



Product Evaluation Report

PER-09040

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Initial Listing
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Re-Approved

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Listed Product

**ECP Steel Pier™ Models 300 & 350 Utility
Bracket Systems**

Listed For

Earth Contact Products, LLC

15612 S. Keeler Terrace
Olathe, KS 66062

Approved Manufacturer

Earth Contact Products, LLC

15612 S. Keeler Terrace
Olathe, KS 66062

Progressive Engineering Inc. is an accredited Testing Laboratory and Third Party Quality Control Agency. This **Product Evaluation Report** represents a product that *Pei* has a follow-up service agreement with. This **Product Evaluation Report** in no way implies warranty for this product or relieves **Earth Contact Products, LLC** of their liabilities for this product. *Pei* is accredited to ISO Standard 17020 and 17025. This **PER** is an official document if it is within one year of the initial or renewal date.

Listing Details

ECP Steel Pier Systems are used as support for structures to recover lost elevations and to provide uniform supplemental support to foundations. ECP Steel Pier Systems provide structural lift and stop settlement of the structure. These products are used in residential, commercial and industrial foundation problems. ECP Steel Pier Systems can be installed in either interior or exterior applications.

ECP Steel Pier Systems have been tested and evaluated for Eccentric Compression strength with a maximum unsupported tube length of 6 inches. This Report does not address Seismic evaluation for this System. This report does not address evaluation of this system below grade.

Product Description

ECP Steel Pier™ Model 300 is a US patent protected product that uses ASTM certified material. Model 300 Pier section uses a high strength galvanized ASTM A500 steel tubing with a nominal outside diameter of 2-7/8" and a minimum wall thickness of .165". Each pier section will be a minimum of 41.5" long. The yield strength of the pier sections is a minimum of 55,000 psi. The ECP Steel Pier Model 300 is composed of three (3) sections. The Starter Pipe Section, Extension Section and the Inertia Sleeve.

ECP Steel Pier™ Model 350 is also a US patent protected product that uses ASTM certified material. Model 350 Pier section uses a high strength galvanized ASTM A500 steel tubing with a nominal outside diameter of 3-1/2" and a wall thickness of .165". Each pier section will be a minimum of 41.5" long. The yield strength of the pier sections is a minimum of 55,000 psi. The ECP Steel Pier Model 350 is composed of three (3) sections. The Starter Pipe Section, Extension Section and the External Pier Sleeve.

ECP Inertia Sleeve is a patented product that improves shaft stiffness. The Inertia sleeve passes fully through the pier coupling and engages with a previous applied section of the Inertia Sleeve.

Material Specifications

Model 350 -

Friction Reduction Collar is fabricated from steel tubing that has a nominal 4" outside diameter with a .220" wall thickness and a length of 1".

Pier Pipe Coupling is manufactured from steel tubing that has a 3-1/8" outside diameter by a .180" wall thickness with a length of 5-7/8".

External Pier Sleeve (Optional) is fabricated from mill rolled induction heat treated steel with a nominal 4" outside diameter with a .220" wall thickness with a nominal length of 42".

Inertia Sleeve (Optional) is formed from steel tubing with a 3-1/8" outside diameter by a .180" wall thickness and a nominal length of 35-1/4" long.

Material Specifications Cont.

Model 300 -

Friction Reduction Collar is fabricated from steel tubing that has a nominal 3-3/8" outside diameter with a .188" wall thickness and a length of 1".

Pier Pipe Coupling is fabricated from steel tubing with a nominal 2-1/2" outside diameter by a .180" wall thickness and a length of 5-7/8".

Inertia Sleeve is fabricated from steel tubing with a 2-3/8" outside diameter by a .192" wall thickness and a nominal length of 35-1/4" long.

Inertia Sleeve Coupling is formed from steel tubing with a 2-1/8" diameter and a wall thickness of .188" that is 12" long.

