

Ottawa Light Rail Transit Project



July 14, 2011

**Implementation of Ottawa's Light Rail
Transit Project**

- Transit Challenge
- Long Range Financial Plan – Transit
- Improved Alignment
- OLRT System Overview
- Updated Cost Estimate
- Infrastructure Ontario
- The Path Forward







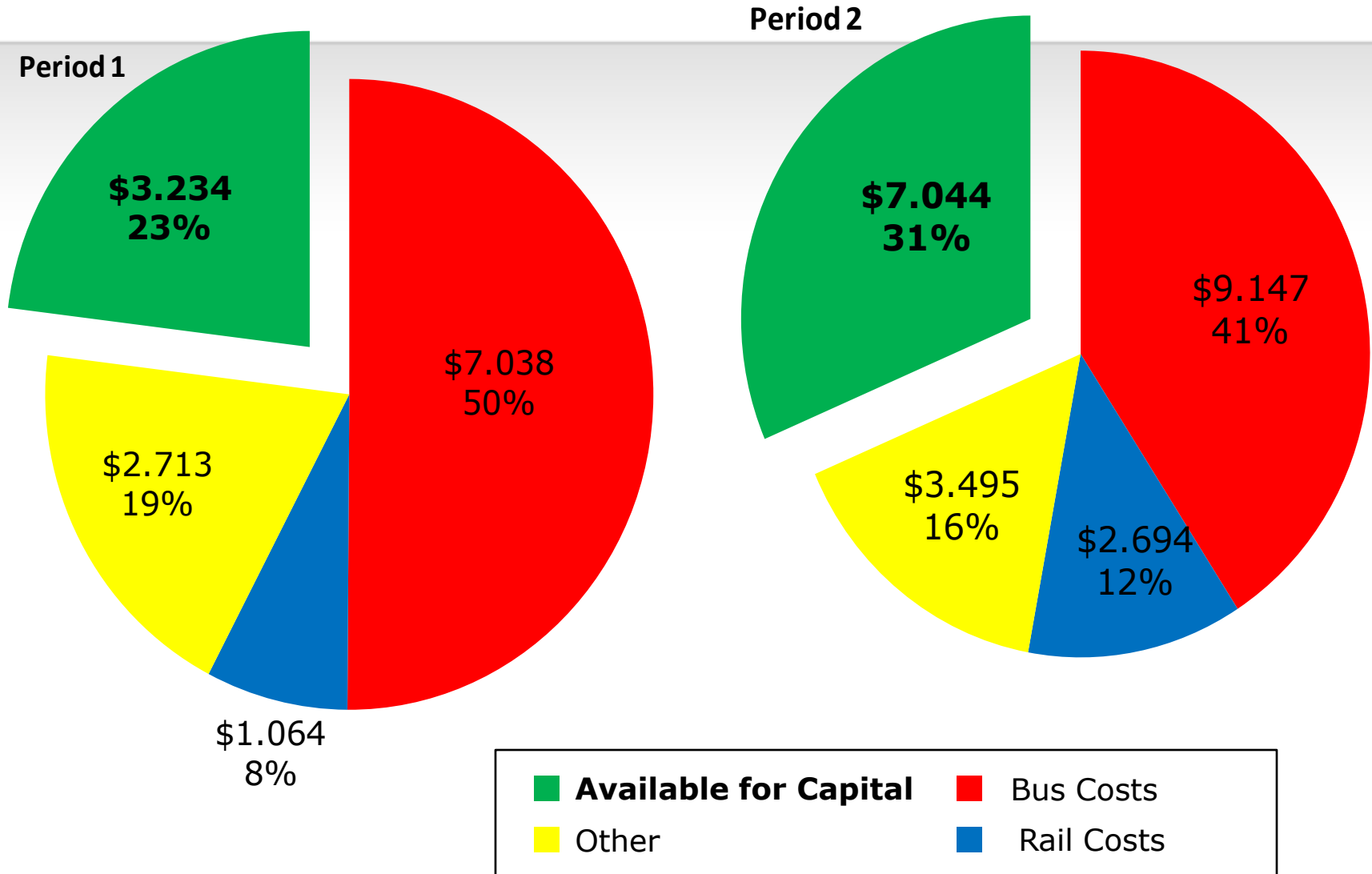
LONG RANGE FINANCIAL PLAN FOR PUBLIC TRANSIT

What is Affordable?

Parameters	Criteria
Transit Taxes	<ul style="list-style-type: none">• Kept within rate of inflation ^[1]
Transit Fares	<ul style="list-style-type: none">• Kept within rate of inflation ^[1]
Debt	<ul style="list-style-type: none">• City's total debt servicing < 25% of own source revenues• Transit debt servicing < 7.5% of own source revenues• Debt term < life of the asset financed
Capacity	<ul style="list-style-type: none">• Sufficient funding to operate, maintain, and expand the transit system as needed

^[1] Assumed at 2.5% as per current Council direction

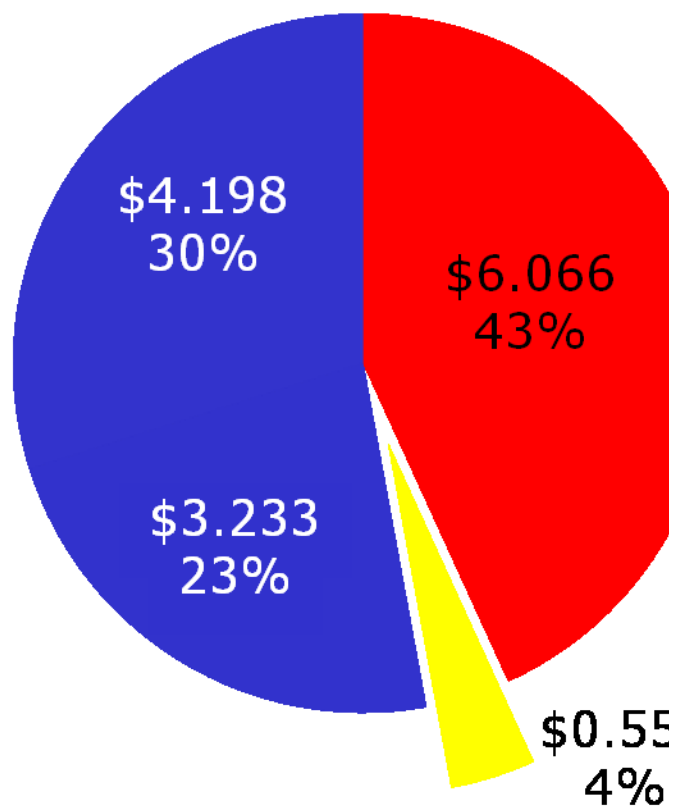
Costs - Transit Operations



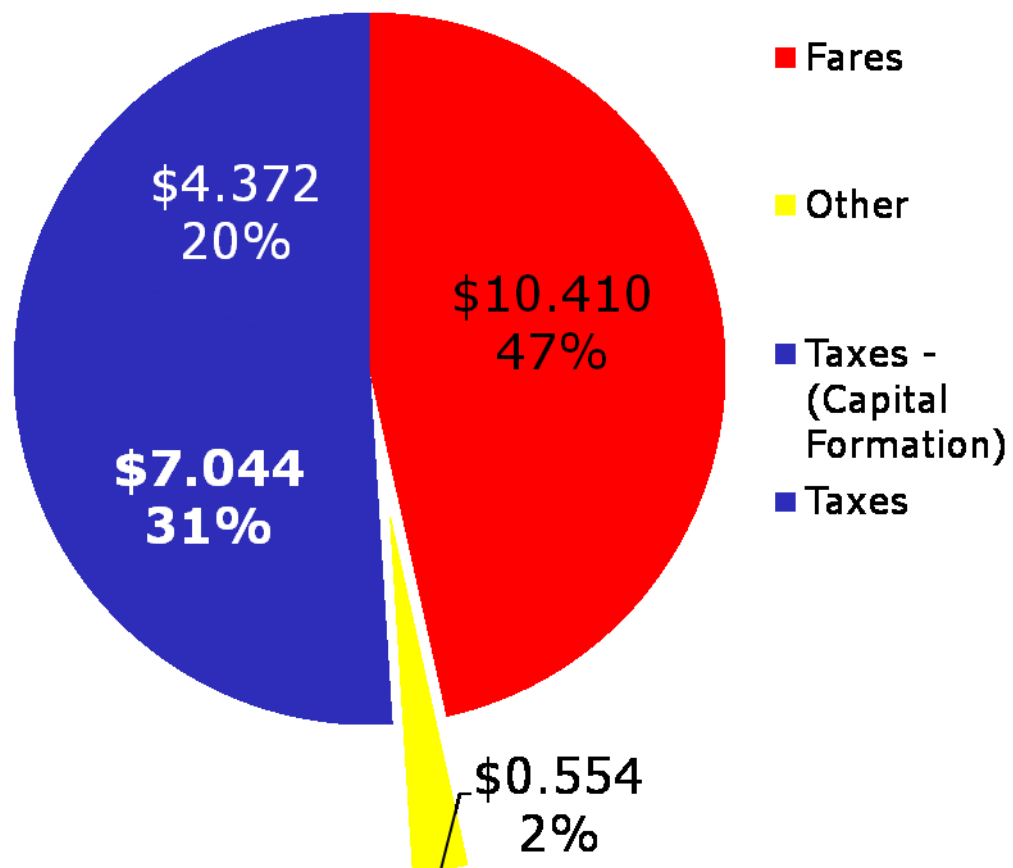
All numbers in \$ Billions

Funding - Transit Operations

**Period 1
(2011 – 2031)**



**Period 2
(2032 – 2048)**



All numbers in \$ Billions

- **What is Capital?**
 - Costs required to acquire and renew assets (buses, rail cars, major projects, IT, park and rides, etc.), and support costs required (studies, disruption costs, etc.)
 - Strategic initiatives included in renewal, disruption costs included in growth

	Period 1 (2011 to 2031) \$ Billions	Period 2 (2032 - 2048) \$ Billions	Total \$ Billions
Growth	7.018	6.328	13.346
Renewal	2.731	2.542	5.273
Total	9.749	8.870	18.619

Transit Capital Funding

	Period 1 (2011 to 2031) \$ Billions	Period 2 (2032 - 2048) \$ Billions	Total \$ Billions
Number of years	21 years	17 years	38 years
Federal and Provincial Governments	3.100	2.673	5.773
City of Ottawa	3.233	7.044	10.277
Federal and provincial gas tax	1.434	1.168	2.602
Development charges	1.256	3.016	4.272
Total	9.023	13.901	22.924

