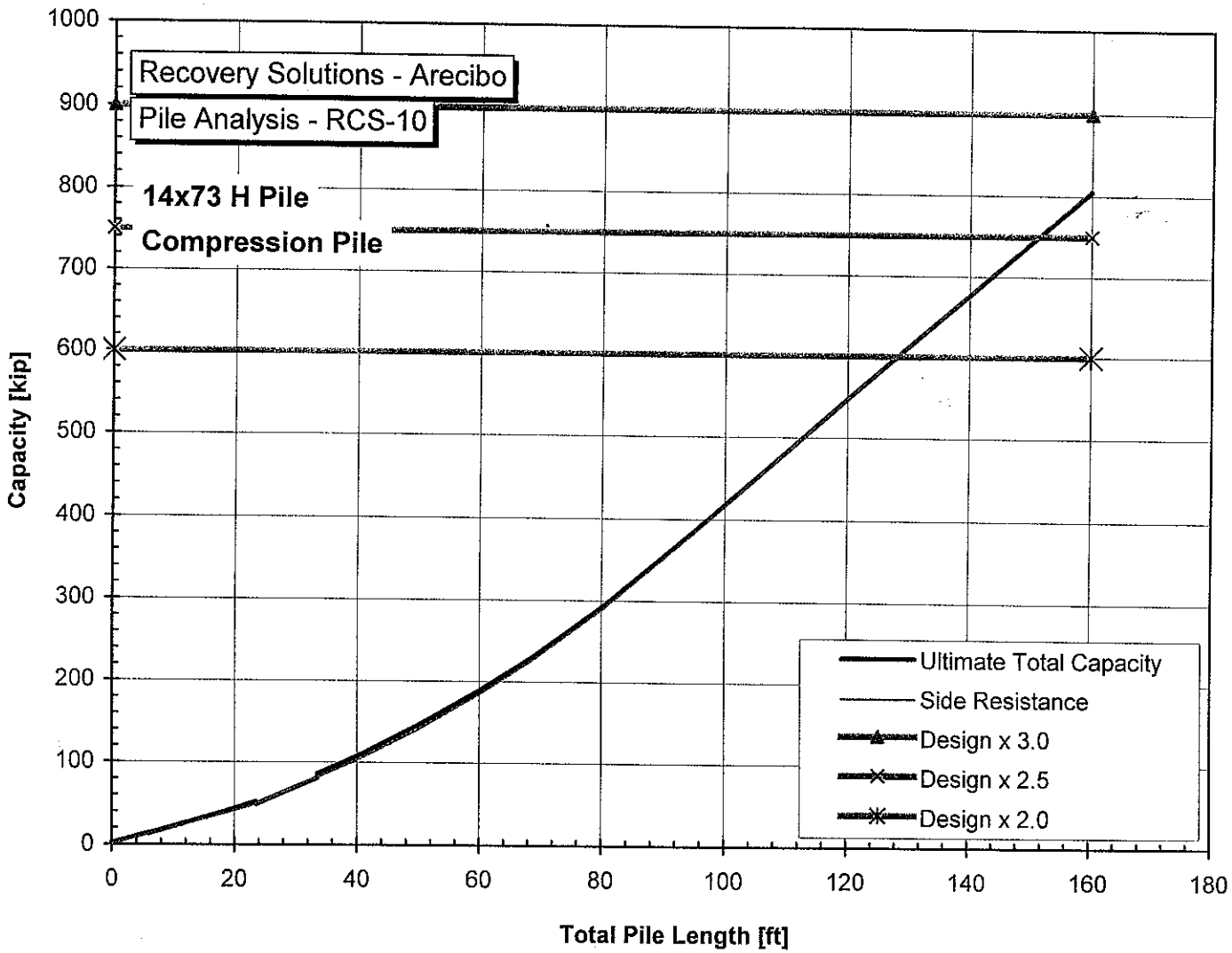



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

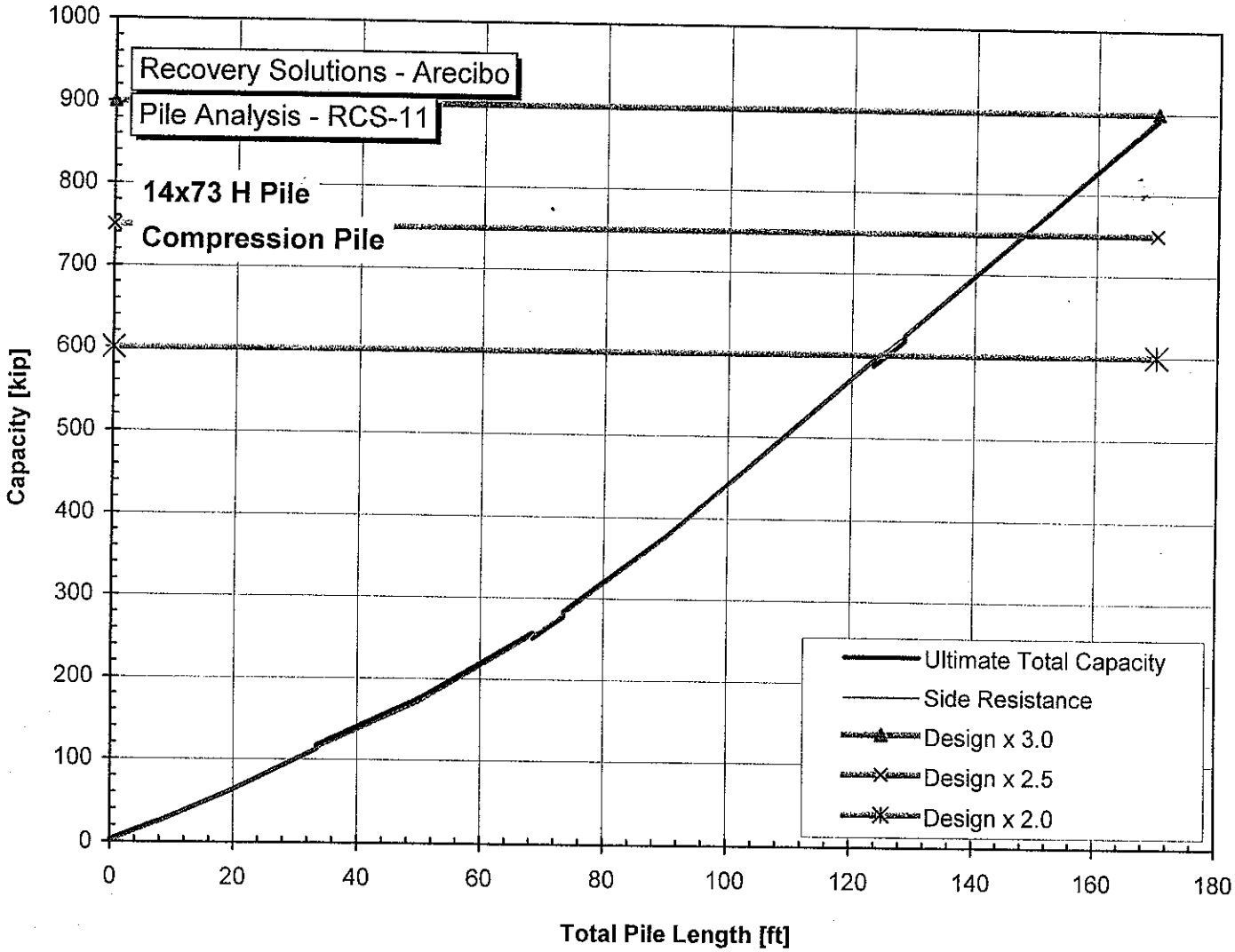



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

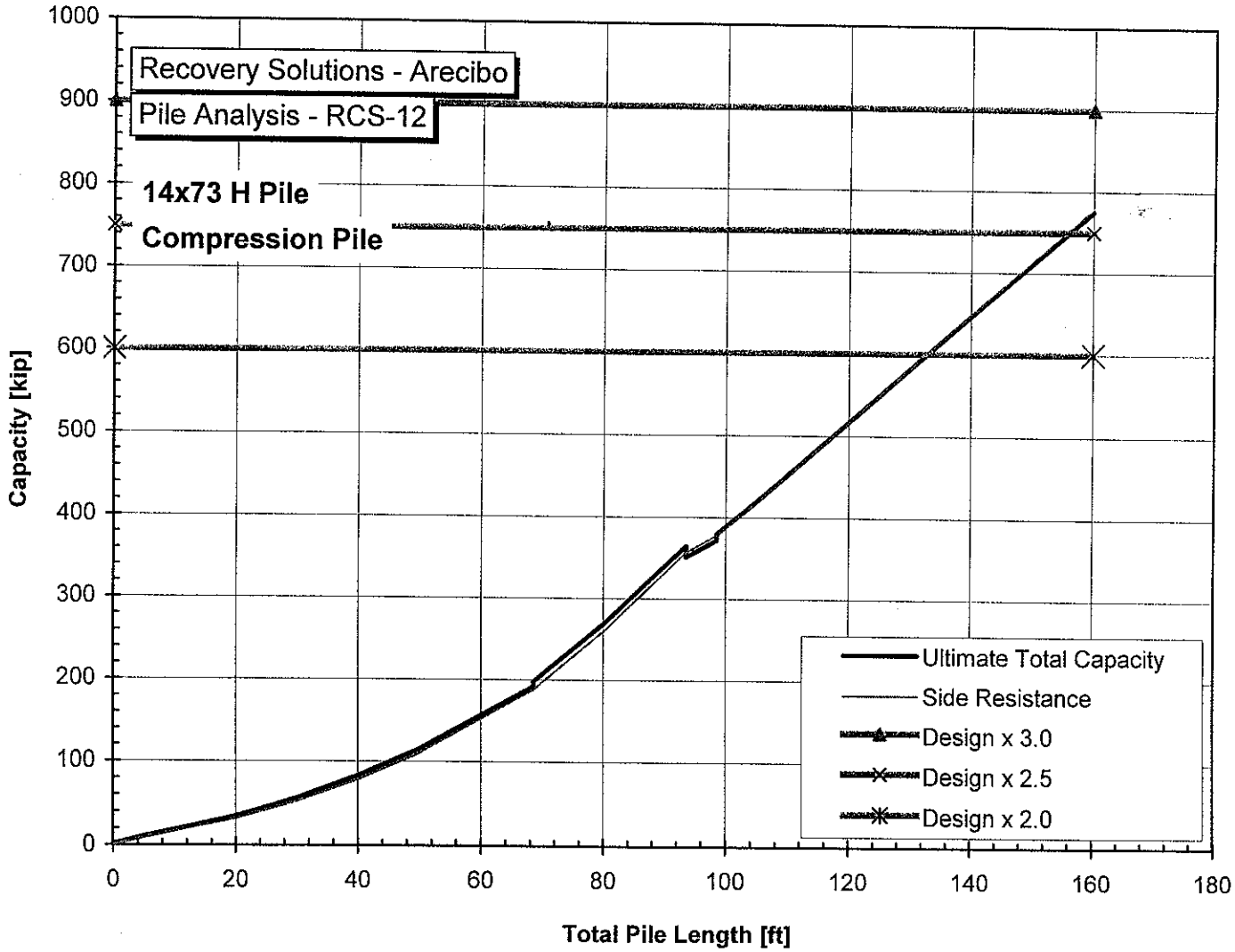



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

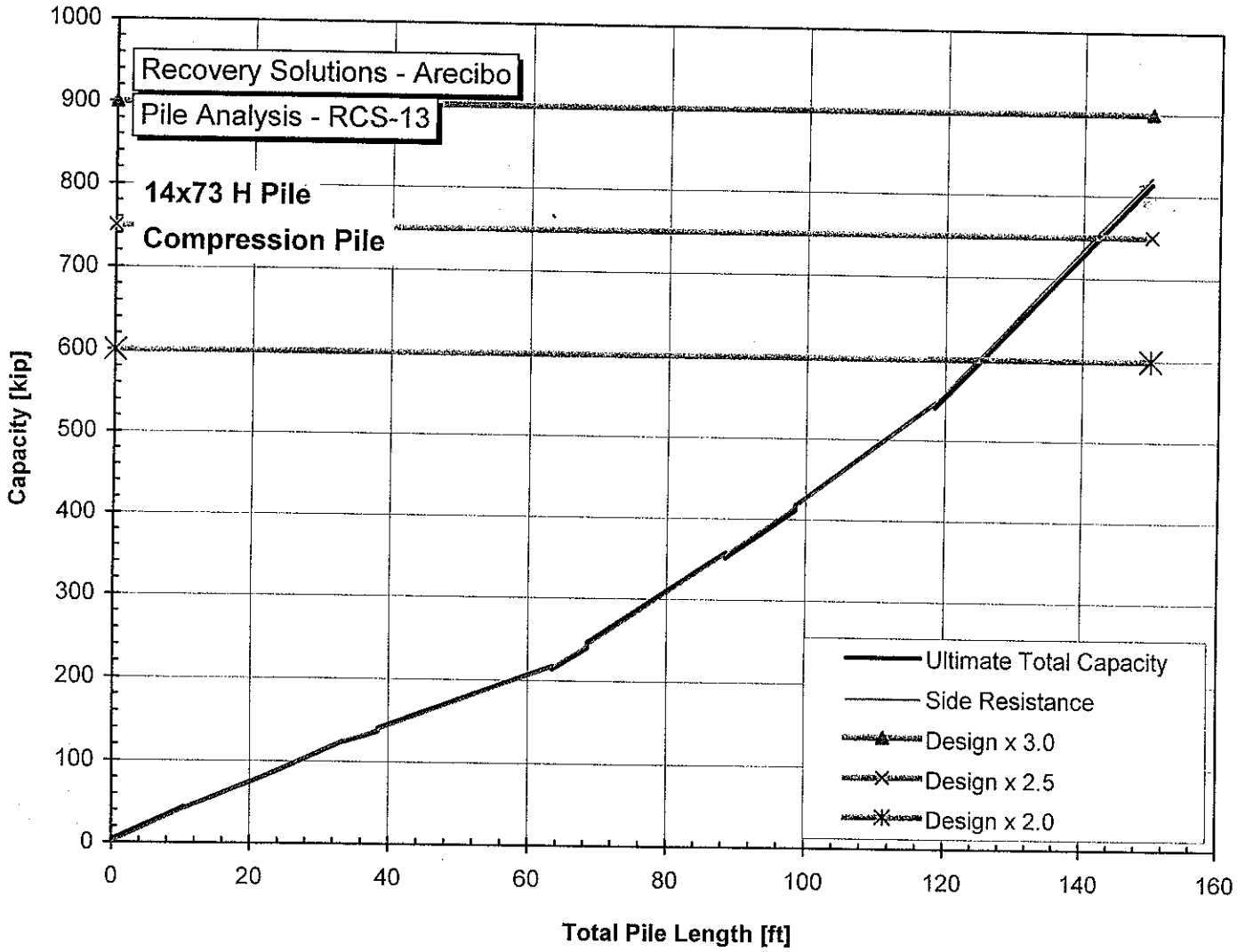



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

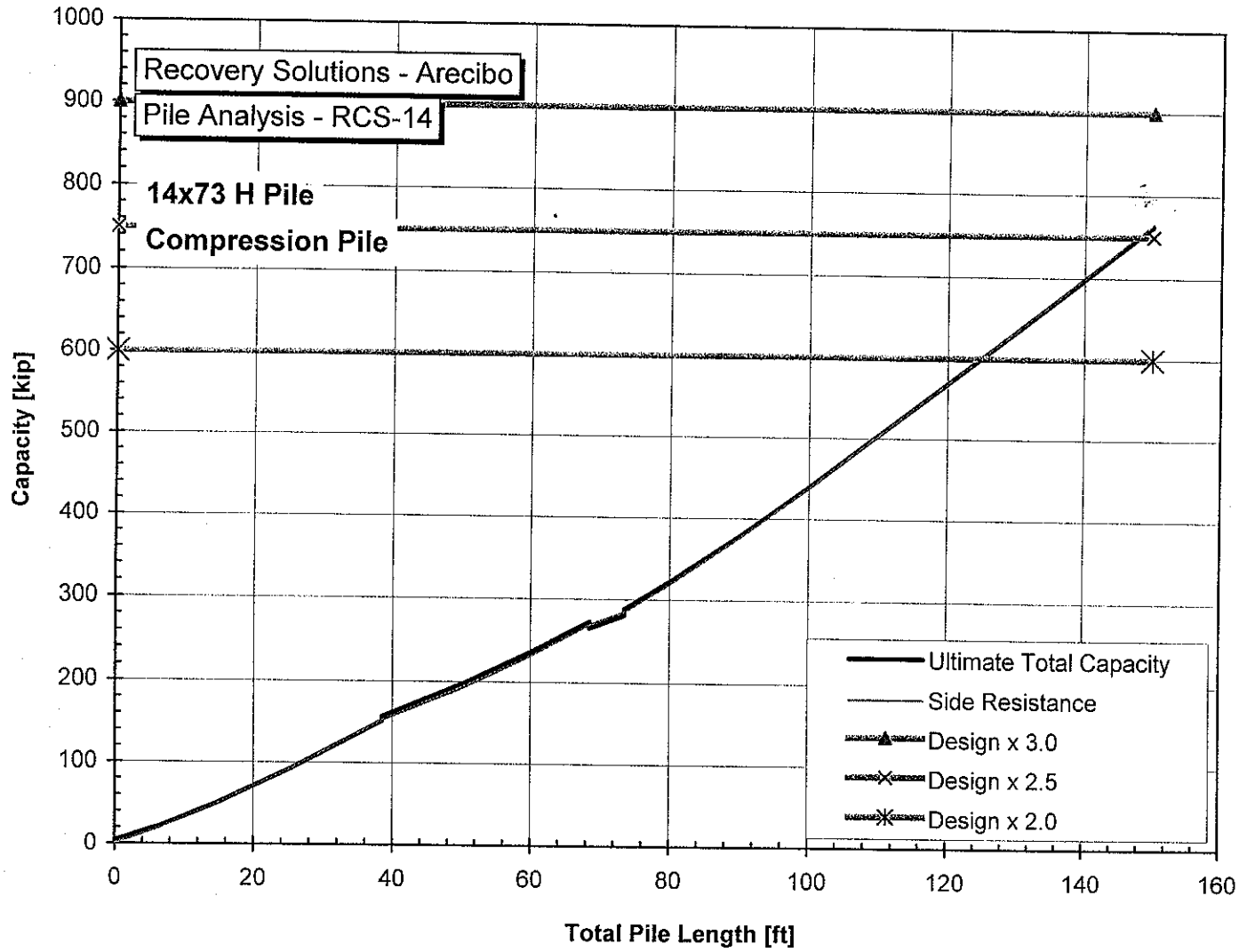



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

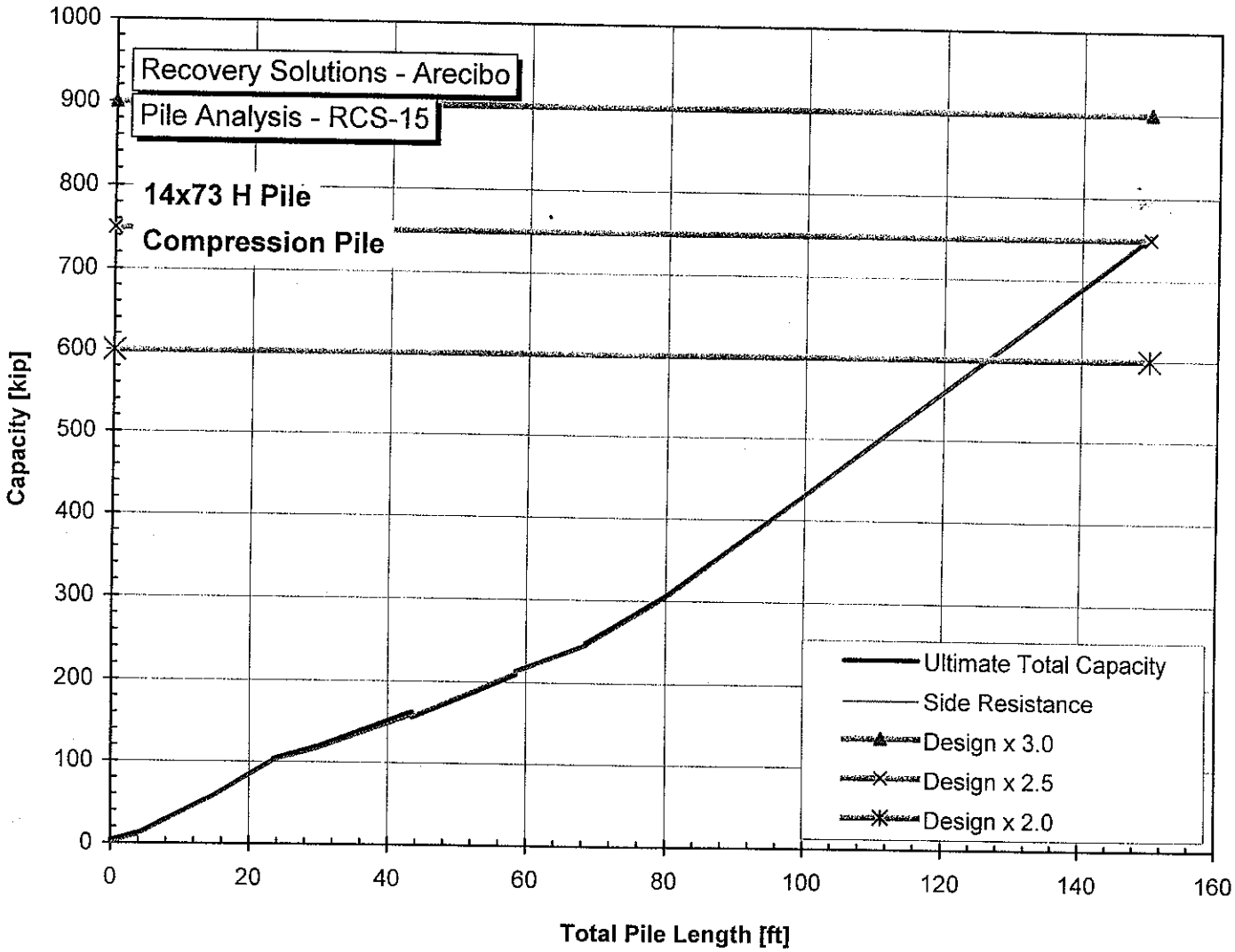



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

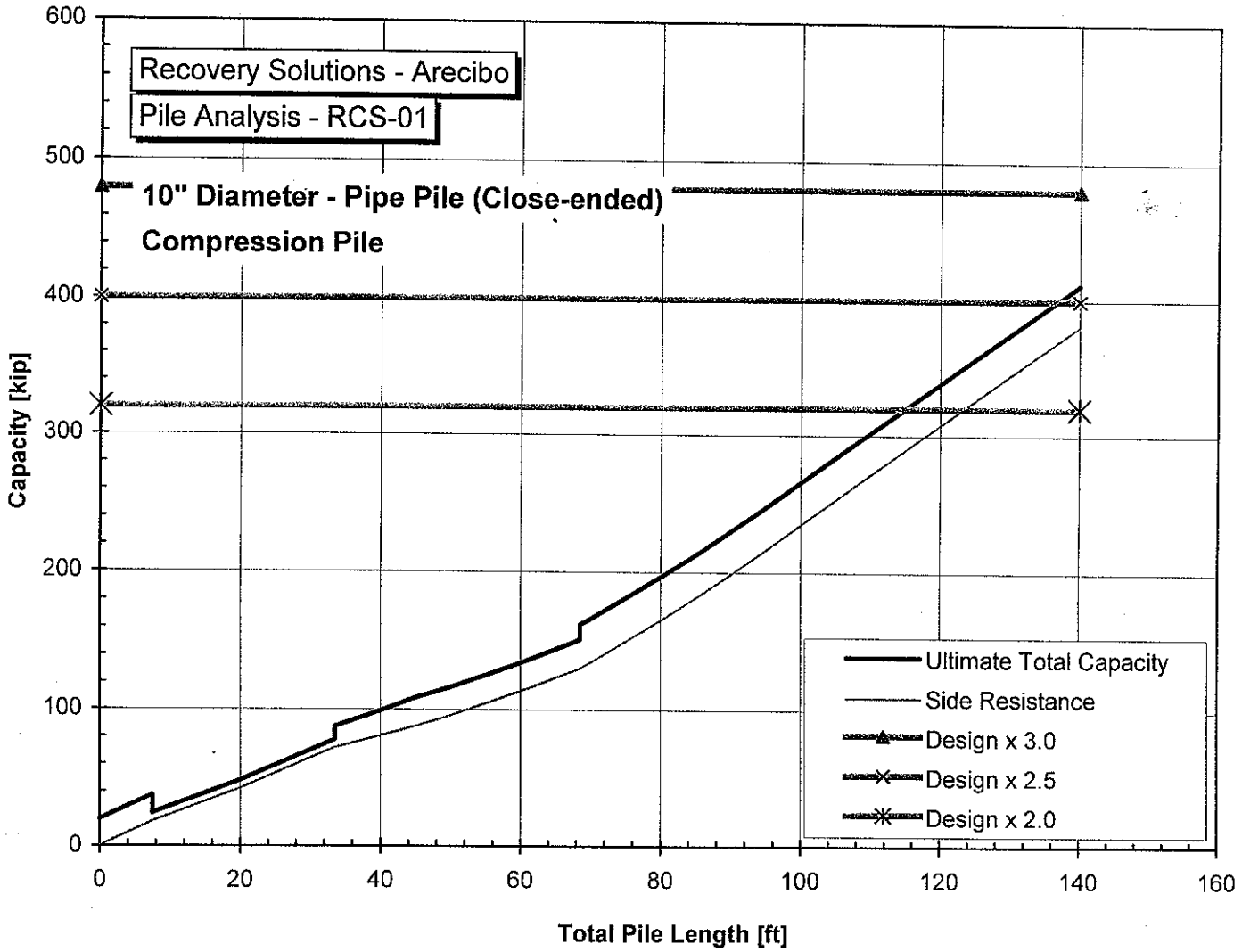



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 14x73 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

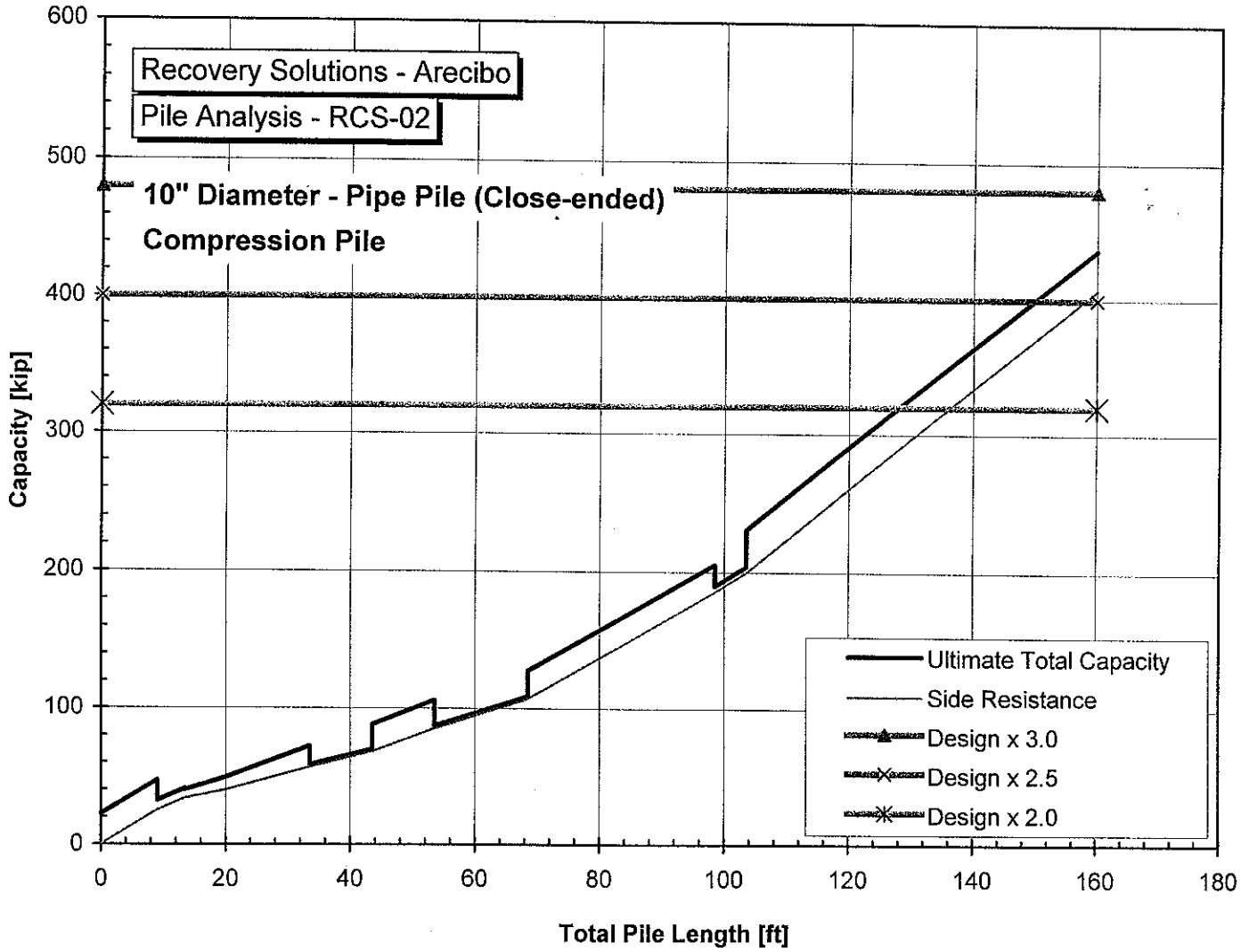



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-01 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

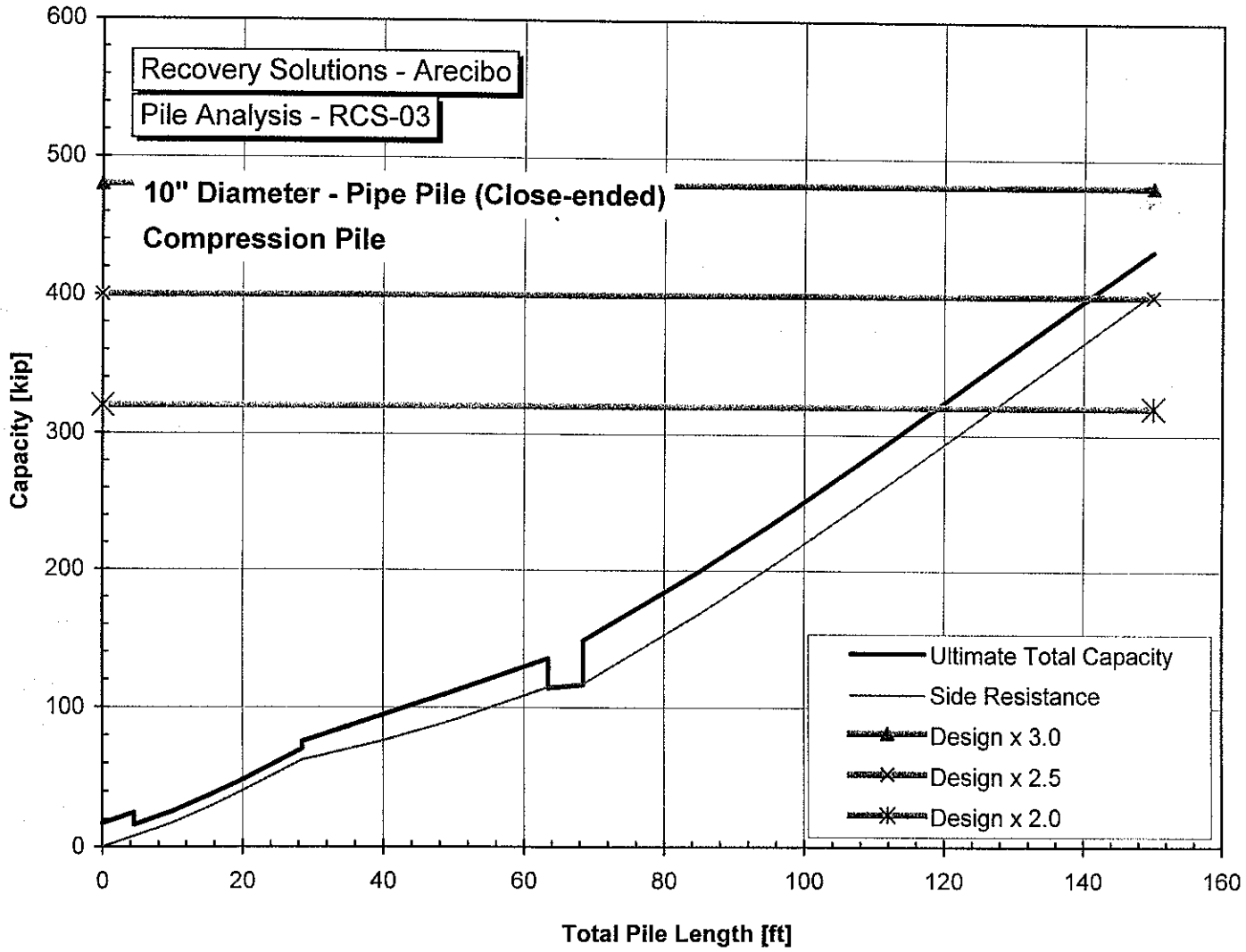



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-02 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

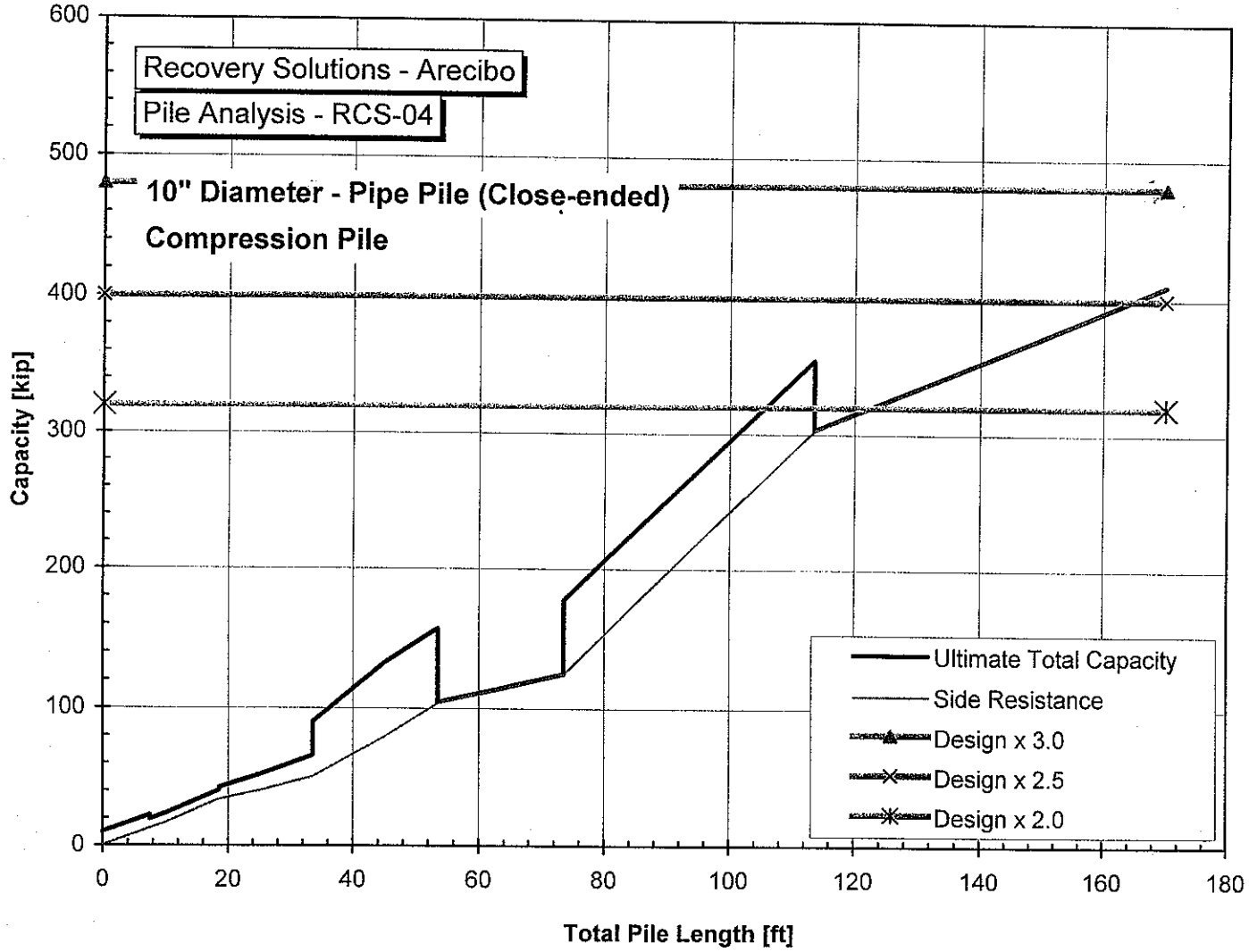



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-03 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

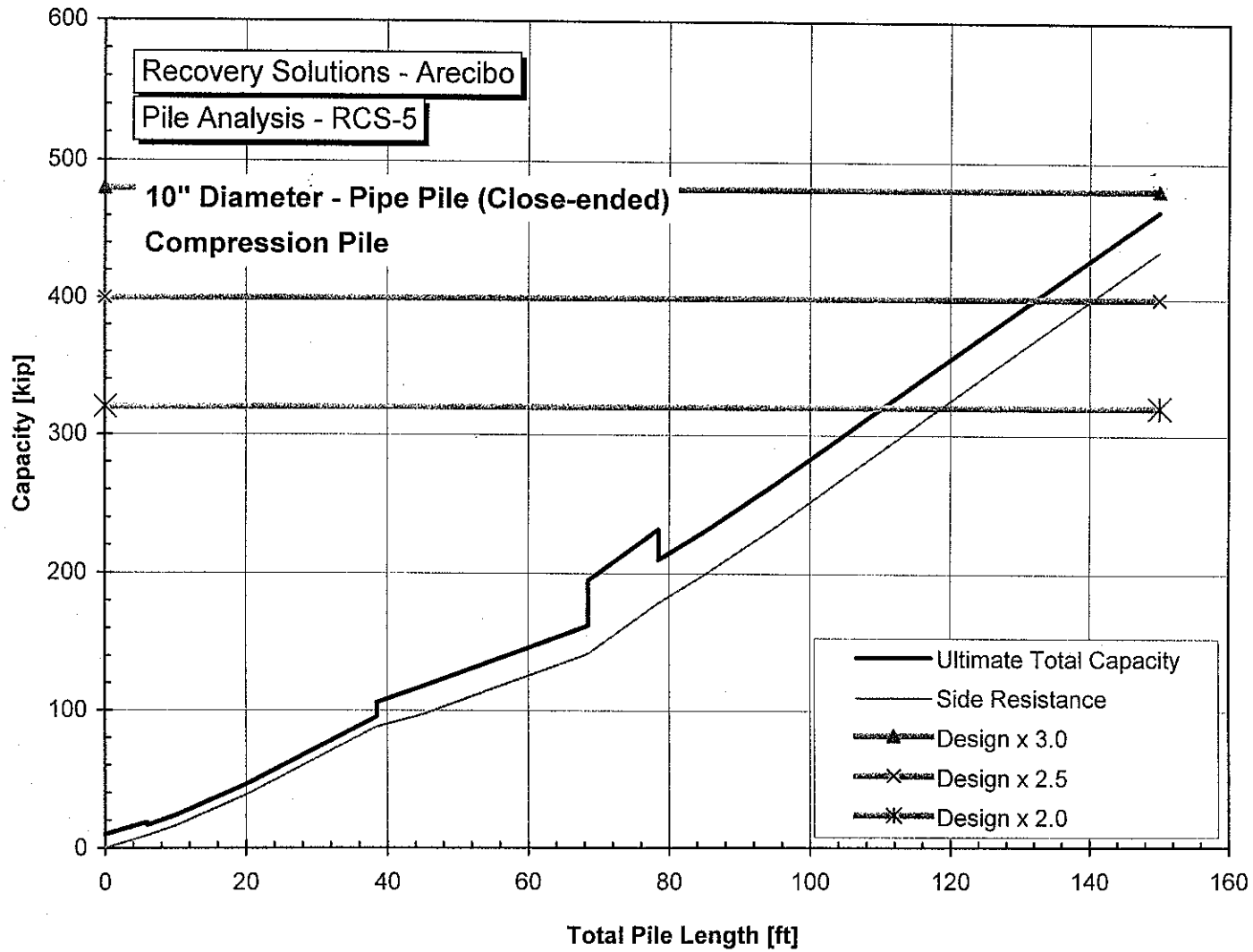



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-04 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

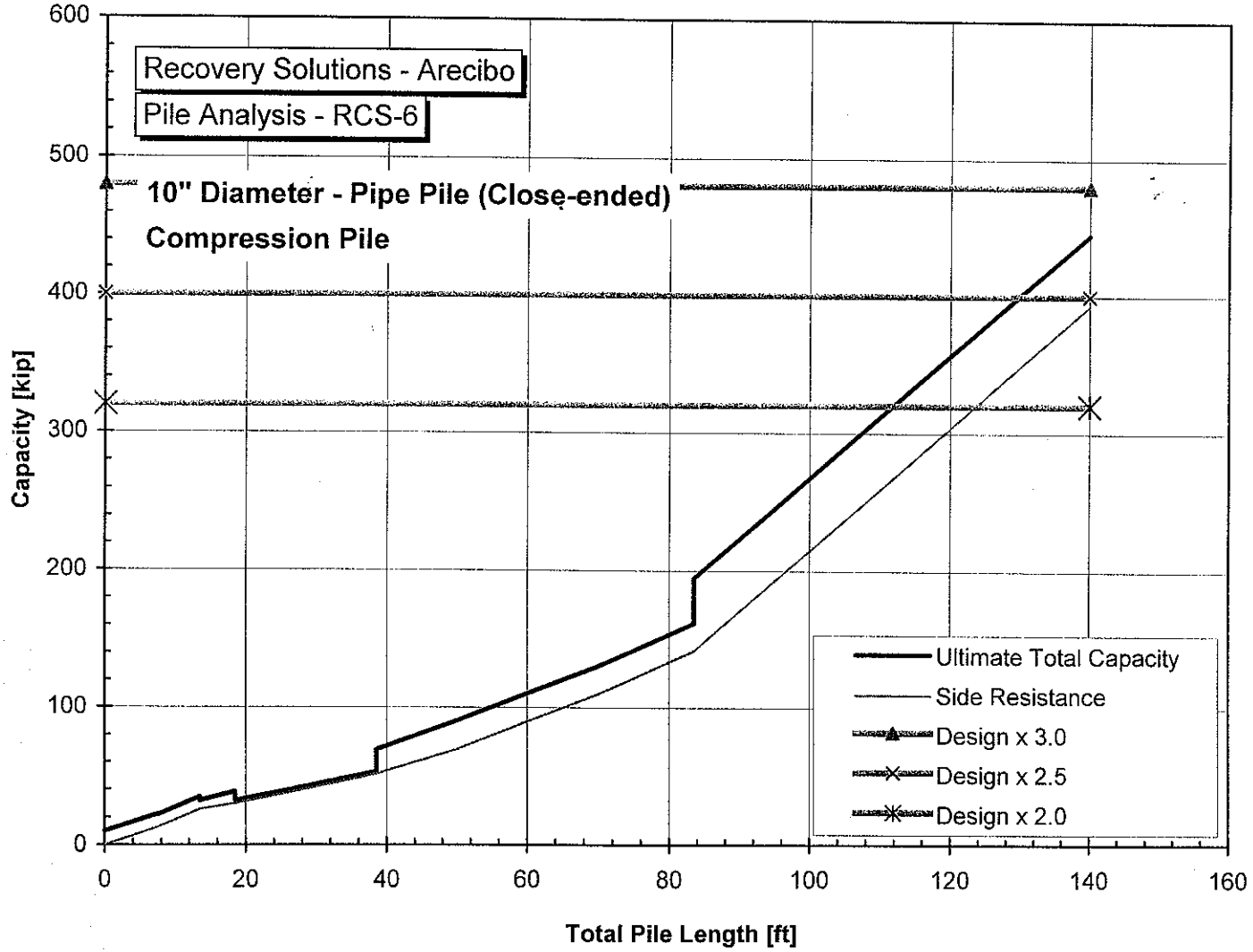



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-05 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

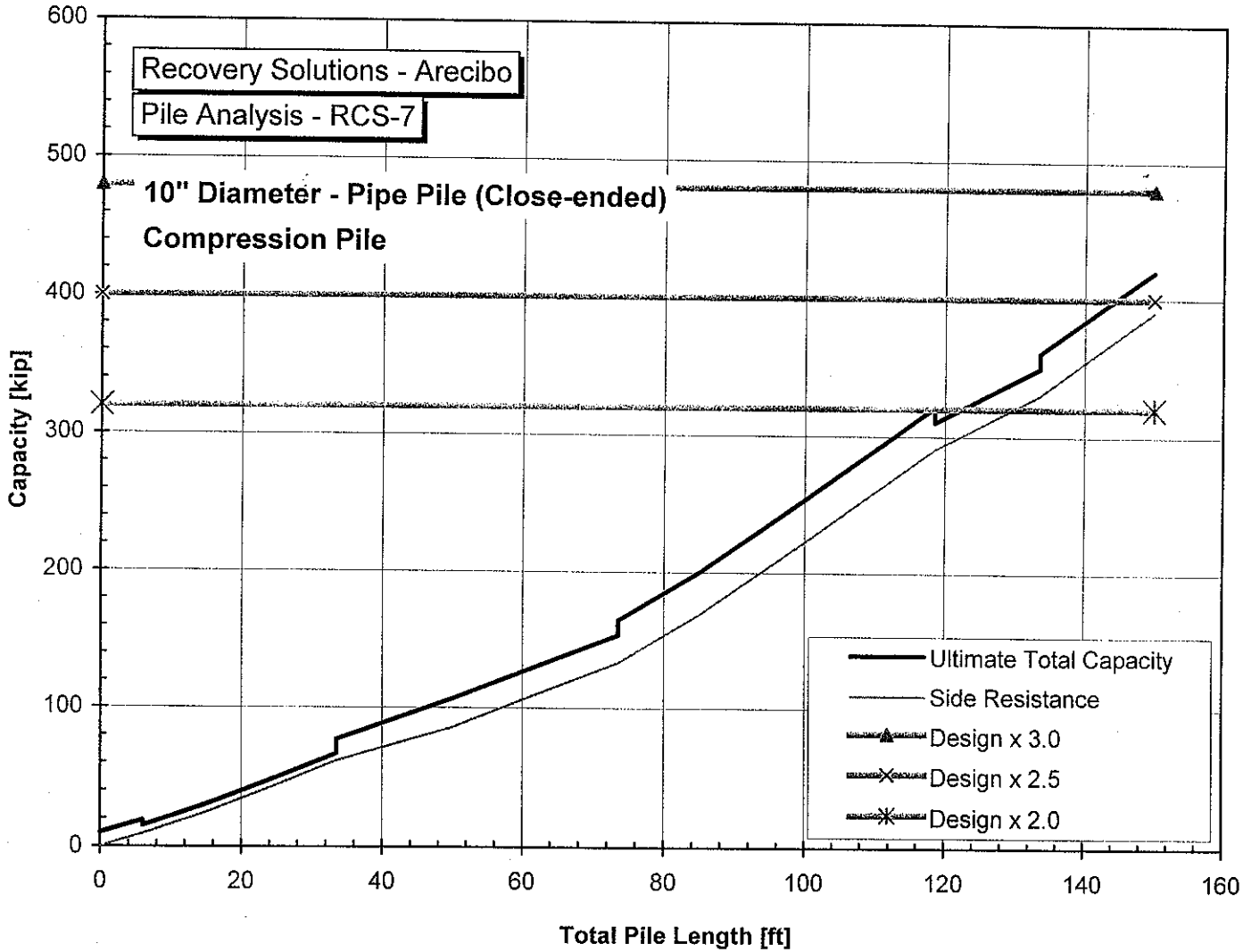



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-06 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

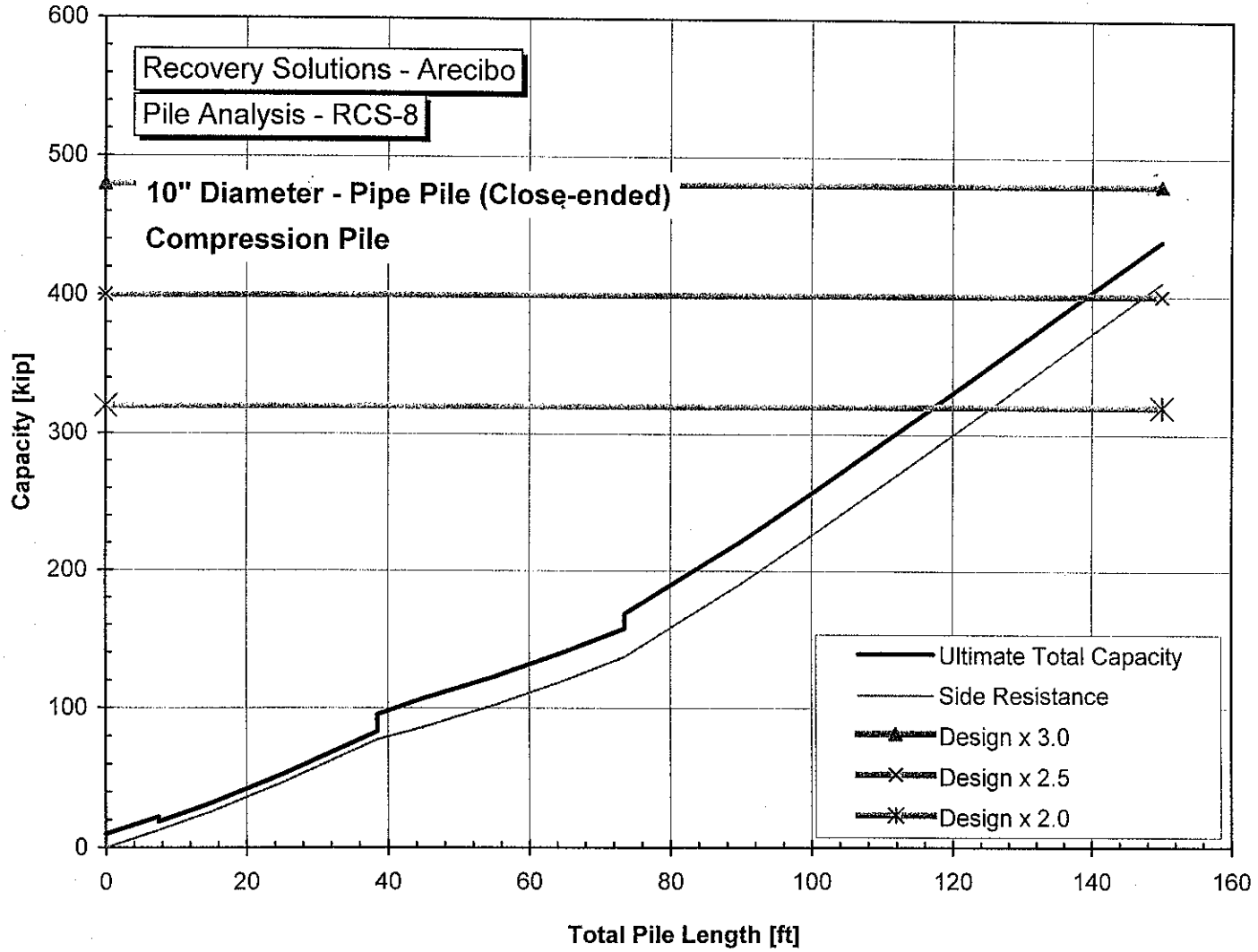



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-07 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

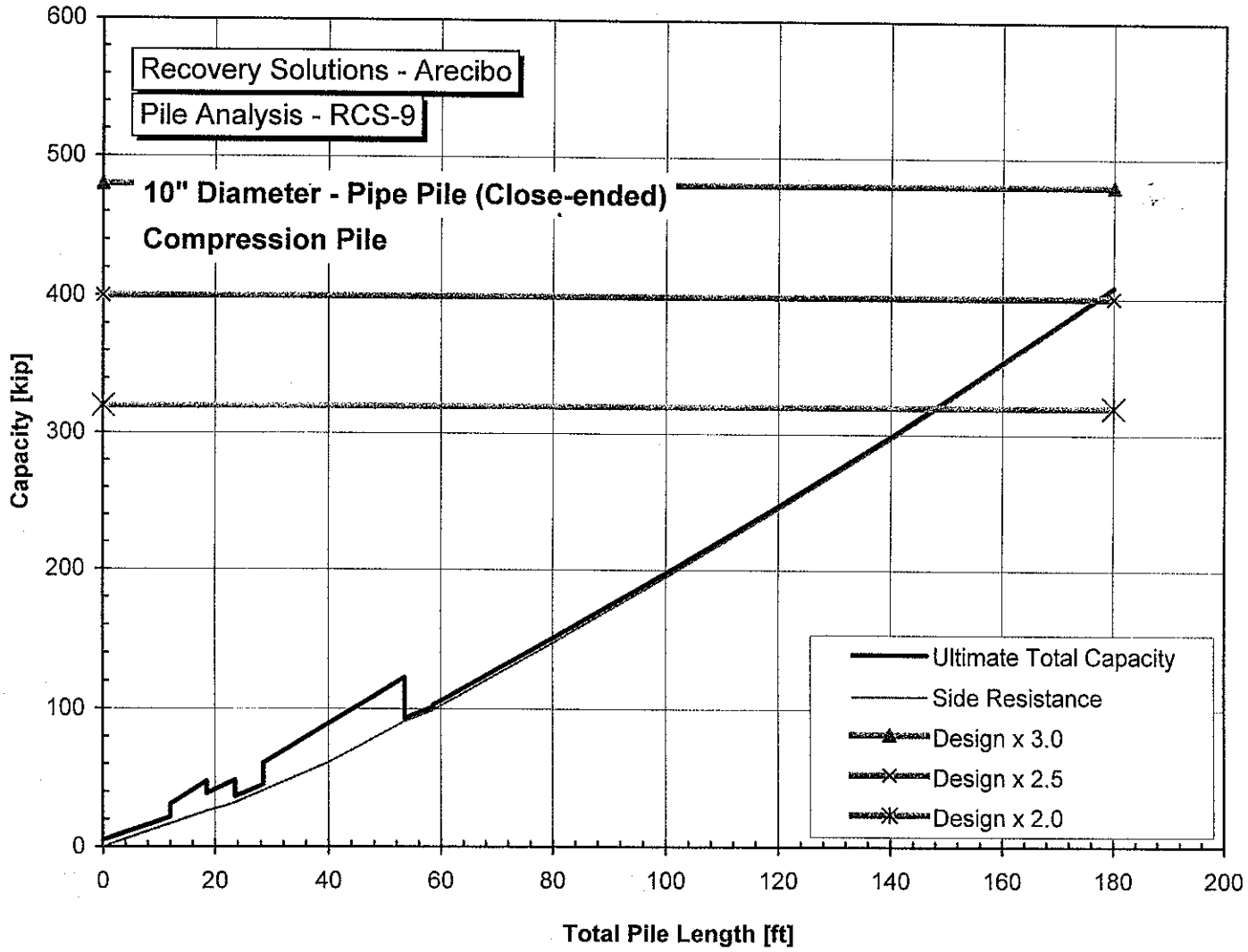



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-08 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

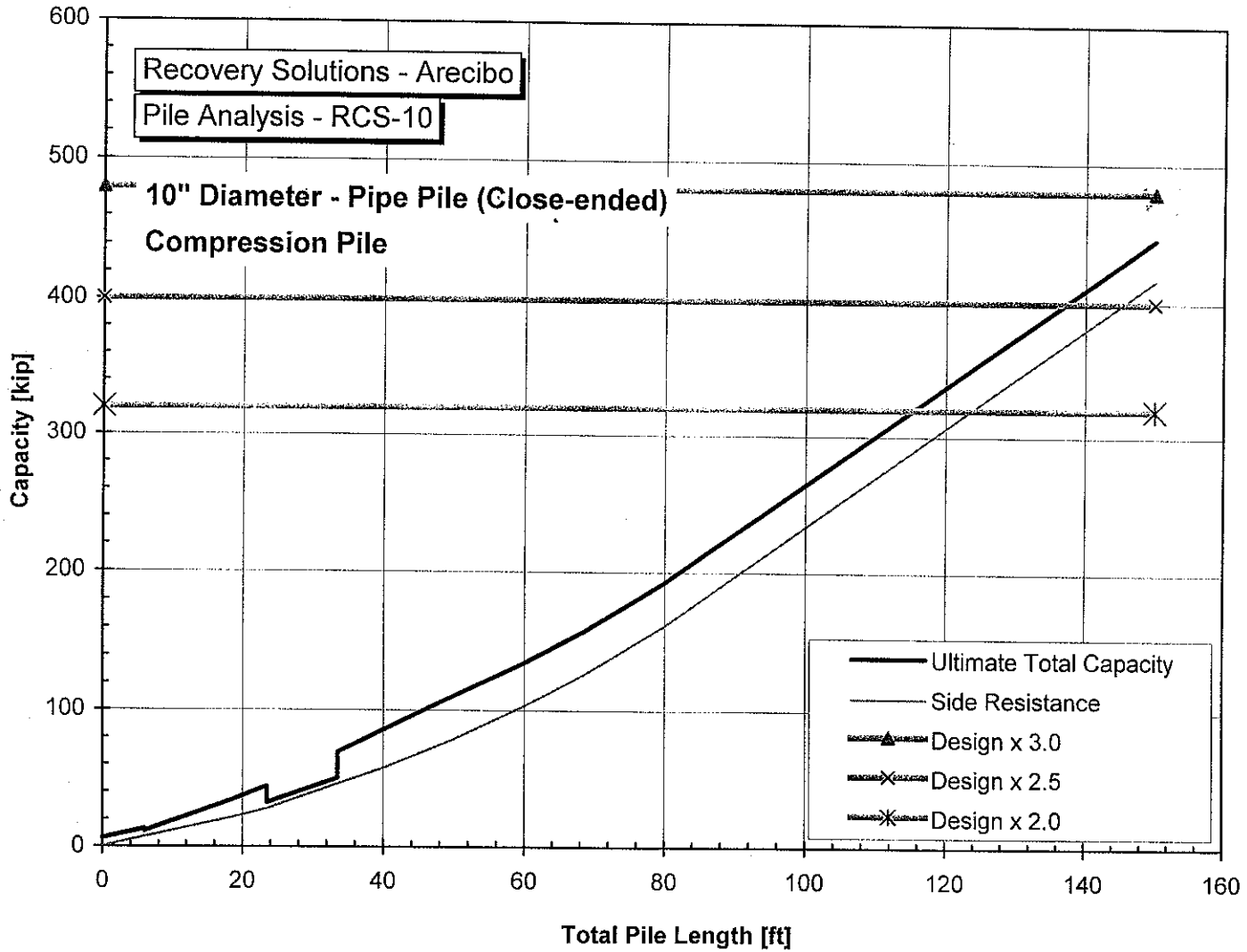



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-09 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

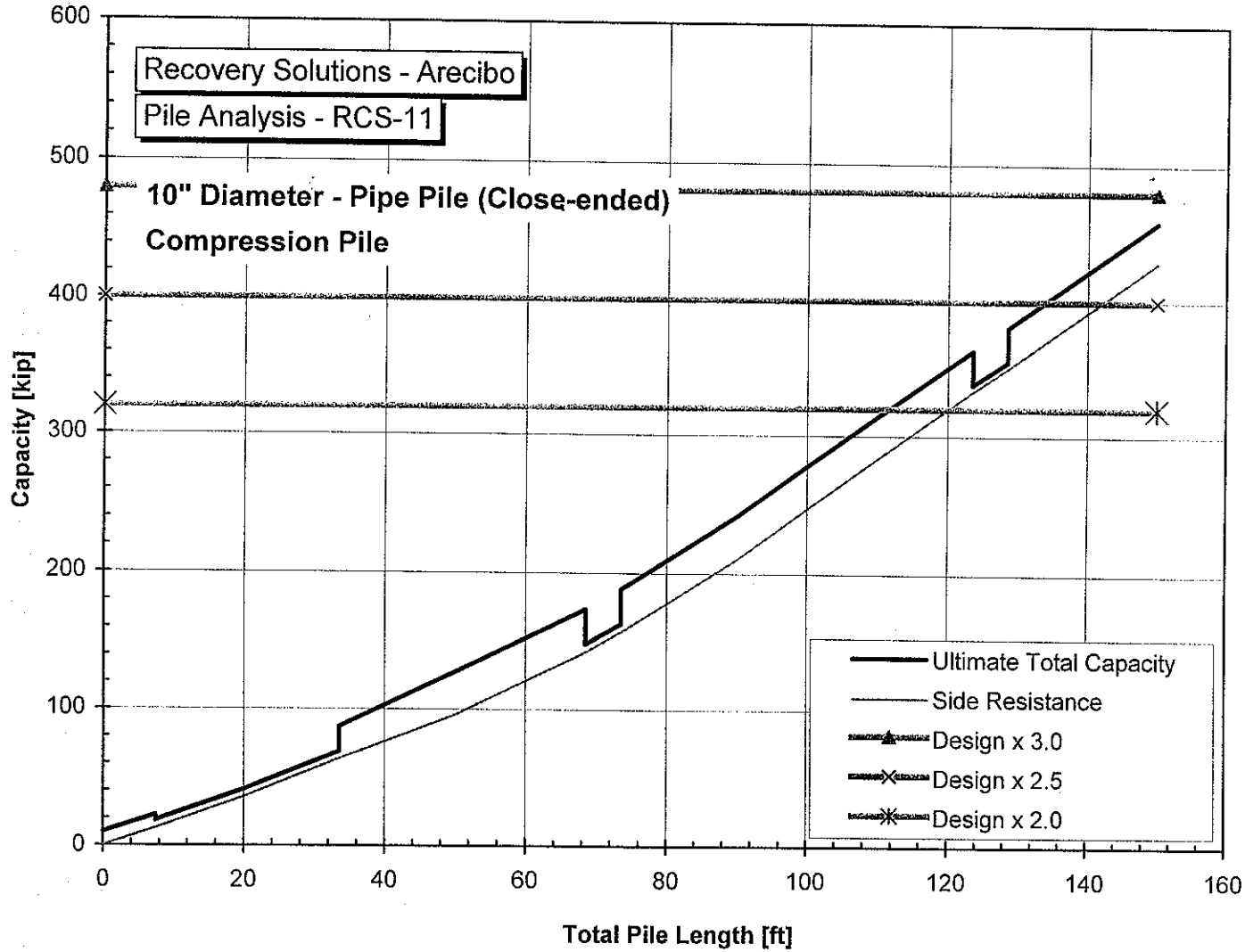



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-10 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

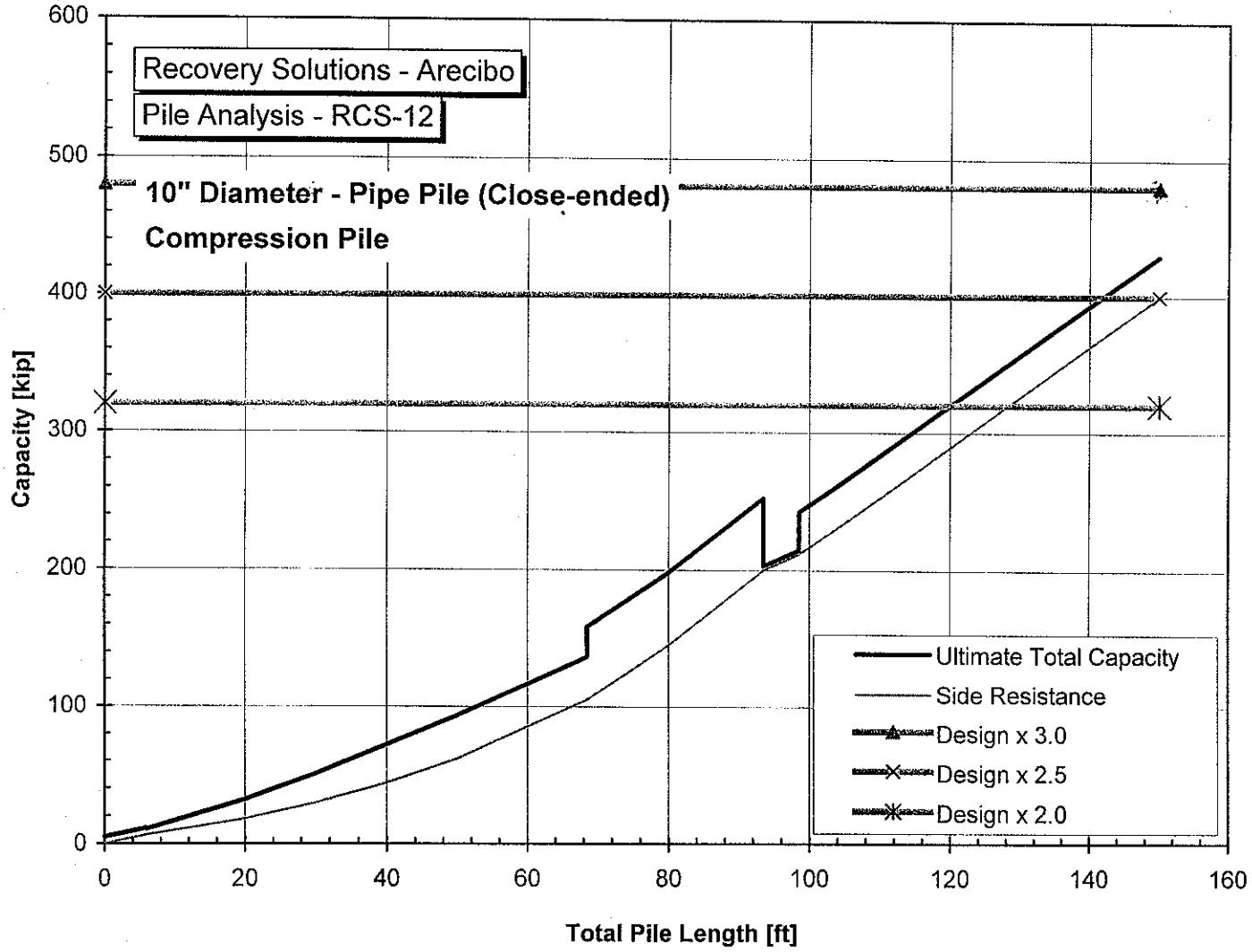



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-11 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

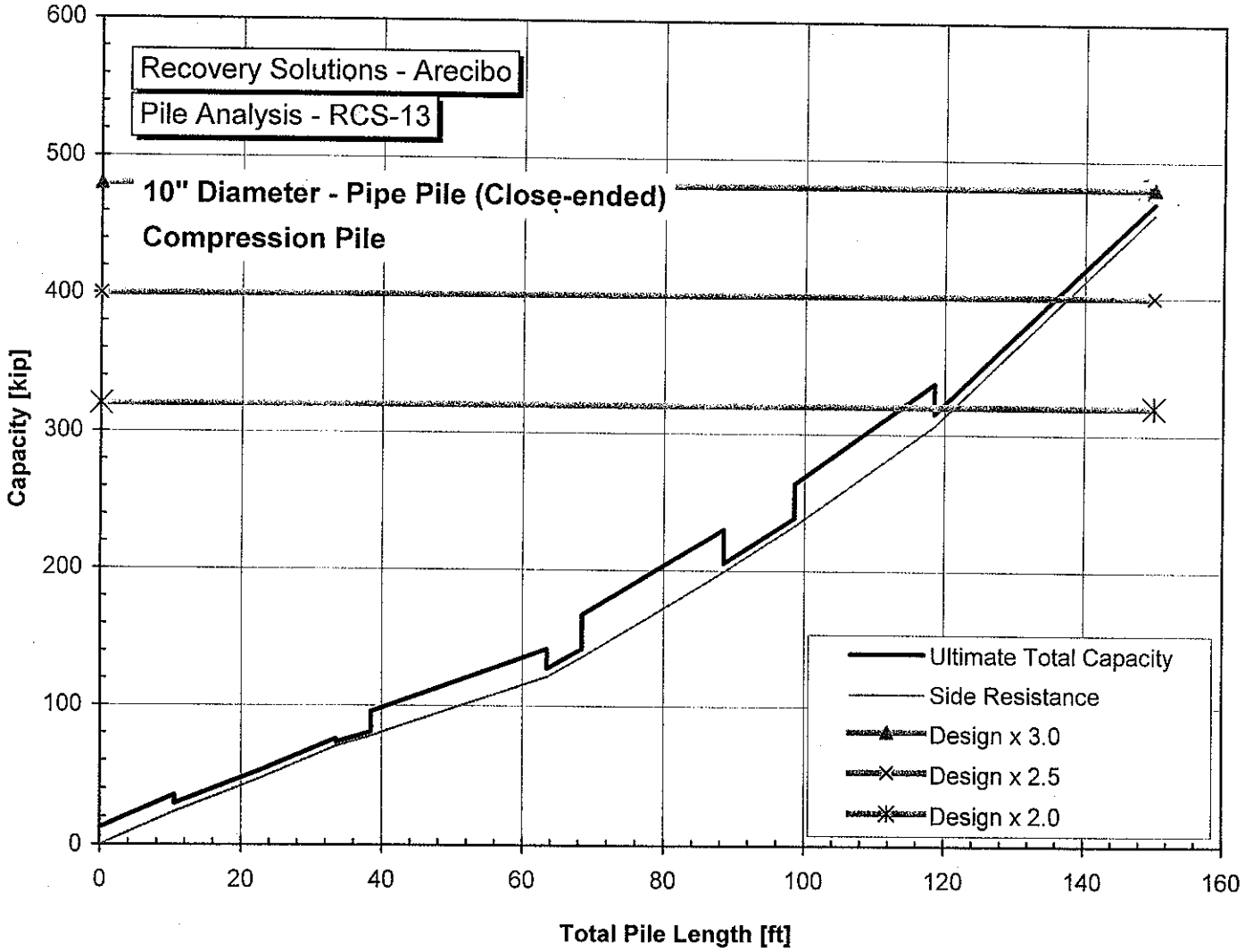



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-12 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

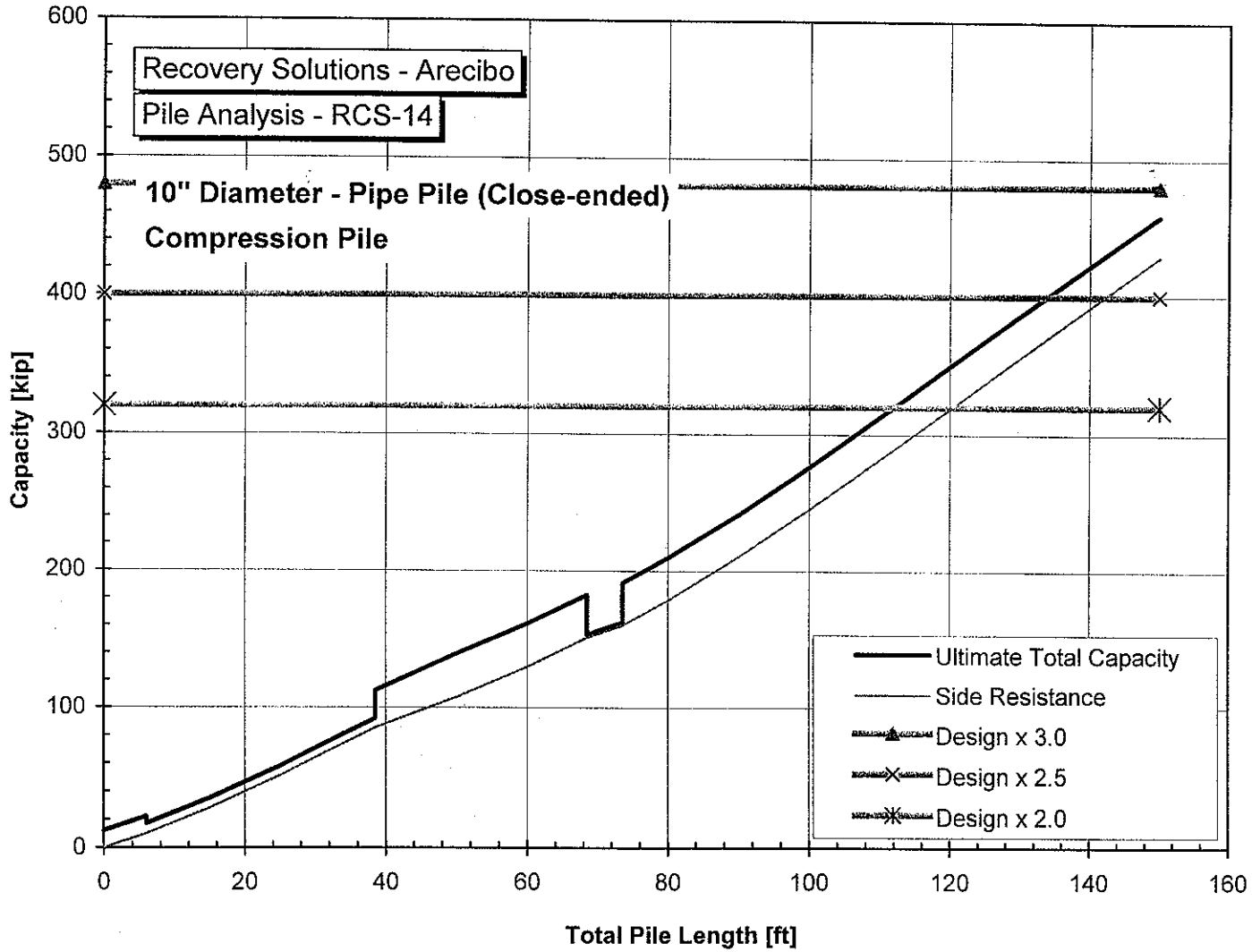



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-13 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

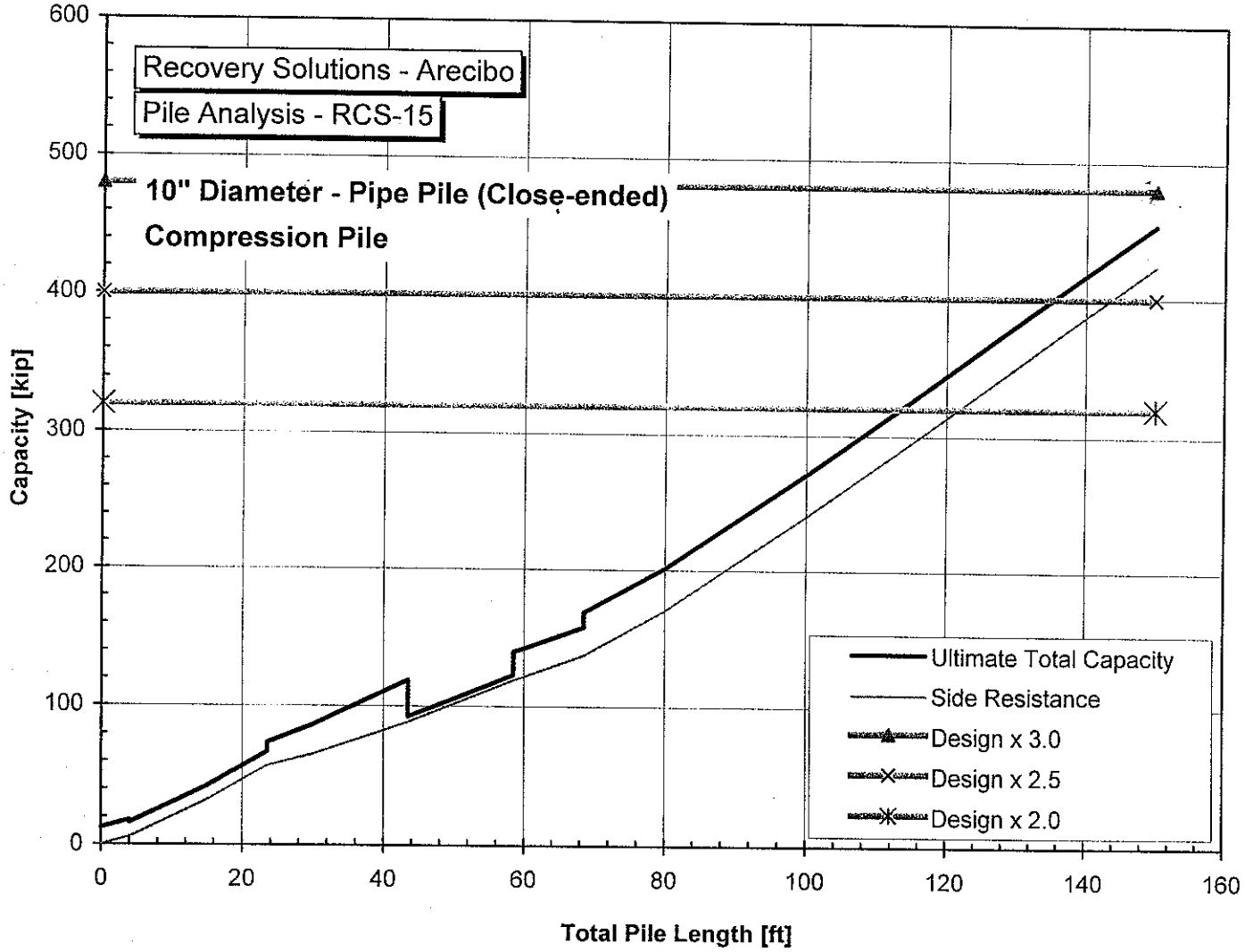



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-14 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

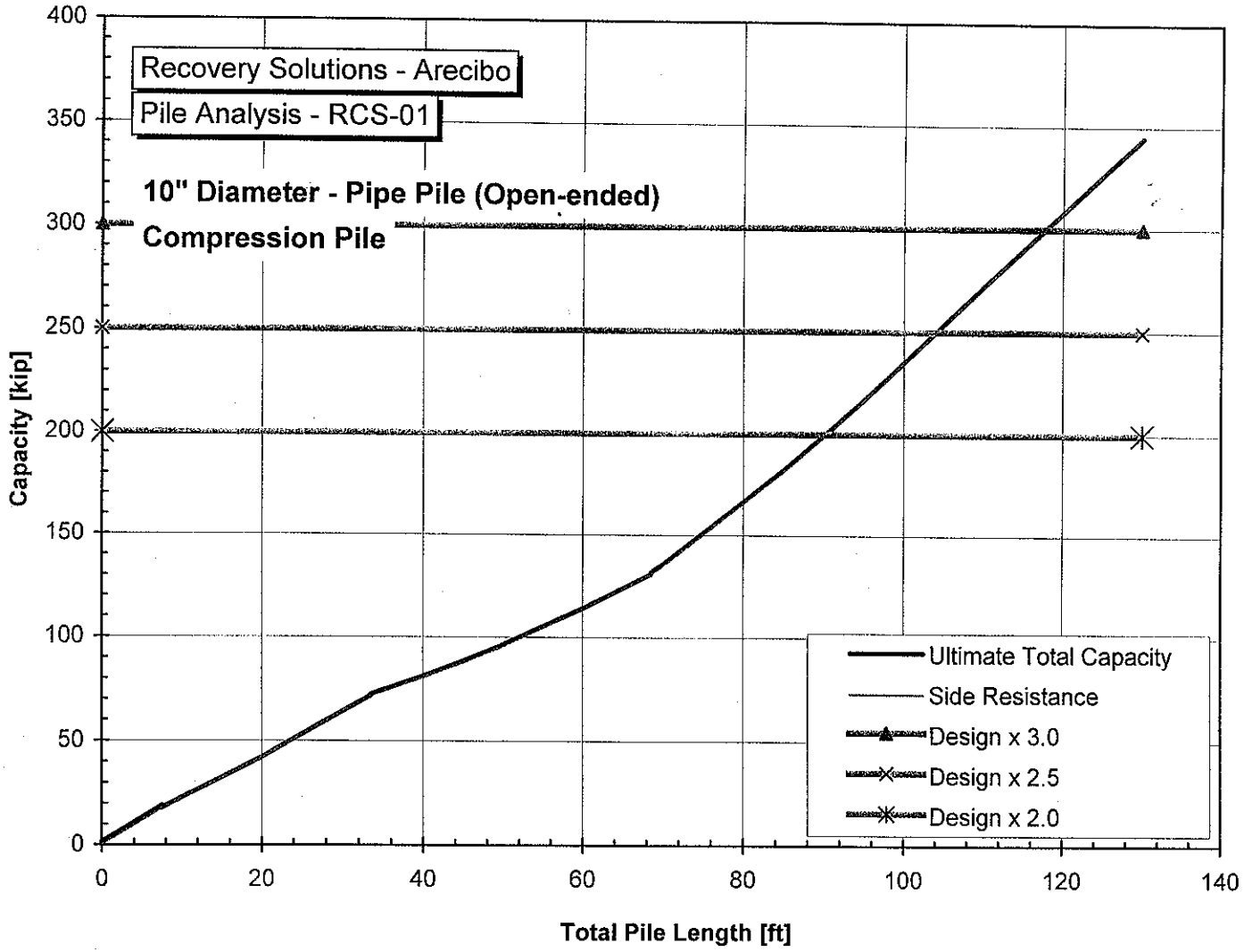



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-15 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

