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AWARDS 2019



Regional Connector Transit Project

United States

Client: Los Angeles County Metropolitan Transportation Authority

DB Contractor: Regional Connector Constructors, a Skanska-Traylor JV

Design-builder's designer: (Hatch) Mott MacDonald

Owner's designer: WSP

Owner's PM assistance: Arcadis and EPC Consultants

Presented by: Christophe Bragard, PE, Tunnel Manager



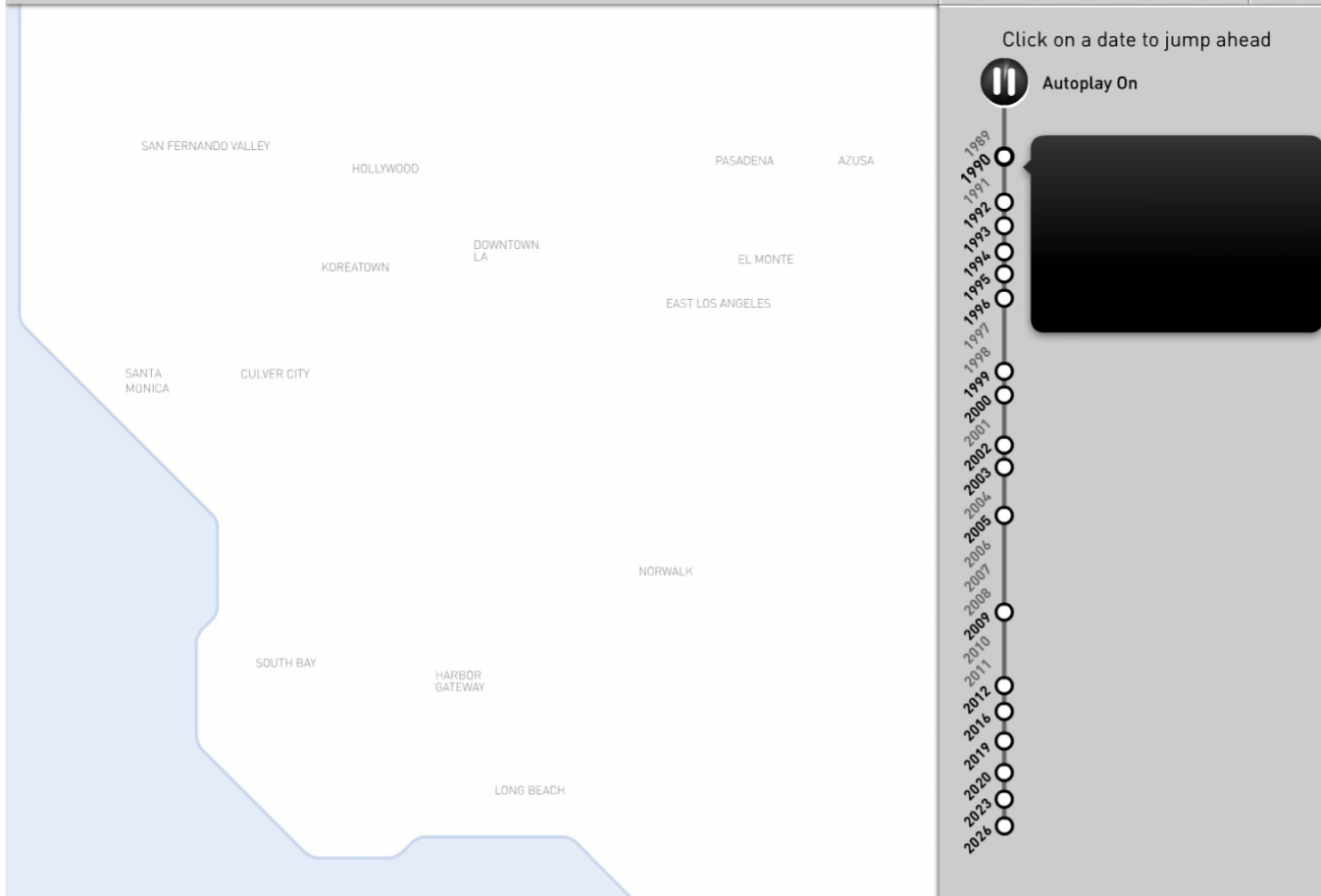
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The “CONNECTOR” of