- Debt is used to allow projects to proceed as needed

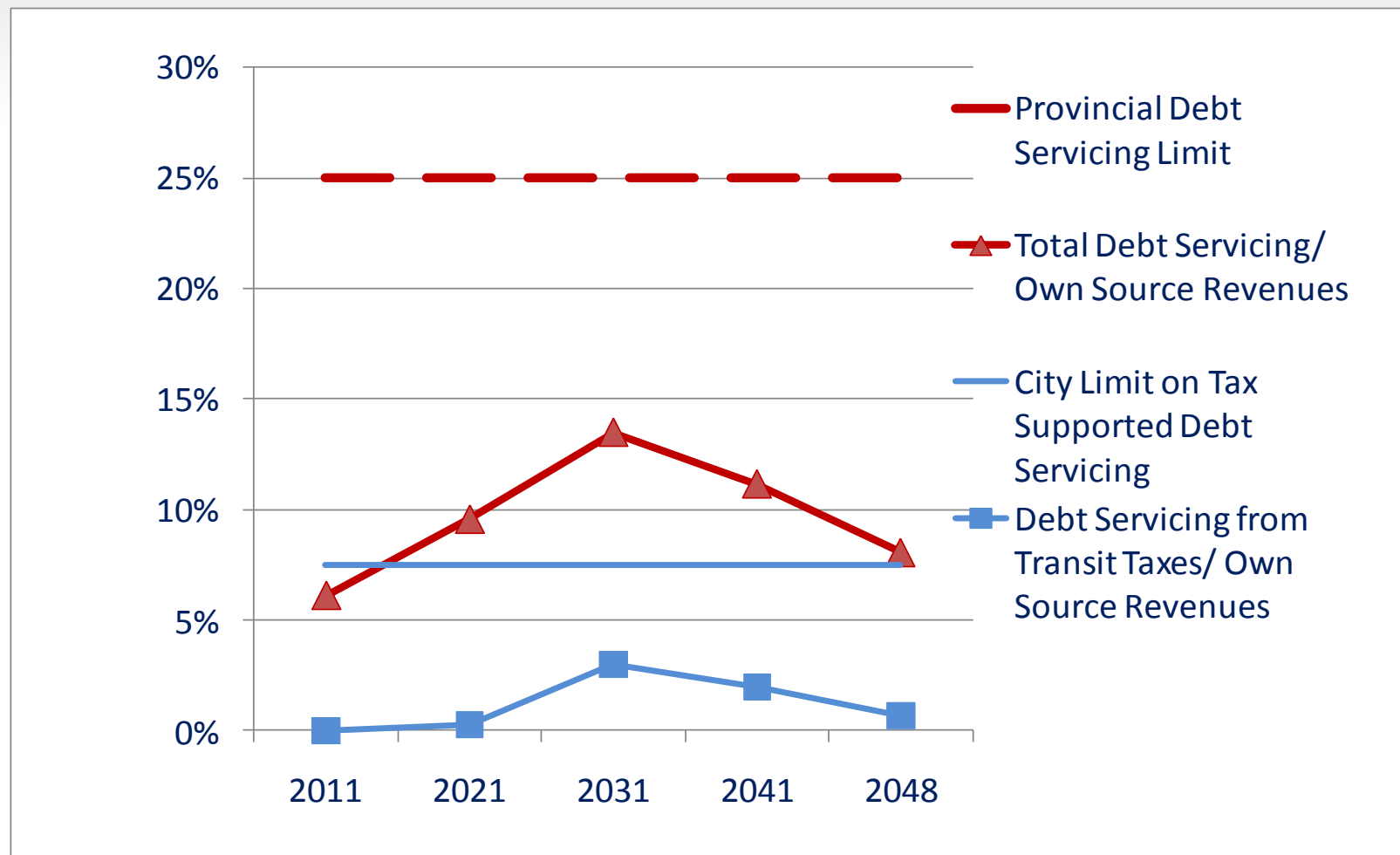
	Period 1 (2011 to 2031) \$ Billions	Period 2 (2032 - 2048) \$ Billions
Capital Funds	9.023	13.901
Capital Works	9.749	8.870
Debt Issued	3.817	1.420

- Debt allows who pays for the asset to align with who benefits from the asset

Sources of Debt Servicing

	Period 1 (2011 to 2031) \$ Billions	Period 2 (2032 - 2048) \$ Billions
Gas Tax Debt Charges	1.138	1.168
Development Charges	1.345	1.862
Transit Taxes	0.685	1.357
Total Debt Servicing	3.168	4.387

Debt Servicing Limits



**The current plan for transit meets
the test of affordability
throughout the term**

- Ensure mobility during and post construction
- Maximize transit oriented development
- Deliver function, on-time, on-budget

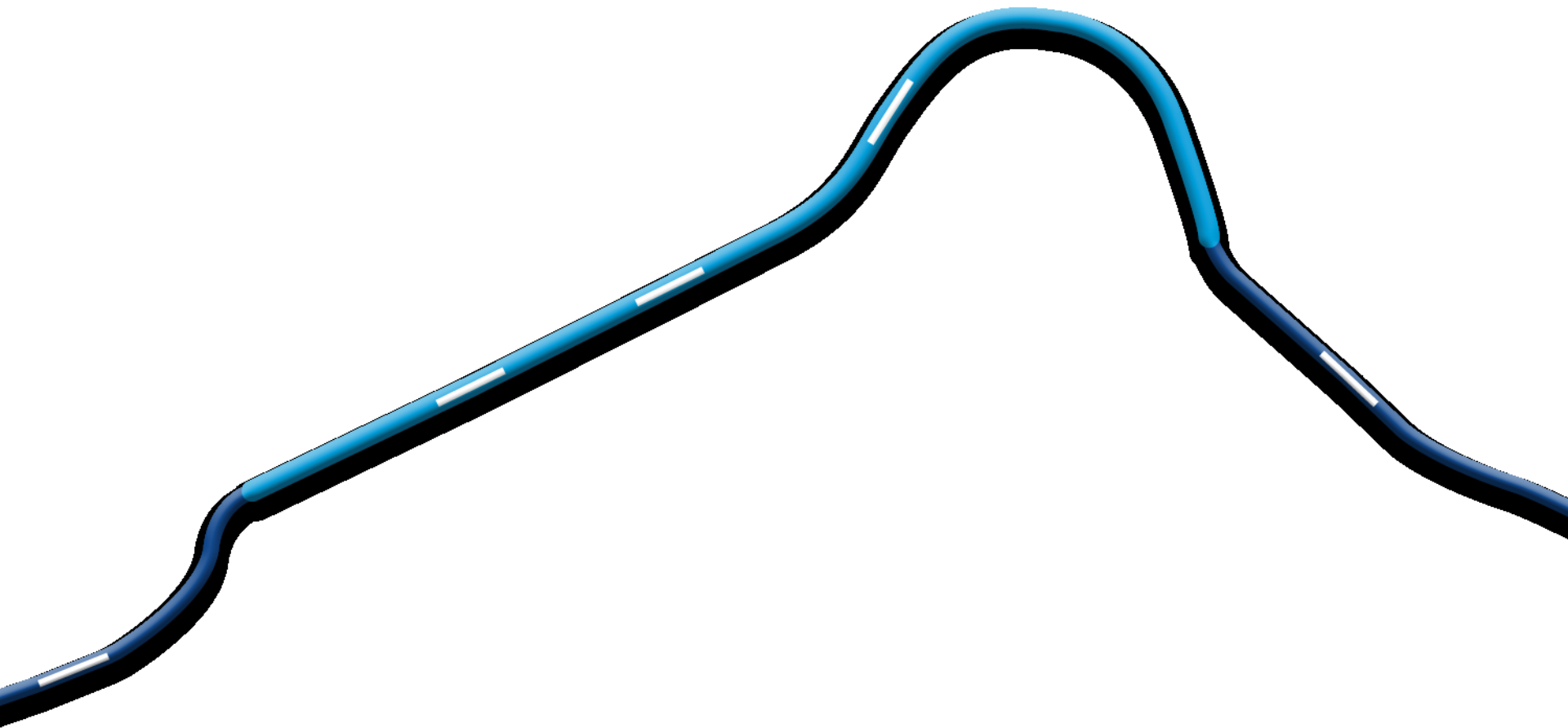


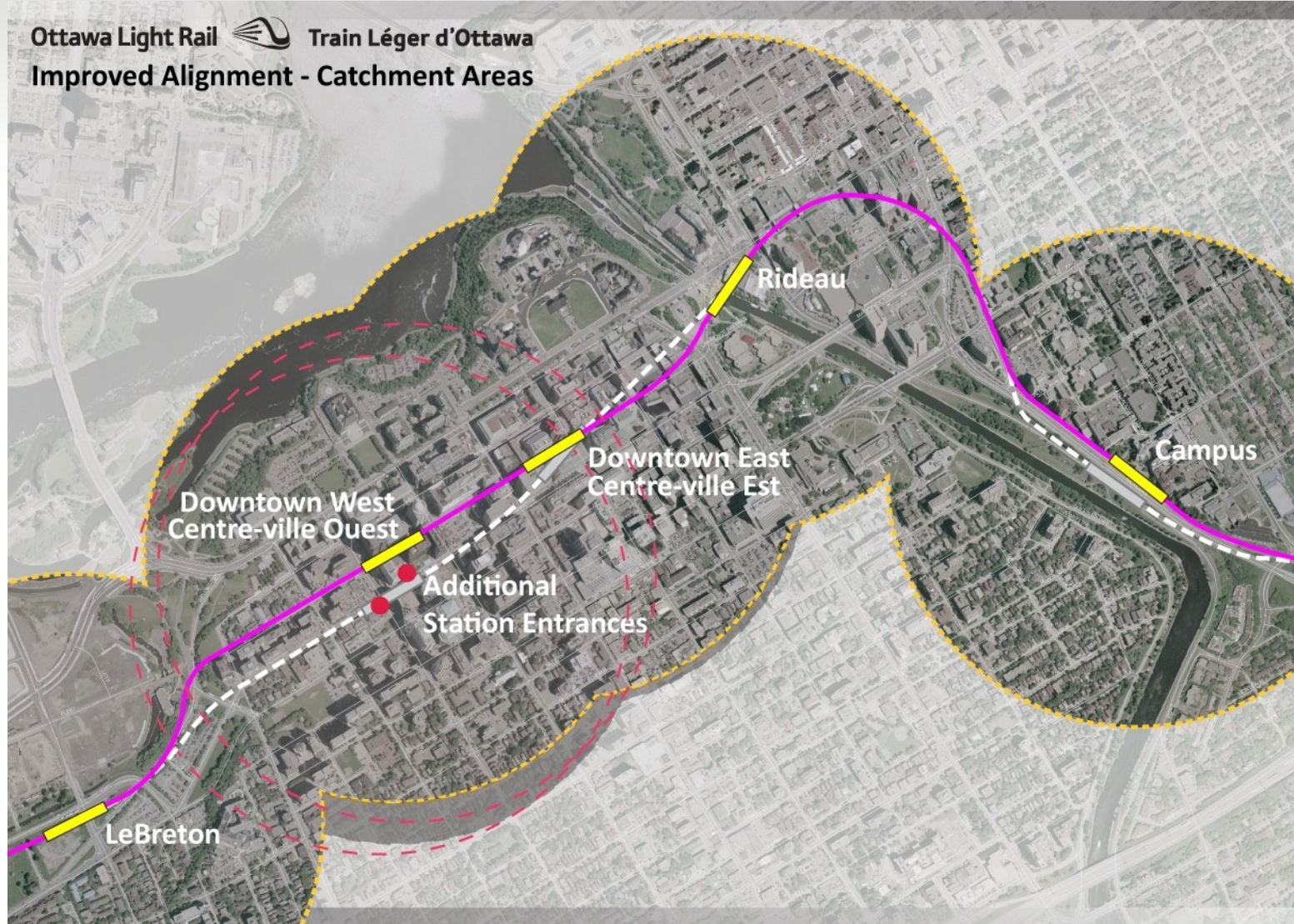
OLRT Implementation Report

TUNNEL ALIGNMENT

- Purpose of preliminary engineering is to advance the functional design of the OLRT project to a level optimal for procurement
- Advancement of the functional design includes modifications or refinements for the purpose of:
 - *Cost containment*
 - *Technical feasibility (geotechnical results)*
 - *Transportation mode integration*
 - *Business Development*
- The preliminary engineering team was directed to meet a challenge budget through innovation and design creativity.

