

American Underground Construction Association

NAT 2004
Atlanta, GA

Santiago's Metro Expands

Presented By
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Dr. G. Sauer Corporation

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METRO DE SANTIAGO

Santiago's Metro Expands



- ❖ Introduction
- ❖ Historical Background
 - Development of Metro System and Development of Construction Methodology
- ❖ Design & Construction of Line 2 South & Line 5 Extensions
 - Geology
 - Running Tunnels
 - Station Tunnels
 - Geotechnical Monitoring
- ❖ Construction Cost
- ❖ Outlook

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Introduction



❖ Metro's History

- 1965 - Predecessors of Metro S.A. are Founded
- 1966 - A Traffic Study for Santiago Recommends up to Five Subway Lines
- 1969 - First Design Work for Line 1
- 1975 - Metro Becomes Part of an Government Agency

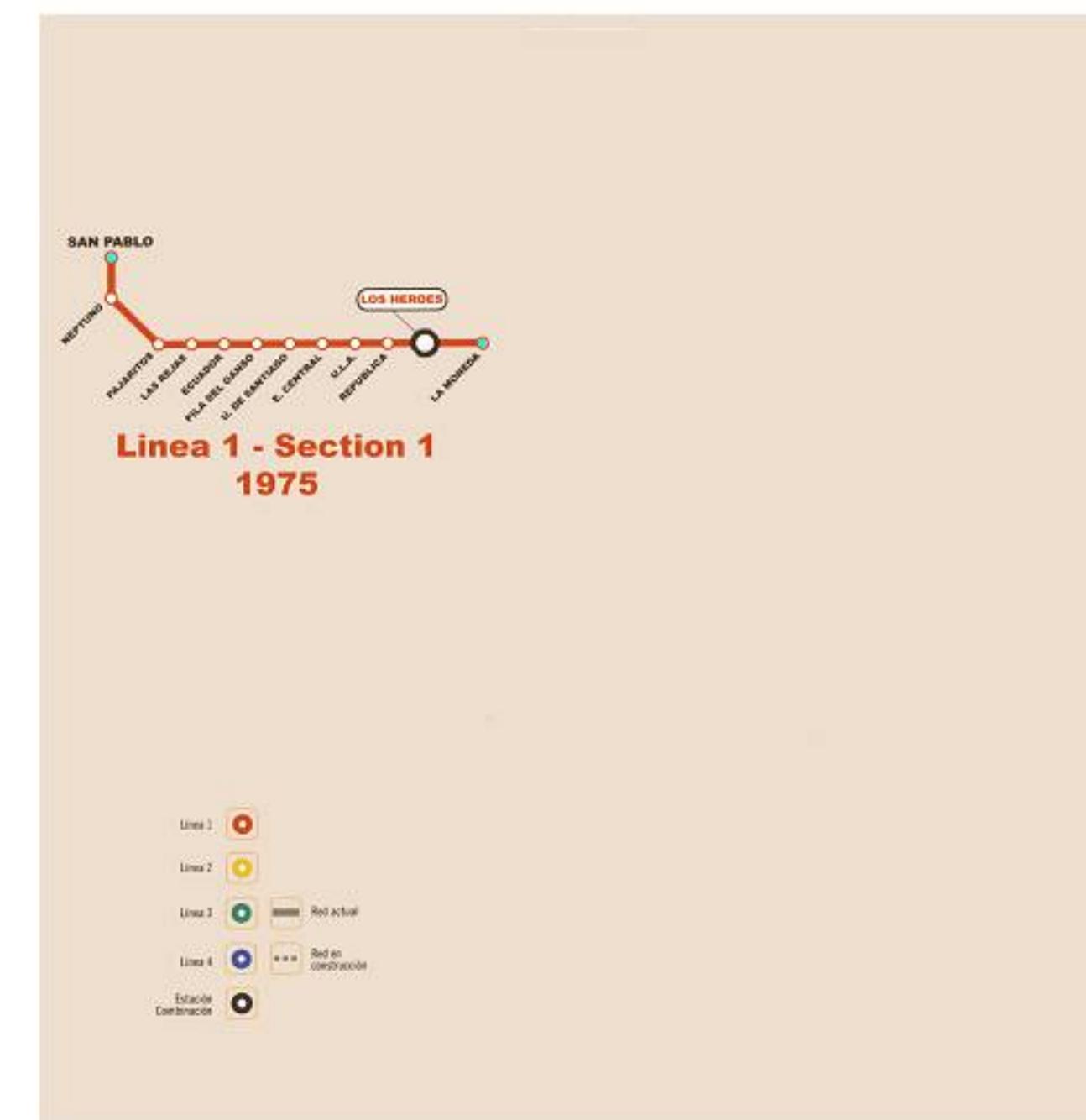
❖ Metro System:

- Length approximately 25 Miles (14 Miles Underground)
- 48 Stations at Grade, above Ground and below Ground
- 198.9 Million People used Metro in 2002
- Metro has 2,800 Employees
- Revenue of US\$82.7 Million in 2002