- 3 metro lines
- SW and NE cities



25 Years of Metro Rail Current & Under Construction

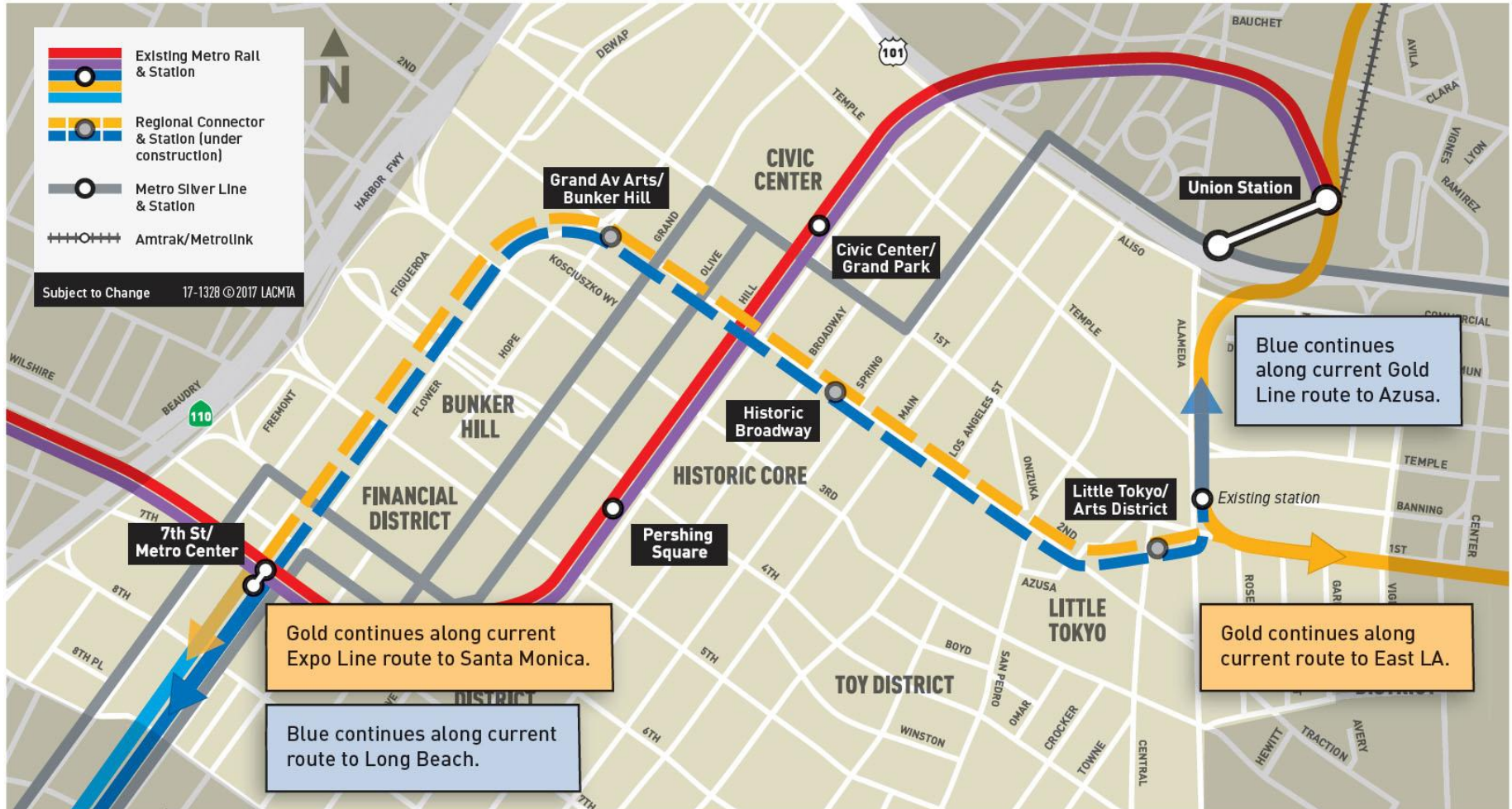




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The "CONNECTOR" of

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A Utility Maze





Contractual Partnership High level teamwork



Delays in previous contract (utility relocation):