- As design progressed it became clear a better, more cost effective tunnel alignment option was available, by moving one block north to Queen.
- An extensive value engineering exercise looked to reduce risk and reduced the costs
- During the functional design phase it was not possible to establish the feasibility of running at a shallower dept down Queen Street but with the benefit of the resources of a full Preliminary Engineering team it was possible to examine shallower options





Improved Alignment

Station Depth



Western Portal
Entrée Ouest

Bronson

Lyon

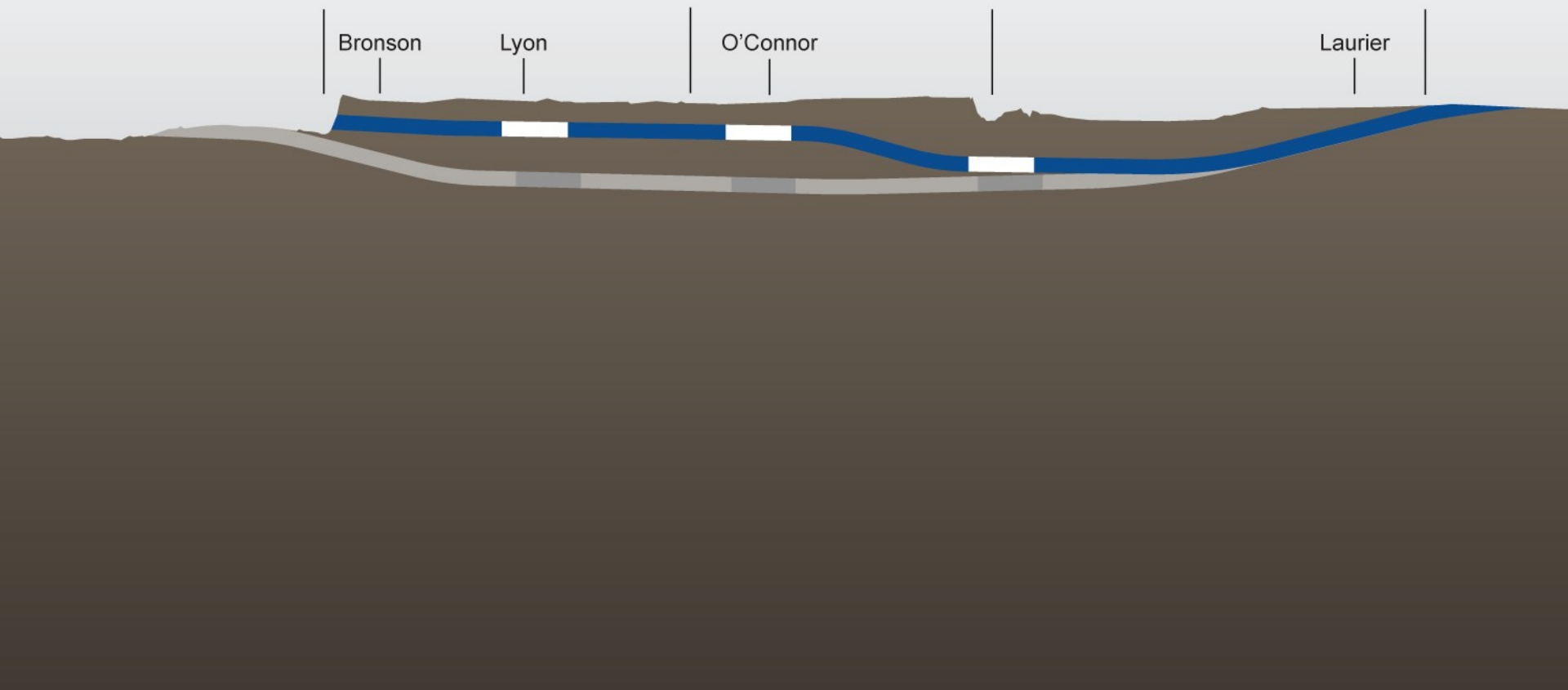
Bank

O'Connor

Rideau Canal
Canal Rideau

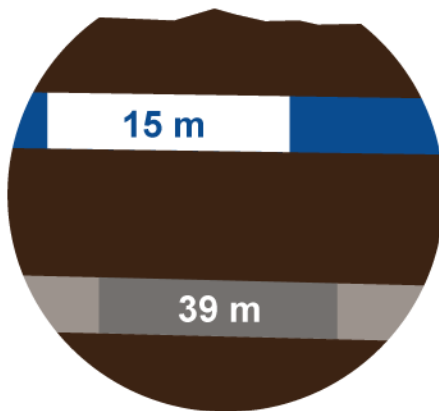
Eastern Portal
Entrée Est

Laurier



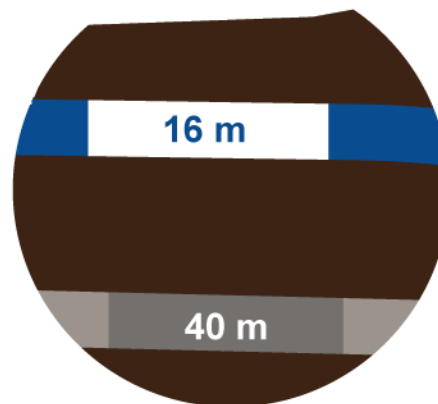
Improved Alignment

Station Depth



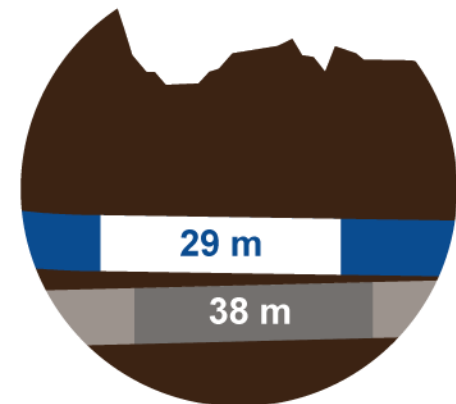
Improved Alignment

Station Depth



Improved Alignment

Station Depth



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 Tunney's Pasture Bayview LeBreton
 Downtown West Downtown East
 Rideau Campus Lees
 Hurdman Train
 St. Laurent Cynville
 Blair

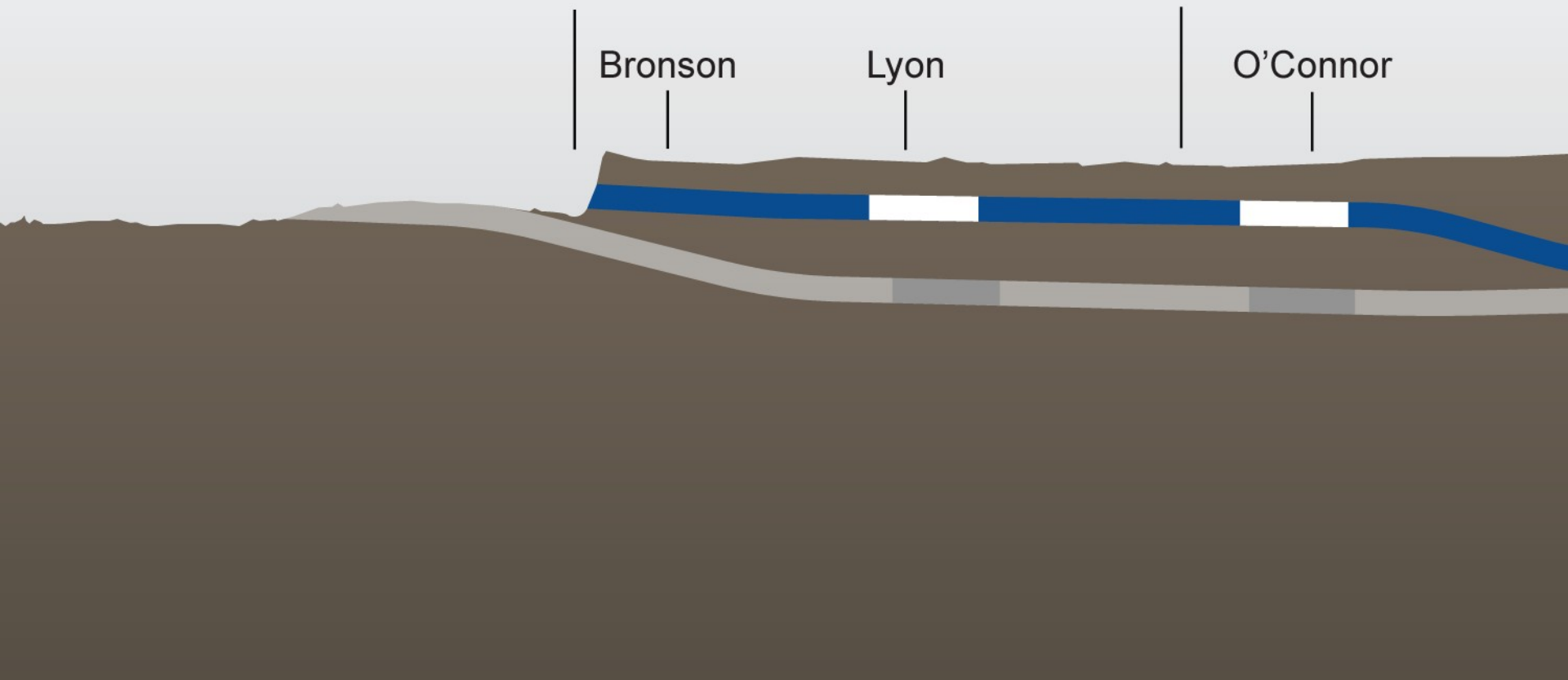
Western Portal
Entrée Ouest

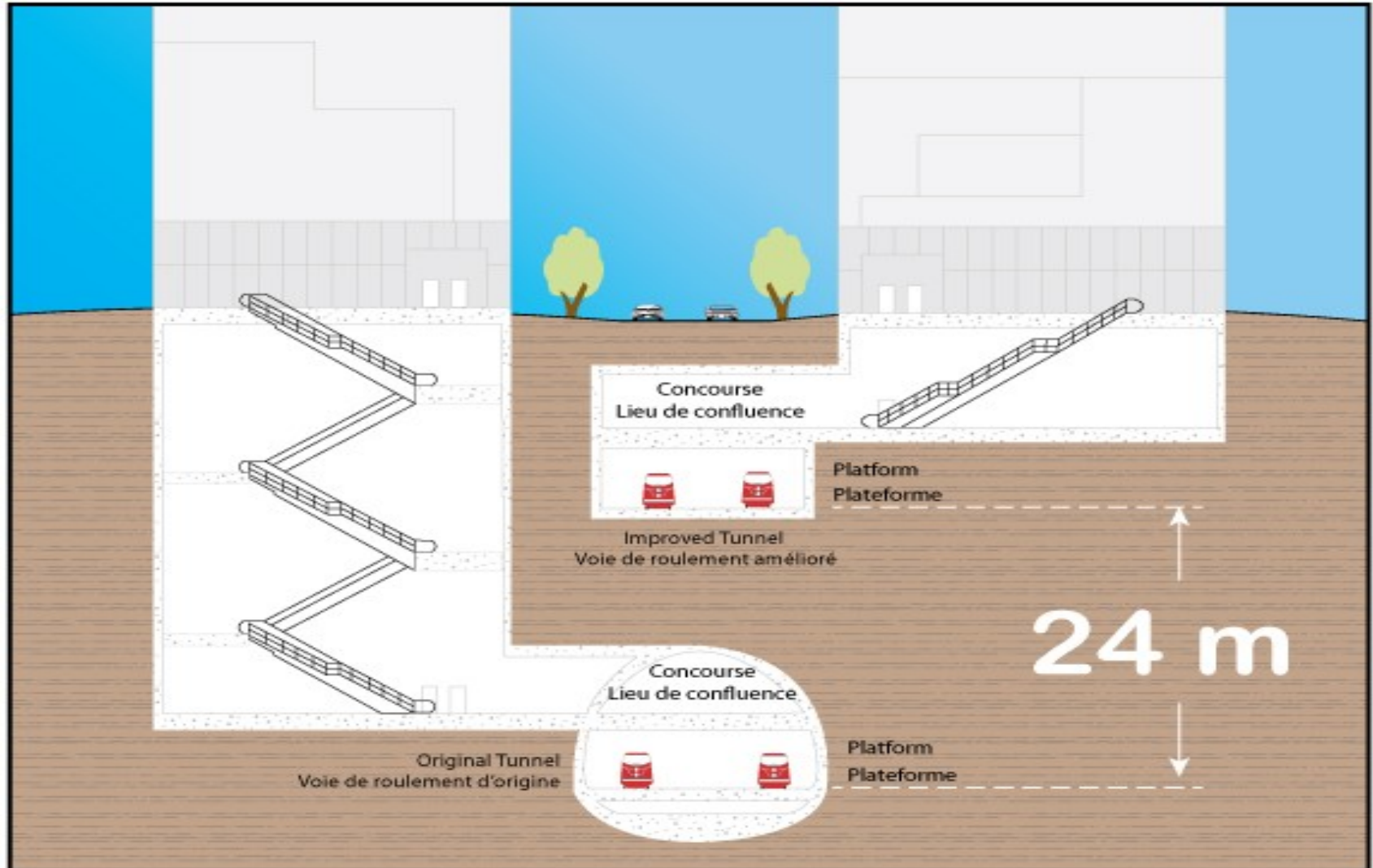
Bank

Bronson

Lyon

O'Connor





Benefits of Queen Alignment

- Shallower path
- Better building connections
- Better accessibility
- Improved ridership experience & public acceptance
- More certain risk transfer



