

# **ATLAS RESISTANCE PIERS**

## **CASE STUDY 110-12**

### **Atlas Resistance Piers are Used to Shore Existing Structure Prior to Excavation**

**Alpharetta, Georgia**

Installed by:  
Atlas Piers of Atlanta  
Alpharetta, Georgia

Designed by:  
Parsons Infrastructure & Technology Group  
Atlanta, Georgia

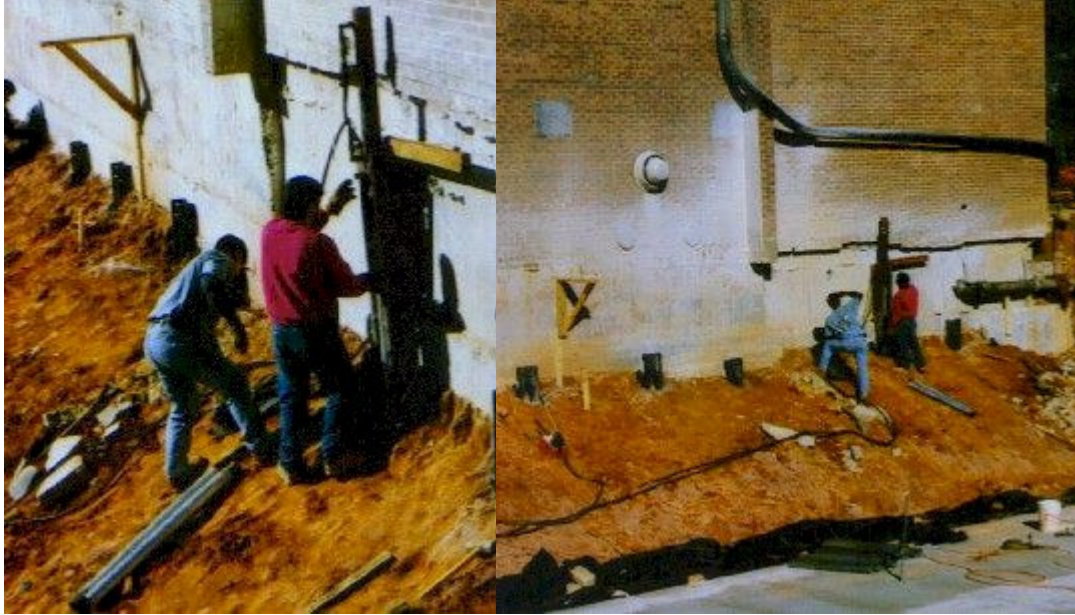
## Support for Existing Structure During Expansion!



This is a view of the job site where workers are finishing the new concrete floor. The **ATLAS RESISTANCE PIERS** provided support to the existing structure during excavation.

**Description of Project:** The existing structure houses the Bell South Central Office. Due to growth in the area, an addition to the structure was planned. The new structure has a finished floor elevation approximately 6' - 8' below the footings of the existing structure. The designer had to address the problem of supporting the existing structure while the soil was removed adjacent to the footing. Also, the owner needed to maintain operations in the existing structure without disruption from movements or vibrations during construction of the addition.

**Description of Design:** The engineers recommended support of the existing structure using **ATLAS RESISTANCE PIERS**. Suitable bearing for the piers was found at 59.5 feet below the existing footings. The concern was the strength of the exposed pier during excavation and construction. The stiffness of the pier was enhanced in this area by installing a pier sleeve over the 4 inch diameter pier pipe. The soil from below the existing structure was retained during the excavation by steel reinforced concrete retaining walls. This wall was constructed after each 18 inches of excavation.



Technicians are installing the AP2P-4000M **Atlas Resistance Piers** to the existing structure. The pier spacing was designed by the engineers to load each pier to 30,000 pounds.