- Coordination Owner-Contractor
- Extensive re-sequencing to minimize schedule impacts
- Change order incorporating utility work and regaining schedule

Unexpected obstructions led to TBM damage:

- Real time collaboration between the Owner and contractor
- Timely joint key decisions to airfreight replacement elements
- Minimized delays (incl. no delay on machine re-assembly)

Others:

- MEP improvement using TBM temporary shaft
- Innovative monitoring joint plan for TBM launch
- Joint risk management review
- Integrated third party coordination



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Deepest Station in LA (120 ft deep)



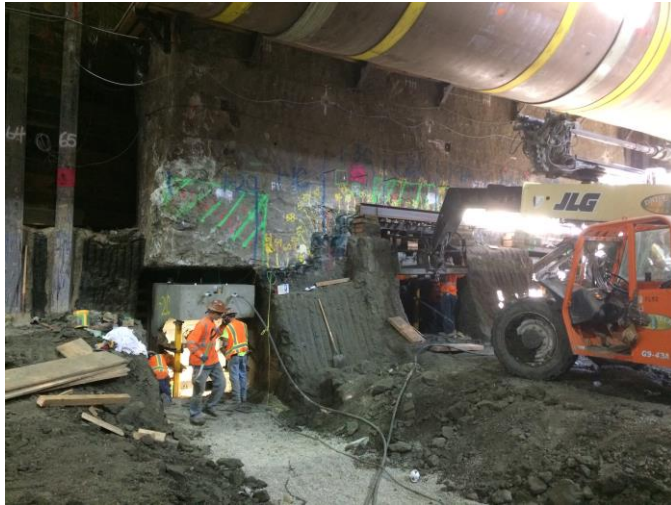
Miami, USA 18th November 2019

Christophe Bragard, PE, Tunnel Manager



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LA Times Underpinning: Creative Solution



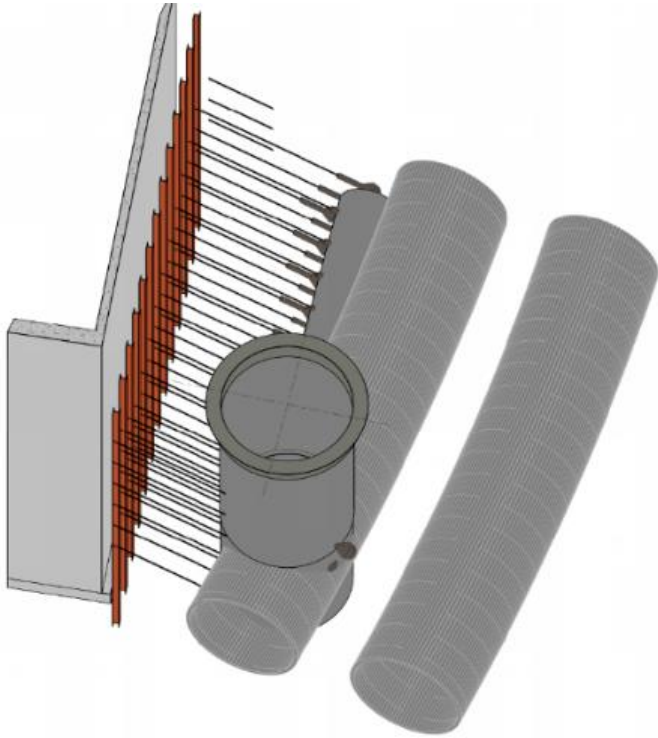
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Tie-Back Removal Shaft and Adit: Diverse Techniques for Risk Mitigation