OLRT Implementation Report

DESIGN OVERVIEW



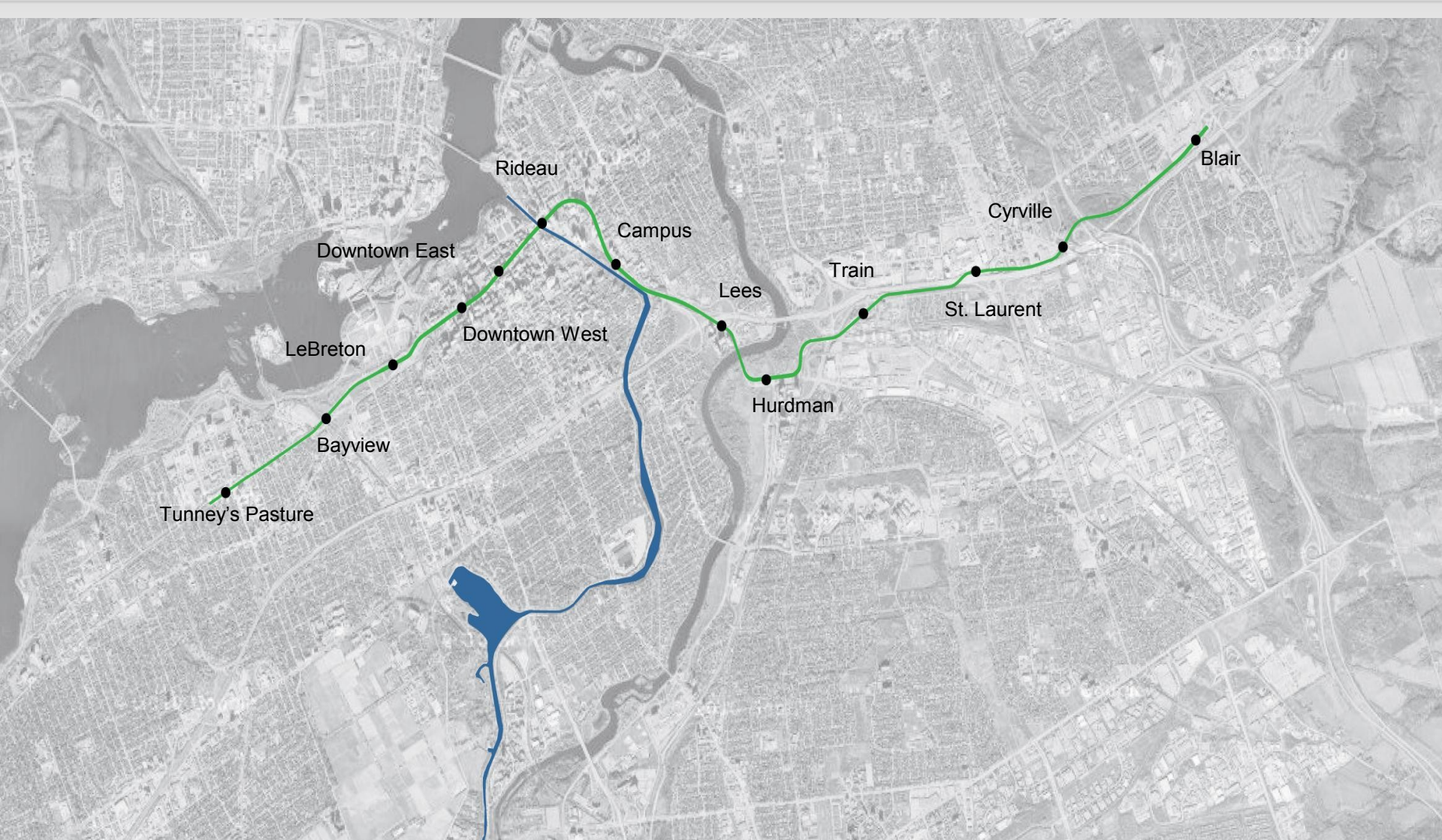


Landscape: A Pleasant Place to be





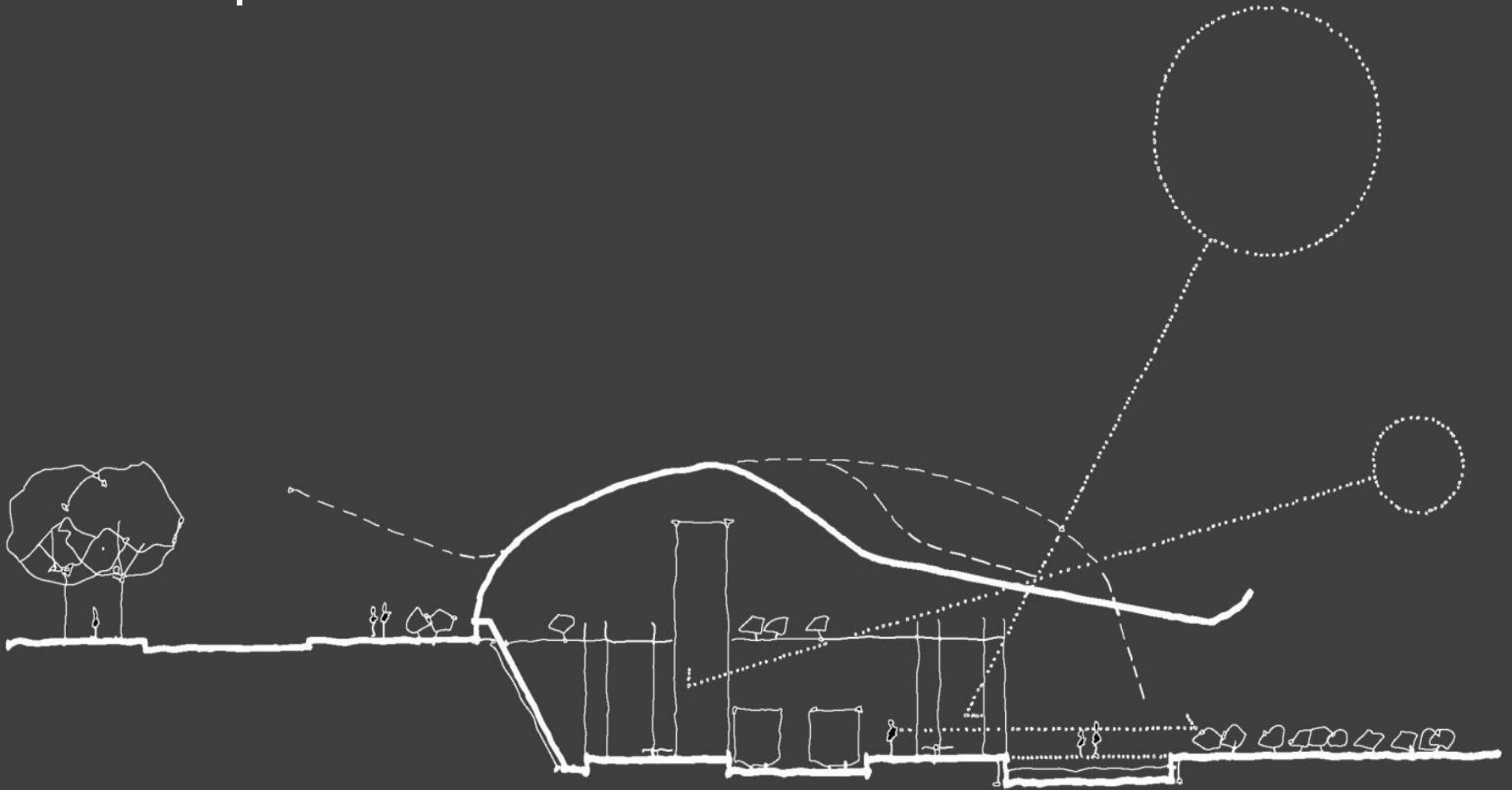
An Opportunity for Connection



Restoring the Urban Landscape



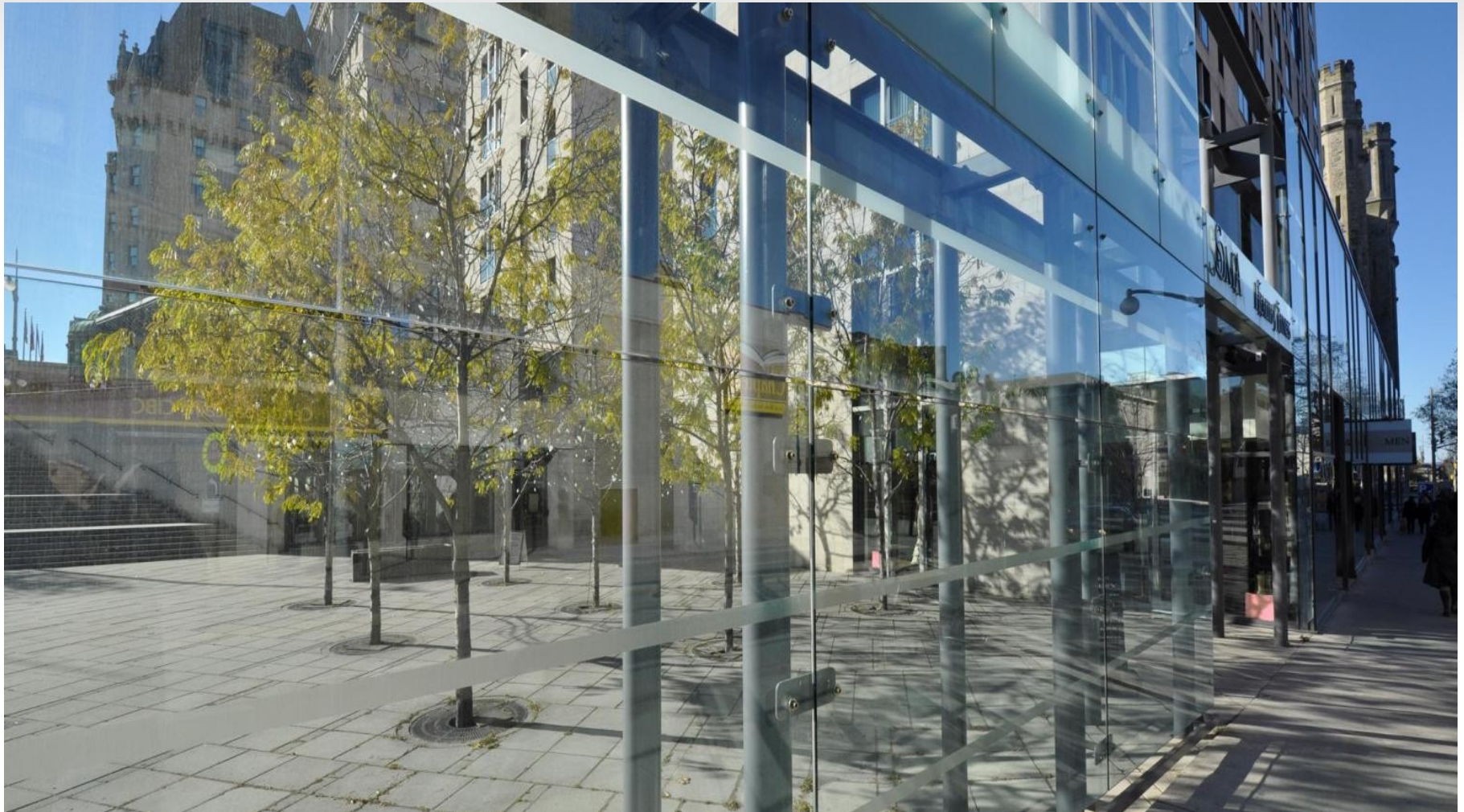
Conceptual Section



On a conceptual level, the architecture of the stations can be described as consisting of the 'Ground', 'Landscape', and 'Enclosure'.







