

18 Metres Deep & 18 Metres High: Tunnels And Plinths Criss-Cross The City As Pace Picks Up

METRO UNDER AND OVER

V Ayyappan | TNN

Like giant moles, boring machines are excavating earth under the city, digging tunnels that metro rail will chug through, while contractors are speeding up work on pre-cast concrete segments that will form the walls of these underground passageways.

Metro rail workers have dug a tunnel 84 metres long under Poonamallee High Road and engineers are preparing to start boring tunnels at May Day Park, Nehru Park and other locations.

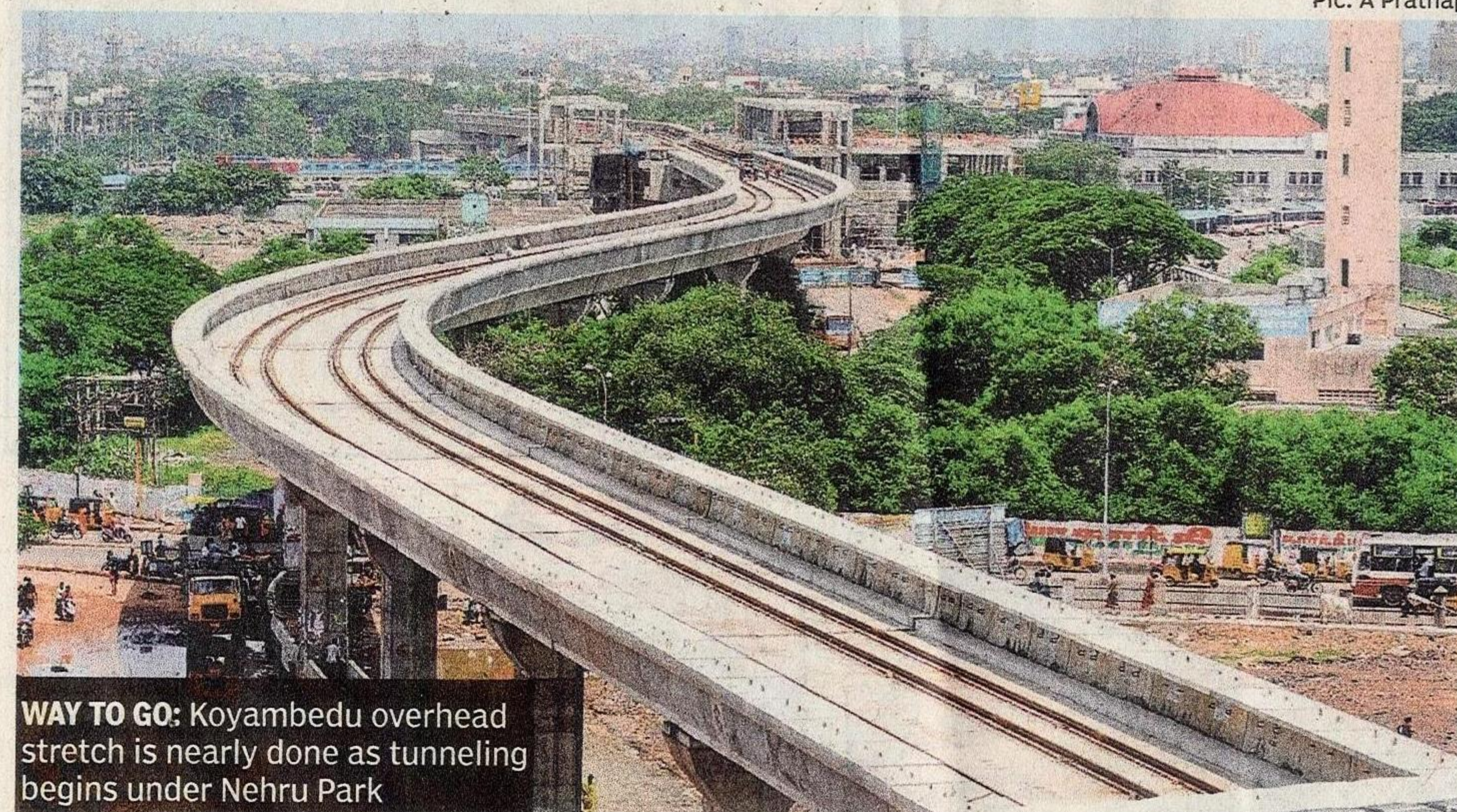
Firms like Gammon, Afcons and L&T, which have won contracts for the underground work, have set up their own