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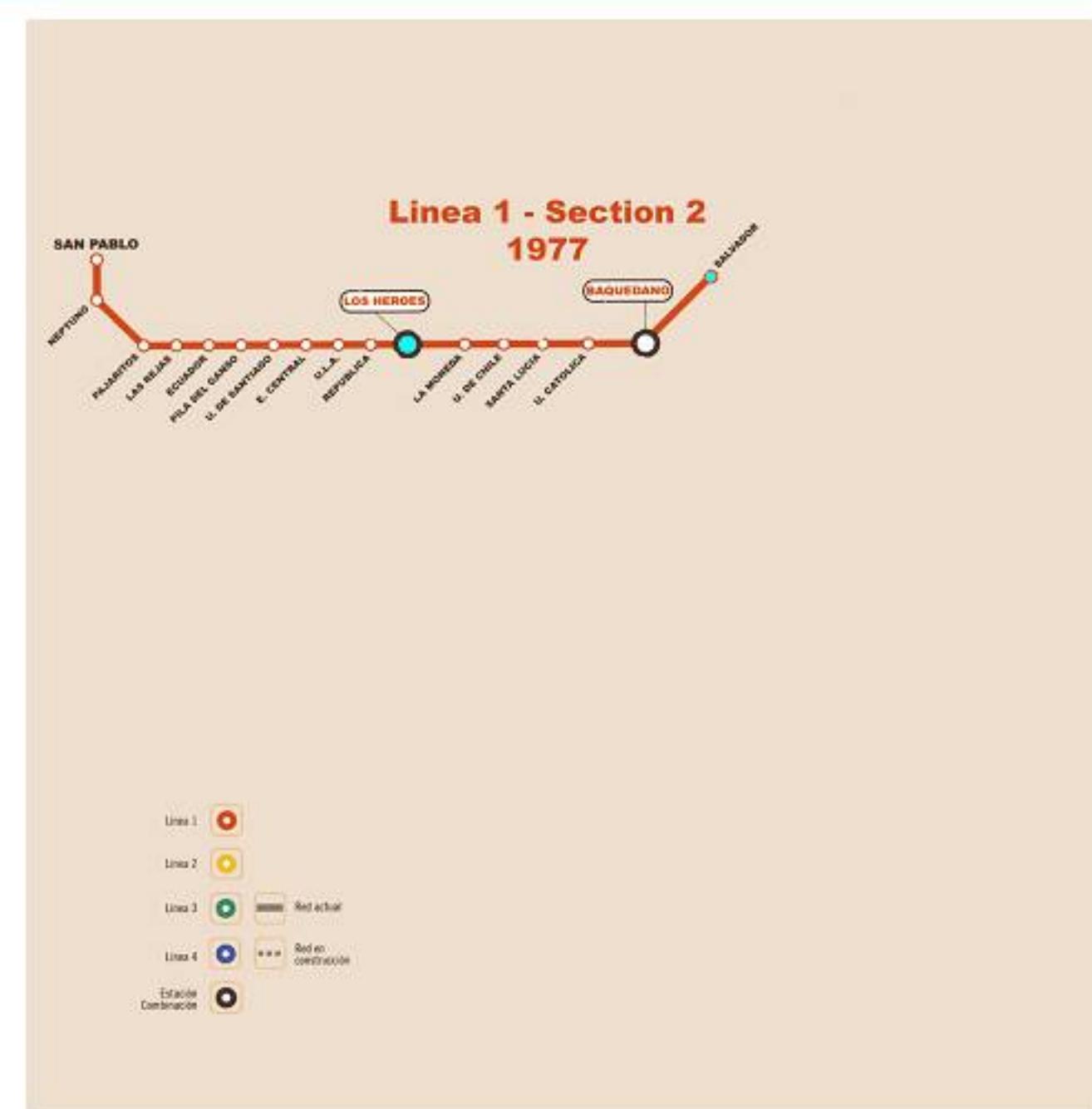
Historical Background



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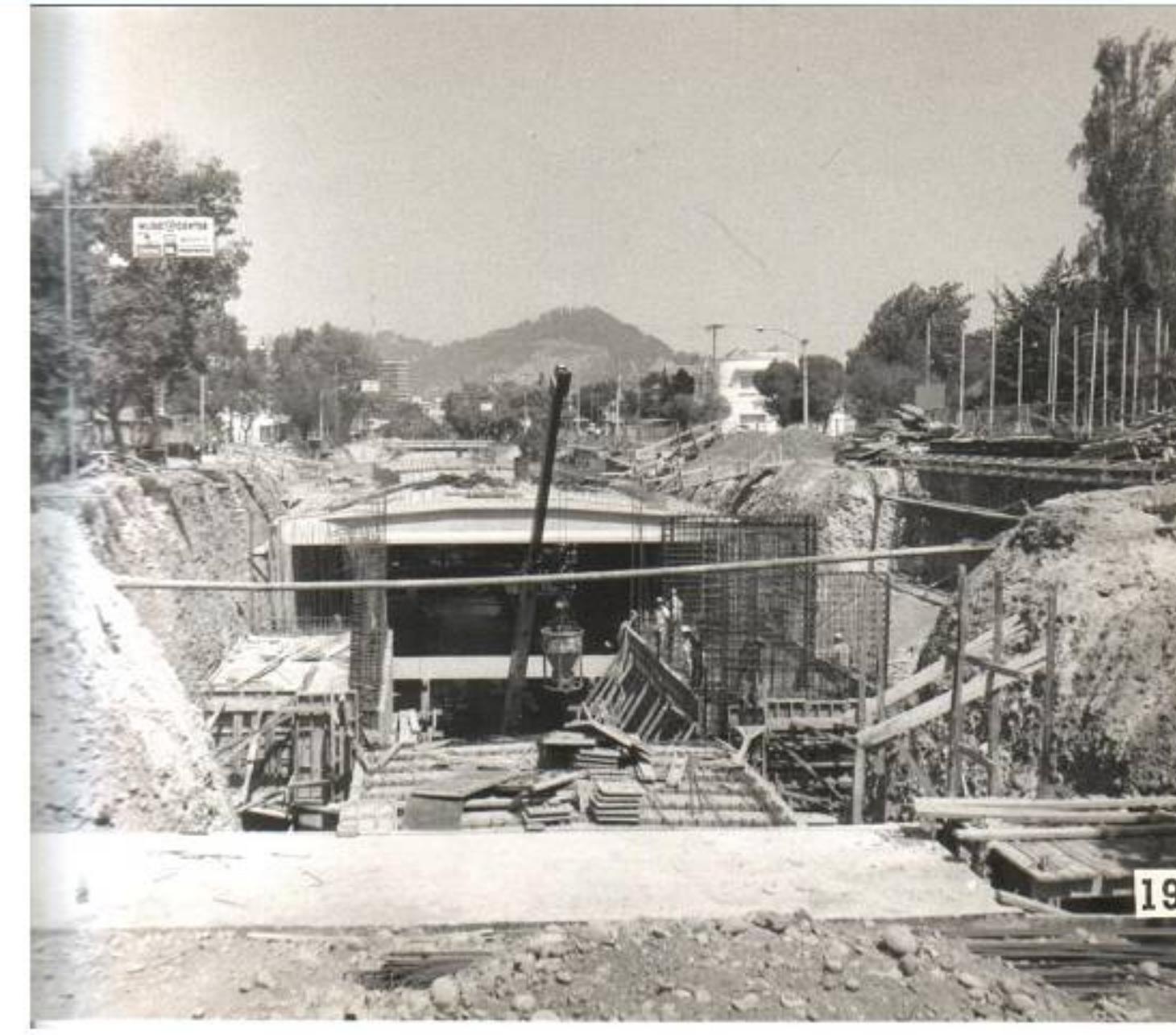