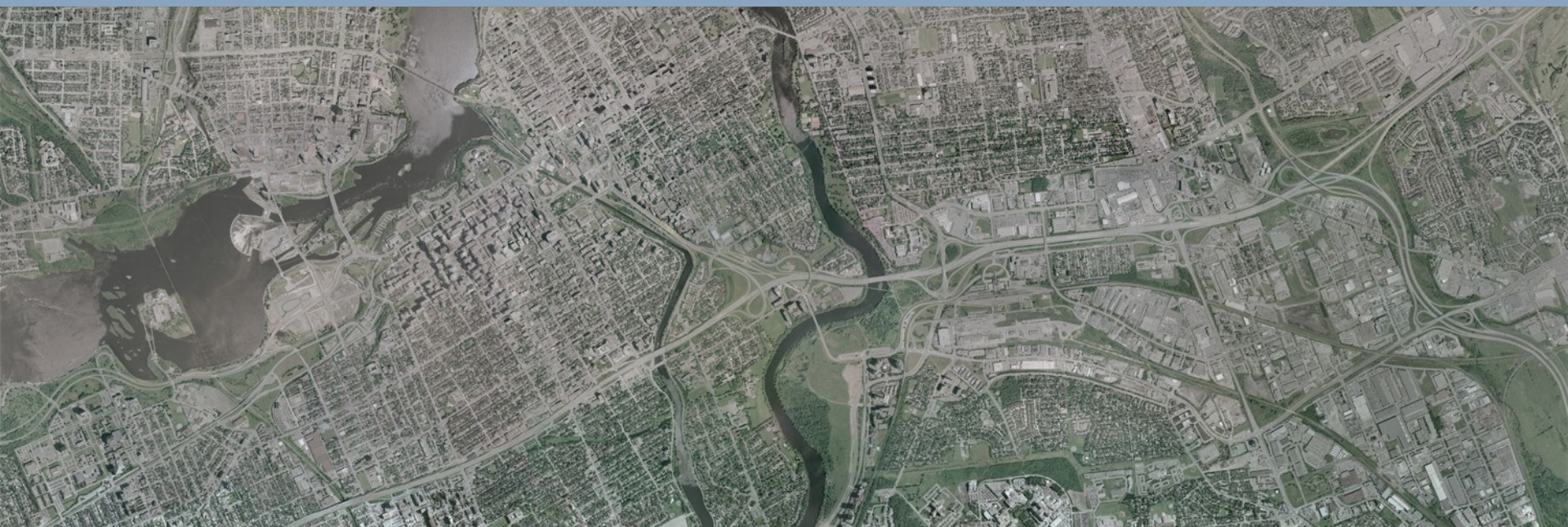


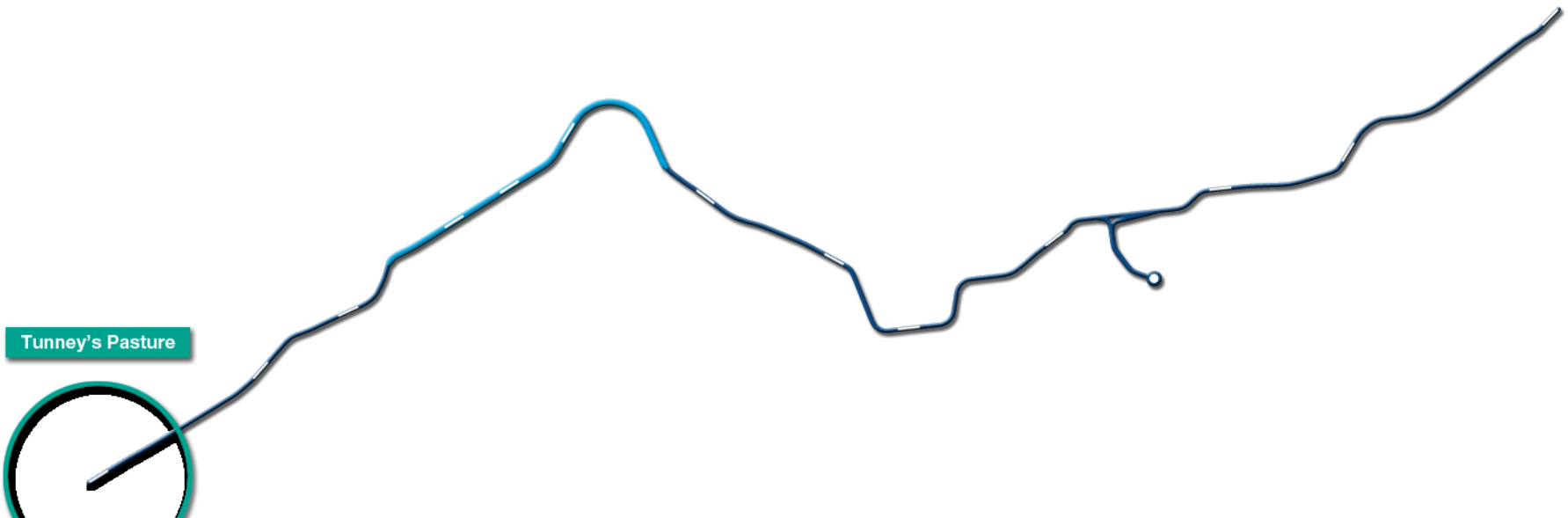


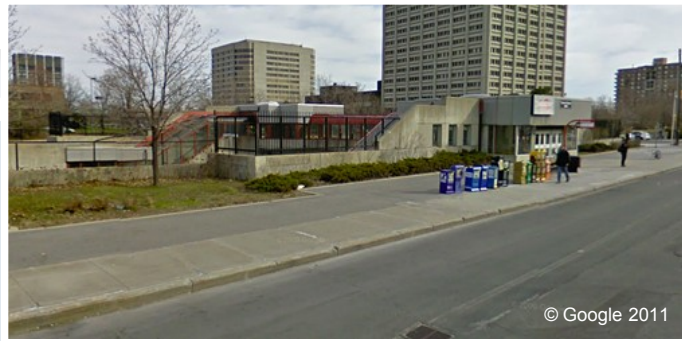
Sustainability Dimensions

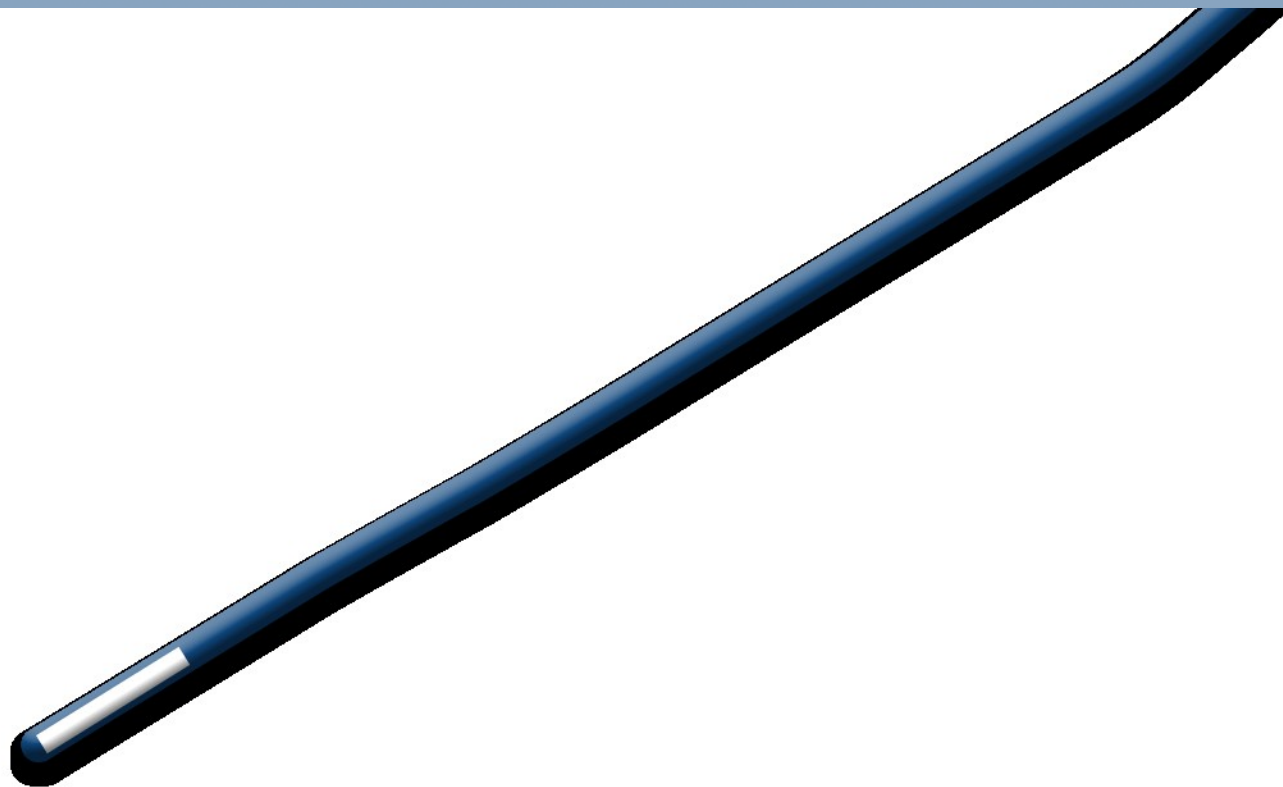
- Economic
- Environmental
- Social
- Cultural