Pier Bracket is a steel welded assembly consisting of a 3/8" or 1/2" thickness meeting specification ASTM A36. In addition to the welded assembly are six (6) mounting studs that are fabricated from 2-1/4" x 1/2-13 all thread bar.

Pier Cap is fabricated from 1-1/2" x 4" x 7-7/8" long steel that conforms to ASTM A36.

Bracket Body consists of two (2) 3/4-10 B7 all thread bars and four (4) 3/4-10 hex nuts.

Lift Assembly consists of a lift head and two (2) lift legs. The Lift Head is fabricated from 1" x 2-7/8" x 7-7/8" long steel conforming to ASTM A36. The two (2) Lift Leg assemblies are constructed from 3/4-10 B7 all thread rod.

Anchor Bolts shall be zinc plated meeting specification ASTM B633.

Drive Stand is a welded assembly consisting of 1/2", 5/8" or 1" Cold Rolled Flat Bar Stock conforming to ASTM A36 along with 3/8" or 1/2" Hot Rolled Steel meeting ASTM A29.

Design Considerations

A structural evaluation **Should** be submitted to the building official on a job specific basis with consideration to the existing foundation, soil conditions and overall system integrity.

General Product Usage and Limitations

1. A site survey is necessary of the area where the Piers are going to be driven to locate any possible interference such as utilities, plumbing, electrical or phone lines.
2. Small excavations are dug for each access point for the placement of the Piers. The total space needed for the foundation is typically 3 feet square.
3. The bearing area around the footing must be a smooth and level condition while adjusting the face of the stem wall to vertical at the point of the bracket attachment. The footings should be notched where required.
4. The utility bracket should be secured to the footing using anchor bolts. A hydraulic cylinder should be mounted on the drive stand to drive the pier pipe into the soil.
5. The existing structure is used as a reaction force with a hydraulic pump and cylinder combination to drive the pier into the soil.
6. Each Pier system that is installed, is load tested to ensure that the system can withstand a load greater than the structure.

Product Labeling

Each Pier that is covered by this **PER**, must be marked with the following information:

1. Earth Control Product's name
2. Product Name, Model Number
3. Plant Identifier & Tracking Code
4. This PER number & **Pei**'s name or logo
5. Load Rating

Product Documentation

ECP Quality Assurance Manual - Dated 11/11/2009

ECP Design & Technical Service Manual - 2007-10

Engineering Calculations for ECP Model 300 Standard Resistance Bracket - Dated December 2006

Engineering Calculations for ECP Model 350 Standard Resistance Bracket - Dated December 2006

A **Pei** test report No. 2008-1722 - Eccentric Compression Test on an ECP Steel Pier Model - 300 Bracket - Dated 11/11/2008.

A **Pei** test report No. 2009-0257 - Eccentric Compression Test on an ECP Steel Pier Model - 350 Bracket - Dated 3/18/2009 - Stamped by a Professional Engineer.