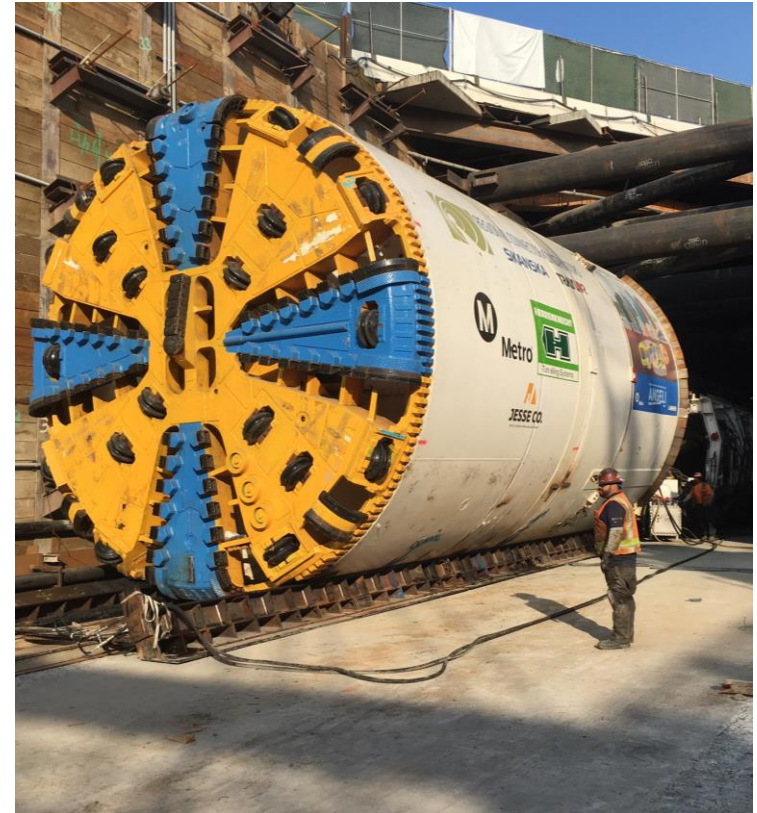




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EPB-TBM Launch

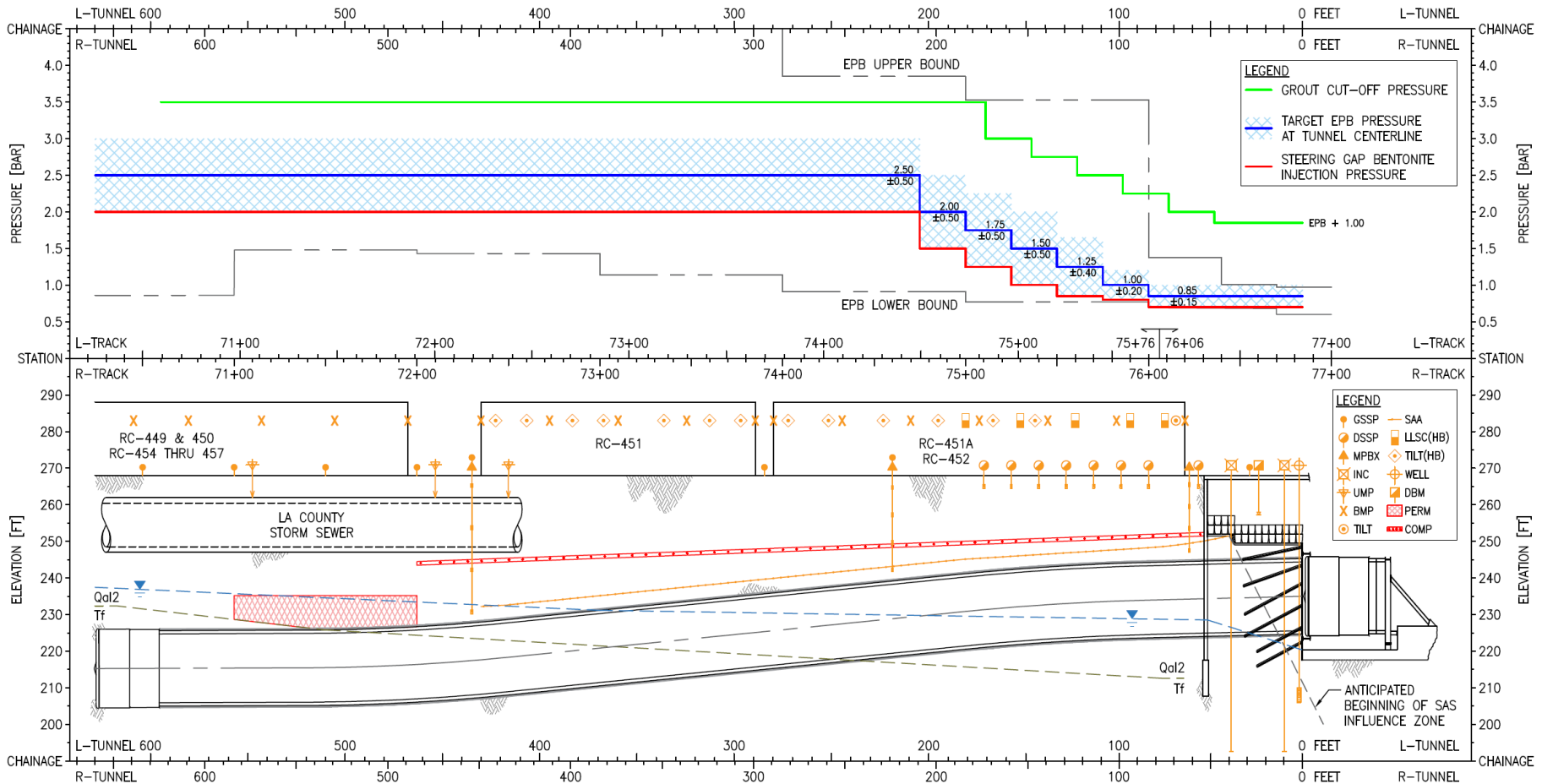
- Very low cover
- Under buildings





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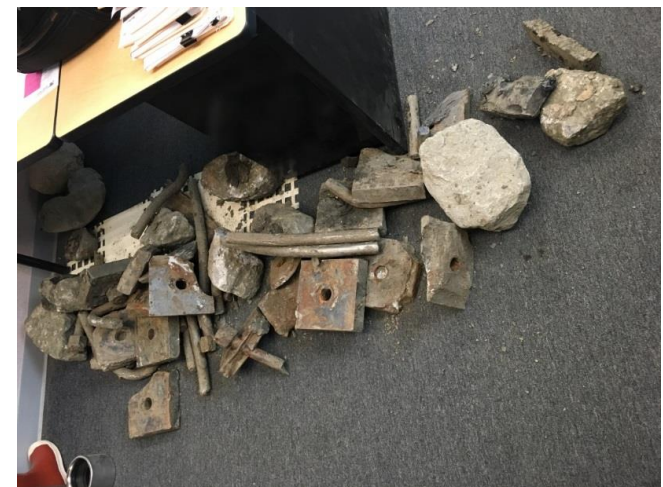
Finely Tuned PLC Controls and Monitoring