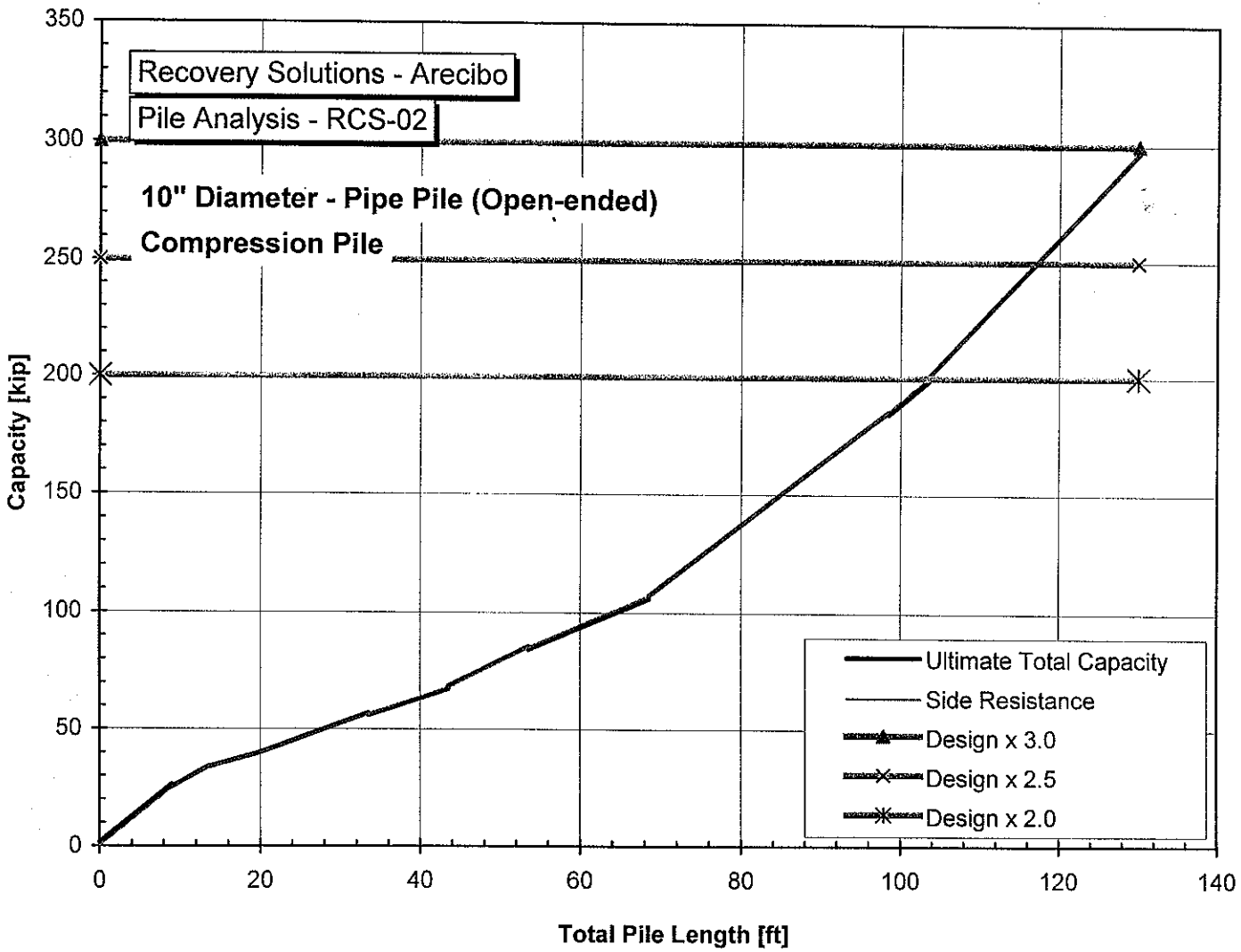



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

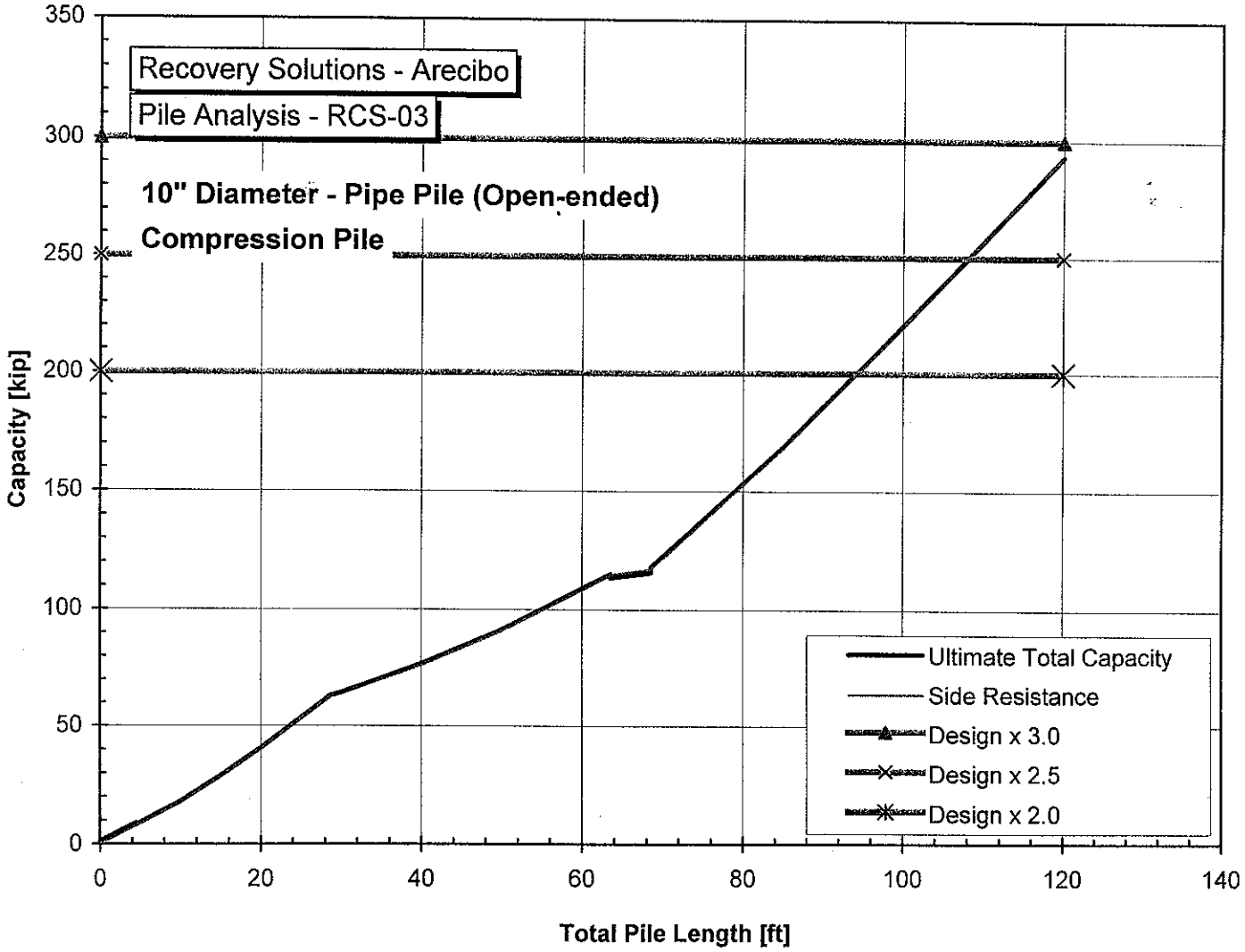



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

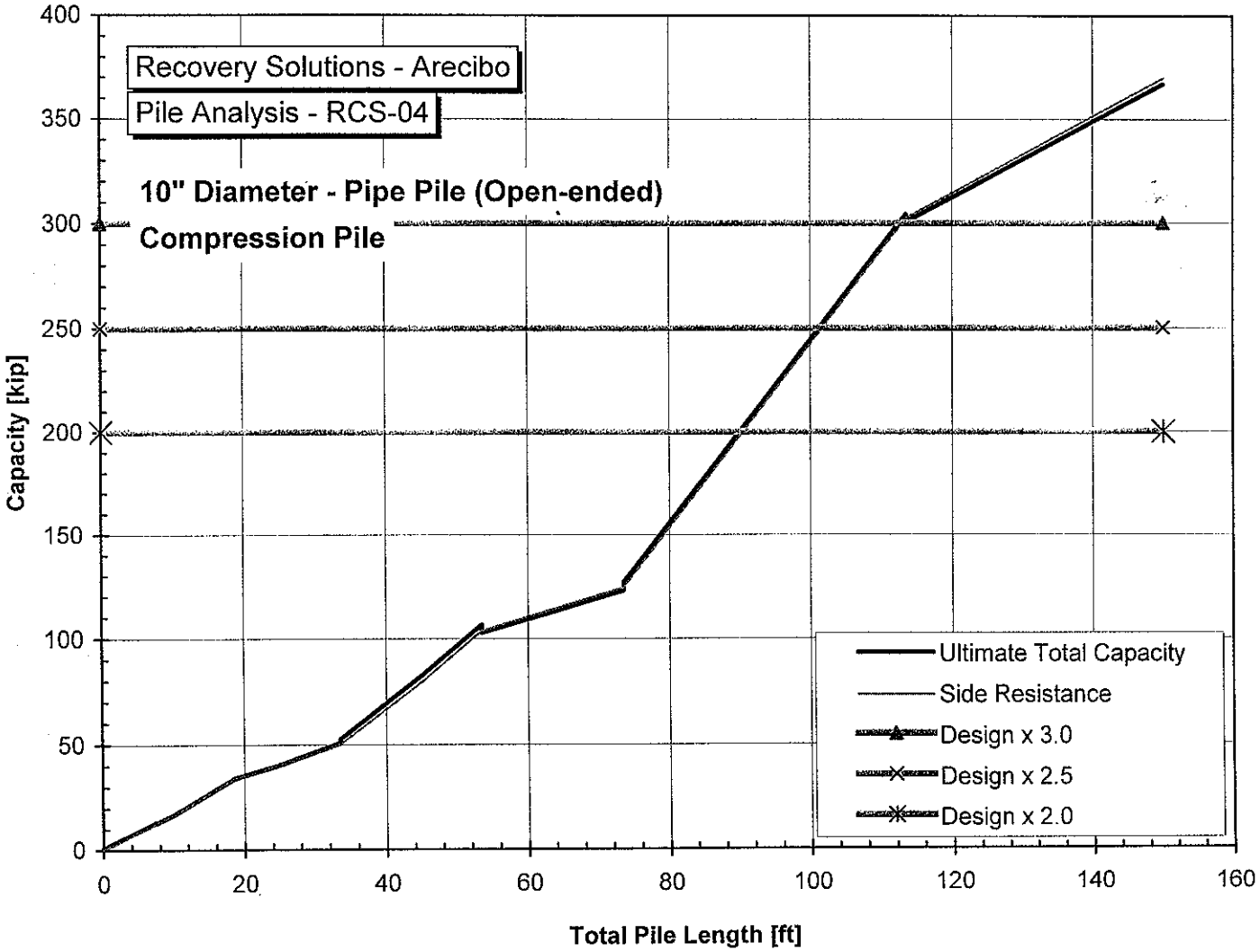



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

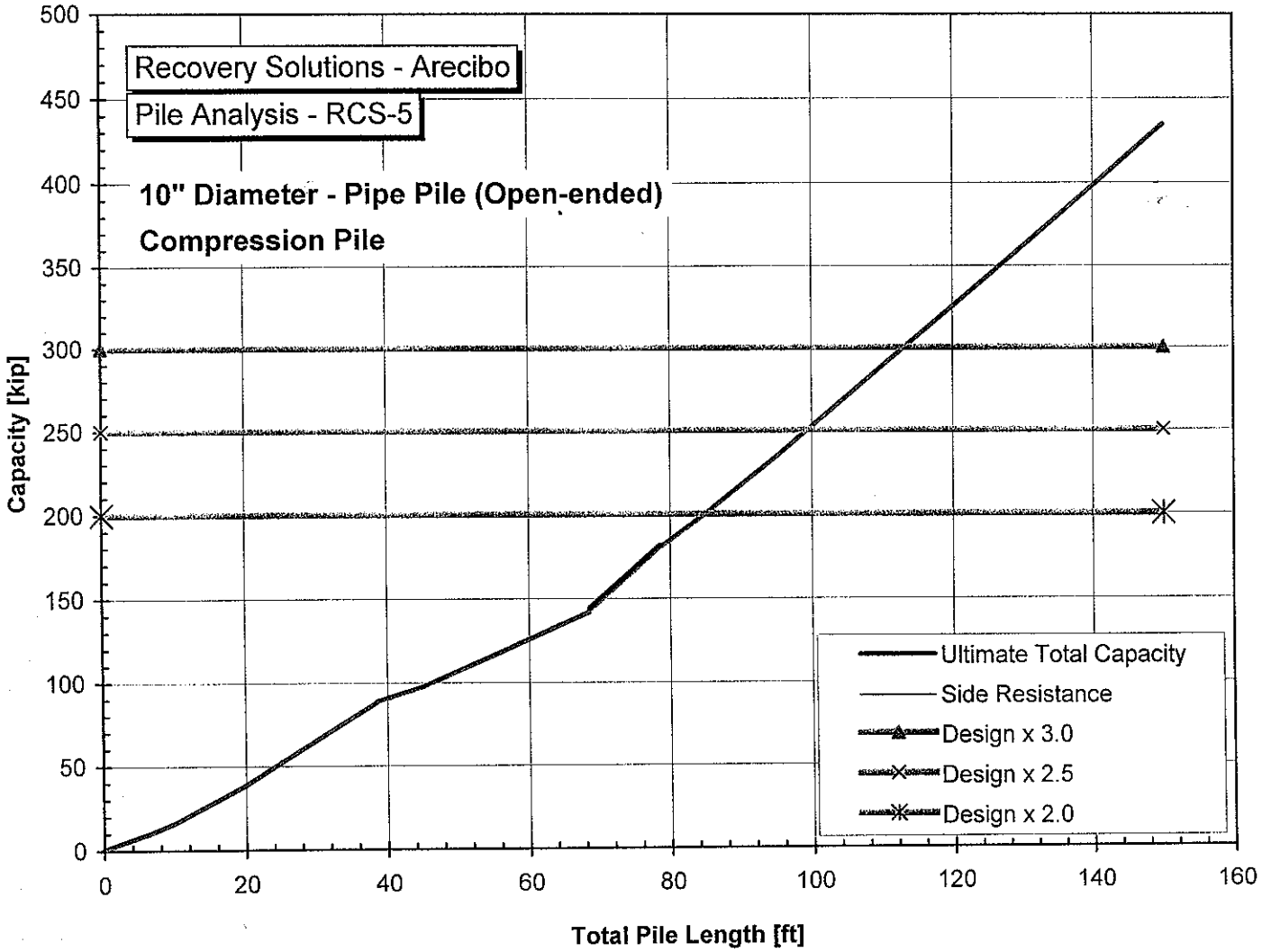



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

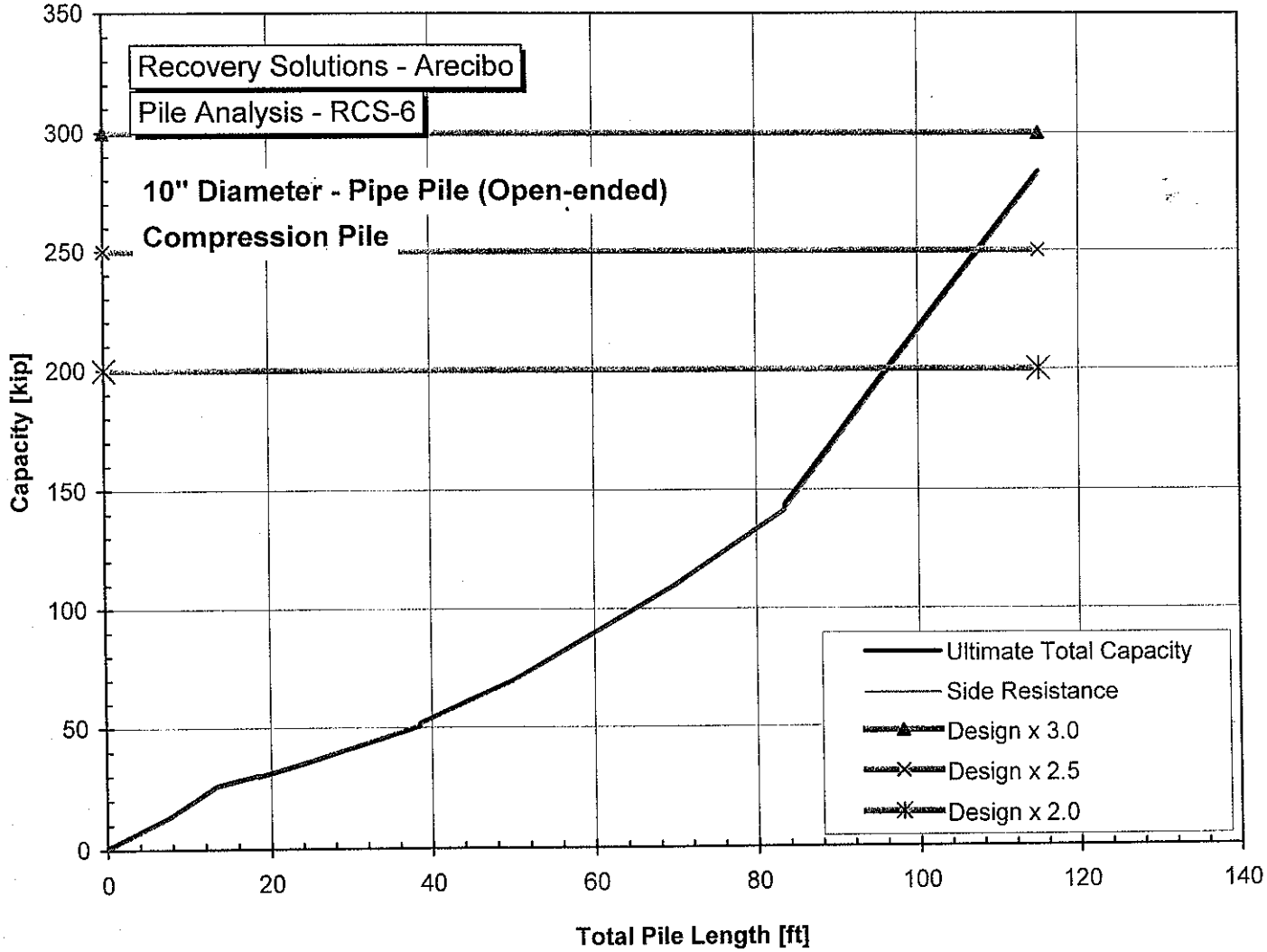



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

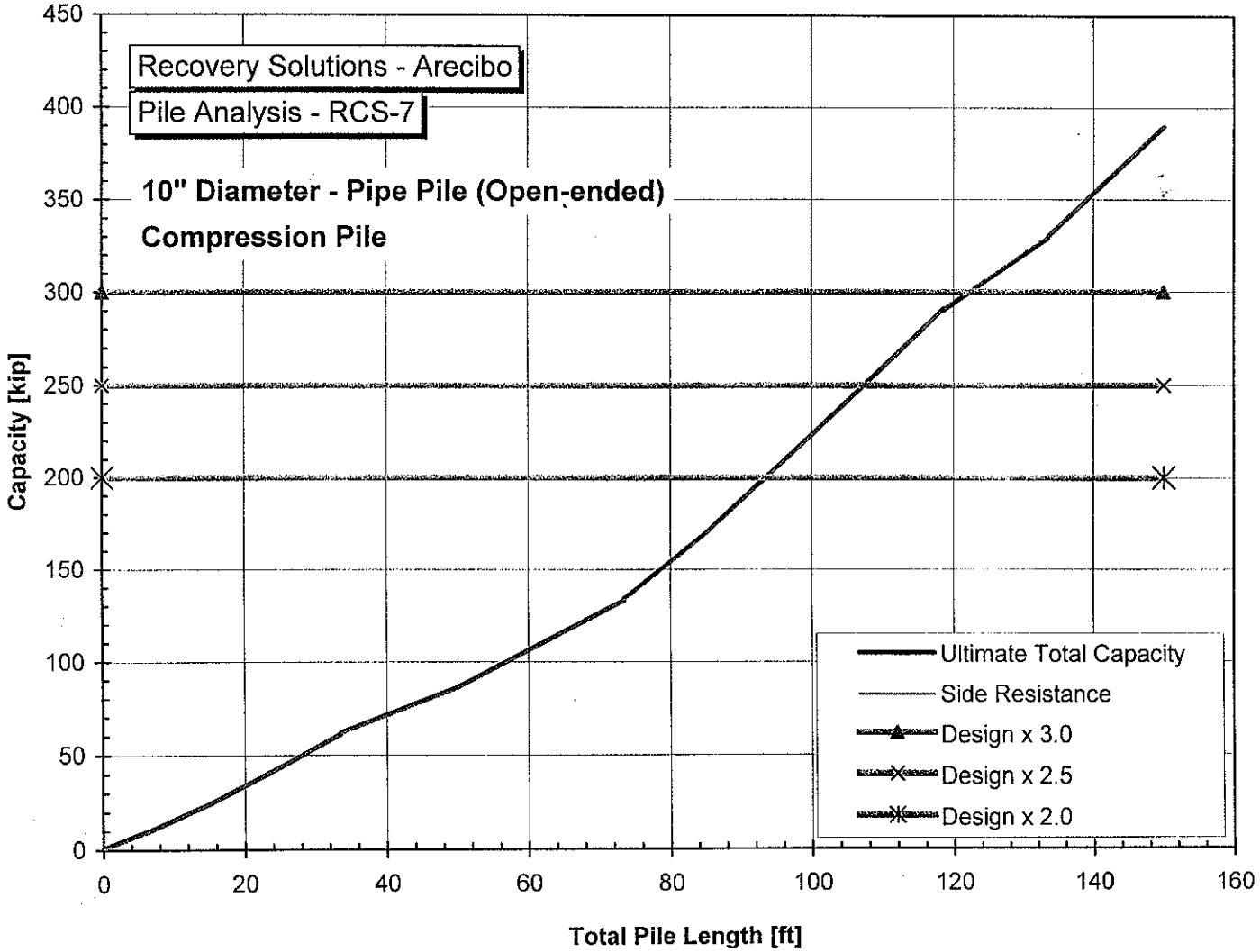



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

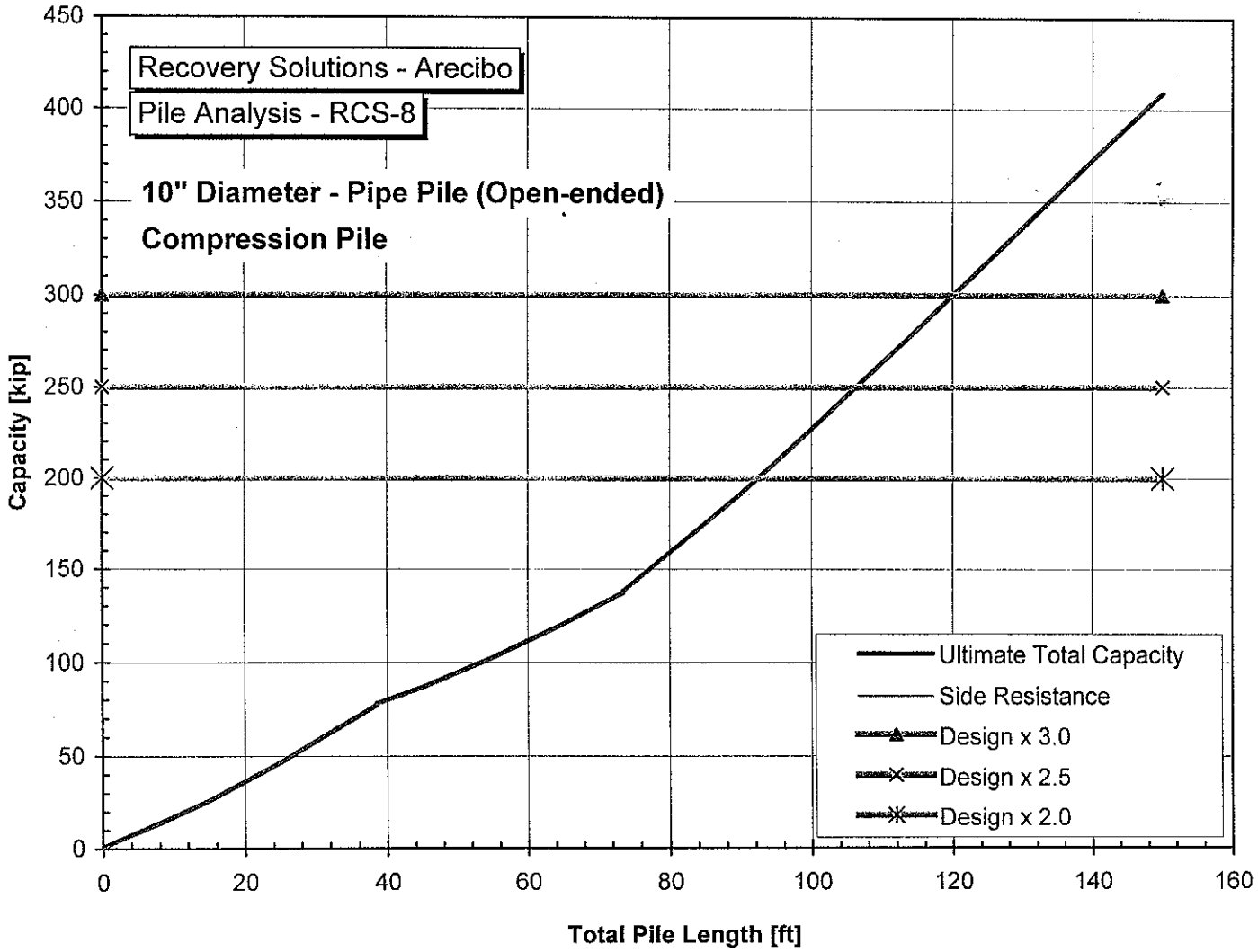



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

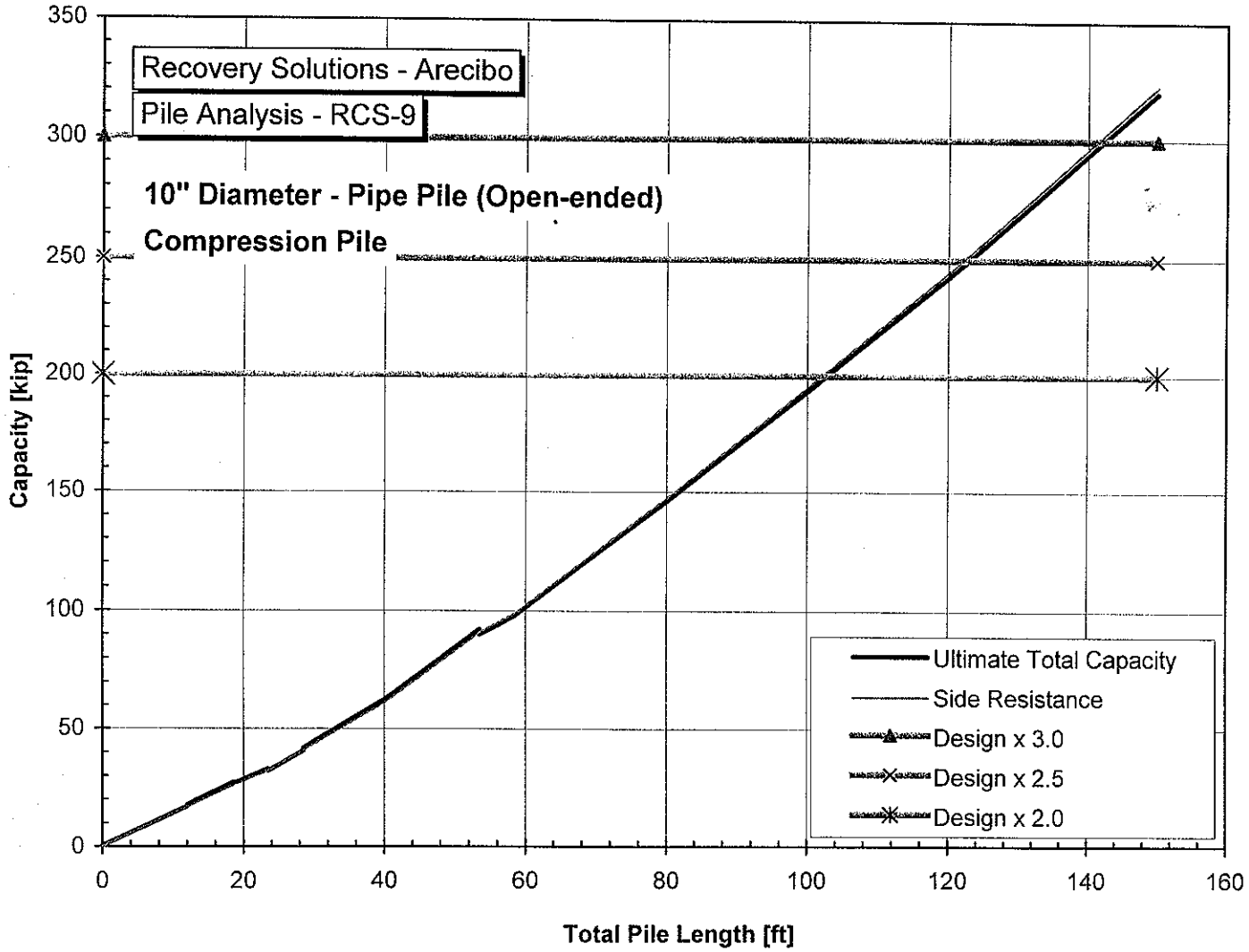



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

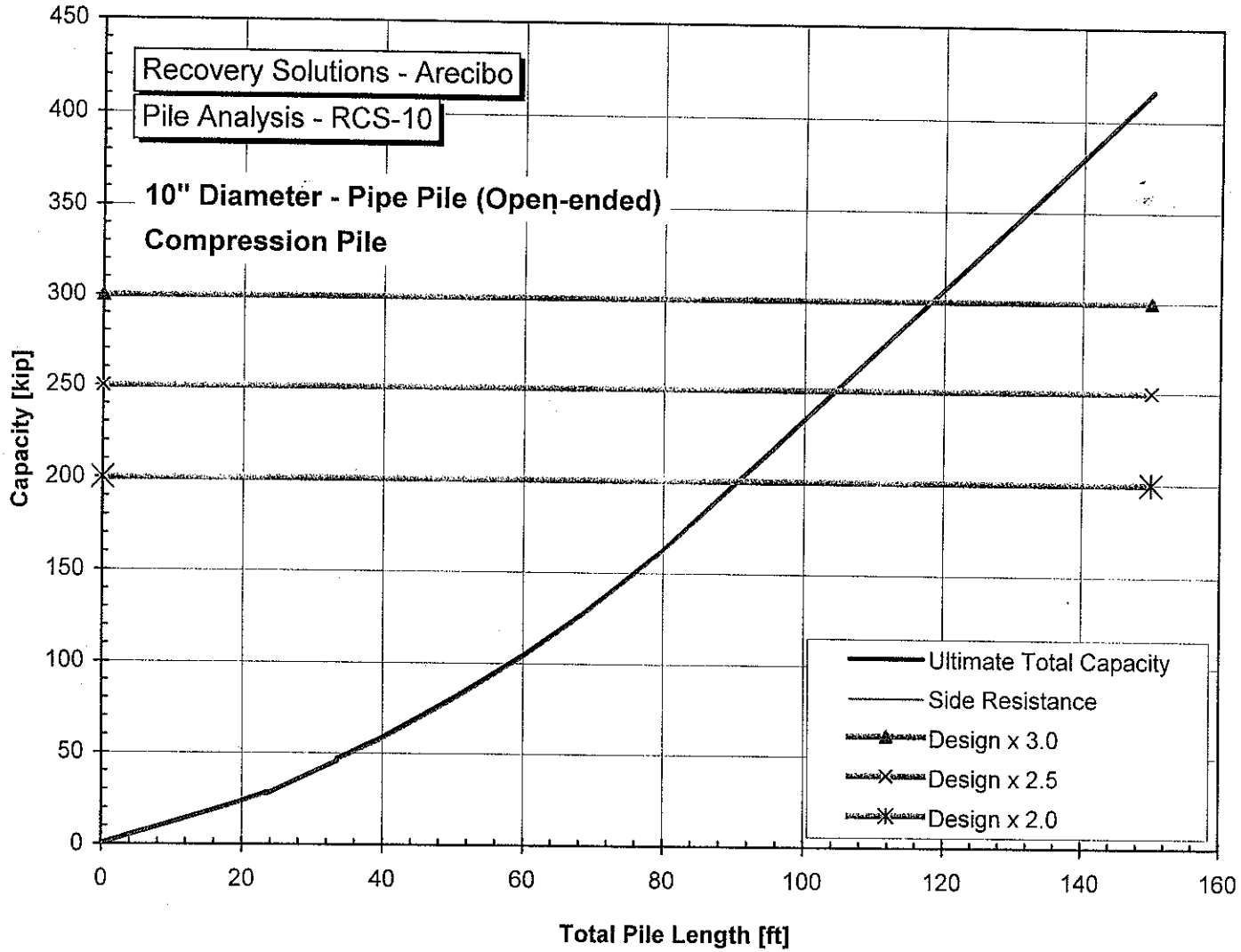



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

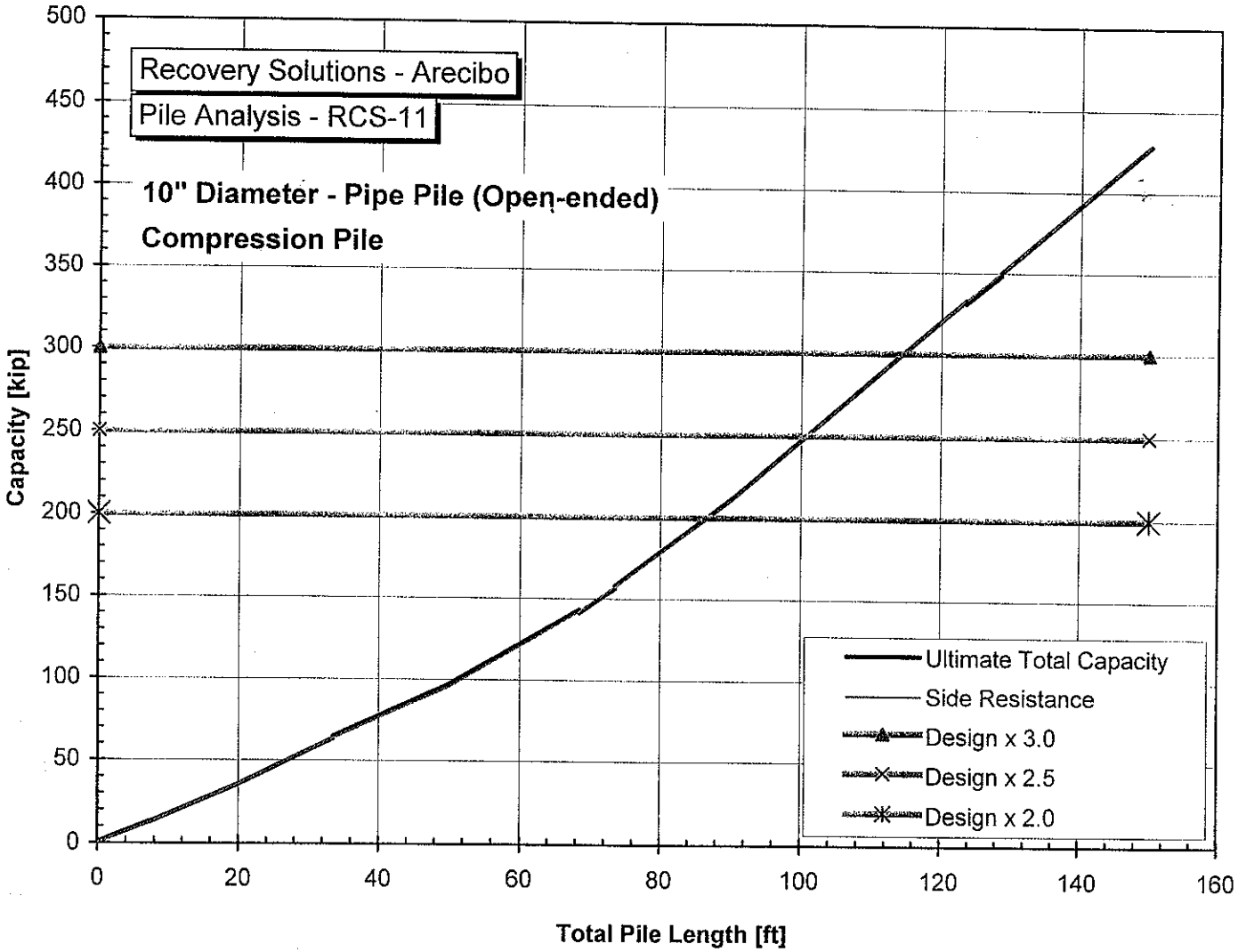



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

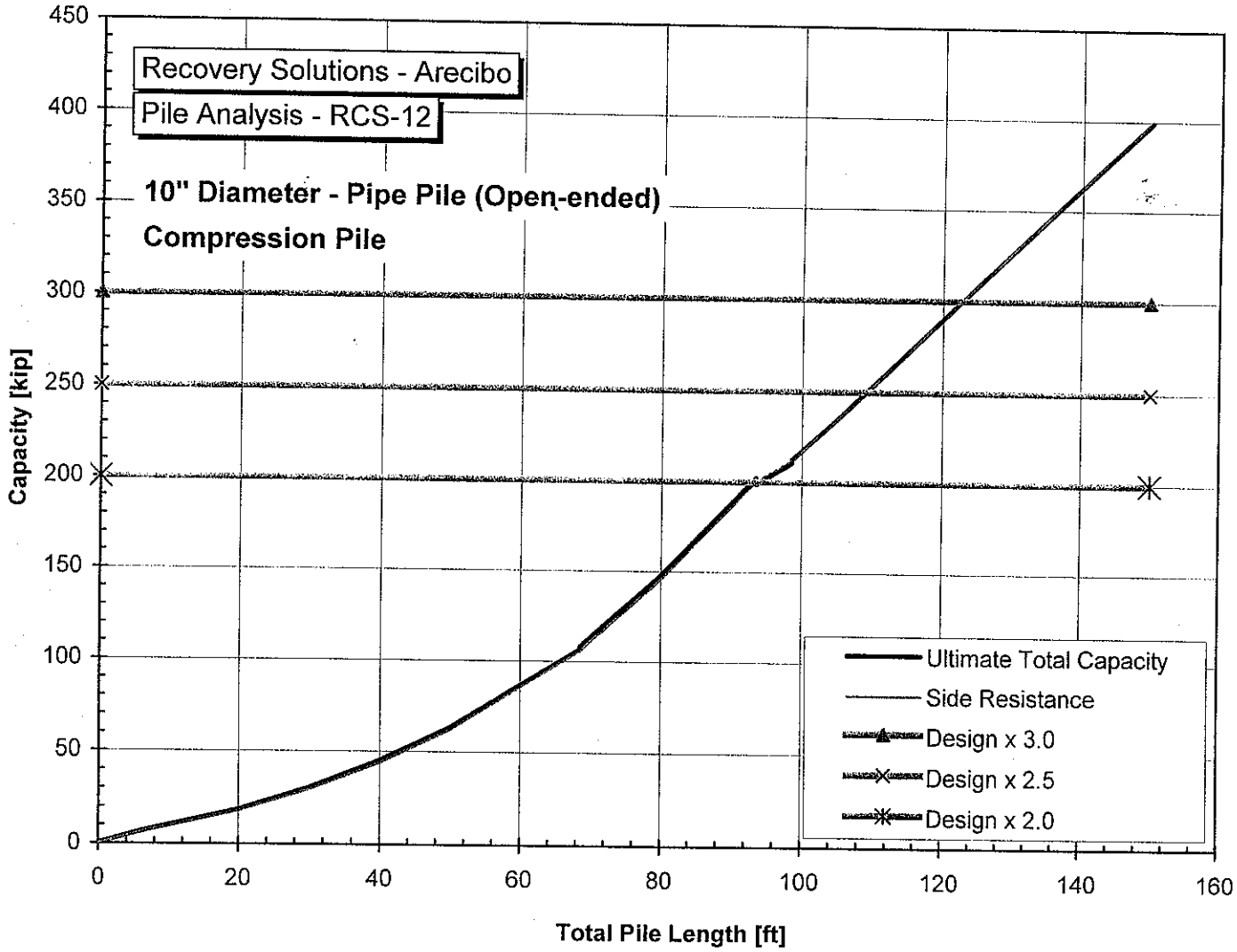



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

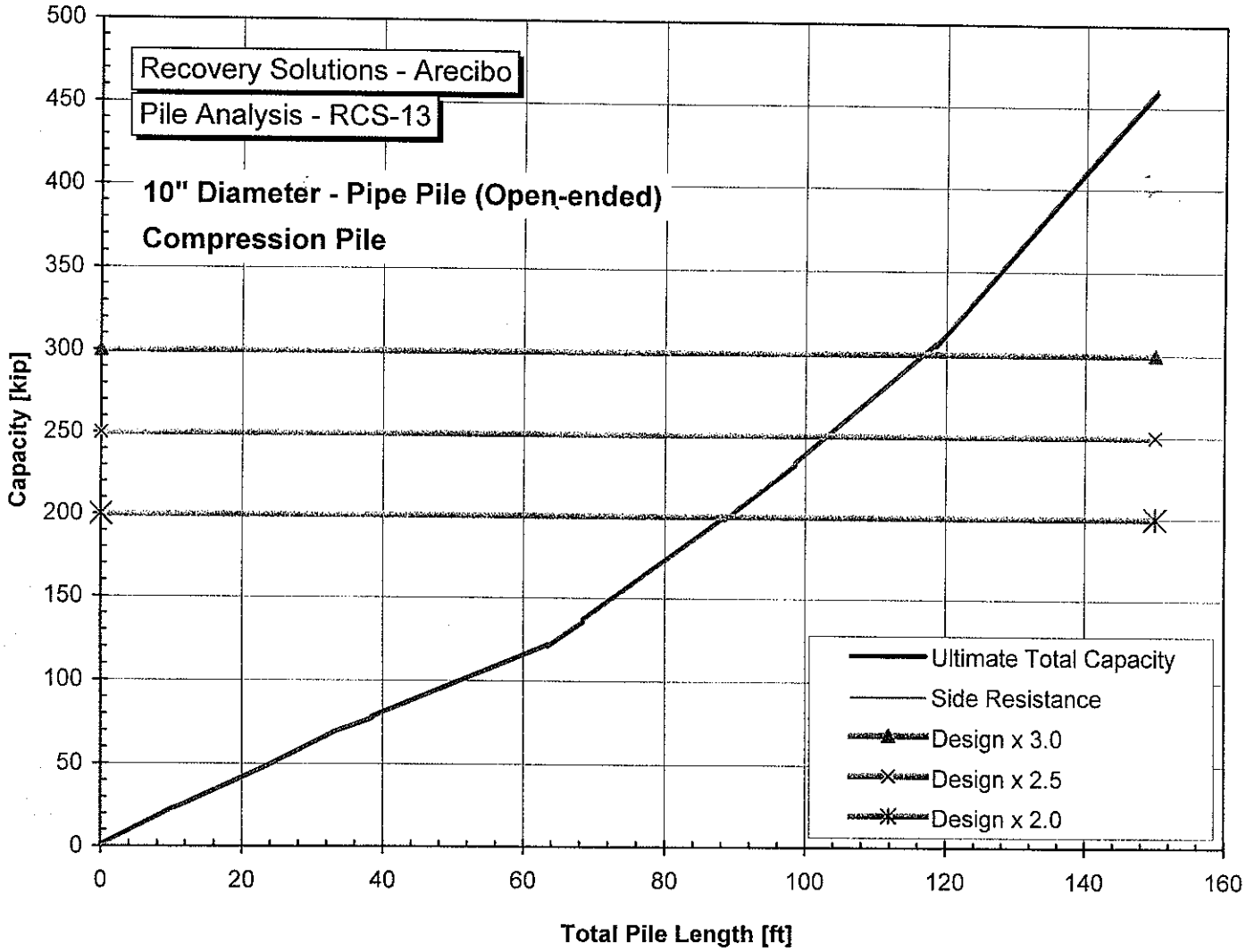



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

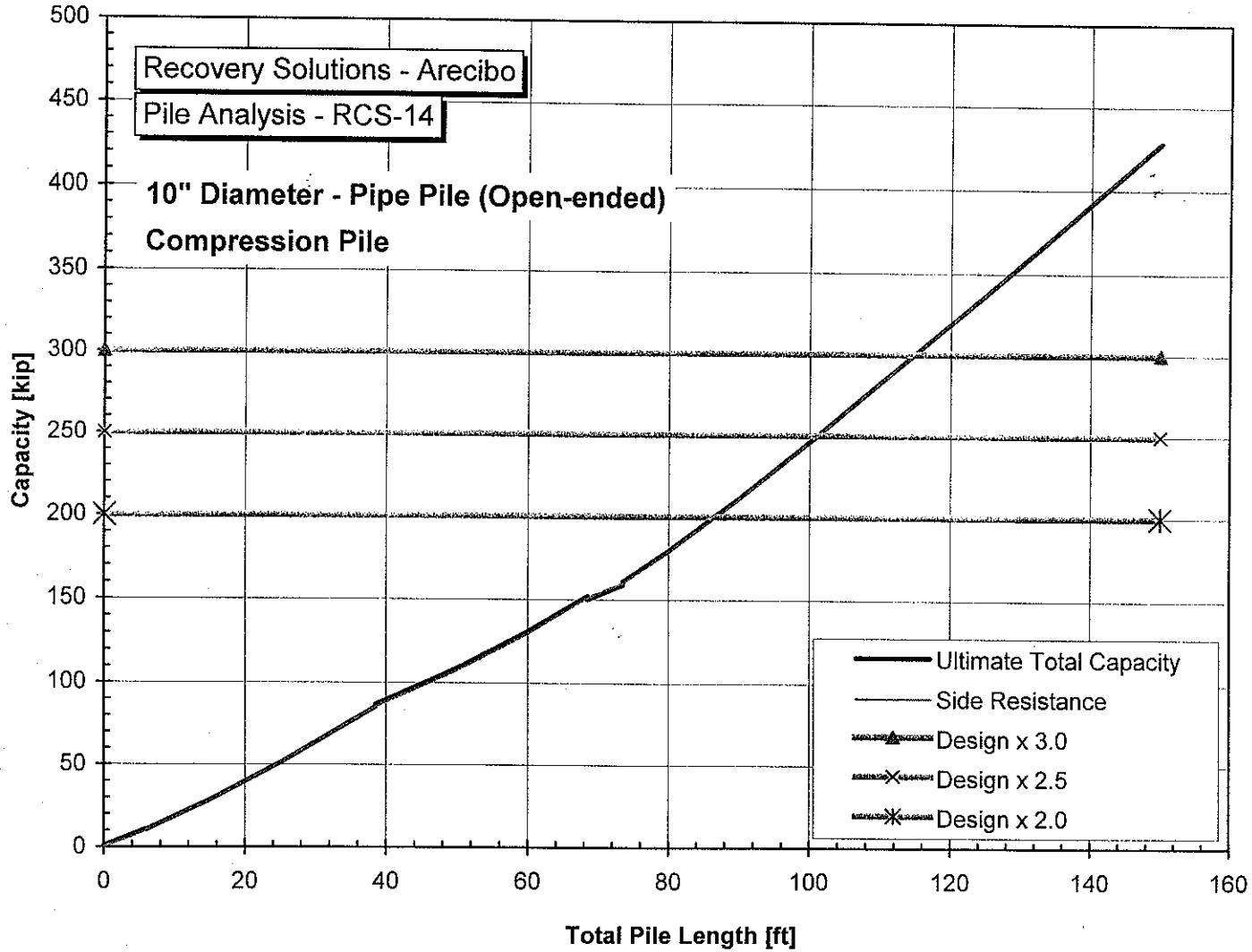



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

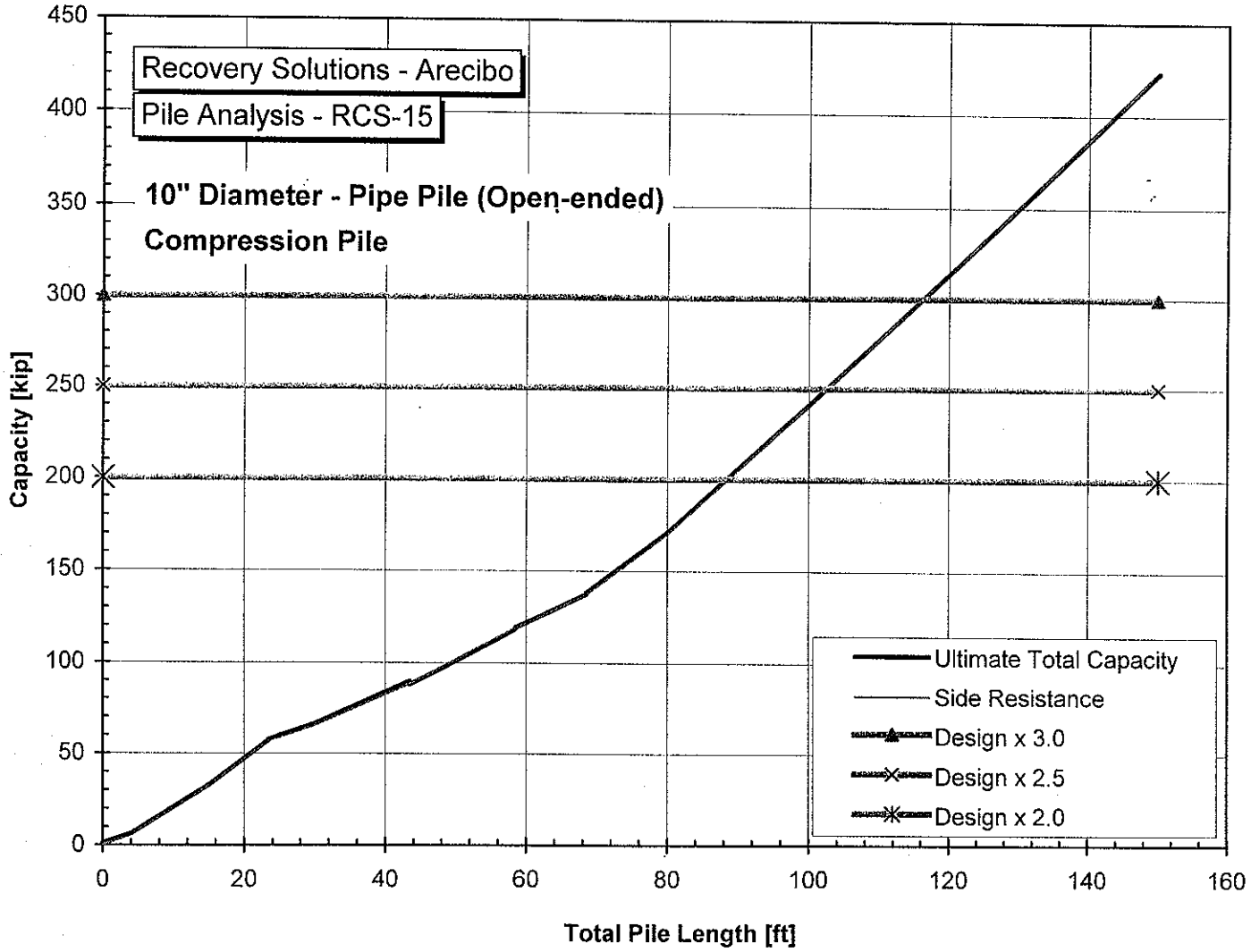



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

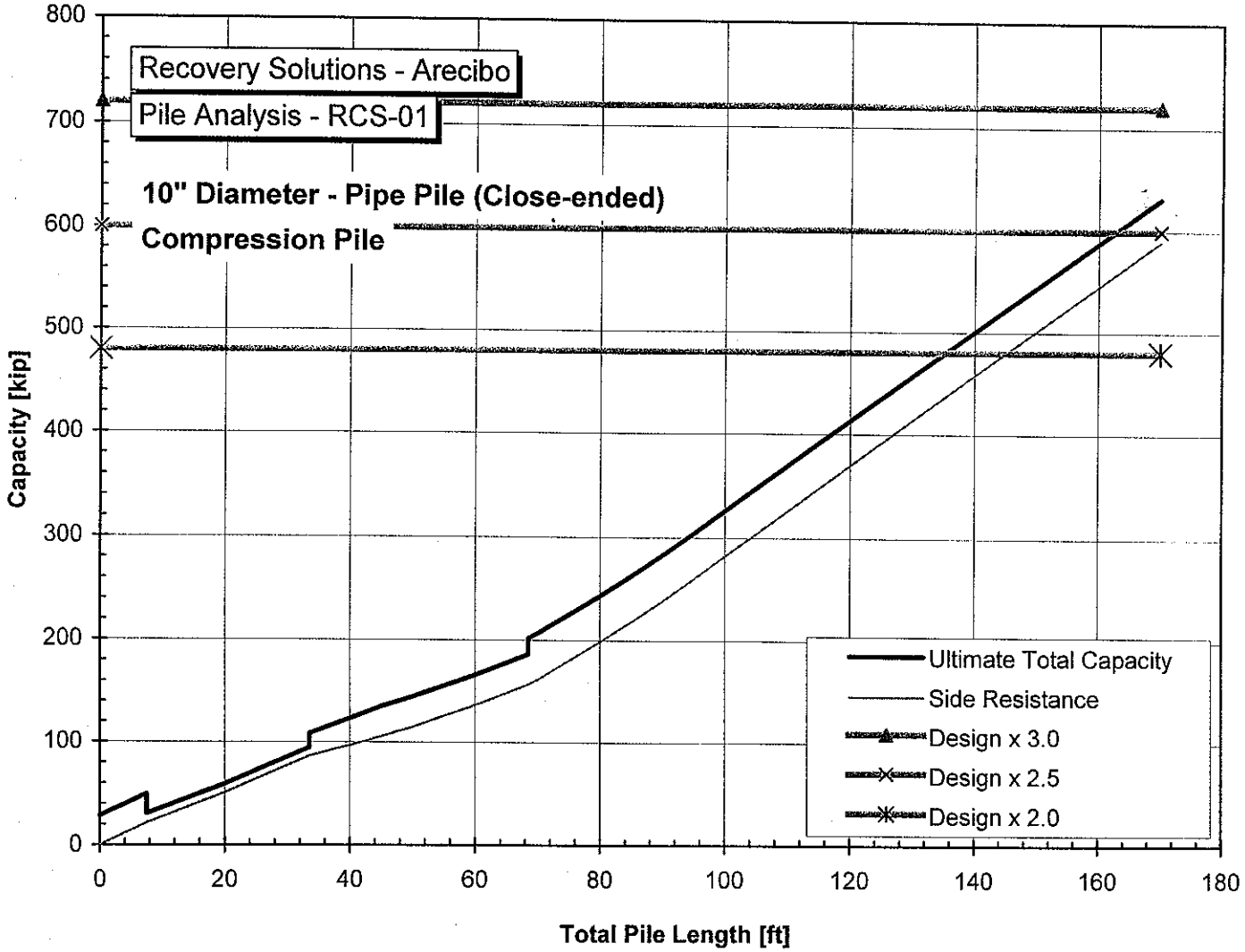



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 10 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

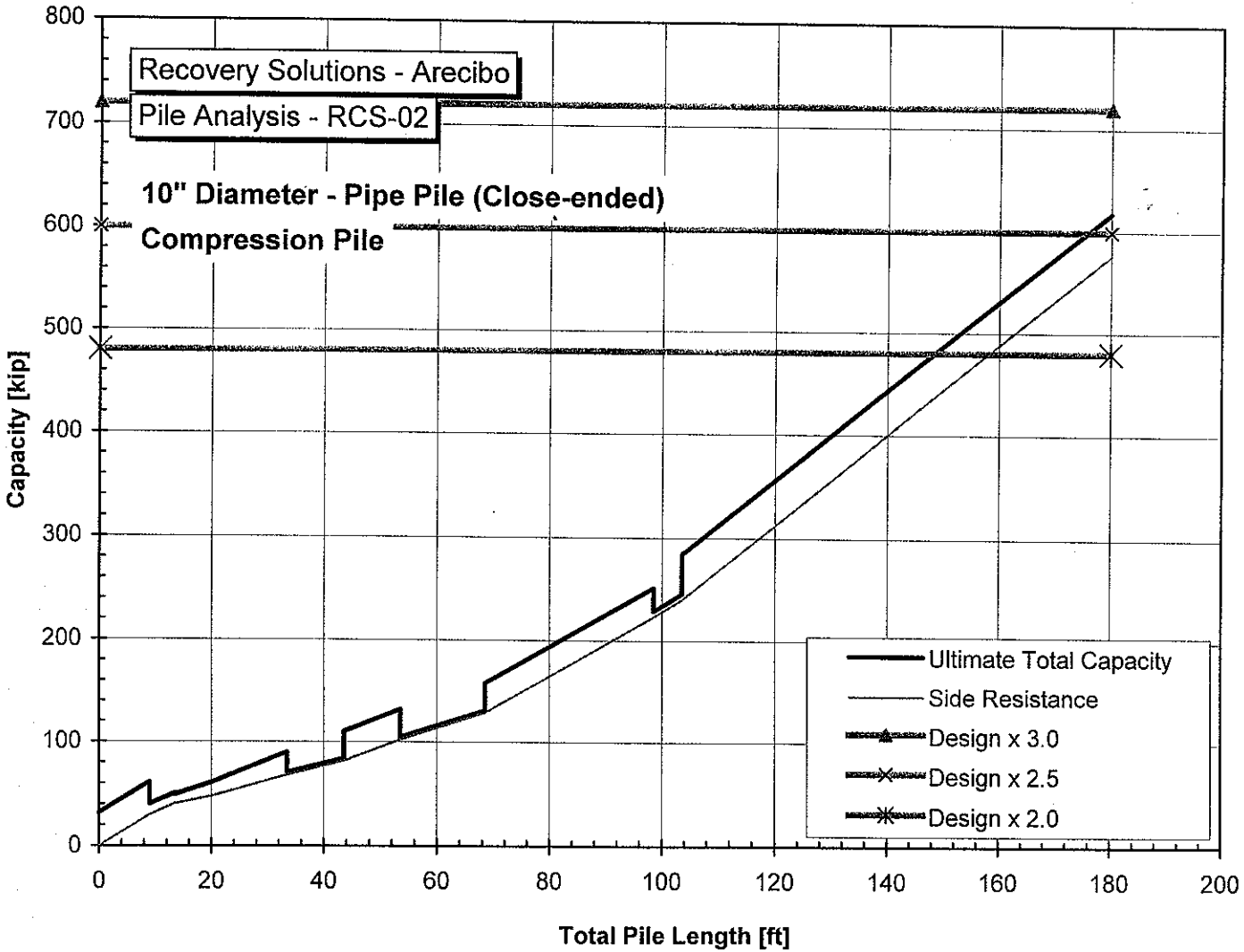



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-01 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

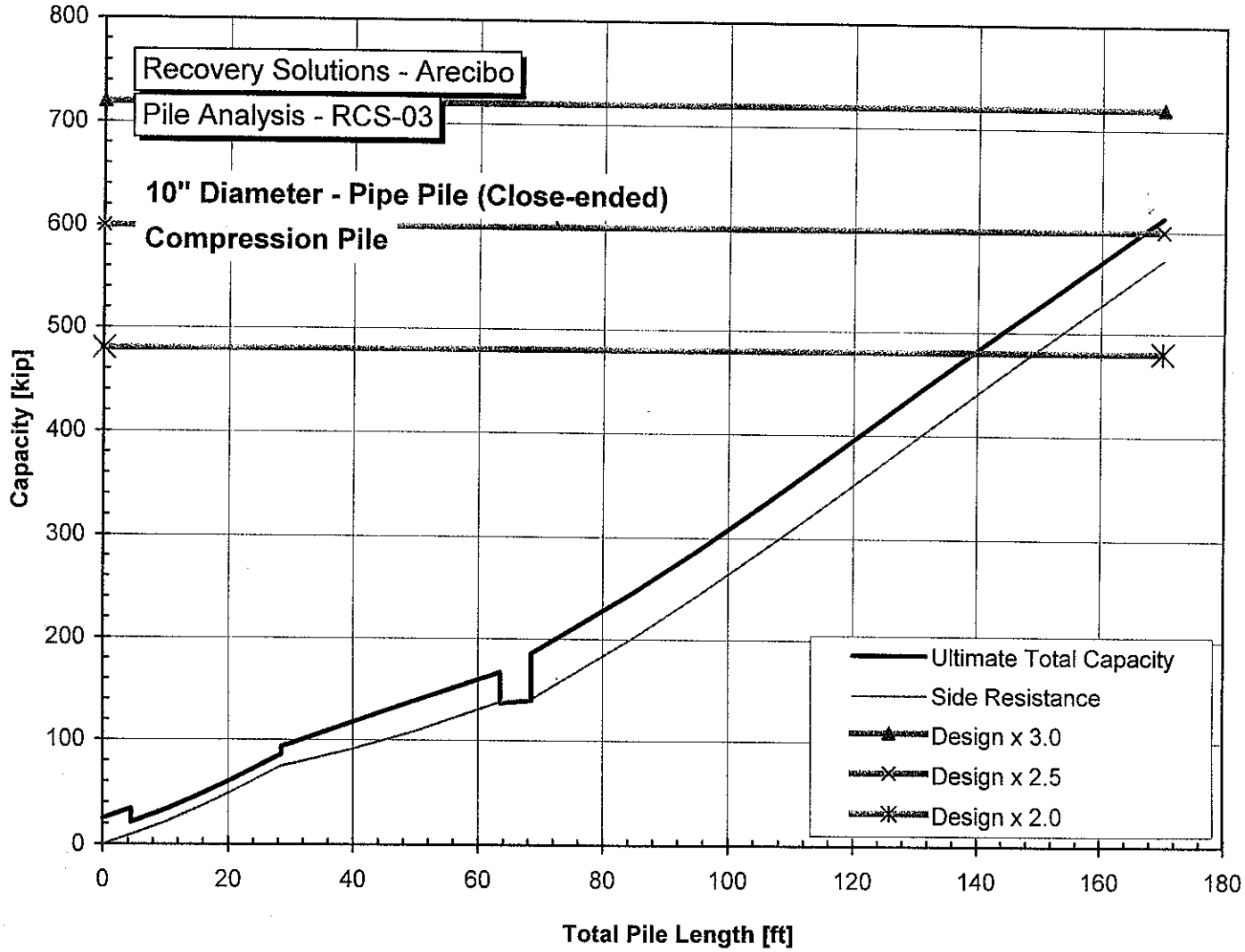



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-02 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

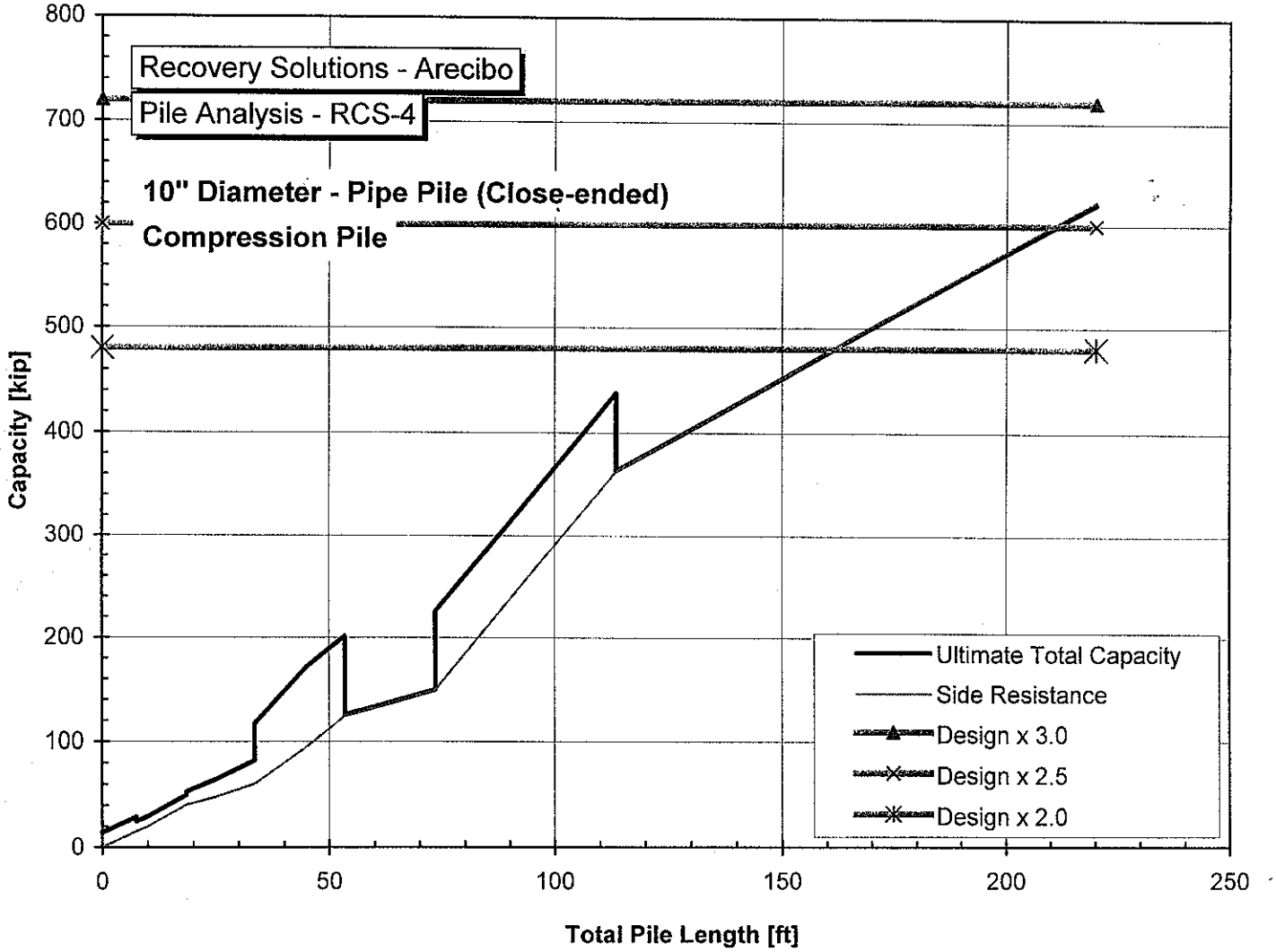



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-03 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

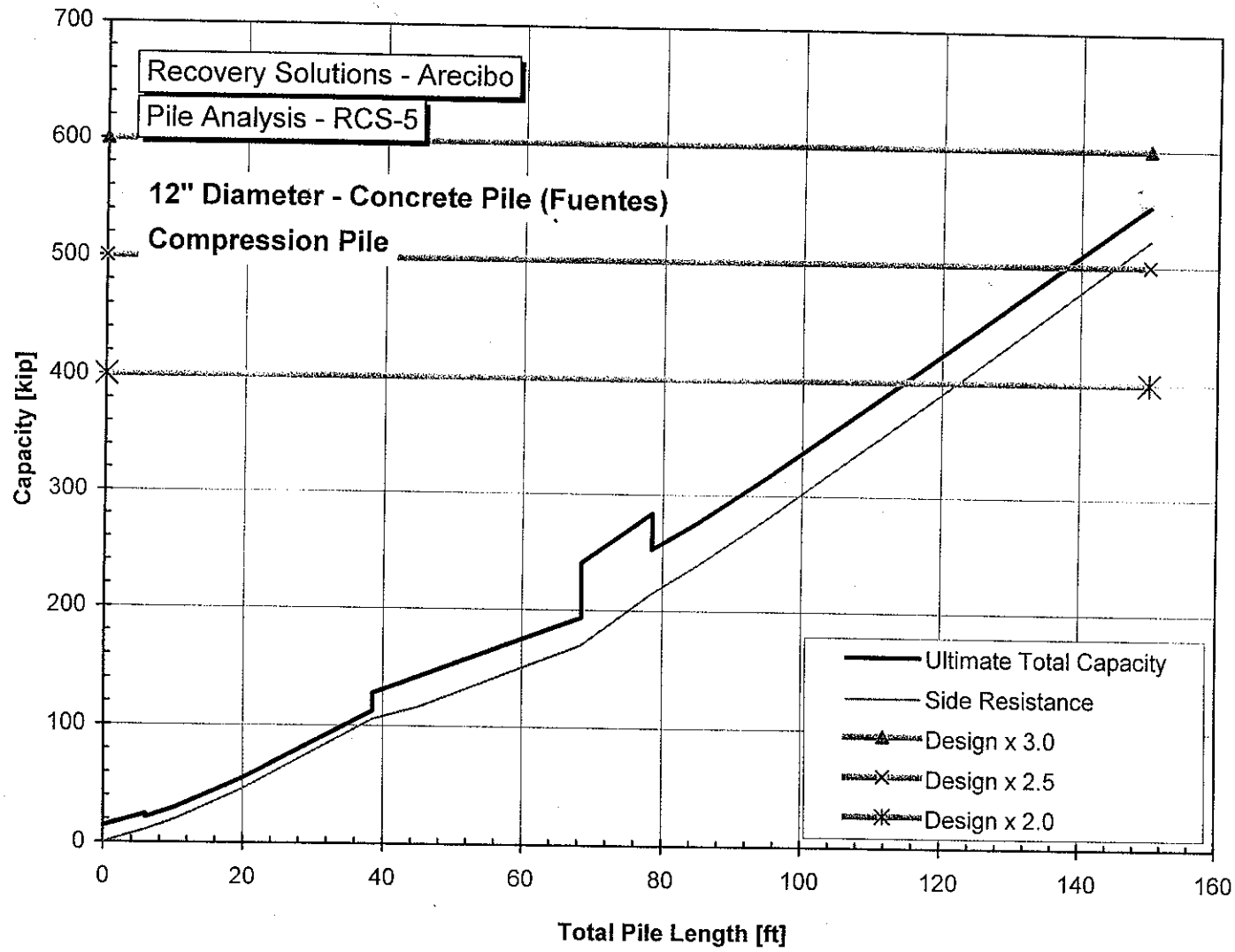



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-04 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

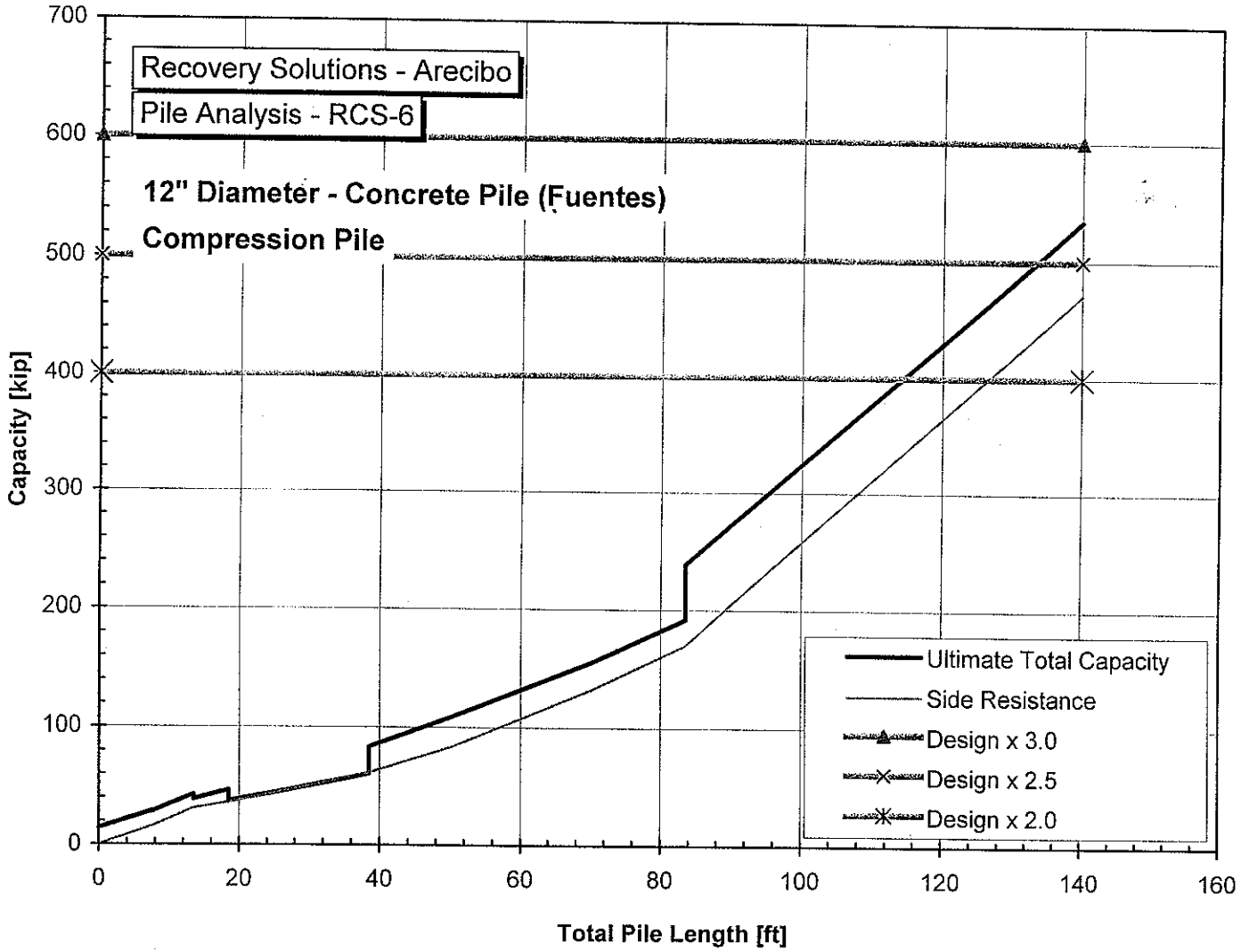



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

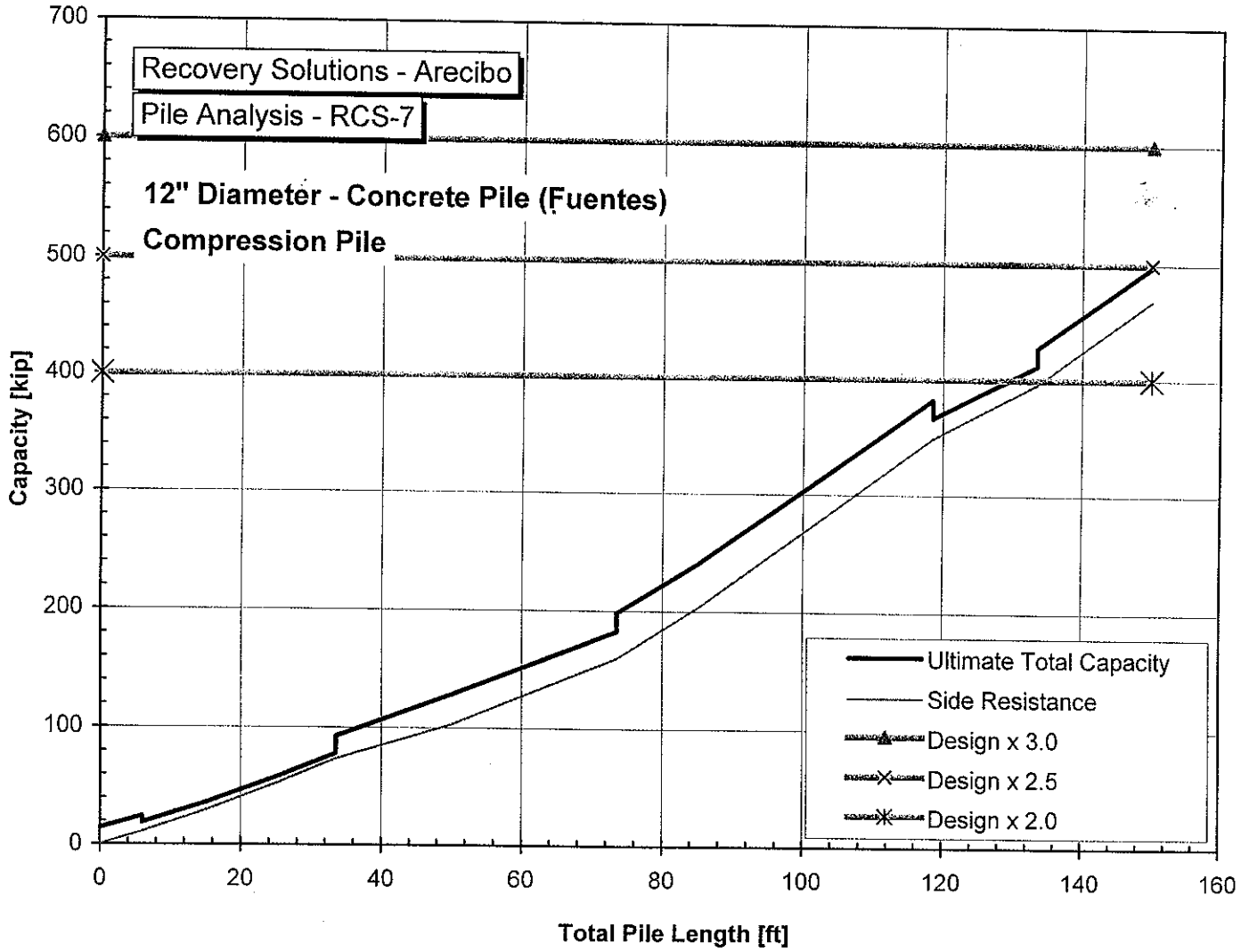



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

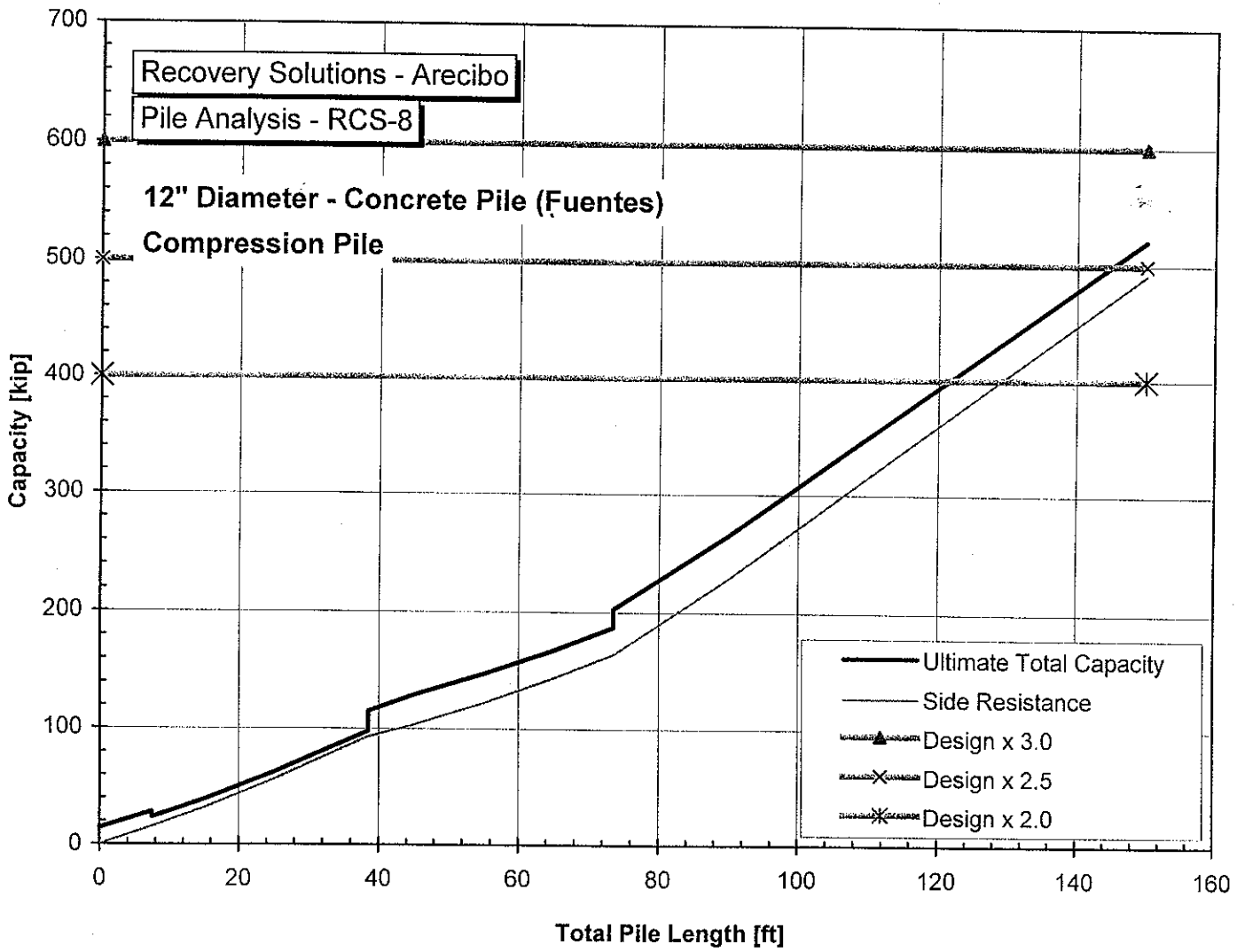



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

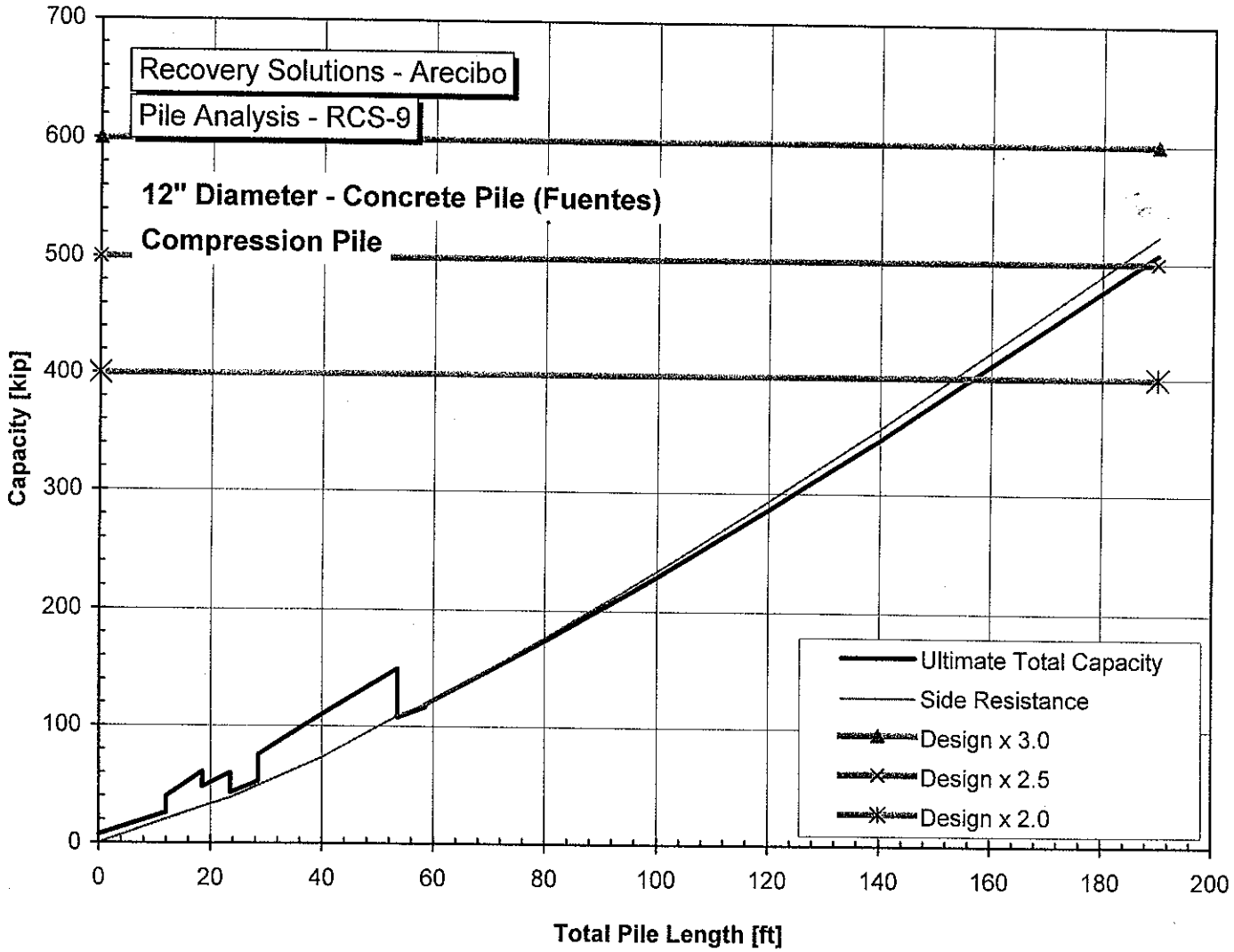



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

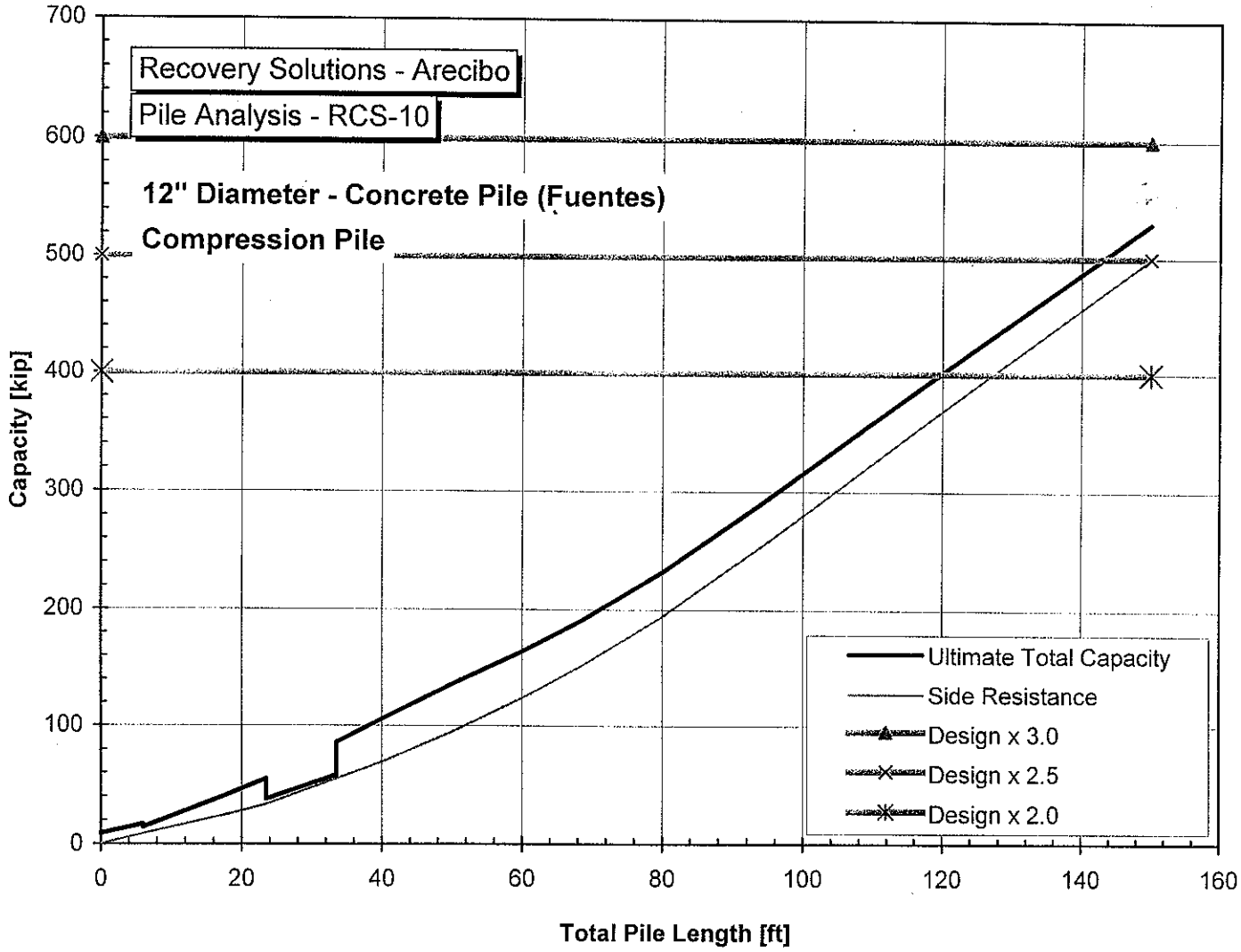



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

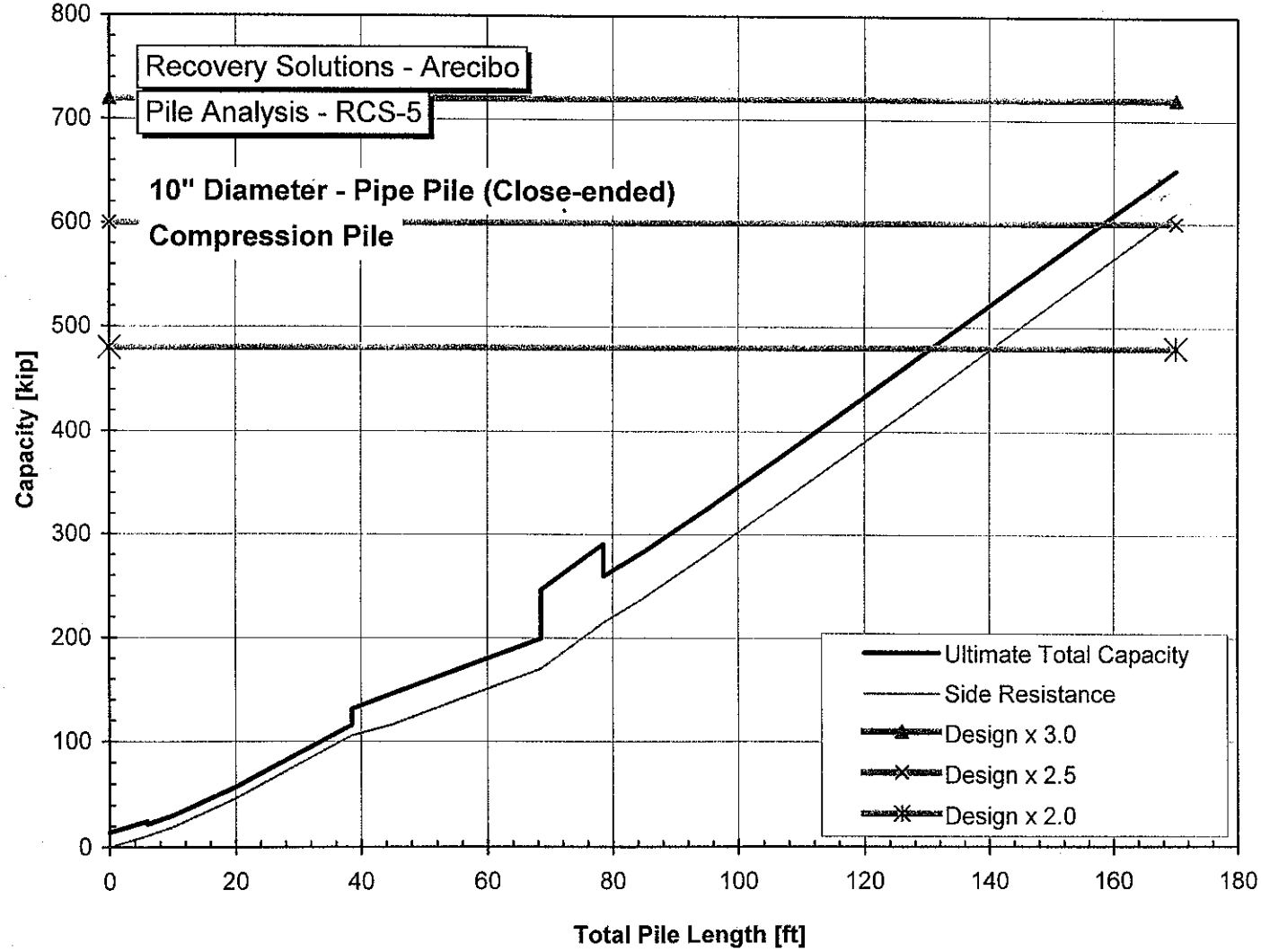



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pile 12 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