#### **Atlas Resistance Pier Summary**

**Design Engineer:** Parsons Infrastructure & Technology Group, Atlanta, Georgia

**Installed By:** Atlas Piers of Atlanta -- Alpharetta, Georgia

**Atlas Resistance Pier Product:** AP2P-4000M -- **ATLAS 2-PIECE MODIFIED**

**RESISTANCE**

**PIER**

**Number of Resistance Piers:** 15

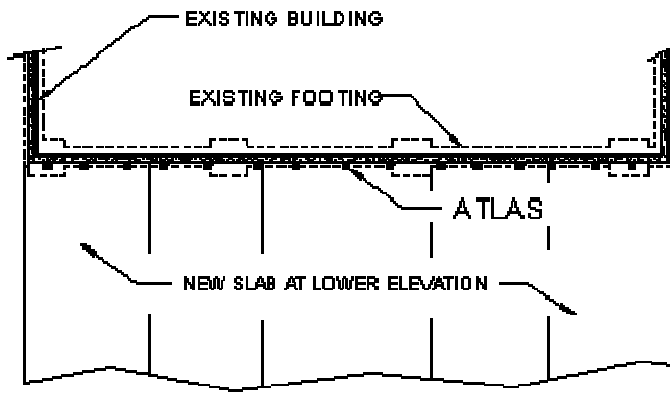
**Average Drive Force:** 60,000 pounds

**Average Working Load:** 30,000 pounds

**Factor of Safety:** 2 : 1 [100% above working load]

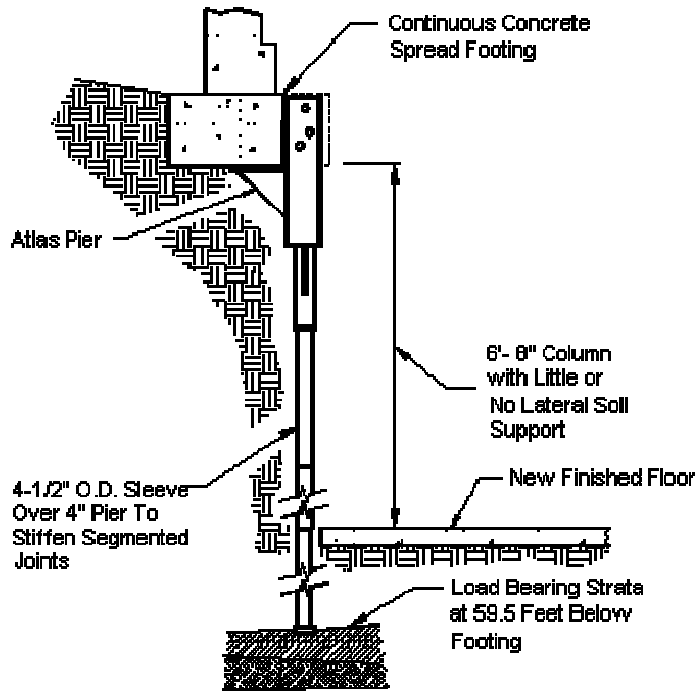
**Average Depth:** 59' - 6"

The plan view to the right shows the general layout of the 15 **Atlas Resistance Piers** on the structure.



**PLAN  
VIEW**

Below is a cross sectional sketch of the **Atlas Resistance Pier** installed to the existing structure and the relationship of the new slab to the original structure.



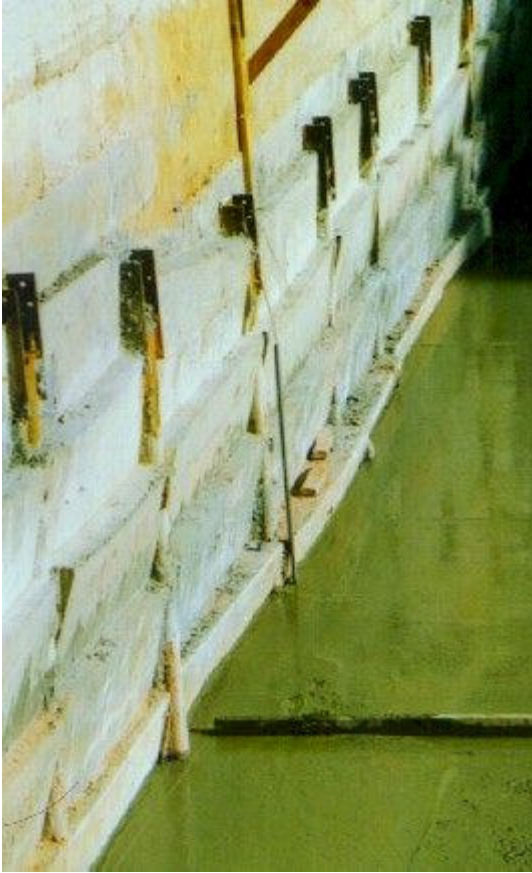
**SECTION**



After the **ATLAS RESISTANCE PIERS** are installed to the load bearing stratum, each pier is tested to a load of 60,000 pounds. Each pier then has 14 feet of 4-1/2 inch diameter sleeve installed over the pier. A working load of 30,000 pounds then applied to the pier and the pier pins are installed.



After excavating approximately 18 inches of soil, steel reinforcing is installed and a wall is cast to retain the soil mass under the existing structure.



## **SUCCESS!**

These photographs show the completed shoring and support project. The existing structure is fully supported and the soil mass under the structure has been retained. The floor slab for the new addition has just been cast.

**Atlas Resistance Piers...**

**THE  
SOLUTION!**