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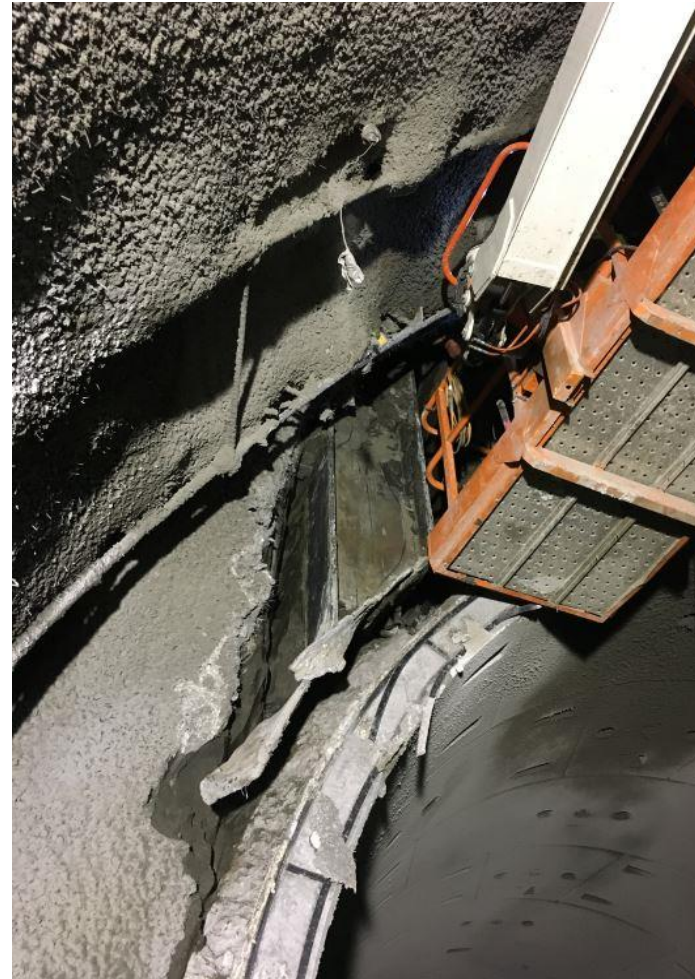
Unexpected Obstructions





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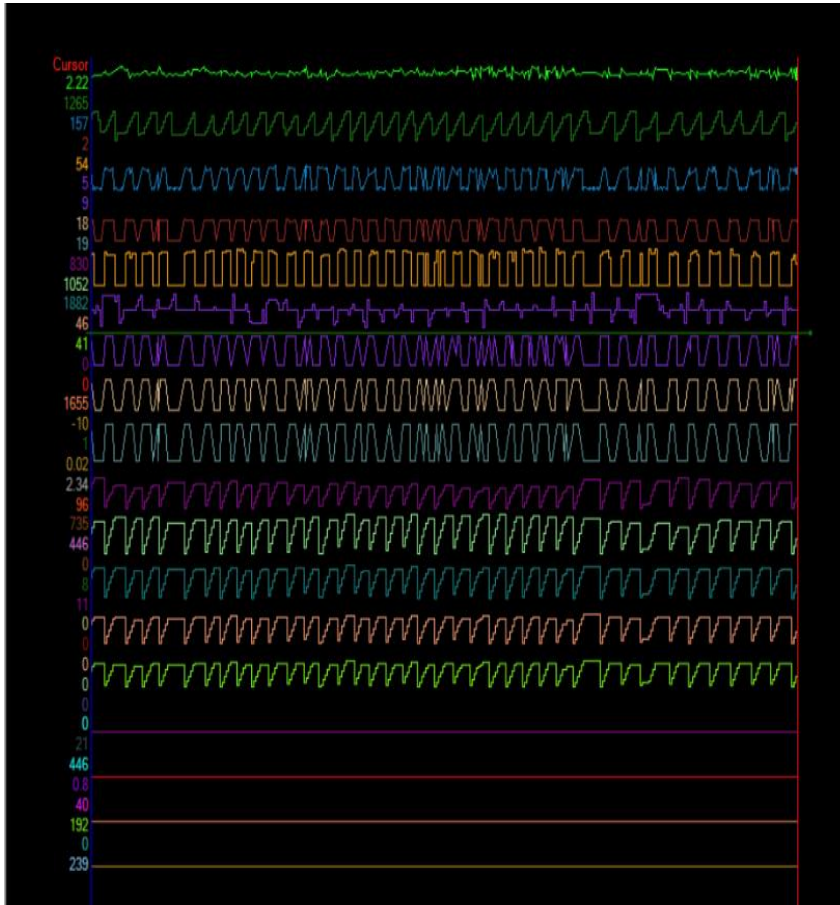
Unexpected Obstructions (cont.)





