

Transportation Committee

For the Metropolitan Council meeting of August 25, 2021

Subject: SWLRT (Green Line Extension) Civil Construction Change Order – Secant Wall in Kenilworth Corridor, Contract Number 15P307A

Proposed Action

That the Metropolitan Council (Council) authorize the Regional Administrator through the Southwest Light Rail Transit (SWLRT) Council Authorized Representative to negotiate and execute a change order for Contract 15P307A with Lunda McCrossan Joint Venture (LMJV) in an amount not to exceed \$29,979,444.69; and that the Council authorize an additional 9.49% to the 20.33% cumulative cap of change order authority under Council Procedure 14-1a for Contract 15P307A.

Summary of Committee Discussion/Questions

Metro Transit SWLRT Project Director Jim Alexander presented this item. Cummings thanked Alexander for the detailed overview and expressed appreciation for staff's caution and care with the project, including being straight and transparent when there are issues. Cummings asked if the two actions are combined into one motion. Alexander responded that is correct.

Motion by Cummings, seconded by Chamblis. Motion carried.

Transportation Committee

Meeting date: August 9, 2021

For the Metropolitan Council meeting of August 25, 2021

Subject: SWLRT (Green Line Extension) Civil Construction Change Order – Secant Wall in Kenilworth Corridor, Contract Number 15P307A

District(s), Member(s): All

Policy/Legal Reference: FM14-1a Procurement Procedure; FM14-2 - Expenditures for the Procurement of Goods and Services Greater than \$500,000

Staff Prepared/Presented: Wes Kooistra, General Manager, (612) 349-7510
Nick Thompson, Deputy GM Capital Programs (651) 602-1754
Jim Alexander, SWLRT Project Director, (612) 373-3880
Joan Hollick, SWLRT Deputy Project Director, (612) 373-3820
Brian Runzel, SWLRT Director Construction, (612) 373-3806

Division/Department: Metro Transit / Green Line Extension Project Office

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Background

The Kenilworth corridor is a densely populated portion of the SWLRT alignment with freight rail and residential buildings close to the LRT tunnel construction site. During the Project's design phase, it was decided to prescribe the contractor's method of installing support of excavation (SOE) requiring sheet piles to minimize potential impacts due to vibration caused by conventionally installed sheets using a vibratory or impact hammer. This determination was made based on the Project's Final Environmental Impact Statement. The project plans directed the contractor to use a press-in piler that minimizes vibration and is capable of pressing in the sheets.

During initial sheet pile installation soil settlement occurred. An extensive monitoring program was then implemented for sheet installation to determine the extent of the settlement. Based on the monitoring results, it was determined that an alternative SOE system was required next to a ten-story condominium building and parking ramp (CICA structures) as the settlement observed posed an unacceptable risk.

Due to the limited space available and the vibration and settlement constraints it was determined that a secant wall would be appropriate for the SOE at the CICA structures. Secant walls are constructed by drilling a series of overlapping shafts and filling with concrete to form a continuous wall and are often used when there are sensitive structures.

The DBE goal established for this contract is 16%. LMJV is currently achieving 20% DBE participation. This change order will include work performed by DBE firms such that LMJV will continue to maintain a minimum 16% DBE participation for the overall contract.

Rationale

This change order related to the secant wall work will be included as part of the SWLRT Project scope of work and \$2.003 billion budget.

Council Procurement Procedure 14-1a Section 2.1.2.23 provides 10% cumulative change order authority on construction contracts without further authorization by the Council. In April 2021, the Council approved an increase of 10.33% in cumulative cap in conjunction with the \$82.6M change order for the Corridor Protection Barrier (Business Item No. 2021-49).