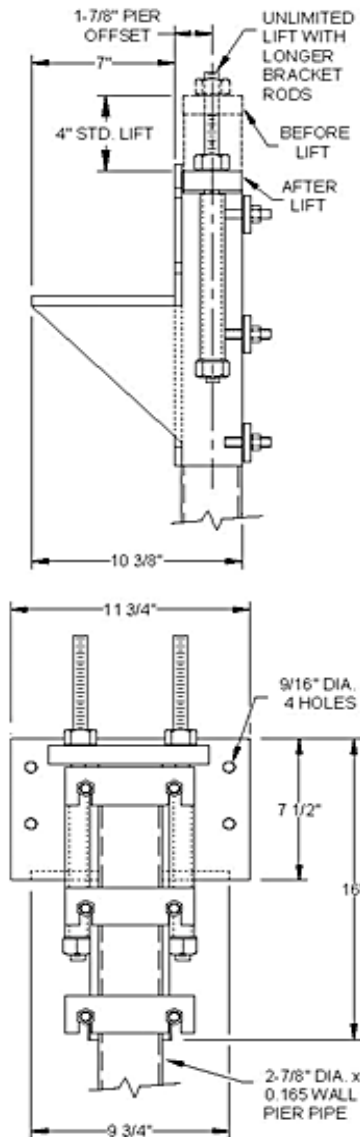
Code Compliance

2009 IRC

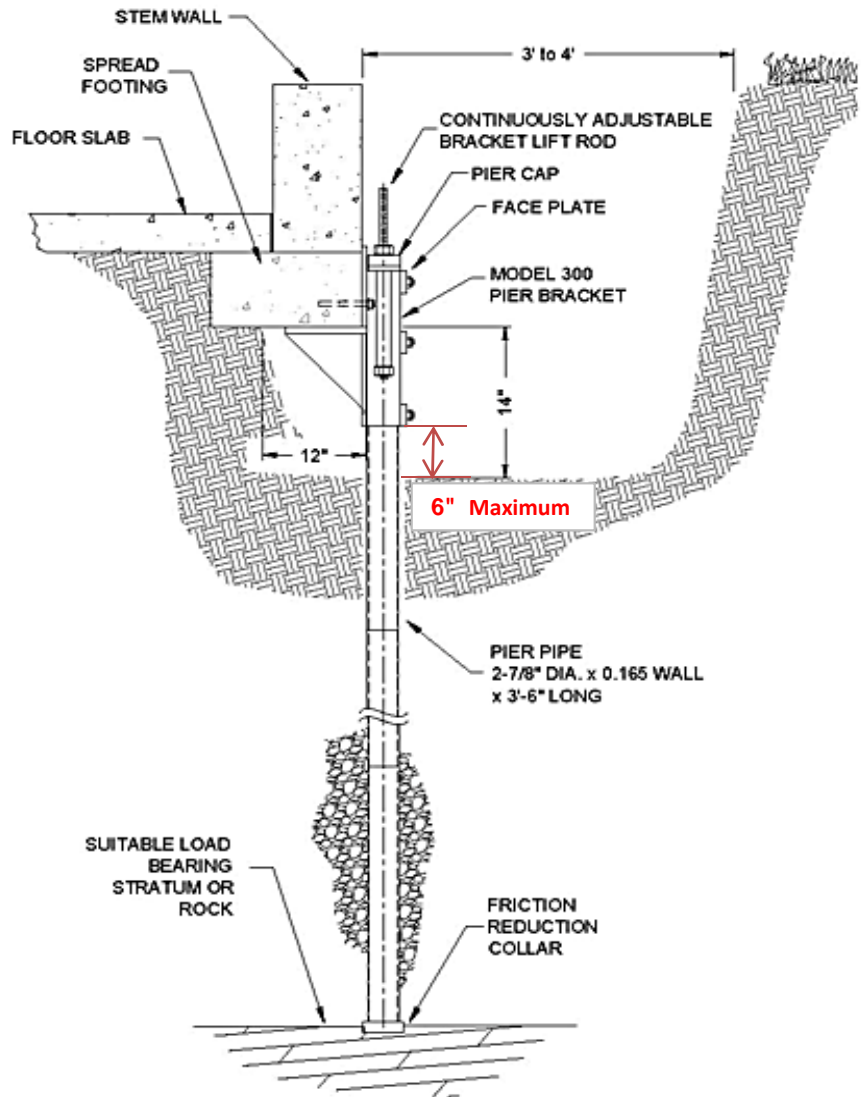
ECP Steel Pier Compression Load Ratings

Model	Product Designation	Ultimate Load Capacity	Design Load using a Safety Factor of 2.0	Design Load using a Safety Factor of 2.5
Model 300 with Inertia Sleeve	Utility Bracket	68,800 Lbs.*	34,400 Lbs.	27,520 Lbs.
Model 350 with Inertia Sleeve	Utility Bracket	102,707 Lbs.*	51,350 Lbs.	41,008 Lbs.