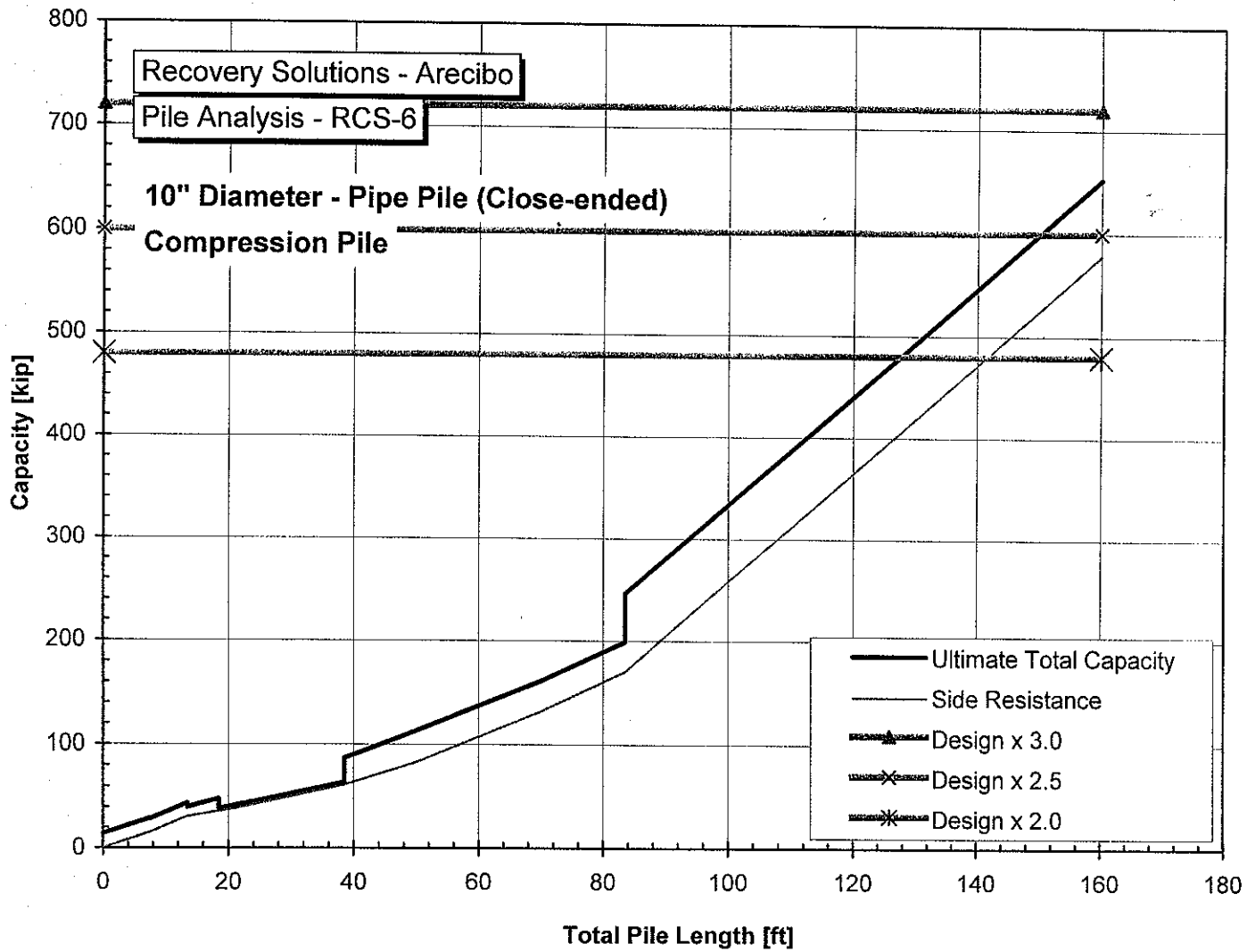



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-05 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

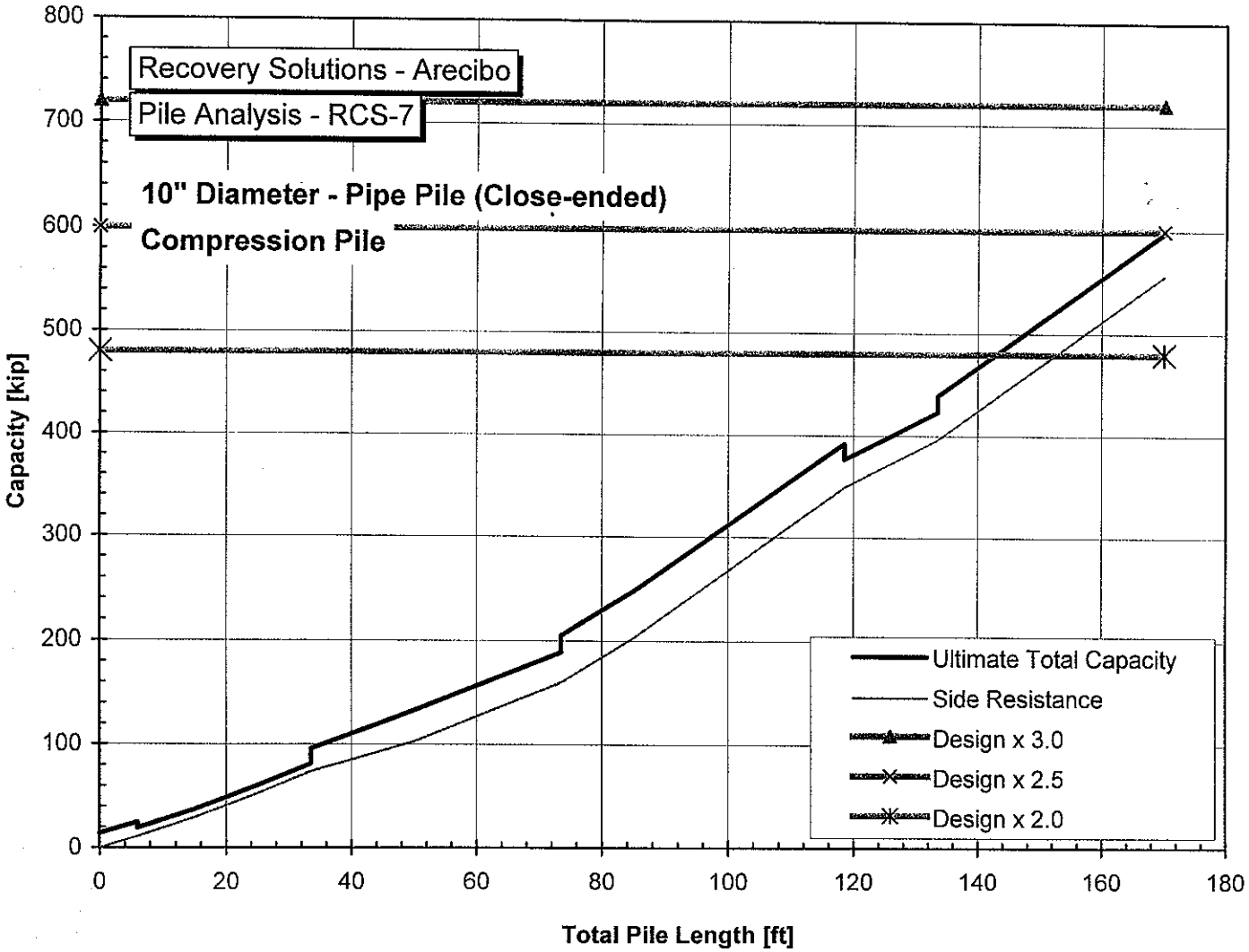



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-06 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

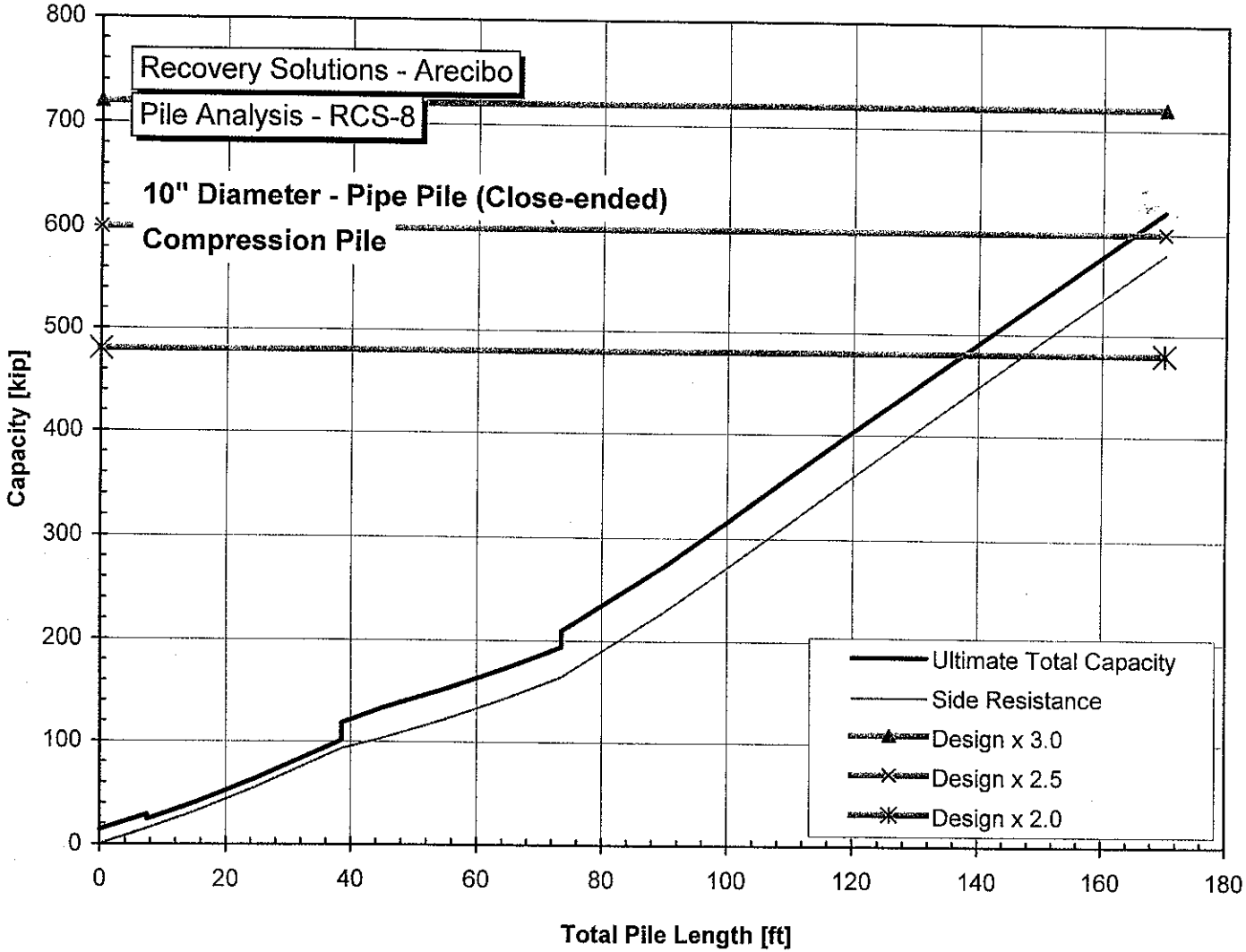



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-07 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

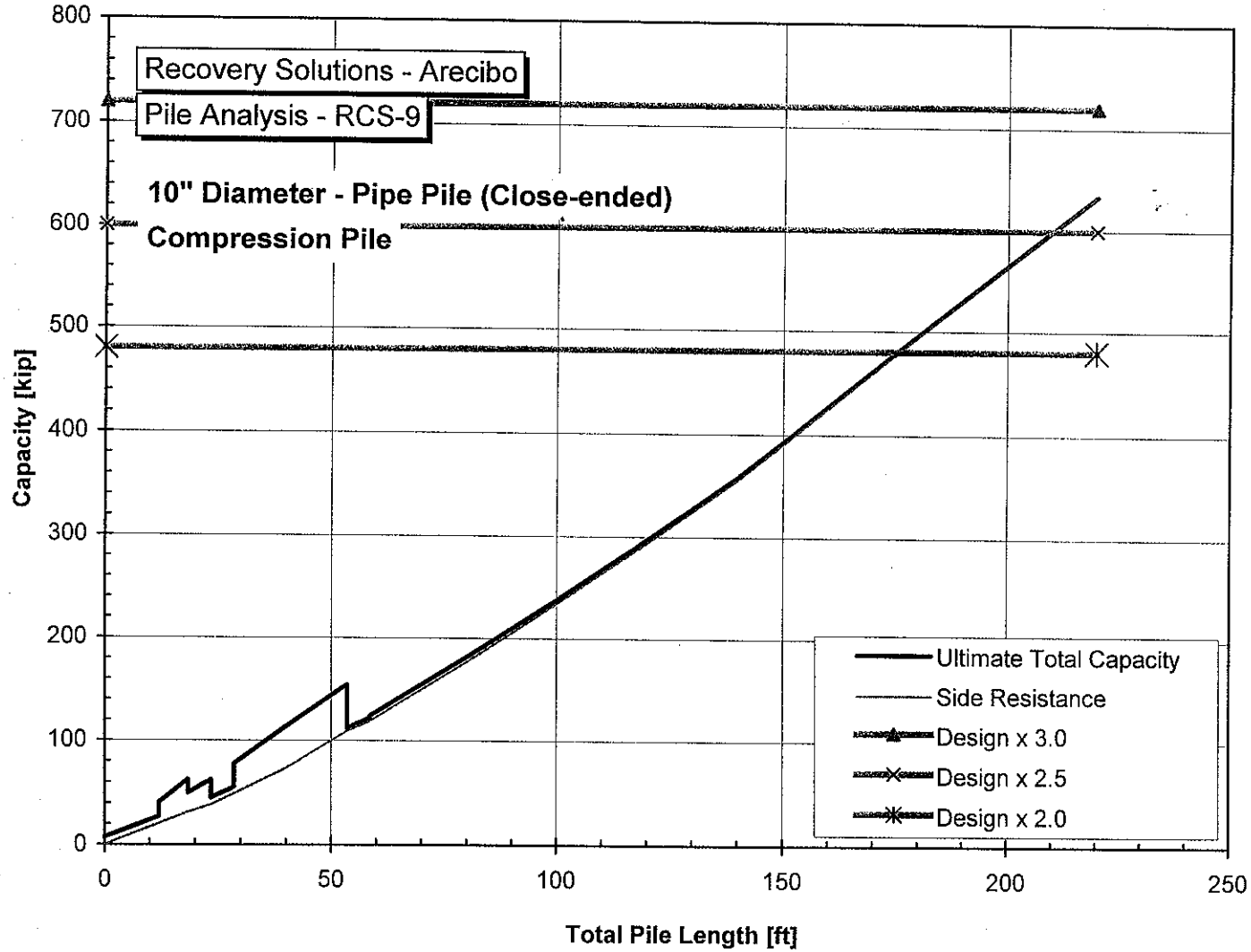



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-08 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

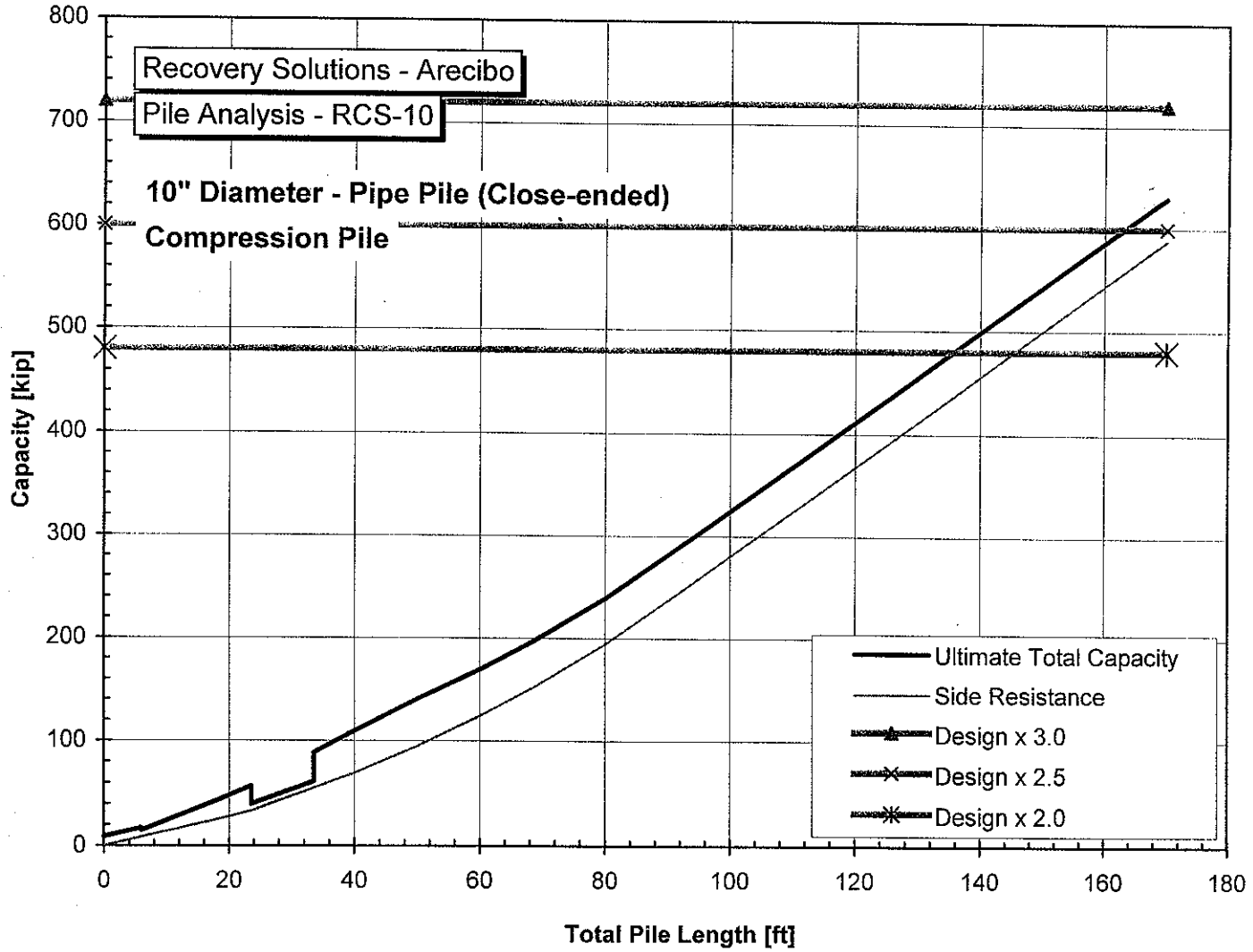



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-09 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

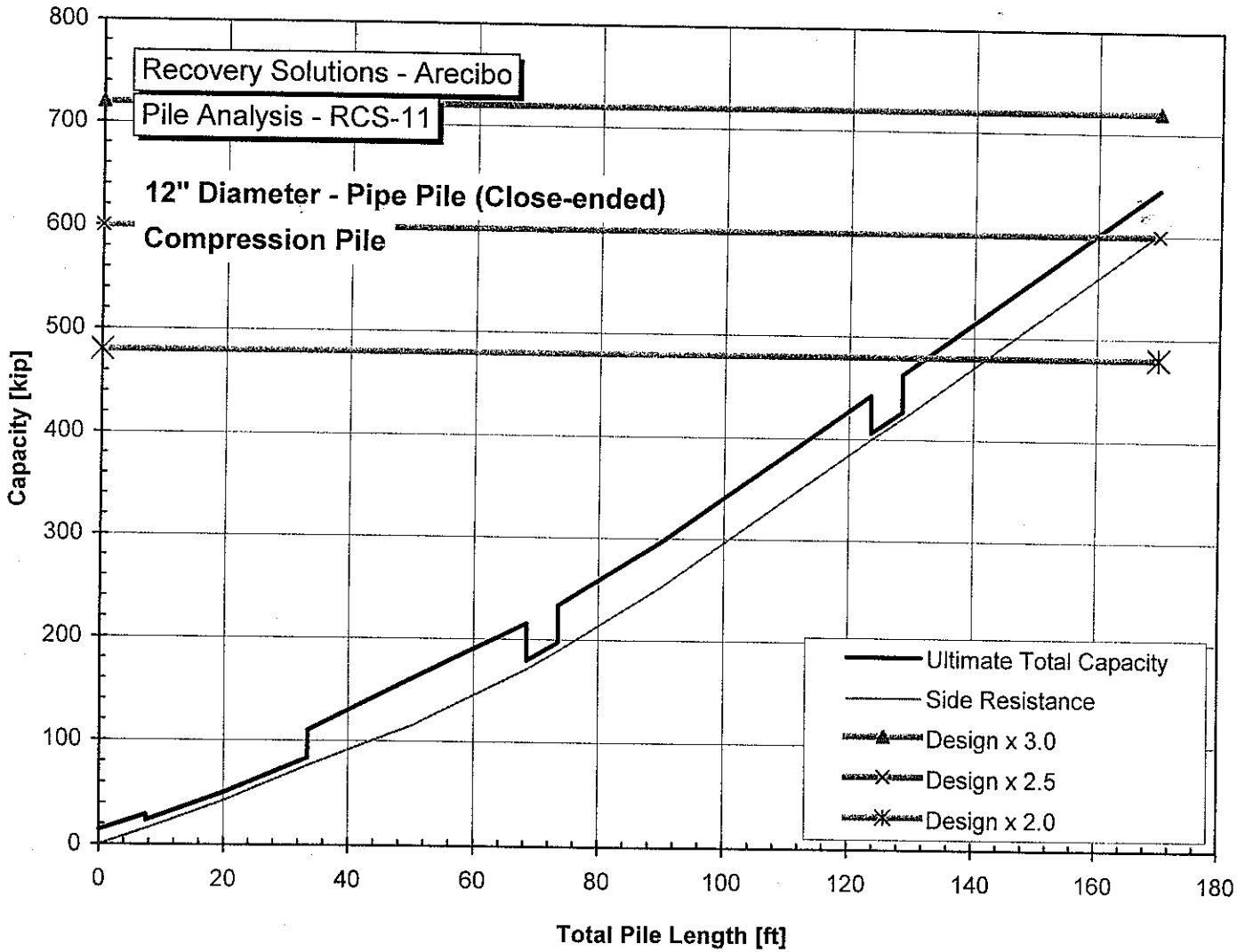



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-10 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

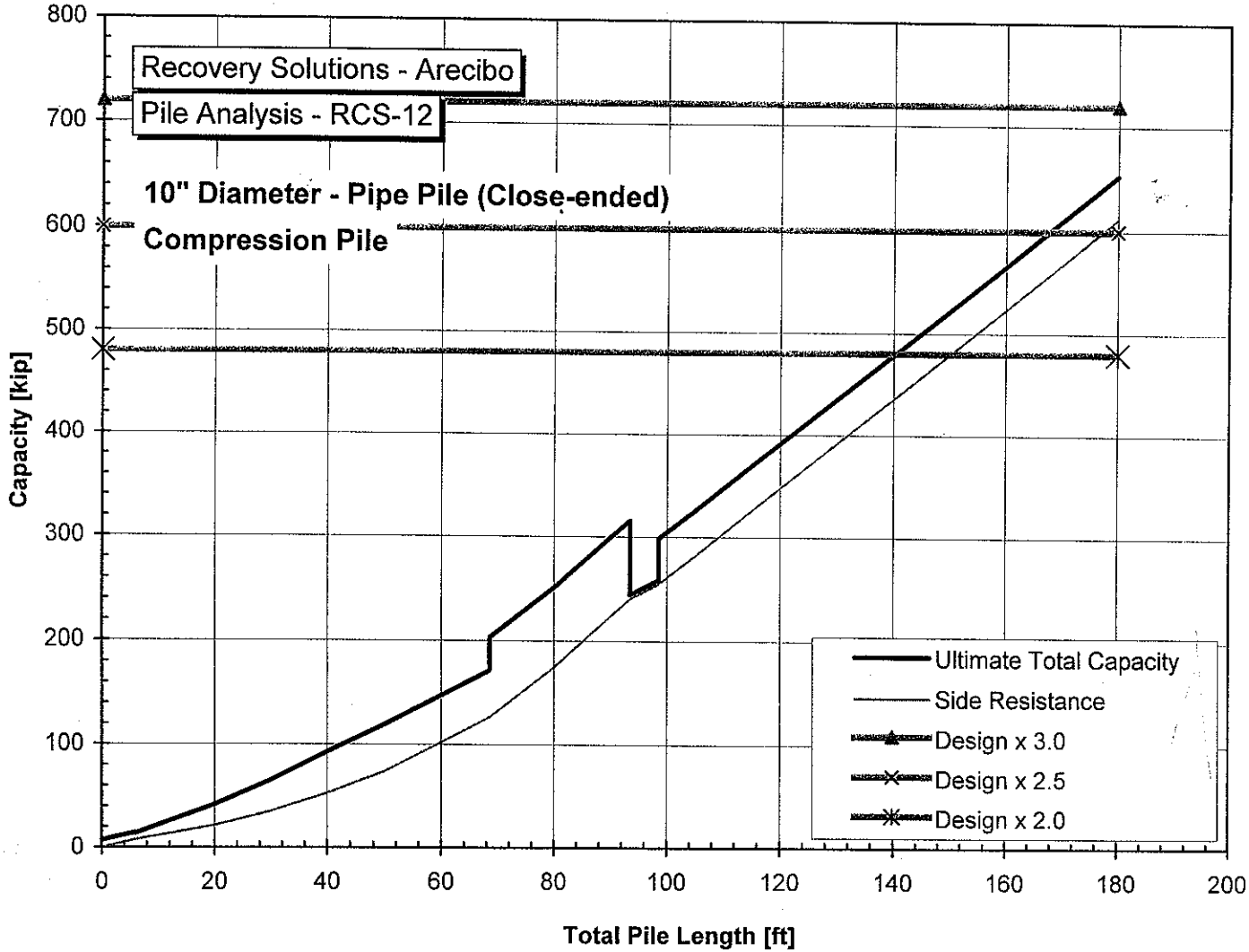



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-11 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

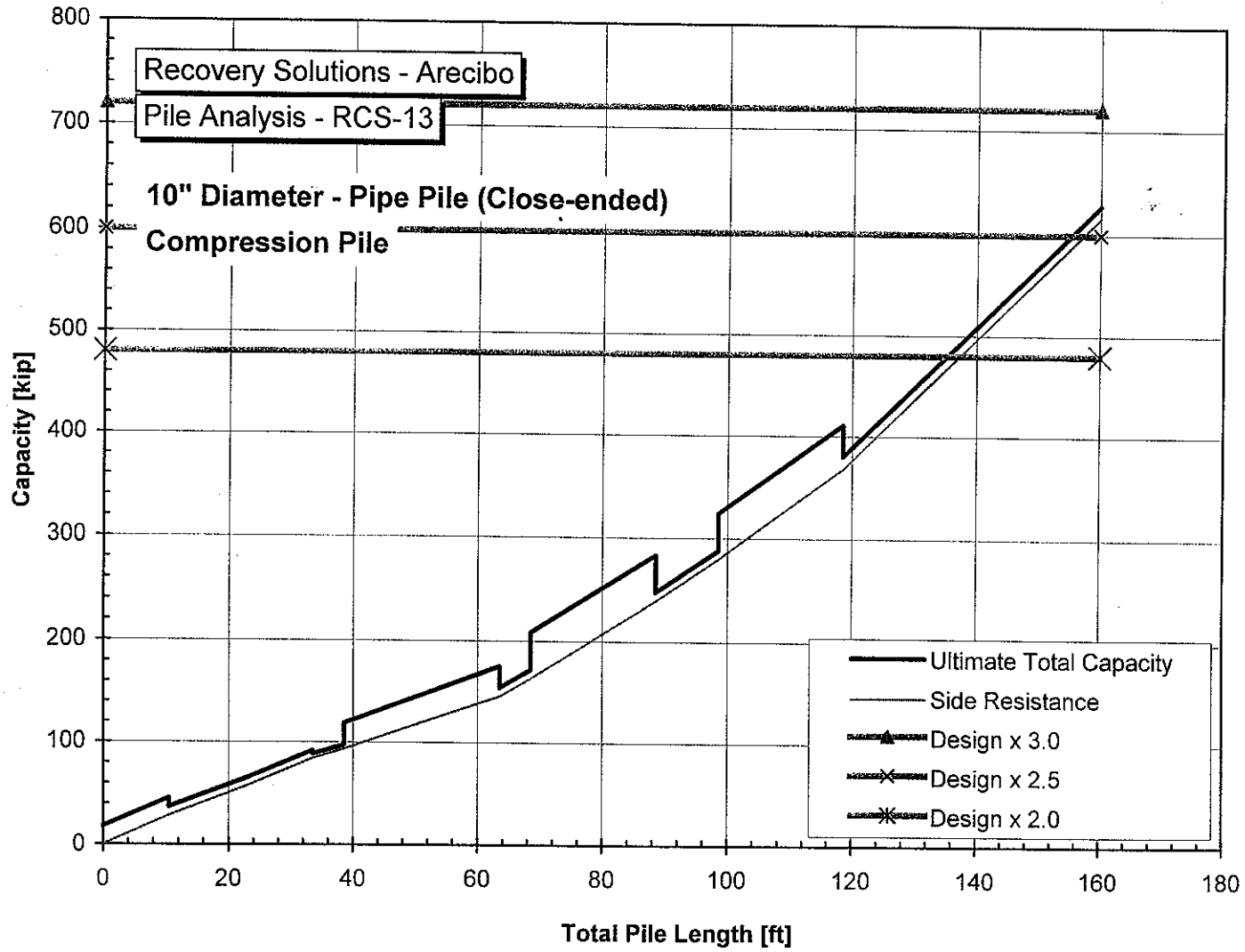



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-12 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

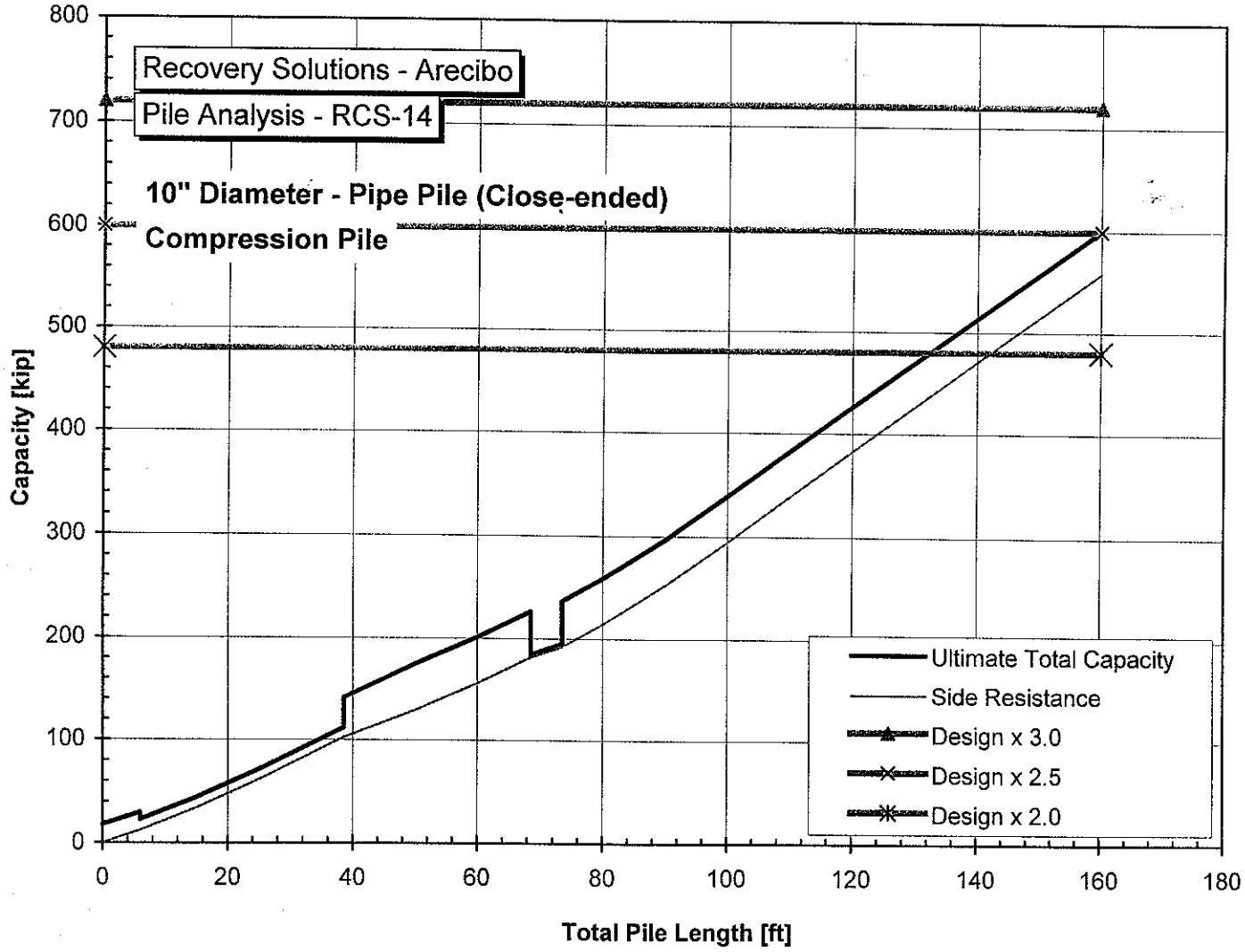



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-13 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

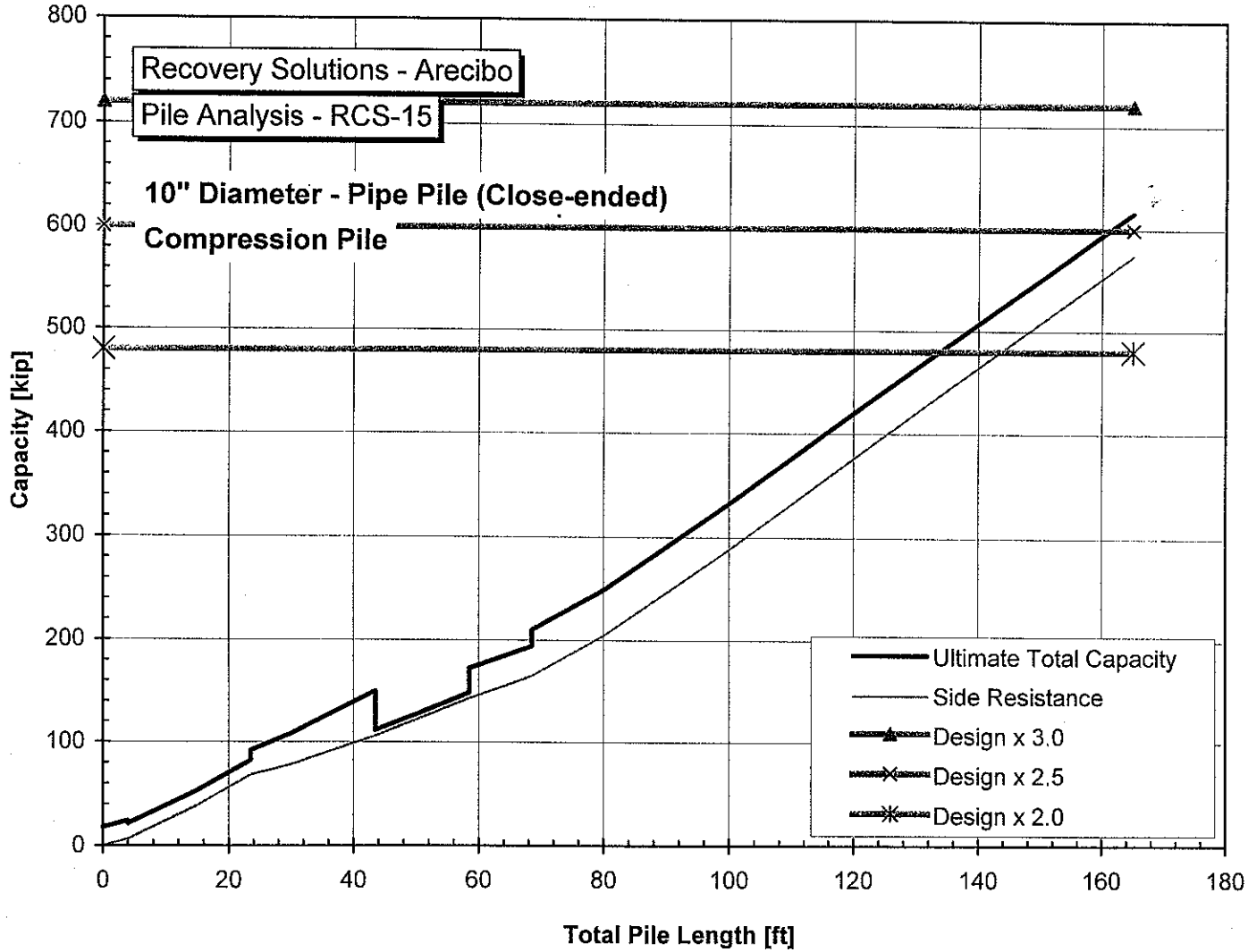



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-14 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

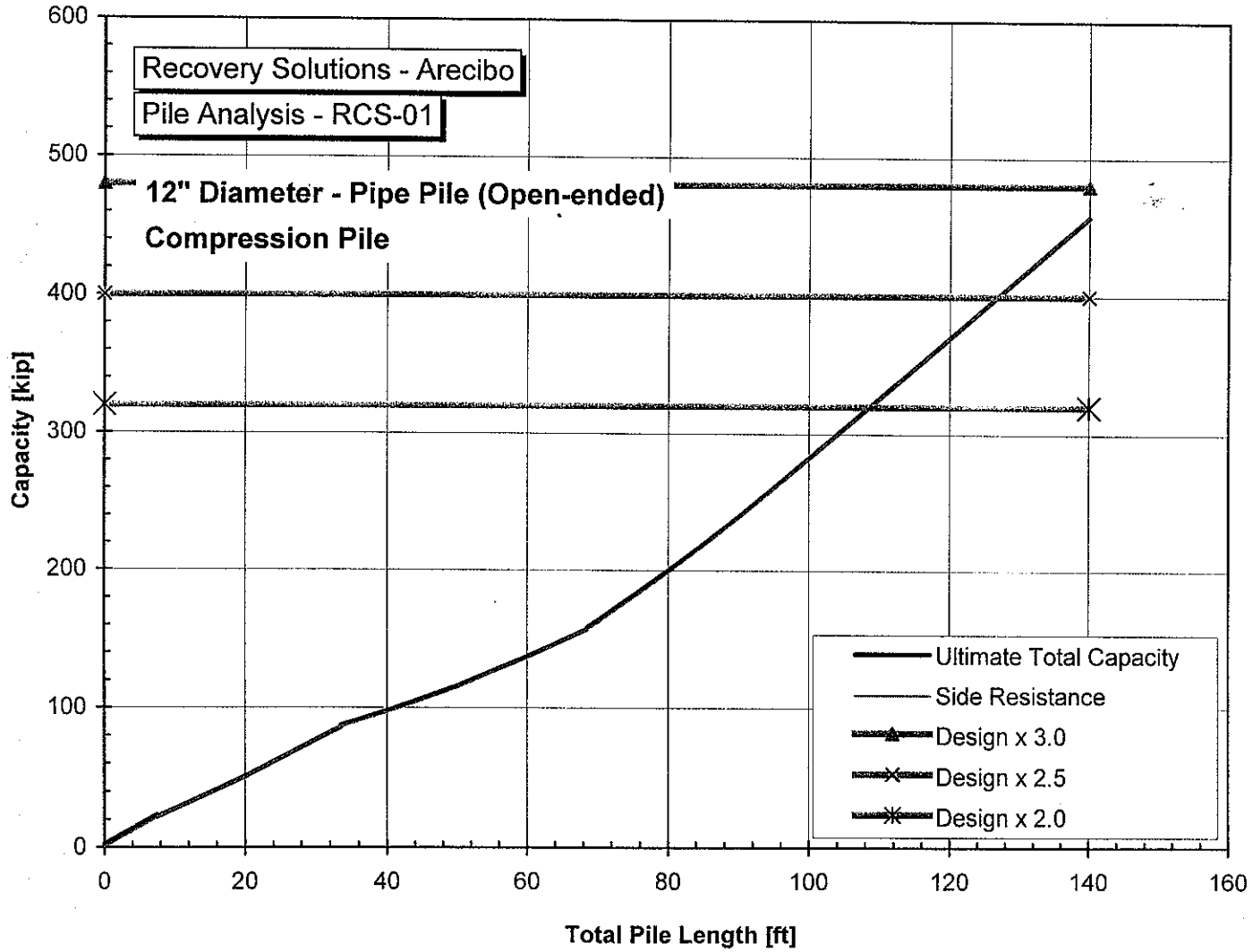



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-15 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