Staff is requesting that the Council authorize a revision to Procurement Procedure 14-1A, Section 2.1.2.23 Change Orders/Contract Amendments, Part 2.b Change Orders to Construction Contracts, to permit an additional 9.49% cumulative cap of contract change order authority for Contract 15P307A. In addition to the secant wall change order, this request includes an increased cap authority for recent change orders for additional contaminated soil disposal (Business Item No. 2021-108) and grouting for the Kenilworth Tunnel construction (Business Item No. 2021-108) and upcoming change orders required for the Project.

This authorization will allow the Project to continue executing change orders for civil construction activities.

Description	Amount	Change Order Authorization
Contract 15P307A original contract value	\$799,514,338.22	--
Currently authorized cumulative change order Authority	\$162,556,338.99	20.33%
Value of change order authority executed to date	\$156,685,054.50	19.60%
Current remaining authority	\$5,871,284.49	0.73%
Additional change order authority for secant wall, contaminated soils, grouting and upcoming change orders	\$75,897,232.97	9.49%
Amended cumulative change order authority	\$238,453,571.96	29.82%

Thrive Lens Analysis

Livability: The Green Line Extension will increase the region's prosperity as it will provide access to 80,900 forecasted jobs and a new transportation option for 55,800 forecasted residents within ½ mile of the planned new stations in addition to the 145,300 forecasted jobs and 35,600 forecasted residents in downtown Minneapolis.

Prosperity: The Green Line Extension reflects strategic investment in regional infrastructure that will promote economic competitiveness and create prosperity for the region.

Funding

The work for this change order is a Southwest LRT Project (61001) eligible cost. Funds for the work are available in the Project budget. This work is included in the Council's authorized capital budget.

Known Support / Opposition

There is no known opposition to this action.

SOUTHWEST

Green Line LRT Extension



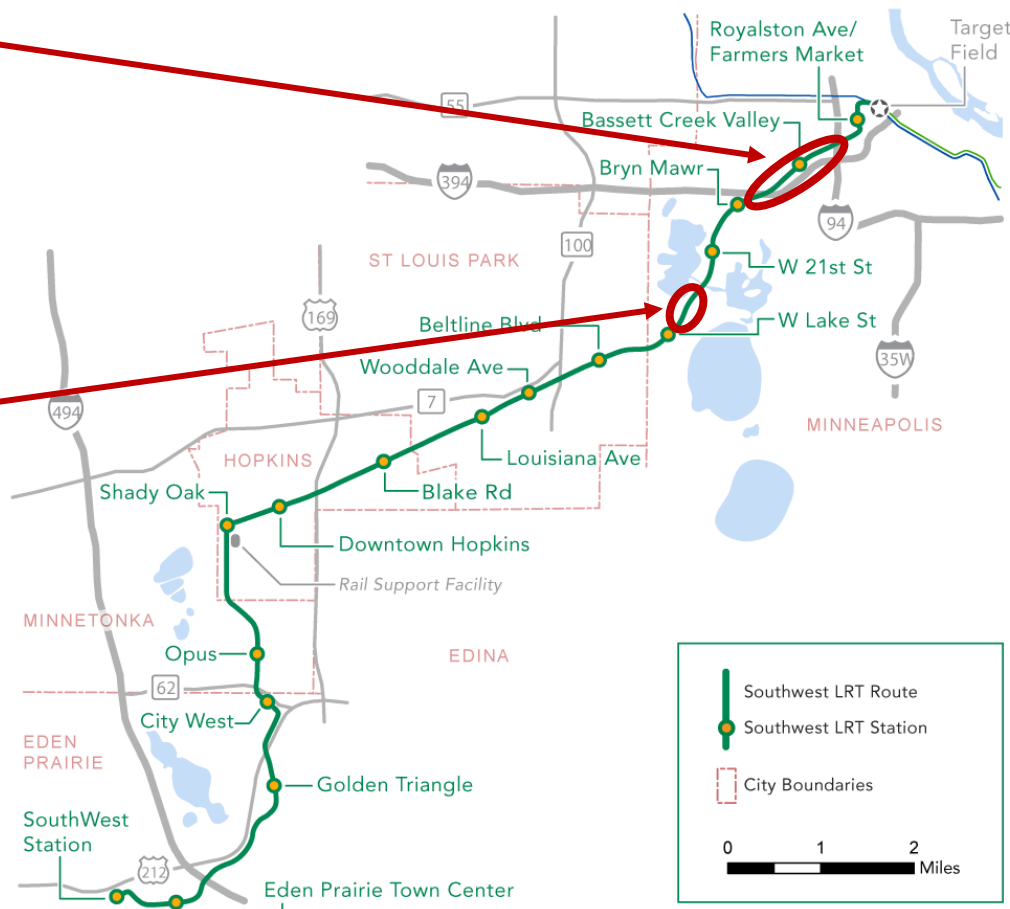
Transportation Committee Business Item #2021-210