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Automatic Conditioning System and High Performance

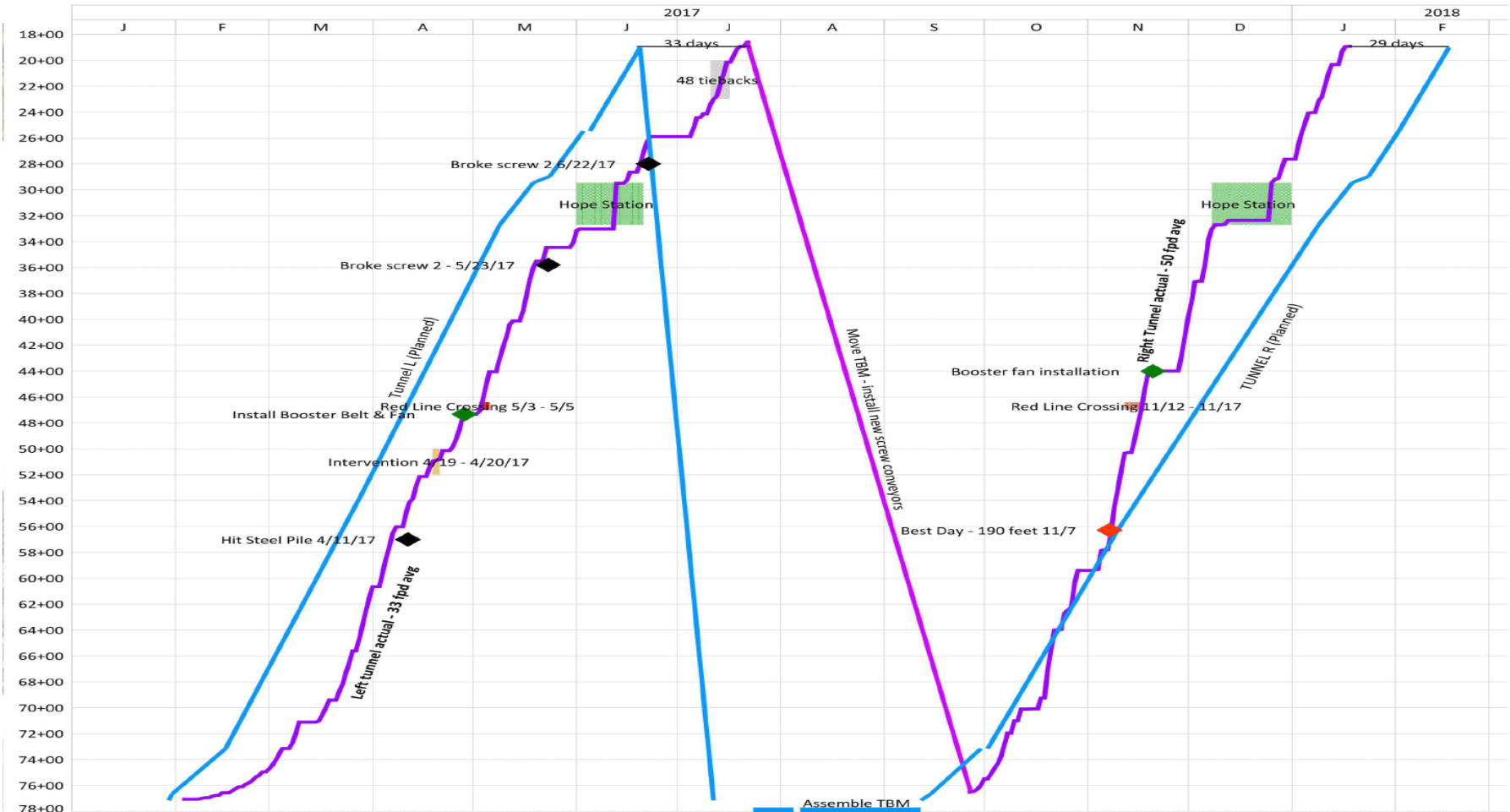


- Best day: 190 ft
 - Best week (5 days): 750 ft
- Best TBM advance time: 18 min.
- Best TBM ring build time: 10 min.
 - 1 Mile in 3.5 months