TUNNEL BORING HAS PROGRESSED BEYOND 84 METRES ON POONAMALLEE HIGH ROAD AND WALLS ARE BEING BUILT BELOW THE SURFACE AT ALL UNDERGROUND STATION SITES

casting yards for the pre-cast tunnel segments at Vanagar-am, Vayalanallur, Muttukadu and Karikattukuppam on the outskirts of the city.

The casting started in the yards in January and the arc-shaped segments are being transported to the city by trailer trucks.

"The segments are lowered into the tunnel shafts and loaded on the gantries of boring machines," said a senior official of Chennai Metro Rail Ltd. "They are moved on the gantries along a conveyor to the front of the machine. The



WAY TO GO: Koyambedu overhead stretch is nearly done as tunneling begins under Nehru Park

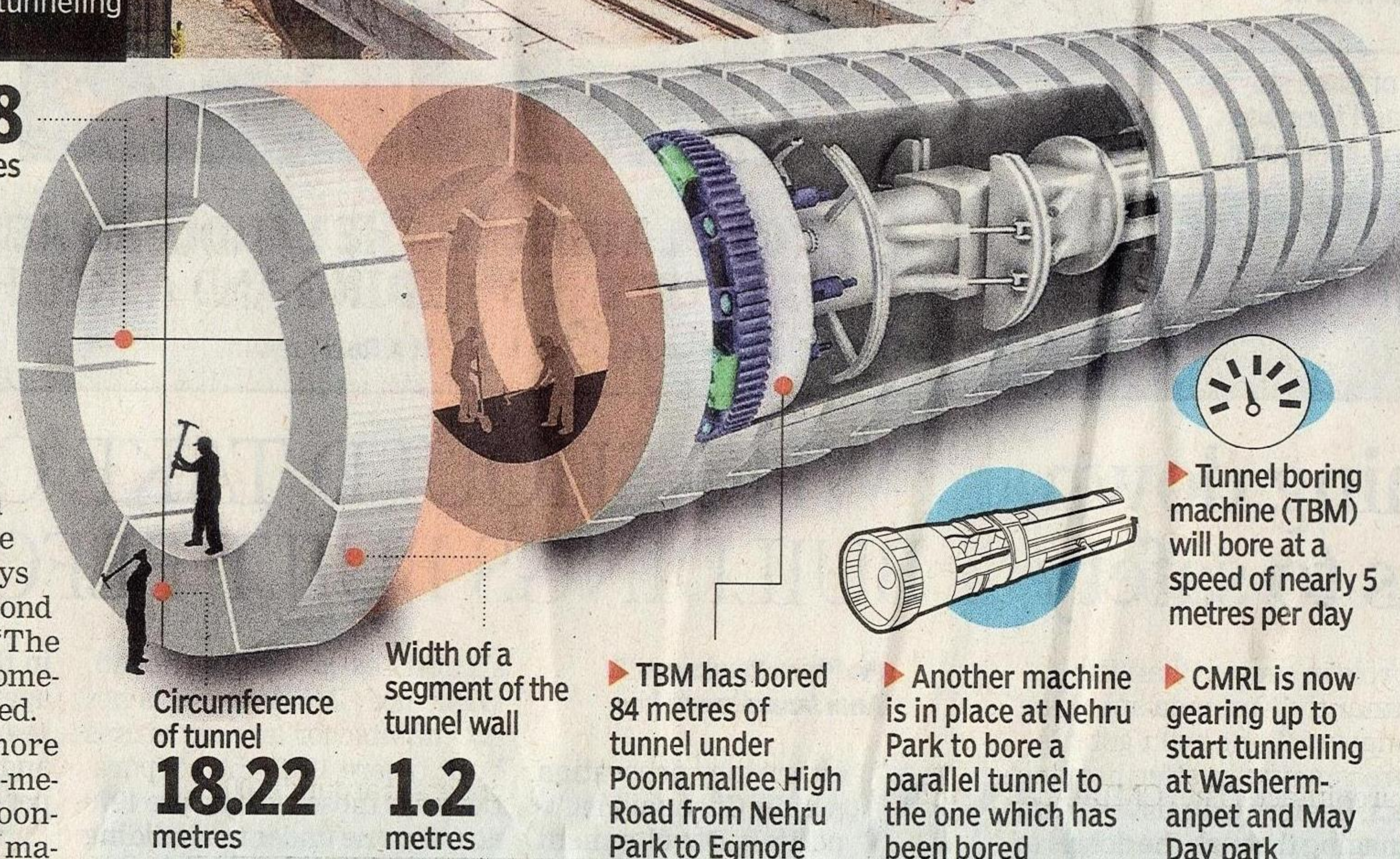
Diameter of tunnel **5.8 metres**

machine installs the segments to make a circular tunnel wall every 1.2 metres — the length of each segment. Seven segments form a circular tunnel wall."

The official said the company will soon set a date to start work on the underground passageways at May Day Park and a second tunnel at Nehru Park. "The work is likely to begin sometime this month," he added.

The machine took more than a month to dig the 84-metre-long tunnel under Poonamallee High Road. The machine has installed concrete segments in the tunnel on the line, which starts at Nehru Park heads towards Egmore. Metro engineers estimate that it will take five months to complete the 939 metres of tunnels on the Central-Koyambedu-St Thomas Mount line.

Work stopped for two days recently to attach six back-up gantries to the boring machine, making the train of digging equipment 95 metres long. The new gantries will be



Circumference of tunnel **18.22 metres**

Width of a segment of the tunnel wall **1.2 metres**

TBM has bored 84 metres of tunnel under Poonamallee High Road from Nehru Park to Egmore

Another machine is in place at Nehru Park to bore a parallel tunnel to the one which has been bored

CMRL is now gearing up to start tunnelling at Washermanpet and May Day park

“WORK ON THE TUNNELS AT MAY DAY PARK AND A SECOND TUNNEL AT NEHRU PARK WILL BEGIN SOON | Senior Metro Rail Official

