

## Extension of O'Donnell Street tunnel

Due to the extension of the tunnel, the entrance of the O'Donnell Street tunnel will be moved from its current location near Maestro Vives Street to Aguirre Street near Retiro Park. Consequently, the length of the tunnel will be extended from its present 500.00m to 1,300.00m.

The U-shaped transversal section of the tunnel entrance is made of reinforced concrete. Afterwards, the tunnel is constructed with retaining wall piles embedded in the soil.

The covered tunnel stretch employs two standard cross section types. The first section consists of a roof consisting of a 0.60m thick reinforced concrete slab, with a distance between pile faces of approximately 9.0m.

The piles in the retaining pile walls are 1.0m in diameter and set at 1.4m between axes. In the second section, the horizontal bracing of the retaining walls is composed of the roof slab and another 0.30m deep intermediate slab set at approximately 6.00m above tunnel grade level.

The project presented two noteworthy situations. The first was at the intersection of the tunnel and an old pedestrian subway underneath Menéndez Pelayo Street which was resolved by filling the old subway with a mixture of soil and concrete followed up by the placing of the pile walls. The second was the intersection of service ducts with the tunnel which was solved by hanging these ducts from the roof slab by means of steel profiles.



### Spain /2006 Project data

Structural type:  
Tunnel between retaining walls  
Location:  
Under O'Donnell Street. Madrid  
Opening date:  
April 2006  
Proprietor:  
Madrid Town Council  
General Consultants:  
PROINTEC  
Geotechnical Consultants:  
Jose María Rodríguez Ortiz (Madrid Town Council) and Javier Castanedo (EPSA)  
Construction:  
EPSA  
Scope of Works:  
Construction Project