August 9, 2021



Civil Construction Challenges

- **Corridor Protection Wall**
 - Required per BNSF agreement
 - Required environmental clearance which was completed after civil construction contracting
 - Added to the Civil Construction Contract by change order
- **Secant Wall**
 - Unforeseen soil conditions (settling during initial tunnel construction) necessitated an alternative construction method
 - Adding to the Civil Construction Contract by change order
- These issues impact other SWLRT contracts and the project schedule



Construction Challenges

- Both elements are major projects by themselves and have a significant impact on the project's cost and schedule
- Next steps:
 - Corridor Protection Wall
 - Continue construction
 - Kenilworth Tunnel
 - Complete change order processes
 - Grouting sheet separation: Completed
 - Secant wall: Business Item 2021-210
 - Sheet installation delay
 - Tunnel construction re-sequencing
 - Update project schedule
 - Determine impacts to Civil, Systems & SCADA contracts
 - Reach agreement on schedule and associated costs
 - Complete change order process to update schedule

Civil Construction Change Order: Secant Wall

Business Item No. 2021-210

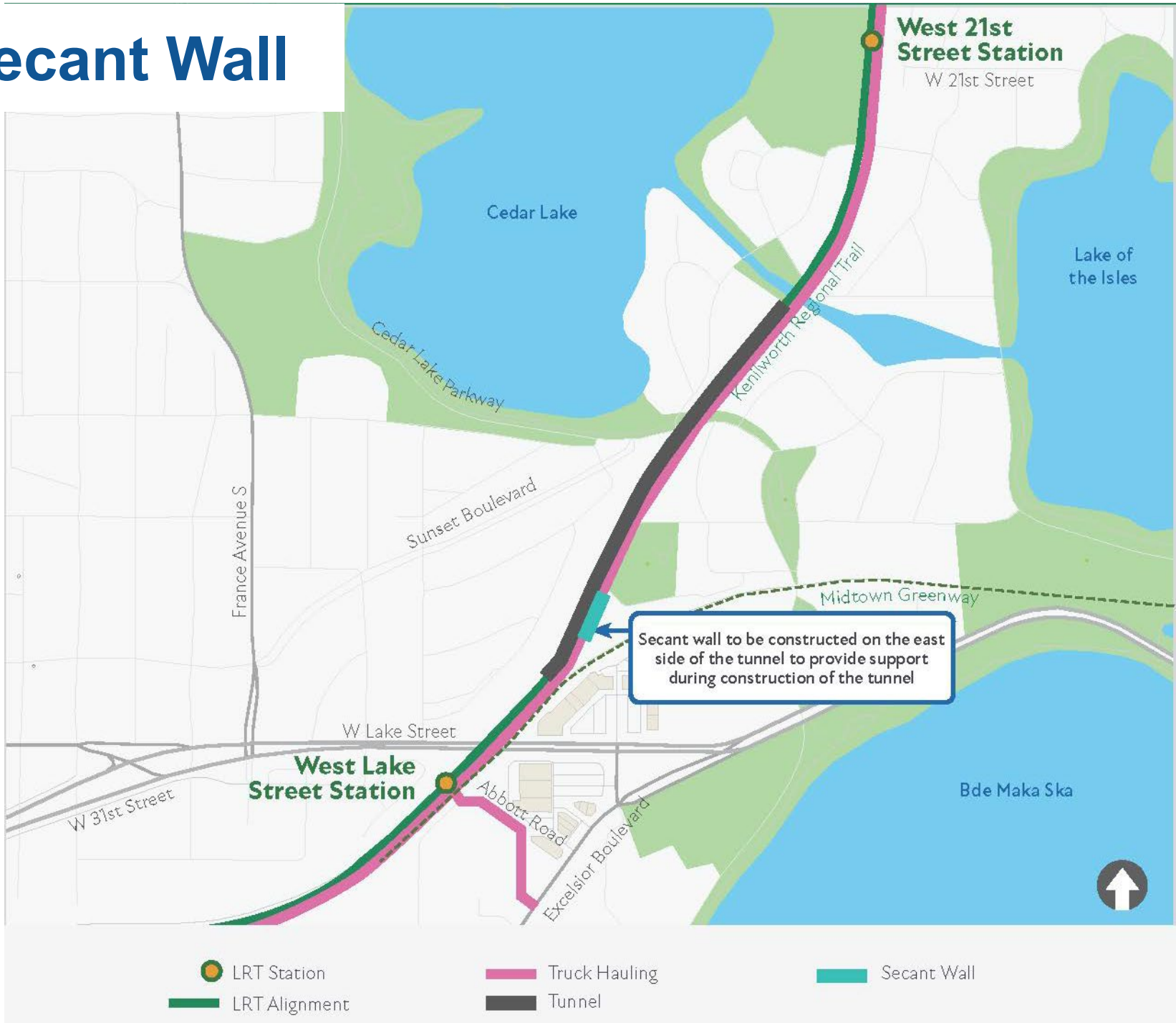
- Regards two elements:
 - Change order to Contract 15P307A with SWLRT Civil Construction contractor LMJV for work related to the construction of a Secant Wall
 - Increase the cumulative change order authority for Contract 15P307A