used to carry additional equipment and a control and monitoring centre into the tunnel.

As the boring machine installs tunnel linings its gantries also carry soil from the digging out of the tunnel. More than 100 men including technicians work together to ensure that the machine main-

tains its pace and direction.

Work has started to place a slab over the 18-metre-deep shaft from which the boring machine started digging the tunnel and where a metro station will eventually be located.

Walls are being built below the surface at all underground station sites, including Mannadi, near the high

HOW TUNNEL WALLS ARE BUILT

1 A tunnel boring machine (TBM) has components that will bore, clear debris and install segments or tunnel walls.

2 Tunnel walls are made of 7 pre-cast concrete segments which are assembled by the tunnel boring machine as it bores

3 After segments are installed, a flat bed is laid to install tracks

4 Tracks are then laid on the concrete bed after tunneling is completed

On the right track from Koyembedu to Vadapalani

With work picking up pace on the Koyembedu-St Thomas Mount line, Chennai Metro Rail Ltd is likely to complete the elevated stretch of the transit system by the end of next year.

Tracks have been fixed over concrete plinths for a length of 3.5km from CMBT to Vadapalani. Overhead power lines are currently being installed on a 2.6-km stretch of the completed portion. Two lines will be laid over the elevated viaduct. More tracks will be installed soon on viaducts that have been completed.

"Electrification will progress with track work," said a senior CMRL official. "Trains will draw power from overhead cables. More than 30 masts are ready for electric lines to be fixed."

Pillars and viaducts are being installed at top speed along the line from Vadapalani to St Thomas Mount. More than 140 of the 185 spans have been installed on the stretch from Koyembedu to Ashok Nagar. On the stretch from Ashok Nagar to St Thomas Mount, 68 of 131 spans have been installed so far.



MEN AT WORK

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