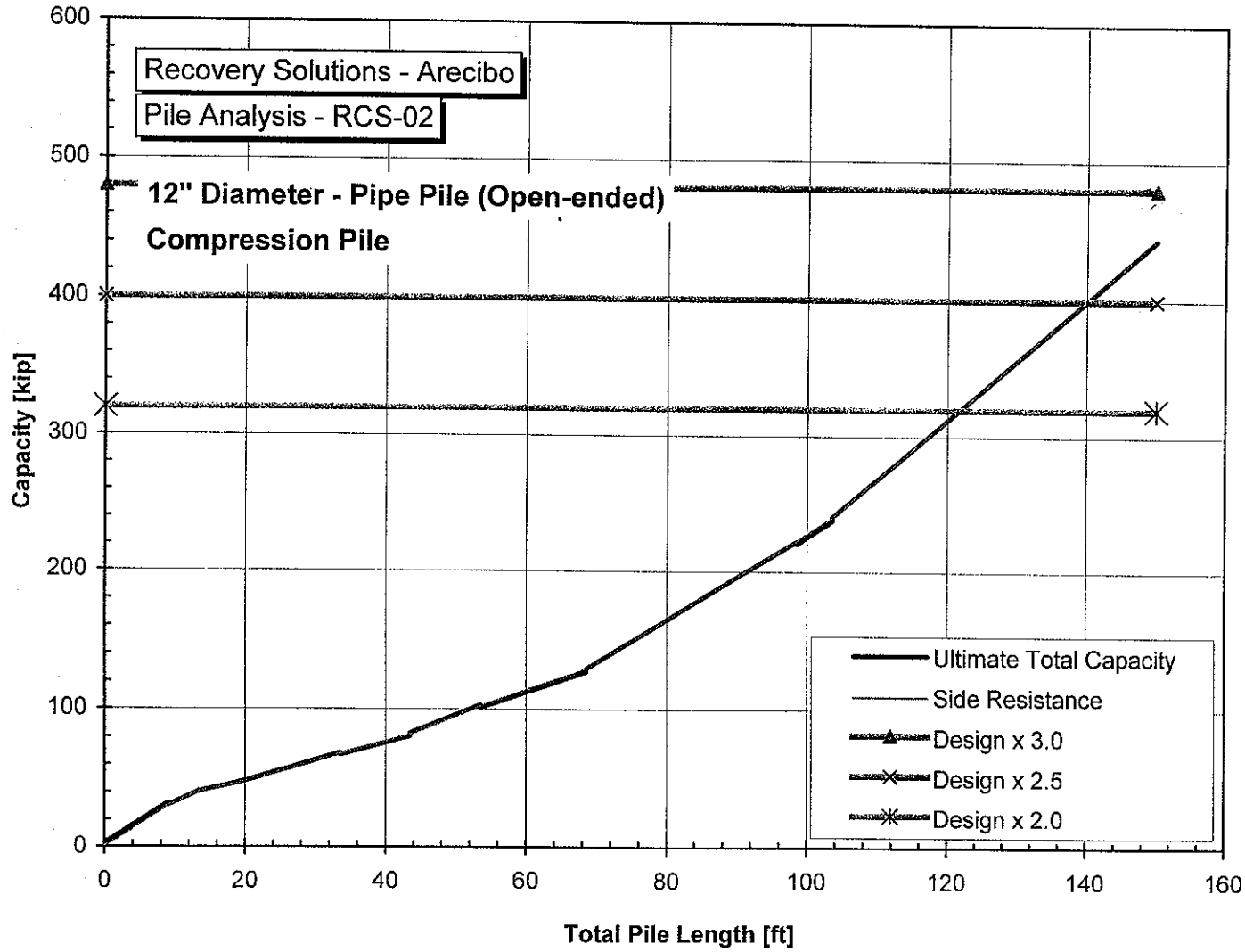



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

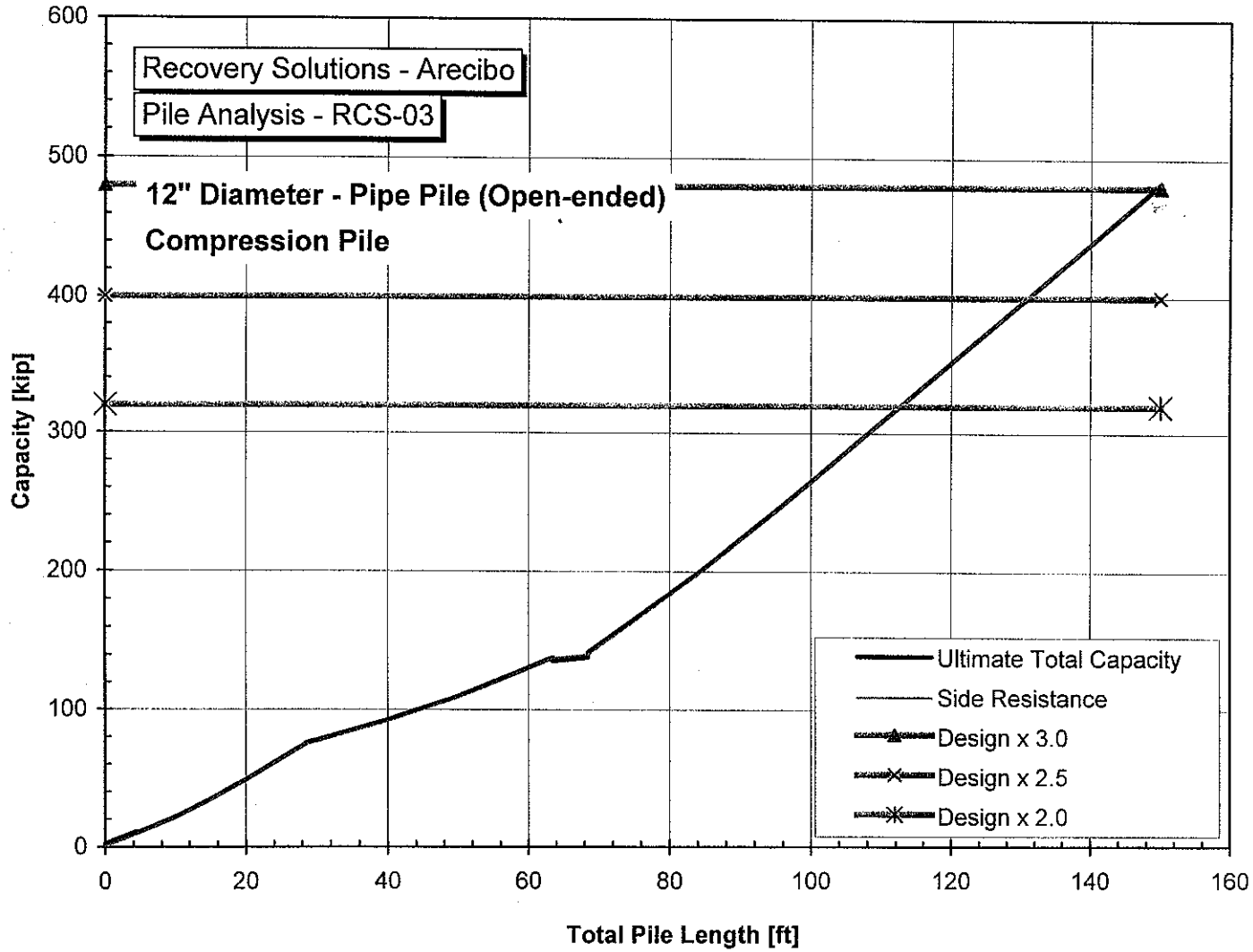



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

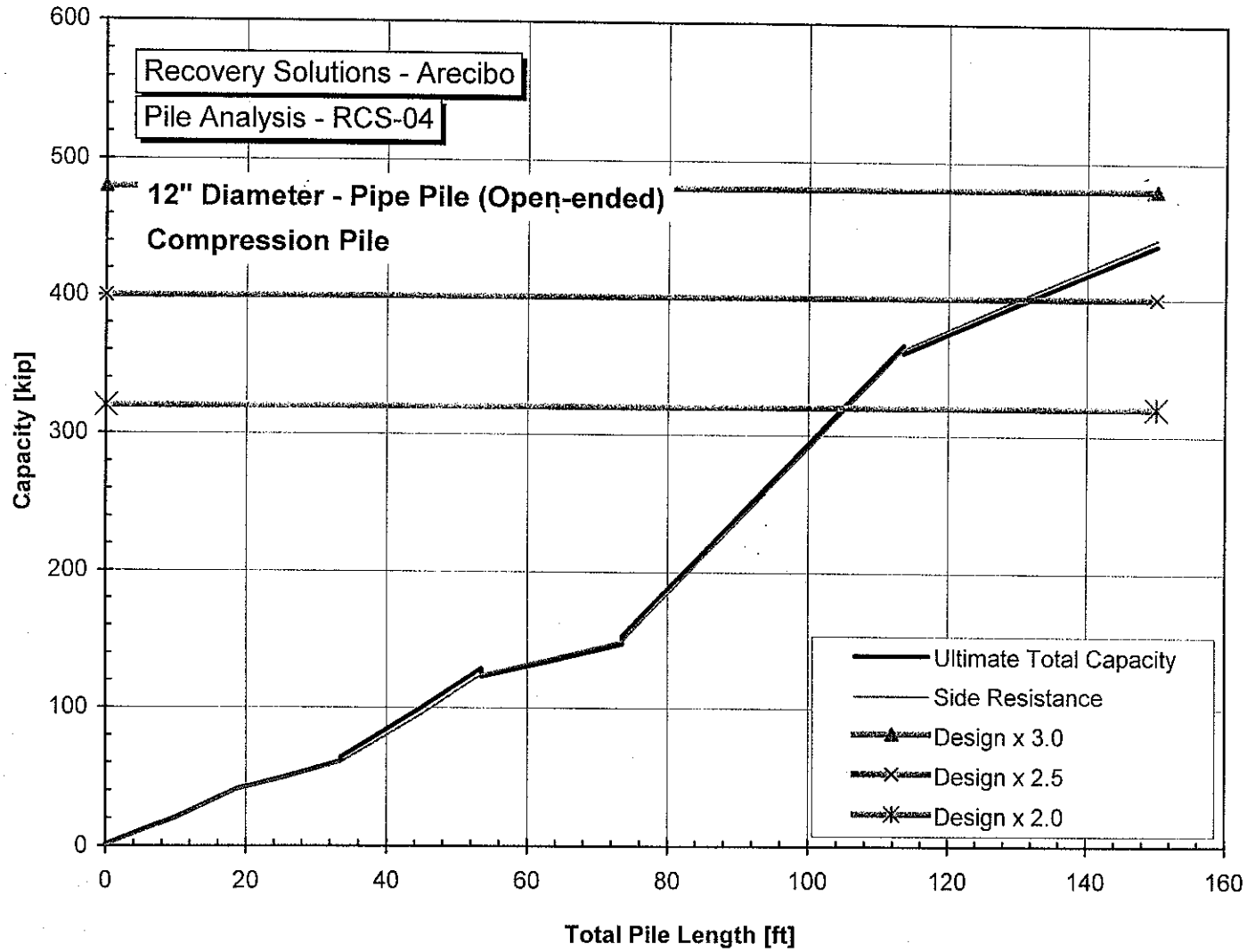



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

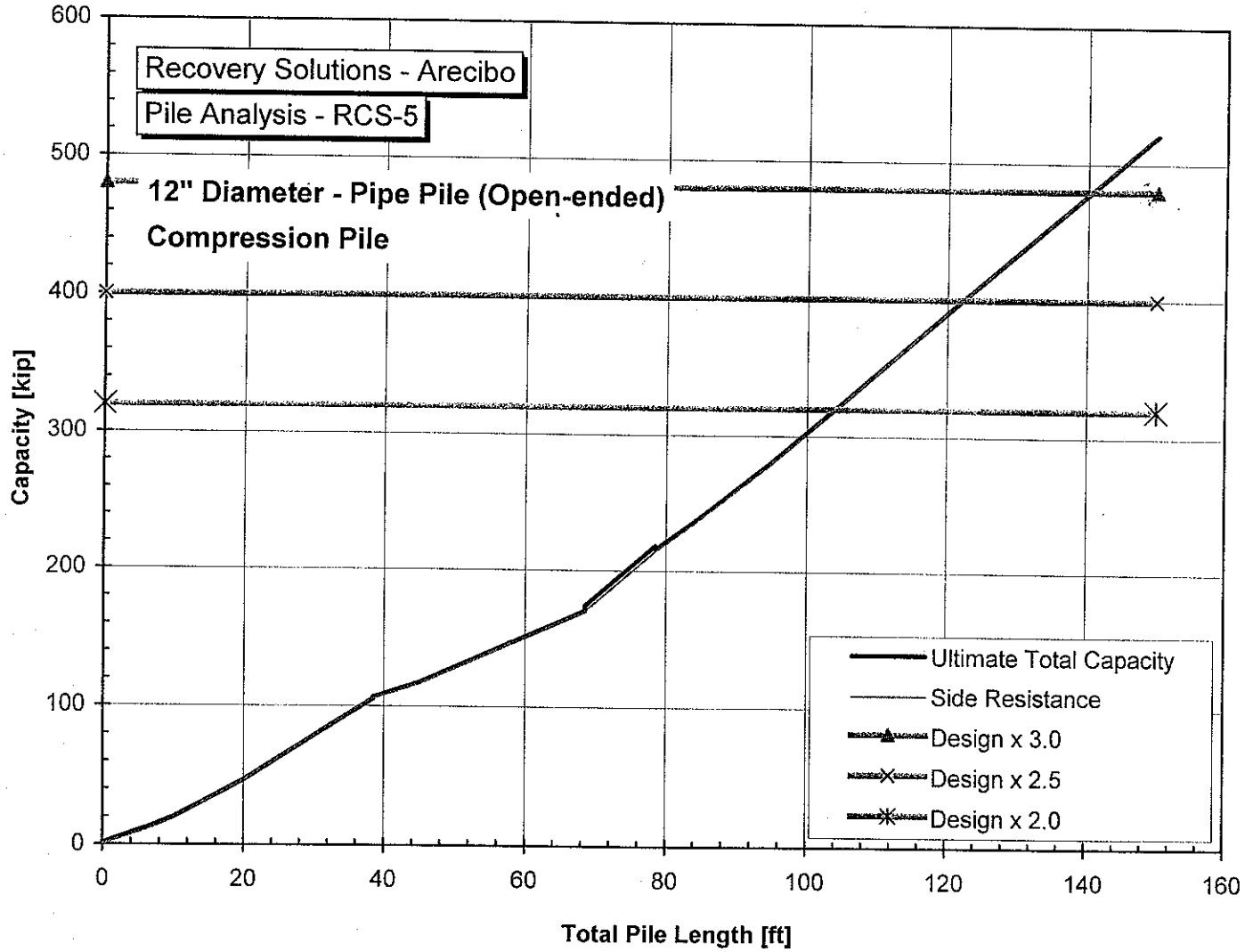



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

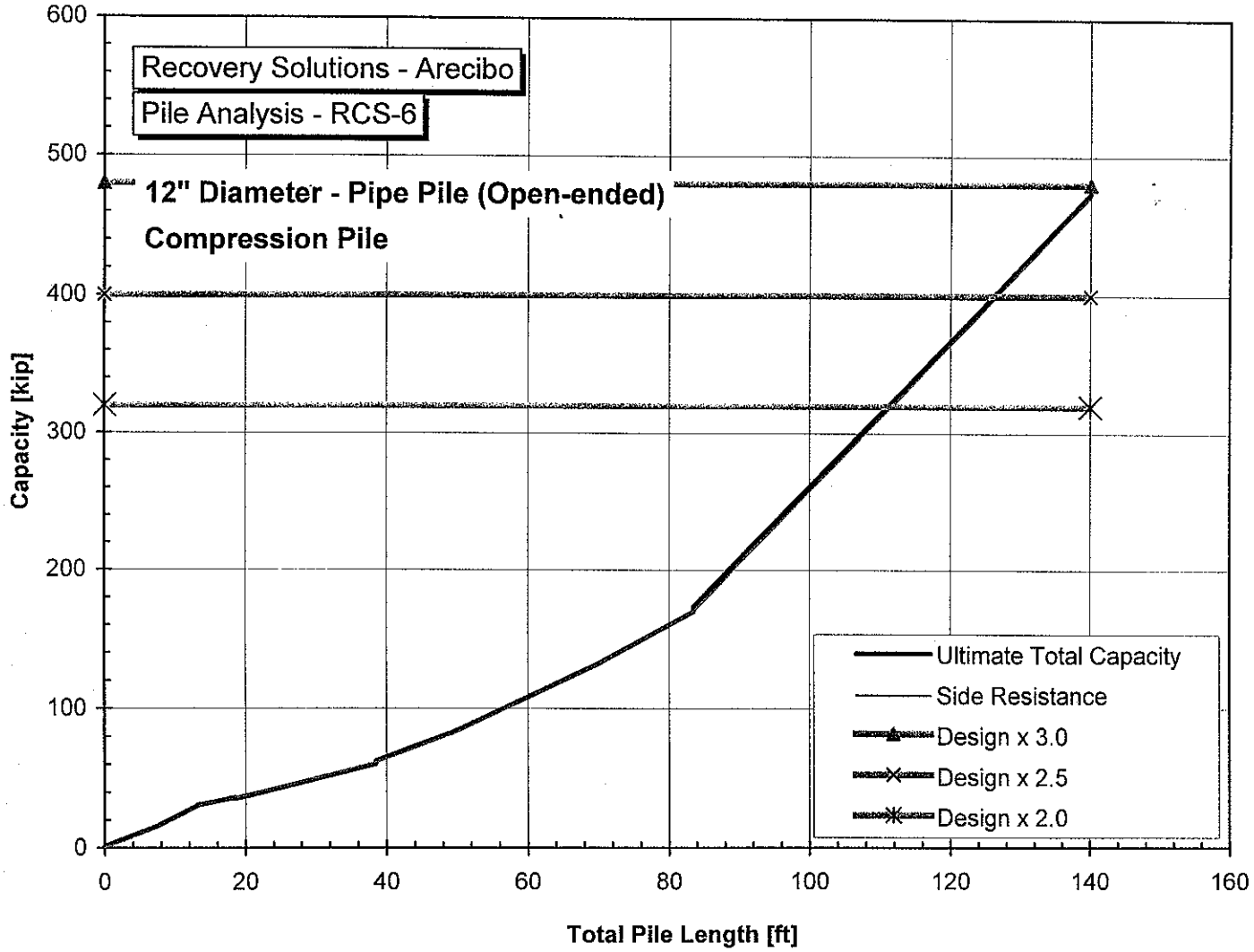



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

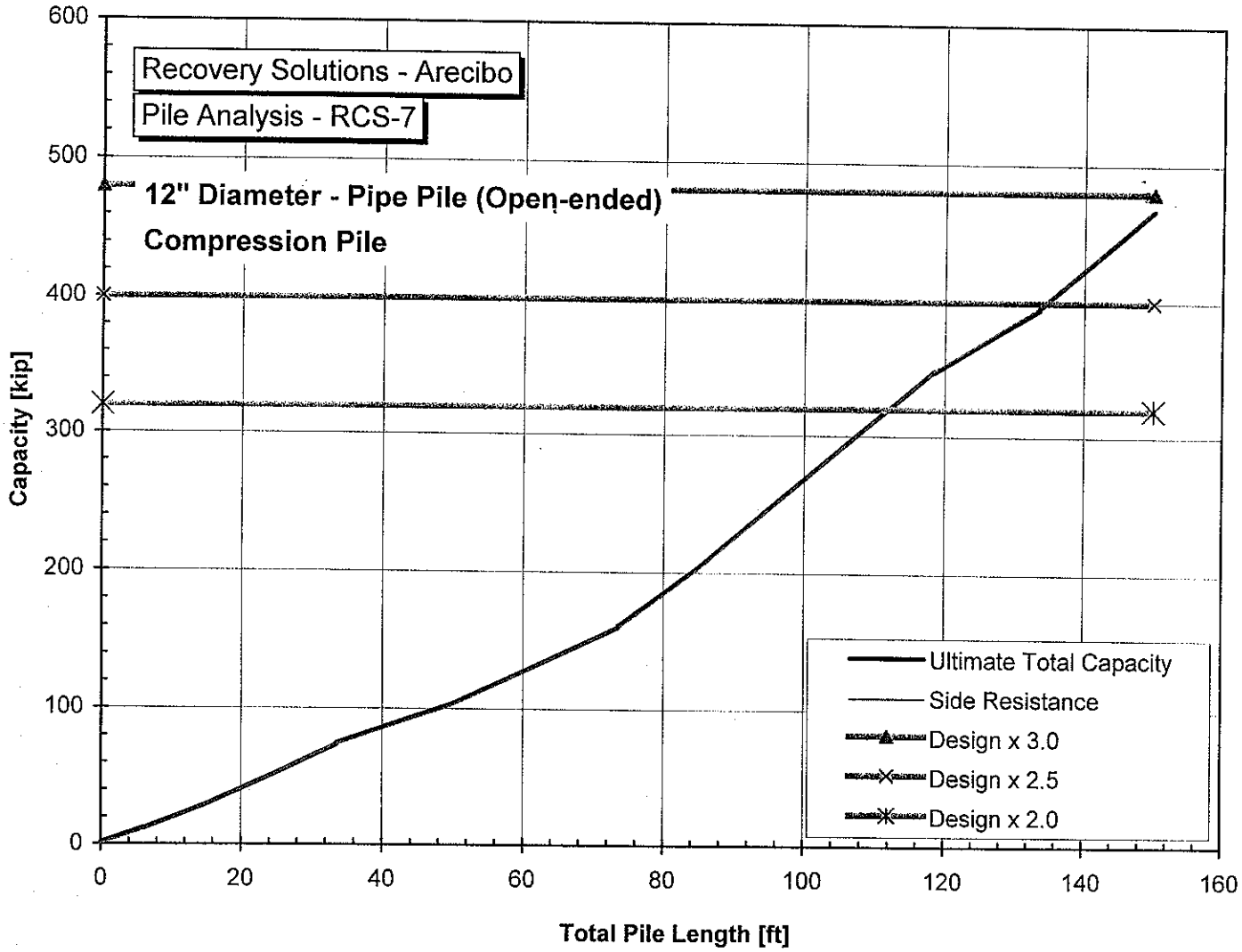



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

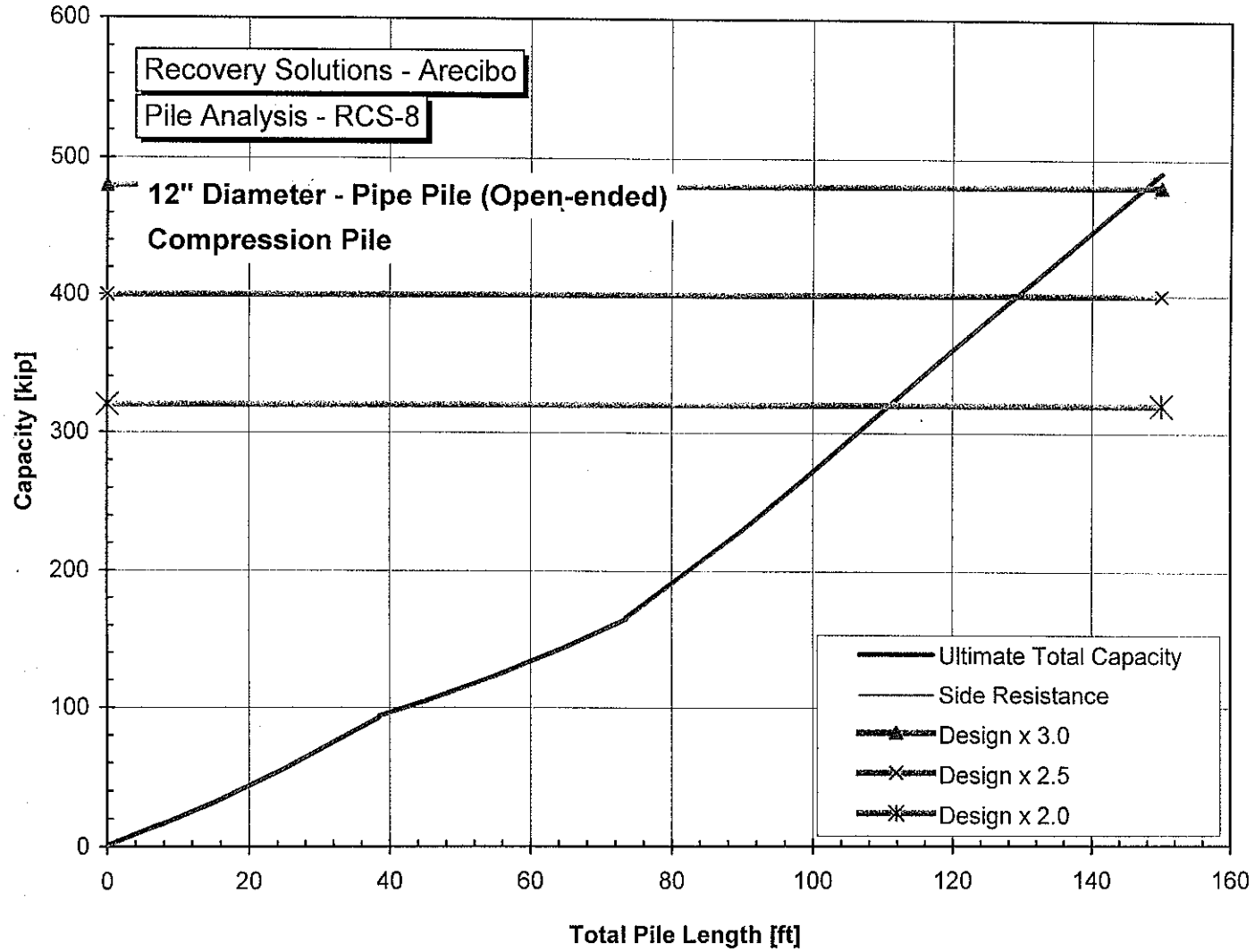



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

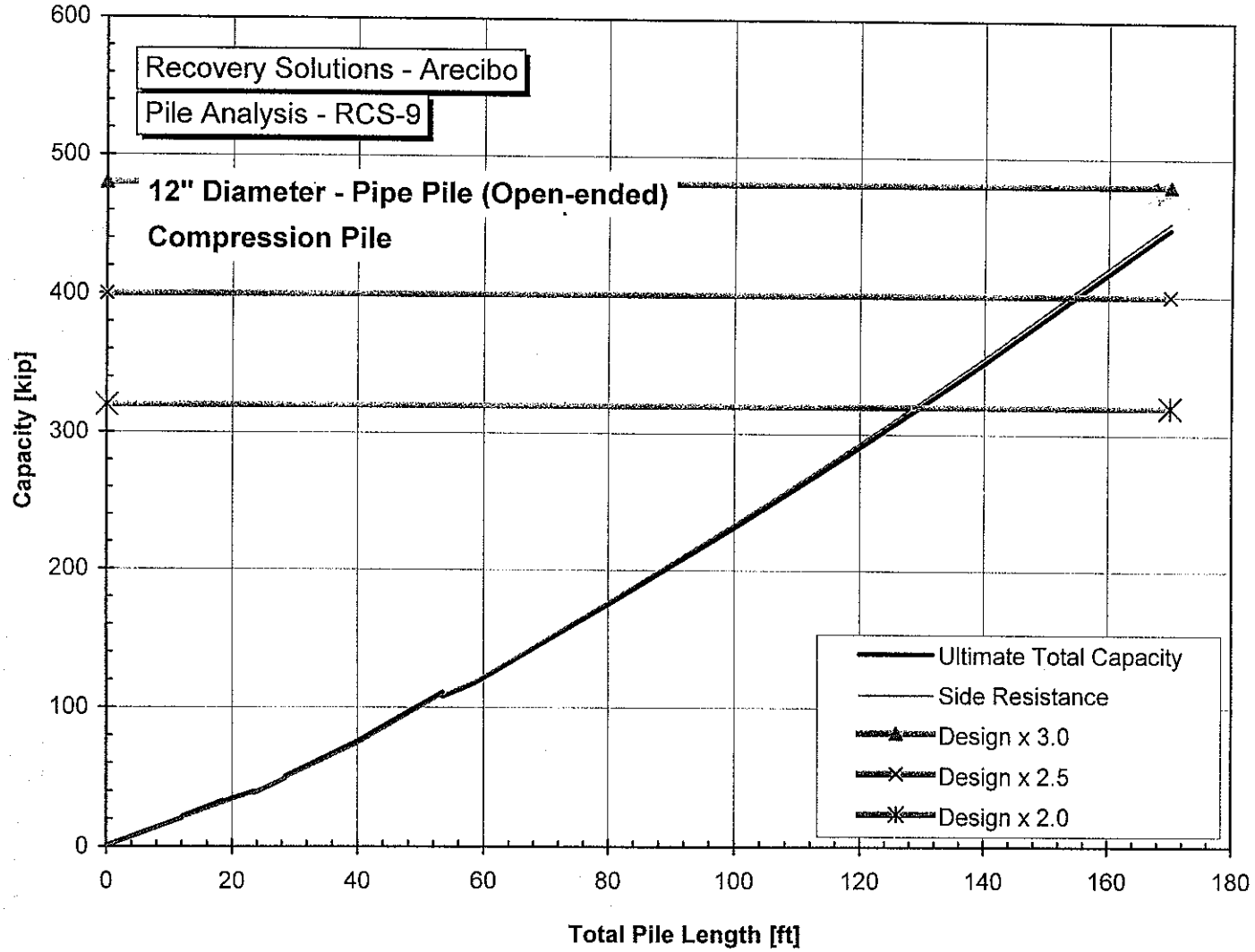



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

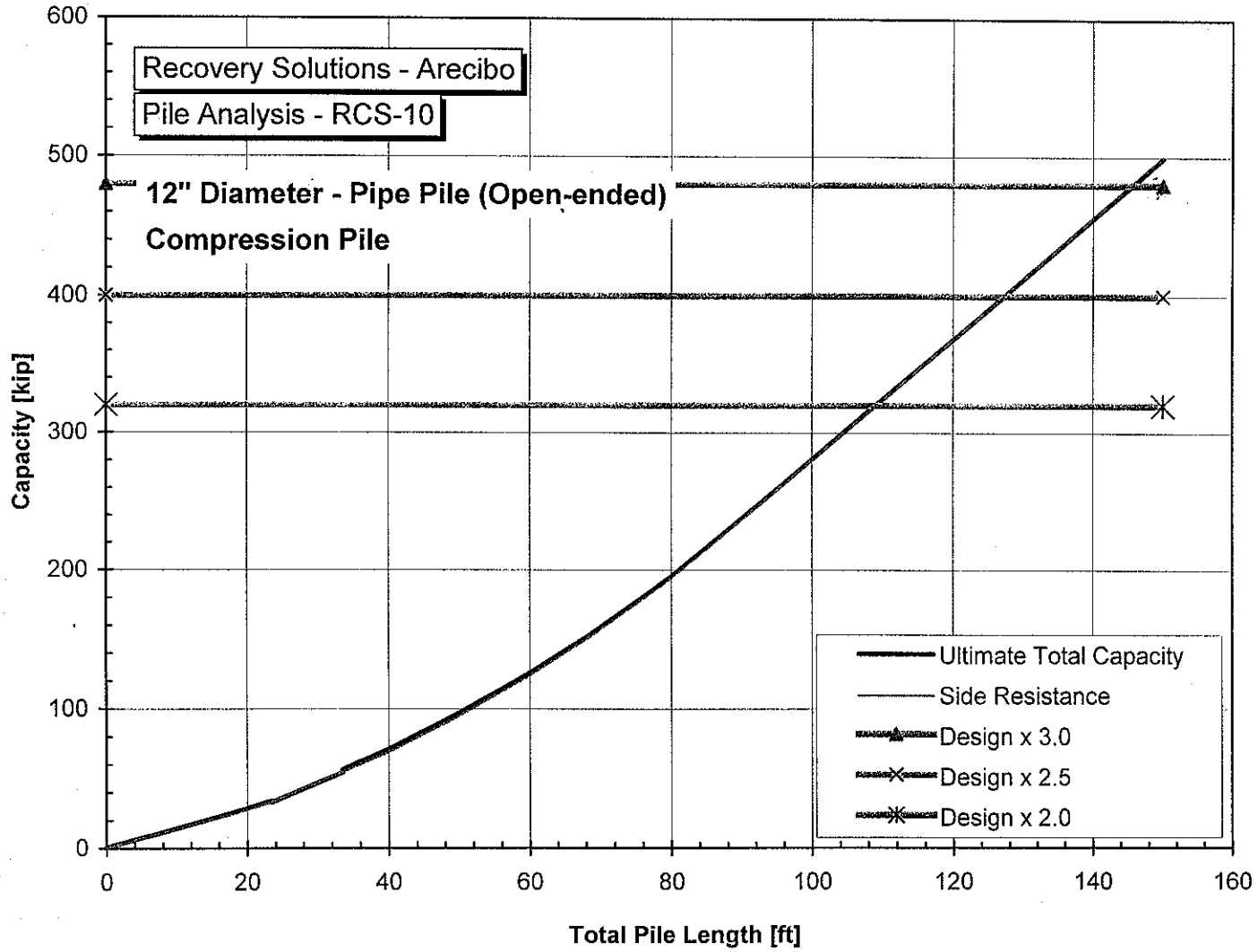



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

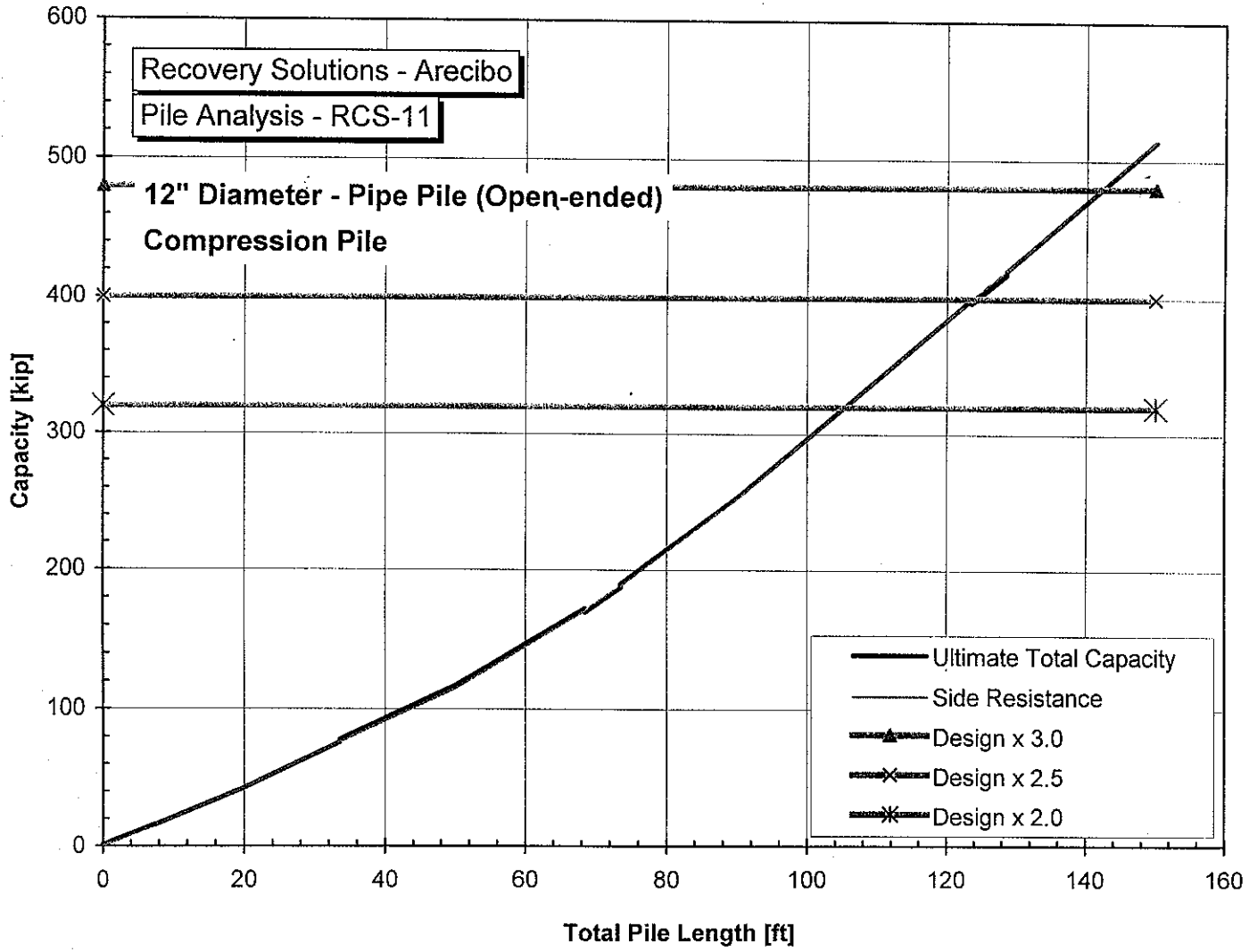



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

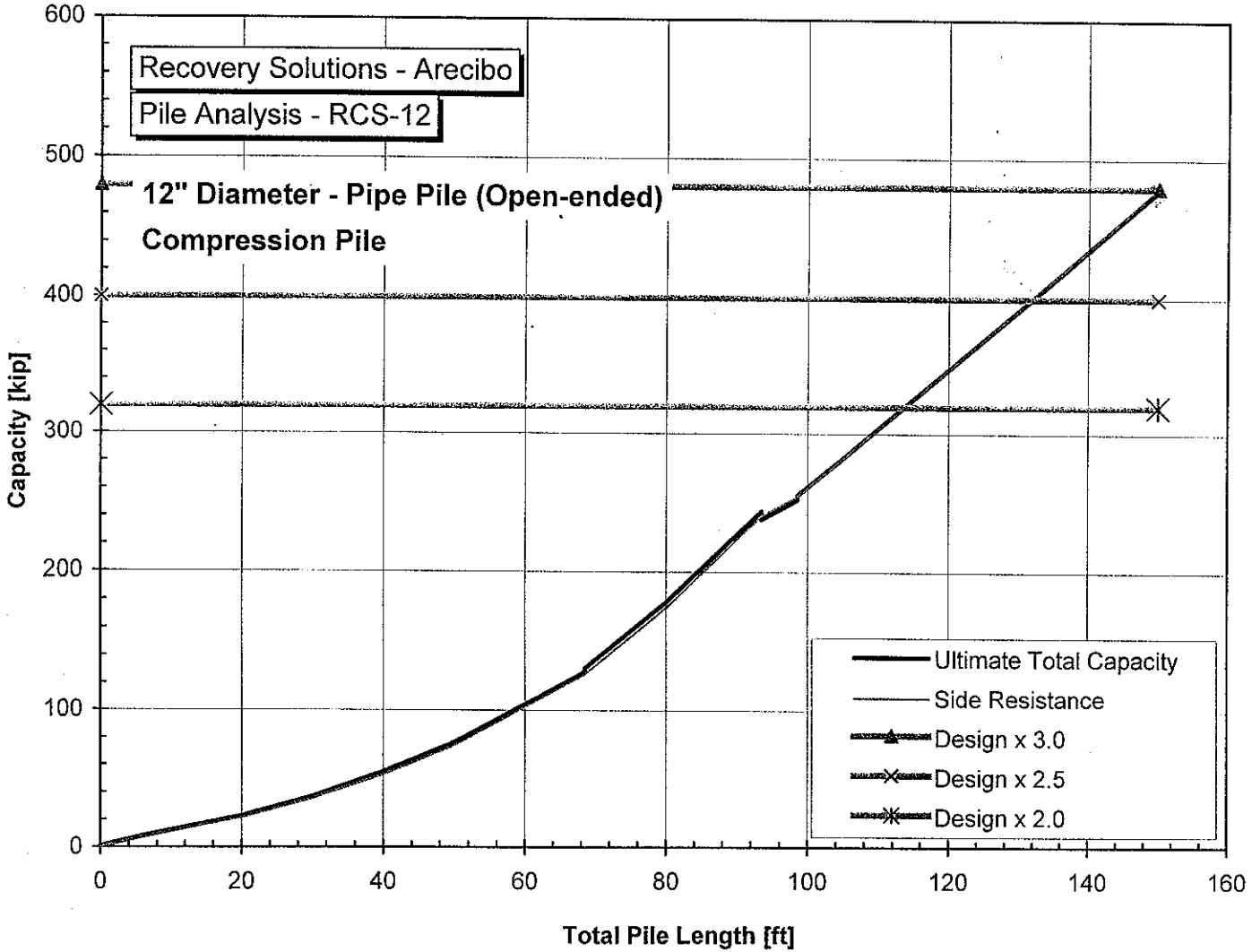



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

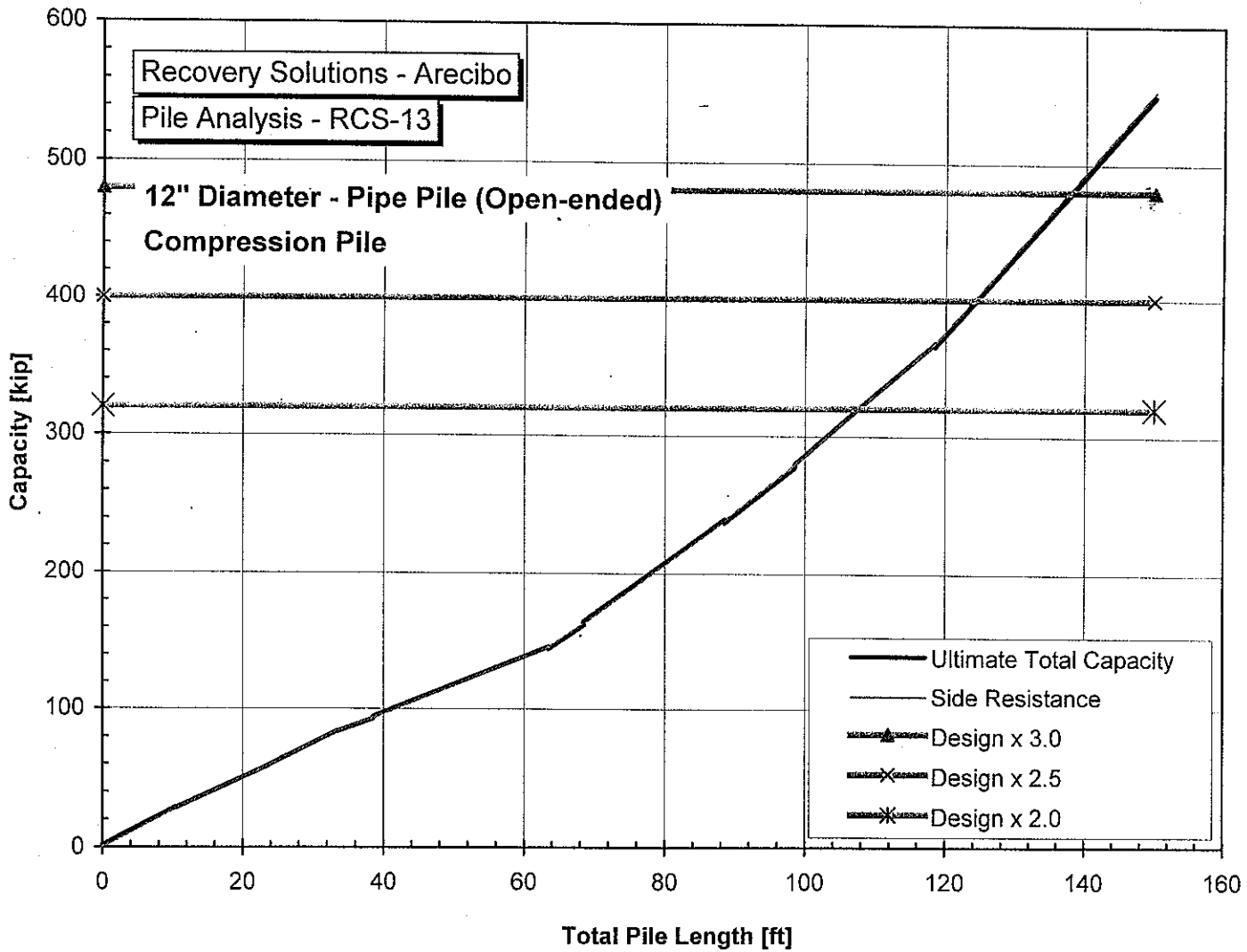



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

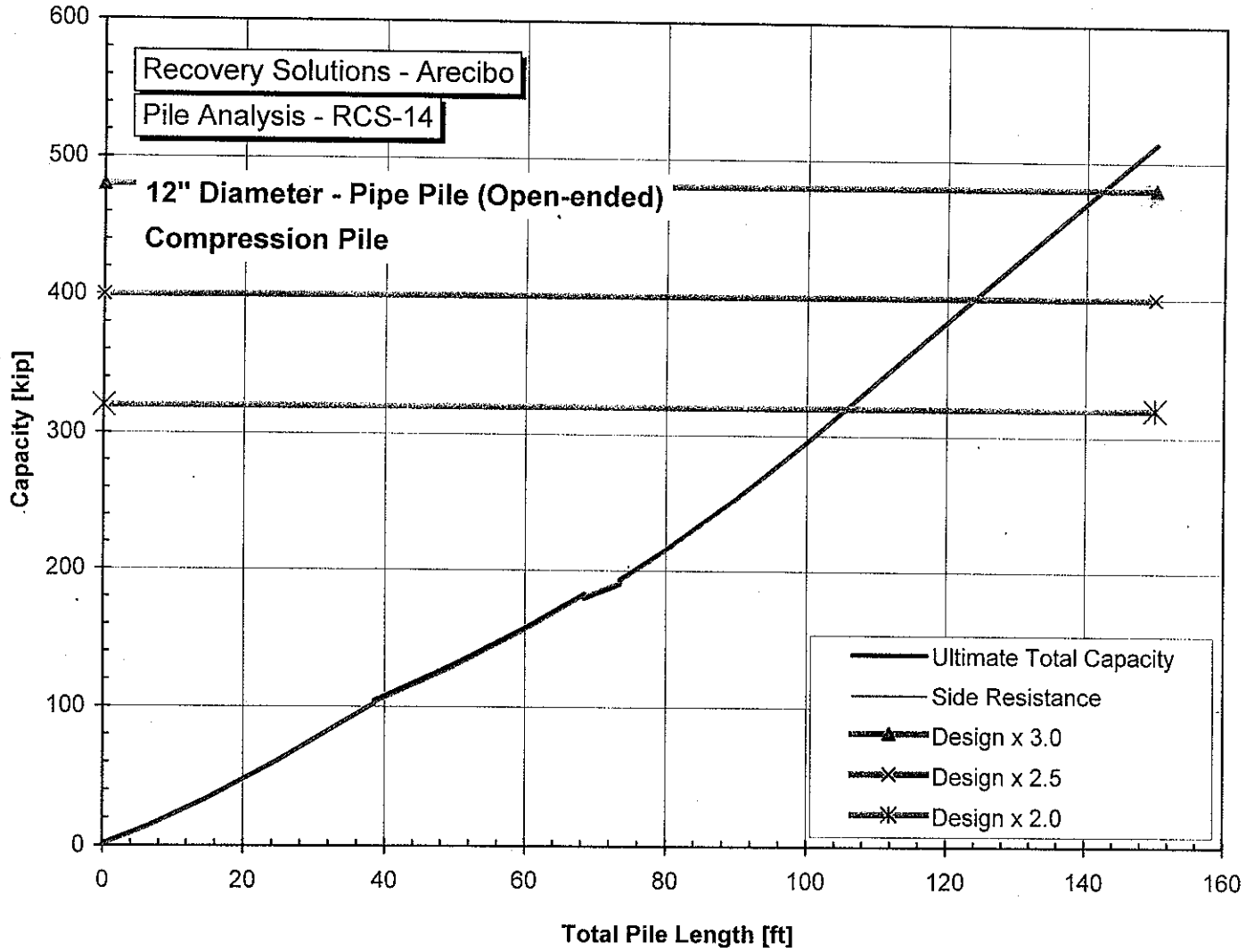



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

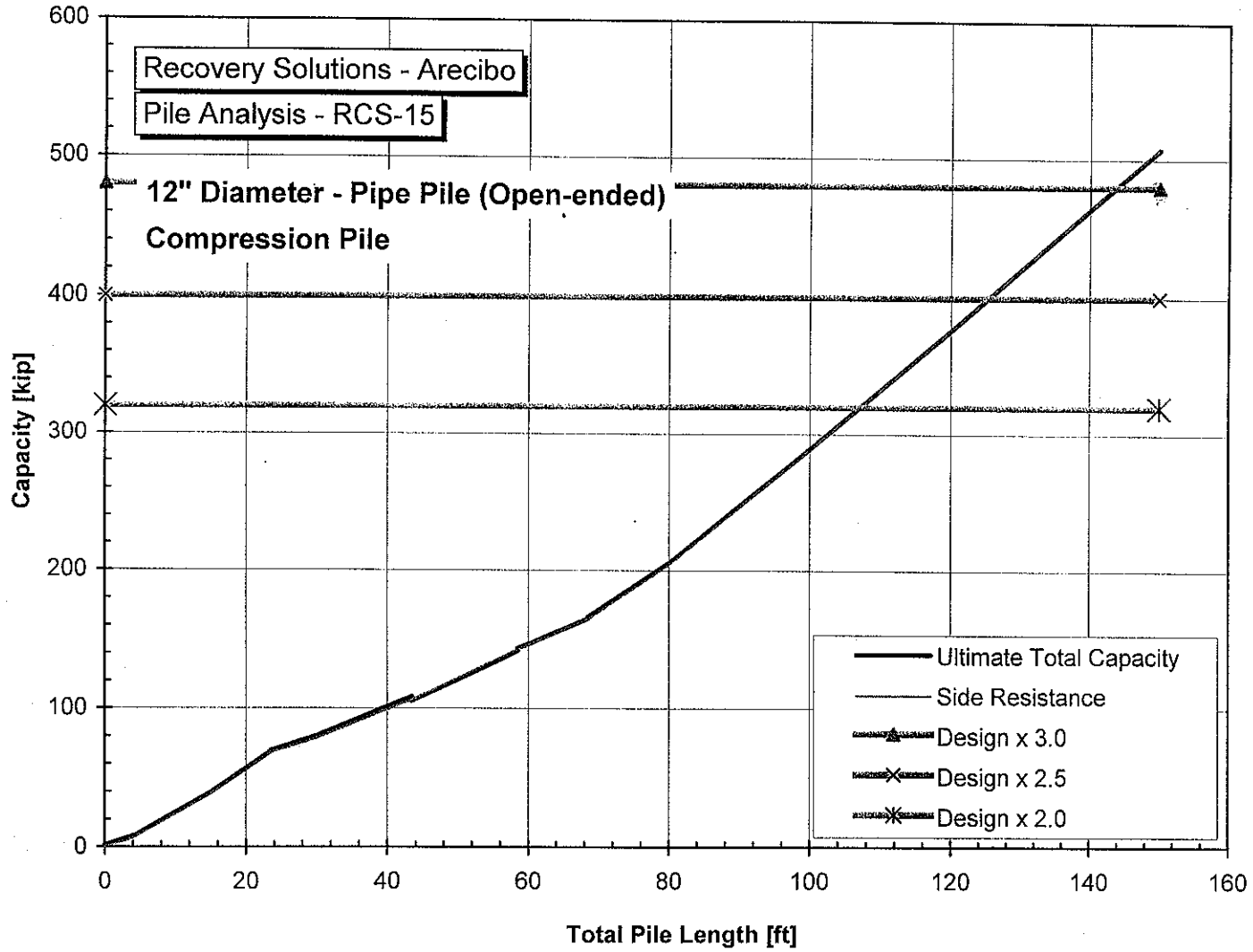



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

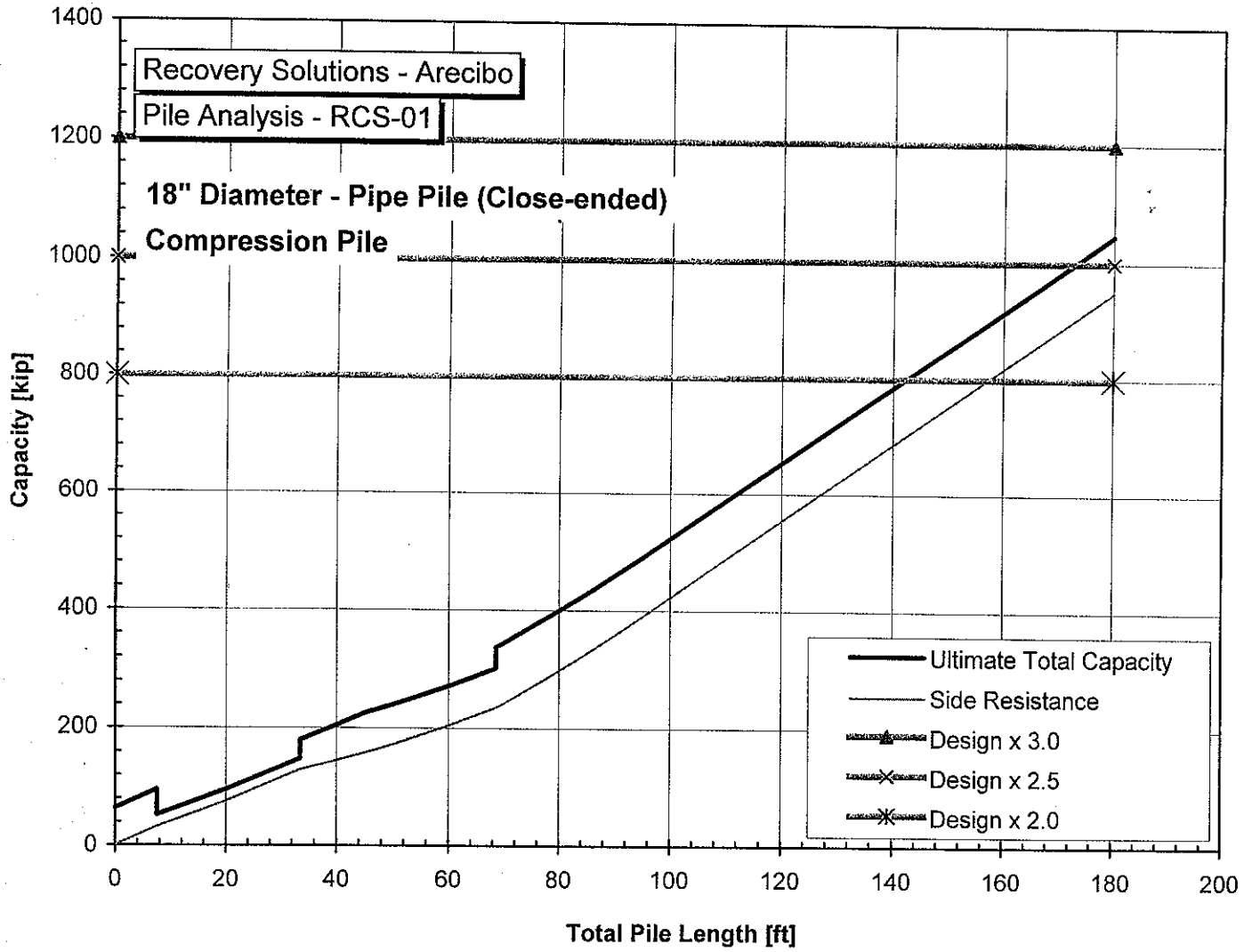



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 12 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

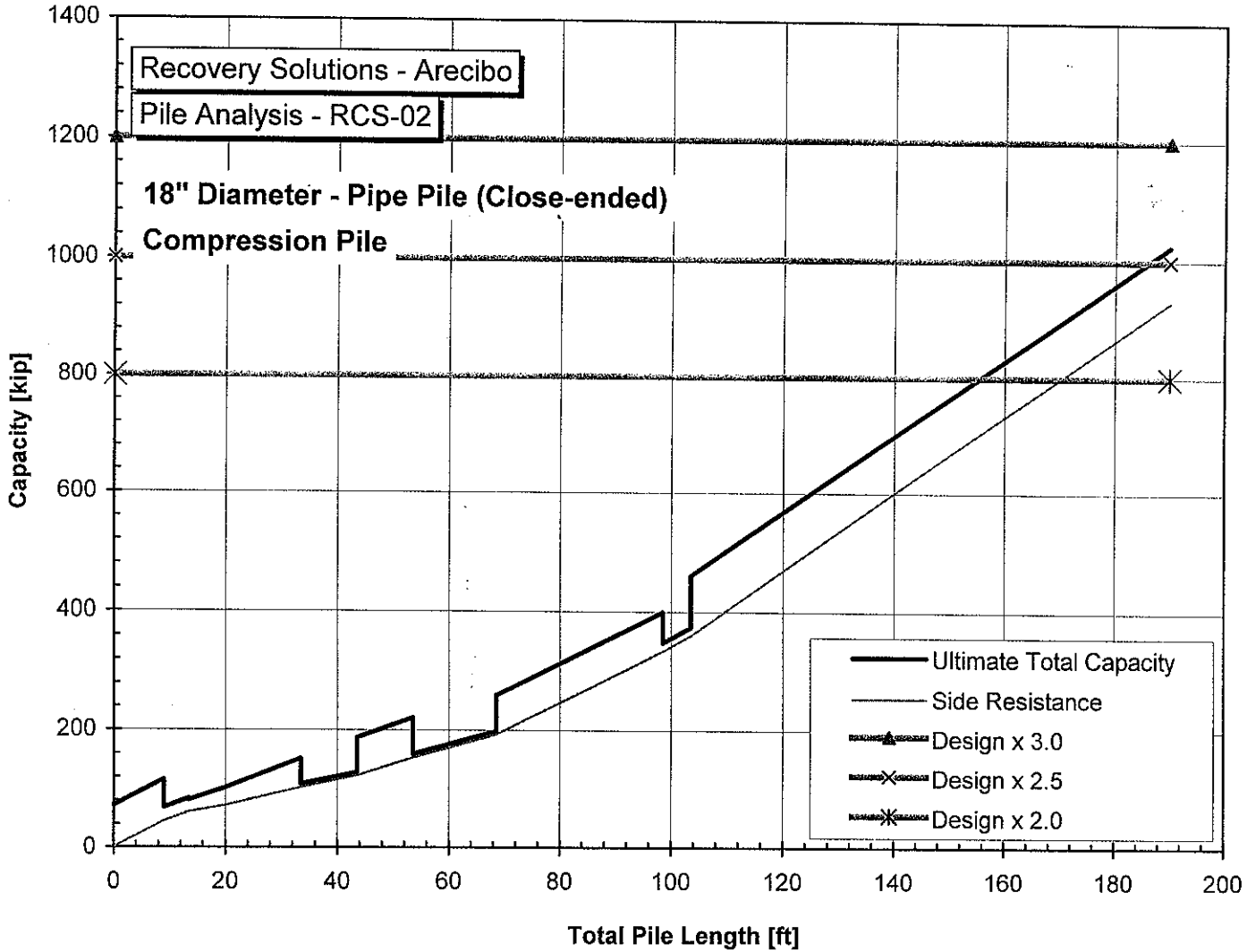



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-01 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

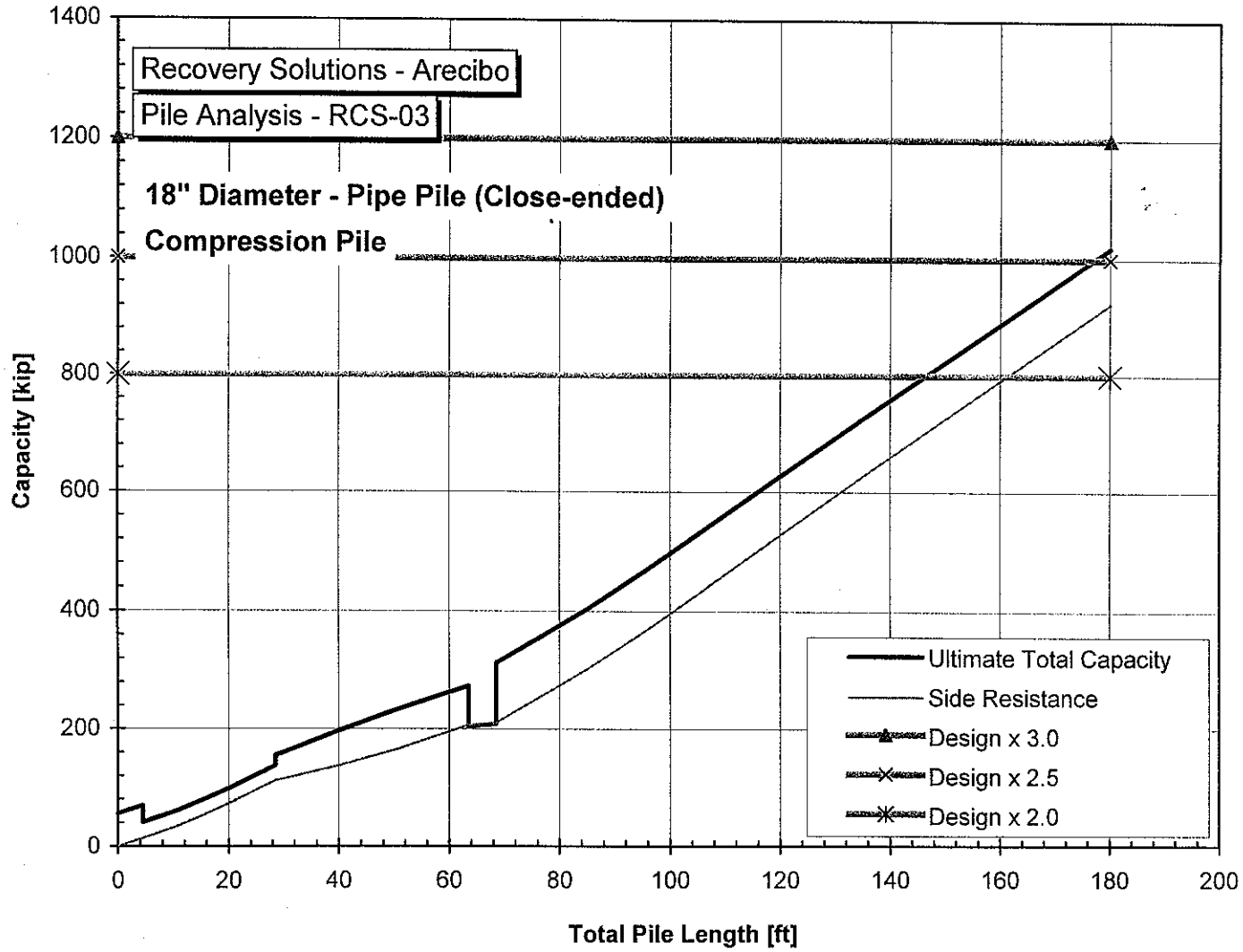



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-02 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

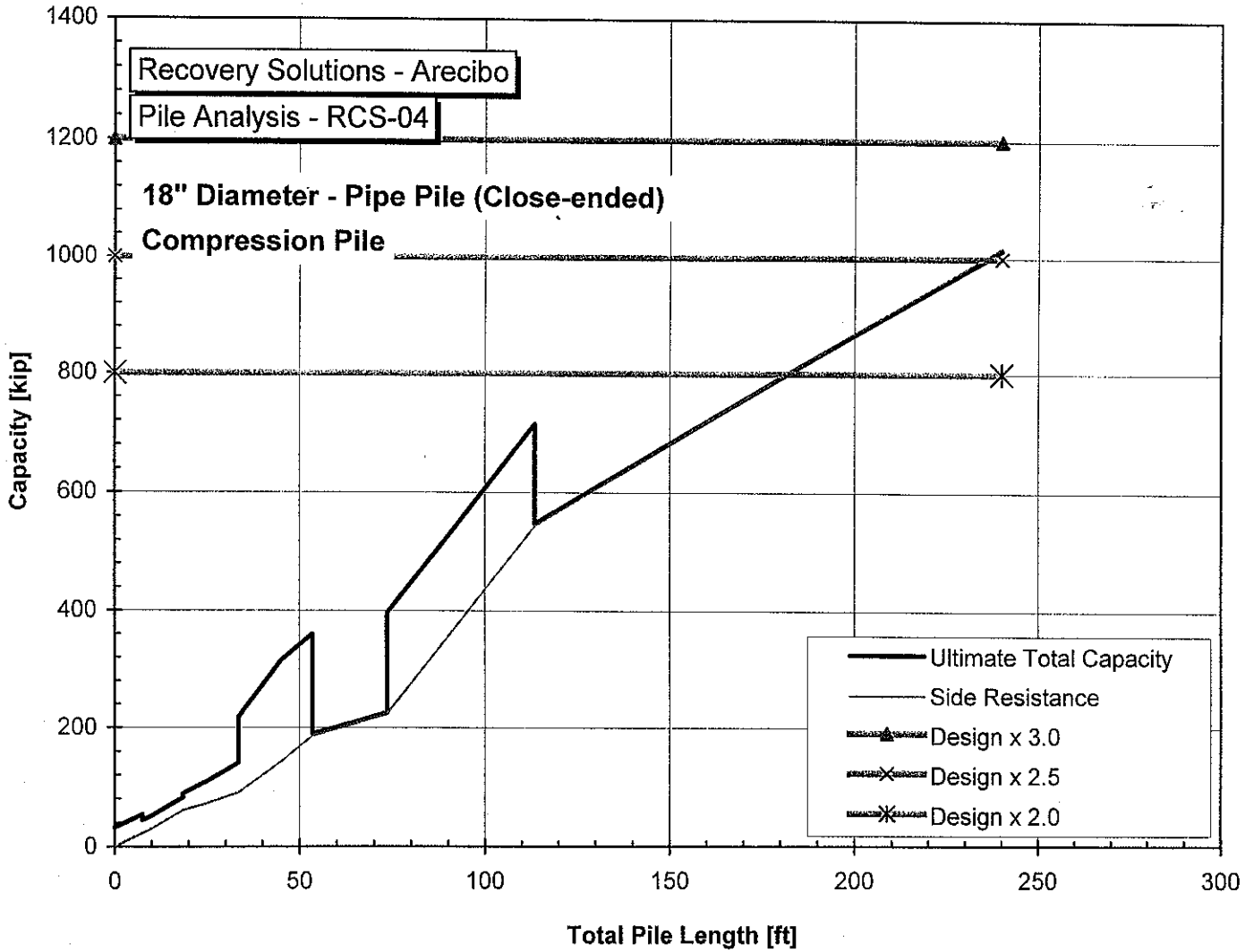



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-03 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

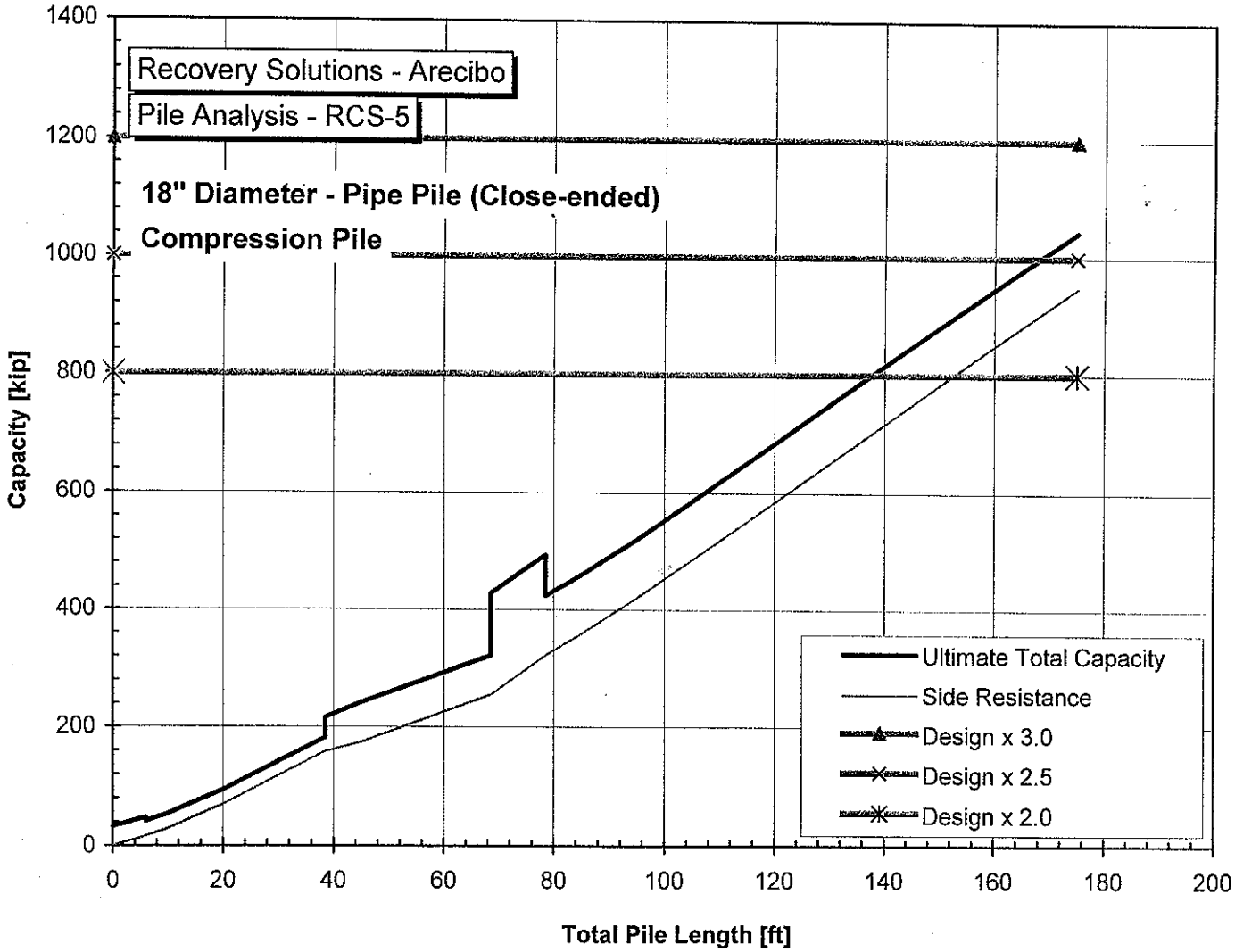



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-04 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

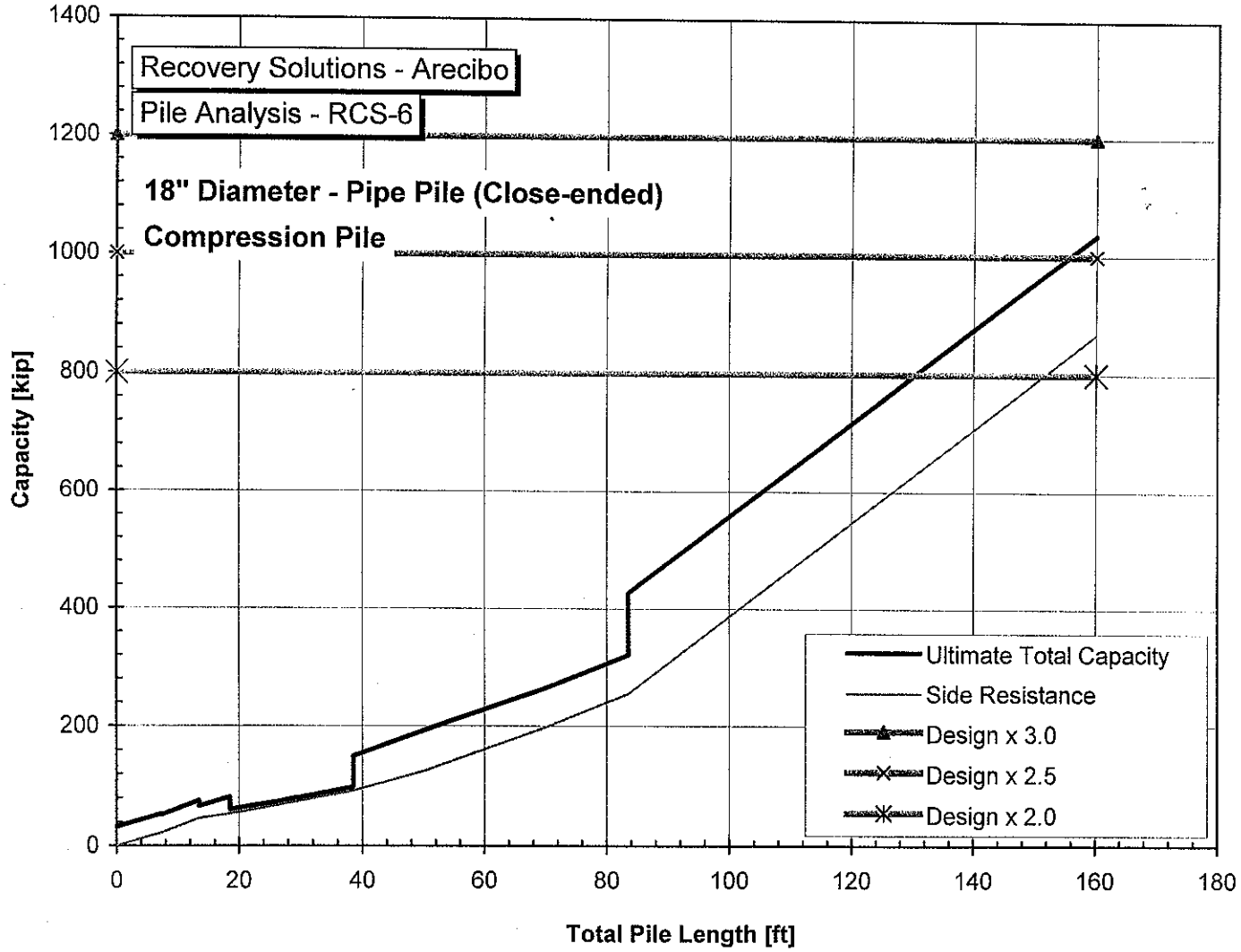



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-05 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

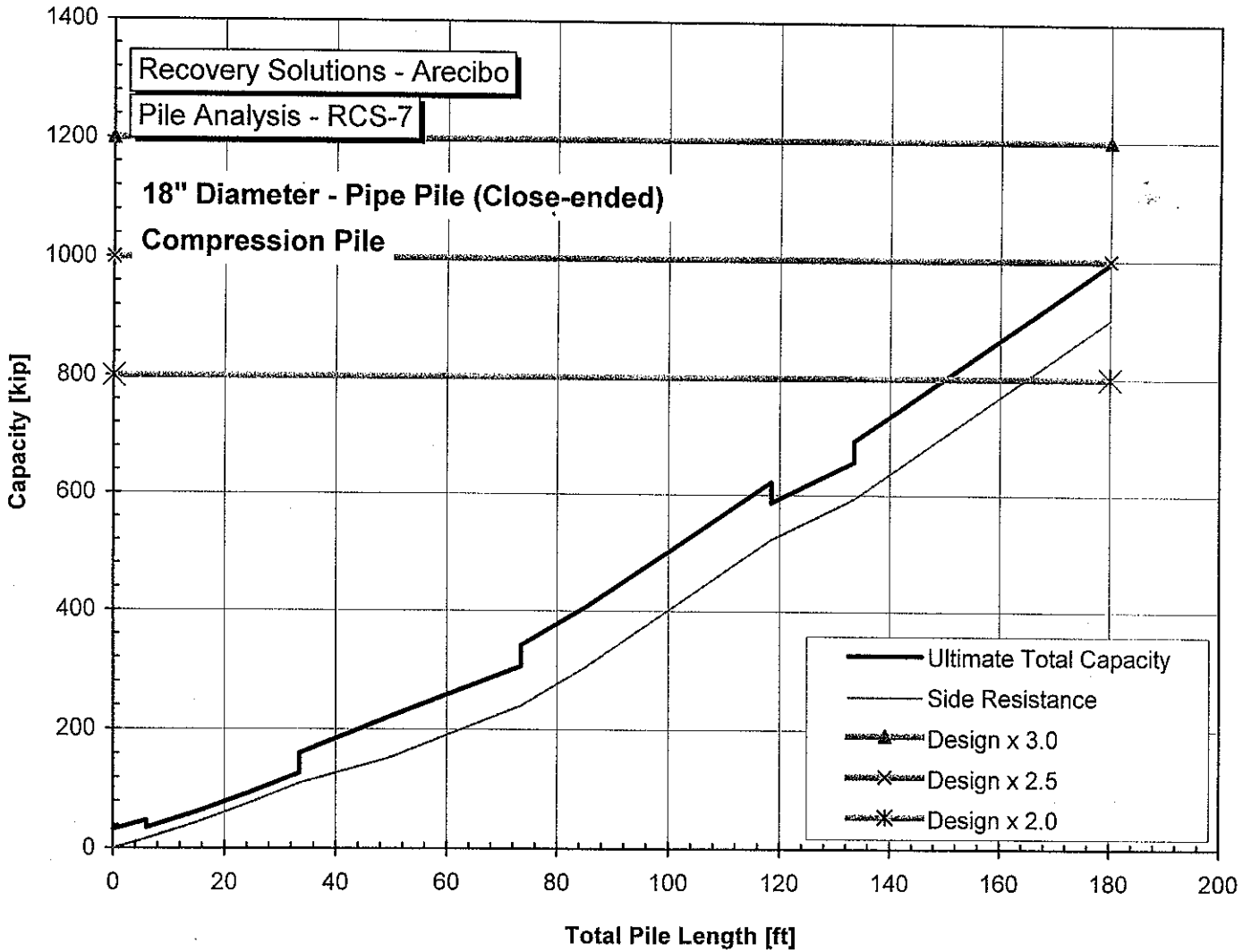



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-06 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

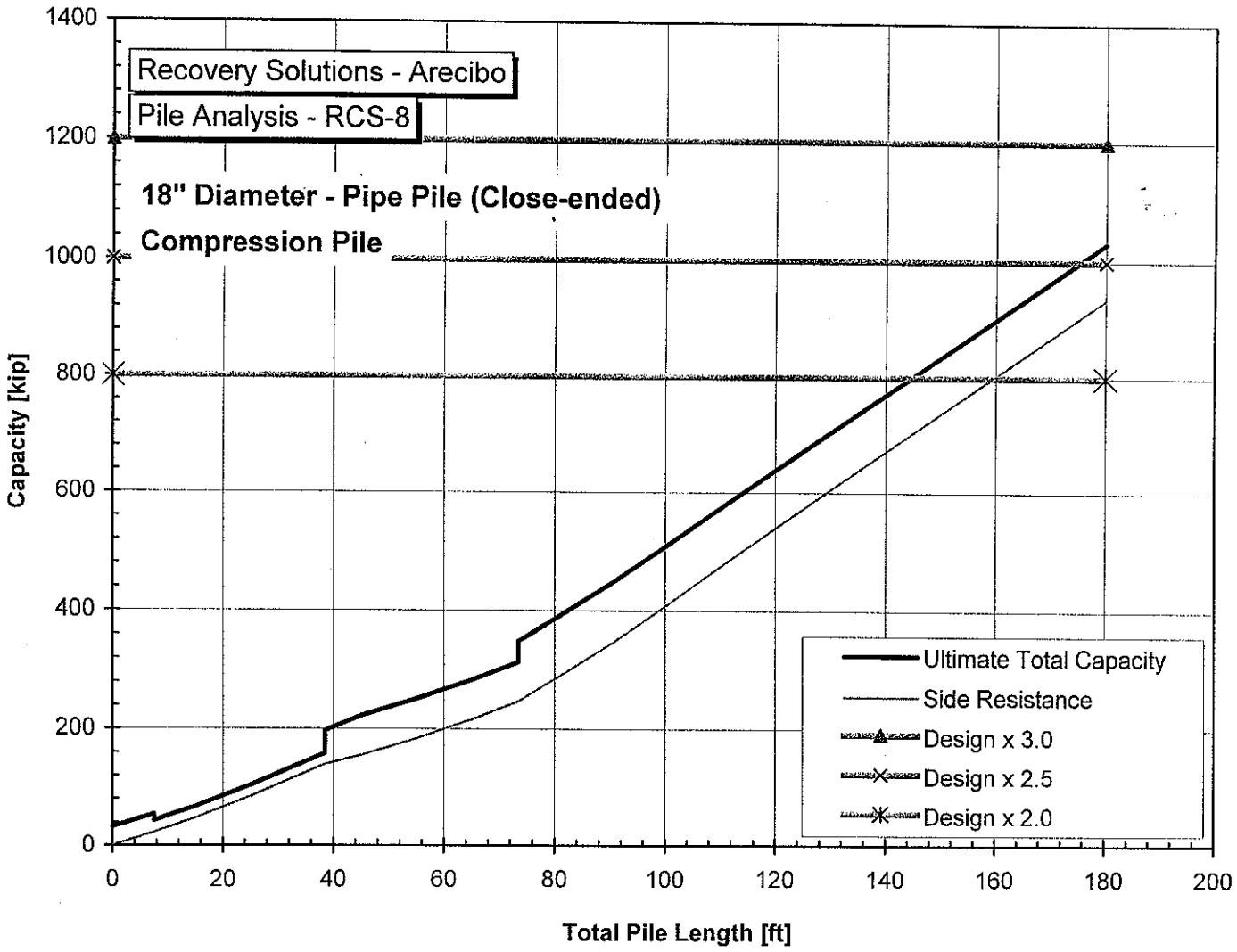



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-07 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

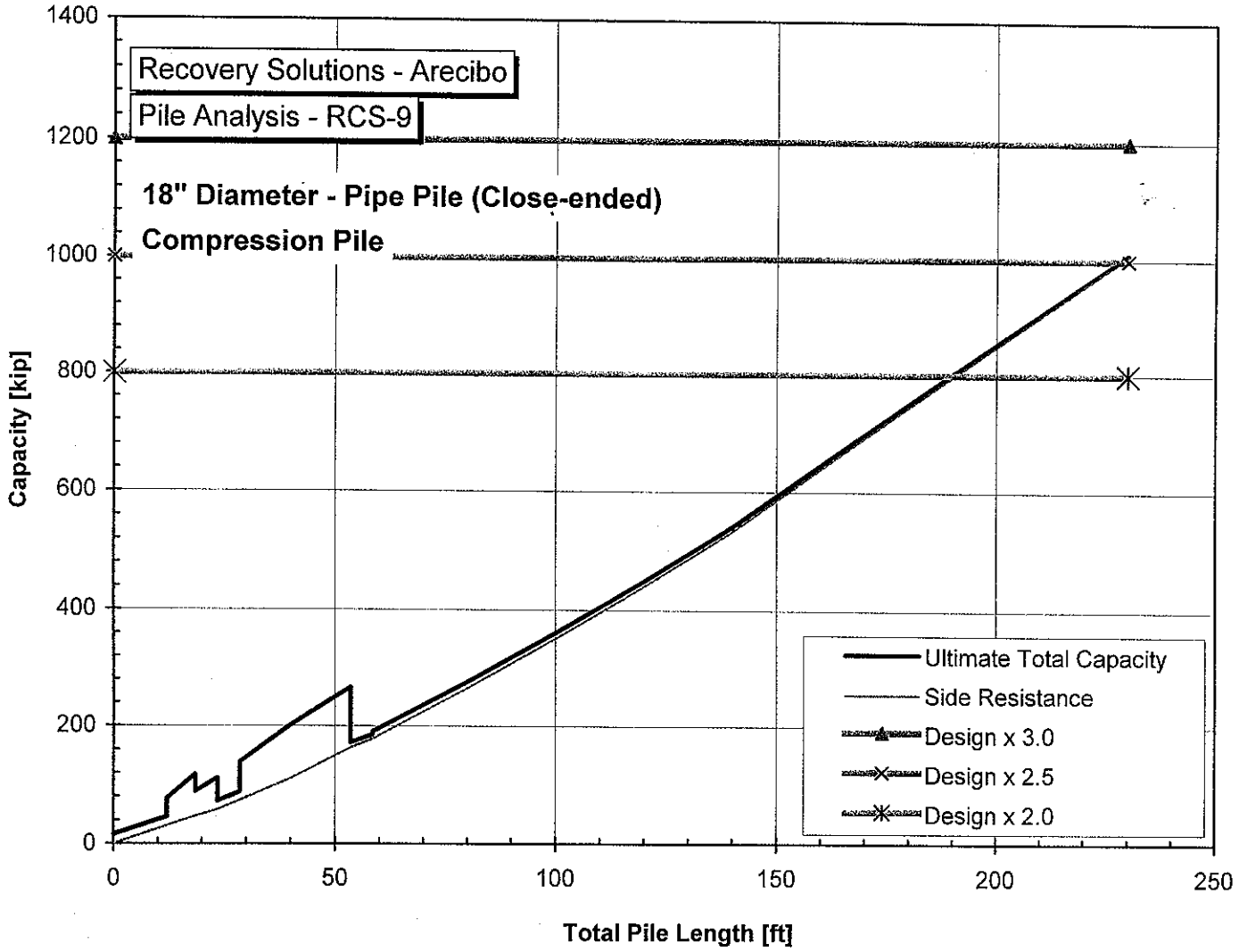



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-08 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

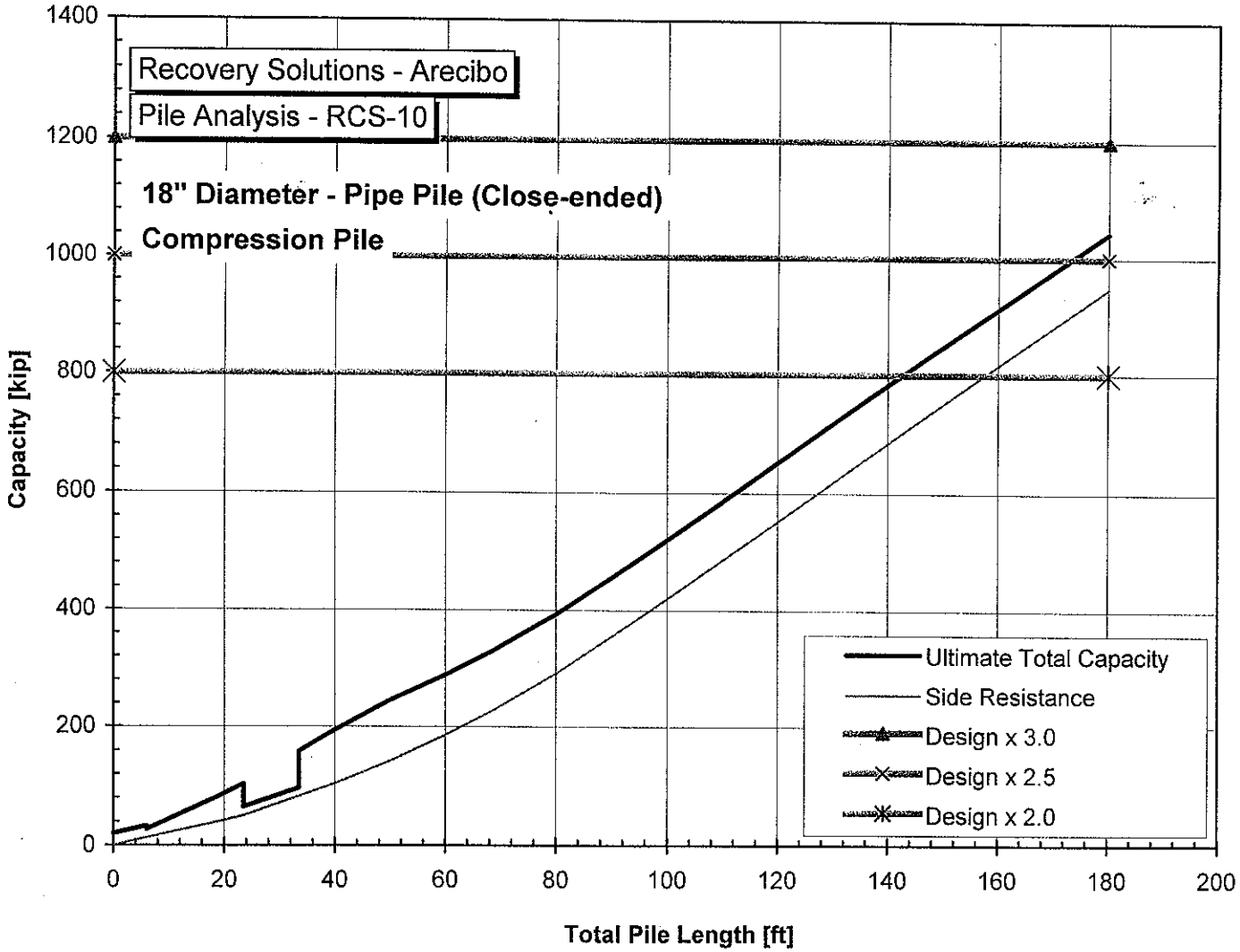



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-09 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

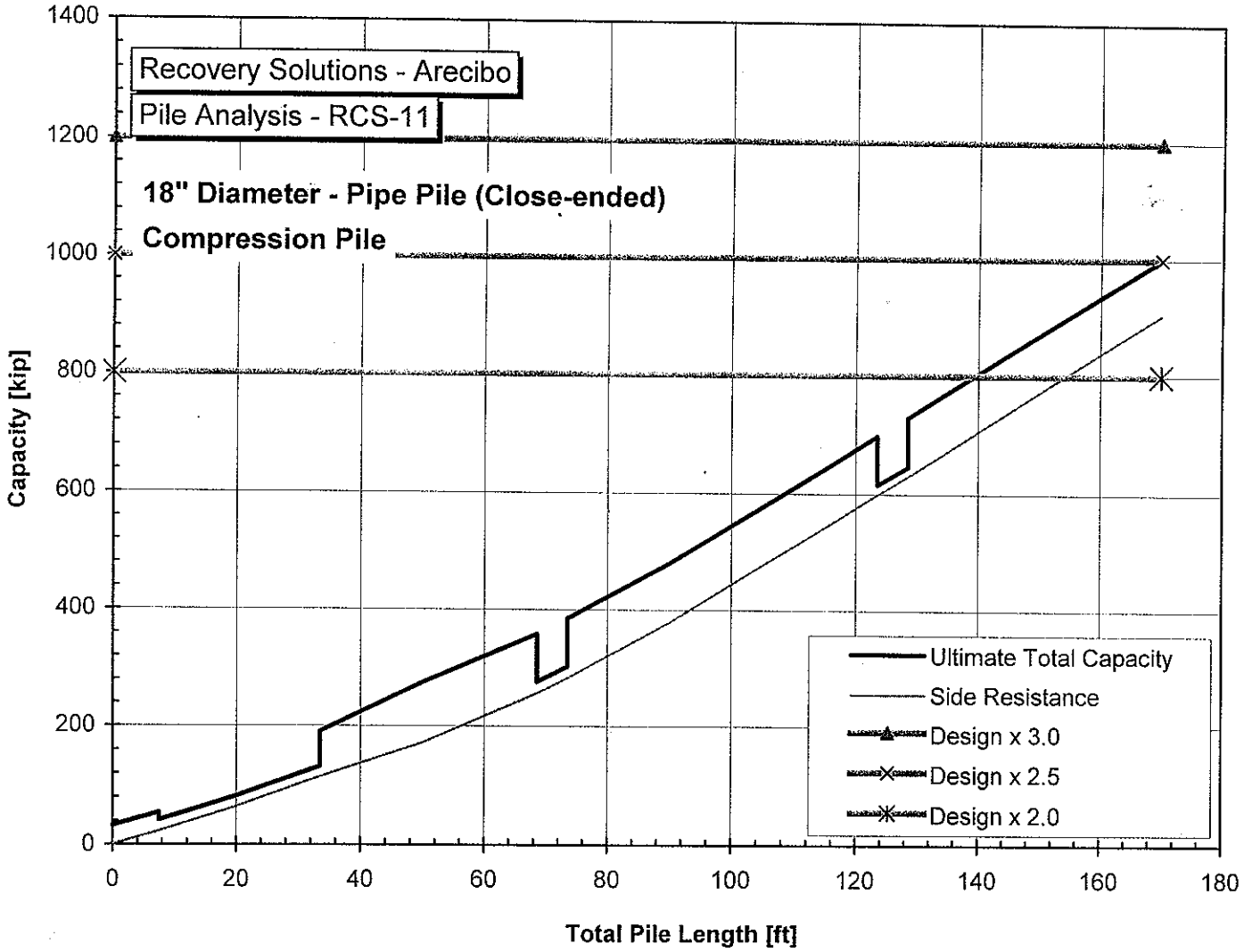



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-10 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

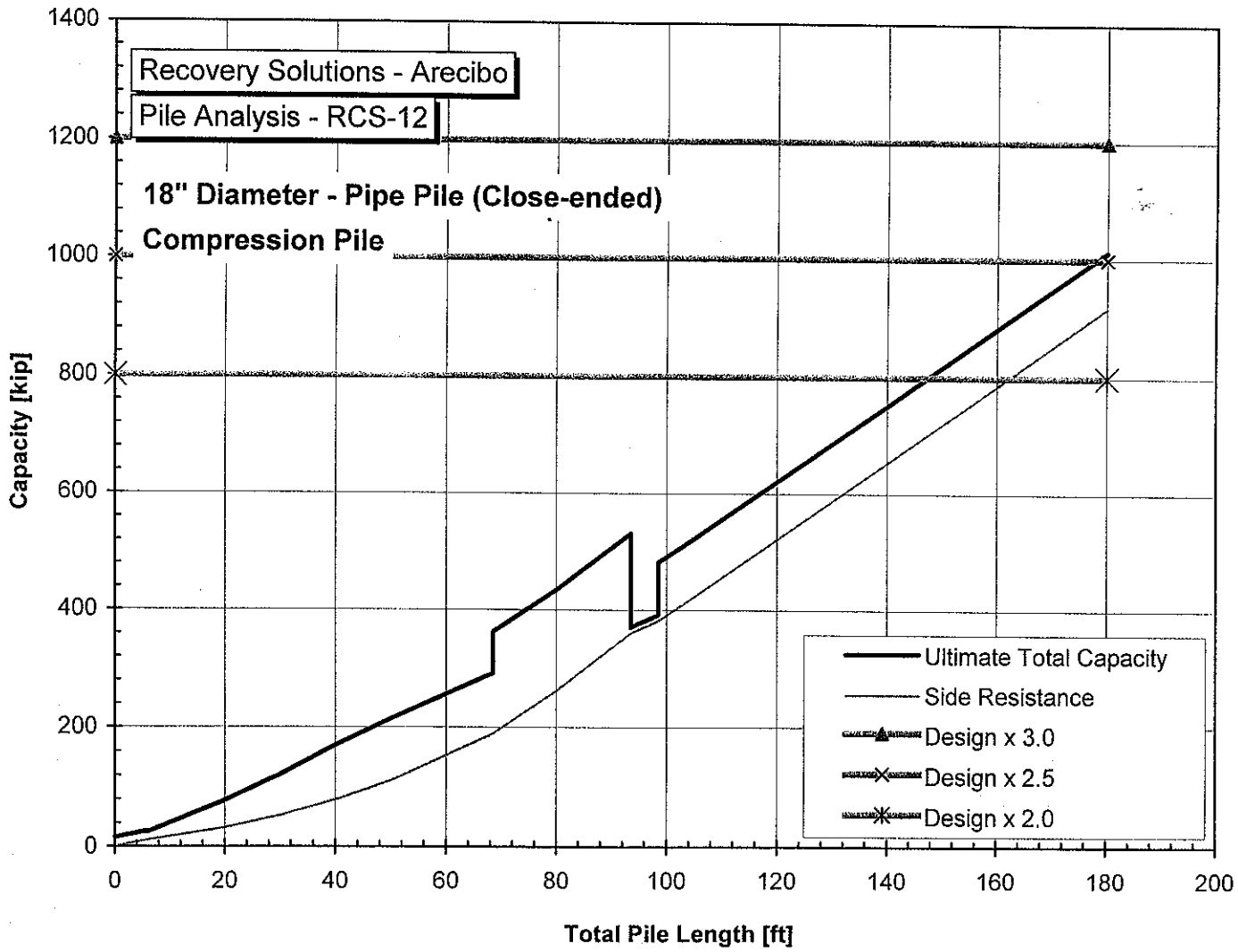



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-11 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

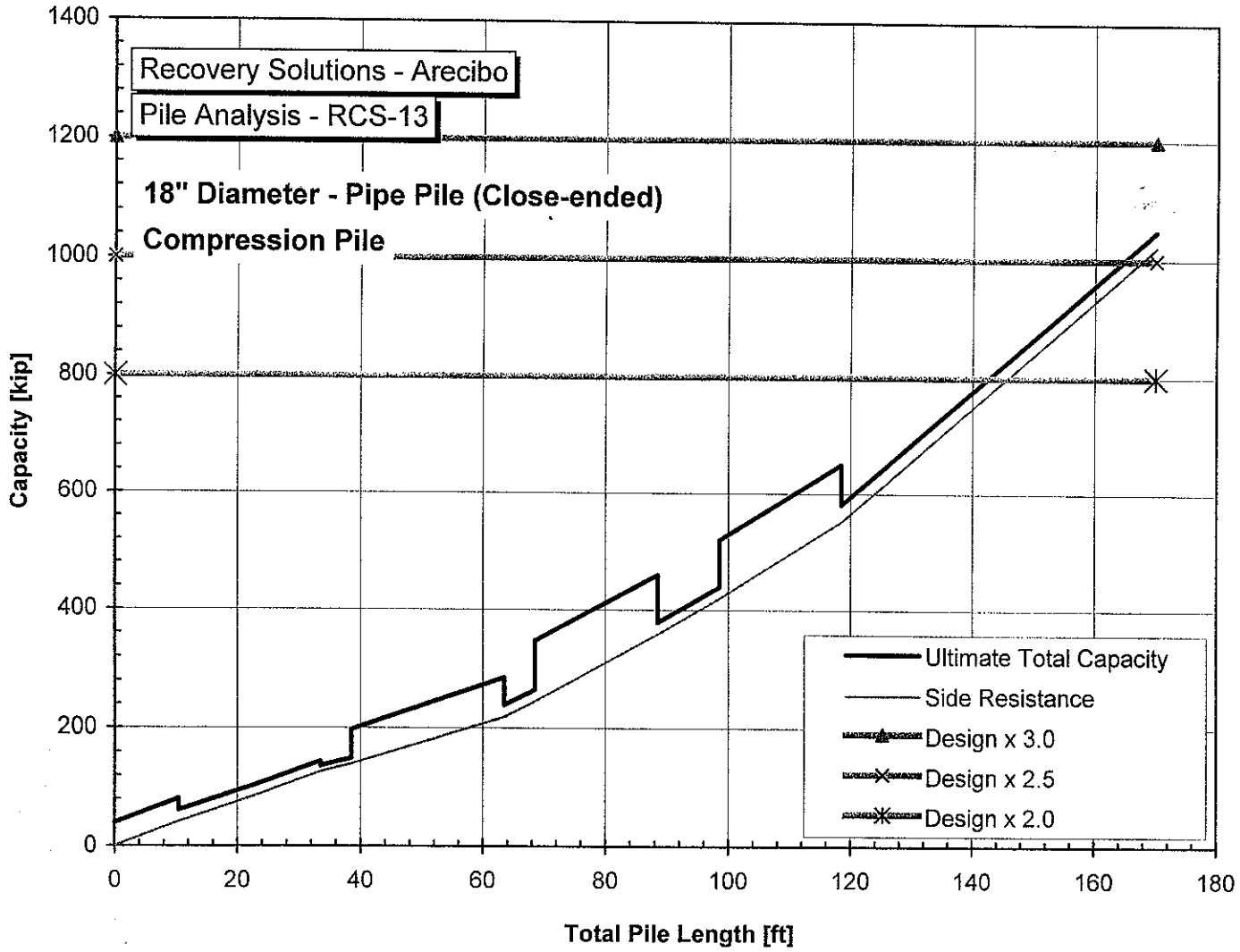



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-12 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

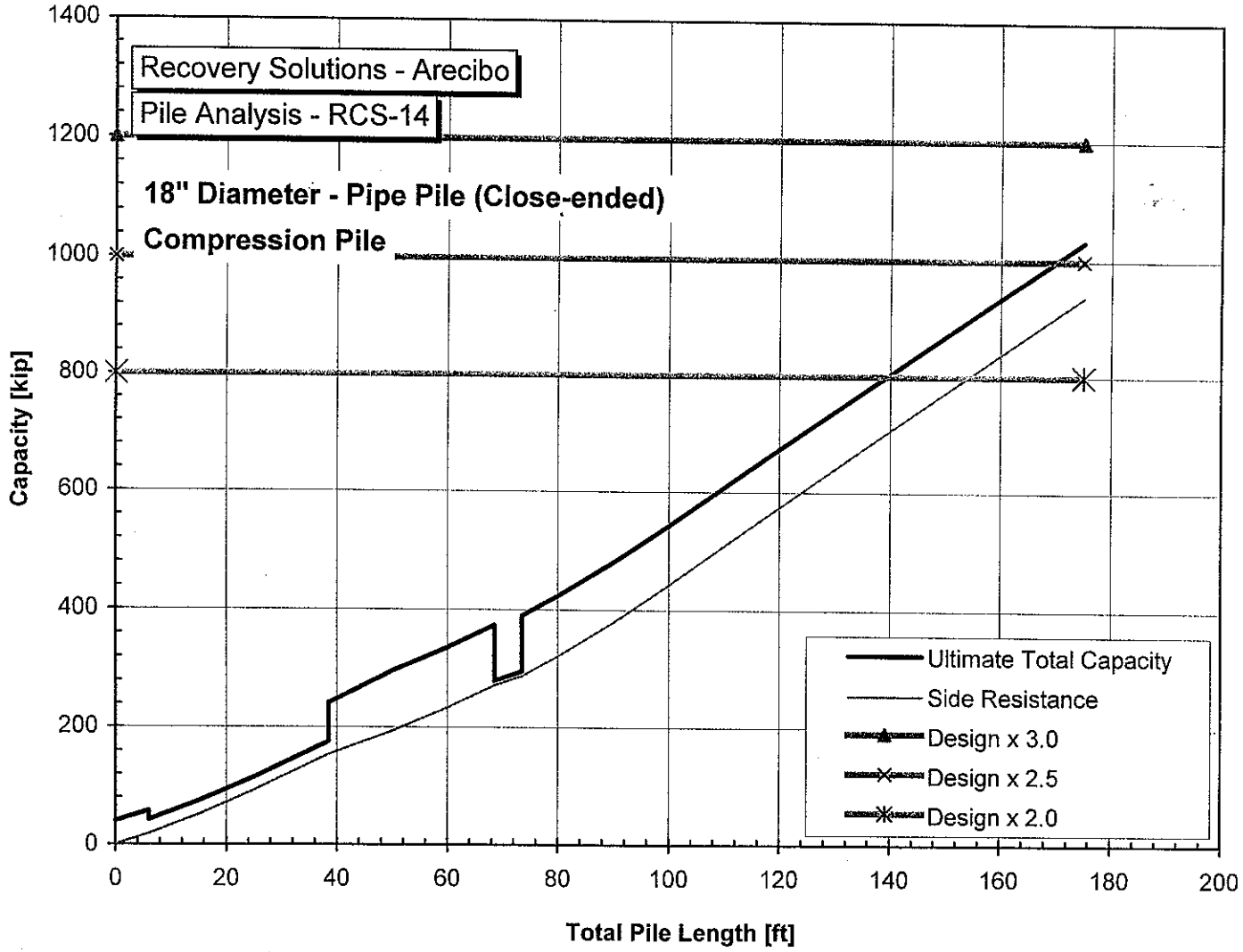



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-13 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

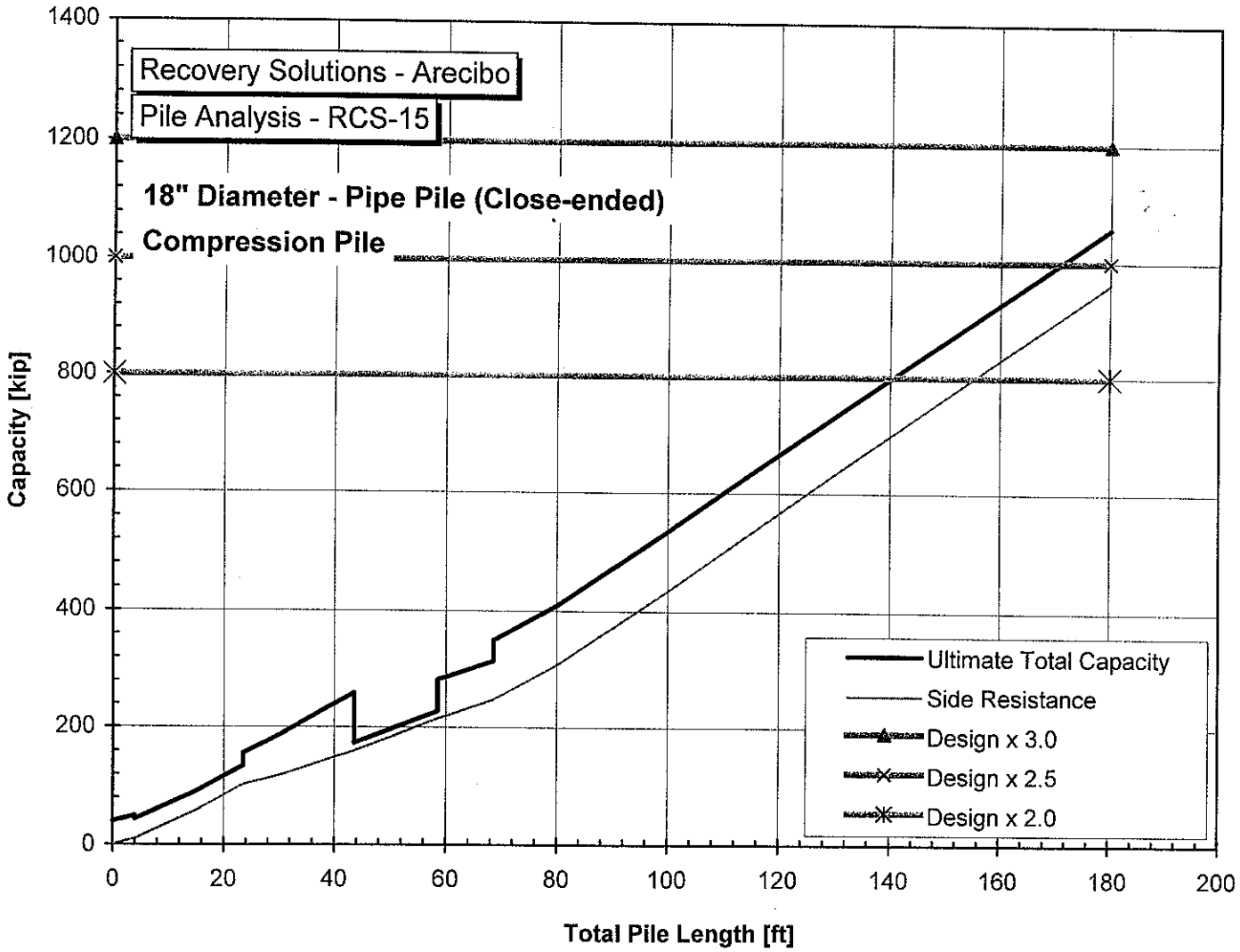



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-14 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

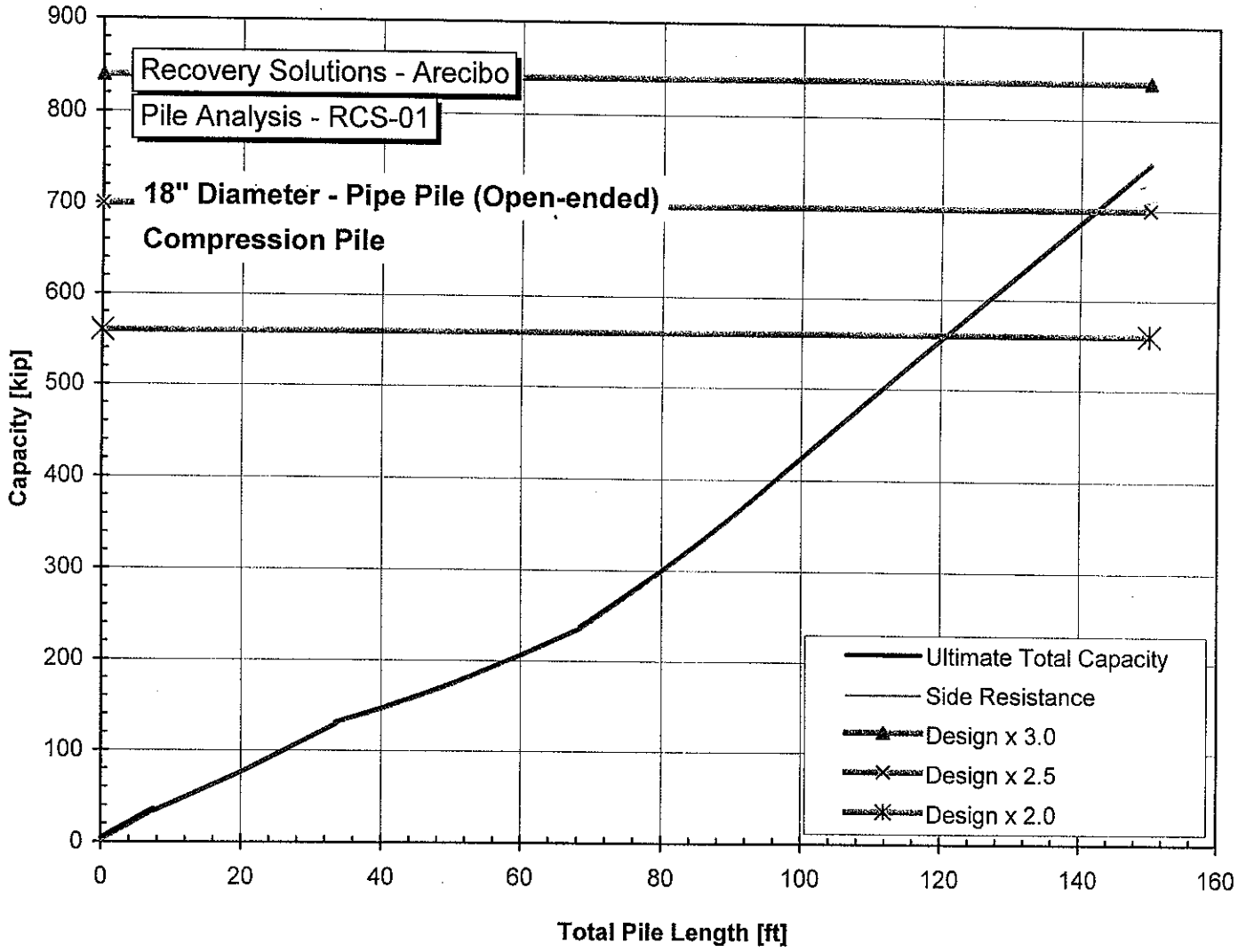



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-15 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