Line 1 entlang Via Apoquindo

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Line 1 - Station El Golf

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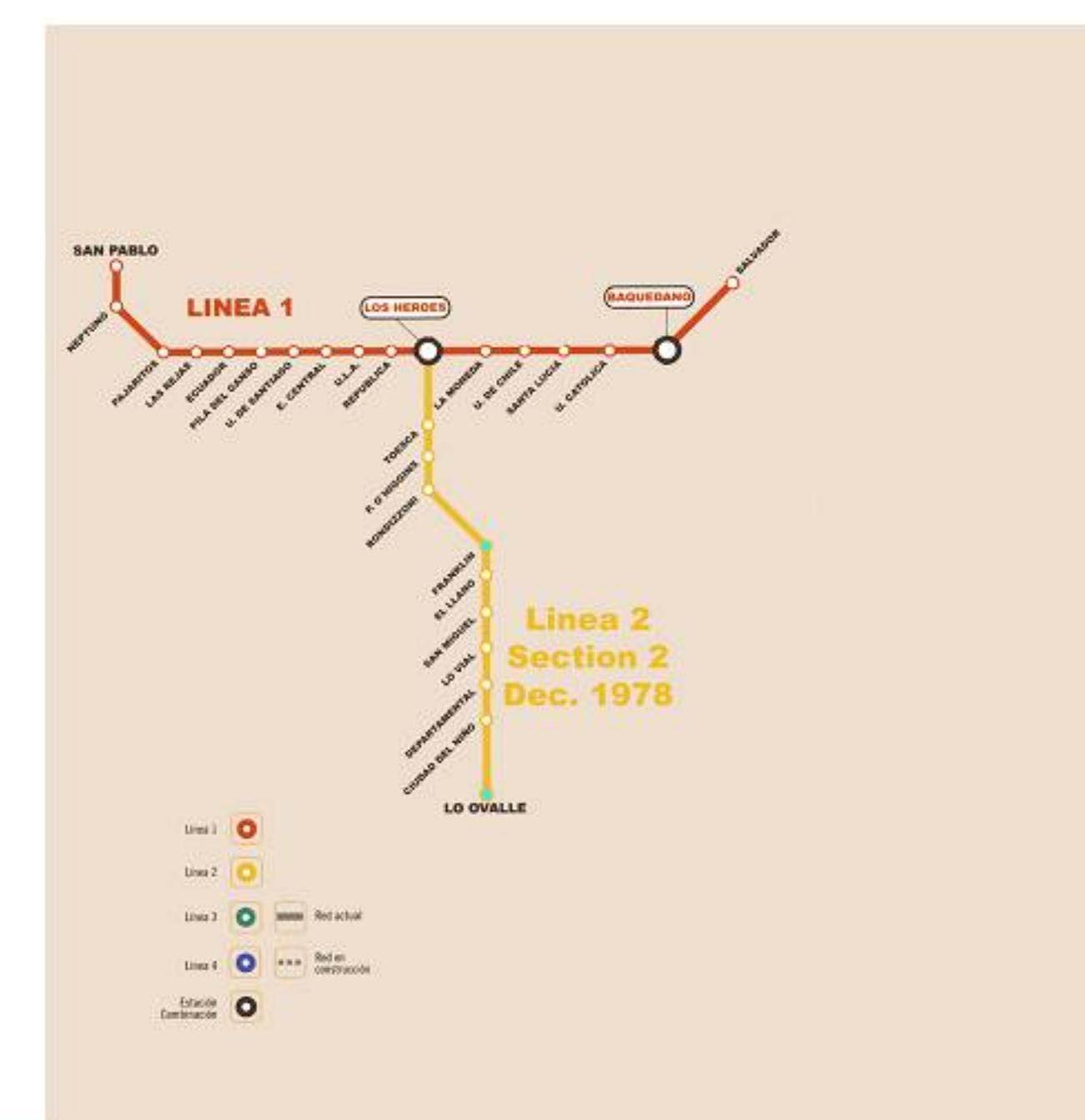