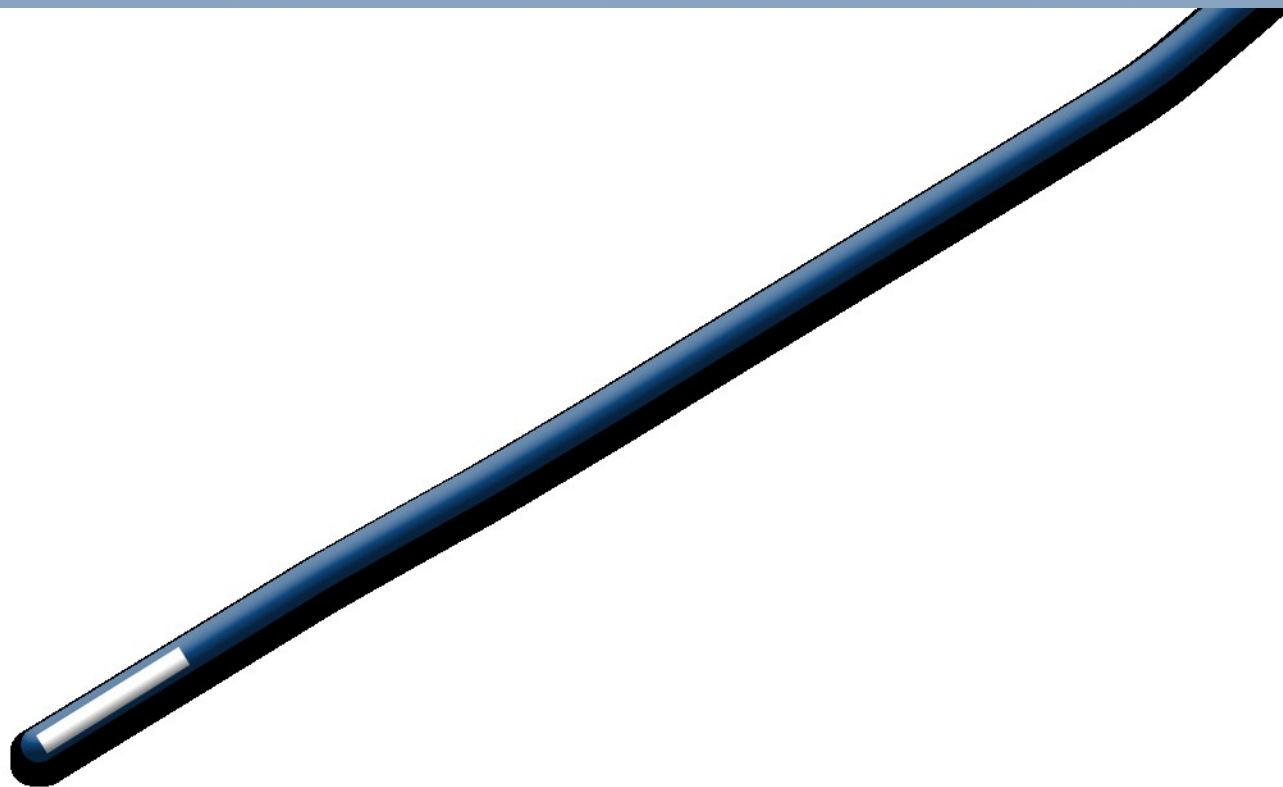


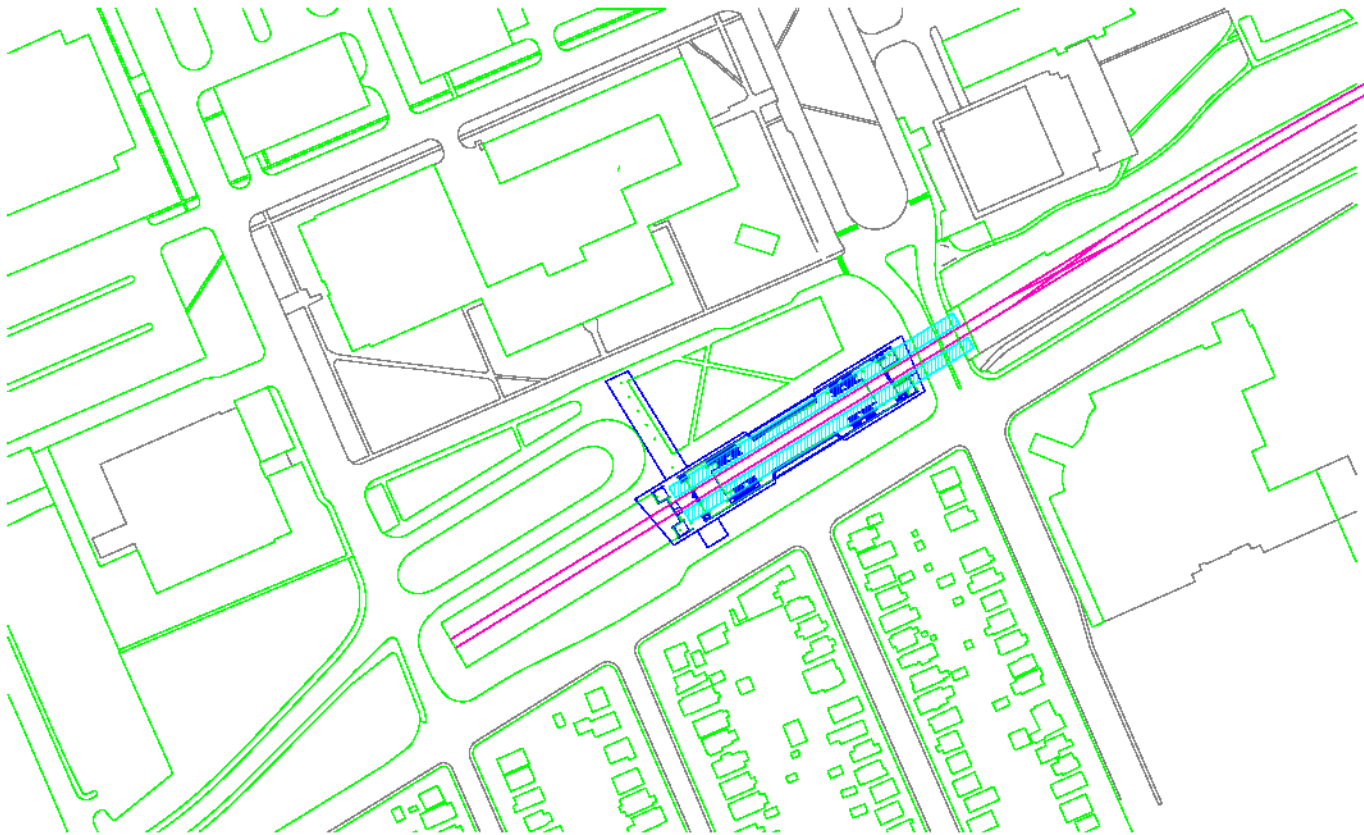


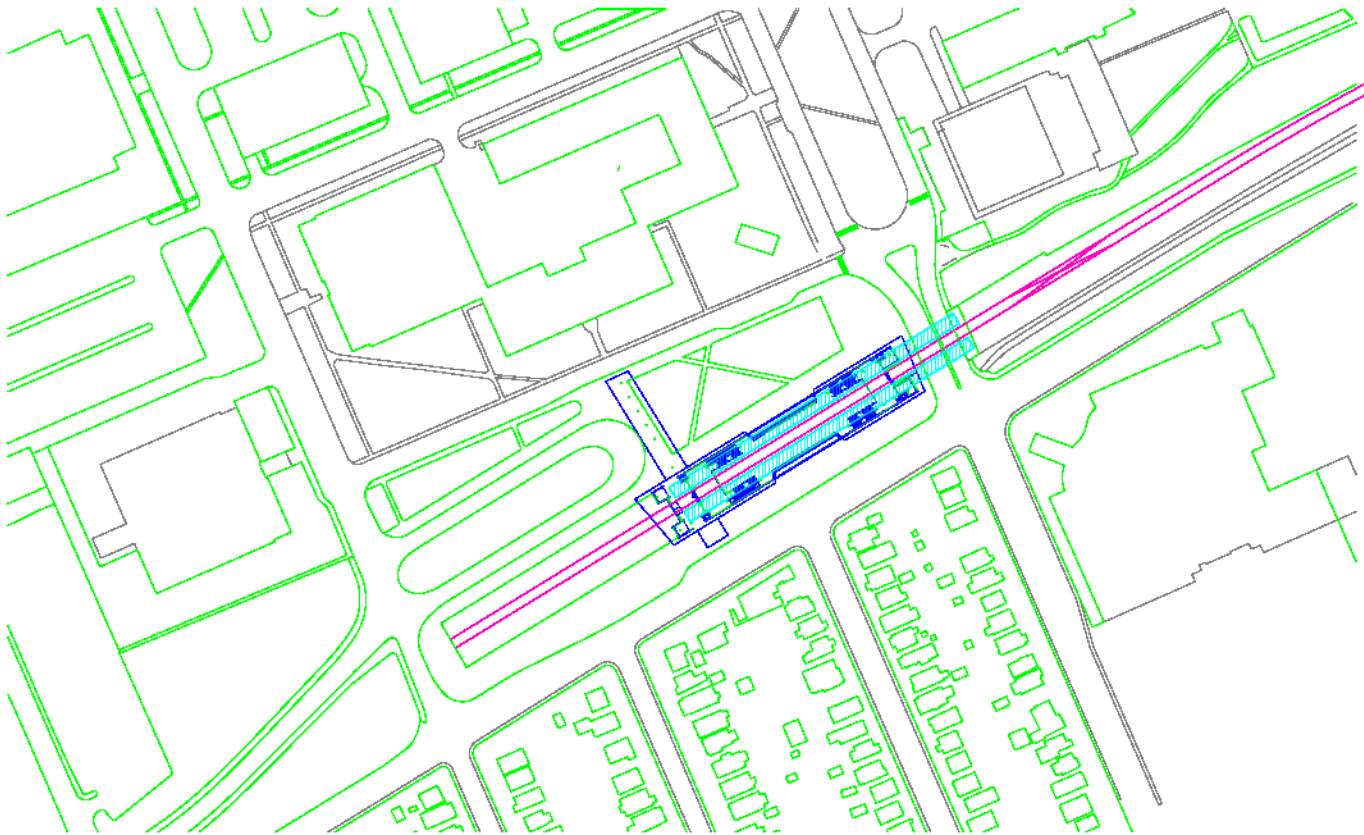


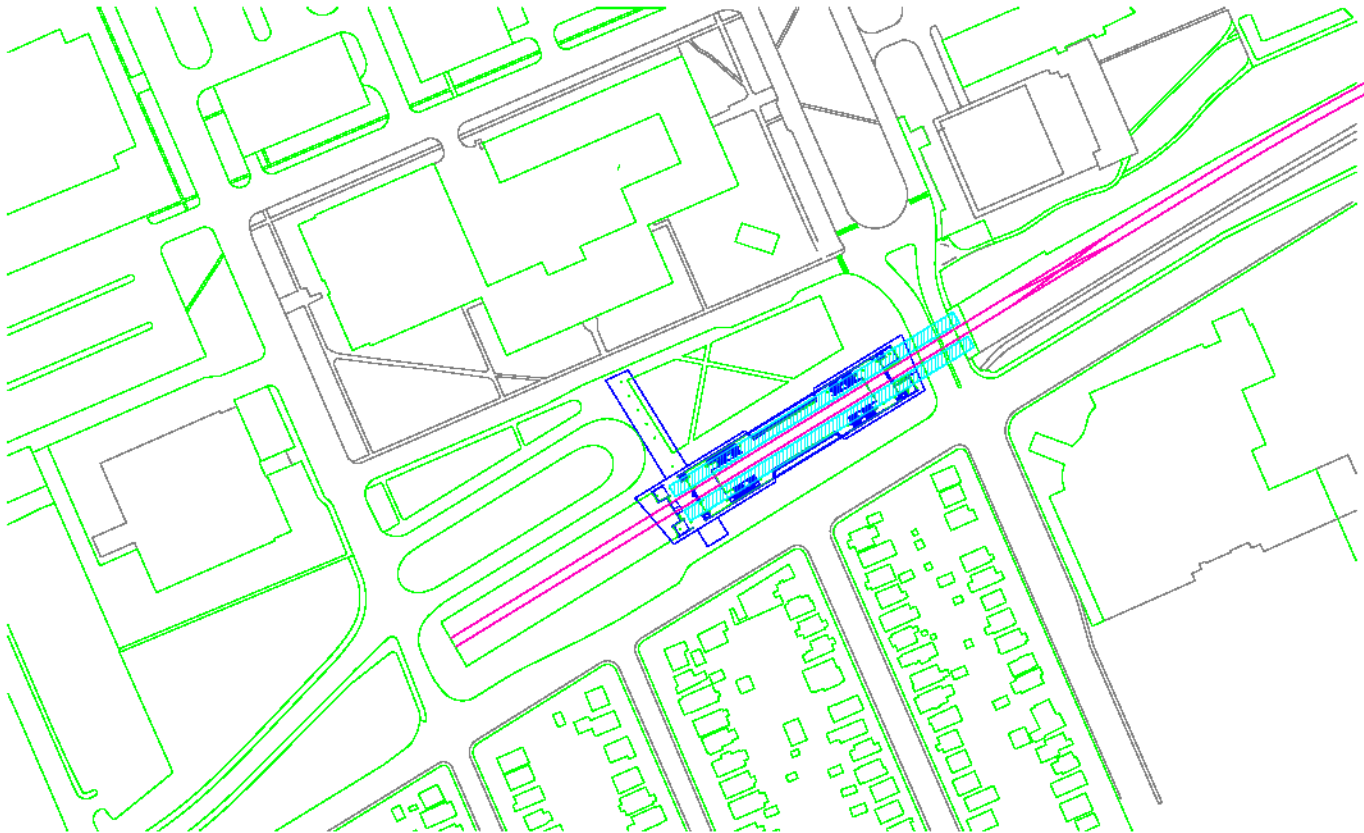