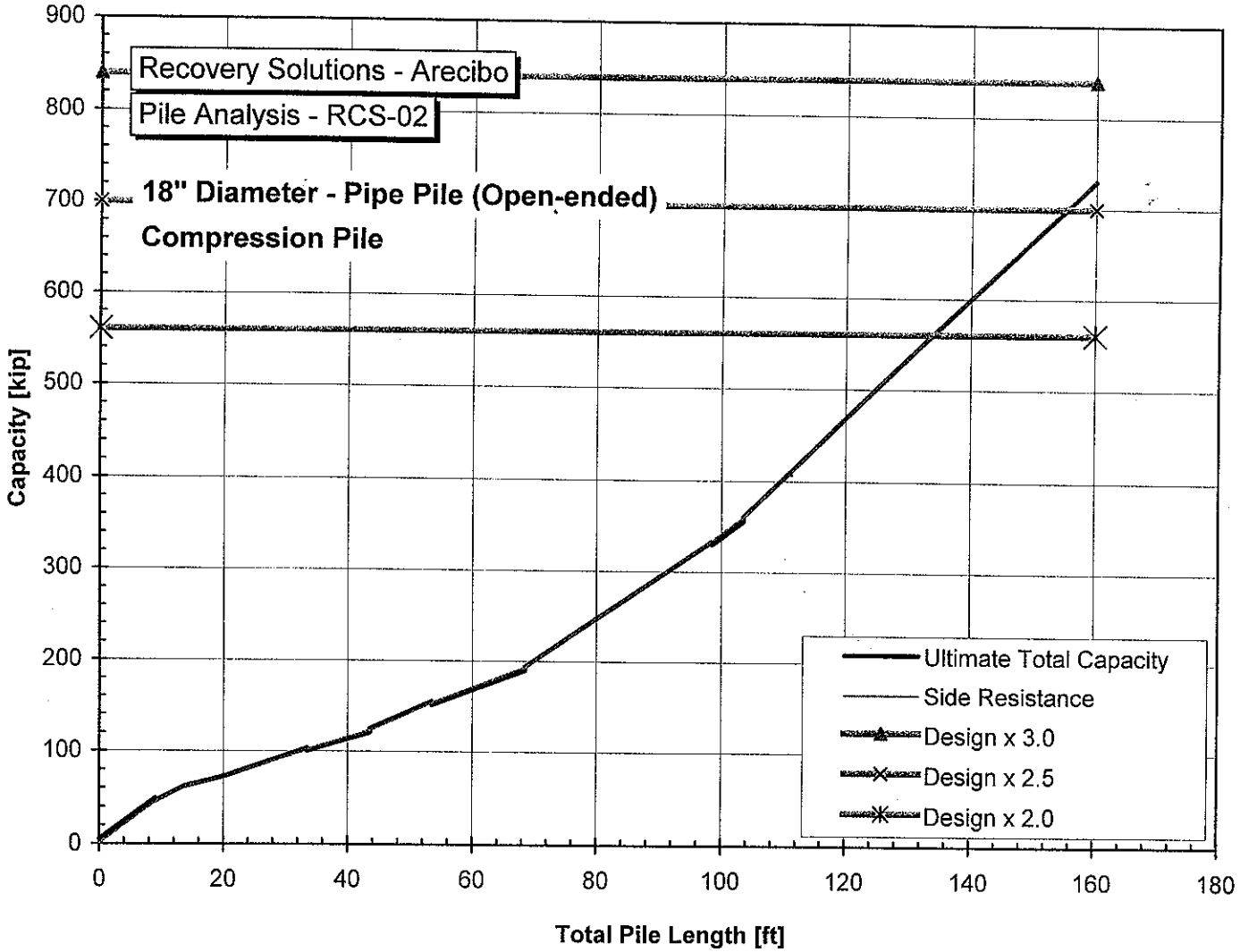



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

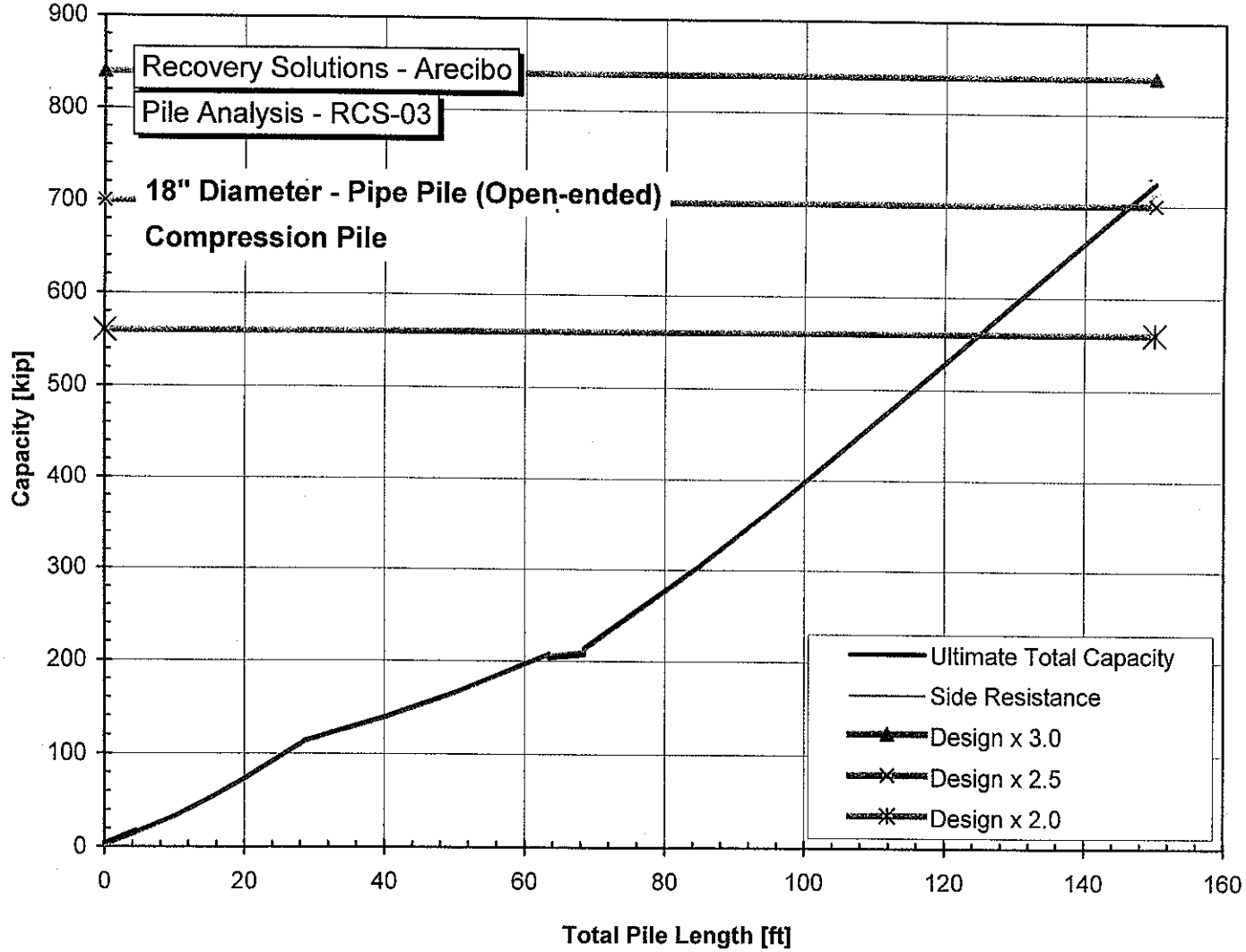



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

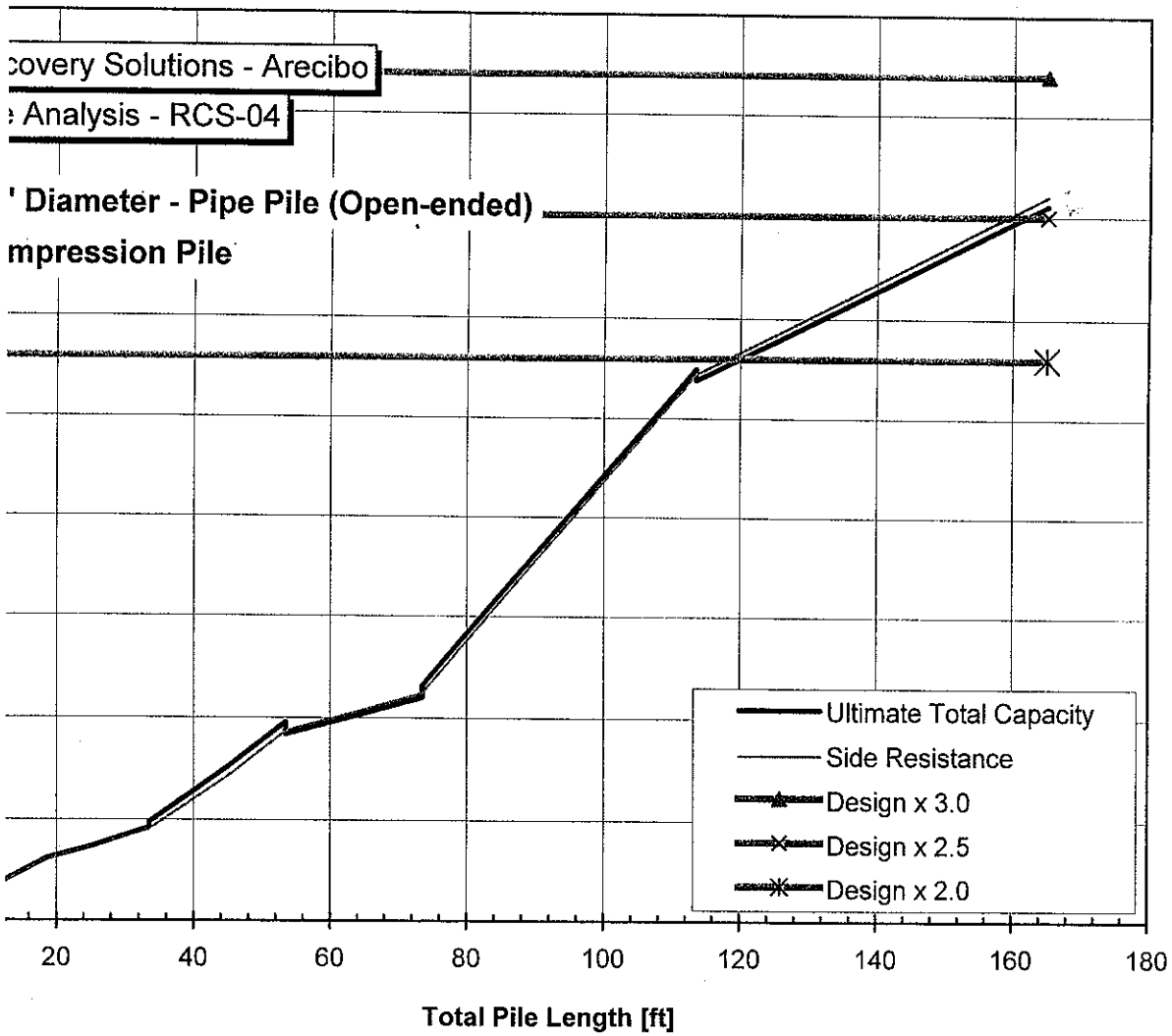



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

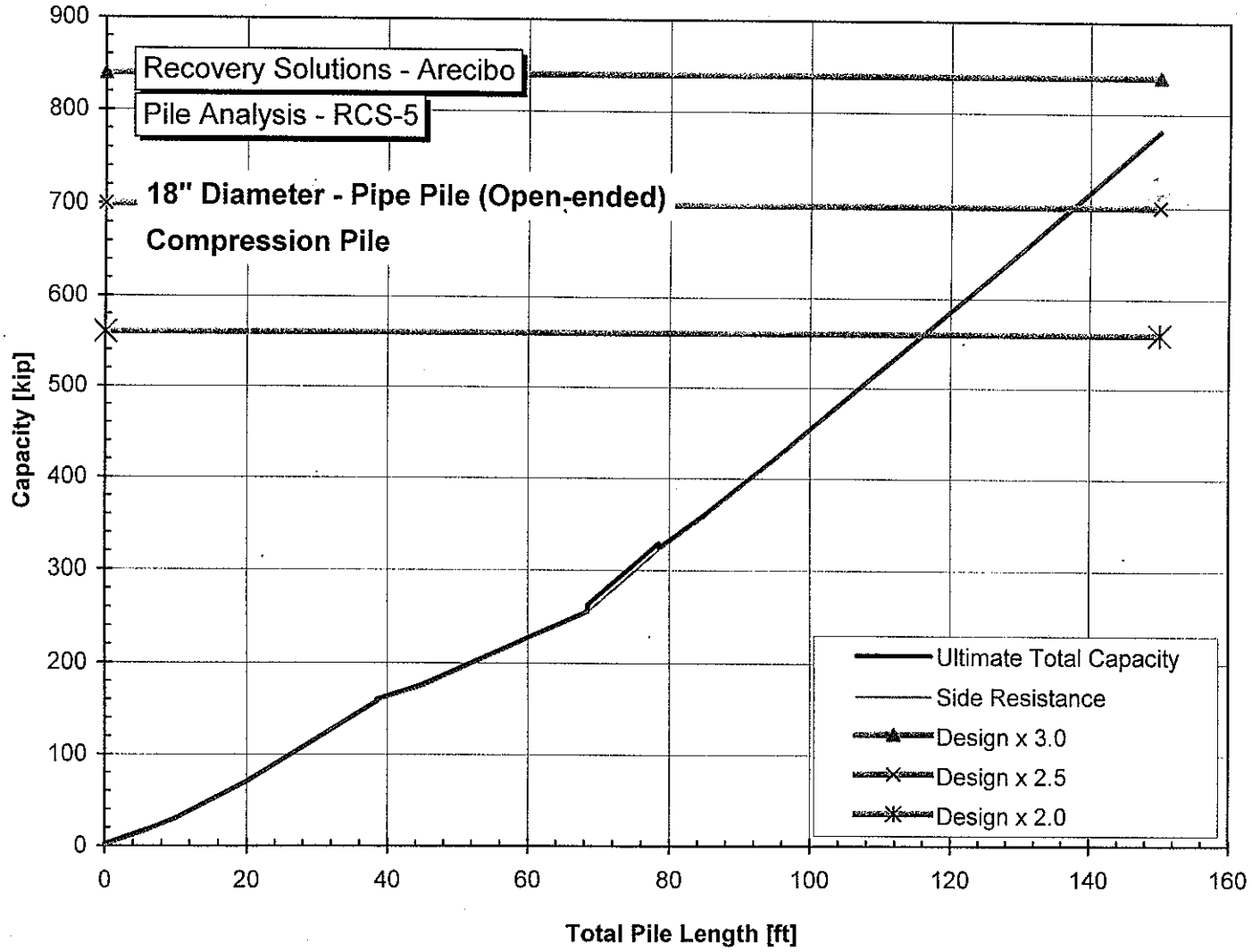
Capacity vs Total Pile Length




File API Analysis - Compression Pipe Pile 18 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

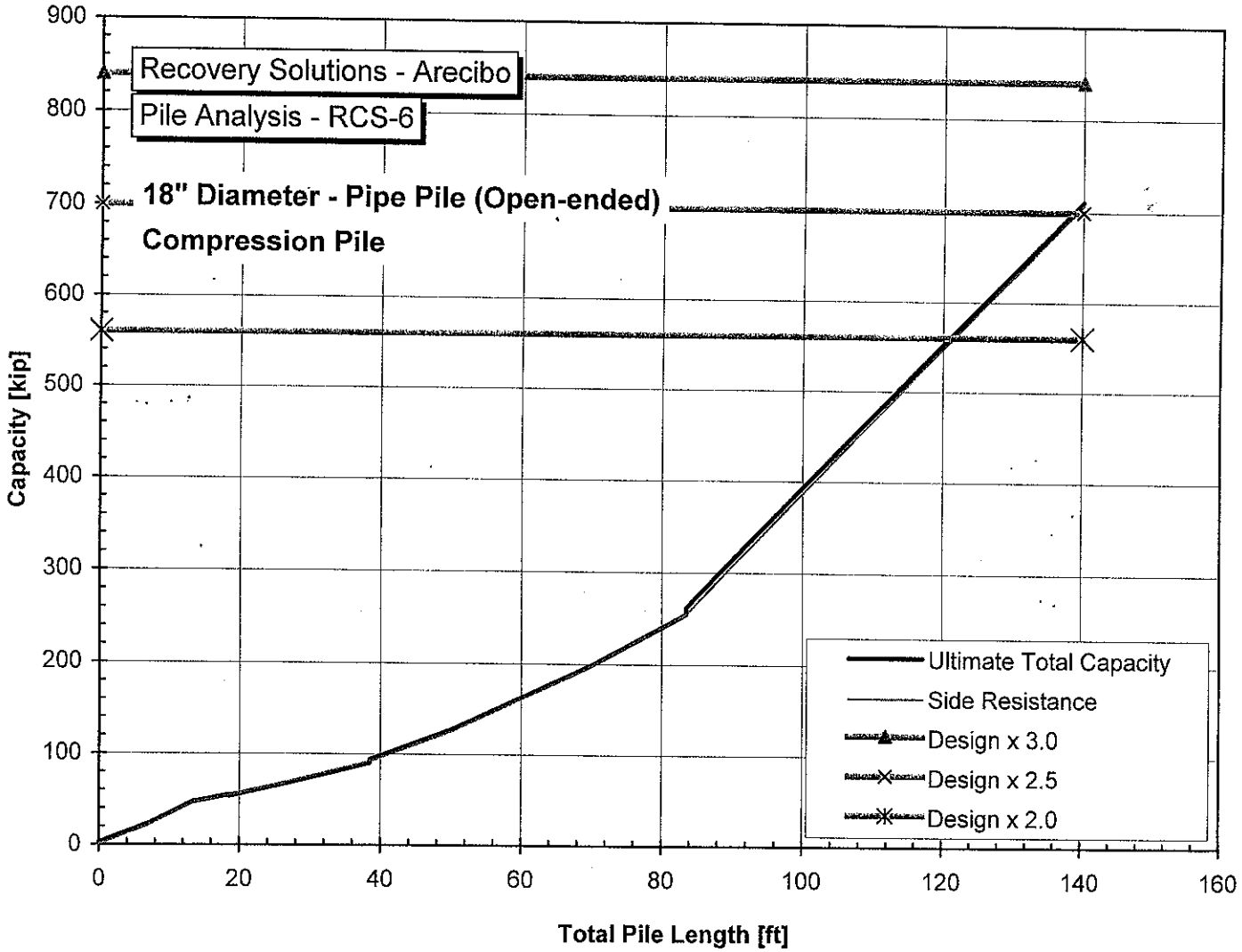



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

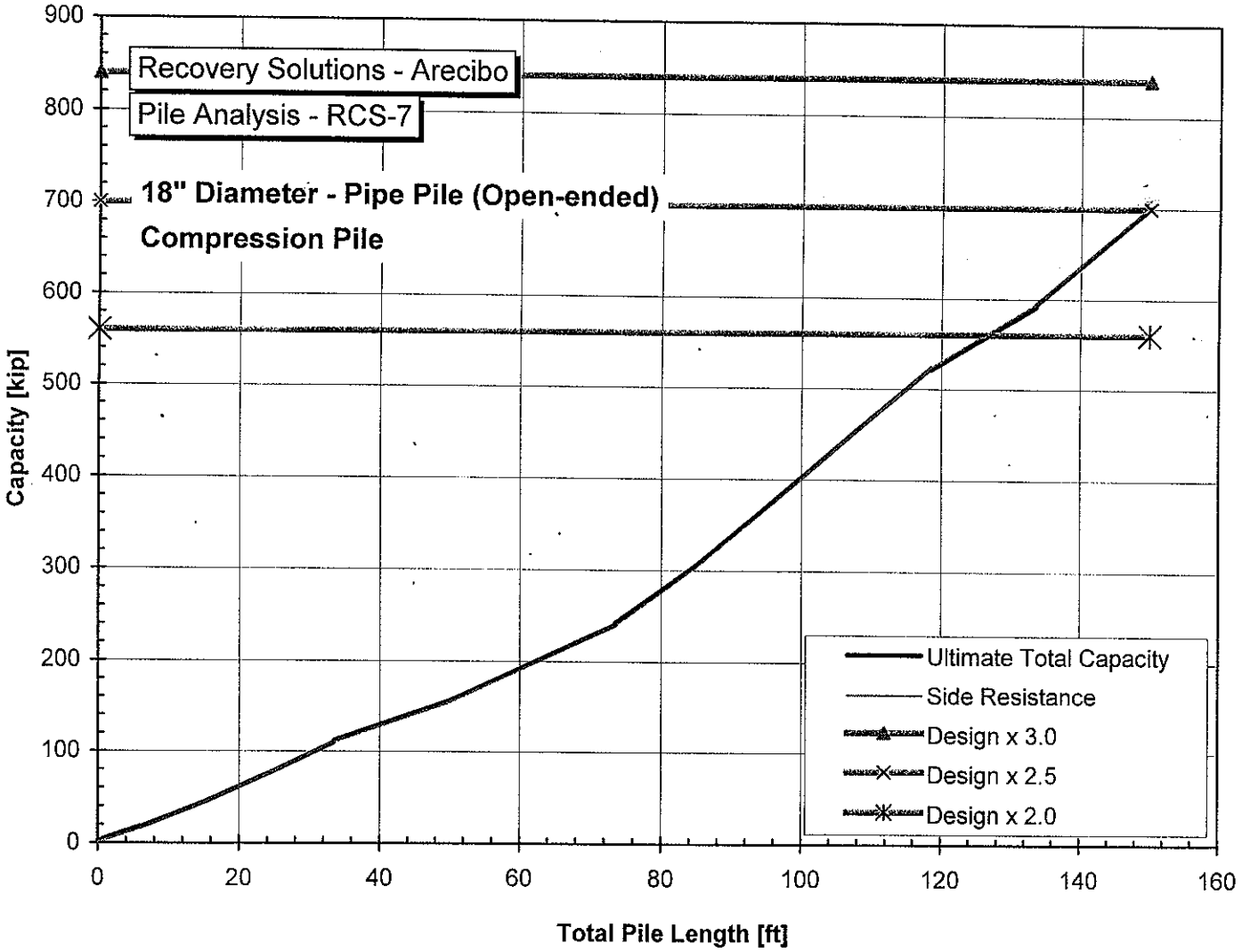



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

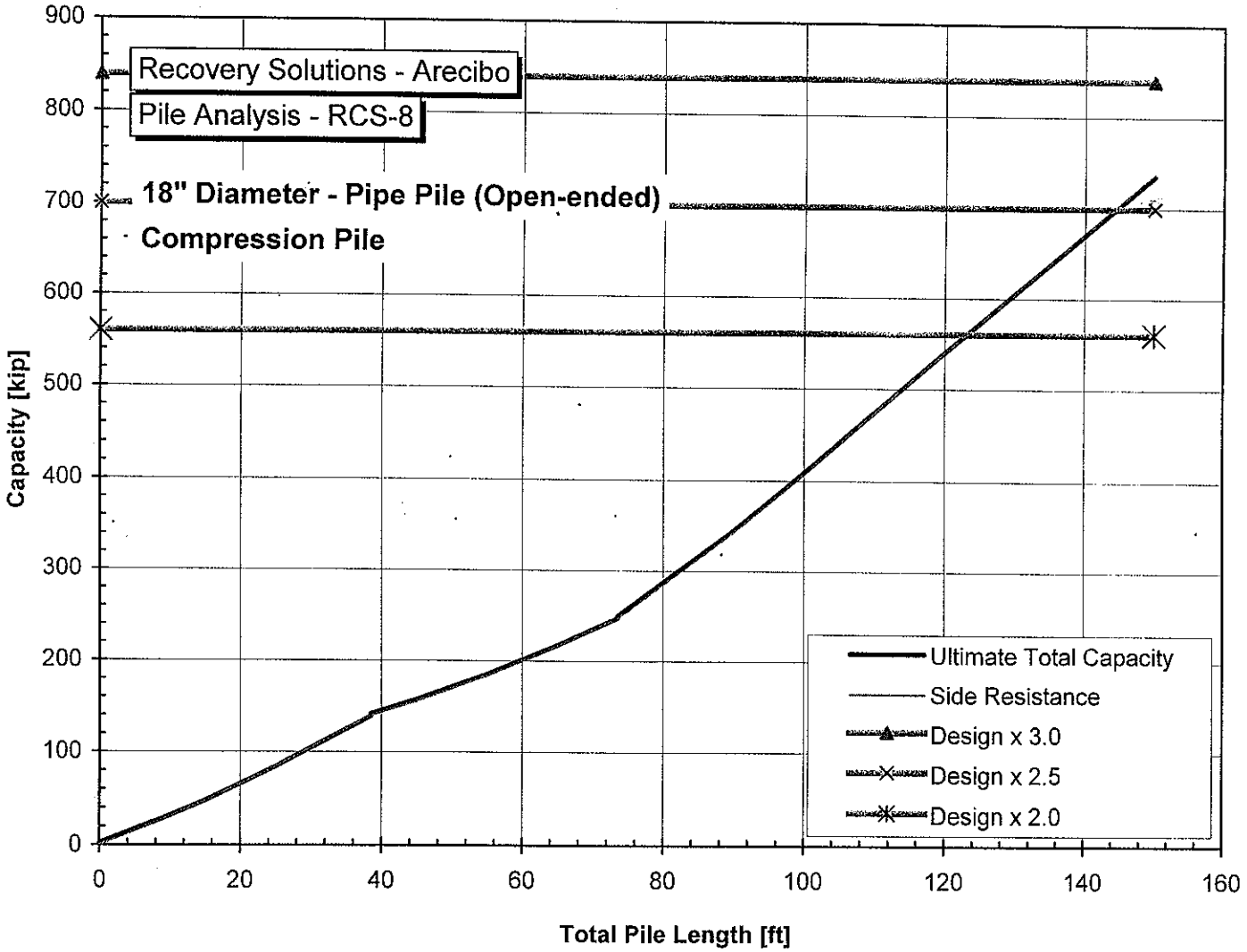



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

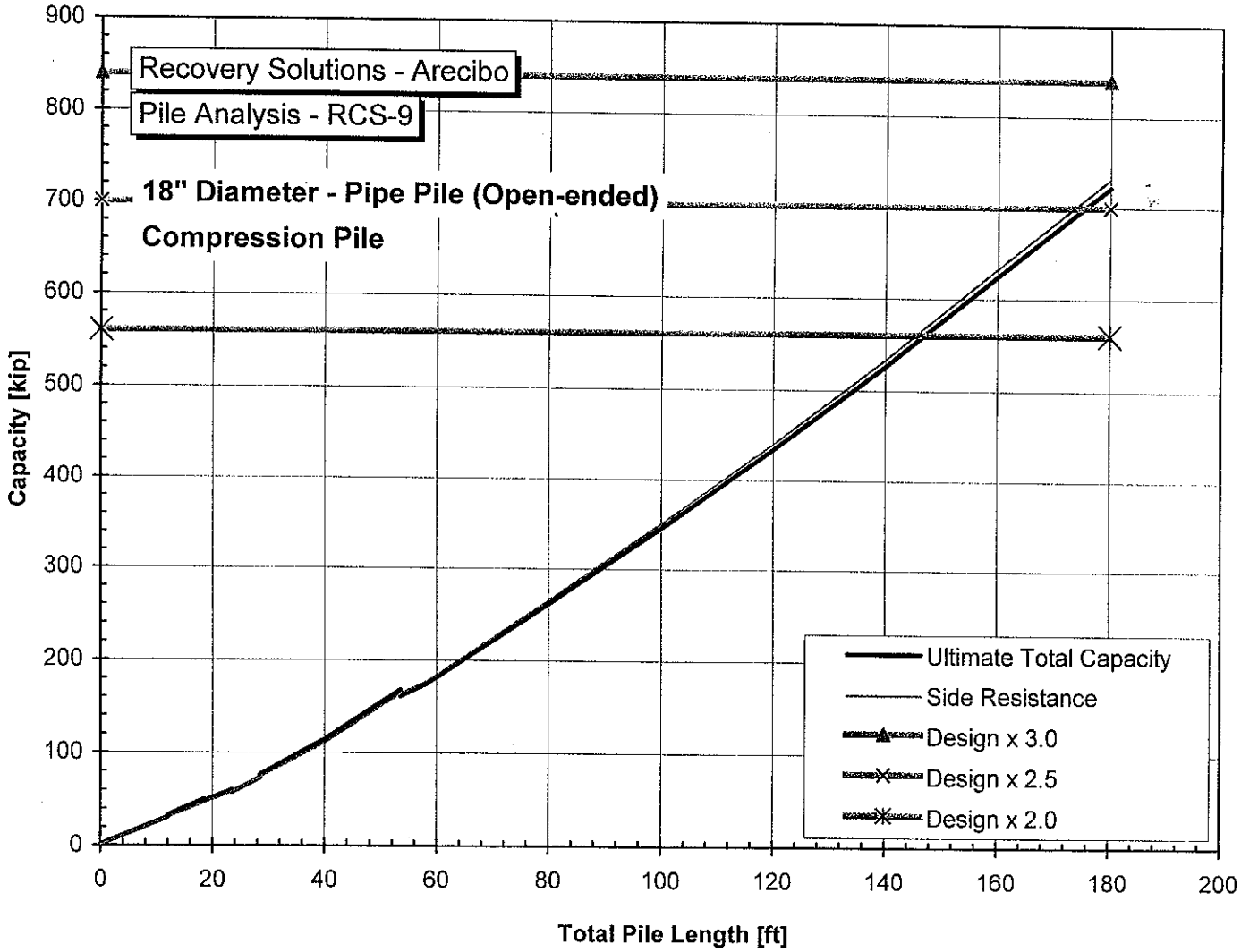



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

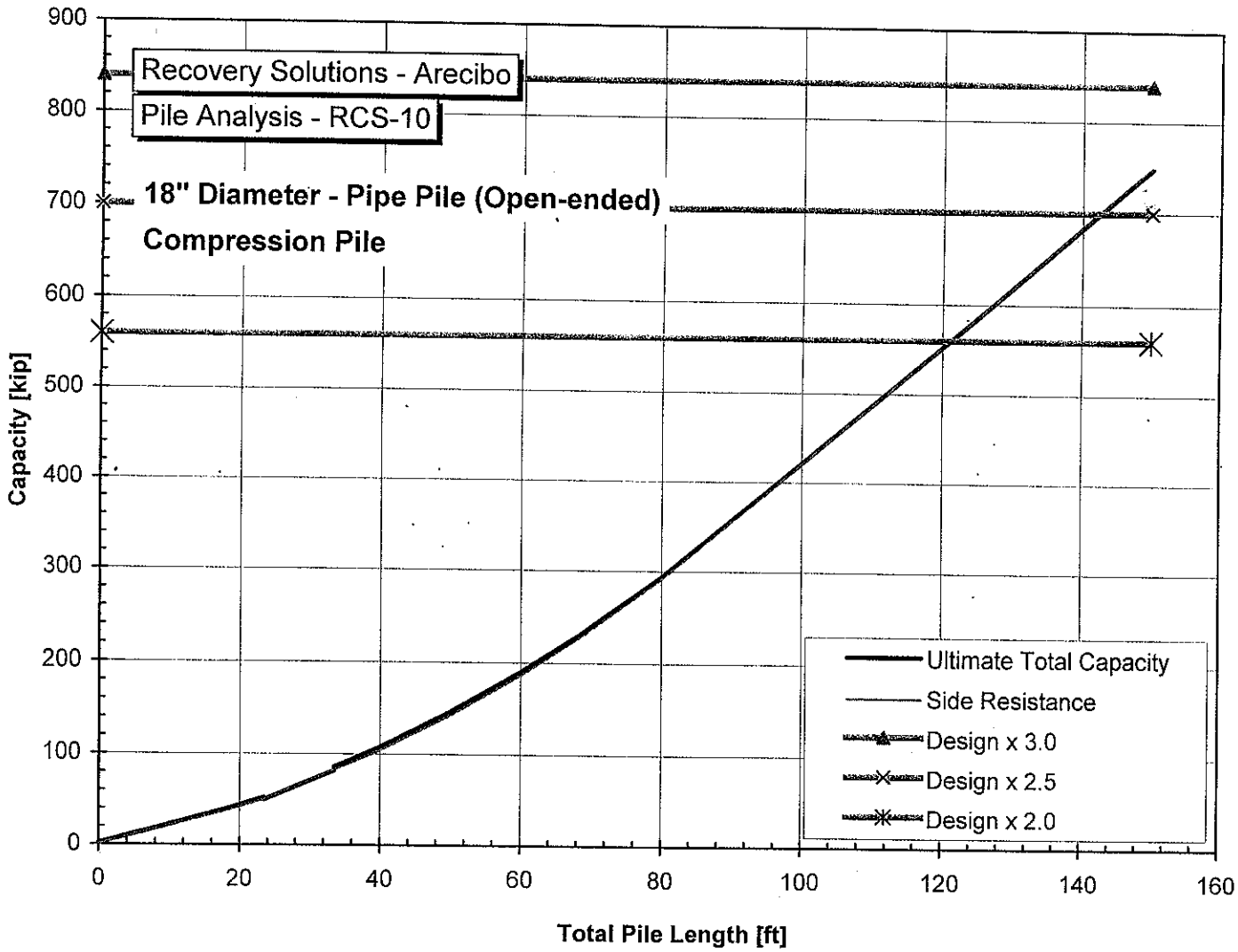



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

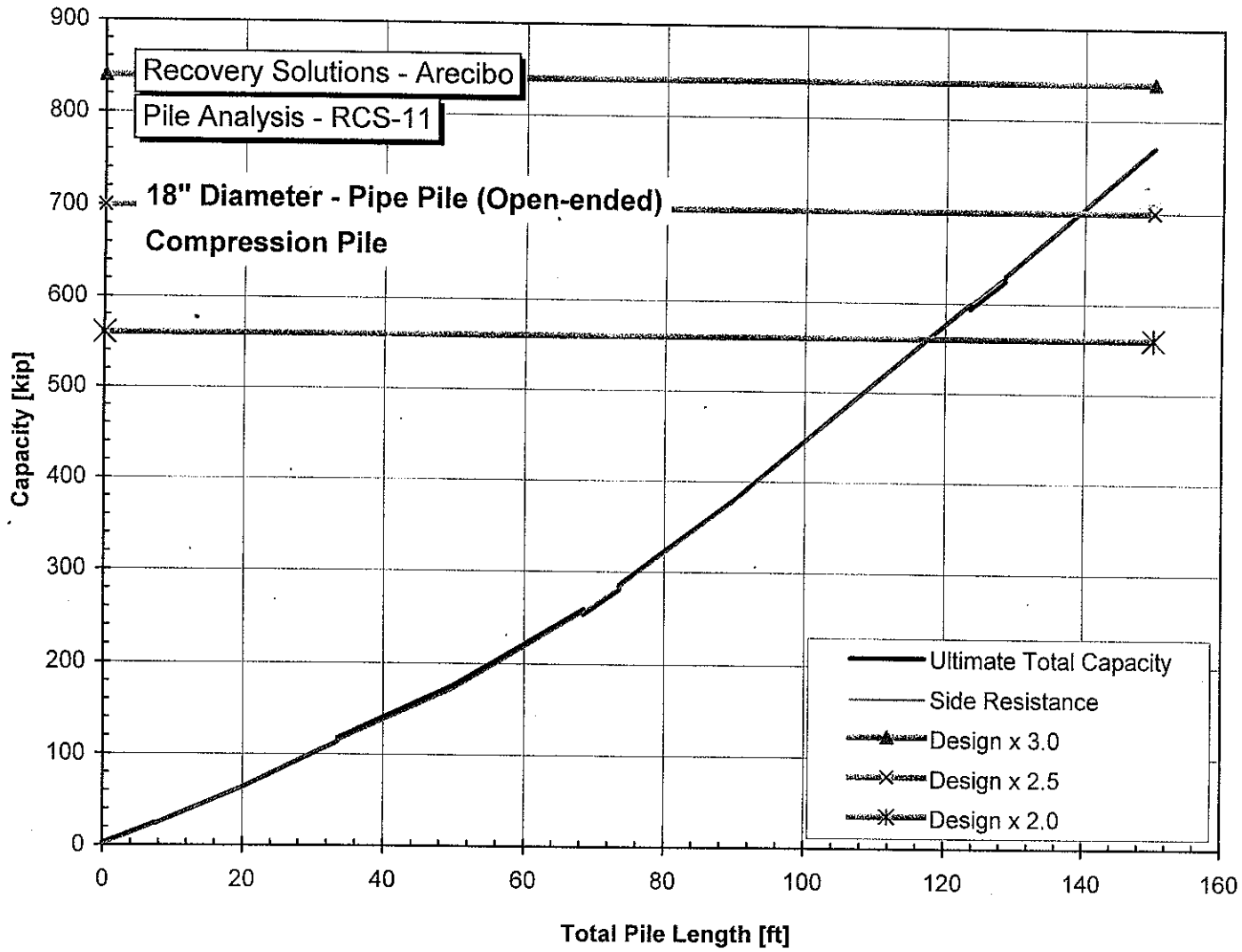



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

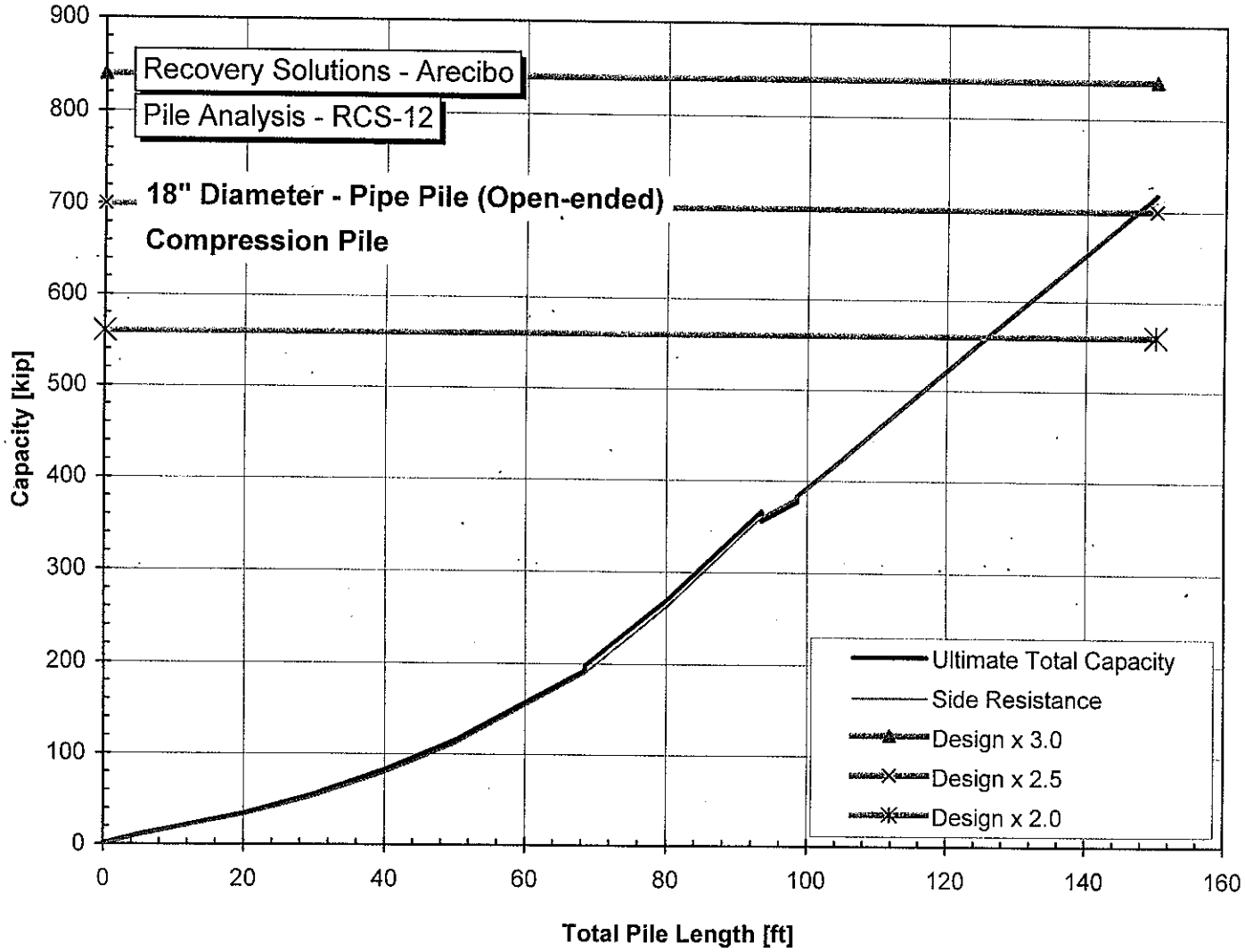



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

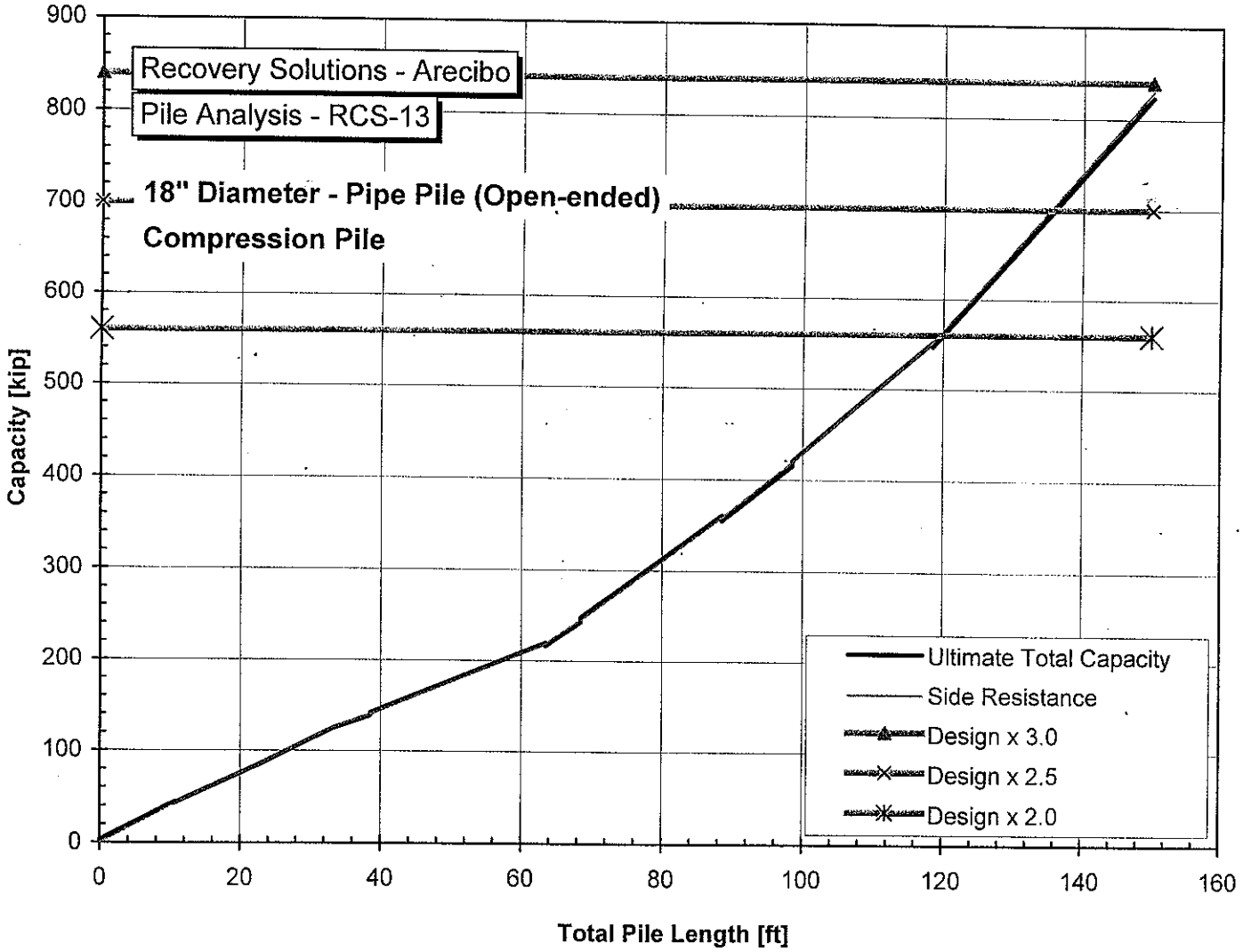



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

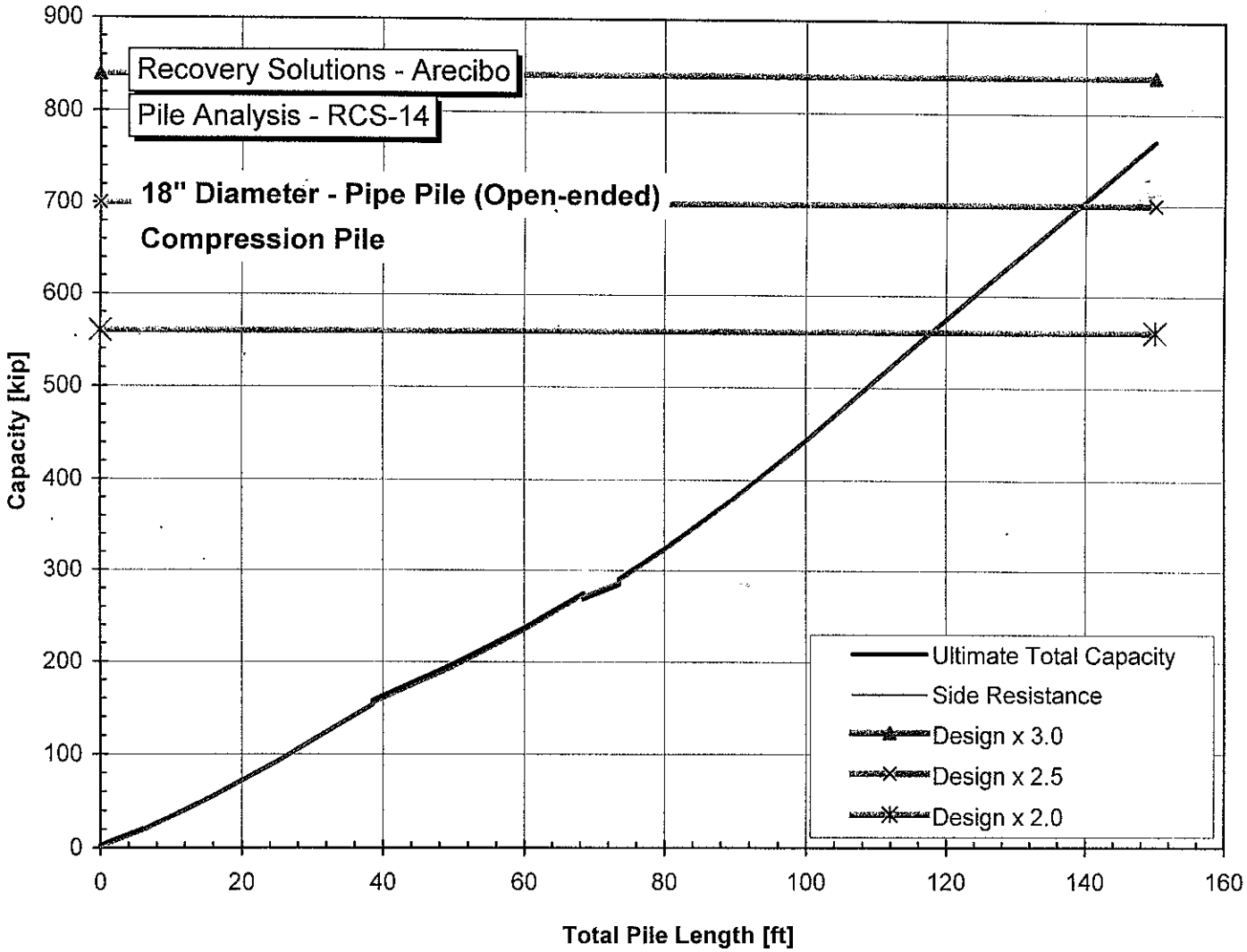



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

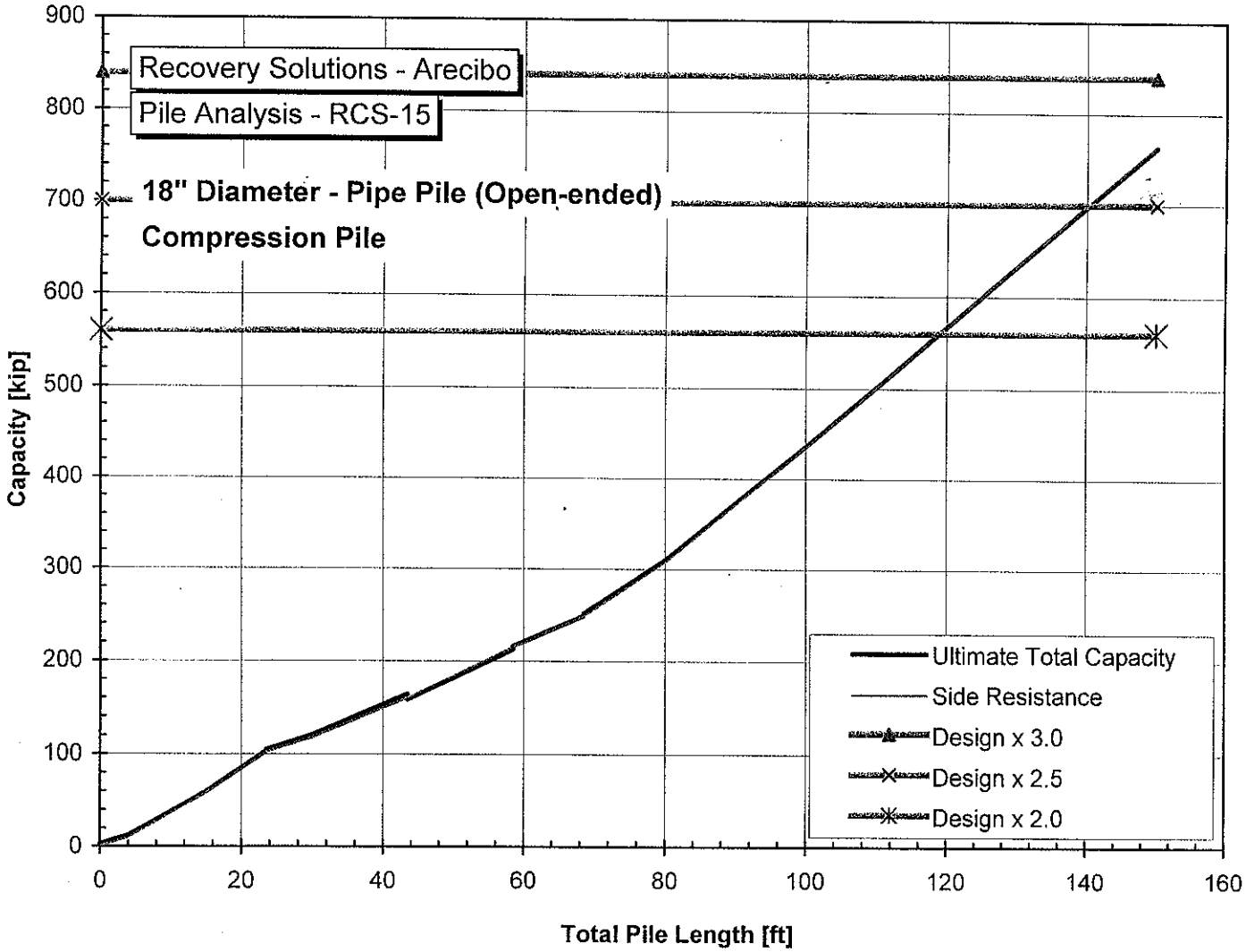



Capacity vs total pile length
Factor of safety shown

File APf Analysis - Compression Pipe Pile 18 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

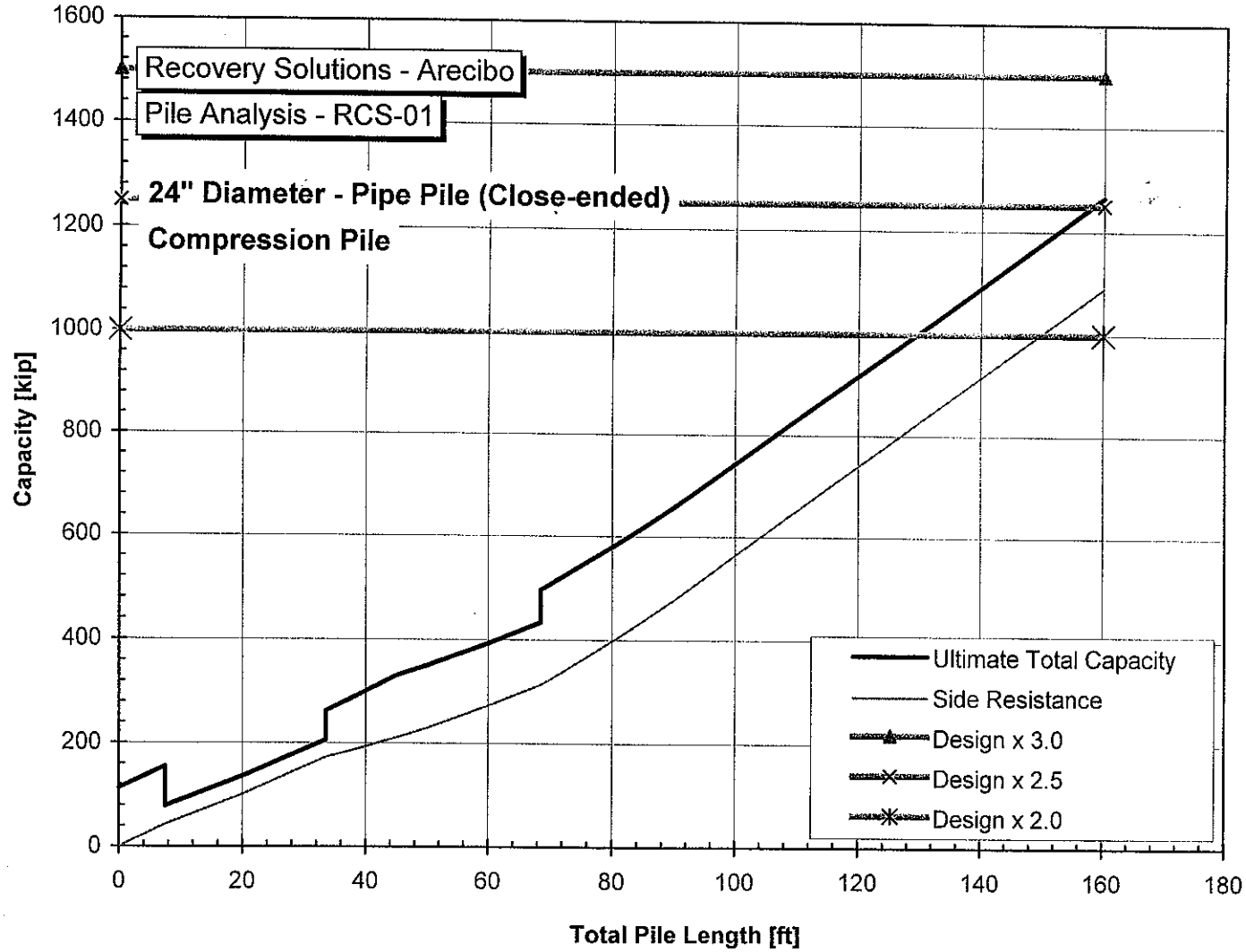



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 18 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

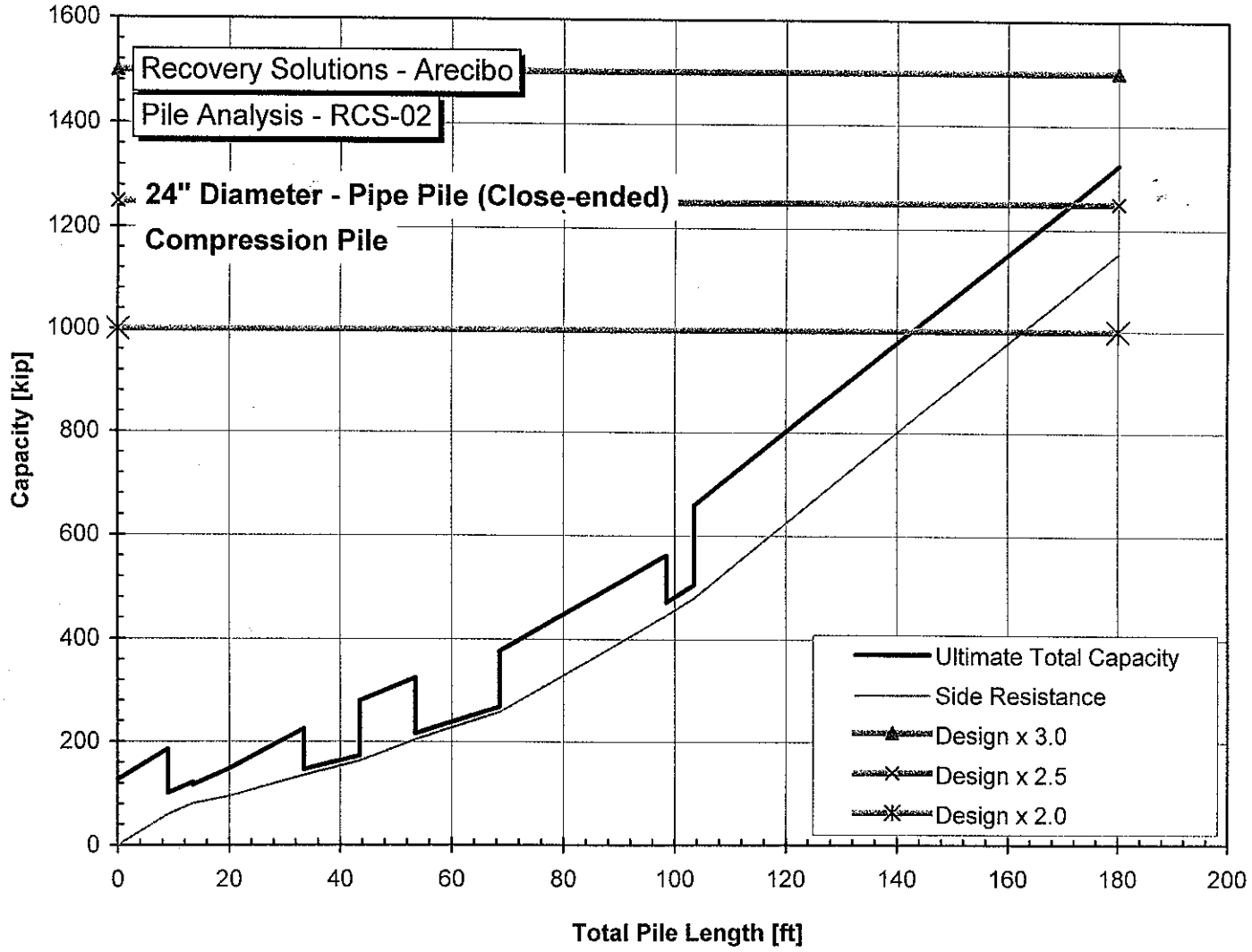



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-01 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

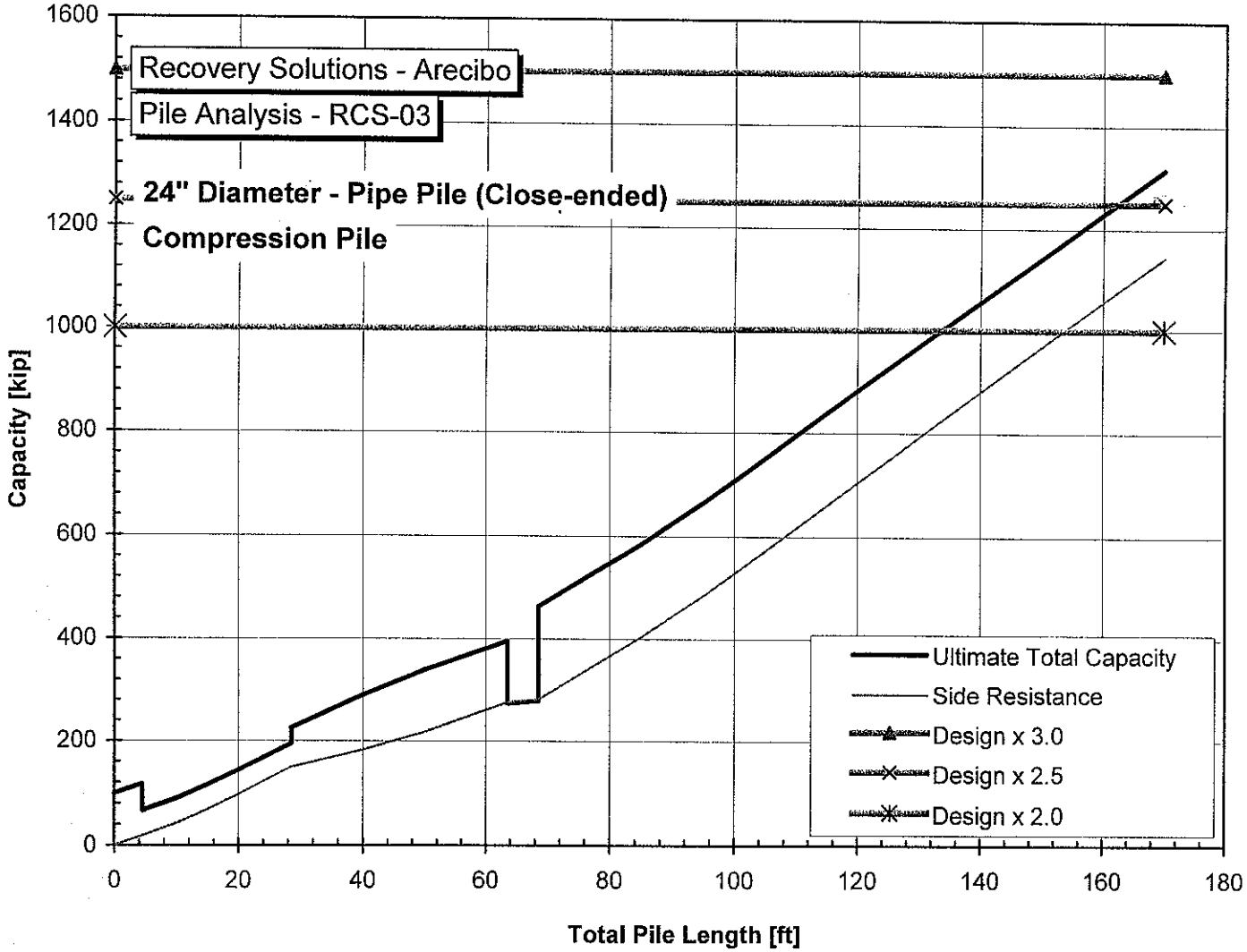



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-02 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

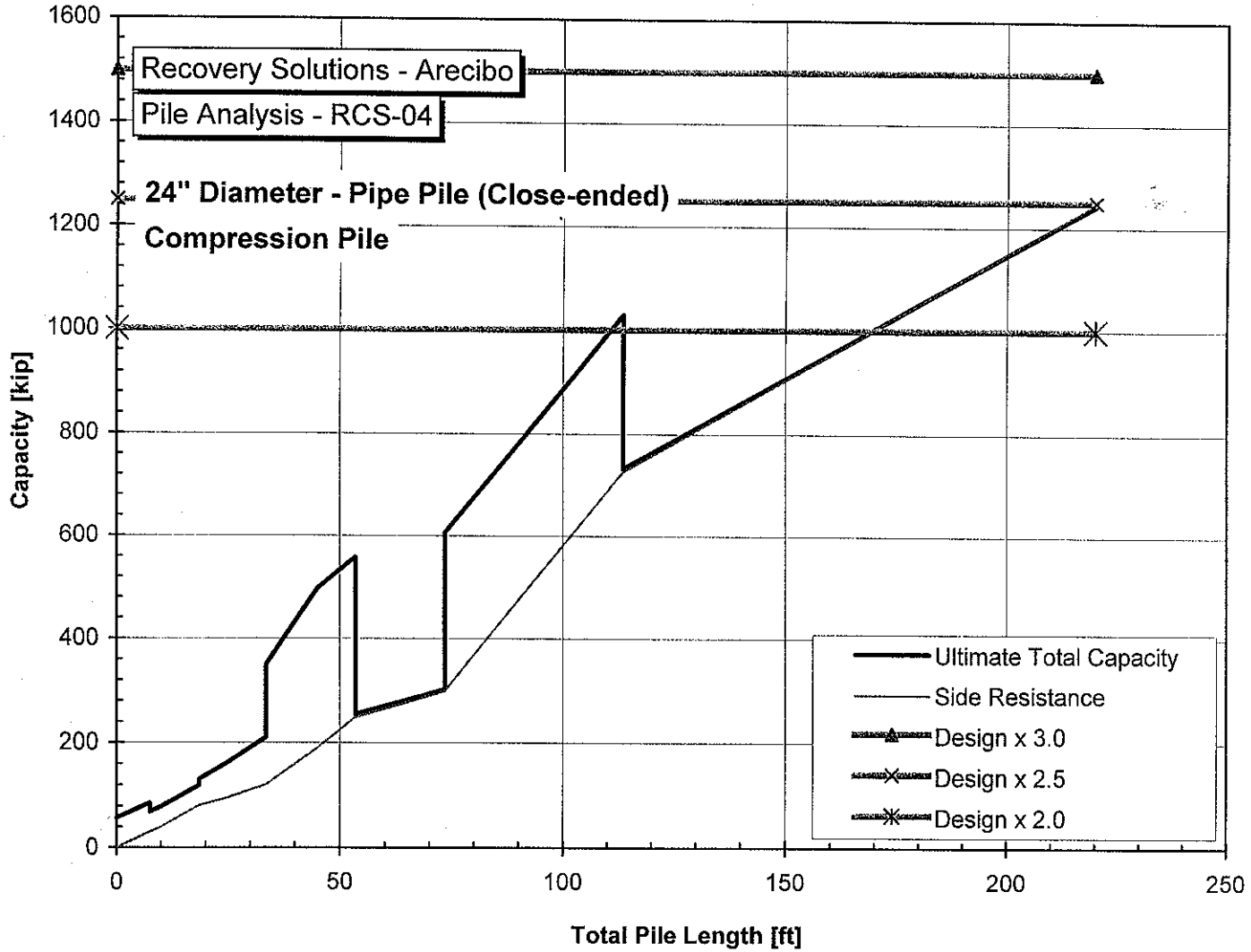



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-03 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

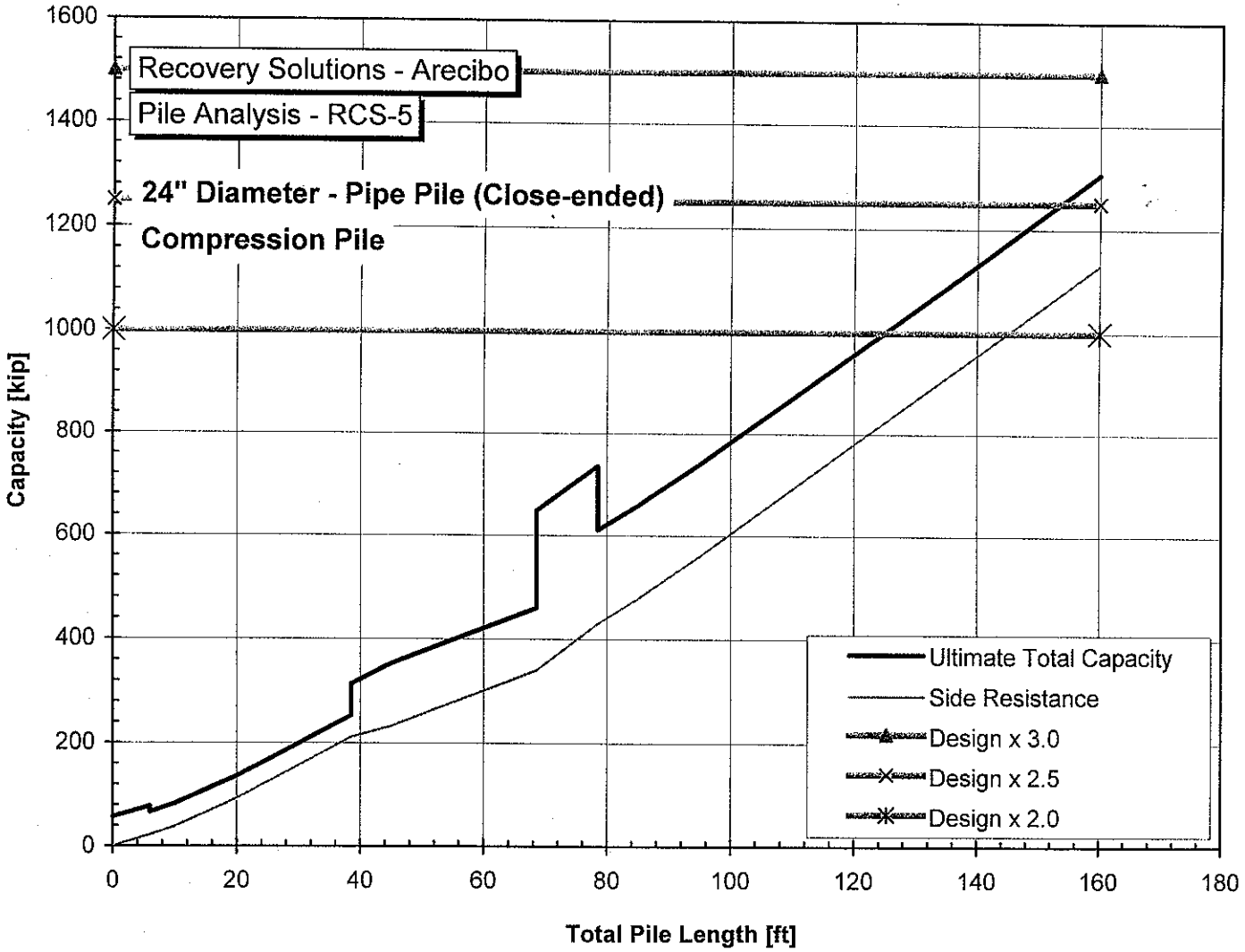



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-04 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

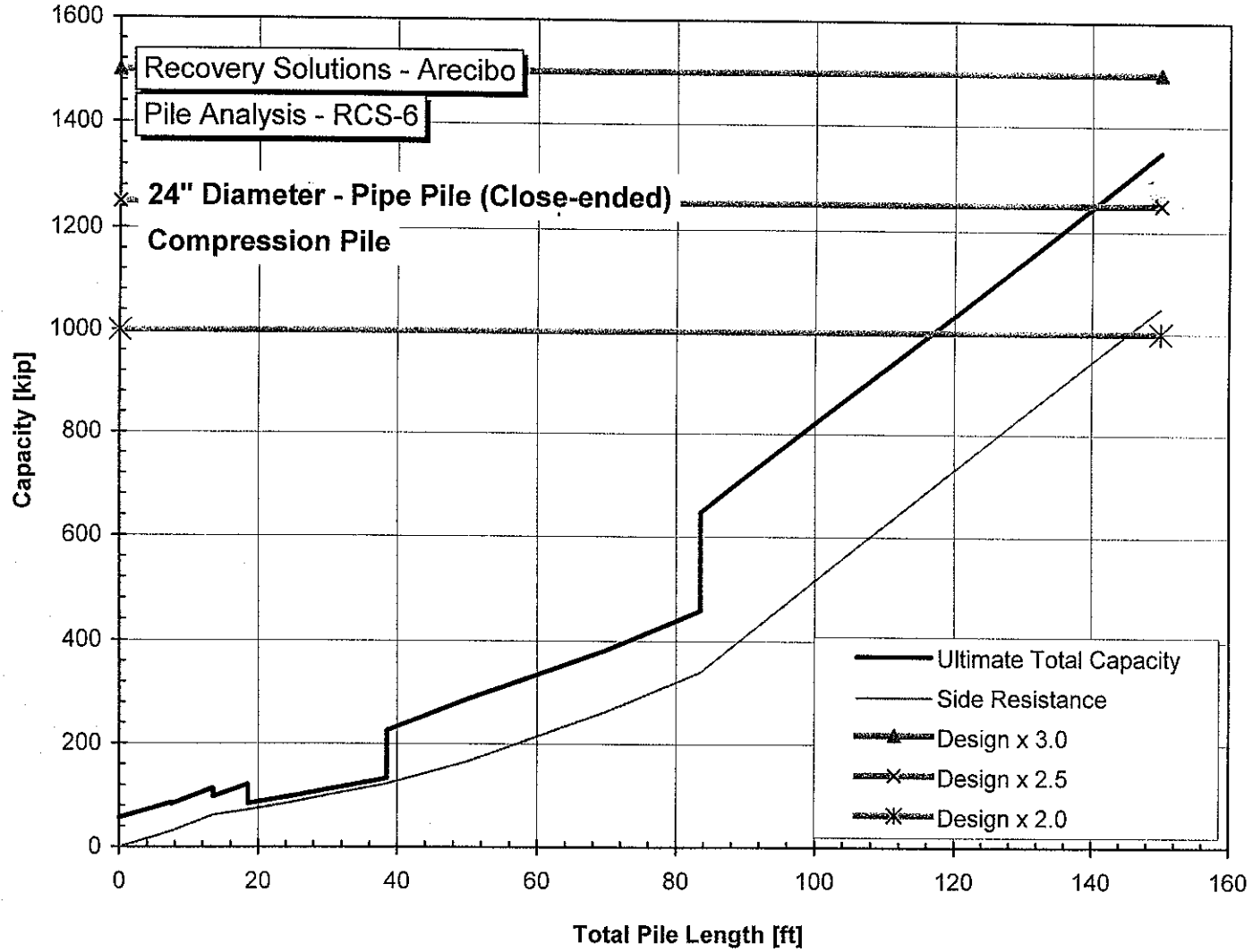



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-05 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

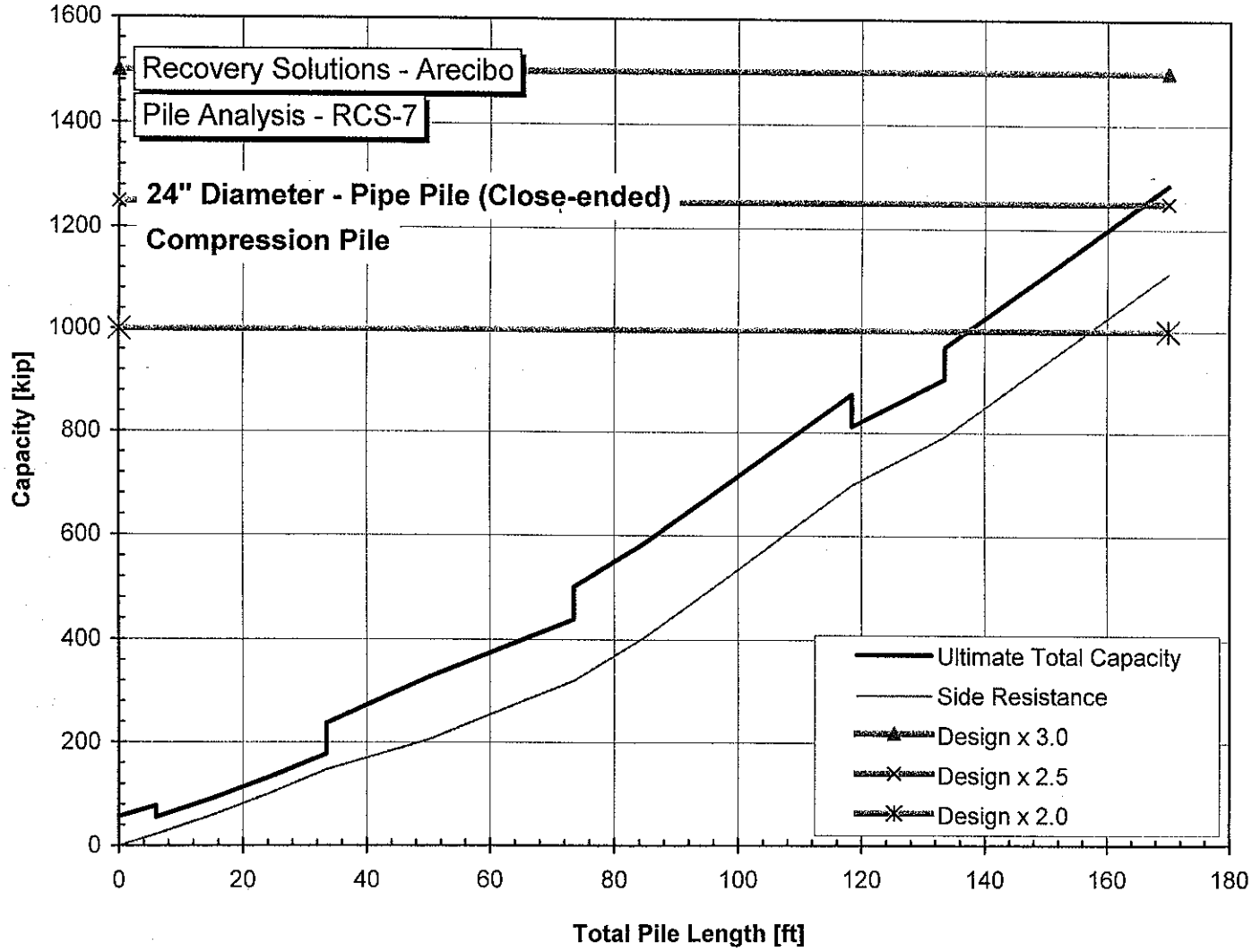



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-06 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

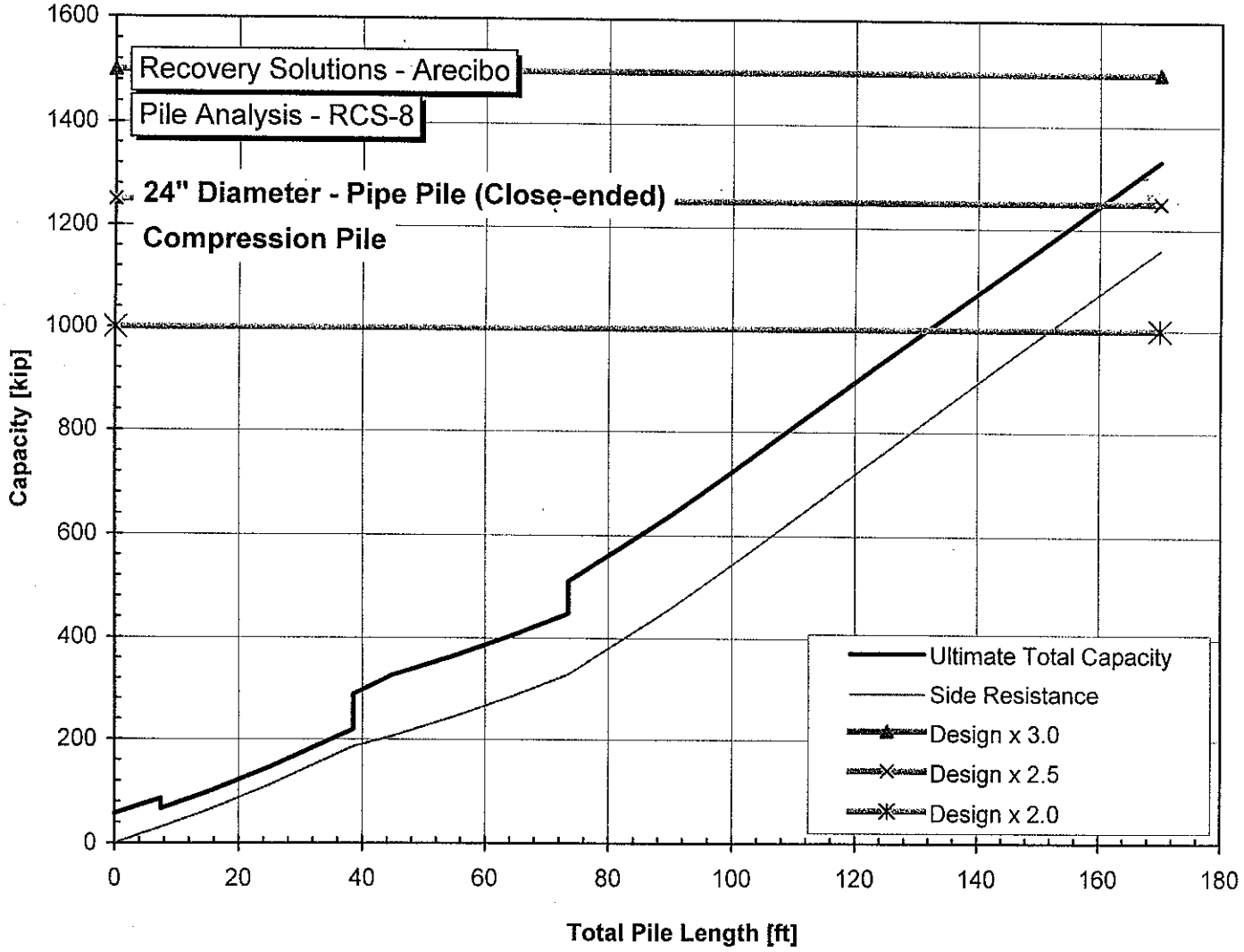



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-07 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

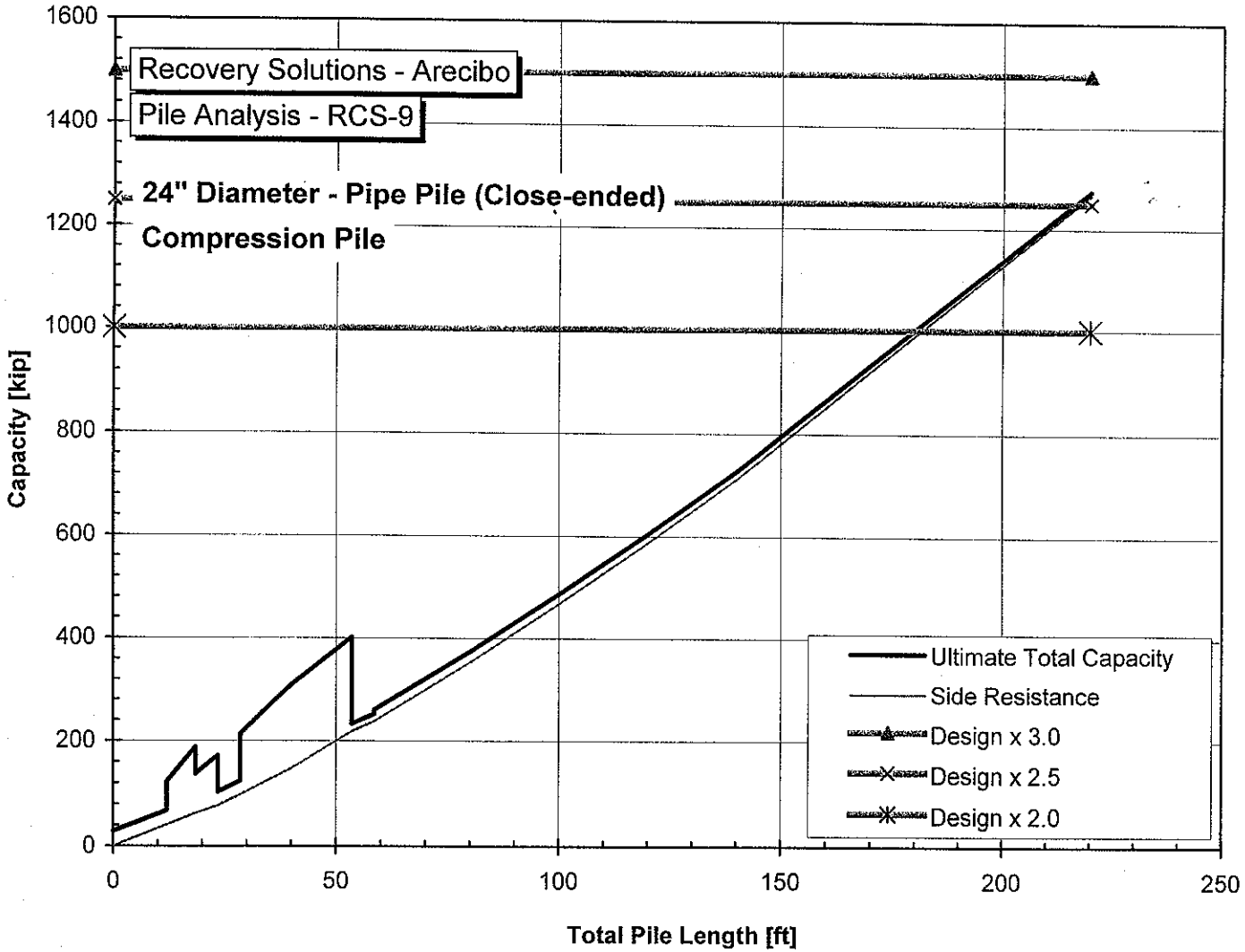



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-08 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