Civil Construction Change Order: Secant Wall

Business Item No. 2021-210

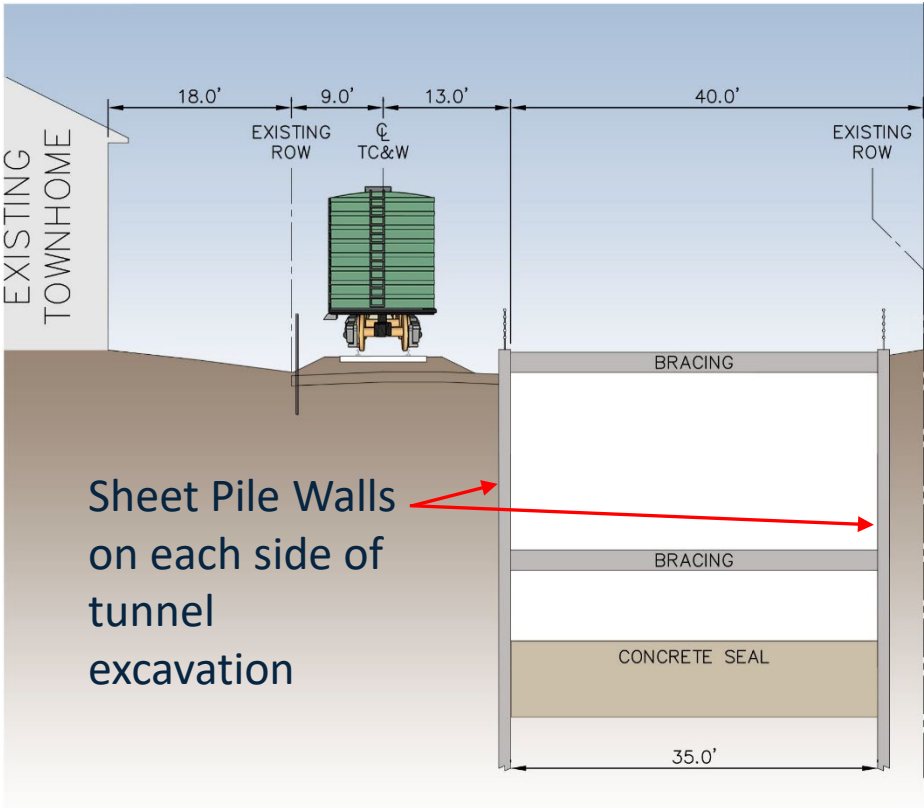
- The change order is required due to unforeseen soil conditions that necessitate an alternative construction method for a segment of the tunnel
- The increase in cumulative change order authority required for the secant wall, contaminated soils and grouting change orders and for upcoming change orders