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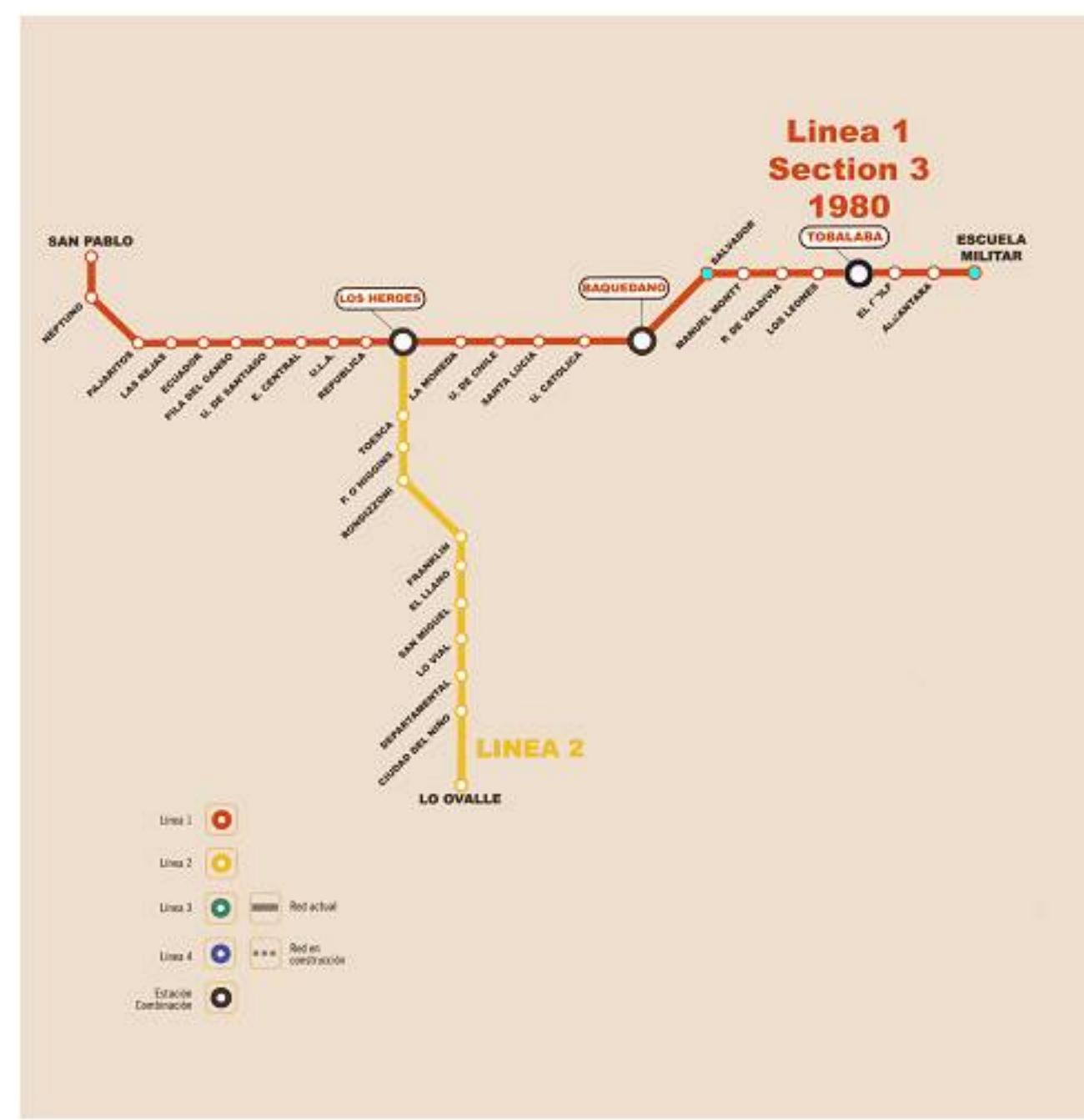
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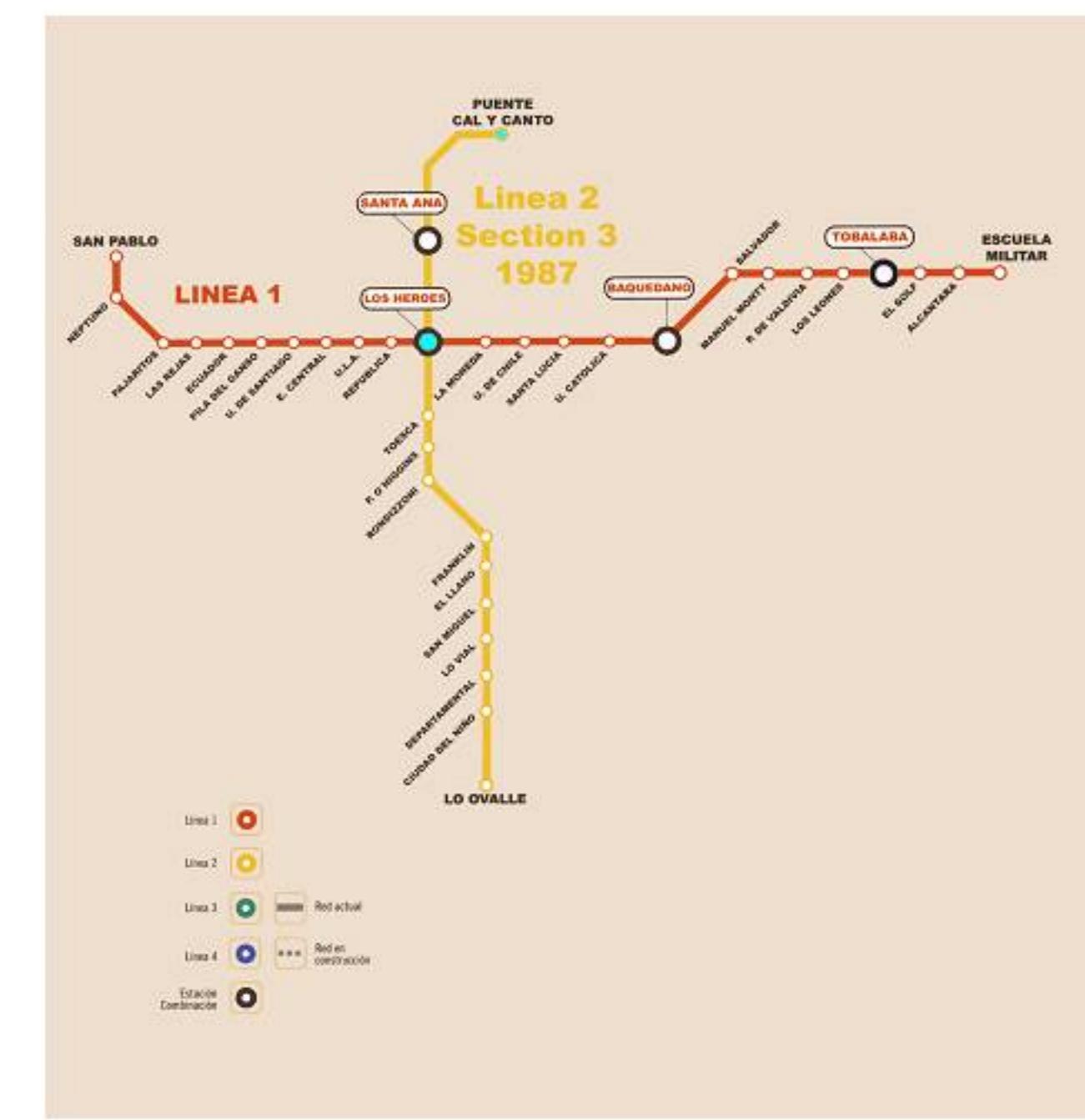
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