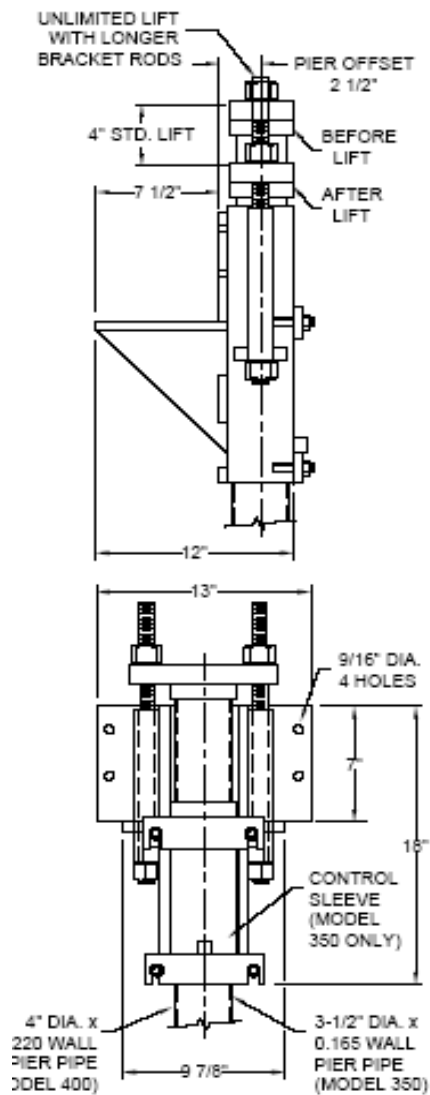
* Tests reflect a 5.3" Eccentric Load



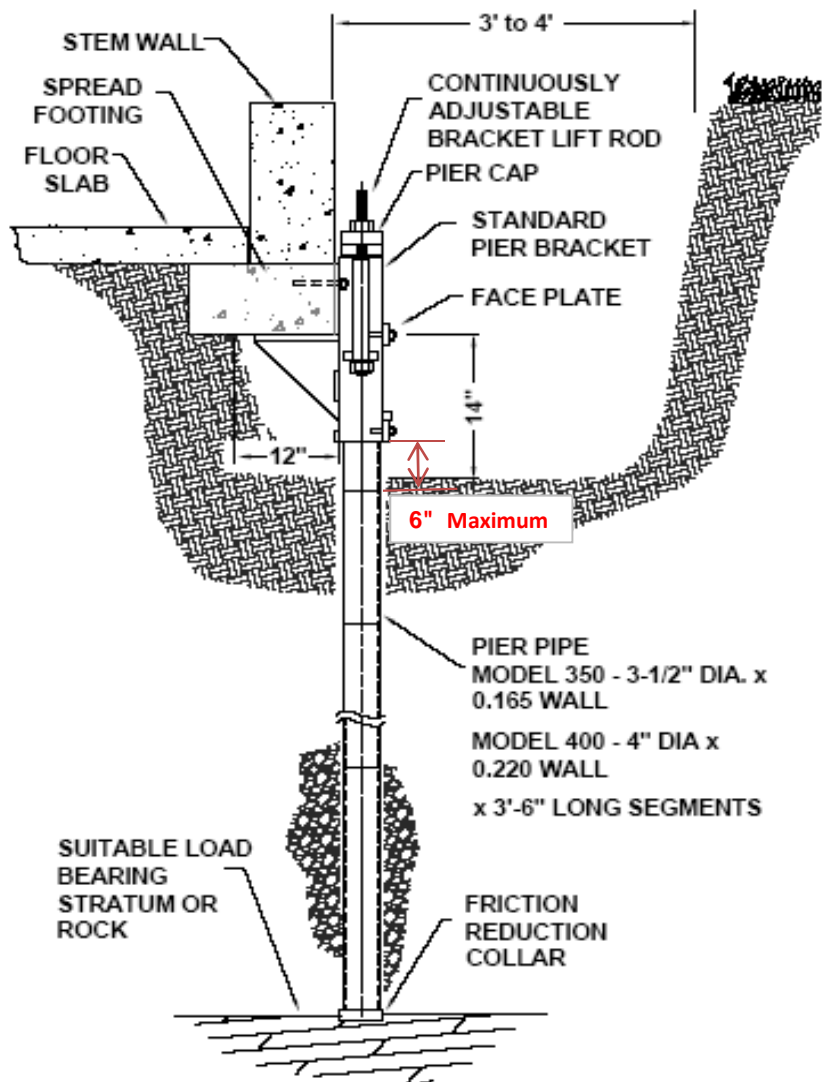
Model 300 Standard Bracket Details



Model 300 Standard Bracket Application Drawing

