January, 2019

Judkins Park: You've got rail!

Rail has arrived and welding has been completed at the Judkins Park Station work zone!

In total, approximately 28 miles (or 148,800 feet) of rail will be installed between the International District / Chinatown Station and the East Channel Bridge.

Depending on location, various installation methods will be used in Seattle: rail will be directly affixed to roadways and elevated guideways using concrete blocks, plinths and ballasted track, while embedded track will be installed within the Downtown Seattle Transit Tunnel as part of the International District Chinatown Station tie-in.

Track installation methods

- Direct fixation track: This is the earliest form of track and was first used on the New York subway system in the 1960s. Rail is directly fastened to concrete slab.
- Ballasted track: Similar to traditional railroad construction, gravel ballast is used to create a level surface before track and concrete railroad ties are placed on top. Ballasted track requires less maintenance, stabilizes the track and provides a smoother ride for light rail vehicles.



An example of direct fixation track at Angle Lake Station, SeaTac



An example of ballasted track on Mercer Island.



Rail welding

To ensure a safe and smooth ride, 80-foot-long rail segments, known as 'sticks,' are welded together to form 800-foot-long and 960-foot-long 'strings.' To do so, crews use a process similar to an assembly line to efficiently weld the track. Here's how:

- Rails are placed on rollers to easily move them through the welding process.
- Crews use computerized 'flash butt' welding equipment to precisely join and weld sticks into longer segments.
- Workers grind away the small amounts of excess materials left from the welding process and inspect the welds.
- Track is then removed from the rollers and stored before being installed.
- Once track is installed, crews will use thermite welding to welding to seamlessly join the longer rail sections together.



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A worker aligns rails to be 'flash butt' welded by machine



Crews grind and inspect welds along an assembly line

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