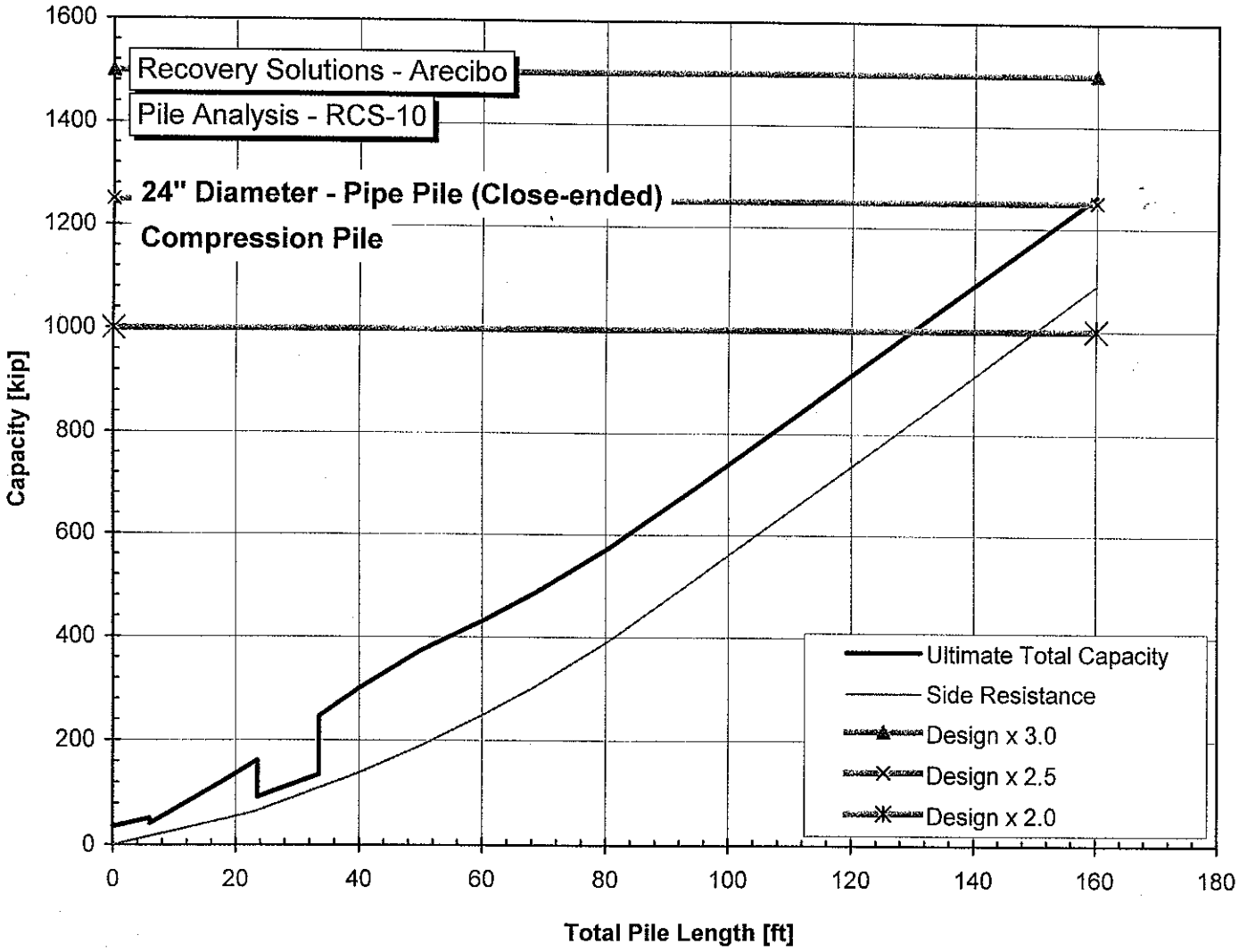



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-09 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

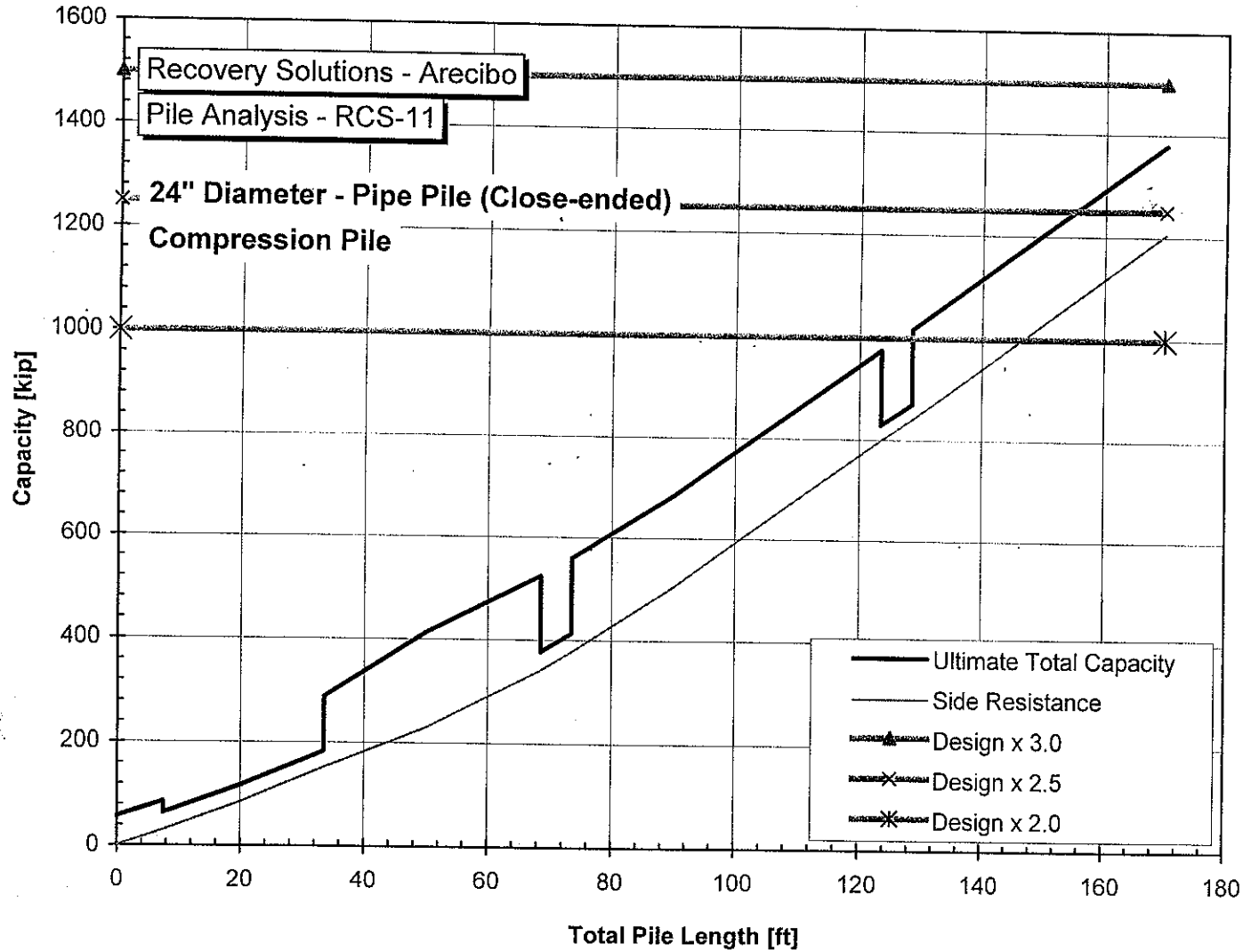



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-10 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

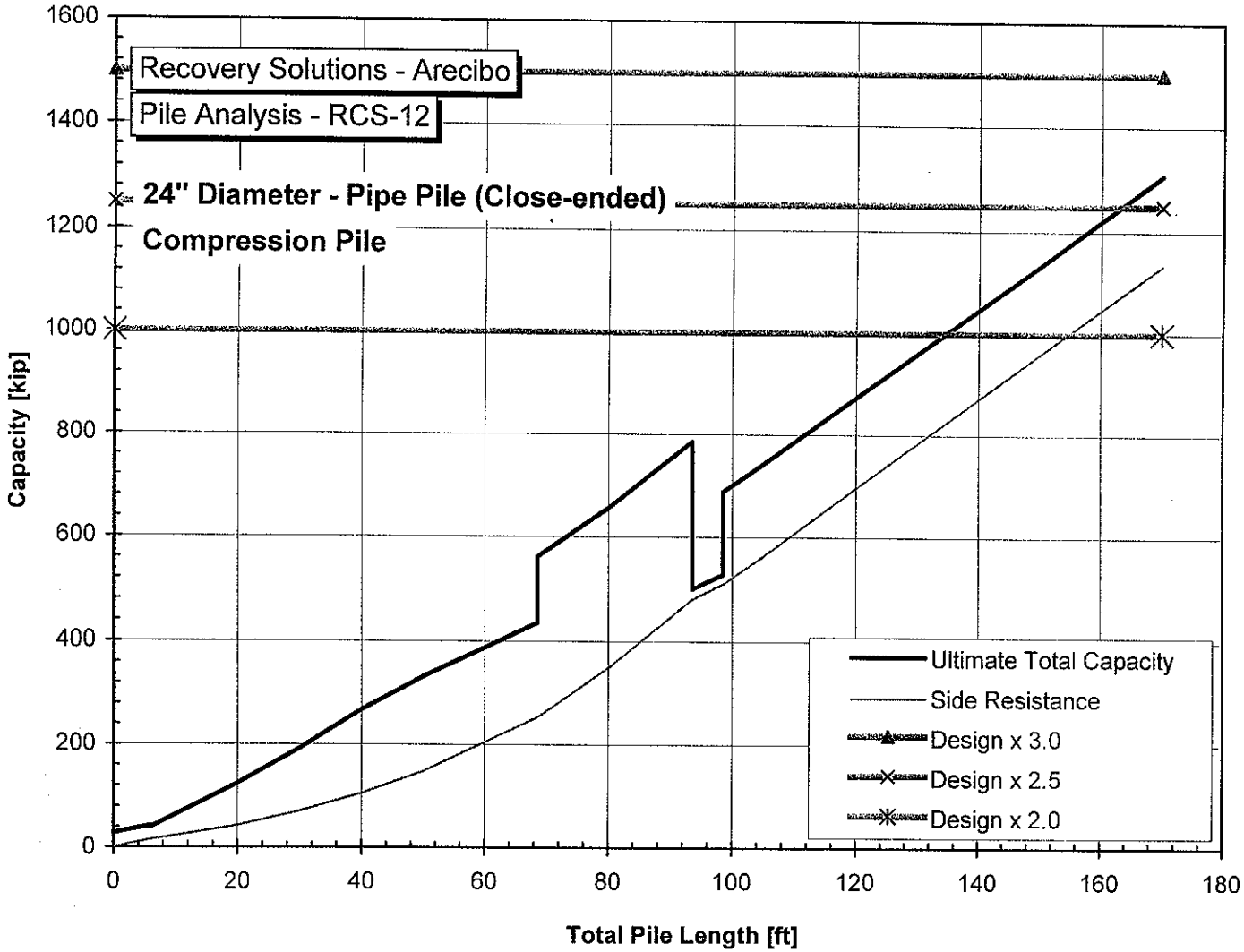



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-11 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

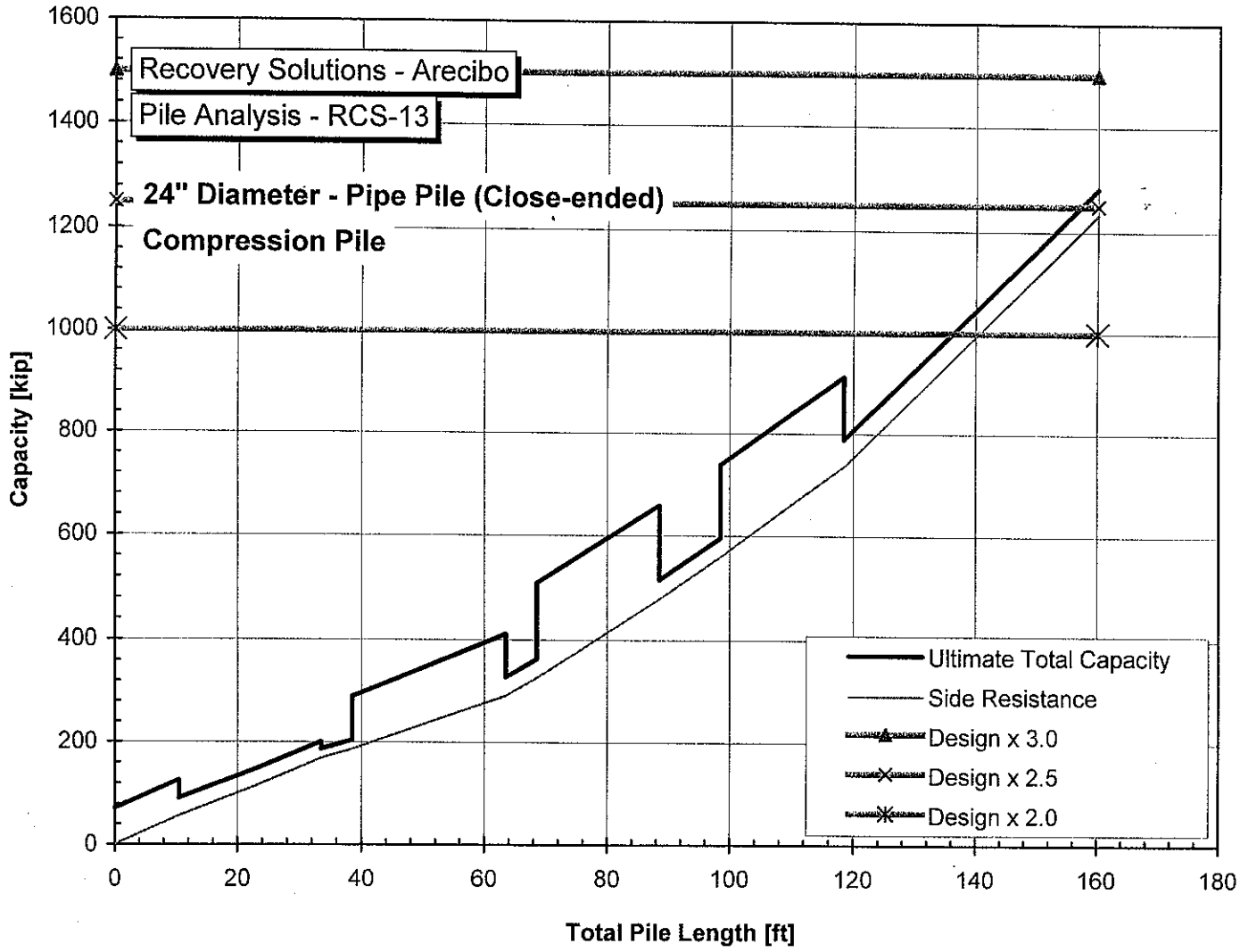



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-12 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

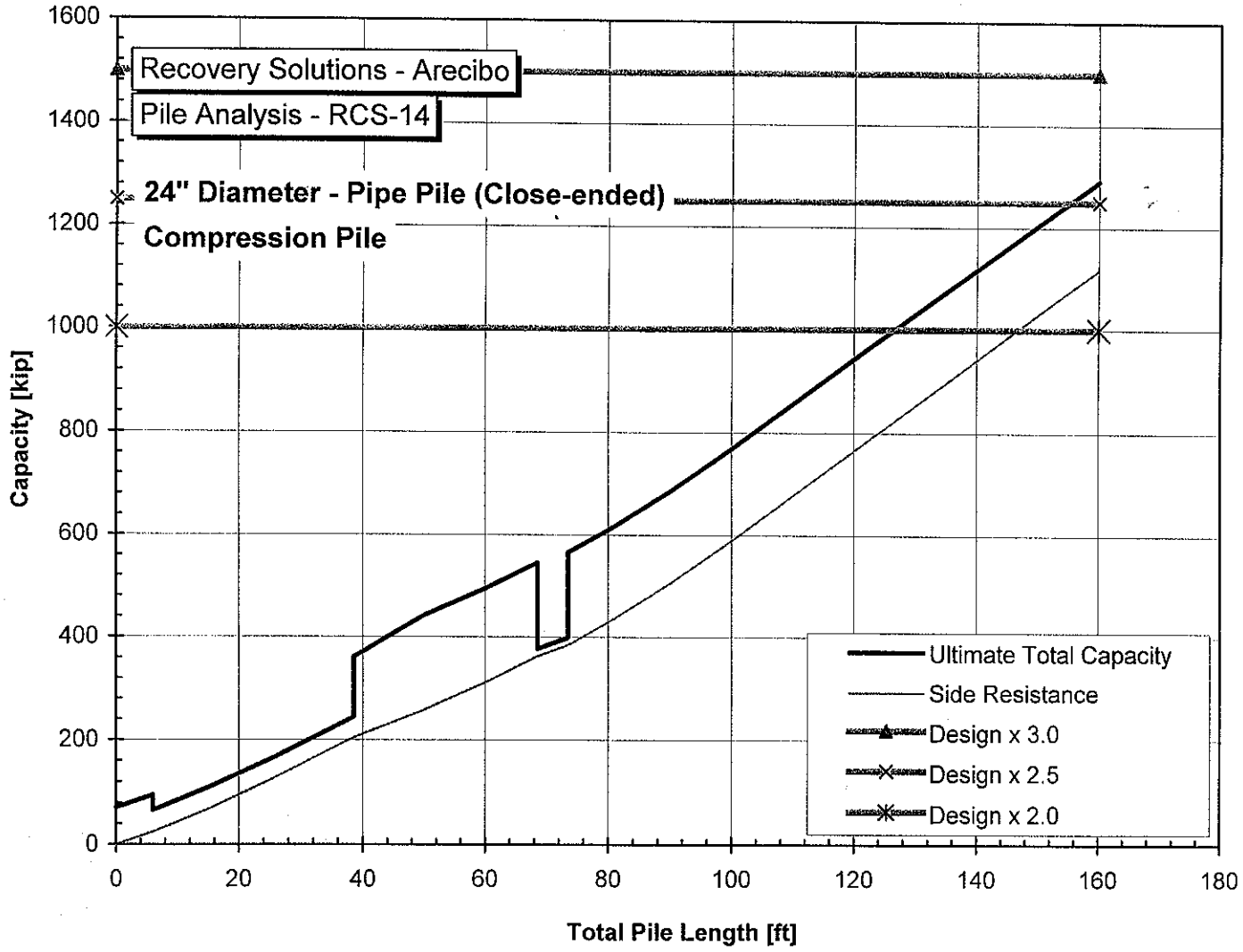



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-13 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

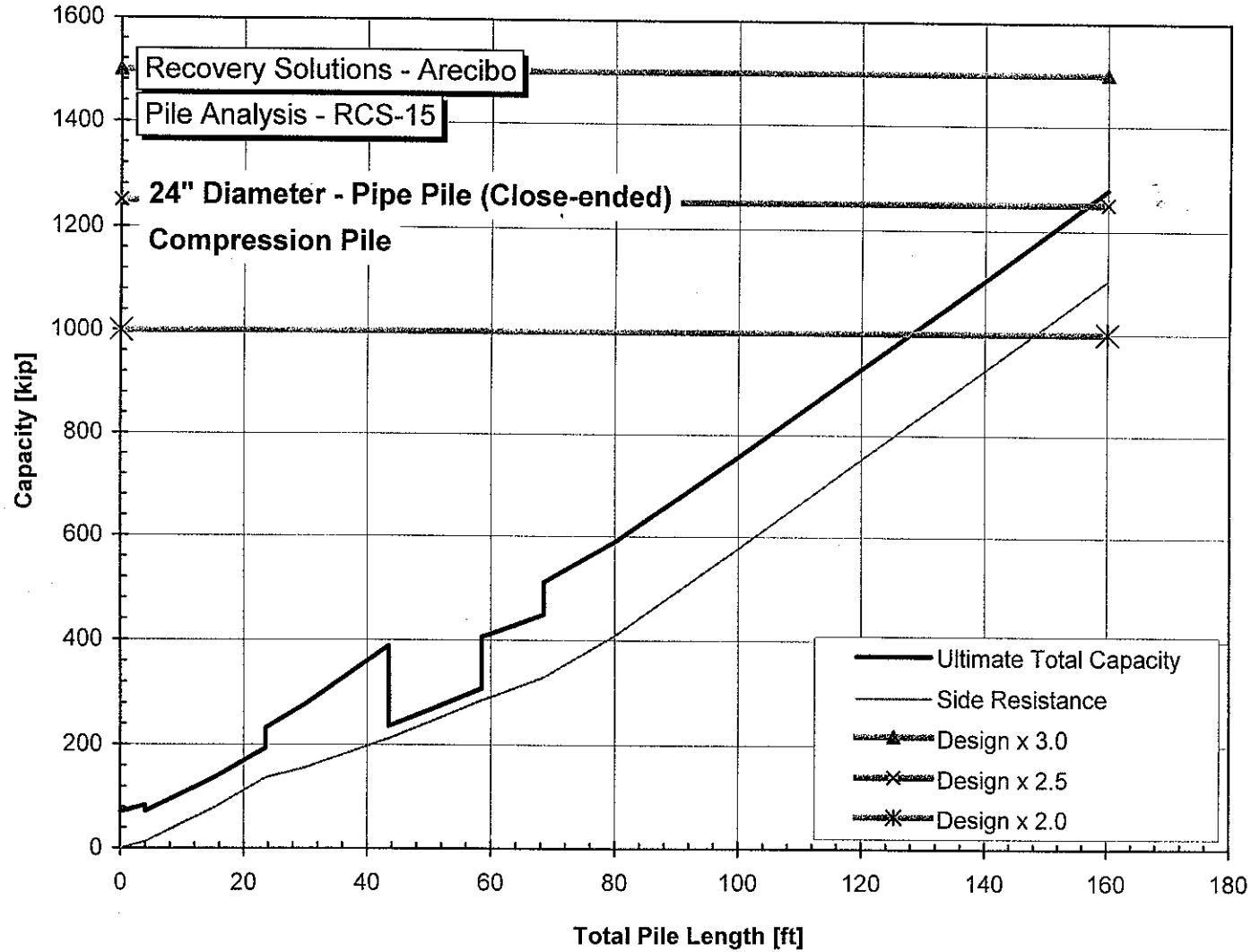



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-14 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

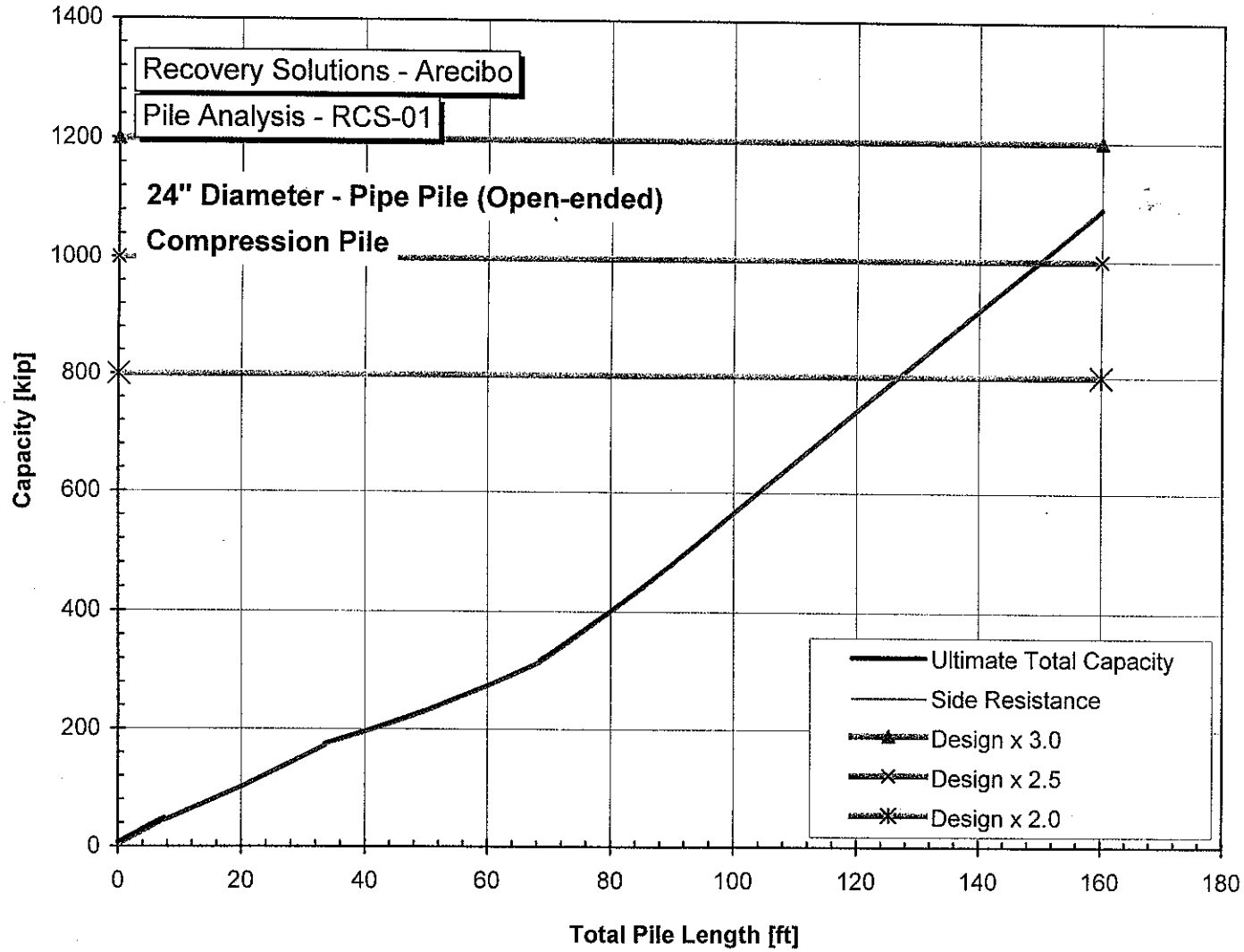



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-15 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

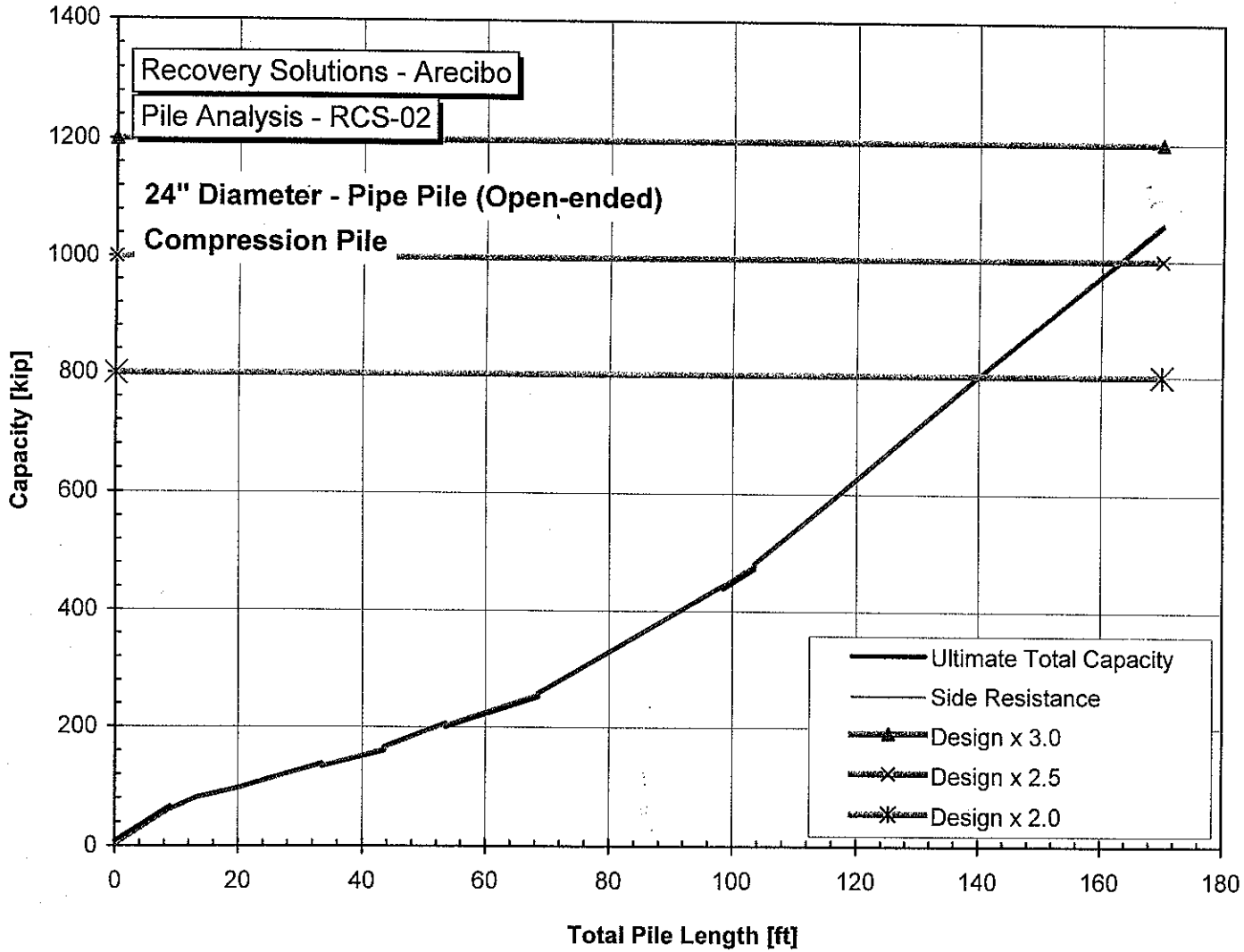



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

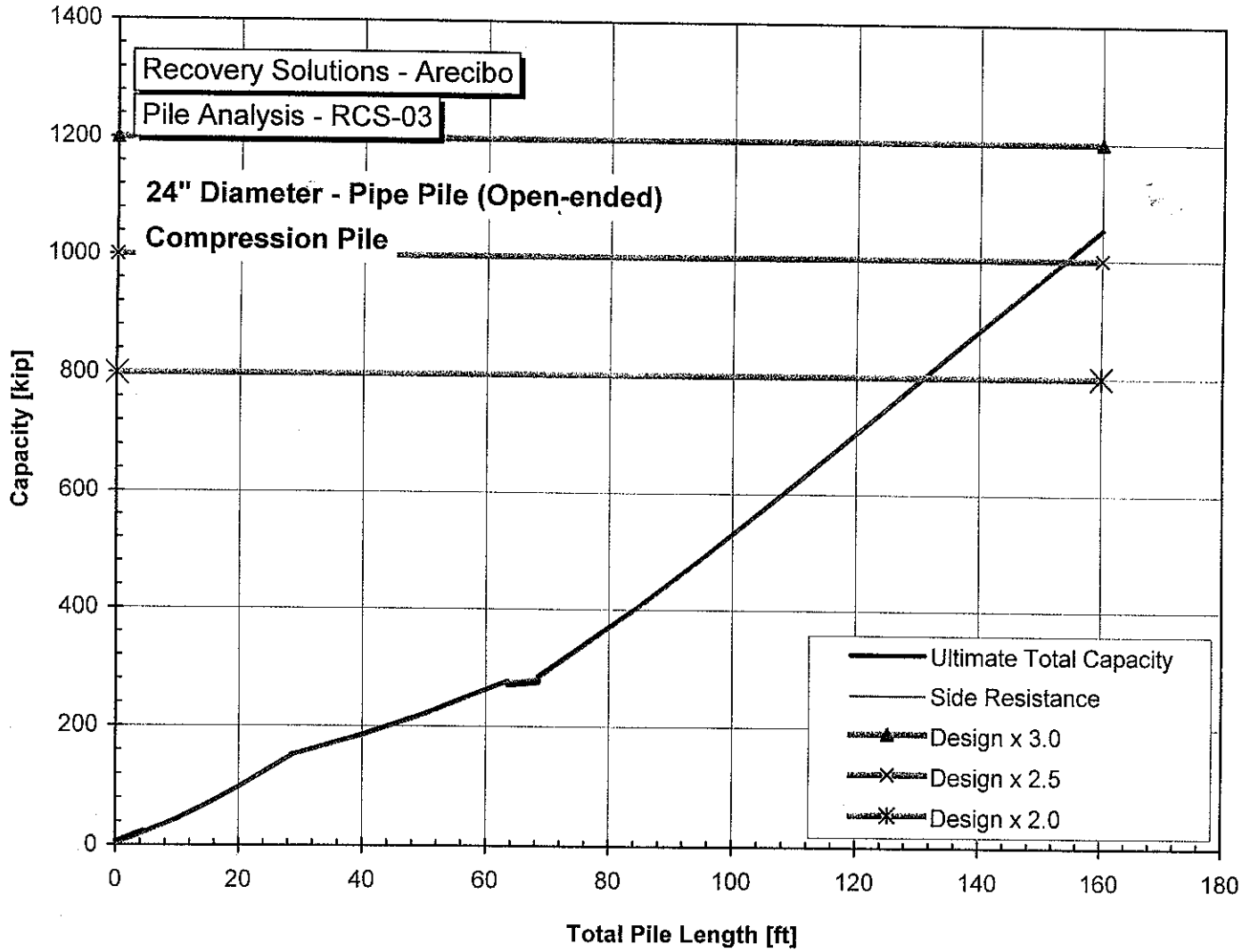



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

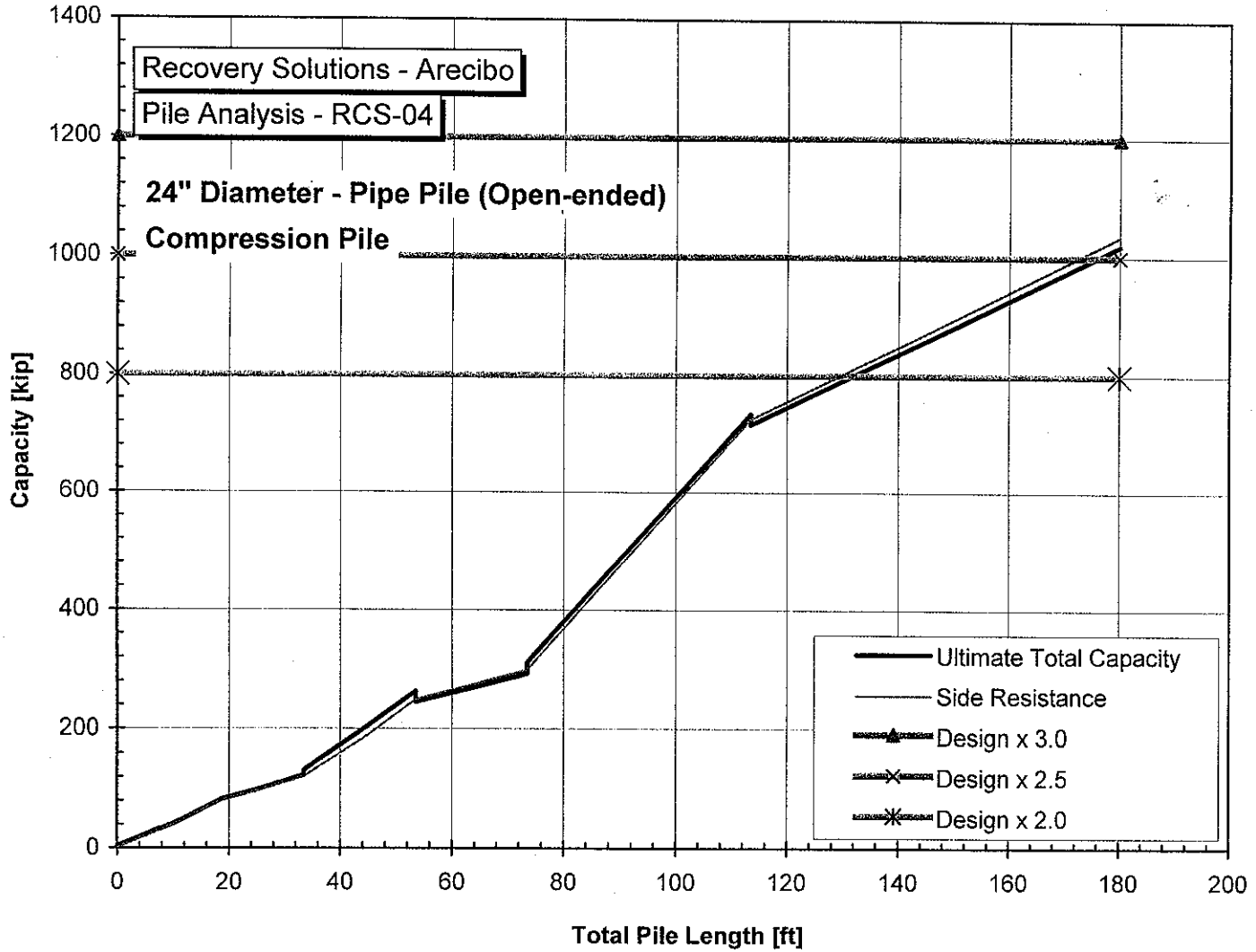



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

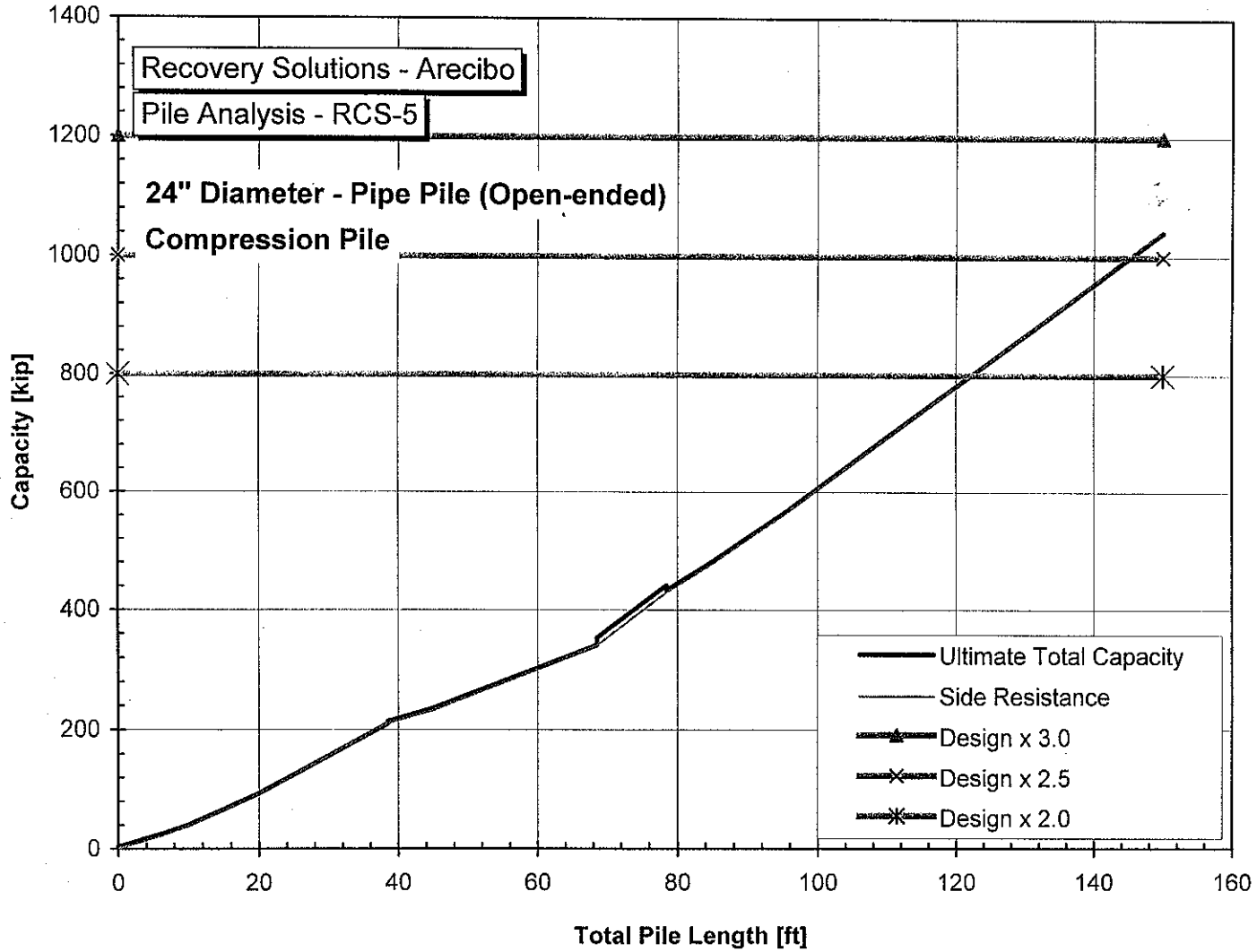



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

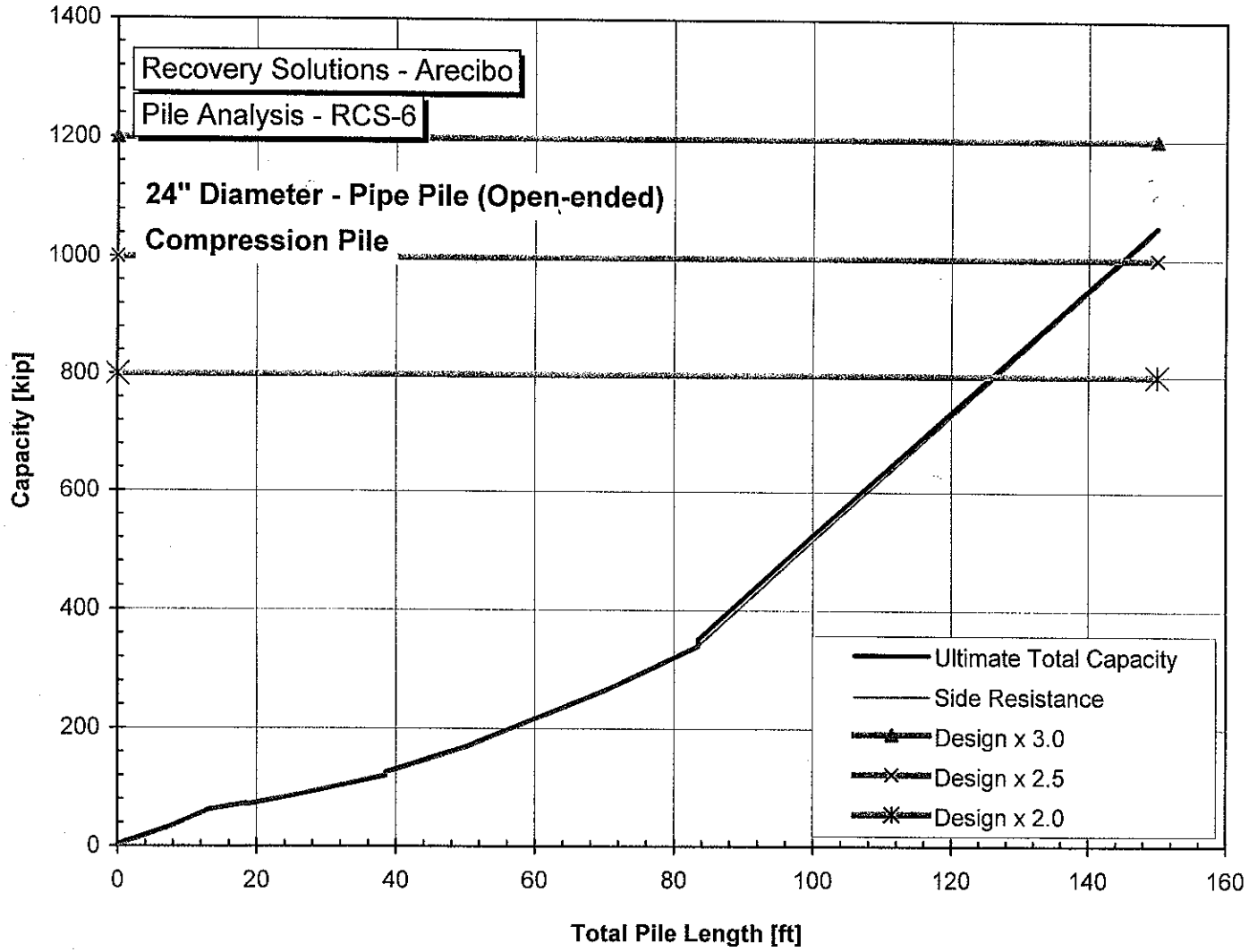



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

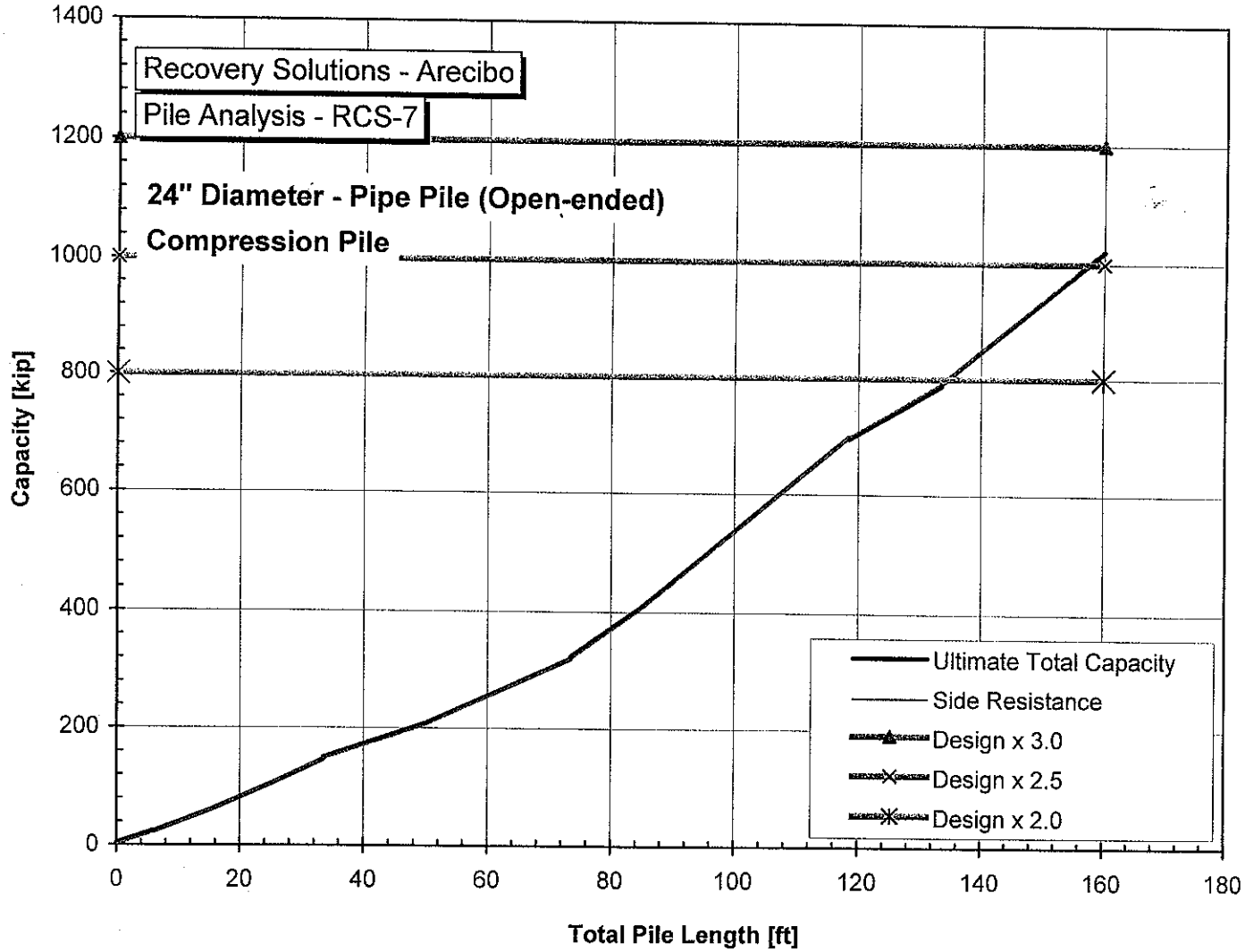



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

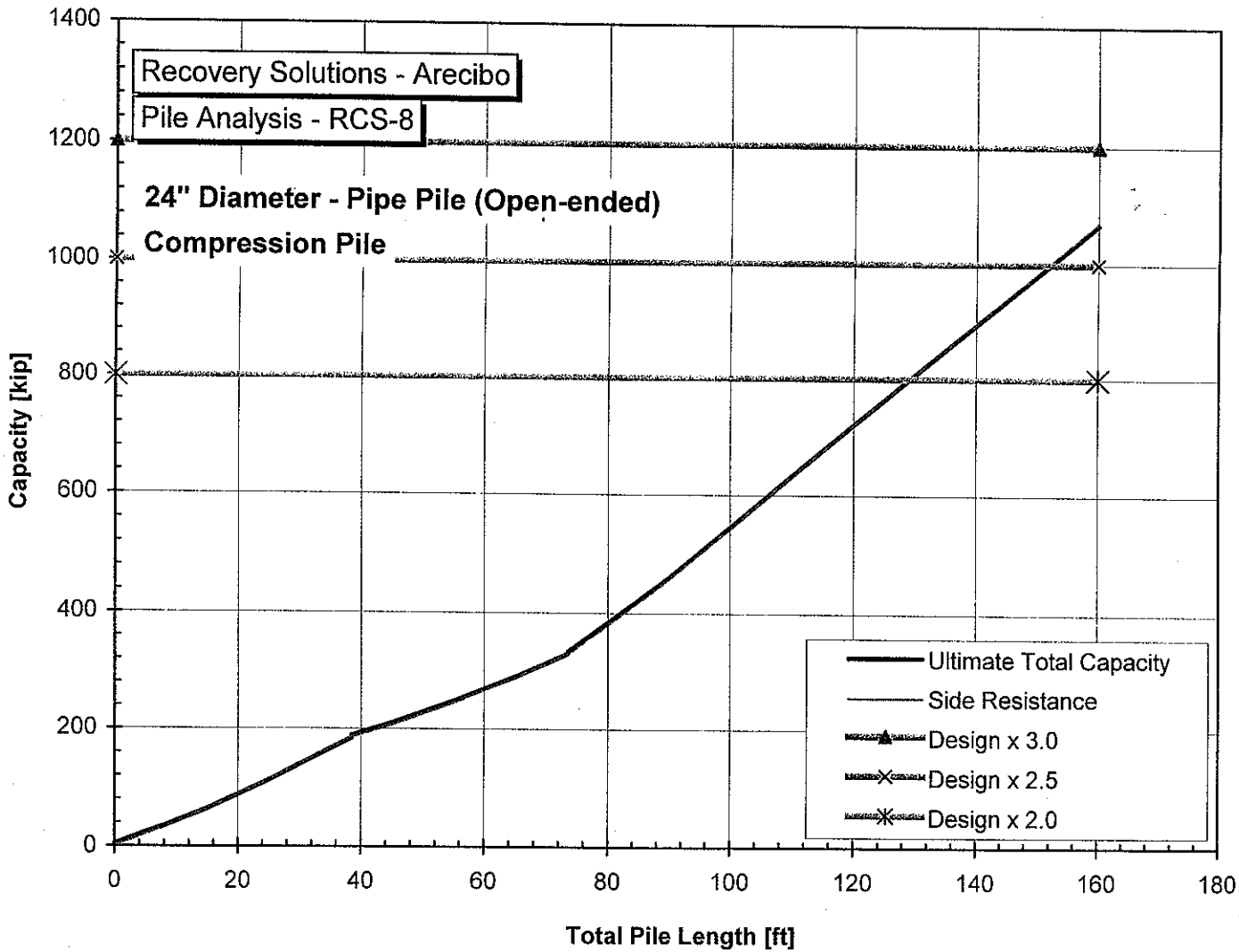



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

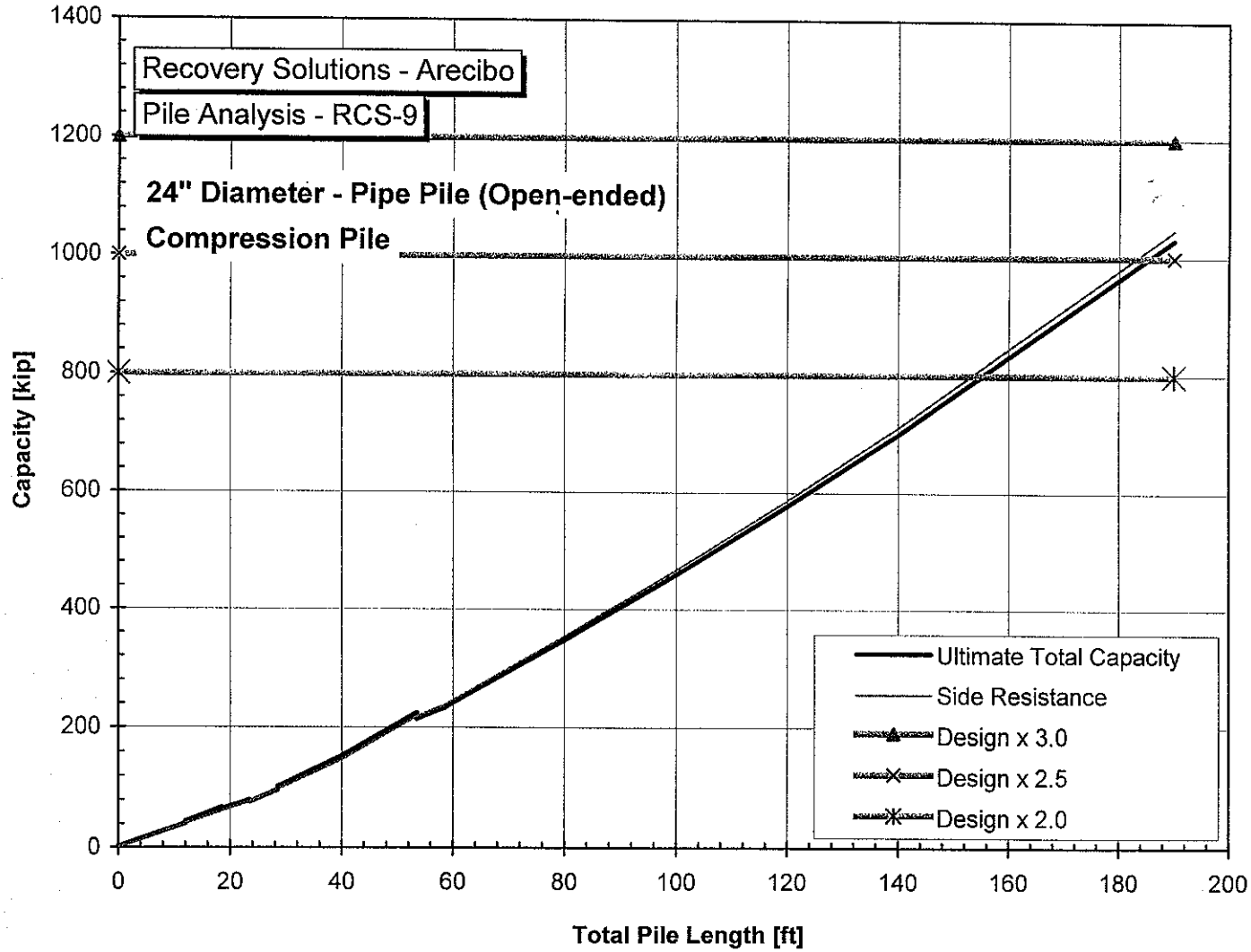



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

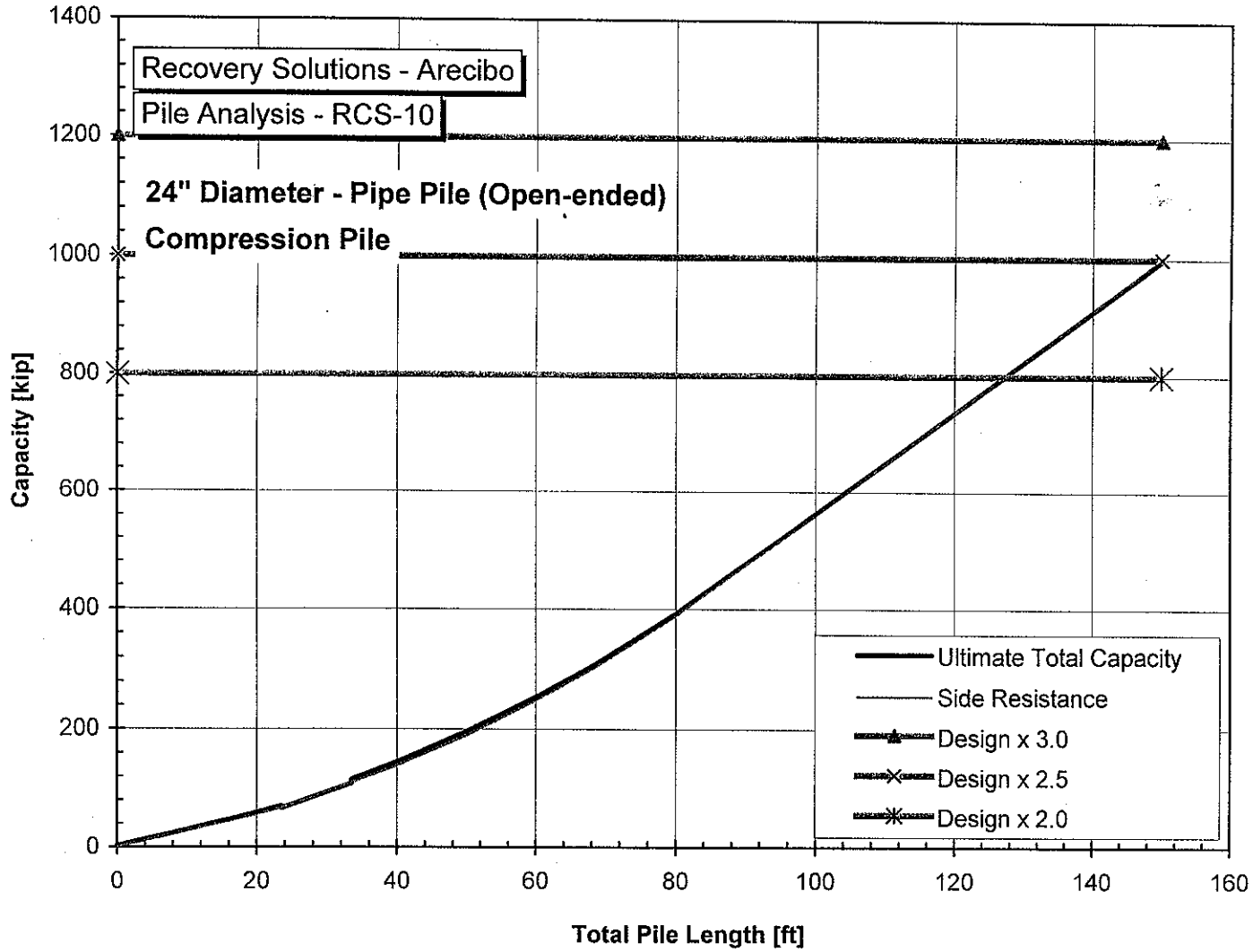



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

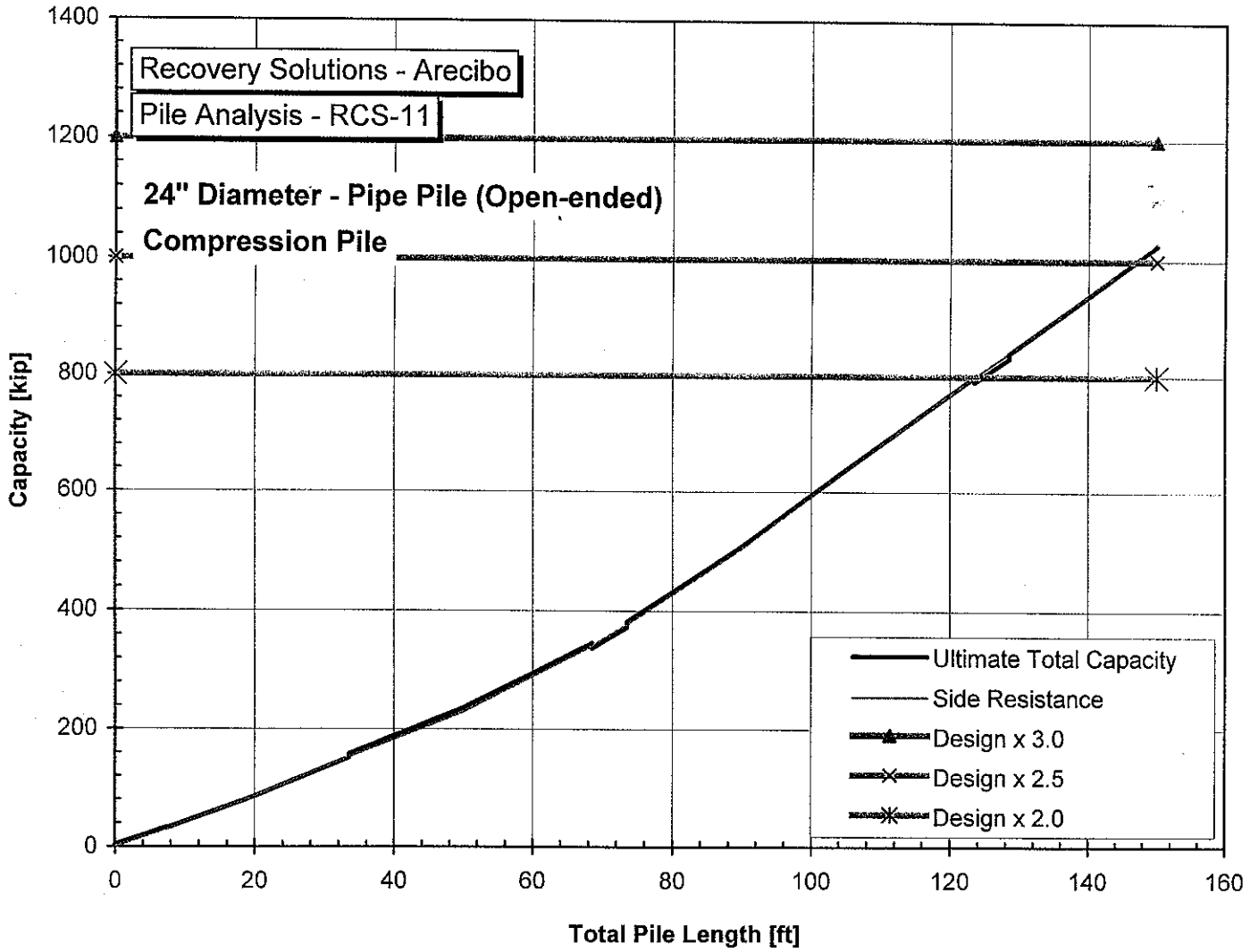



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

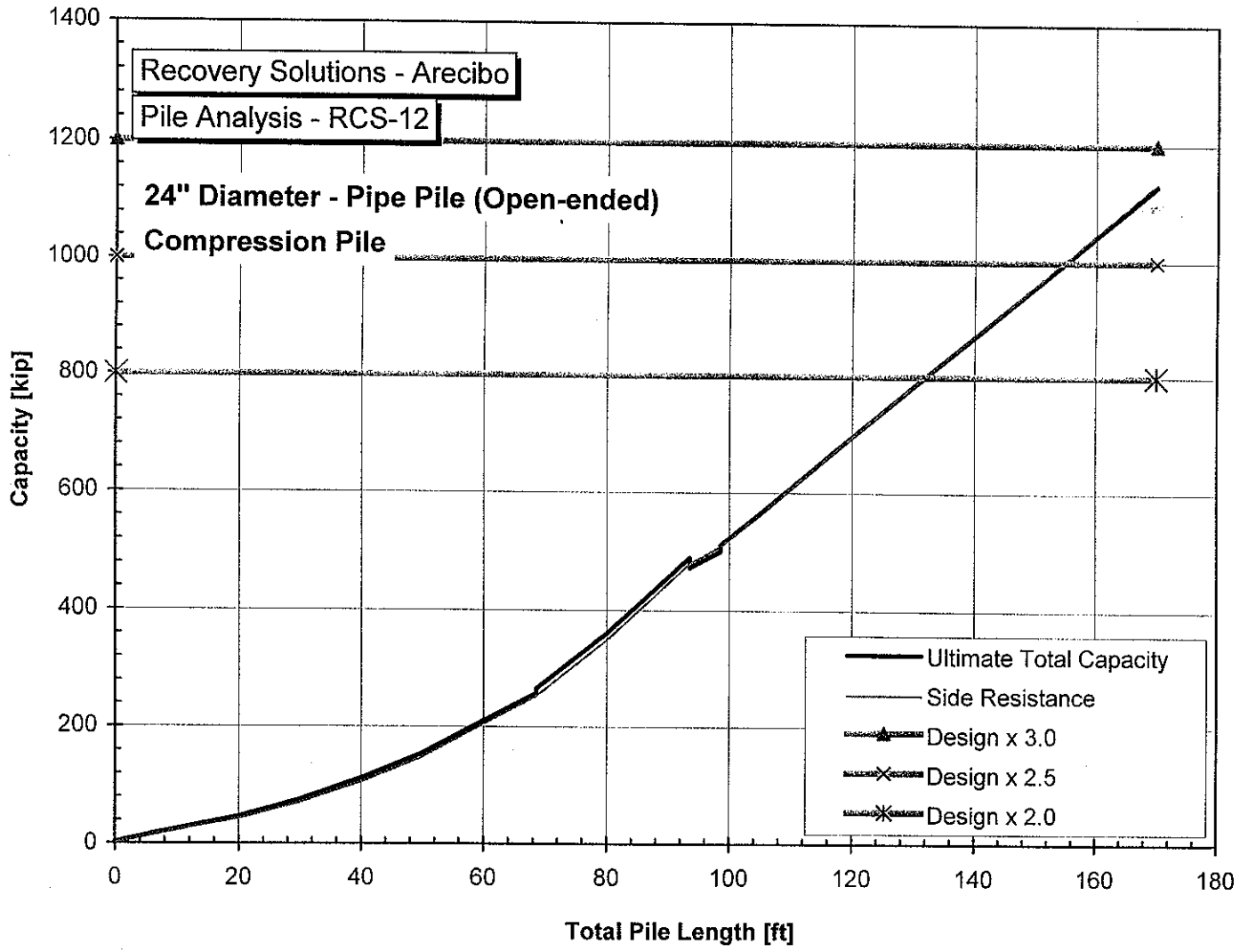



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

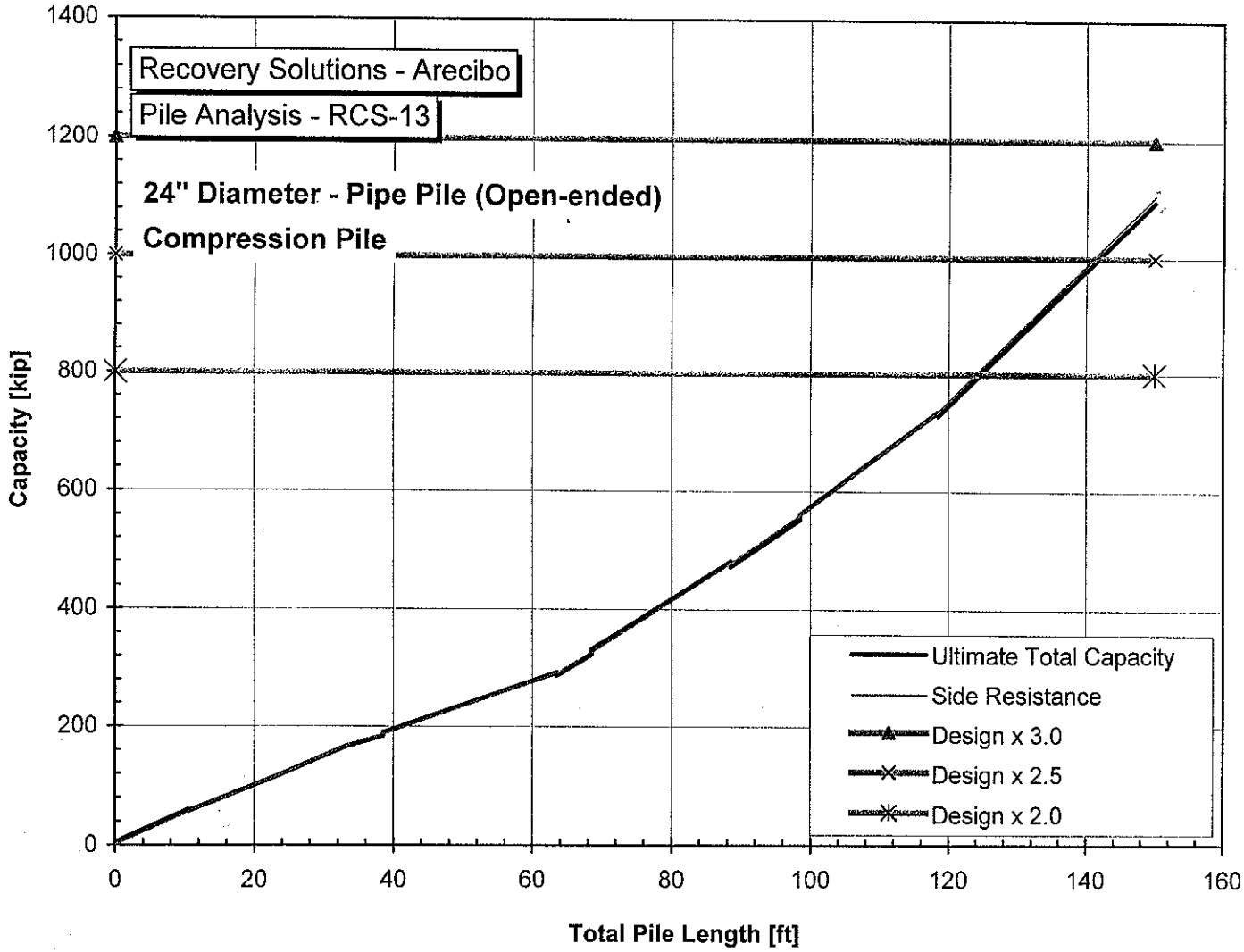



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

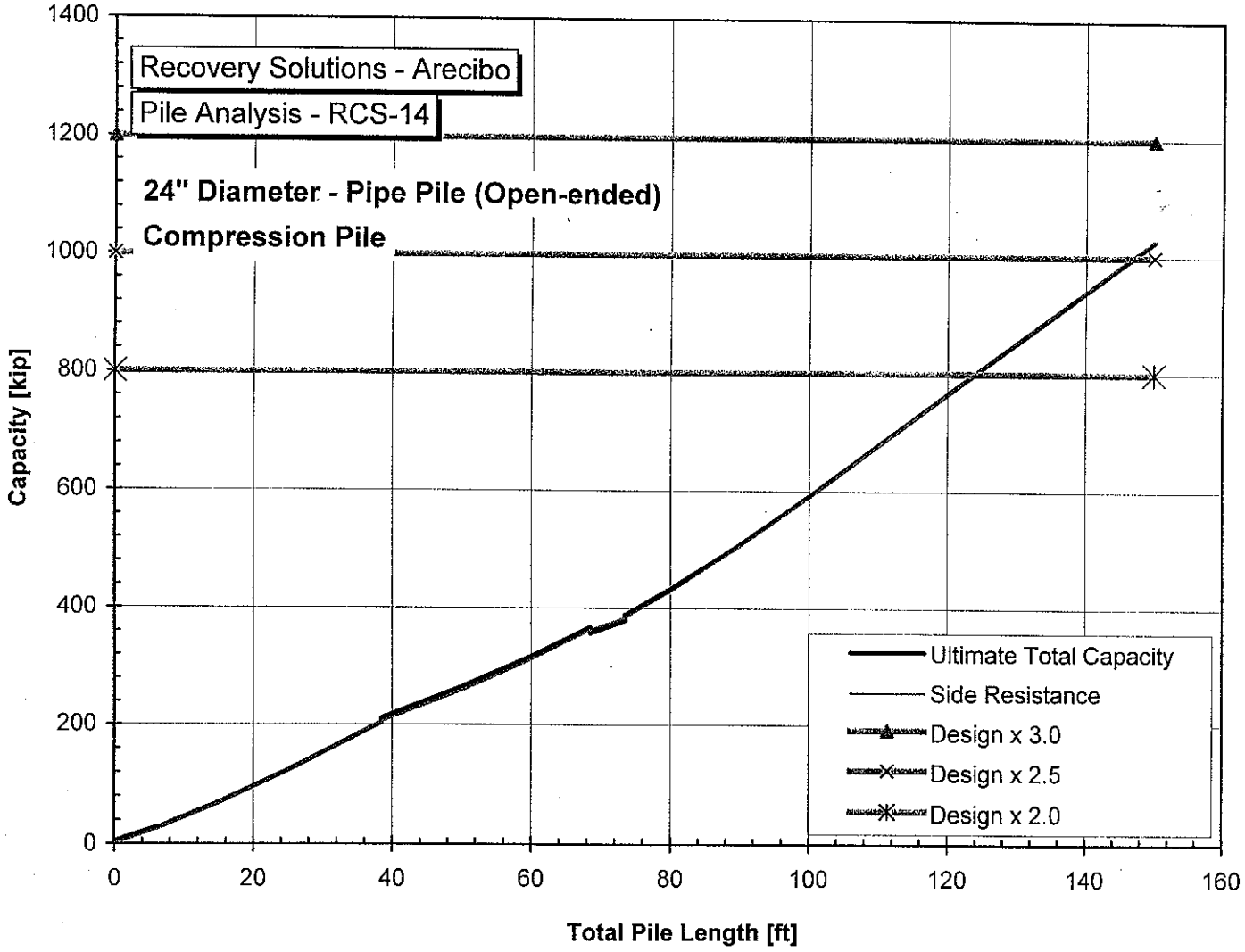



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

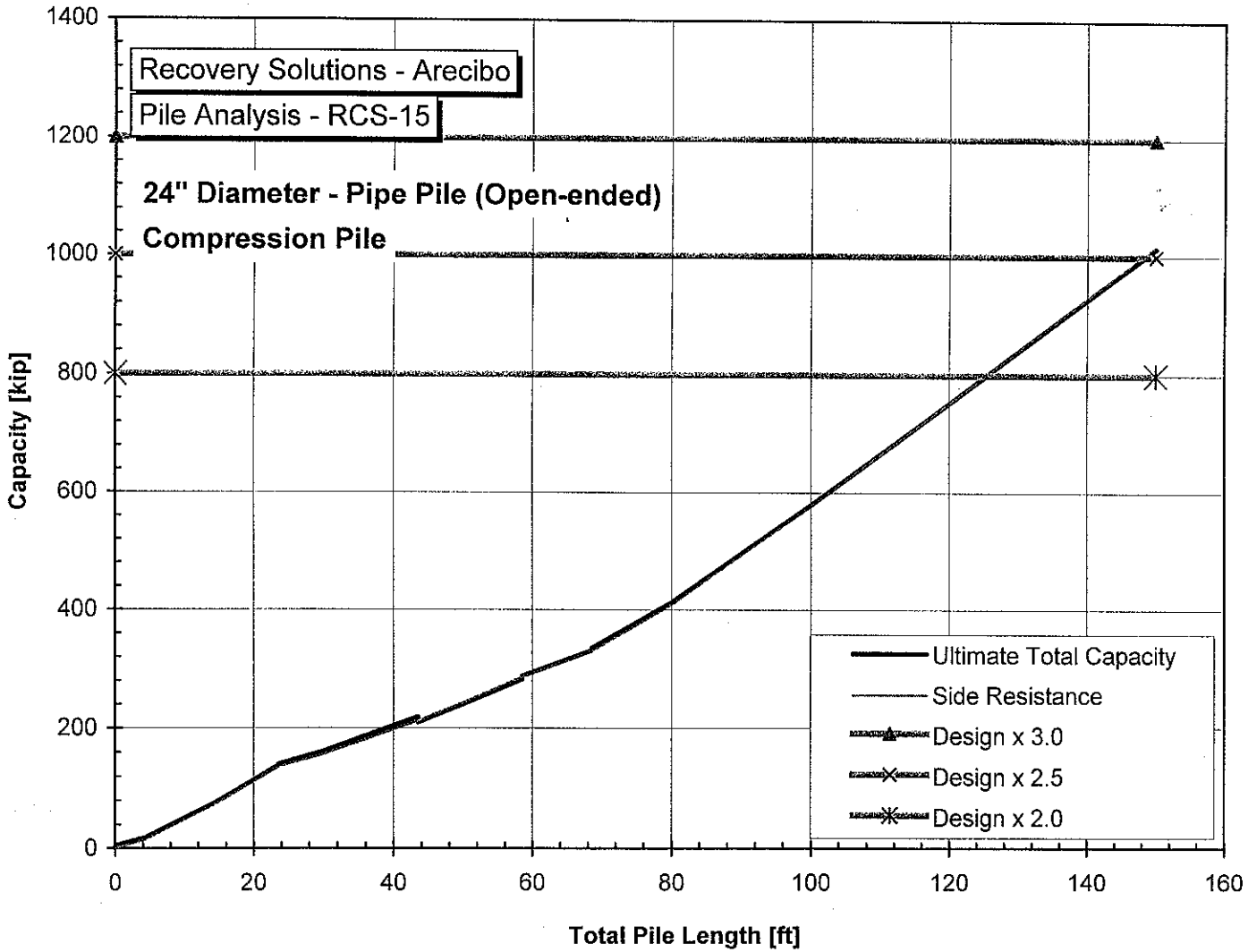



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

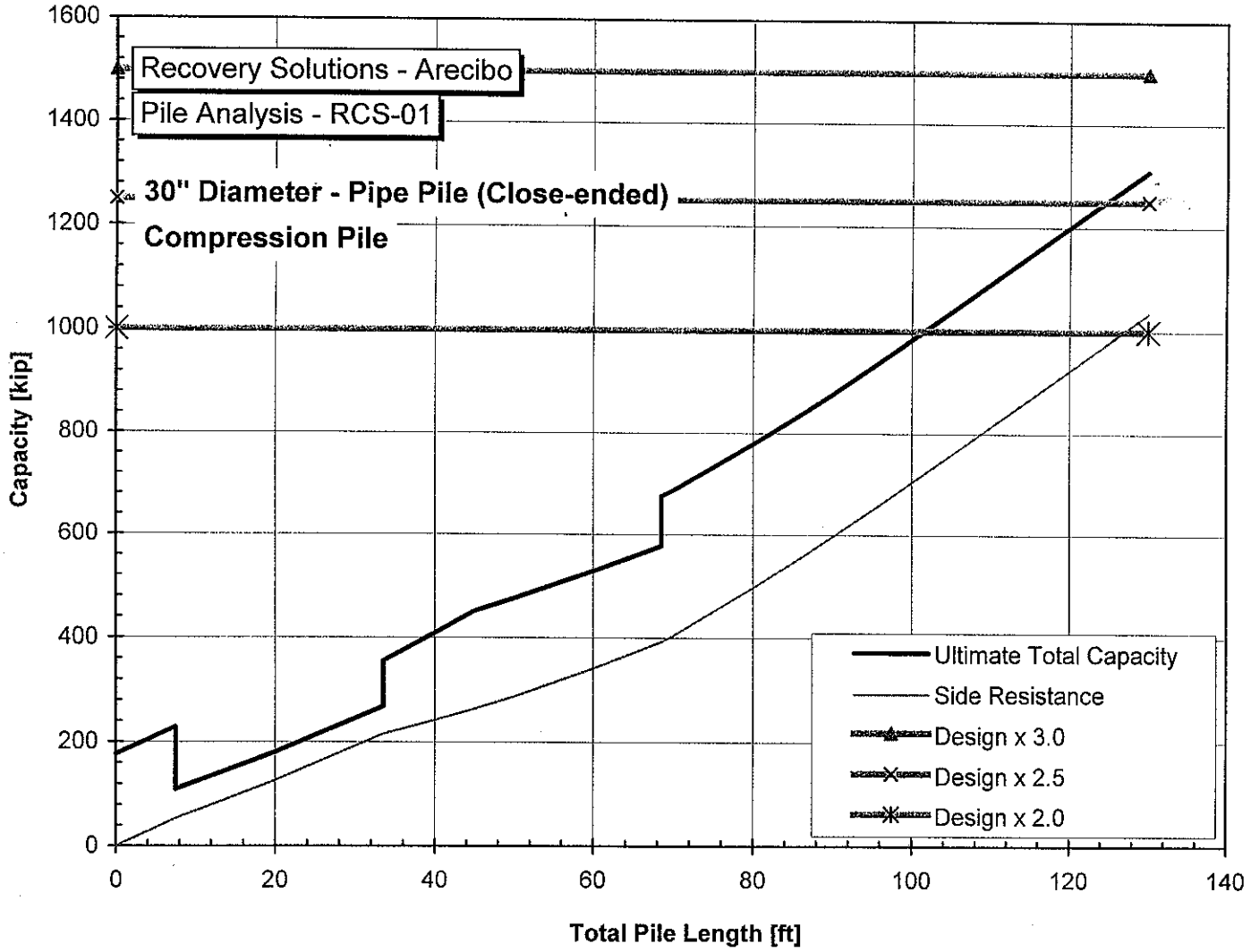



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 24 in. RCS-15
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