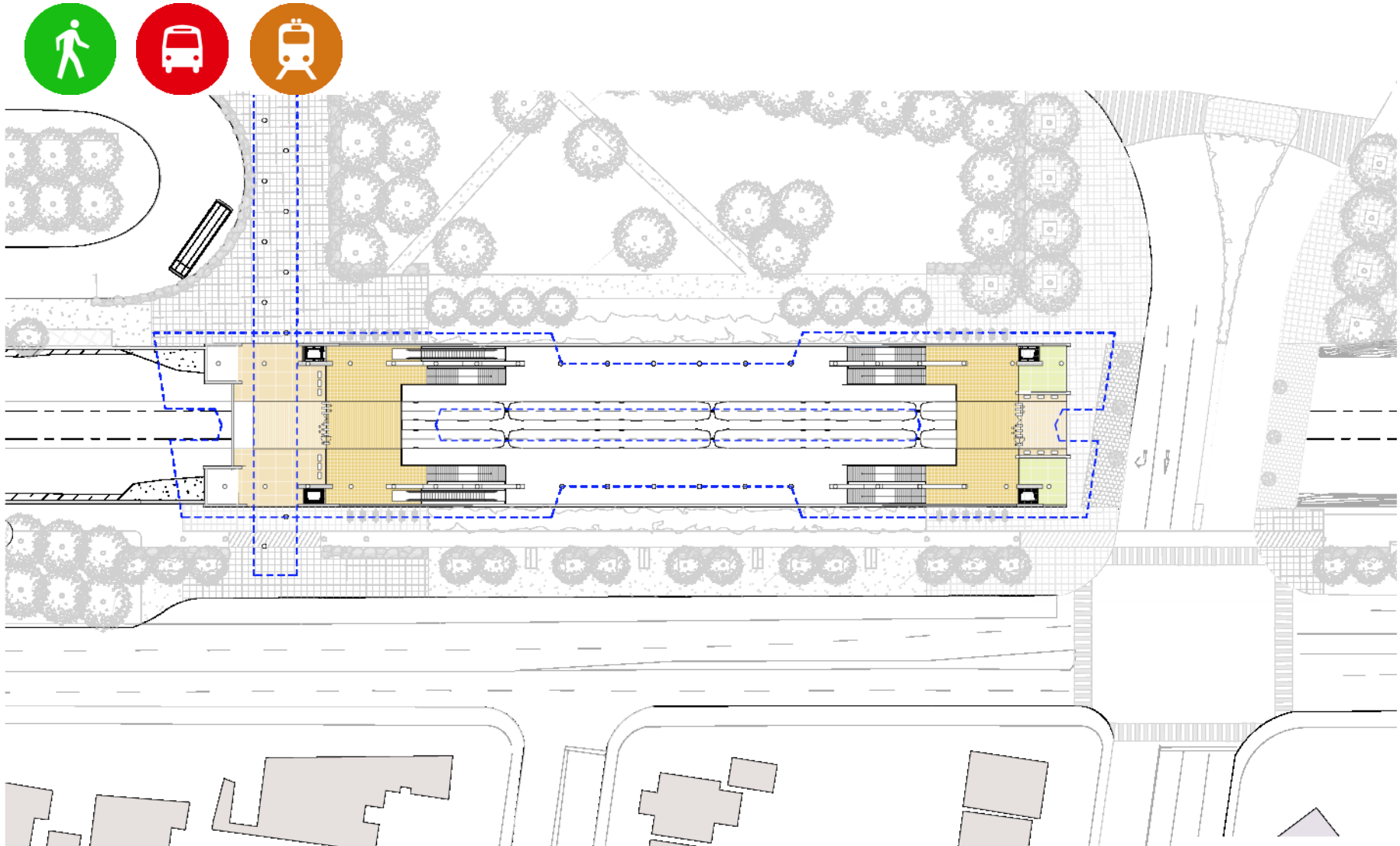


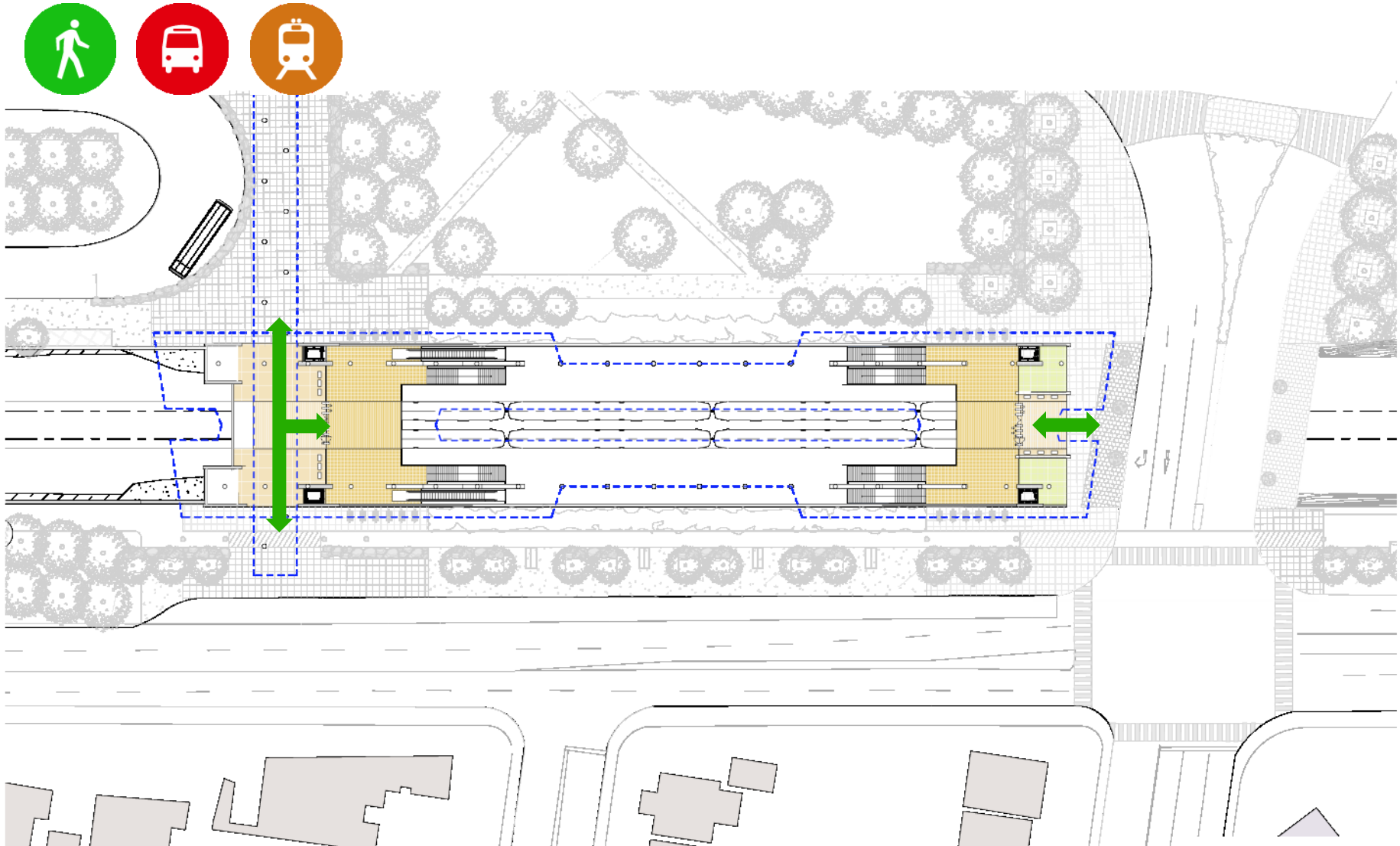




Tunney's Pasture

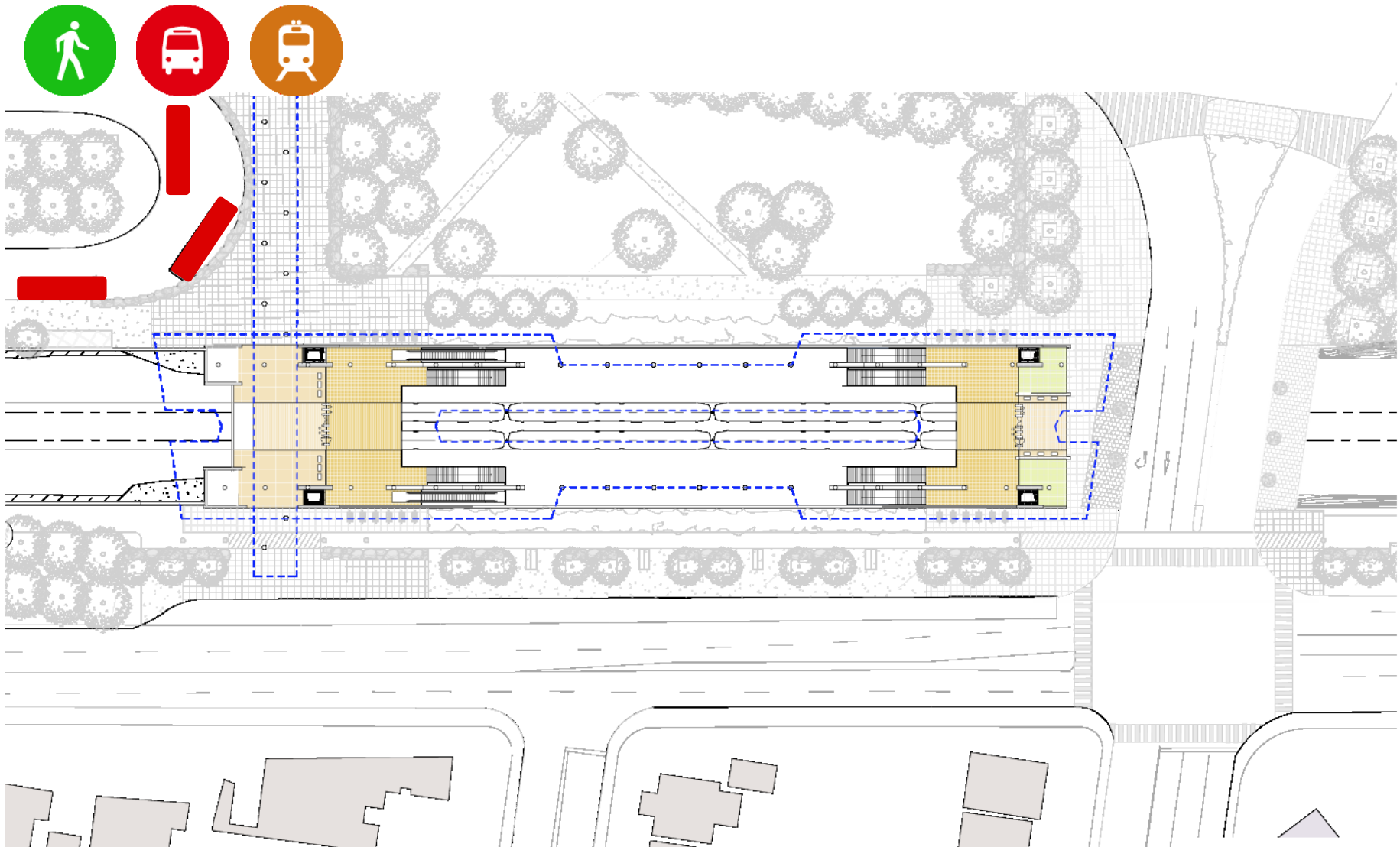
Entrances (Street Level)