Secant Wall



Kenilworth Tunnel Construction

Original Plan

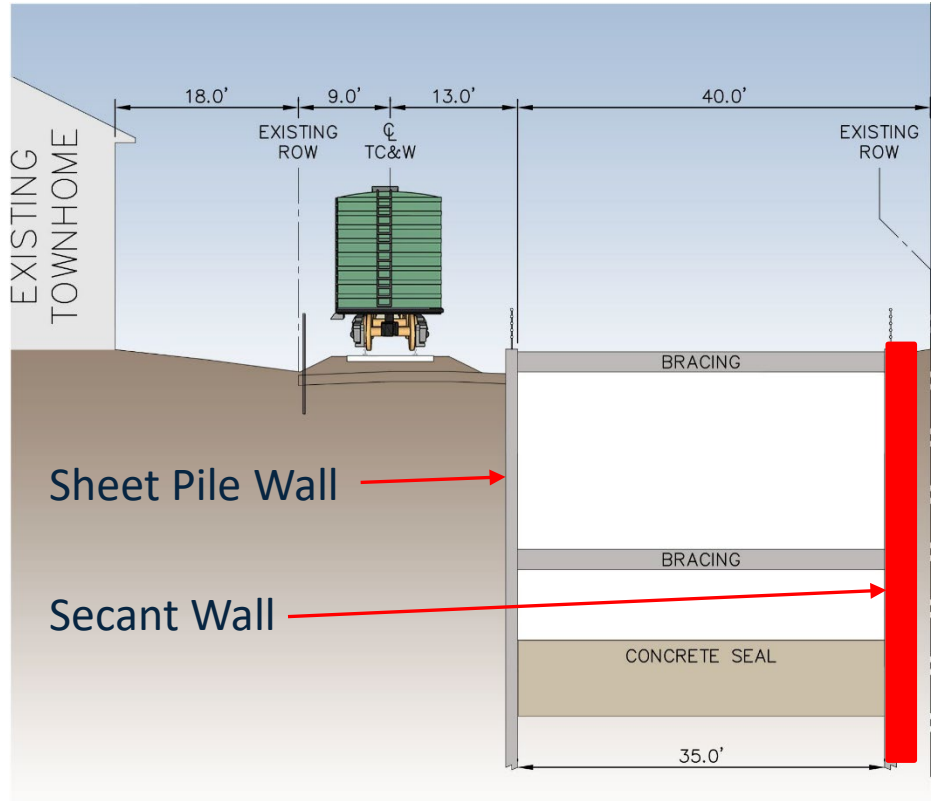


Sheet Pile Walls
on each side of
tunnel
excavation

Sheet Pile Wall in Plan View

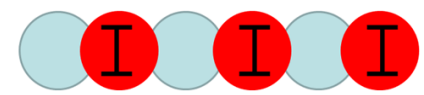


Modified Plan at Cedar Isles Condominium