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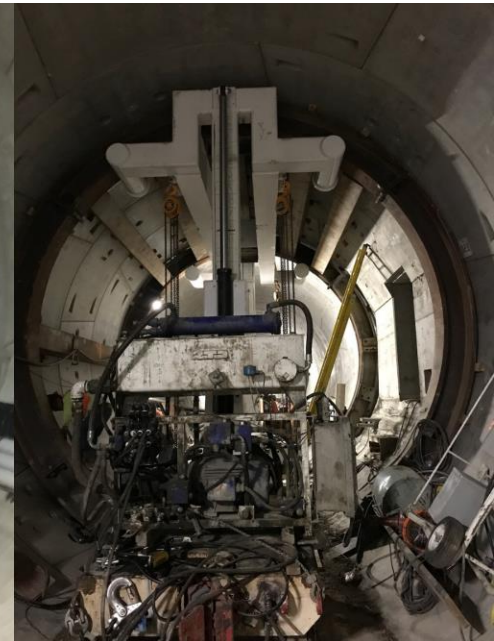
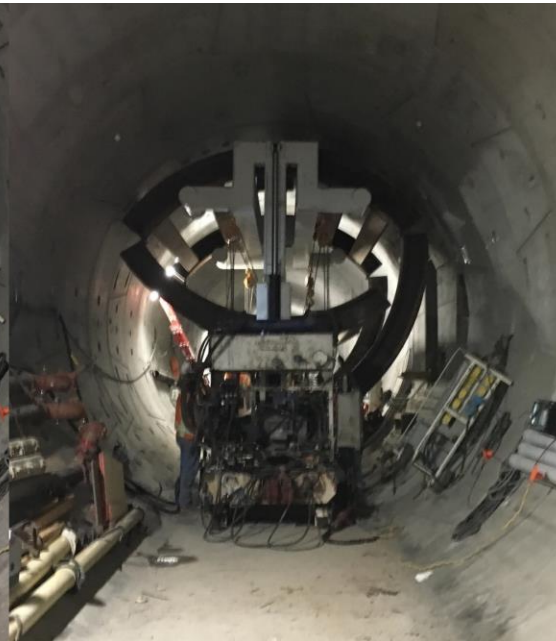
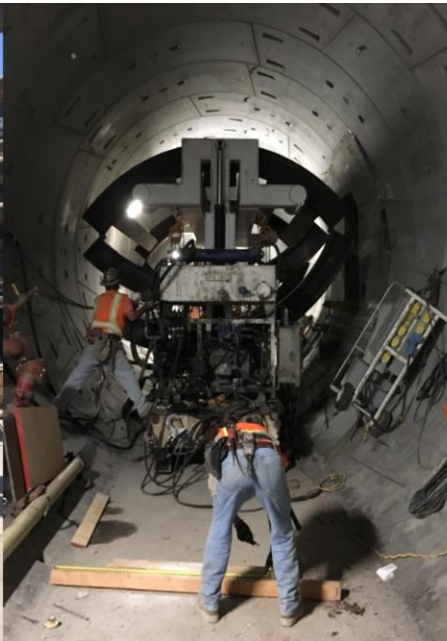
Post Obstructions Schedule Recovery





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Semi-Mechanized Cross Passage Tunnel Support





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SEM Cross Passage





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SEM Cavern





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SEM Cavern



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2014 – to date Safety Stats



> 3,100,000 manhours
Recordable rate 0.96
Lost time incident rate **0.00**



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Thank you!