

# Purple Line Extension

Los Angeles, California



Wide flange beams used as bracing in the downtown excavation for the Purple Line Extension project in Los Angeles (Photo Credit: Skanska, Traylor, Shea JV)



Deep excavation work on the La Brea Station using wide flange beams

## HISTORY

Originally planned in the 1980s to run west on Wilshire Boulevard, then north to the San Fernando Valley, the Purple Line of the Los Angeles Metro connects downtown Los Angeles to central and western portions of the city with a heavy rail subway system.

Due to an unrelated methane explosion in 1985, just as construction began, the plans for the Purple Line to run under Wilshire Boulevard were scrapped and a new route was chosen up Vermont Avenue to Hollywood Boulevard.

Initially, the subway was part of the Red Line system, but was designated as the Purple Line in 2006 to differentiate the two routes.

## PROBLEM

The new extension to the Purple Line will provide dependable, high-capacity, and high-speed service between downtown Los Angeles, Miracle Mile, Beverly Hills, and Westwood and will eventually bring up to 9 miles of extended rail service to the downtown area.

As with any deep excavation within city limits, the Purple Line has had its challenges. The largest and most complex challenge of the three major excavations is at the La Brea station. This site is where the tunnel boring machine will be launched to do all the tunnel excavation for the project. The excavation site is 1,000 feet long, 65 feet wide, and nearly 80 feet deep. Located at the center of a busy Wilshire Boulevard, there is limited right of way.

## SOLUTION

The Purple Line project was awarded to the joint venture of Skanska USA Civil West, Traylor Brothers, Inc., and JF Shea Construction. The project is completely underground and requires complicated excavation design and shoring systems. Section 1 is 3.92 miles and stretches from Wilshire & Western to Wilshire & La Cienega.

The joint venture reached out to Nucor Skyline for their expertise in steel beam solutions. Nucor Skyline provided approximately 10,000 tons of 24", 36", and 40" wide flange beams,

all produced in their Blytheville, Arkansas mill. The wide flange beams are very versatile and will be used throughout the construction of the new line as bracing, soldier pile beams, cap beams, deck beams, walers, and struts.

## PROJECT PARTNERS

### Owner

LACMTA Los Angeles County Metropolitan Transit Authority – Los Angeles, CA

### General Contractor

Skanska USA Civil West, Traylor Brothers Inc, and JF Shea Construction Joint Venture – Los Angeles, CA

### Engineer

Parsons Transportation Group/  
LK Comstock National Transit –  
Washington DC

## PRODUCTS

Wide Flange: 24", 36", and 40" beams,  
10,000+ tons