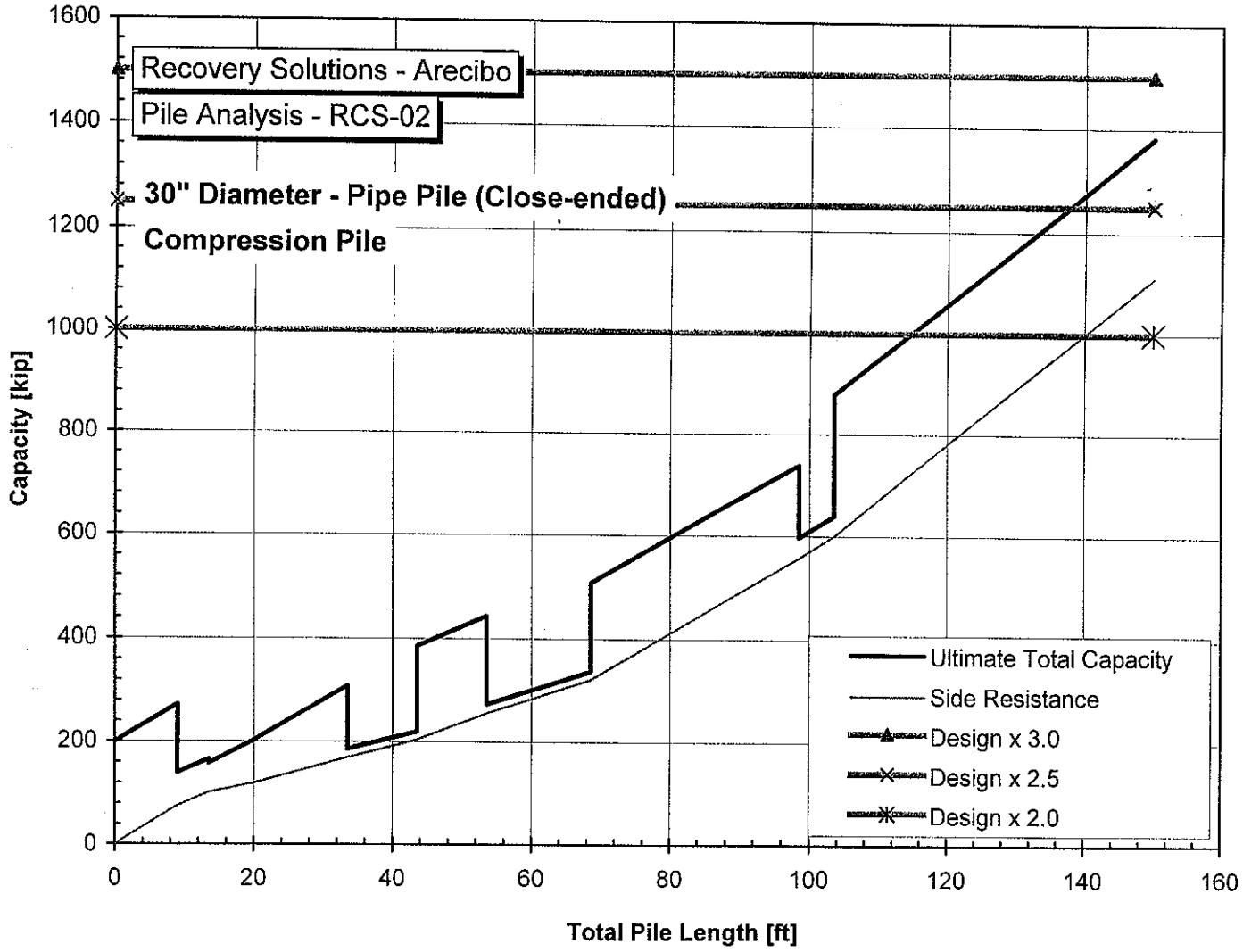



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-01 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

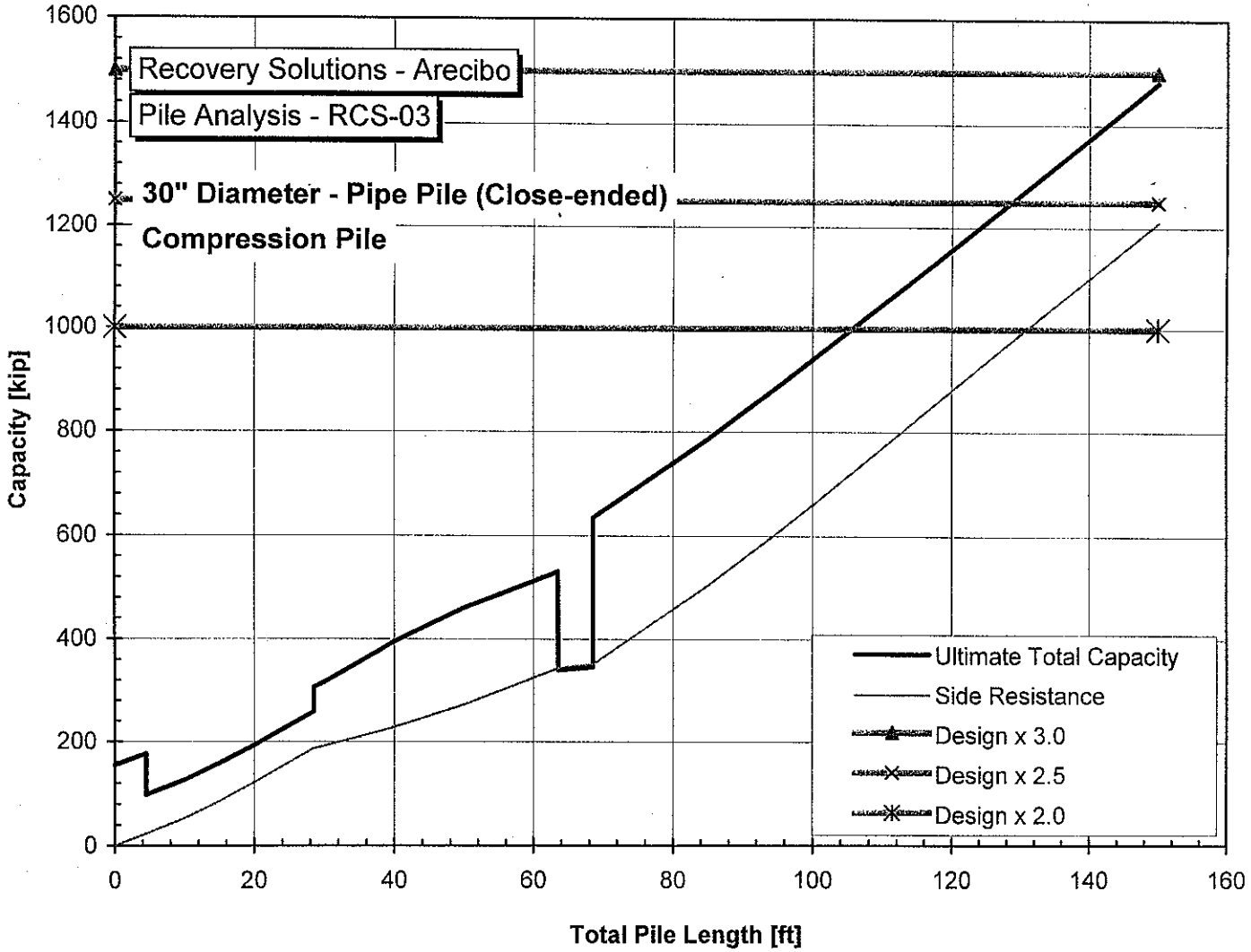



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-02 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

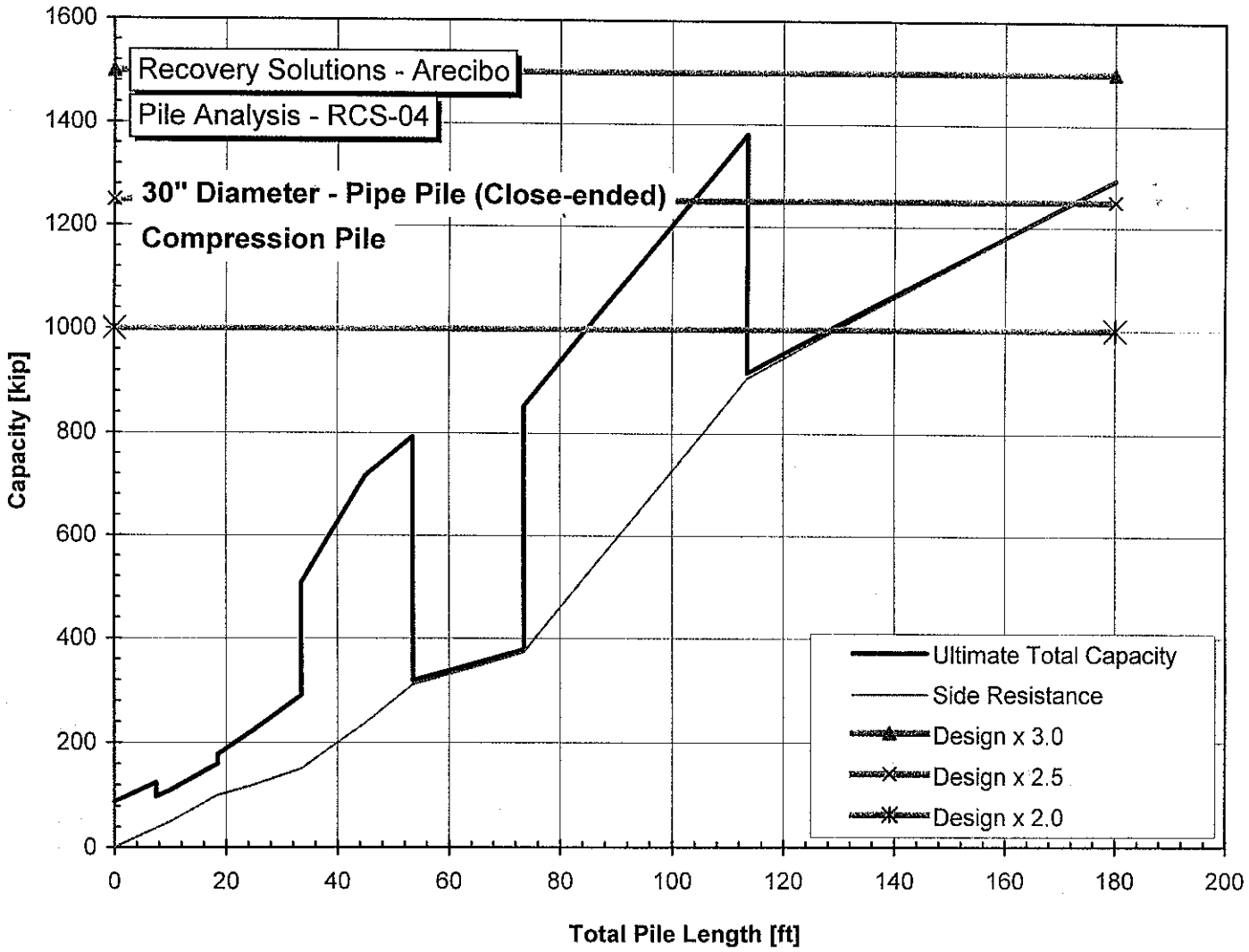



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-03 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

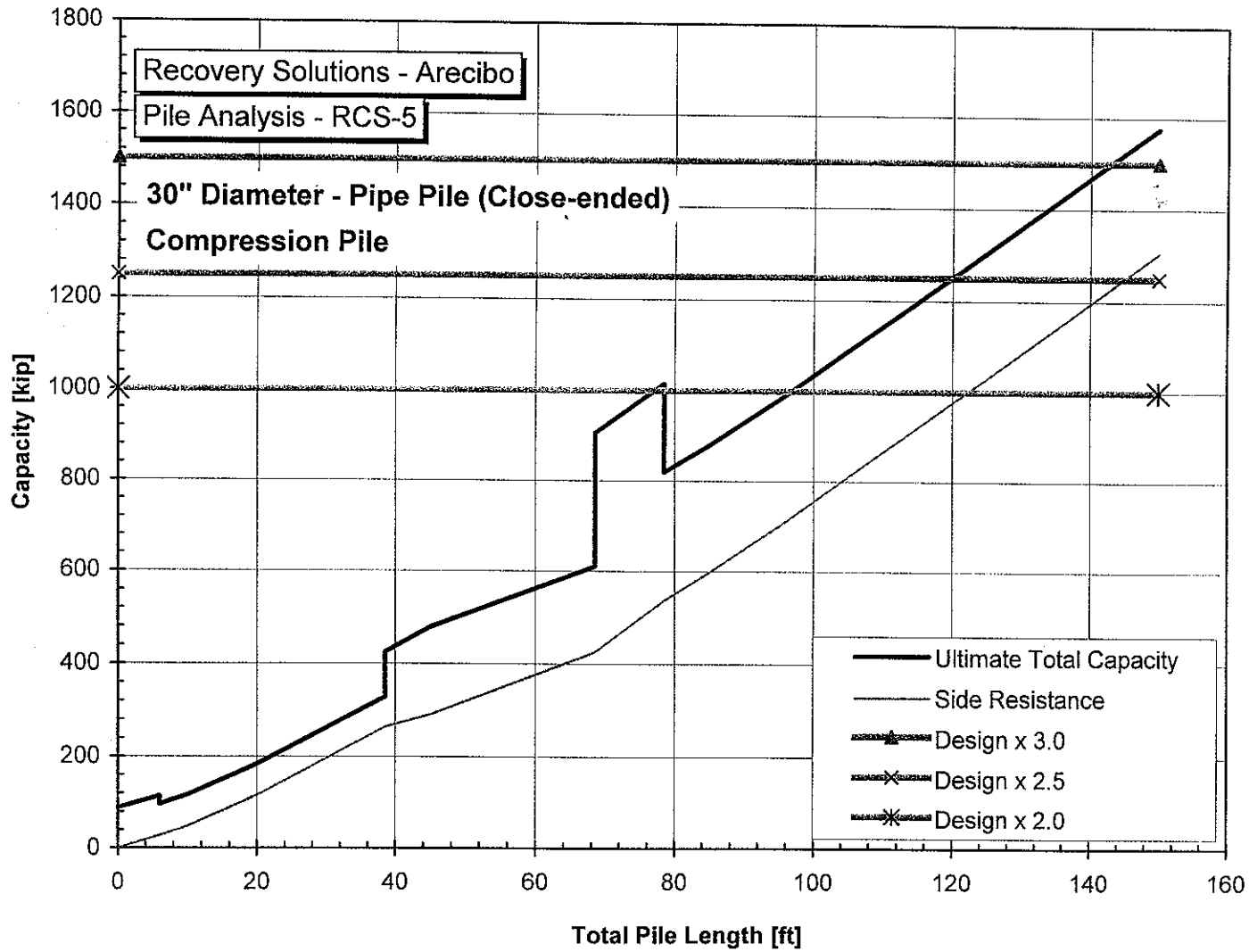



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-04 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

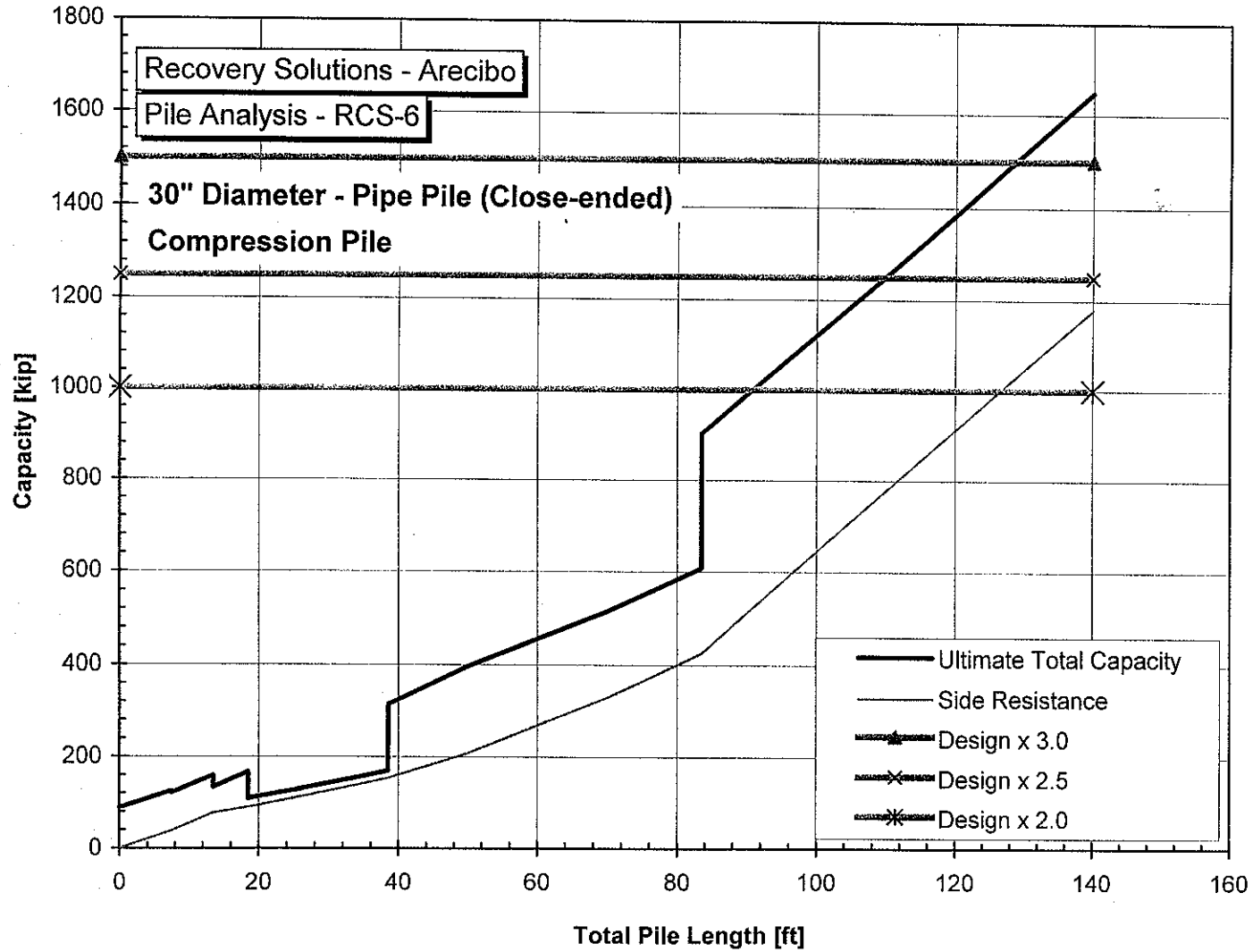



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-05 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

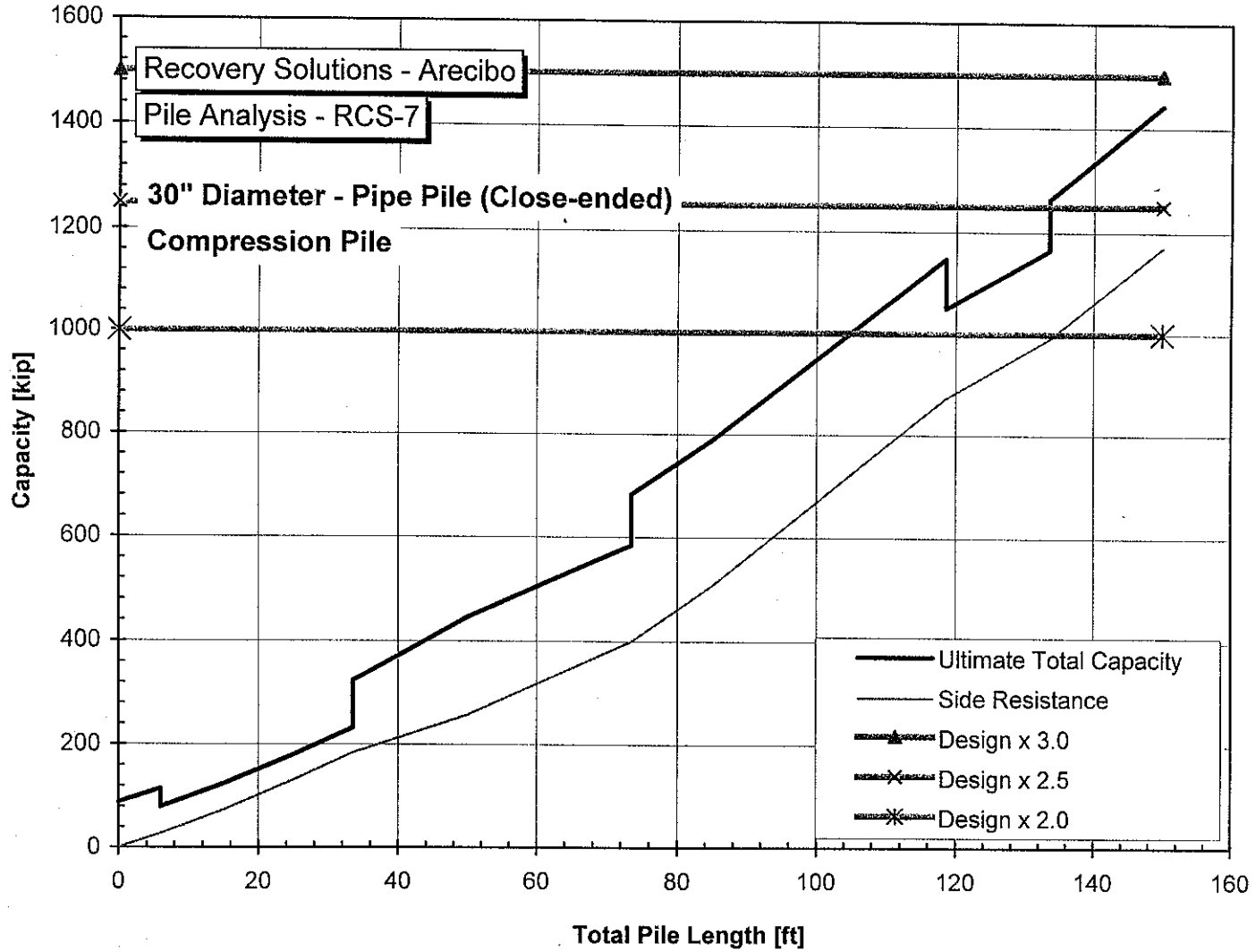



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-06 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

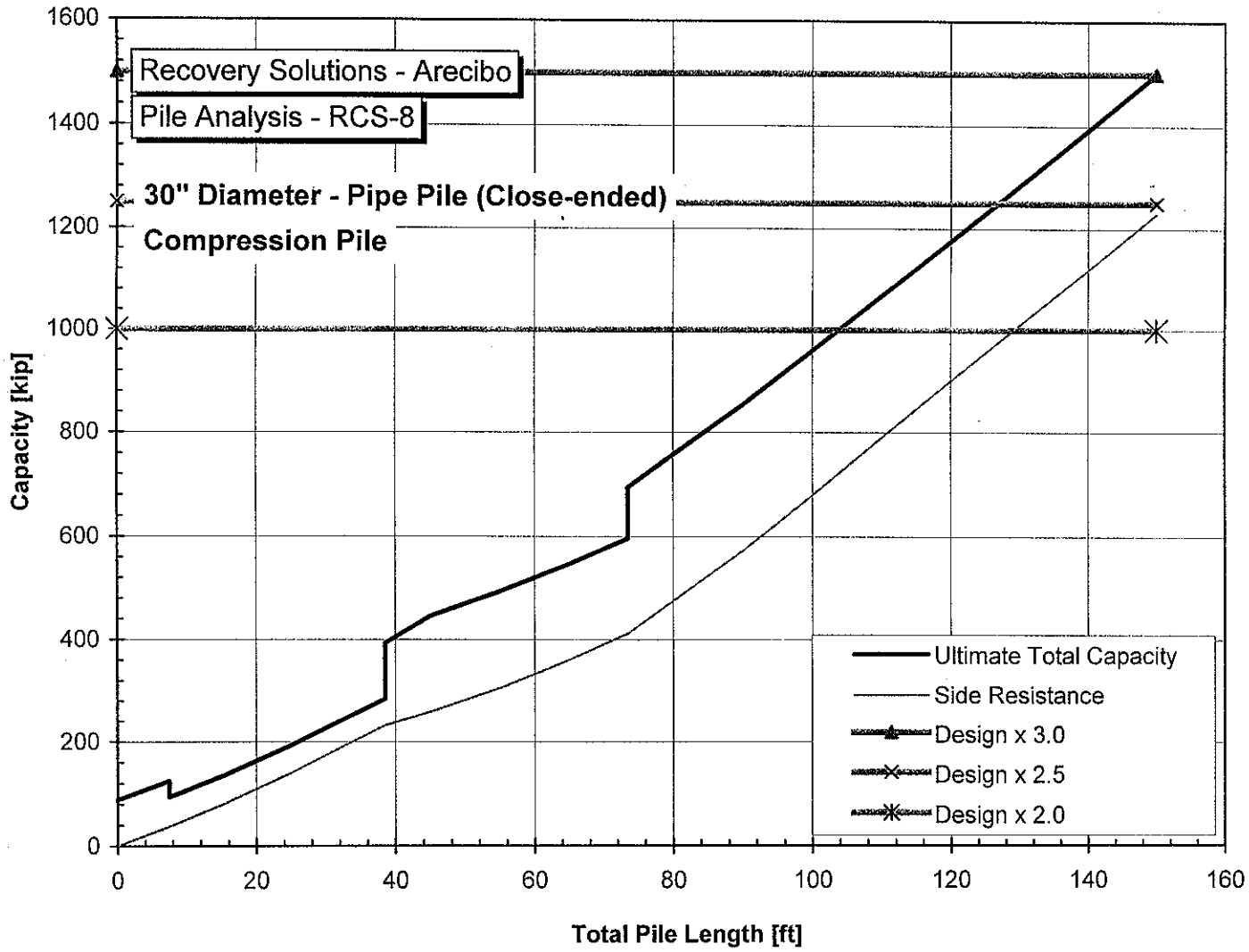



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-07 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

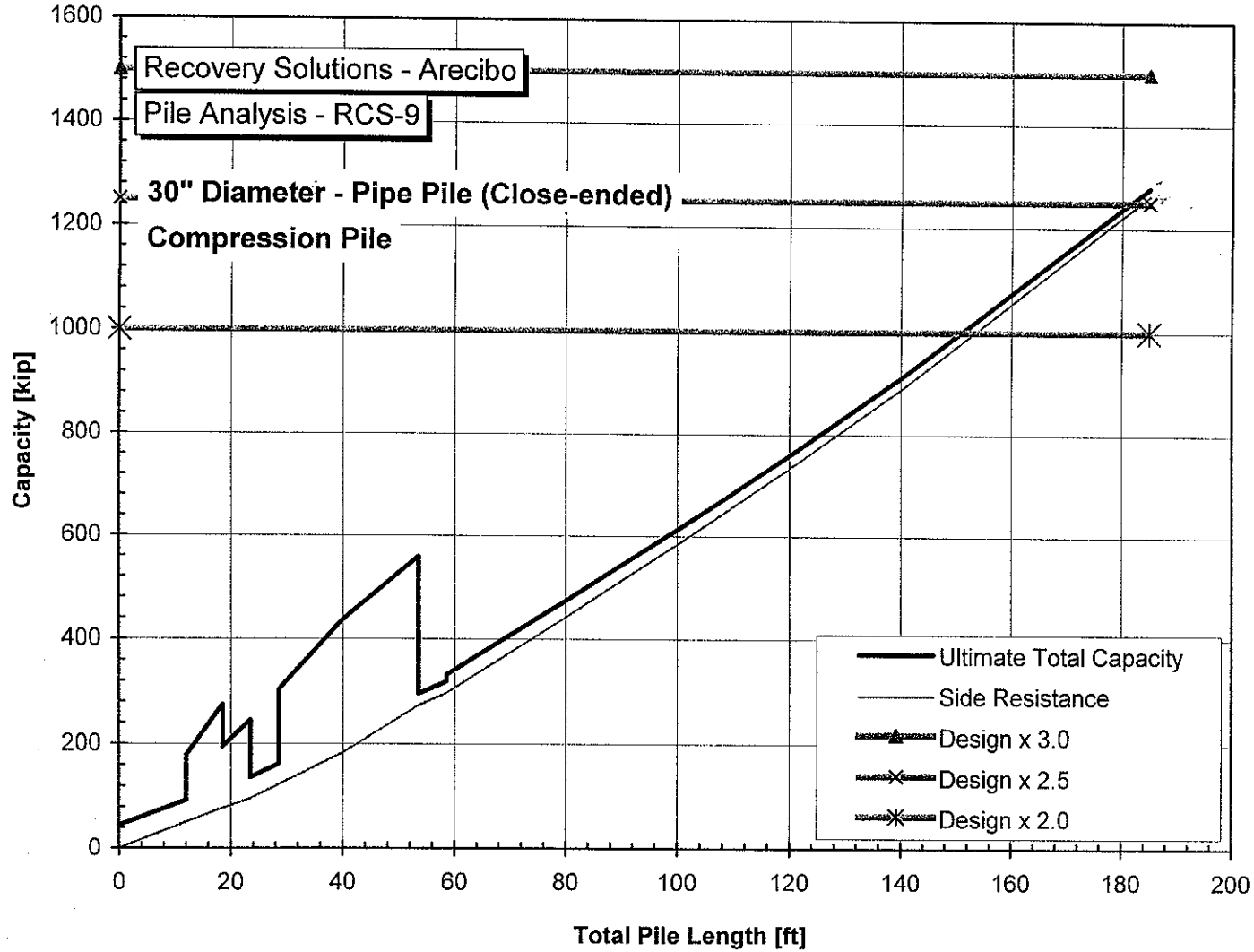



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-08 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

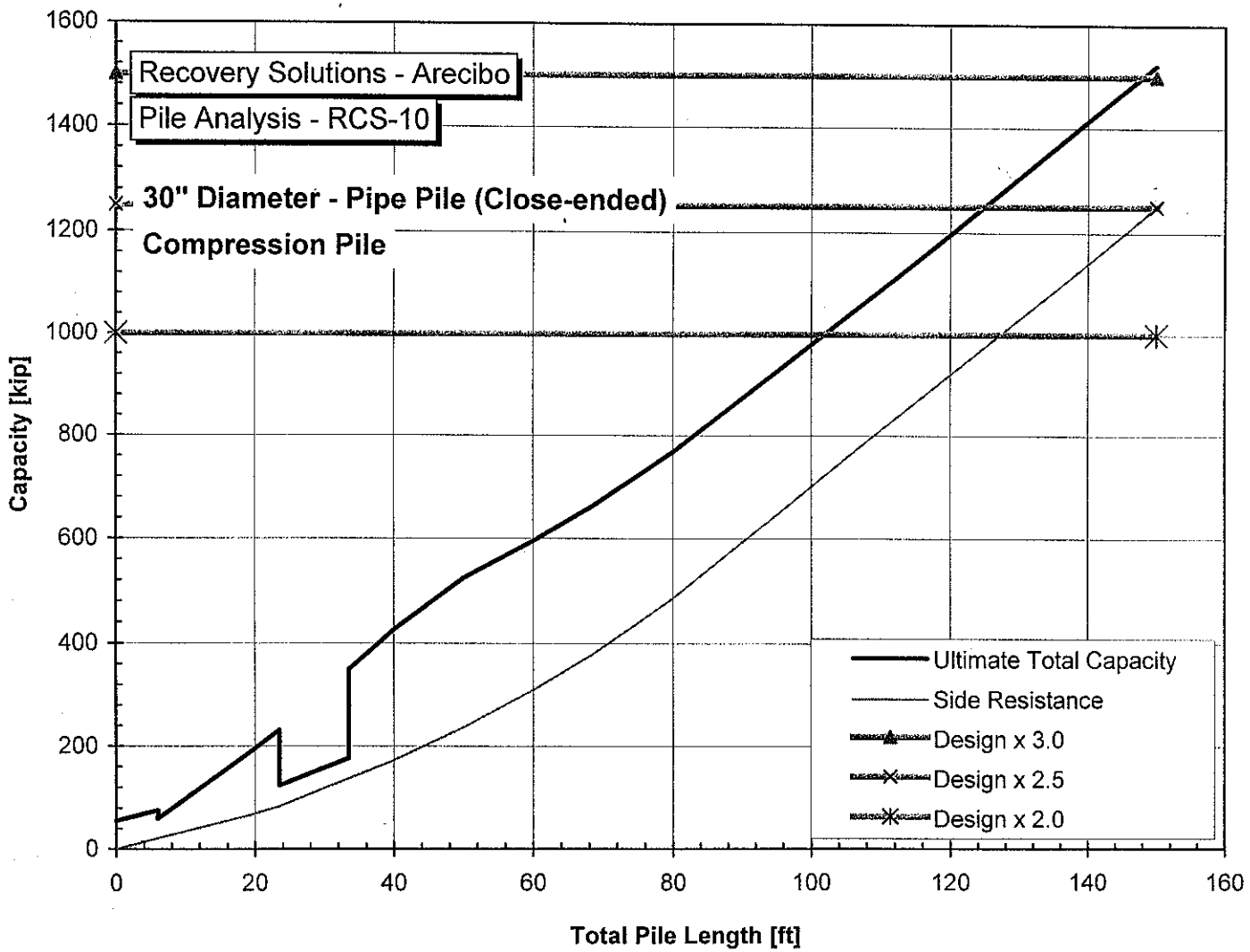



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-09 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

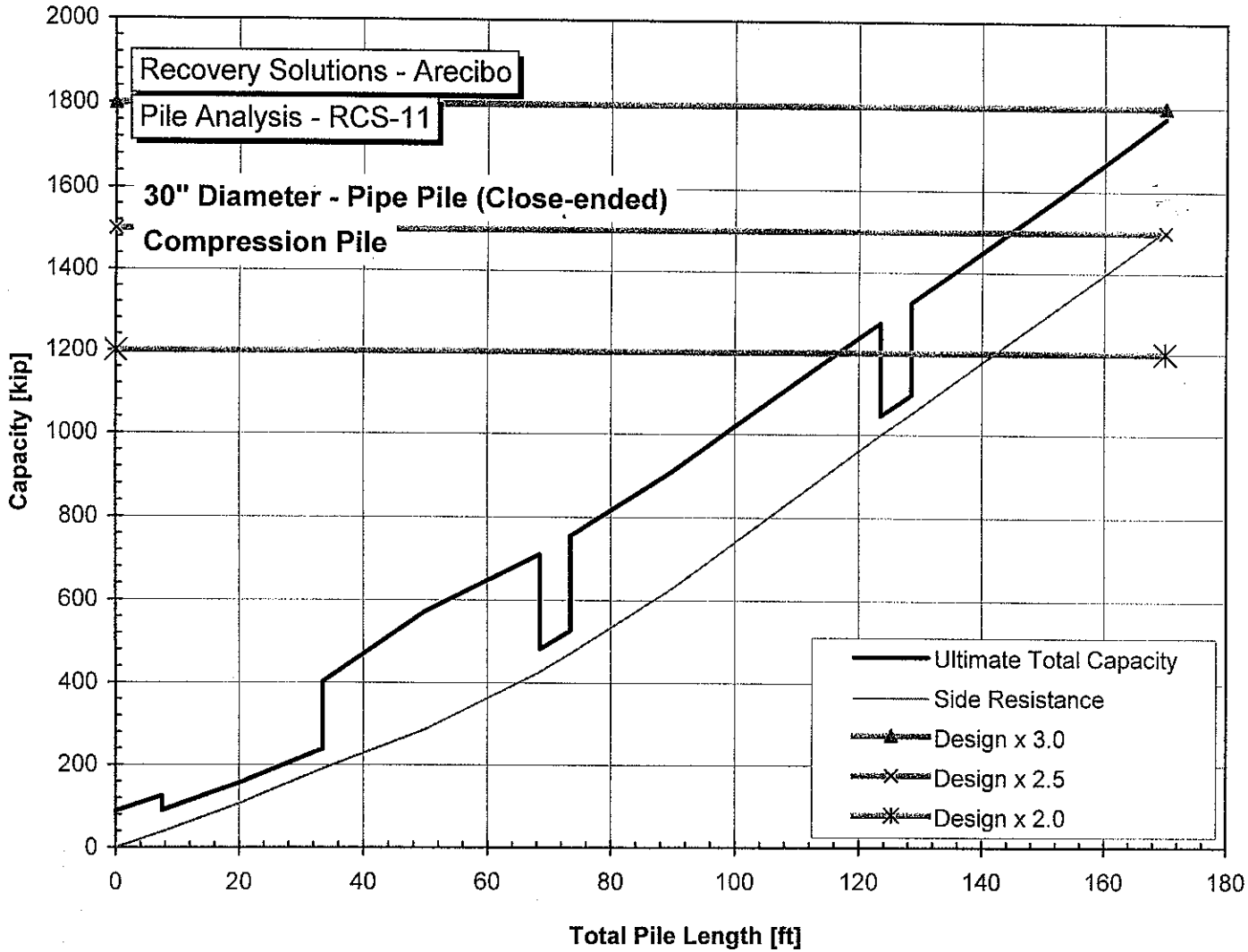



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-10 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

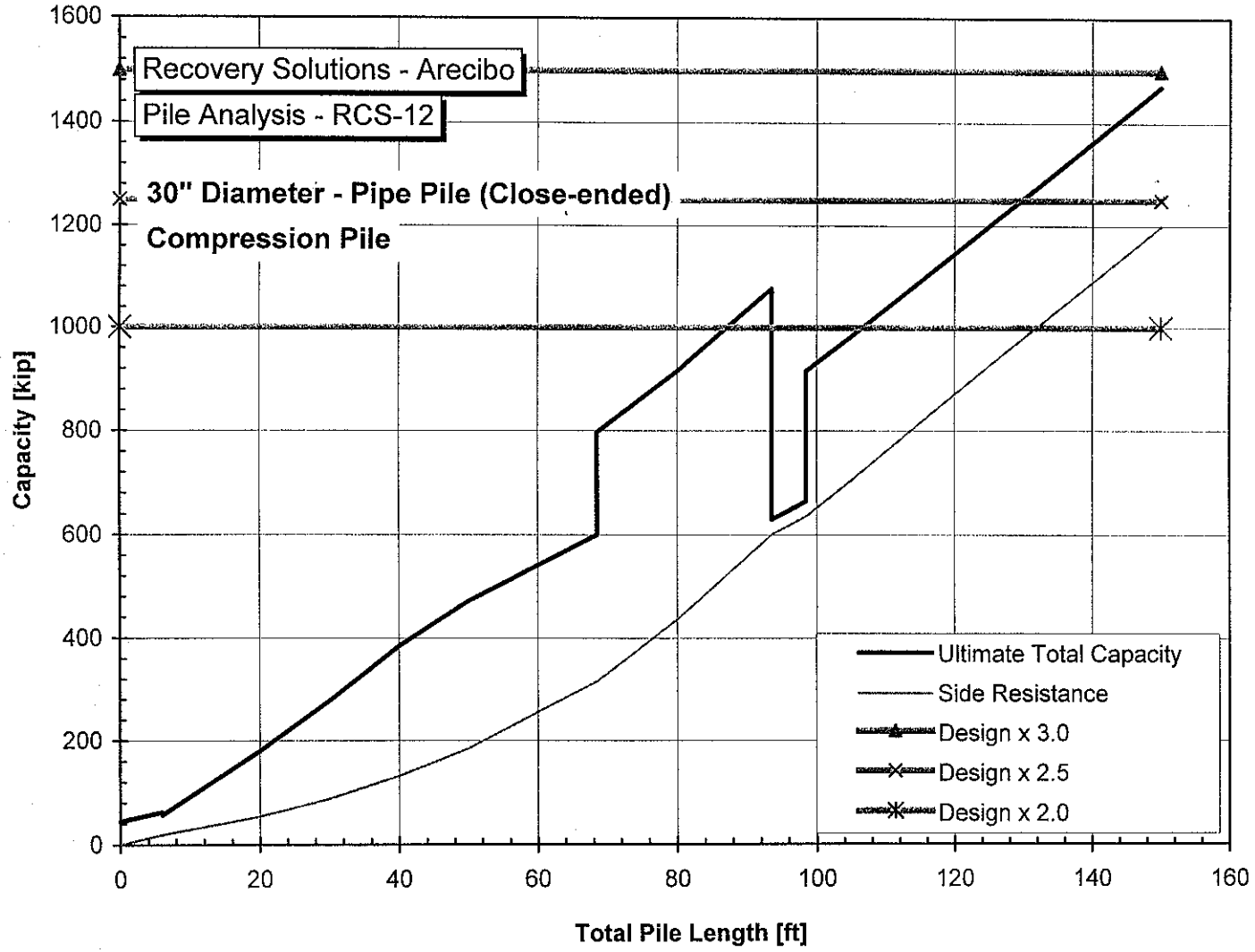



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-11 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

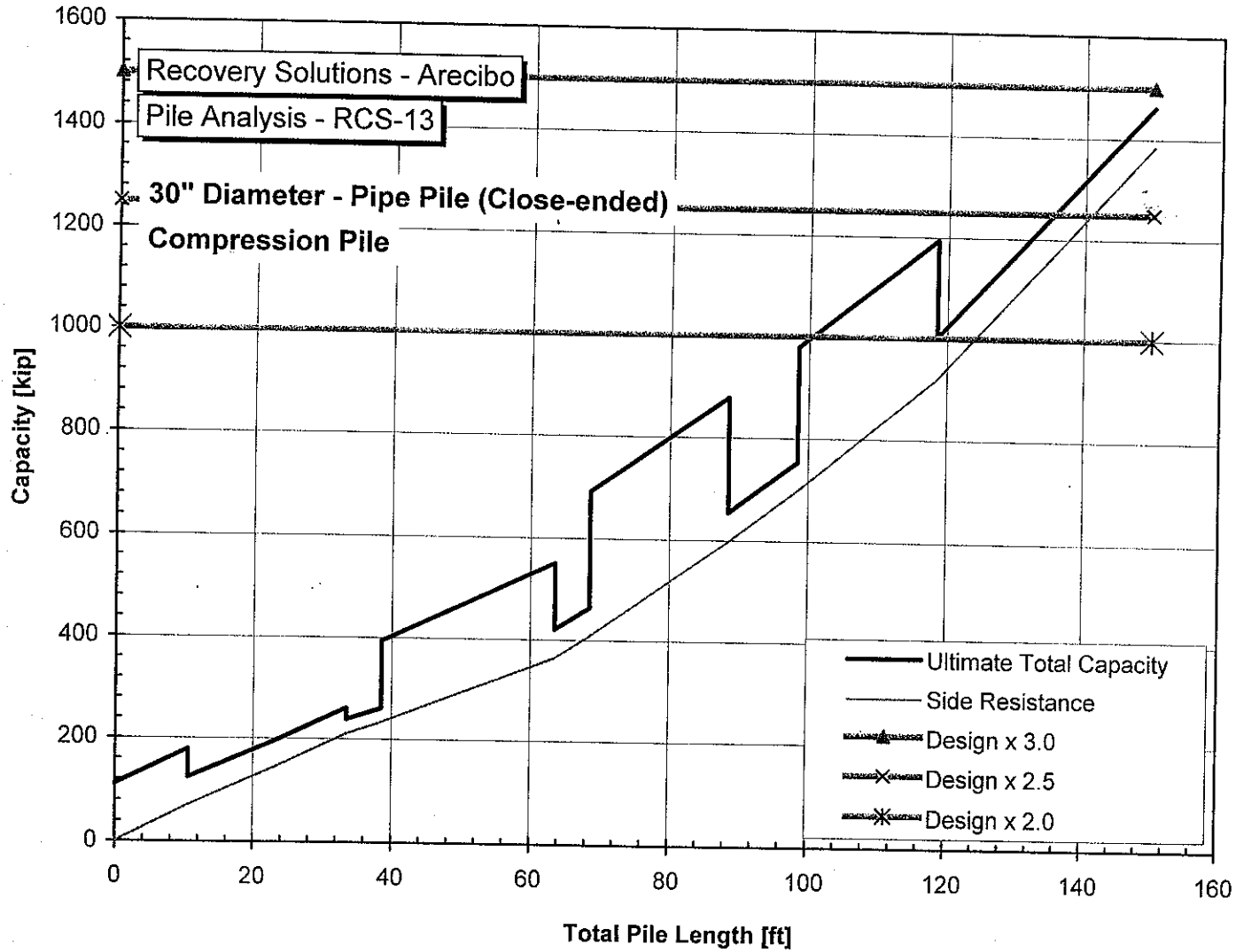



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-12 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

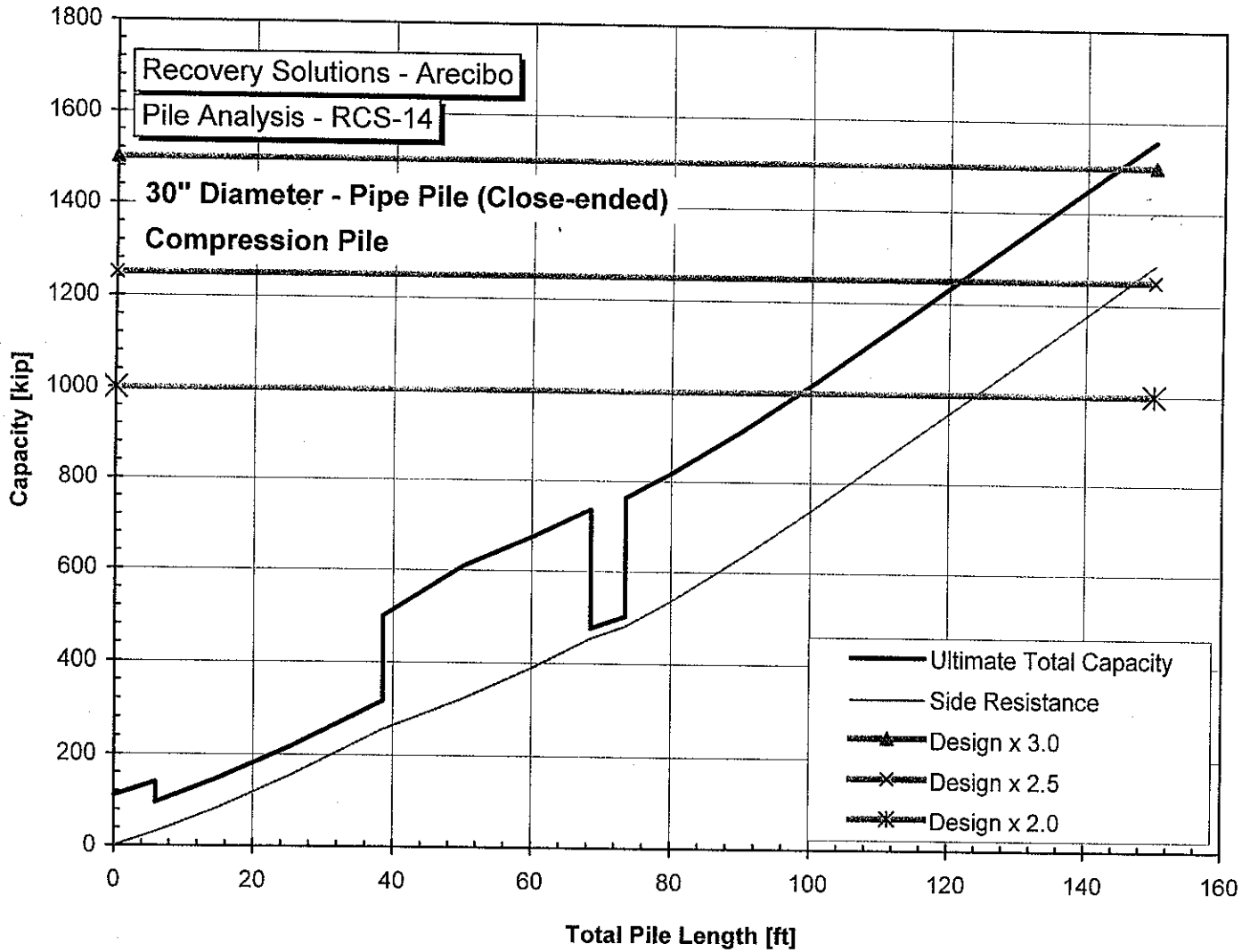



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-13 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

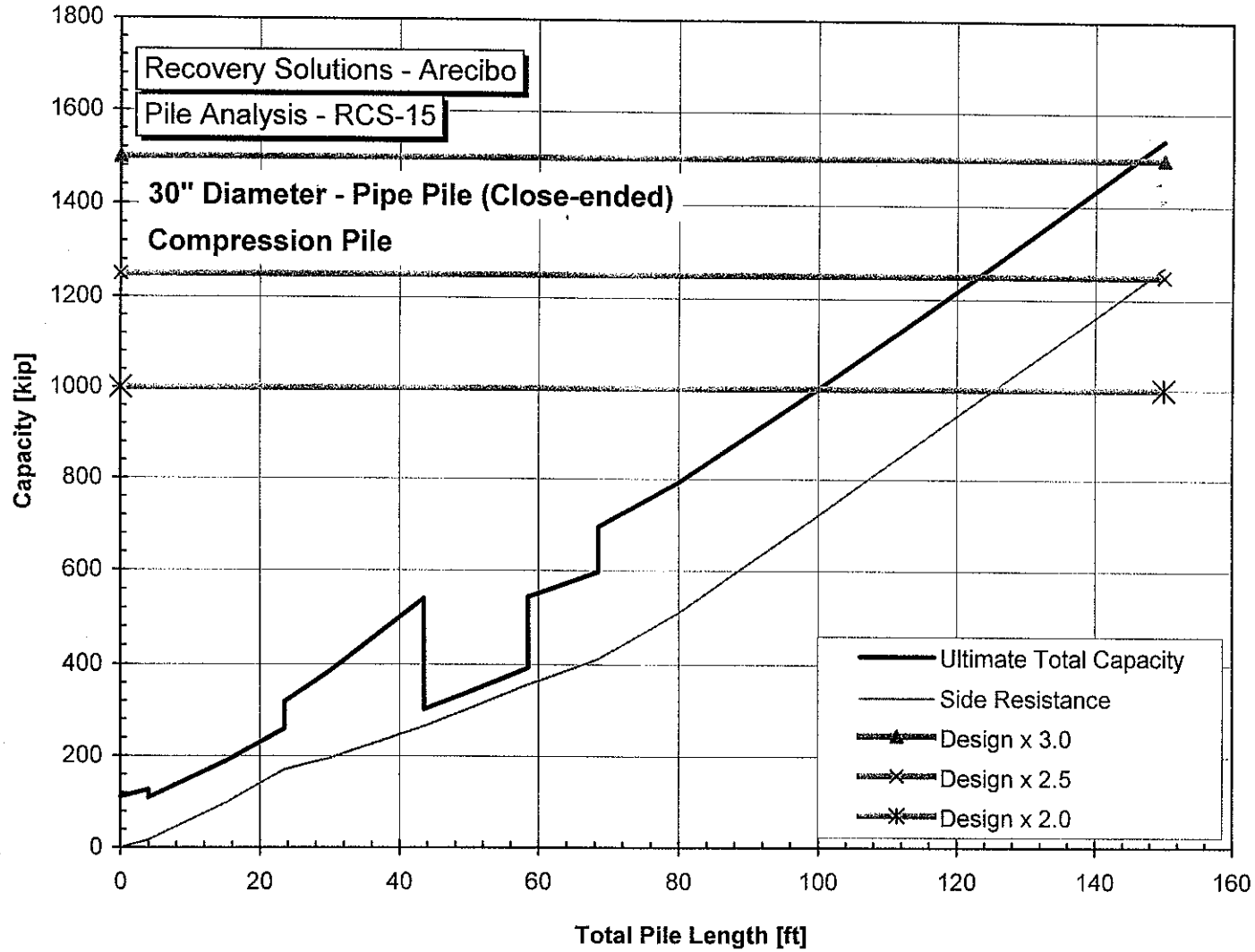



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-14 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

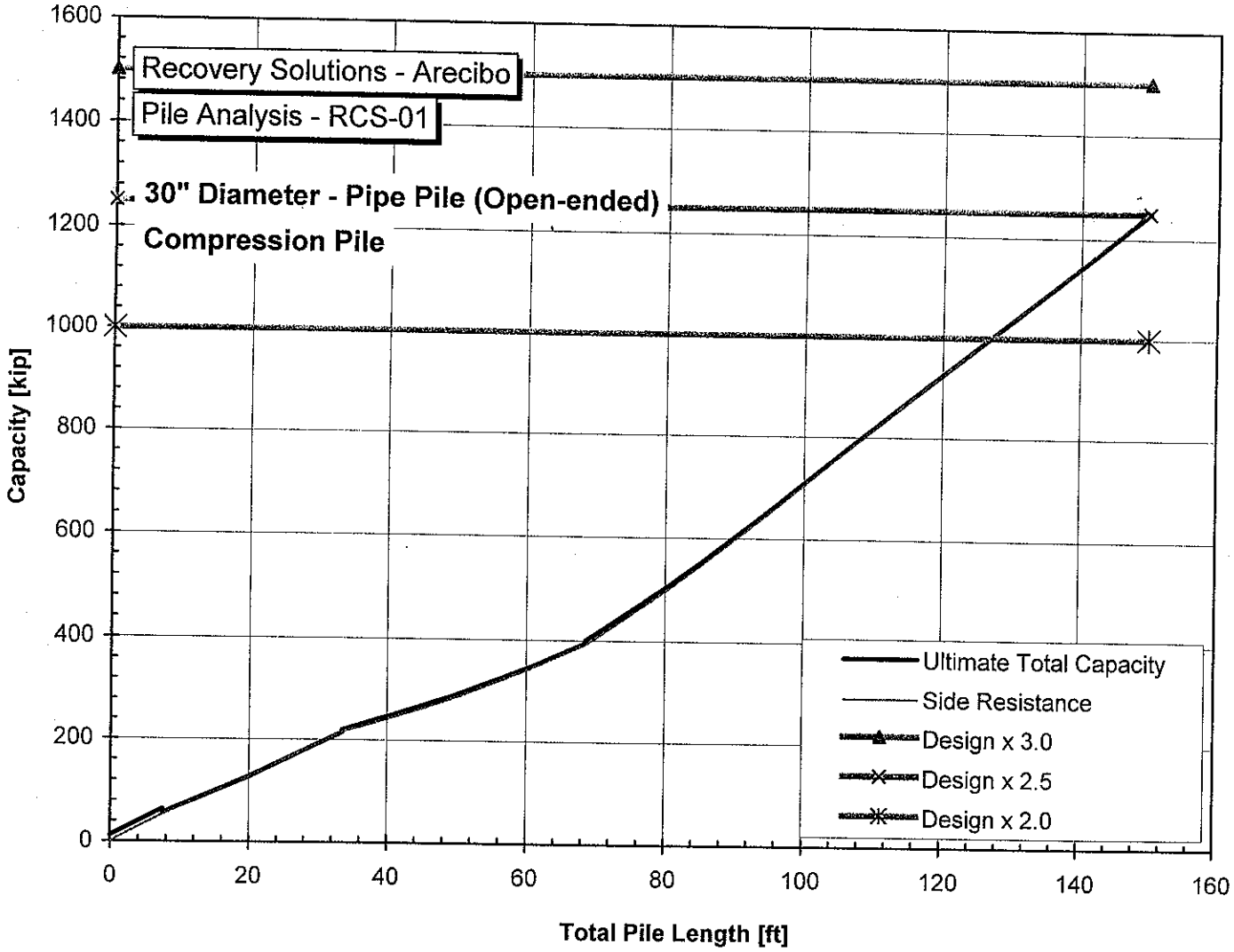



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-15 Closed
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

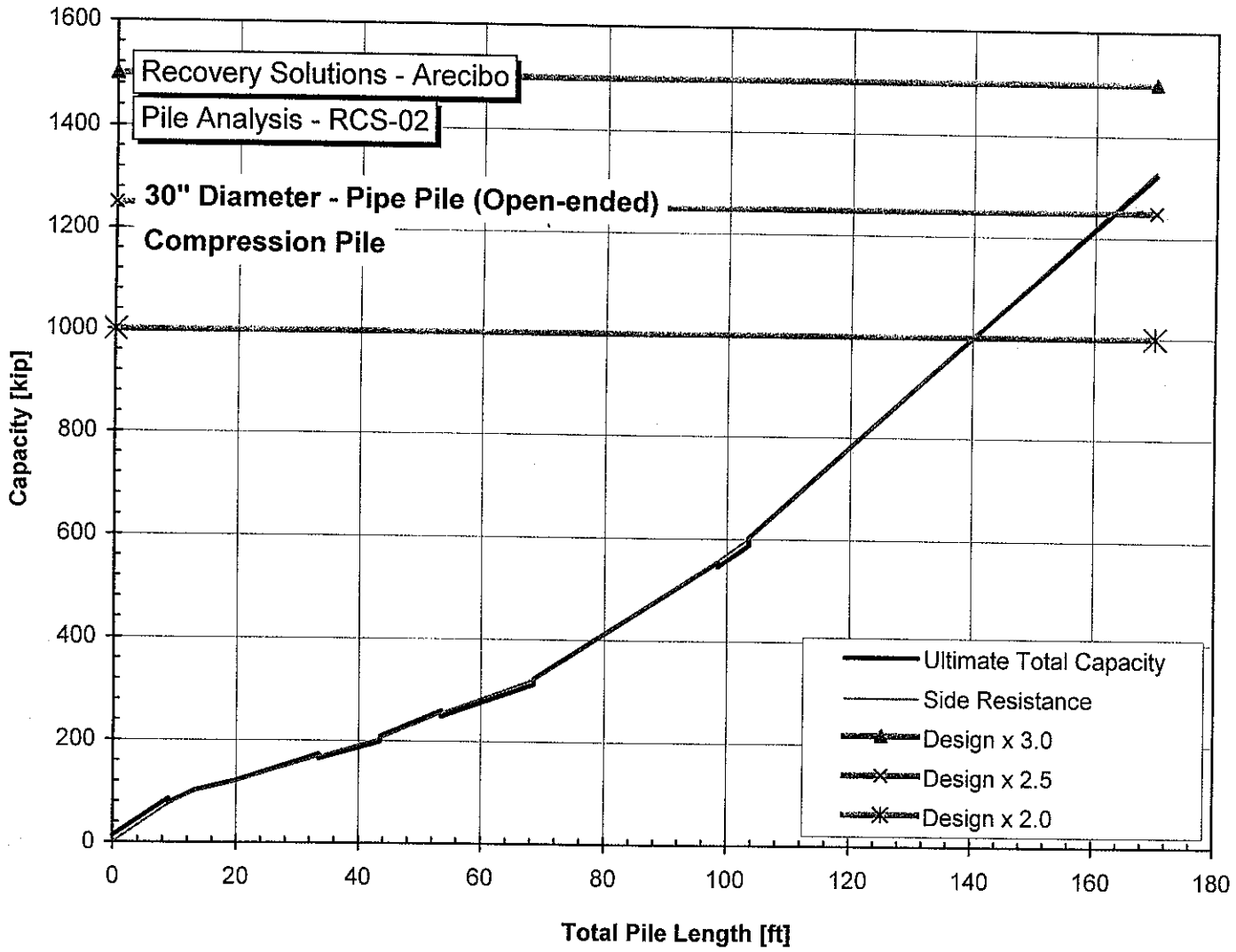



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-01
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

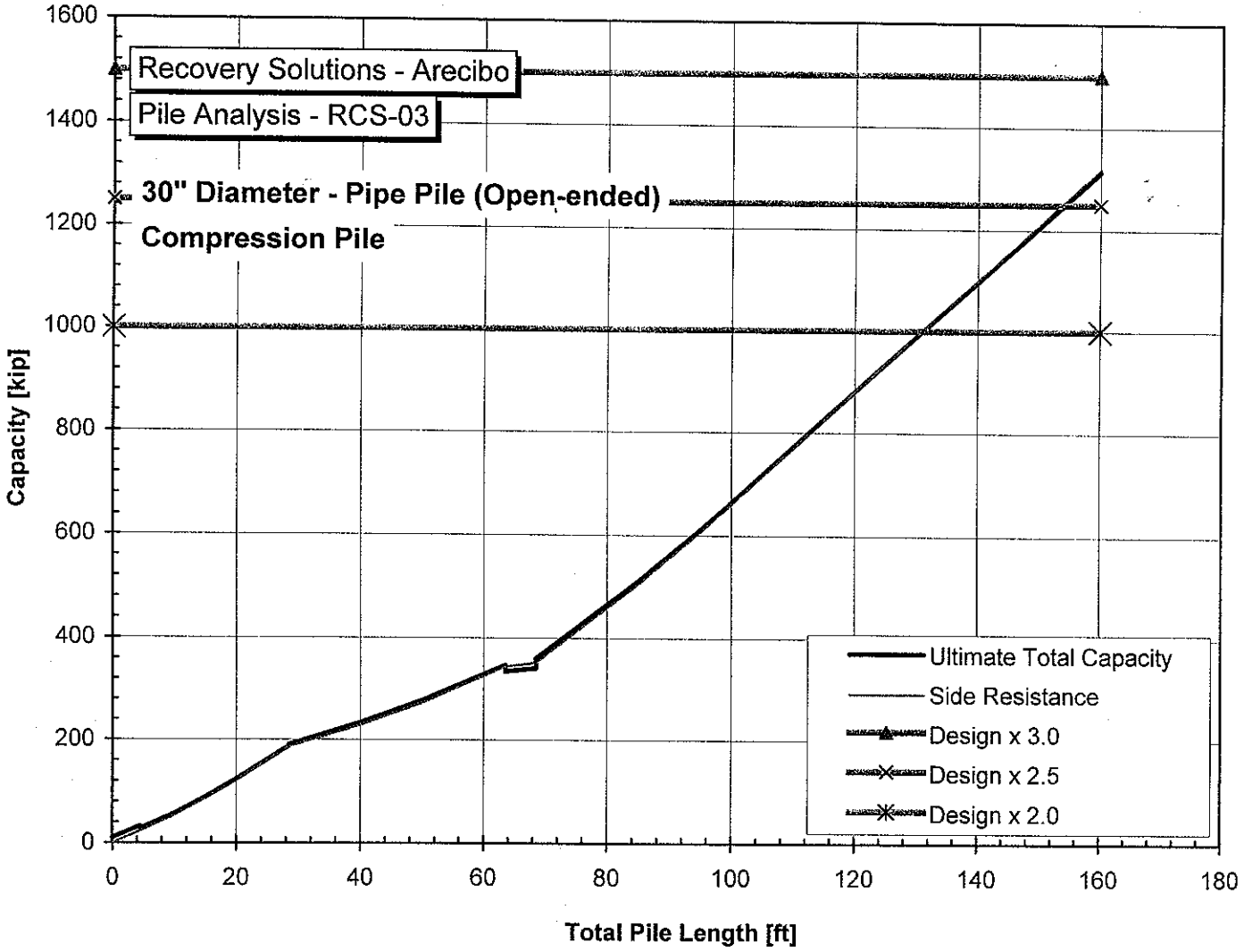



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-02
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

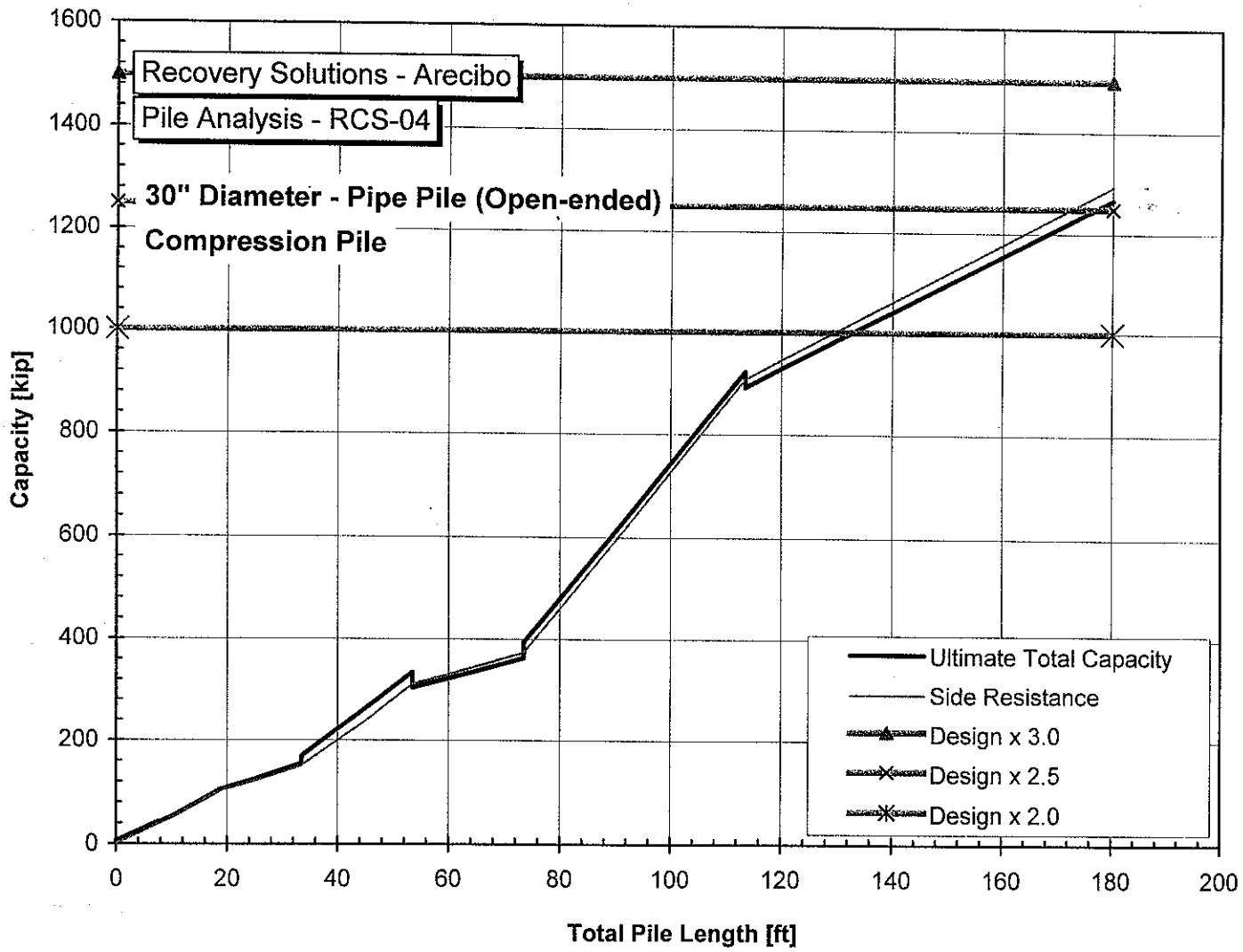



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-03
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

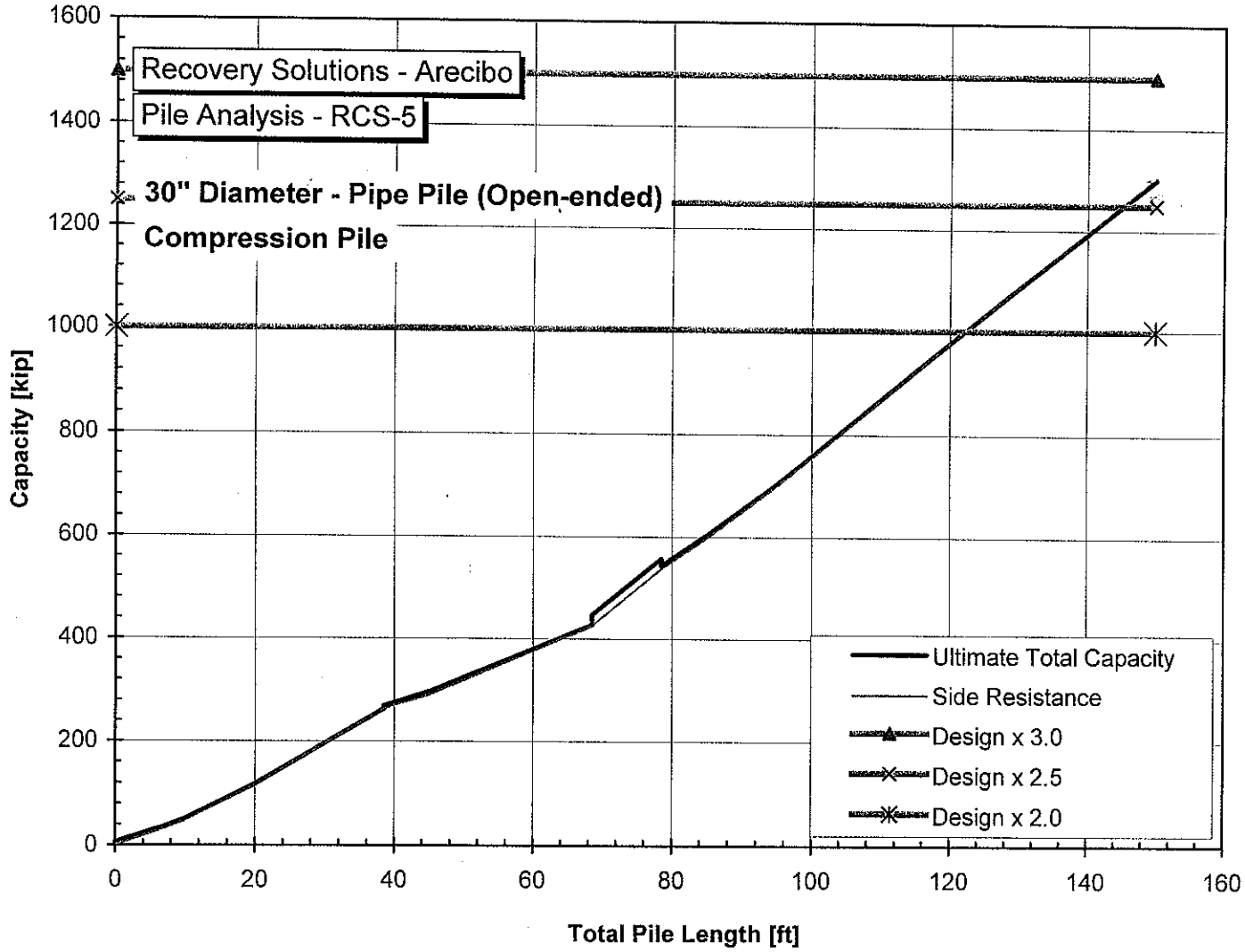



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-04
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

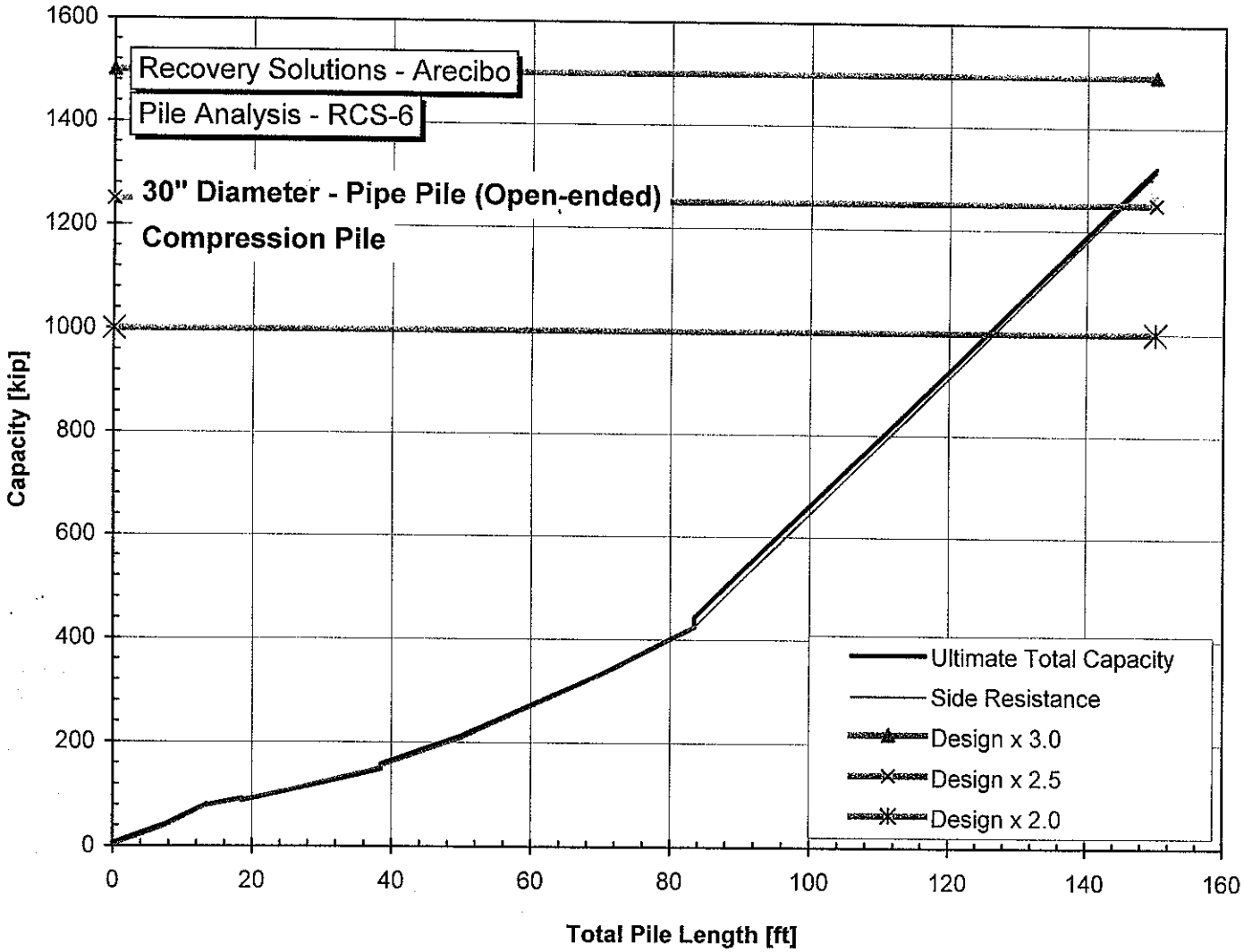



Capacity vs total pile length
Factor of safety shown

File APi Analysis - Compression Pipe Pile 30 in. RCS-05
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

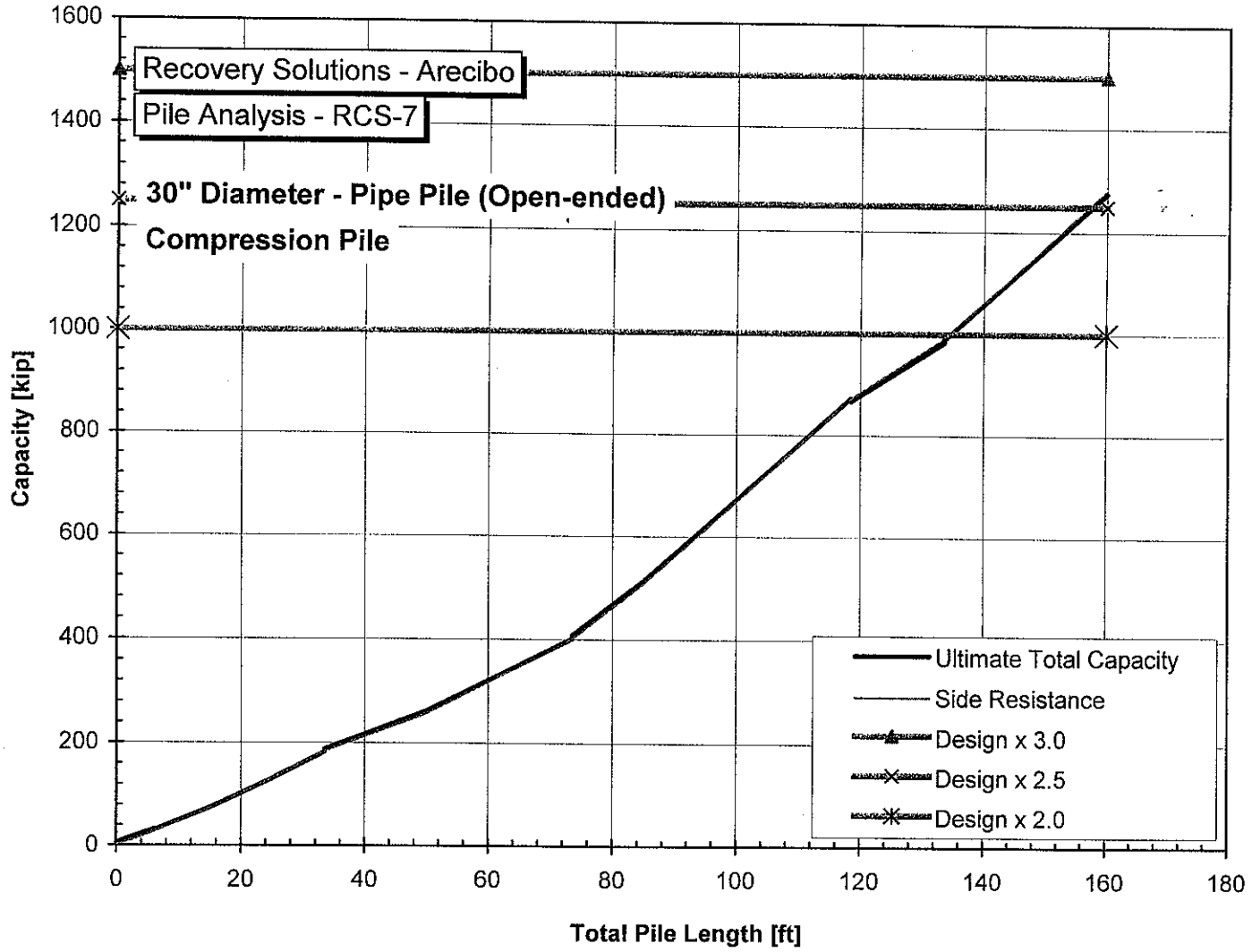



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-06
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

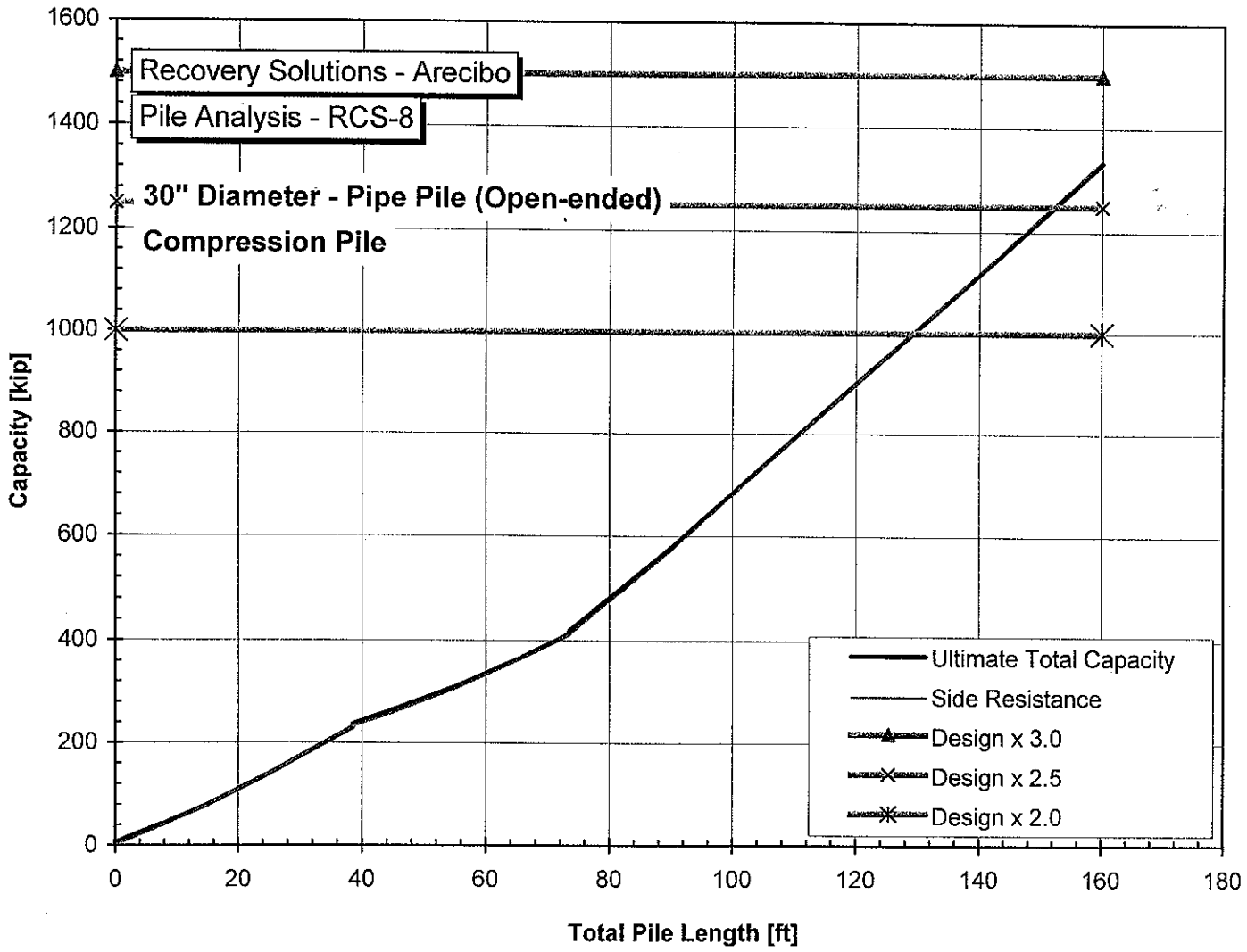



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-07
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