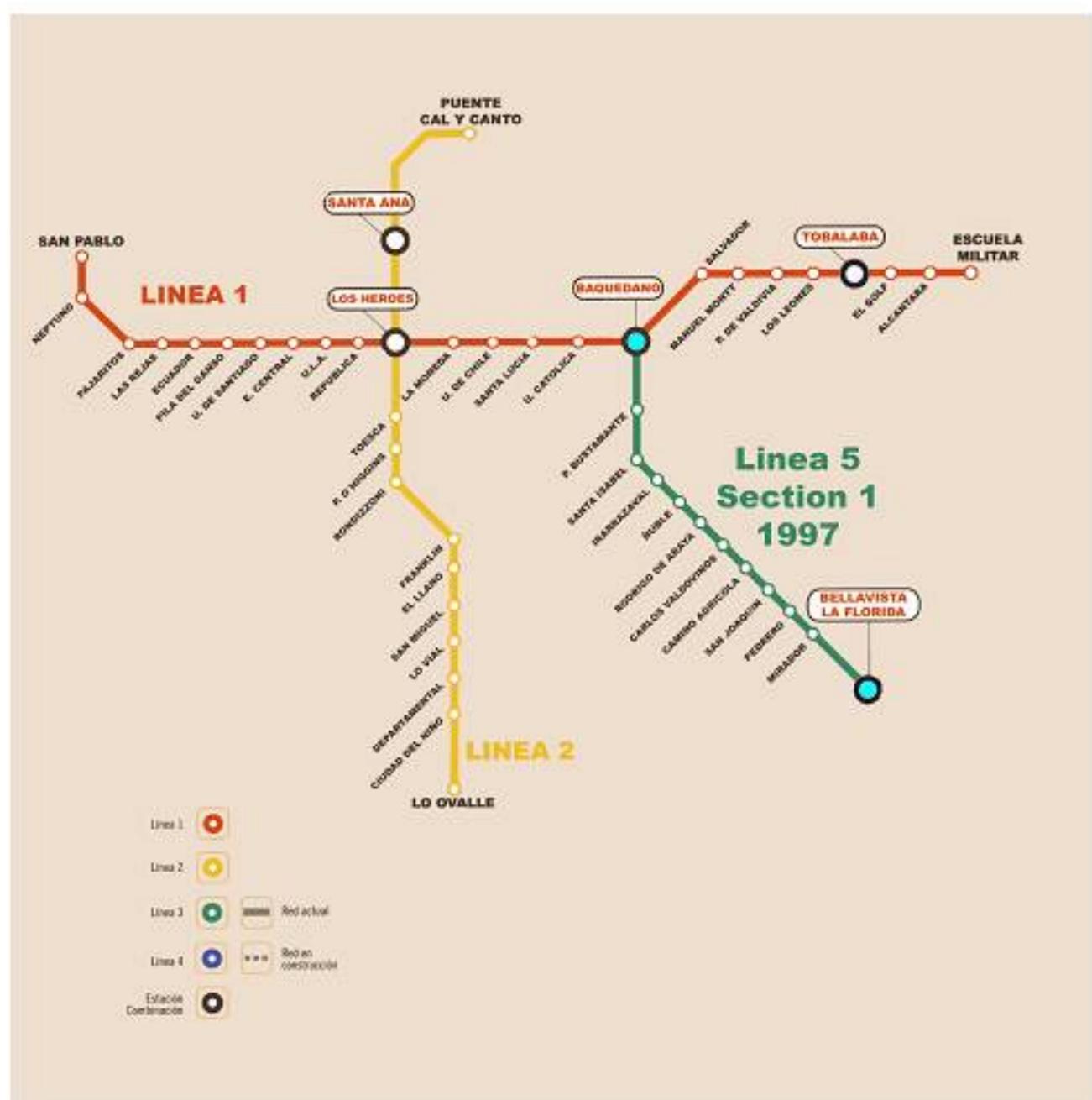
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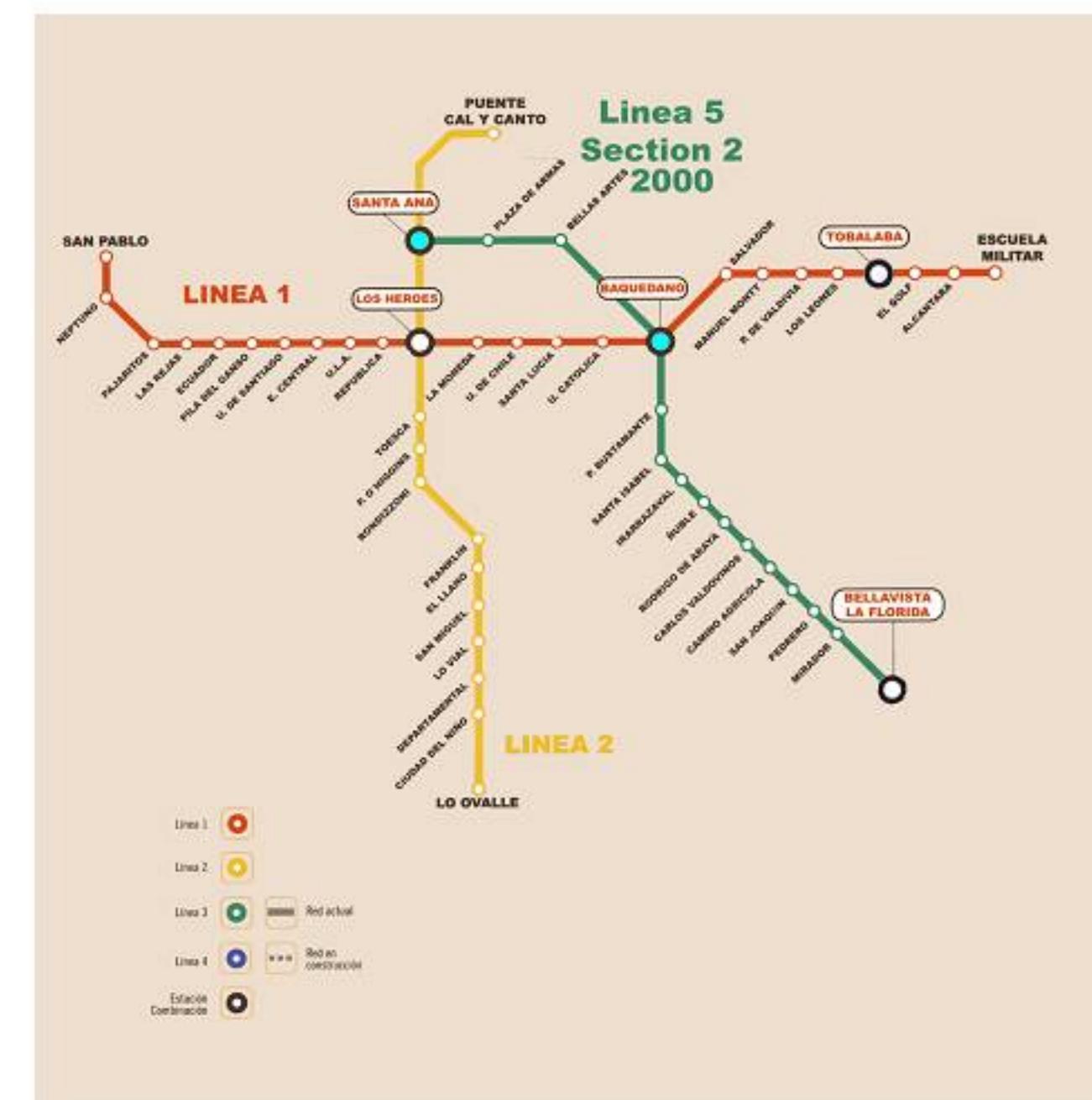
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