and Parking Ramp



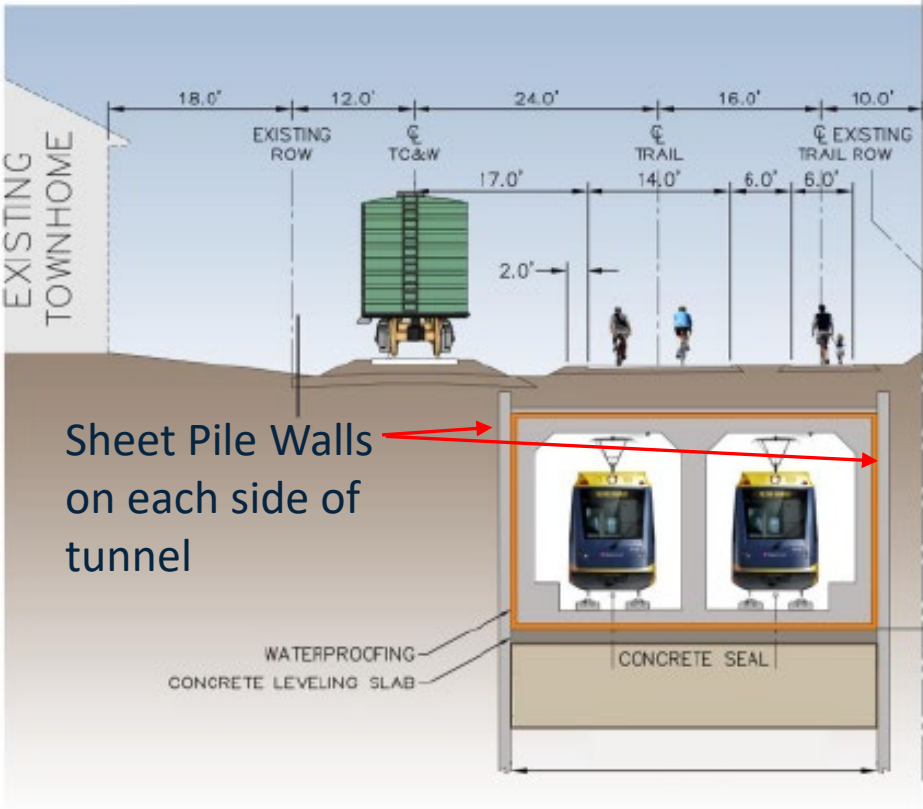
Sheet Pile Wall
Secant Wall

Secant Wall in Plan View

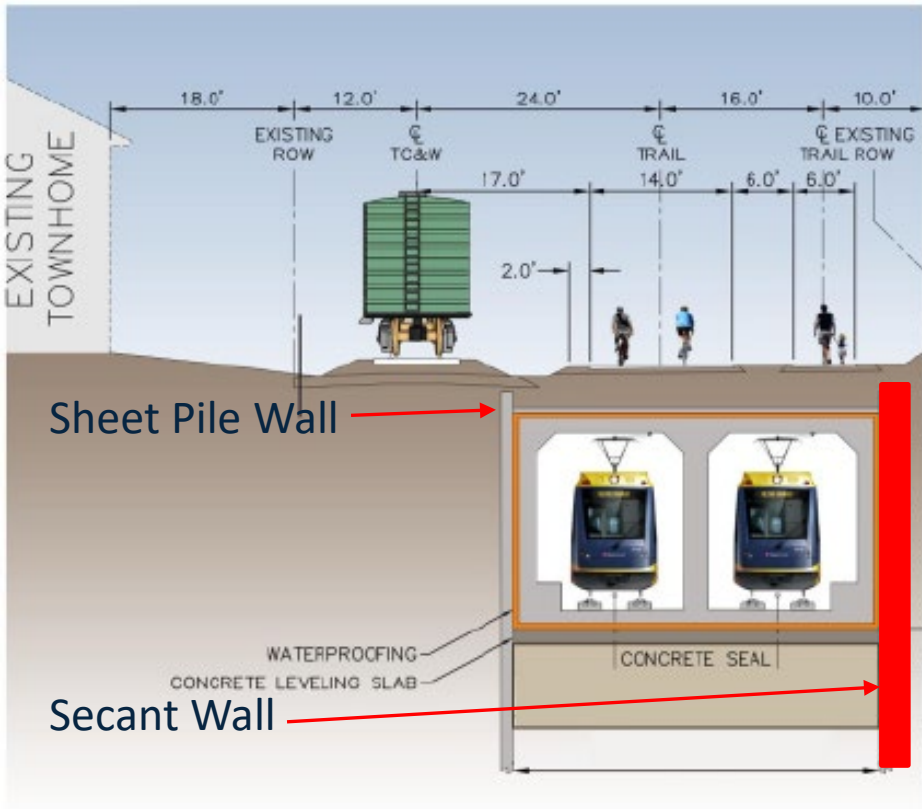


Kenilworth Tunnel Construction

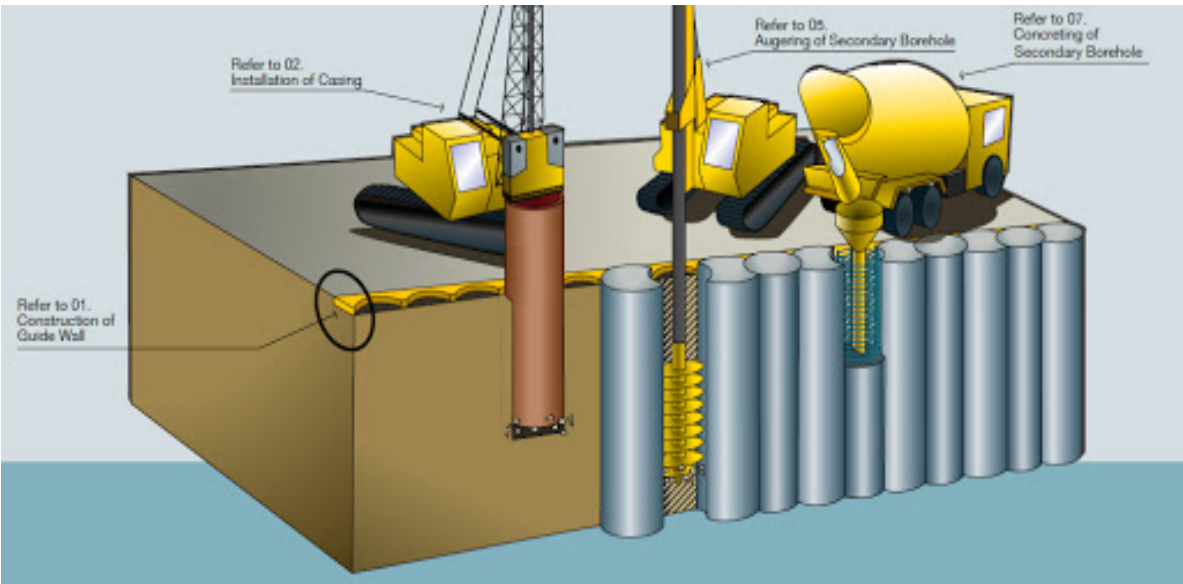
Original Plan



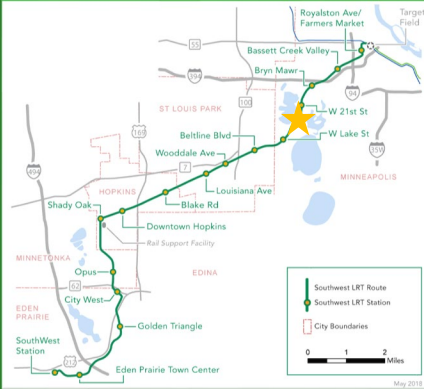
Modified Plan at Cedar Isles Condominium and Parking Ramp



Example of Secant Wall Construction



Minneapolis: Kenilworth Tunnel



Cumulative Change Order Authorization

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