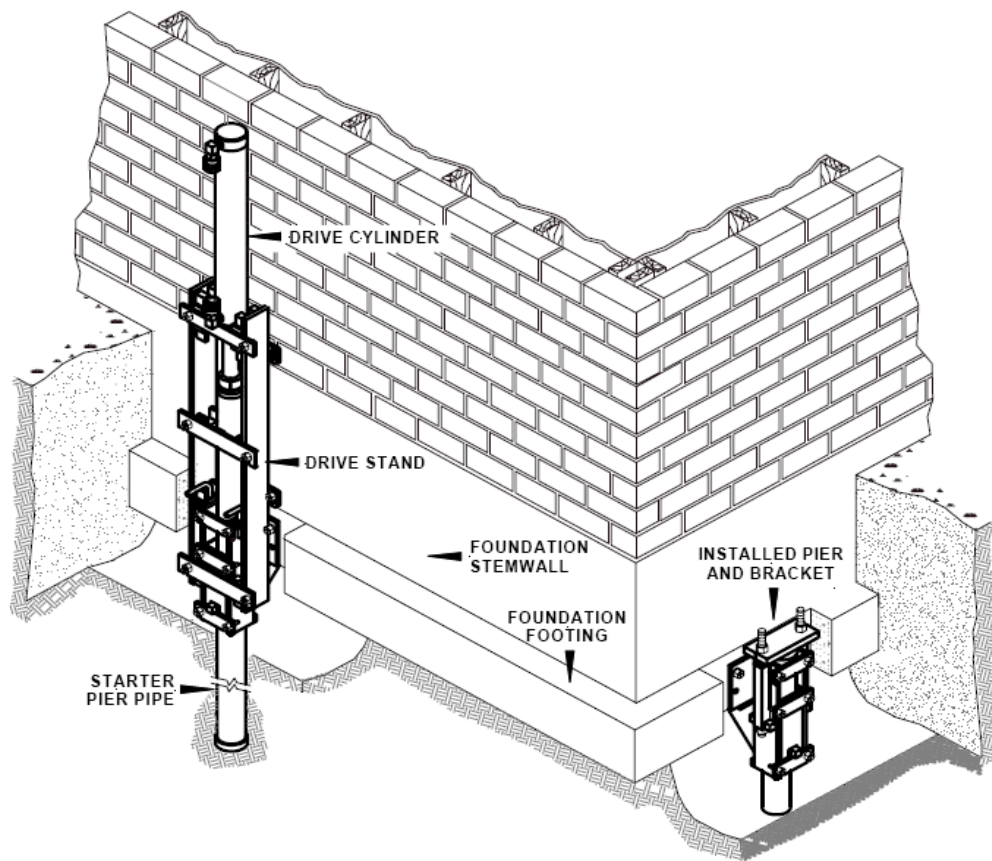


**Model 350 & Model 400
Utility Bracket Details**



**Model 350 & Model 400 Utility Bracket
Application Drawing**





Typical ECP Steel Pier Installation