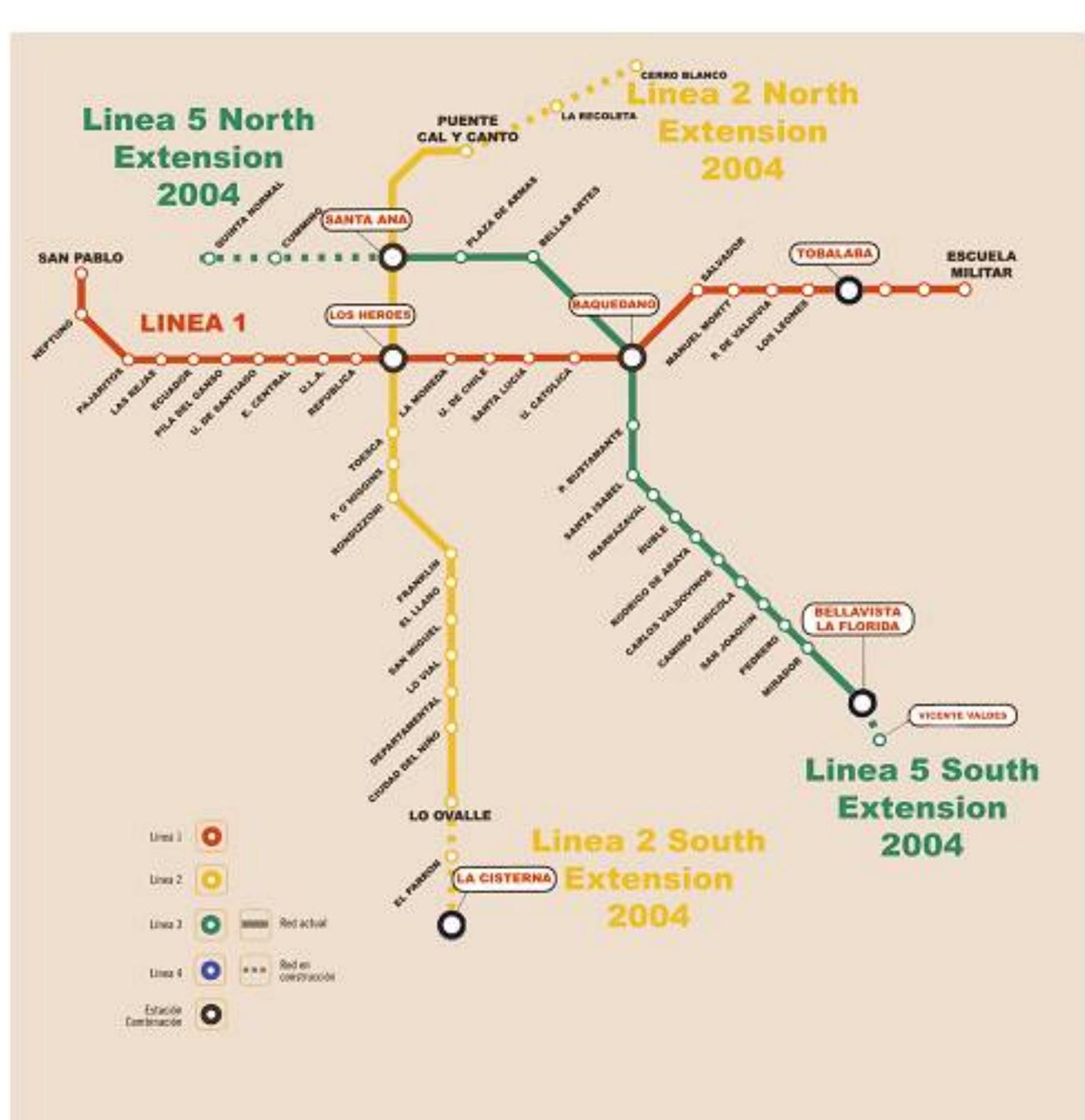
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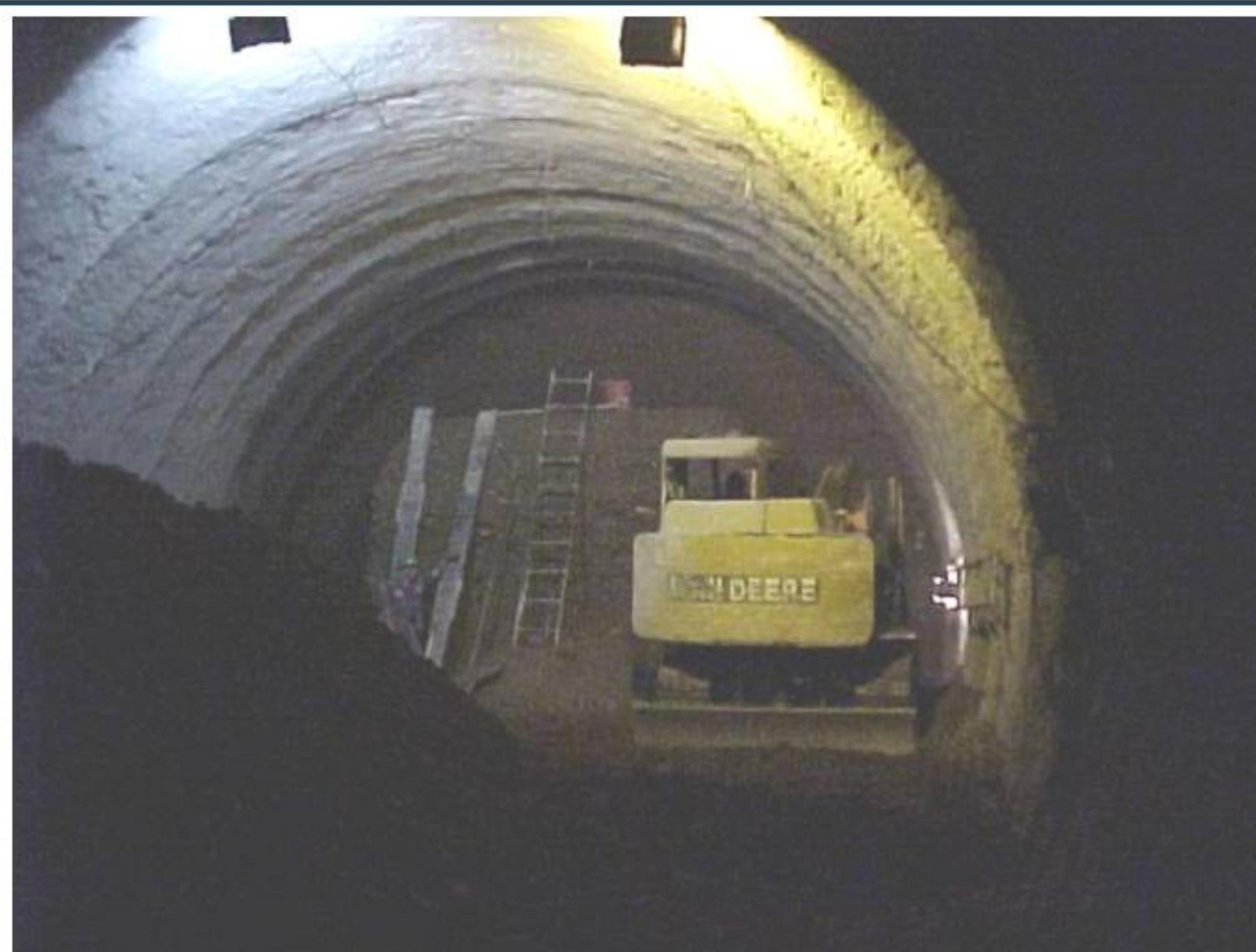
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Station Design – La Cisterna