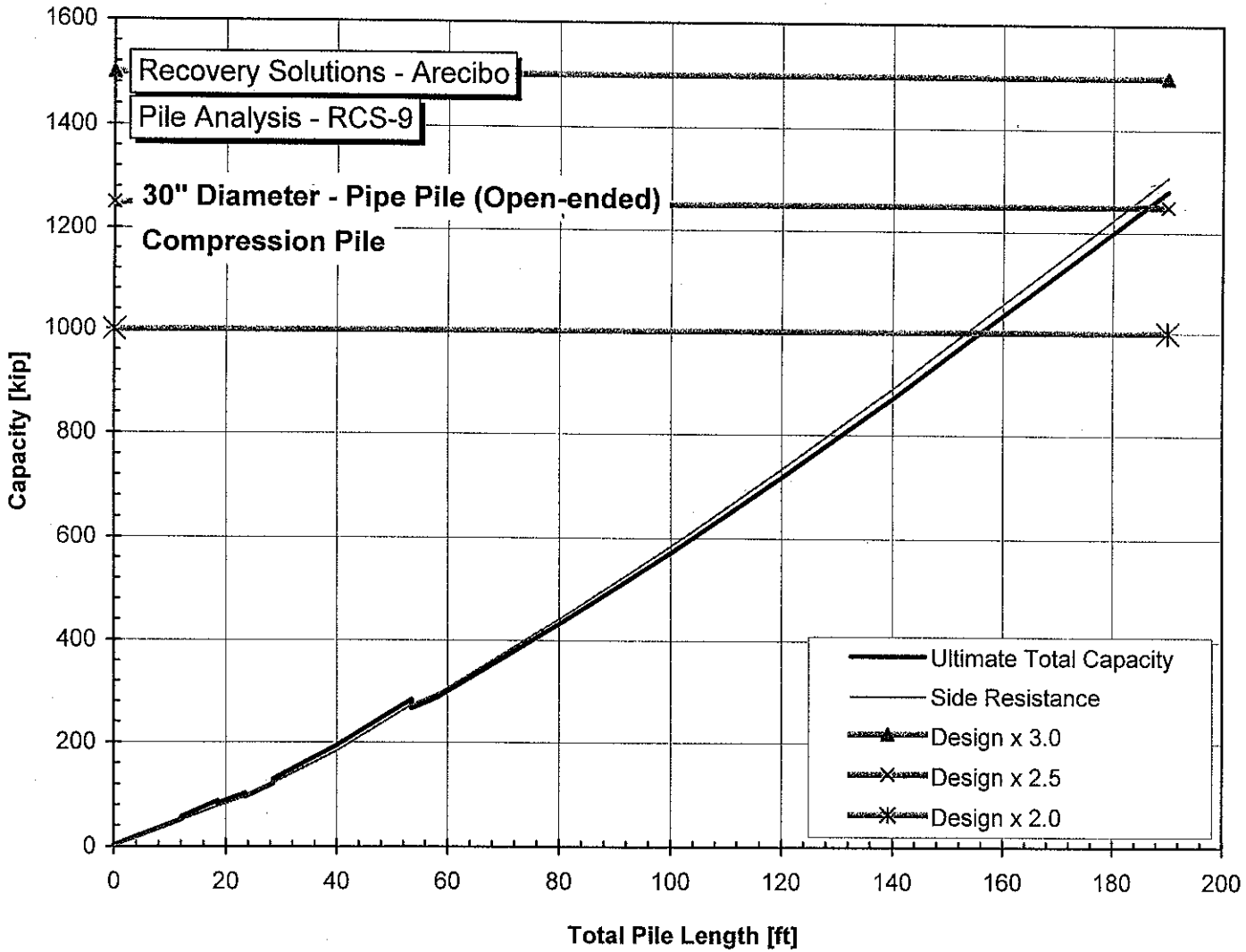



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-08
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

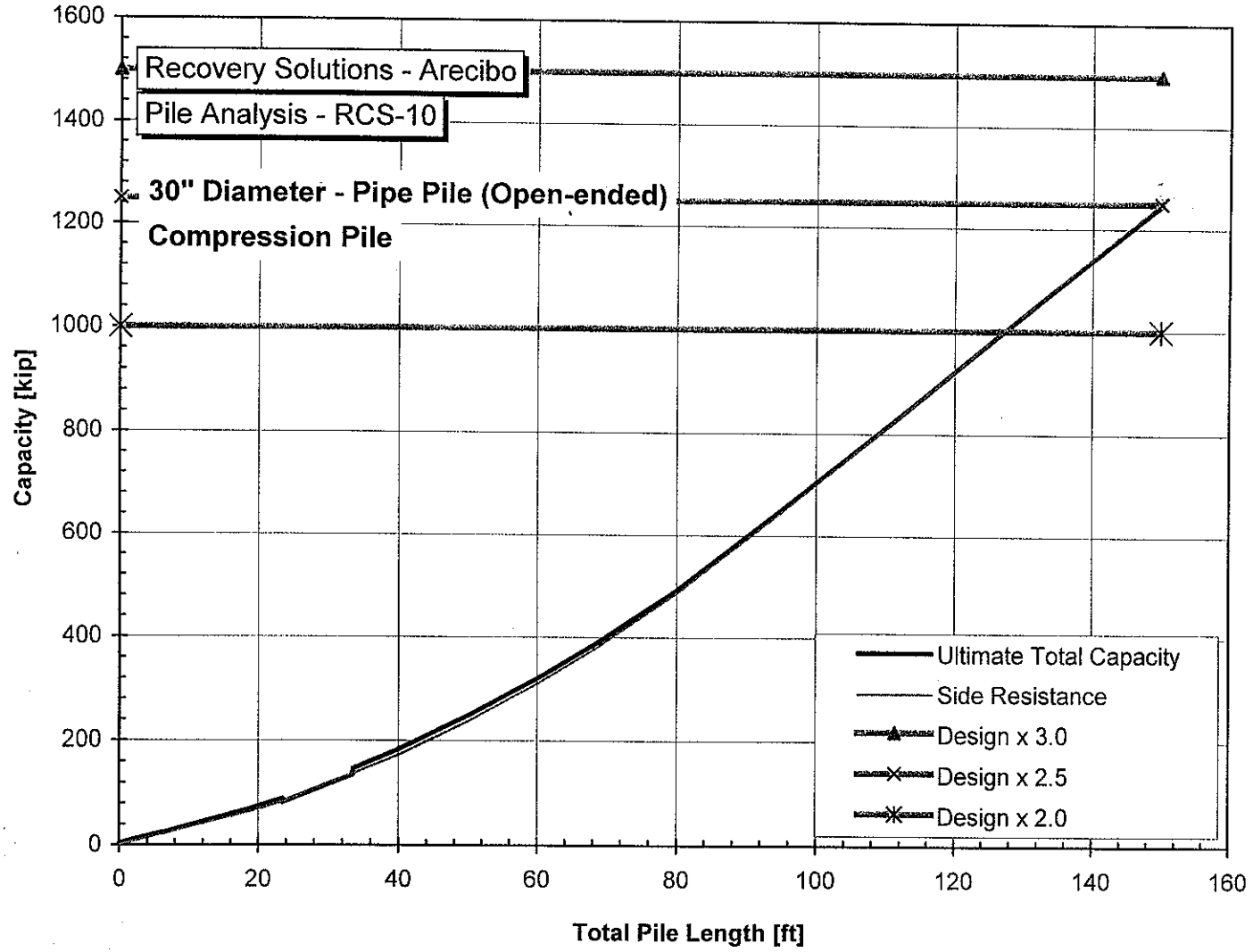



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-09
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

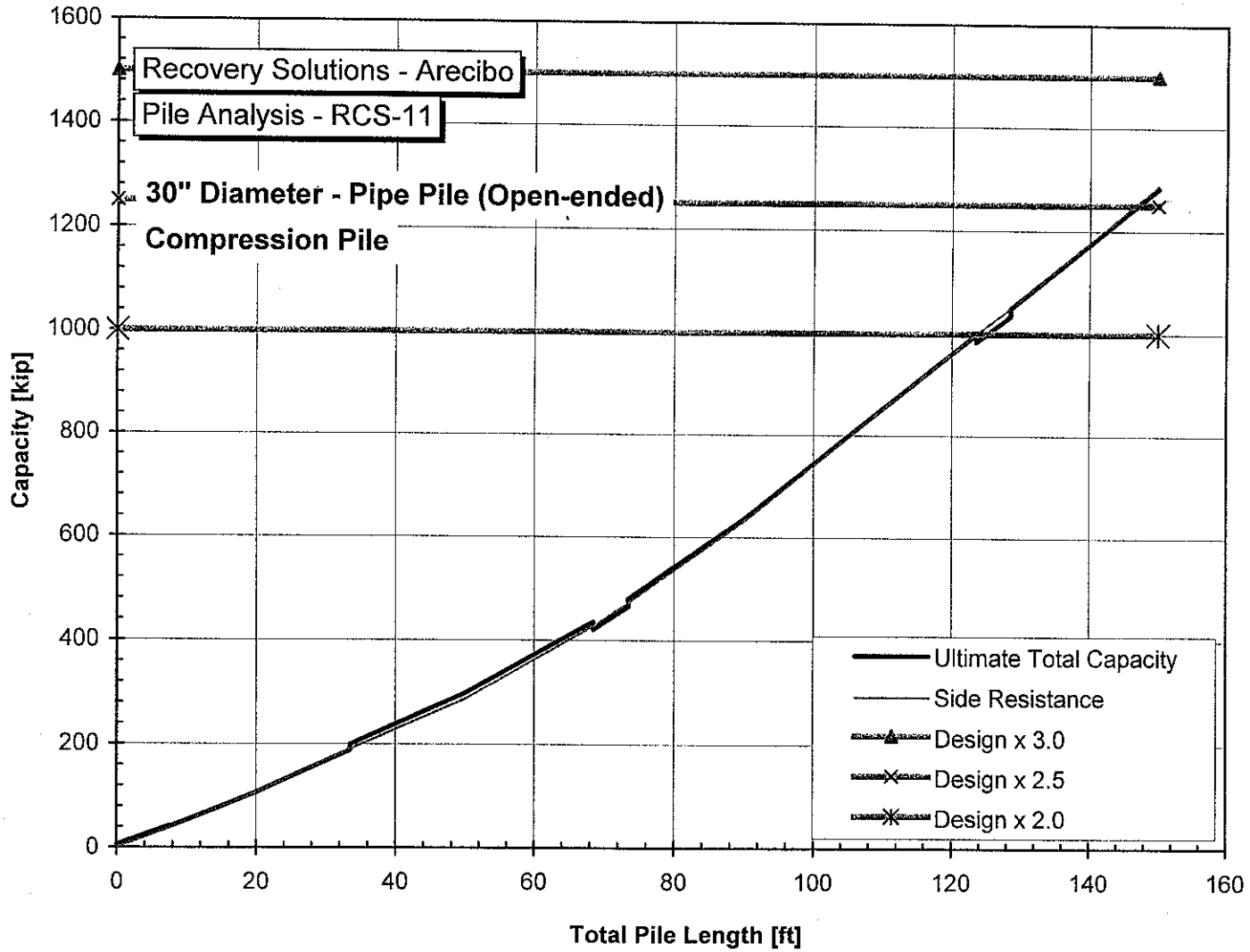



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-10
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

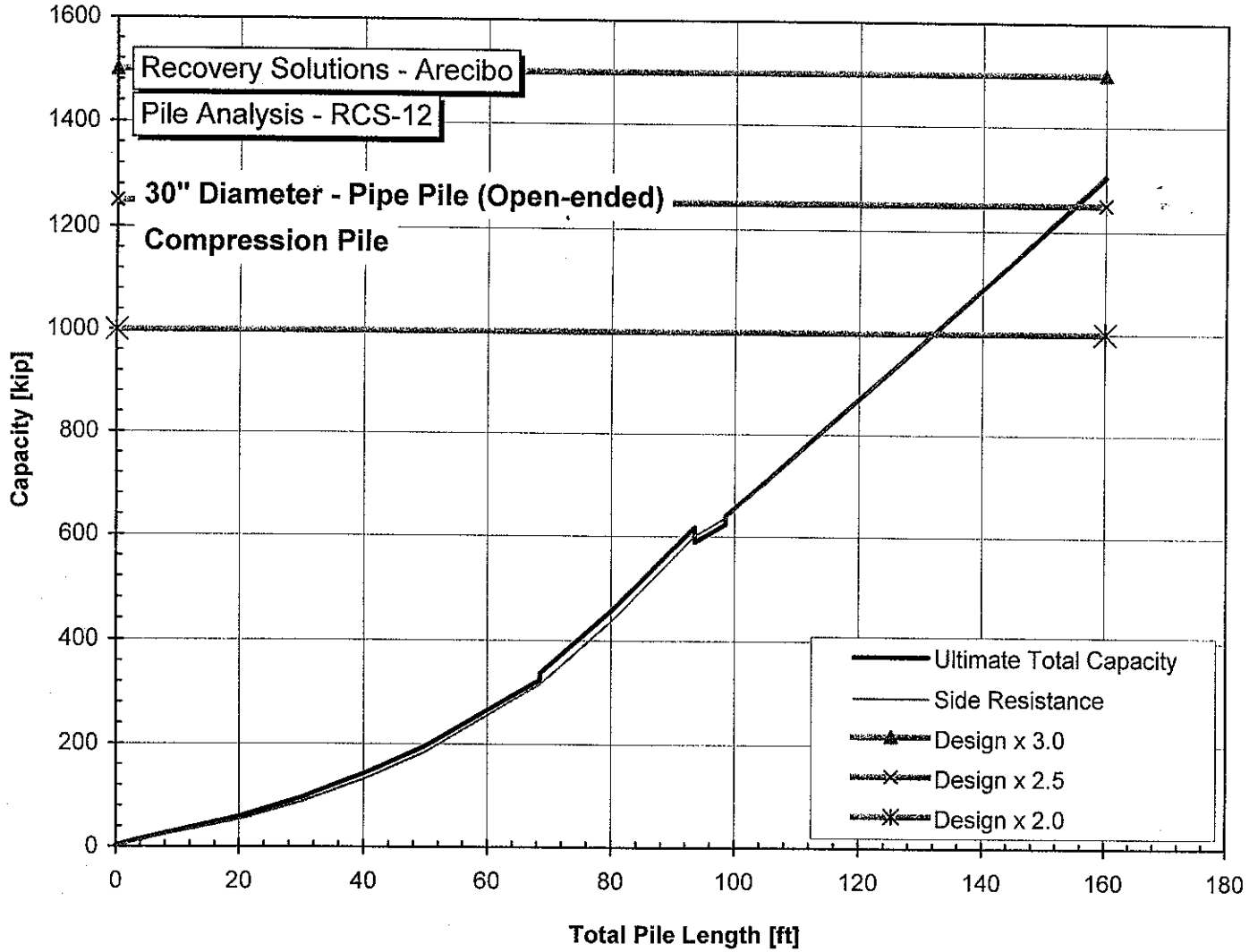



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-11
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

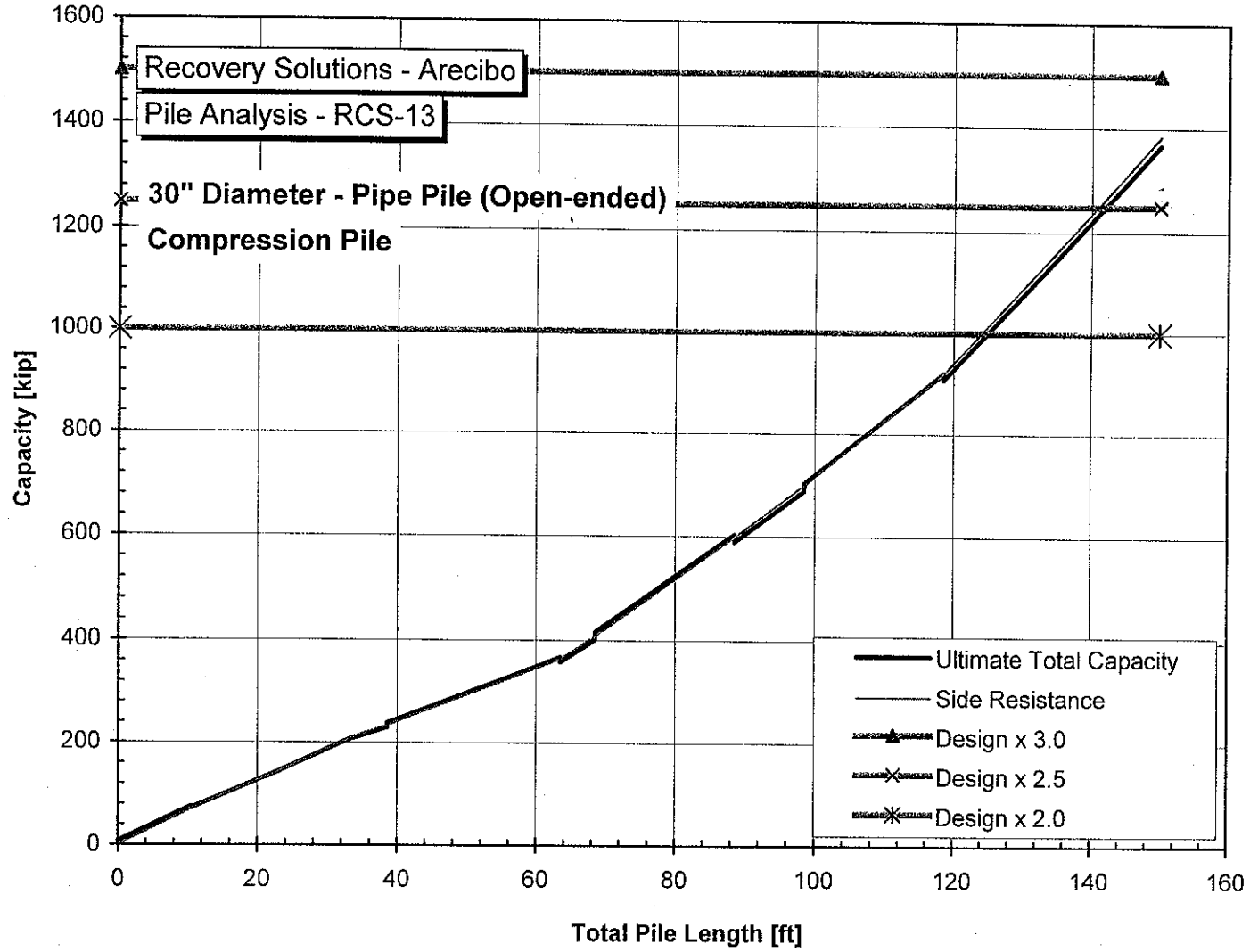



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-12
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

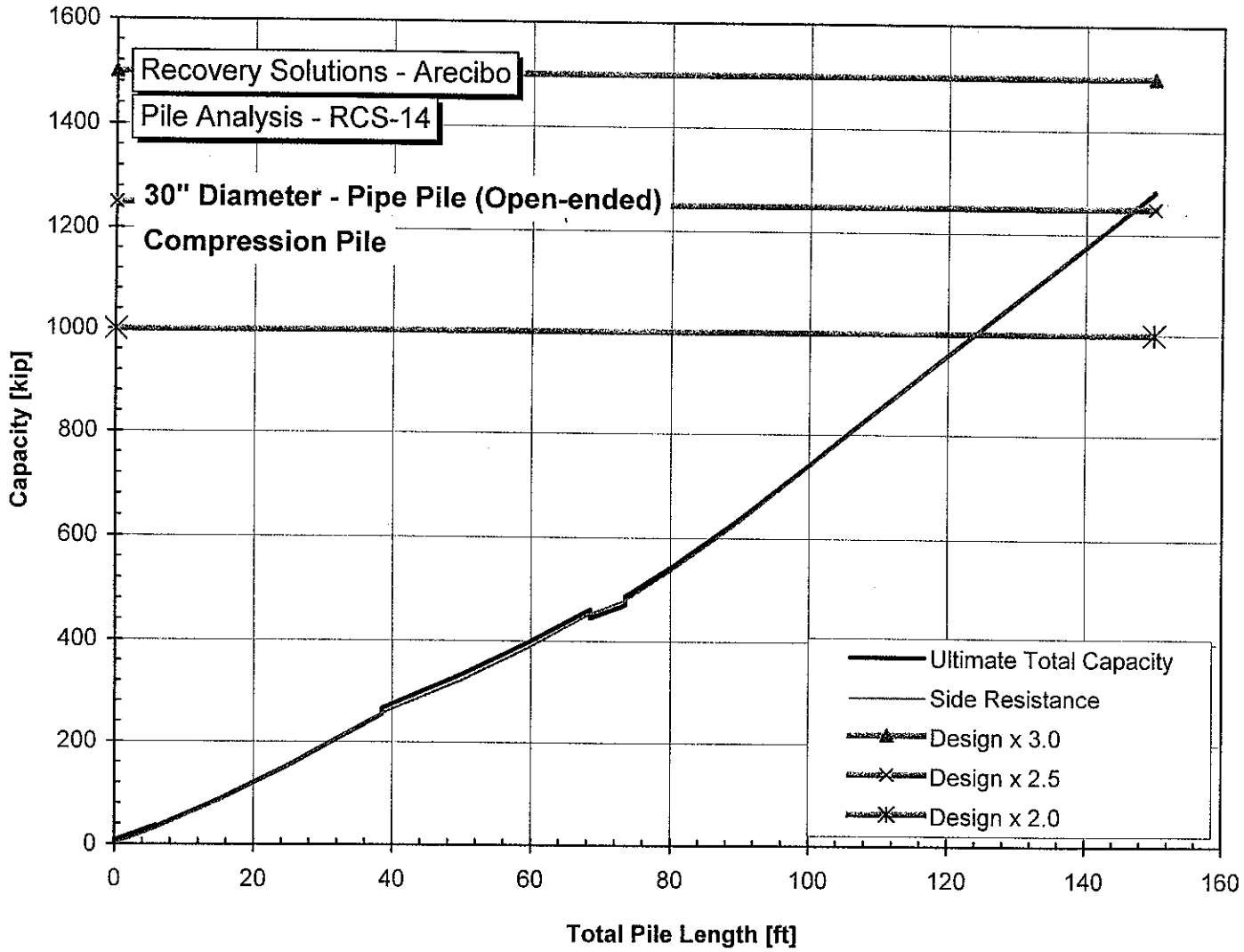



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-13
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length

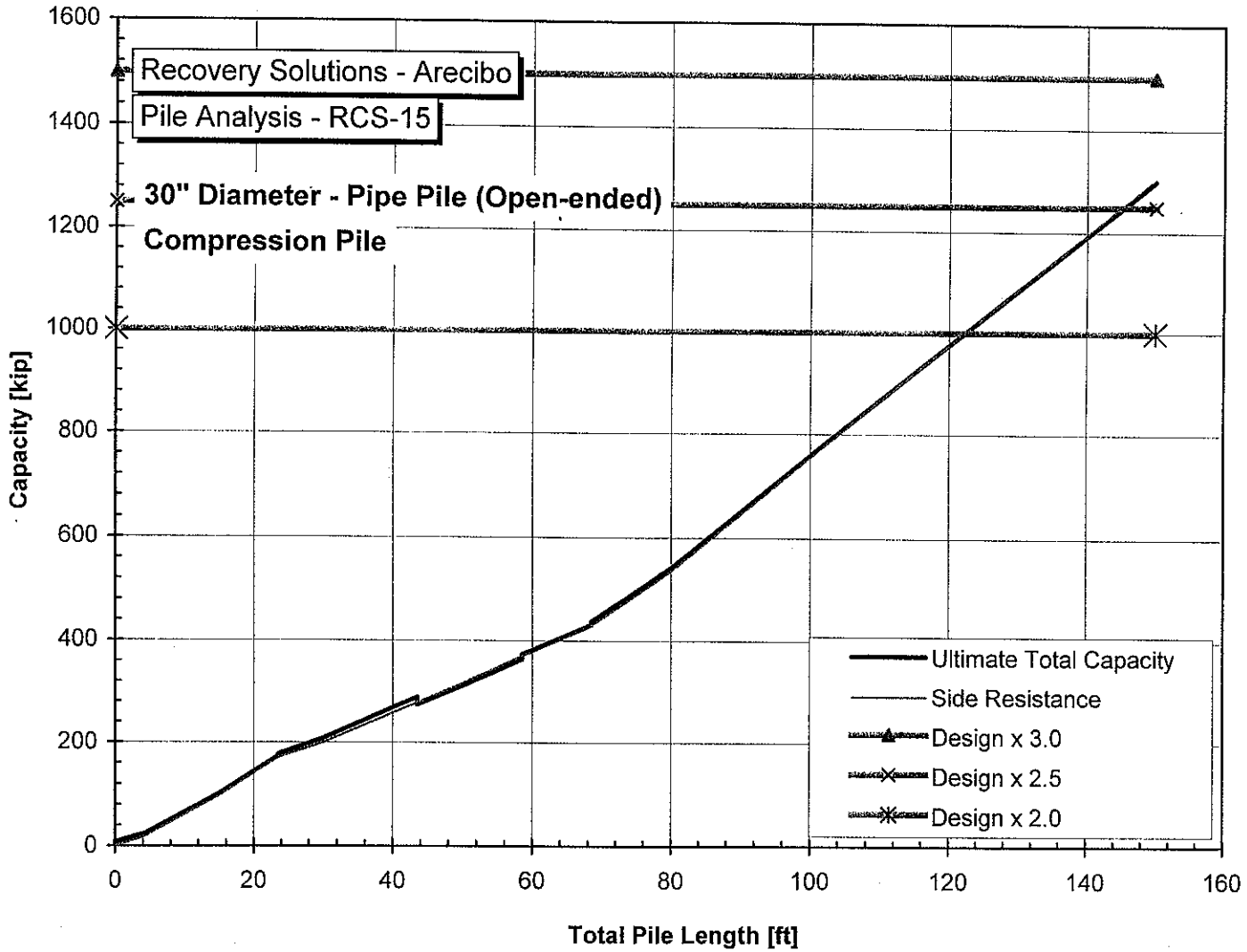



Capacity vs total pile length
Factor of safety shown

File API Analysis - Compression Pipe Pile 30 in. RCS-14
Assumes cohesive undrained behavior in limestone

GEOCONSULT

Capacity vs Total Pile Length



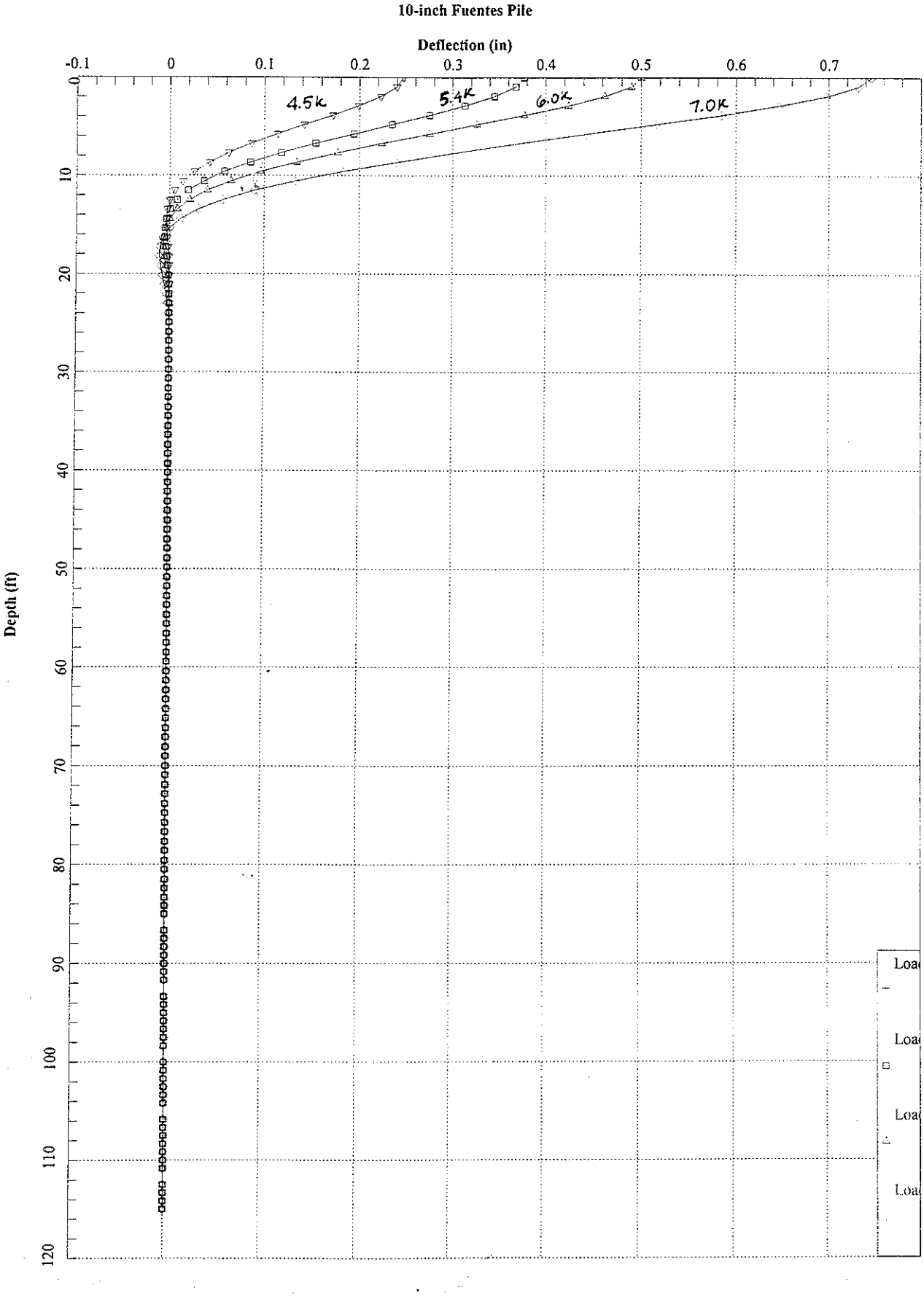

Capacity vs total pile length
Factor of safety shown

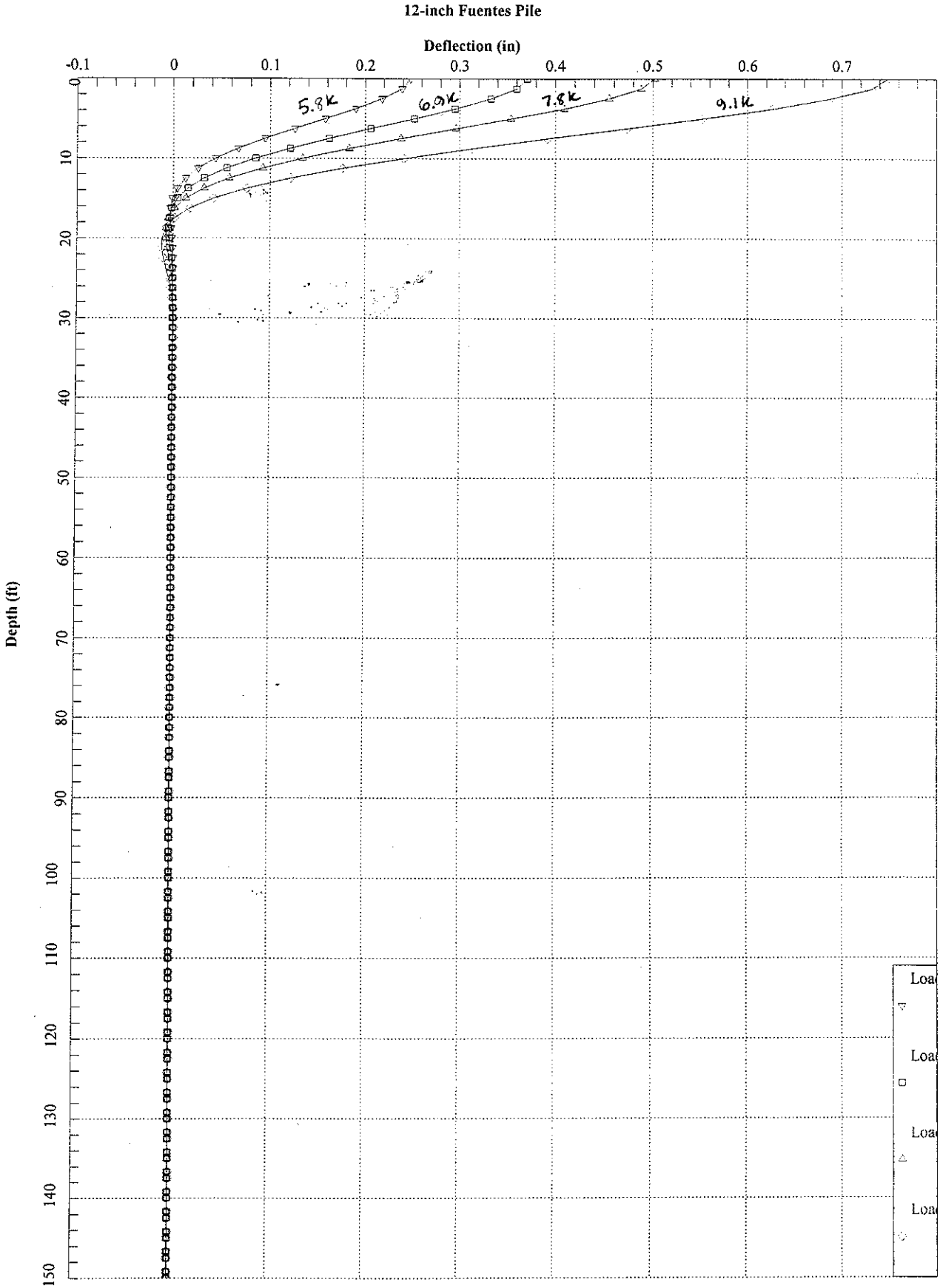
File API Analysis - Compression Pipe Pile 30 in. RCS-15
Assumes cohesive undrained behavior in limestone

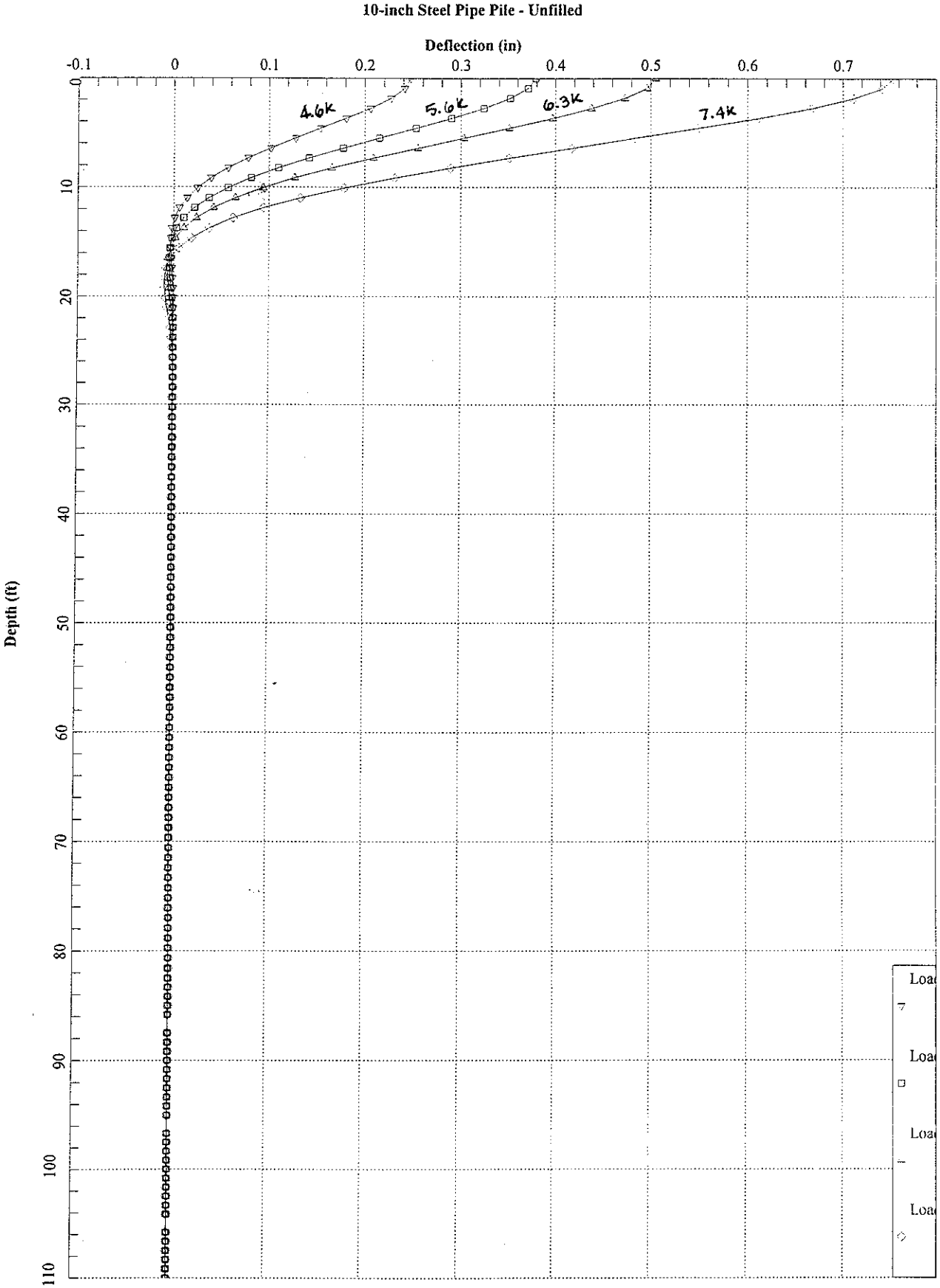
GEOCONSULT

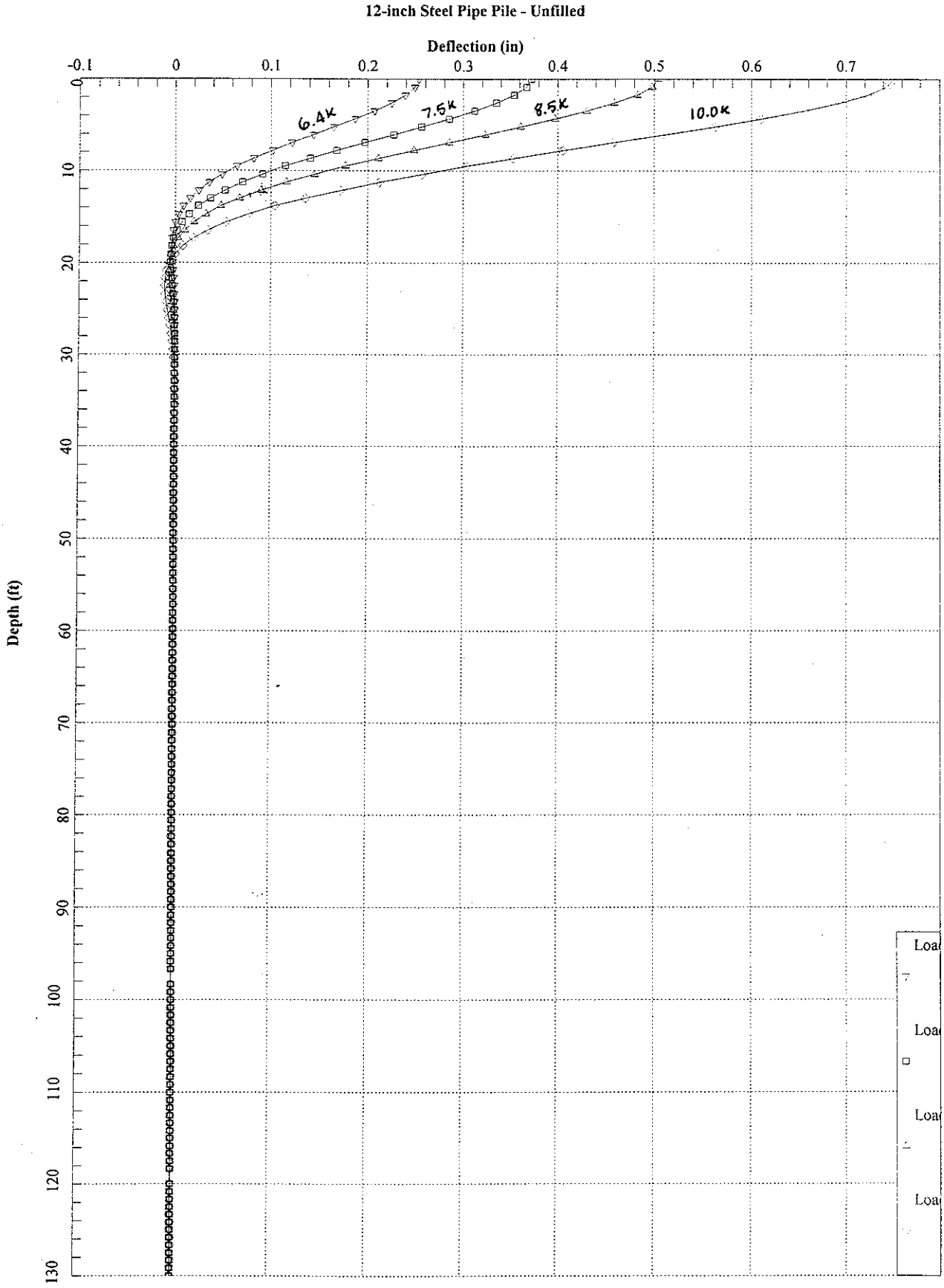
**Appendix D**

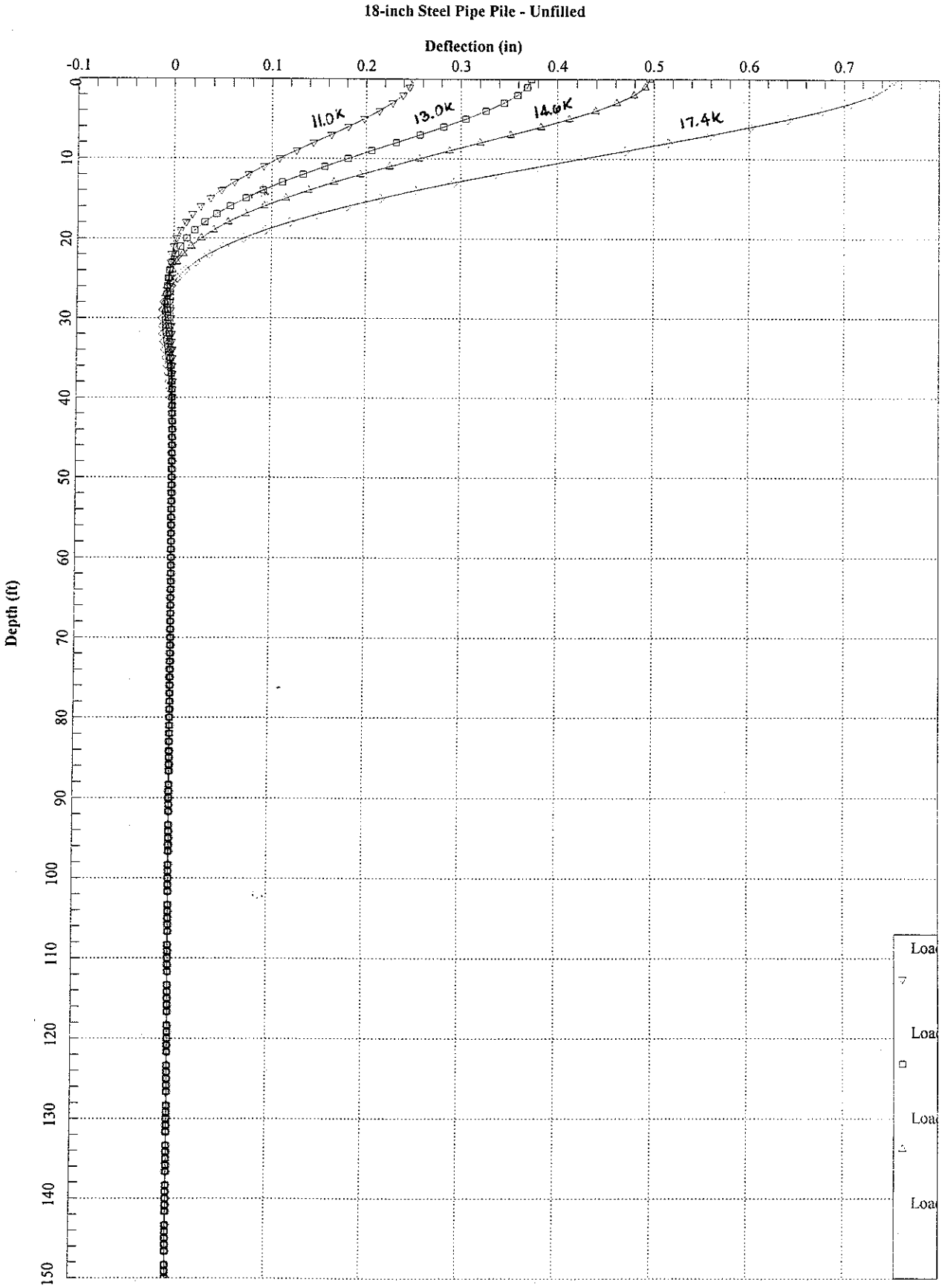
Lateral Deflection vs. Length Curves

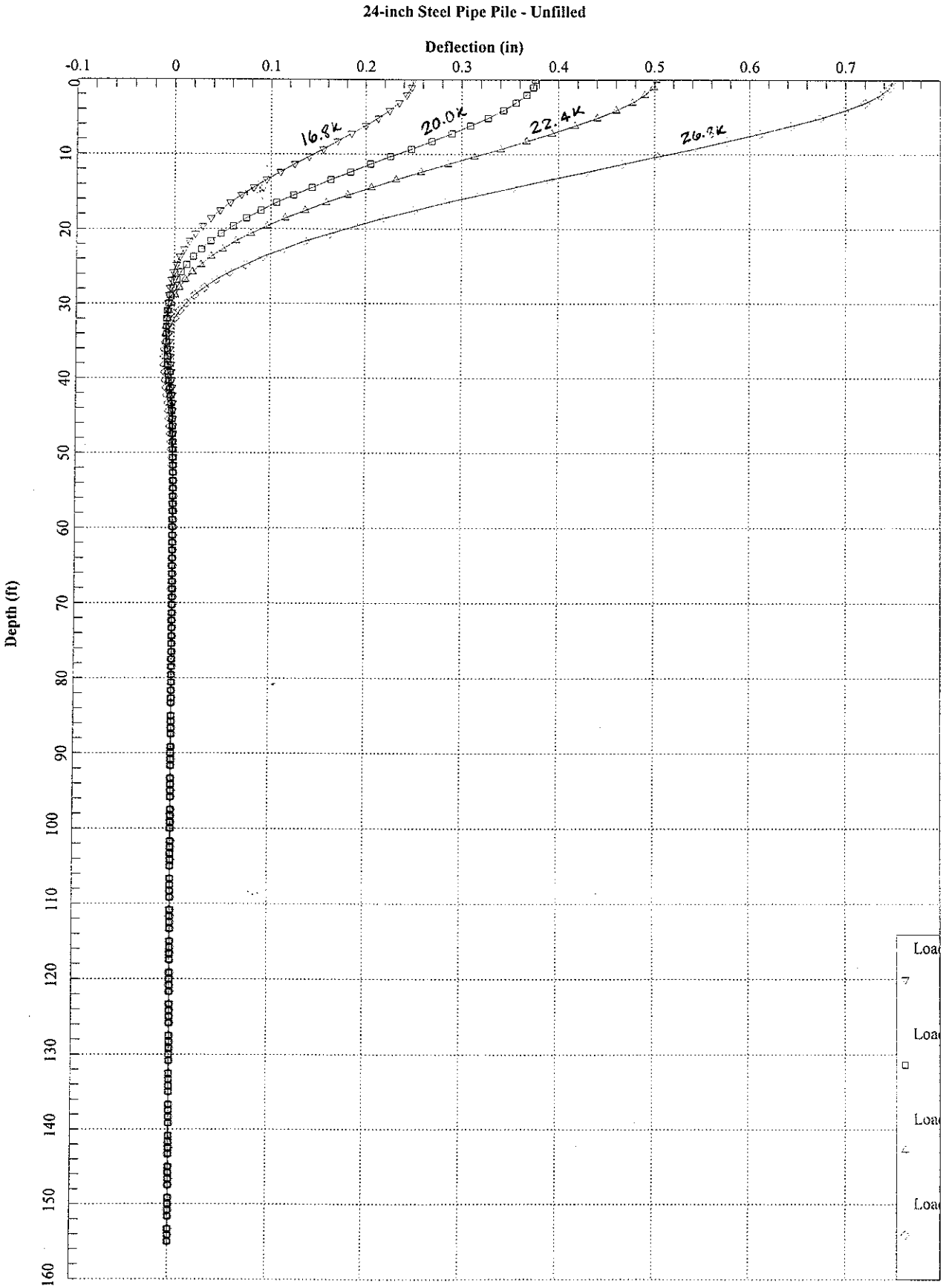

10-inch Fuentes Pile
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
4.5k
5.4k
6.0k
7.0k
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120

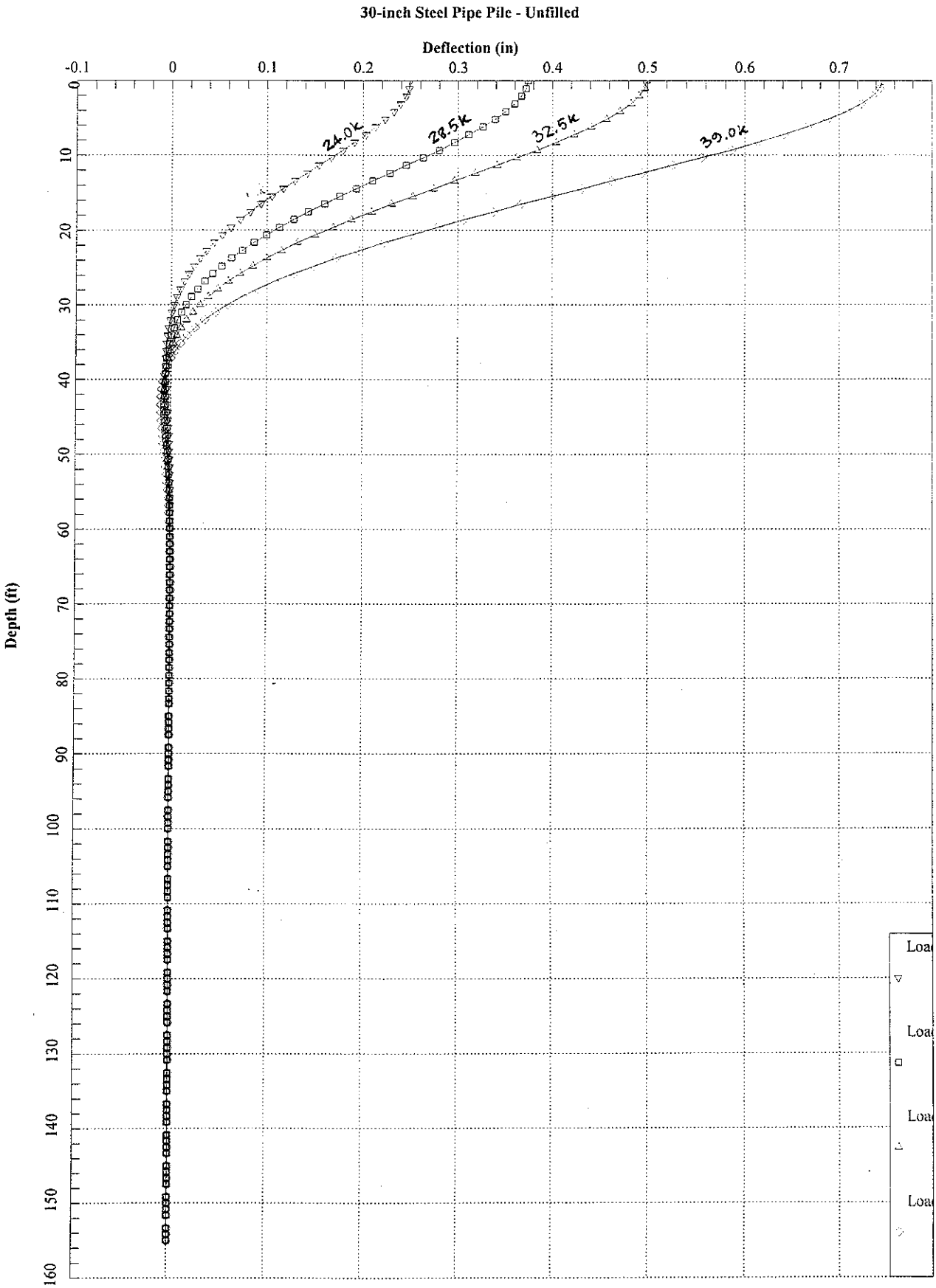

12-inch Fuentes Pile
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
5.8K
6.9K
7.8K
9.1K
Depth (ft)
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150


10-inch Steel Pipe Pile - Unfilled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
4.6K
5.6K
6.3K
7.4K
Depth (ft)
10
20
30
40
50
60
70
80
90
100
110

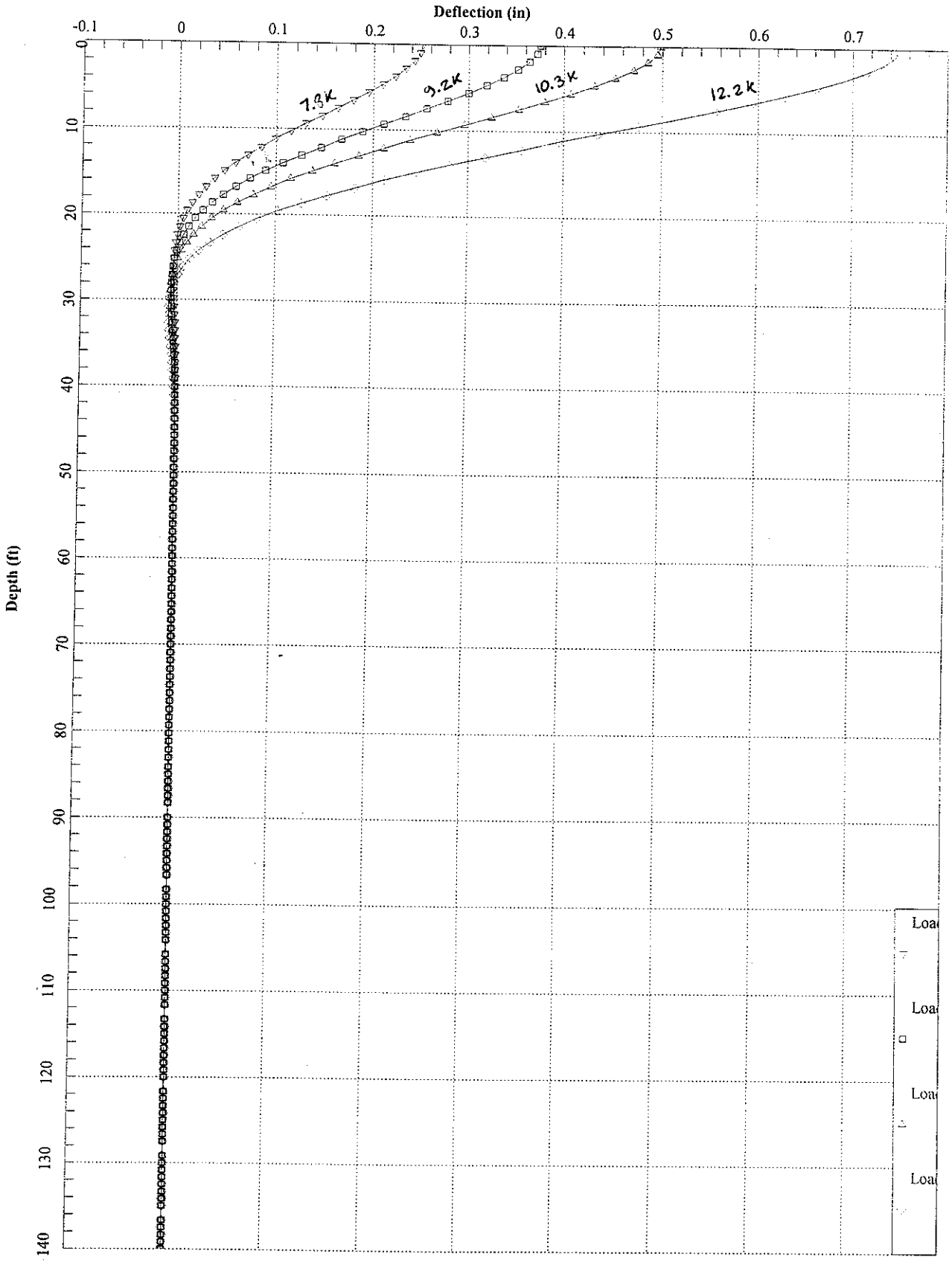

12-inch Steel Pipe Pile - Unfilled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
6.4K
7.5K
8.5K
10.0K

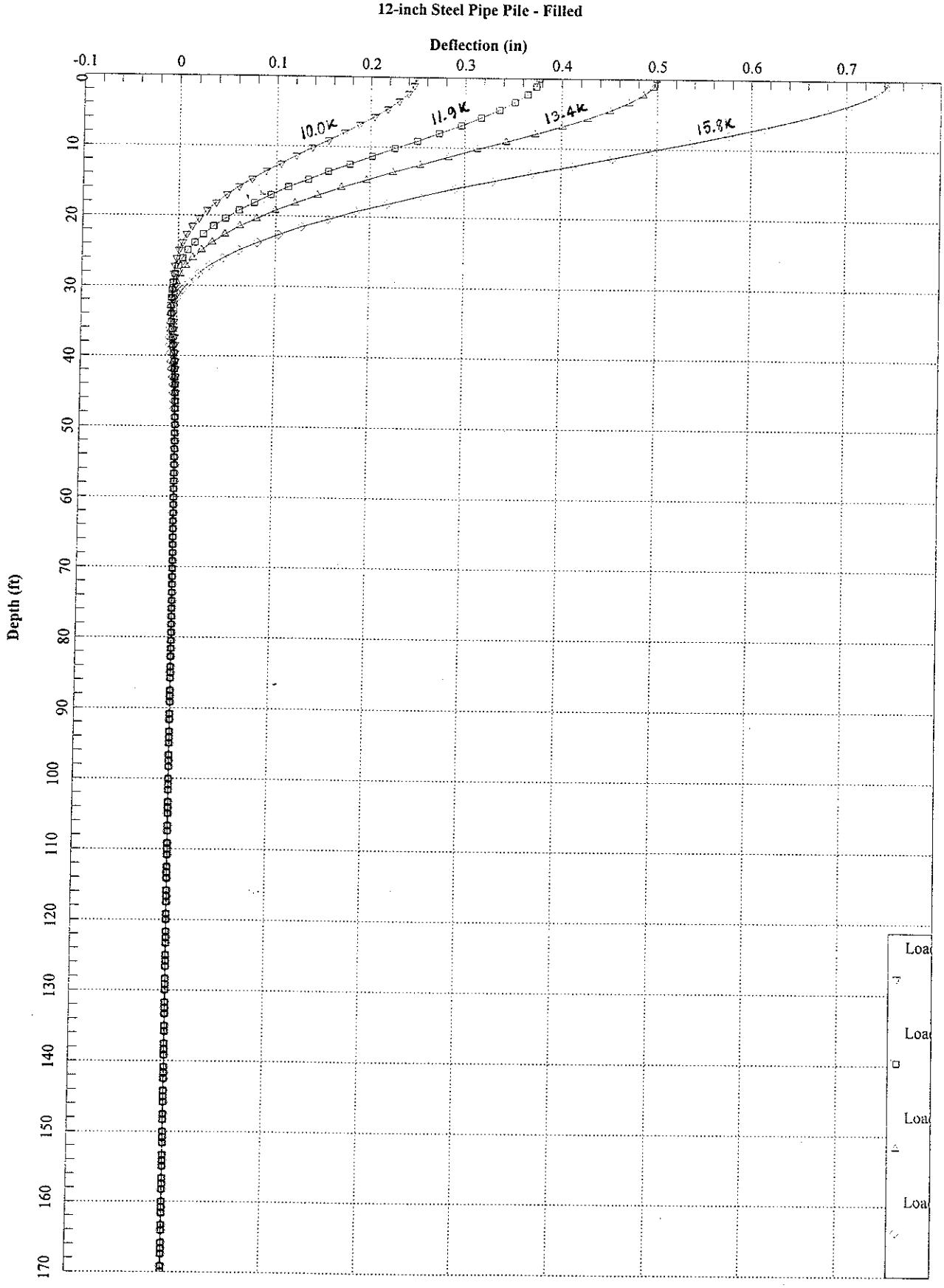

18-inch Steel Pipe Pile - Unfilled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
11.0K
13.0K
14.0K
17.4K

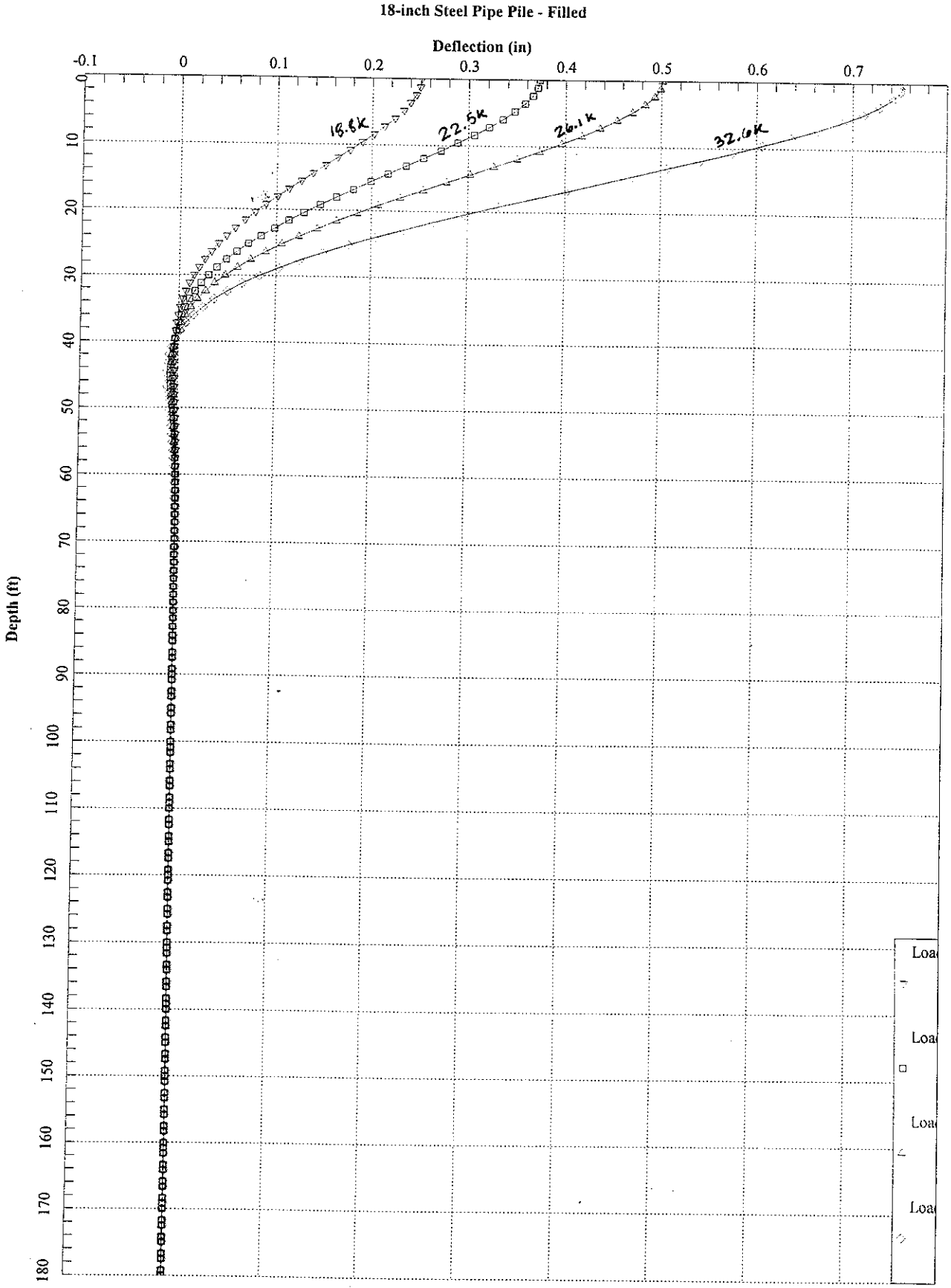

24-inch Steel Pipe Pile - Unfilled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
16.8K
20.0K
22.4K
26.8K

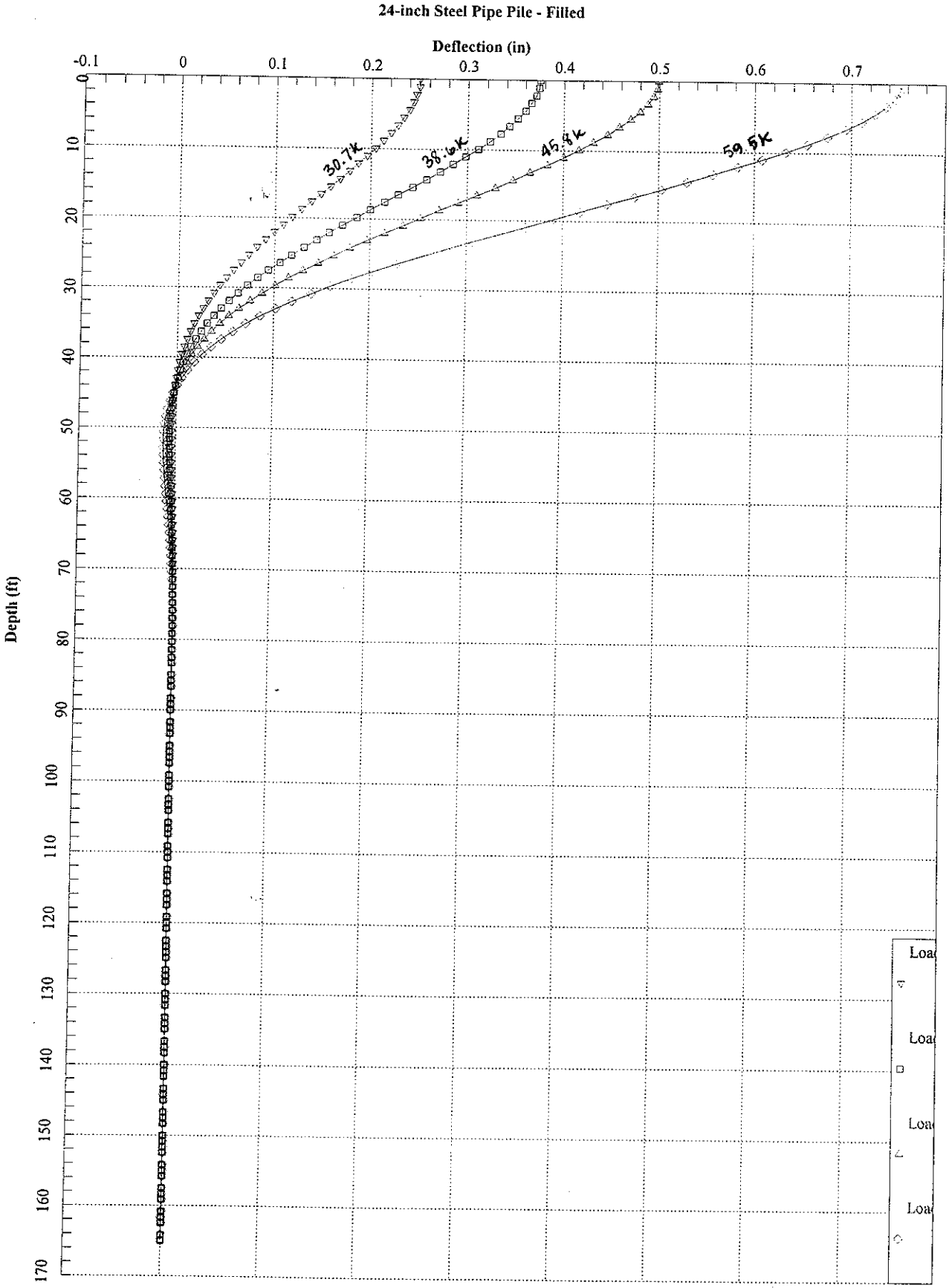

30-inch Steel Pipe Pile - Unfilled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
24.0k
28.5k
32.5k
30.0k

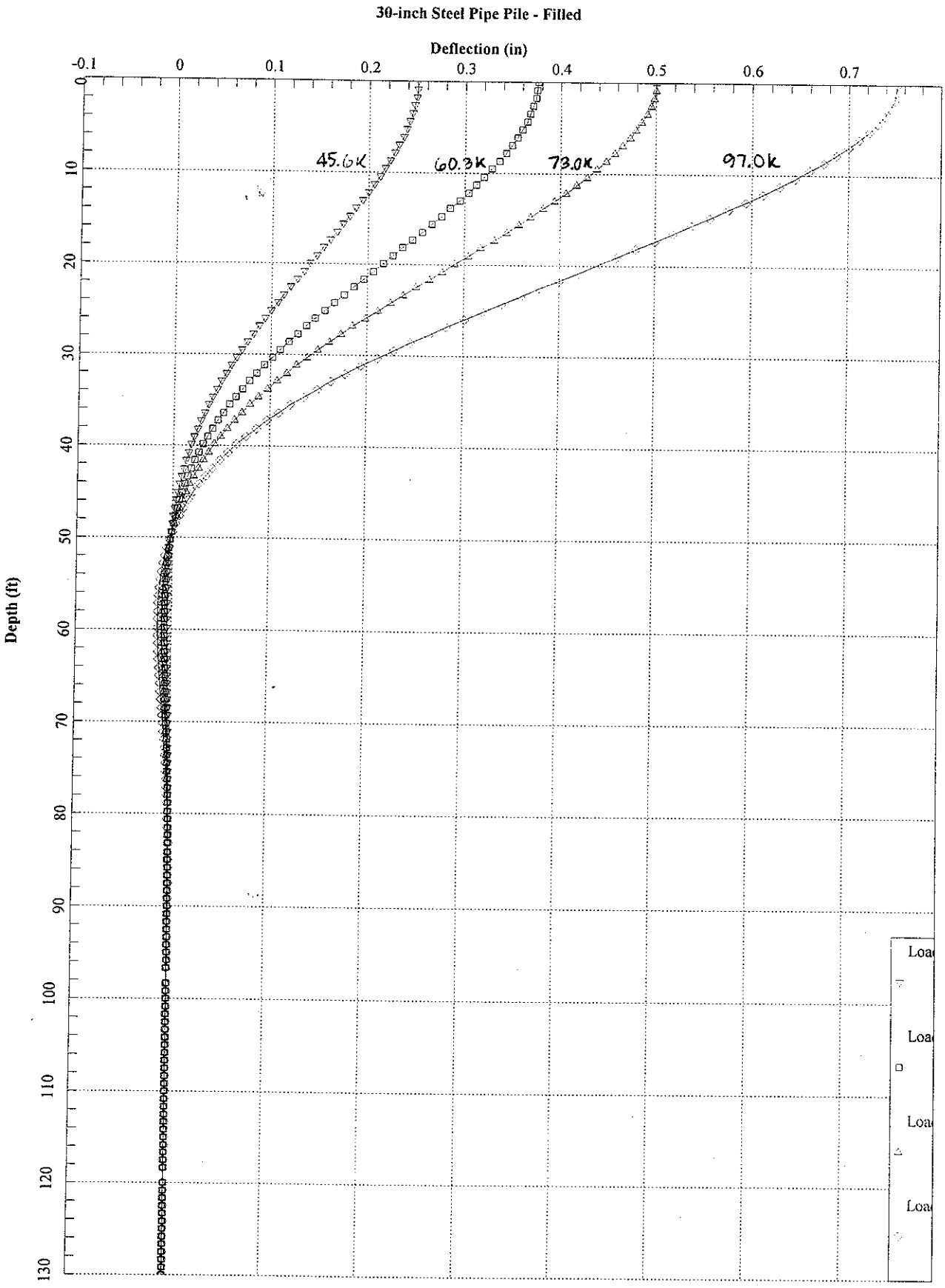
**10-inch Steel Pipe Pile - Filled**

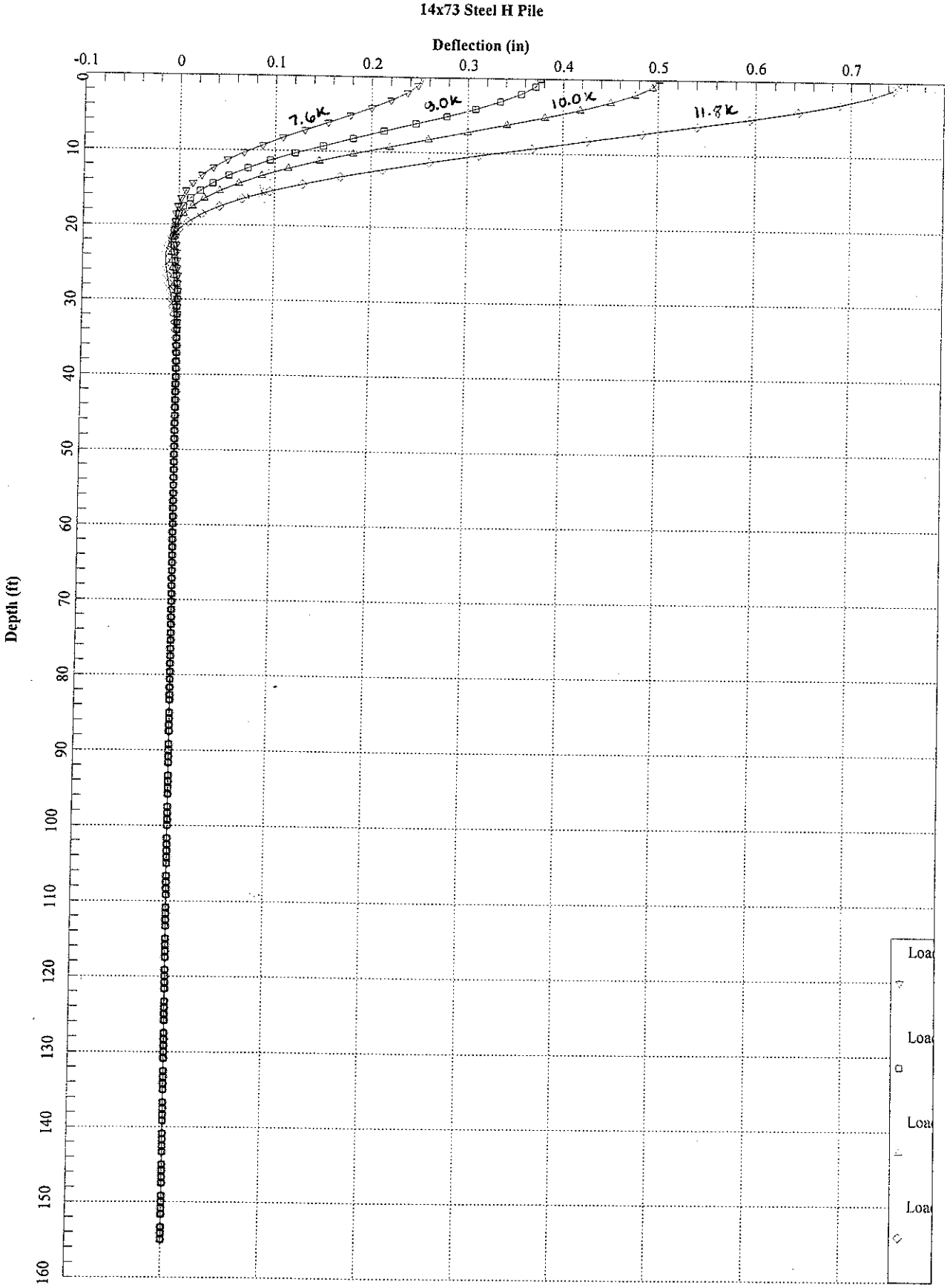



12-inch Steel Pipe Pile - Filled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
10.0K
11.9K
13.4K
15.8K


18-inch Steel Pipe Pile - Filled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
16.8K
22.5K
26.1K
32.6K
Loa
Loa
Loa
Loa


24-inch Steel Pipe Pile - Filled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
30.7K
38.6K
45.8K
59.5K


30-inch Steel Pipe Pile - Filled
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
45.6K
60.3K
73.0K
97.0K
Loa
Loa
Loa
Loa


14x73 Steel H Pile
Deflection (in)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
Depth (ft)
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
7.6K
9.0K
10.0K
11.8K
Loa
Loa
Loa
Loa

**Appendix E**

Important Information About your Geotechnical Engineering Report

# IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING PROPOSAL

As the client of a consulting geotechnical engineer, you should know that site subsurface conditions cause more construction problems than any other factor. ASFE/The Association of Engineering Firms Practicing in the Geosciences offers the following suggestions and observations to help you manage your risks.

**HAVE REALISTIC EXPECTATIONS**

If you have not dealt with geotechnical issues before, recognize that site exploration identifies actual subsurface conditions only at those points where samples are taken, at the time they are taken. The data derived are extrapolated by consulting geotechnical engineers who then apply their judgment to render an opinion about overall subsurface conditions, how they will react to construction activity, and appropriate design of foundations, slopes, impoundments, and other construction elements. Even under optimal circumstances, actual subsurface conditions may differ from those inferred to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock, and time.

**DEVELOP THE SUBSURFACE EXPLORATION PLAN WITH CARE**

The nature of a subsurface exploration program — the types, quantities, and locations of procedures used — plays a large role in determining the effectiveness of a geotechnical engineering report and the design based upon it. The more comprehensive a subsurface exploration plan, the more information it provides to the geotechnical engineer, helping the engineer reduce the risk of unanticipated conditions and the attendant risk of costly delays and disputes. Even the cost of subsurface construction may be lowered.

Geotechnical design begins with development of the subsurface exploration plan, a task that should be accomplished jointly by you and/or your professional representatives and the geotechnical engineer. Mutual development helps assure that all parties involved recognize one another's concerns and the available technical options. Clients who develop a subsurface exploration plan without the involvement of their geotechnical engineers may be required to assume responsibility — and liability — for the plan's adequacy.

**READ GENERAL CONDITIONS CAREFULLY**

Most consulting geotechnical engineers include their standard general contract conditions in their proposals, and it is common for one of these conditions to limit the engineer's liability. Known as risk allocation or limitation of liability, this approach helps prevent problems to begin with, and establishes a fair and reasonable framework for handling them should they arise.

Various other elements of the general conditions explain the geotechnical engineer's responsibilities, in order to help prevent confusion and misunderstandings, and assist all parties in recognizing who is responsible for different tasks.

In all cases, read the geotechnical engineer's general conditions carefully. Speak with the geotechnical engineer about any questions you may have.

**HAVE THE GEOTECHNICAL ENGINEER WORK WITH OTHER DESIGN PROFESSIONALS**

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid misinterpretations, retain your geotechnical engineer to work with other project design professionals who are affected by the geotechnical report. Ask the geotechnical engineer to explain report implications to those design professionals affected by them, and to review other design professionals' plans and specifications to consider the manner in which they have incorporated geotechnical issues. Although other design professionals may be familiar with geotechnical concerns, none knows as much about them as a competent geotechnical engineer.

**REALIZE THAT ENVIRONMENTAL ISSUES HAVE NOT BEEN ADDRESSED**

If you have requested a geotechnical engineering proposal, it will not include services needed to evaluate the likelihood of the site being contaminated by hazardous materials or other pollutants. Given the liabilities involved, it is prudent practice always to have a site reviewed from an environmental viewpoint. A geotechnical engineer cannot be responsible for failing to detect contaminants when the services needed to perform that function are not being provided.

**OBTAIN CONSTRUCTION OBSERVATION SERVICES**

Most experienced clients retain their geotechnical engineers to serve throughout the project's development. Involvement during the construction phase is particularly important, because it permits the geotechnical engineer to be on hand promptly to evaluate unanticipated conditions, to conduct additional tests if required, and — when necessary — to recommend solutions to problems. In addition, the geotechnical engineer can monitor the geotechnical-related work performed by contractors. It is essential to recognize that the construction recommendations included in a geotechnical engineer's report are preliminary, because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site.

Because actual subsurface conditions can be discerned only during earthwork, geotechnical engineers need to observe those conditions in order to finalize their recommendations. Only the geotechnical engineer who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations are valid. The geotechnical engineer submitting the report cannot assume responsibility or liability for the adequacy of preliminary recommendations if another party is retained to observe construction.

**RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE**

Most geotechnical engineers who are members of ASFE are familiar with a variety of techniques and approaches that can be used to help reduce risks for all parties to a construction project, from design through construction. Speak with your geotechnical engineer not only about geotechnical issues, but others as well, to learn about approaches that may be of genuine benefit. You may also wish to obtain certain ASFE publications. Contact an ASFE member or ASFE itself for a complimentary directory of ASFE publications.

ASFE PROFESSIONAL FIRMS PRACTICING IN THE GEOSCIENCES

8811 COLESVILLE ROAD/SUITE G106/SILVER SPRING, MD 20910
TELEPHONE: 301/565-2733 FACSIMILE: 301/589-2017

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