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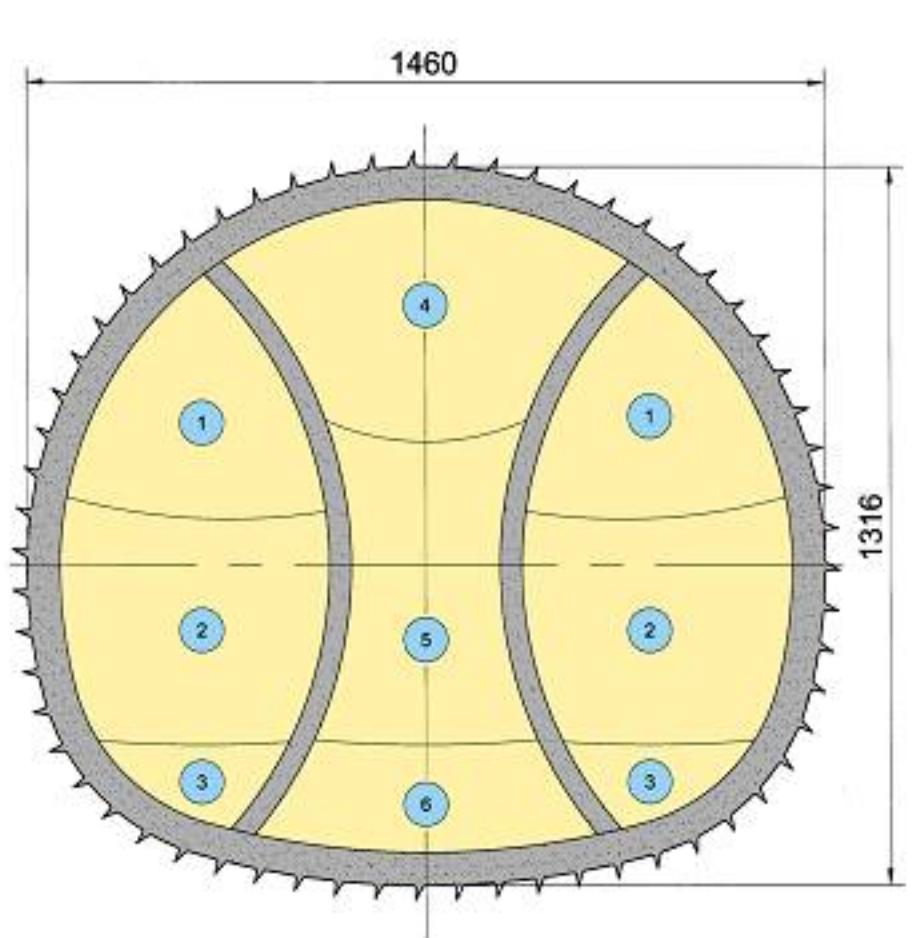
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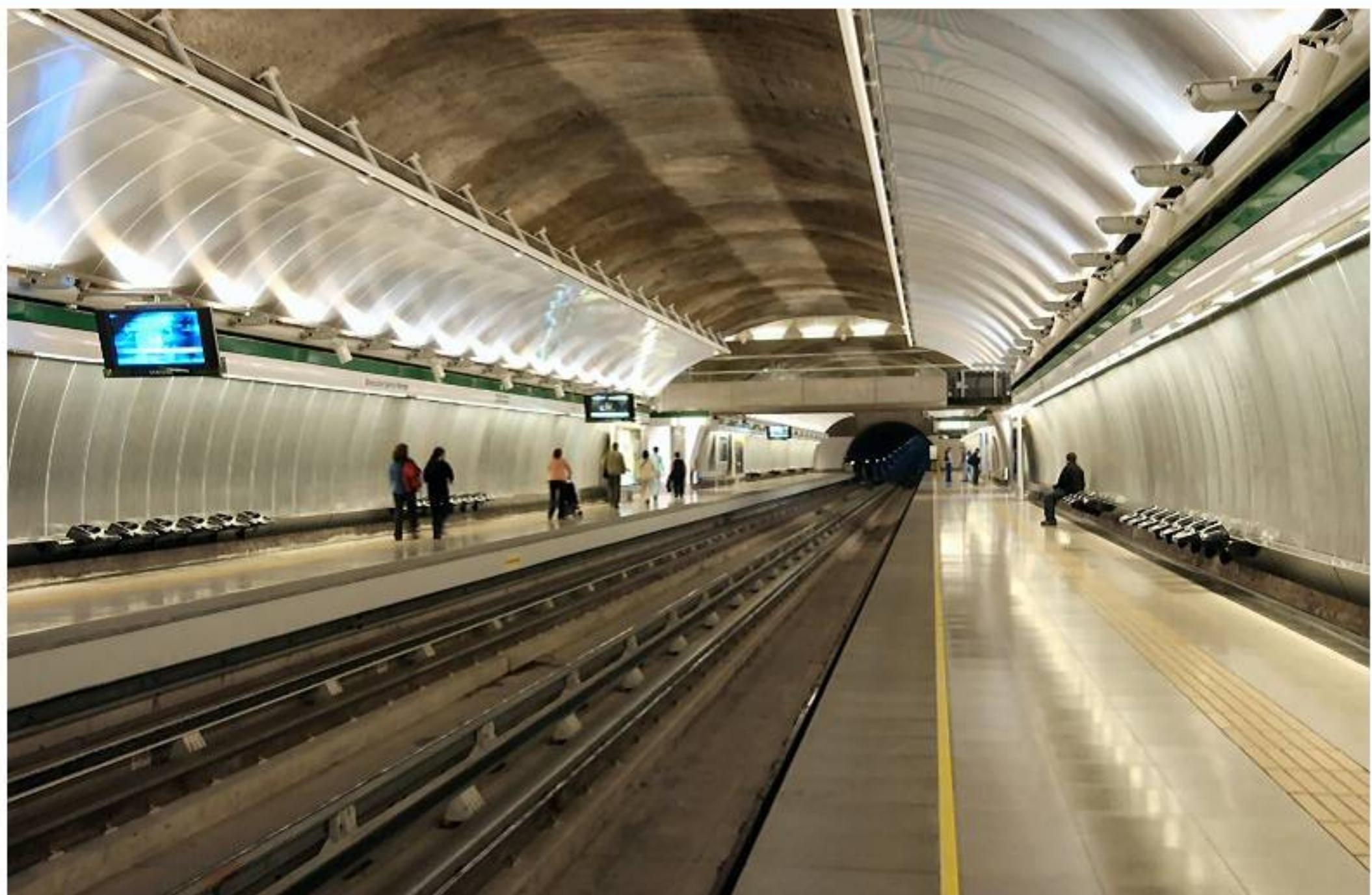
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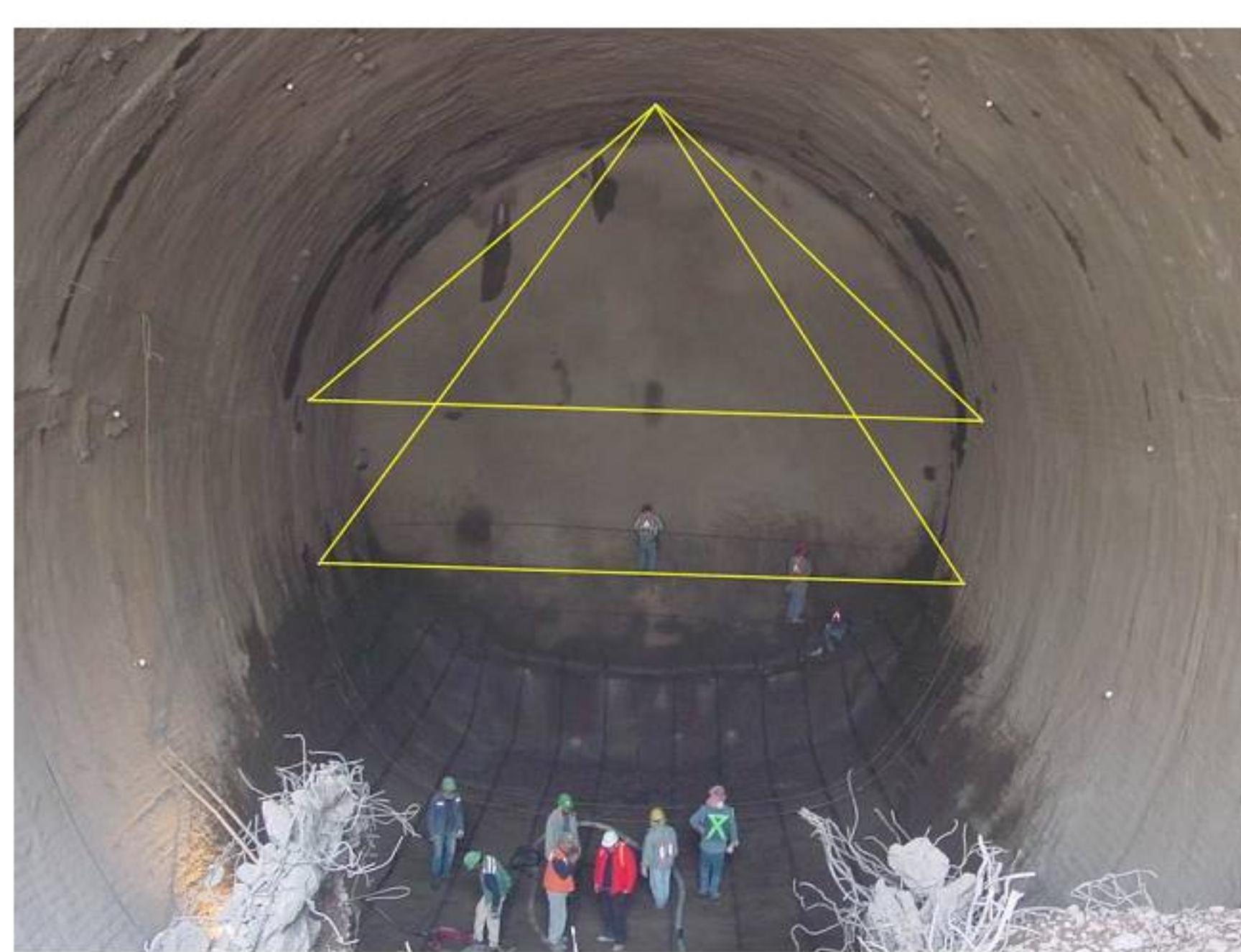
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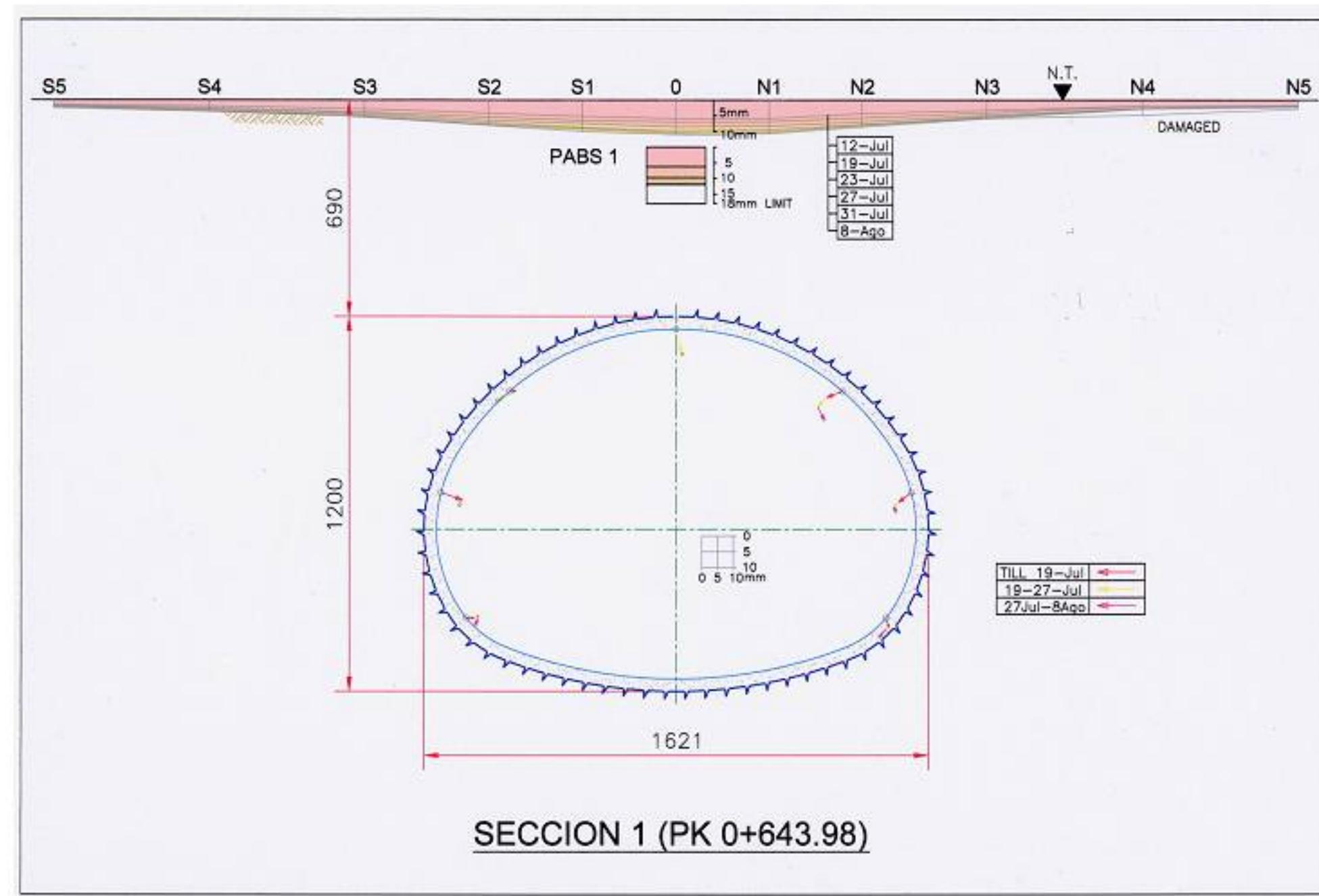
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Costs



Construction Cost:

Linear Foot Running Tunnel:	US\$1,950
Linear Foot Station Tunnel:	US\$8.250
Geotechnical Instrumentation Including Monitoring per Mile Tunnel:	US\$412.500

Cost per Line:

Line 5 West Extension:	US\$ 39.925.000
Line 2 North Extension:	US\$ 32.570.000
Line 2 South Extension:	US\$ 29.650.000
Line 4 (including Line 4A):	US\$ 1.007.000.000

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Outlook



Metro's Future:

- 2004 - Start Operations at Additional 4.0 Miles of Subway Including 6 Stations at Line 2 North and South, and at Line 5 West
- 2005 - Start Operations at Line 4 with a Total Length of approximately 21 Miles and 25 New Stations
- 2006 - Start Operations at a Second Extension of Line 2 North with a Length of 3.2 Miles and 5 Stations Currently Under Design

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