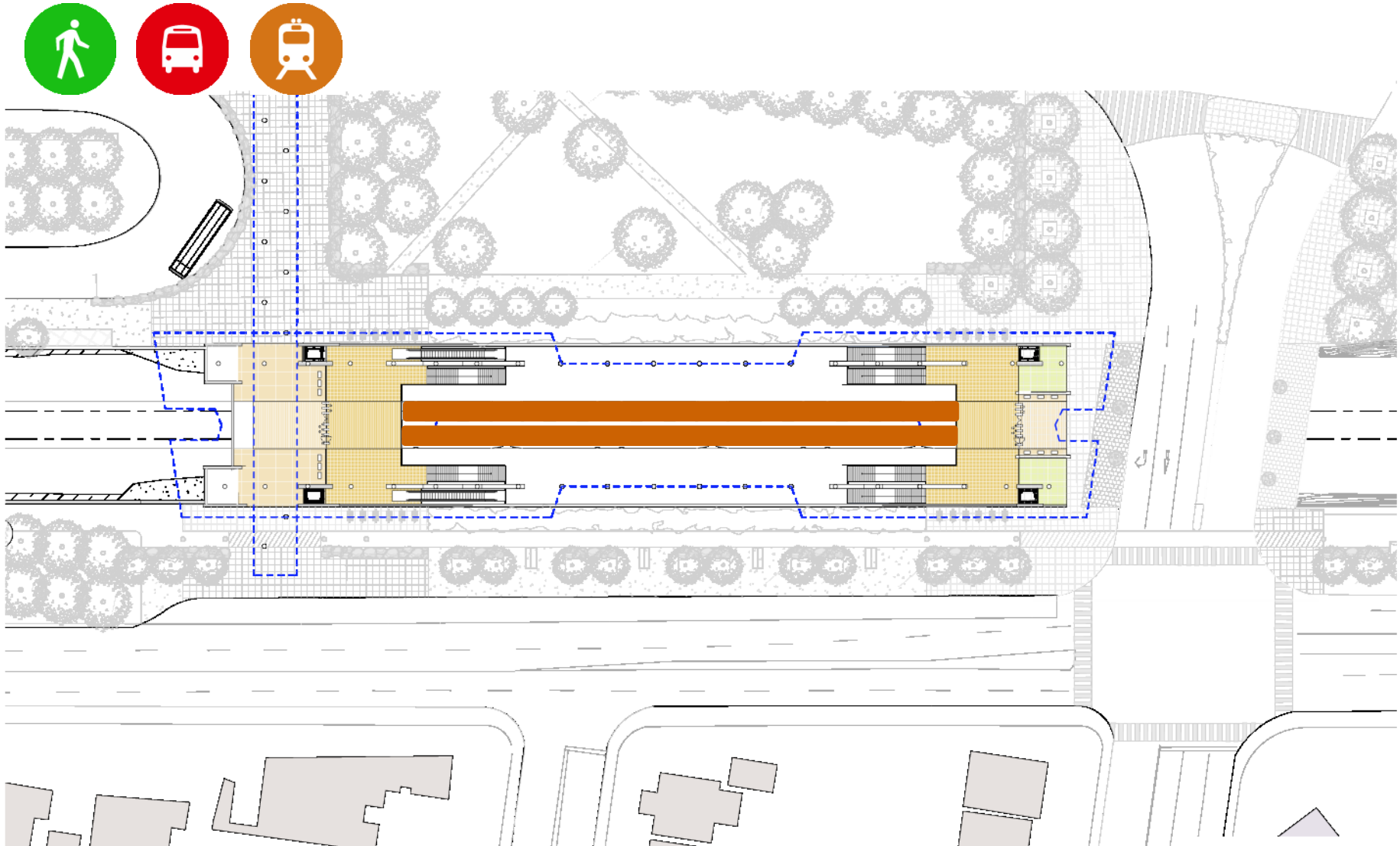
Tunney's Pasture

Entrances (Street Level)



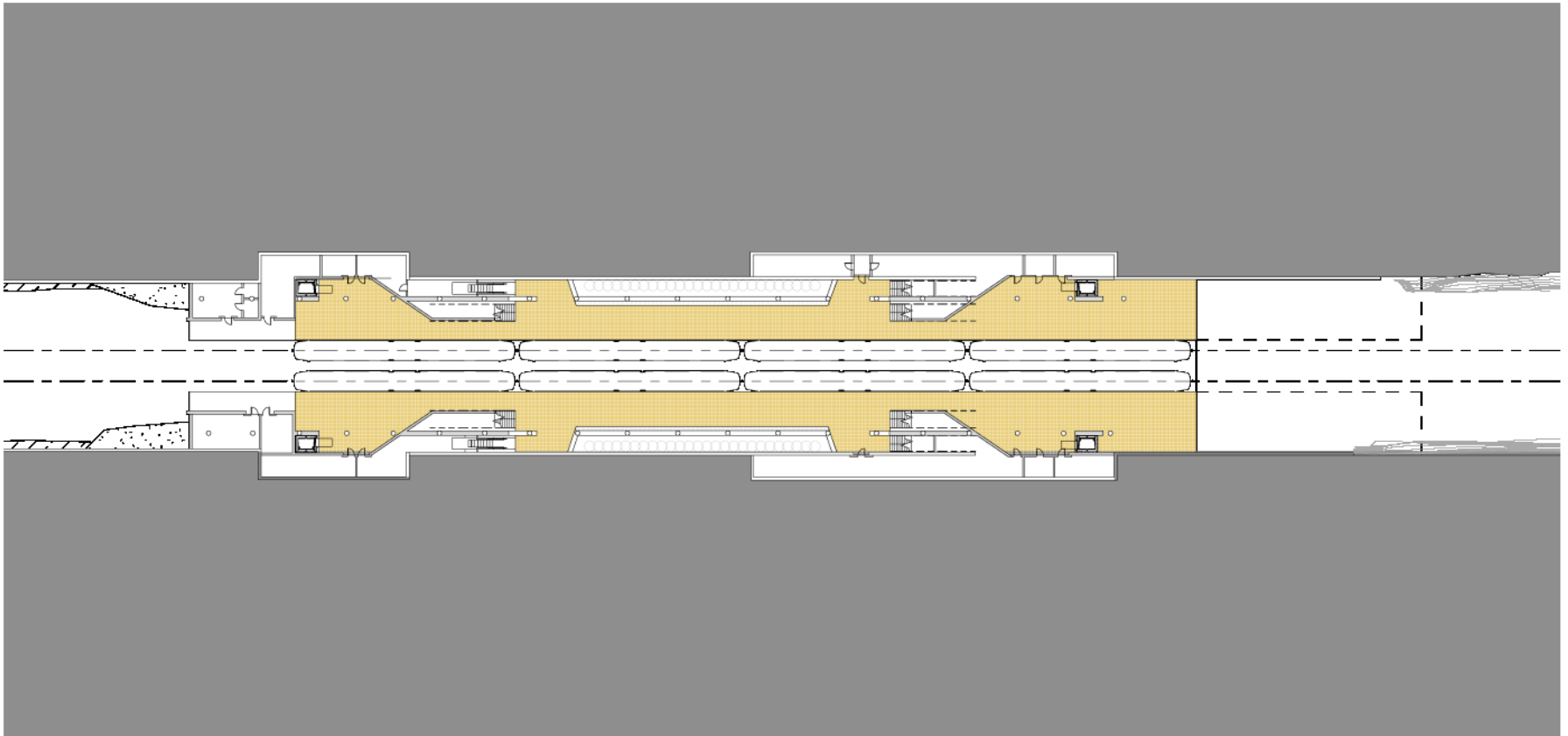
Tunney's Pasture

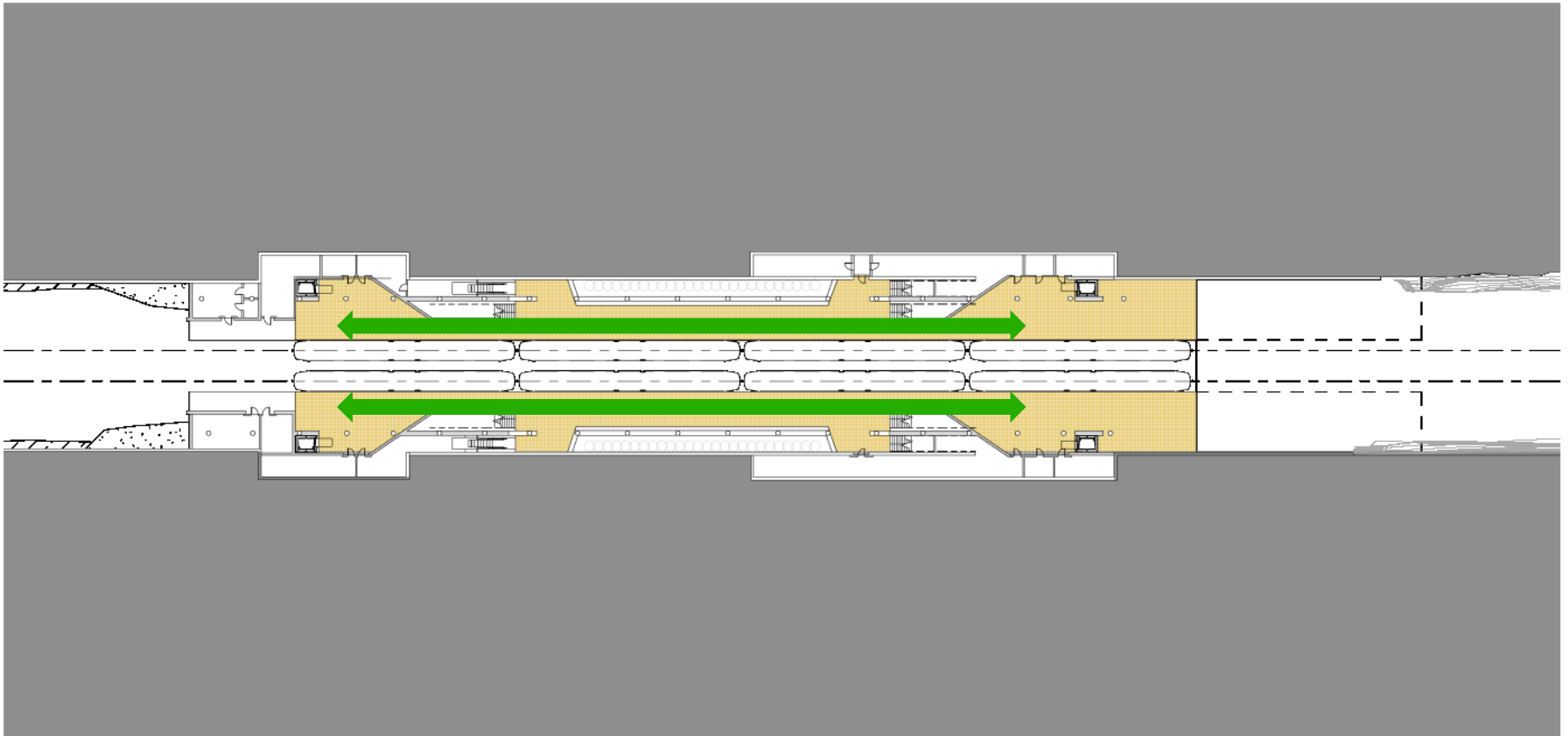
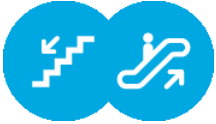
Entrances (Street Level)



Tunney's Pasture

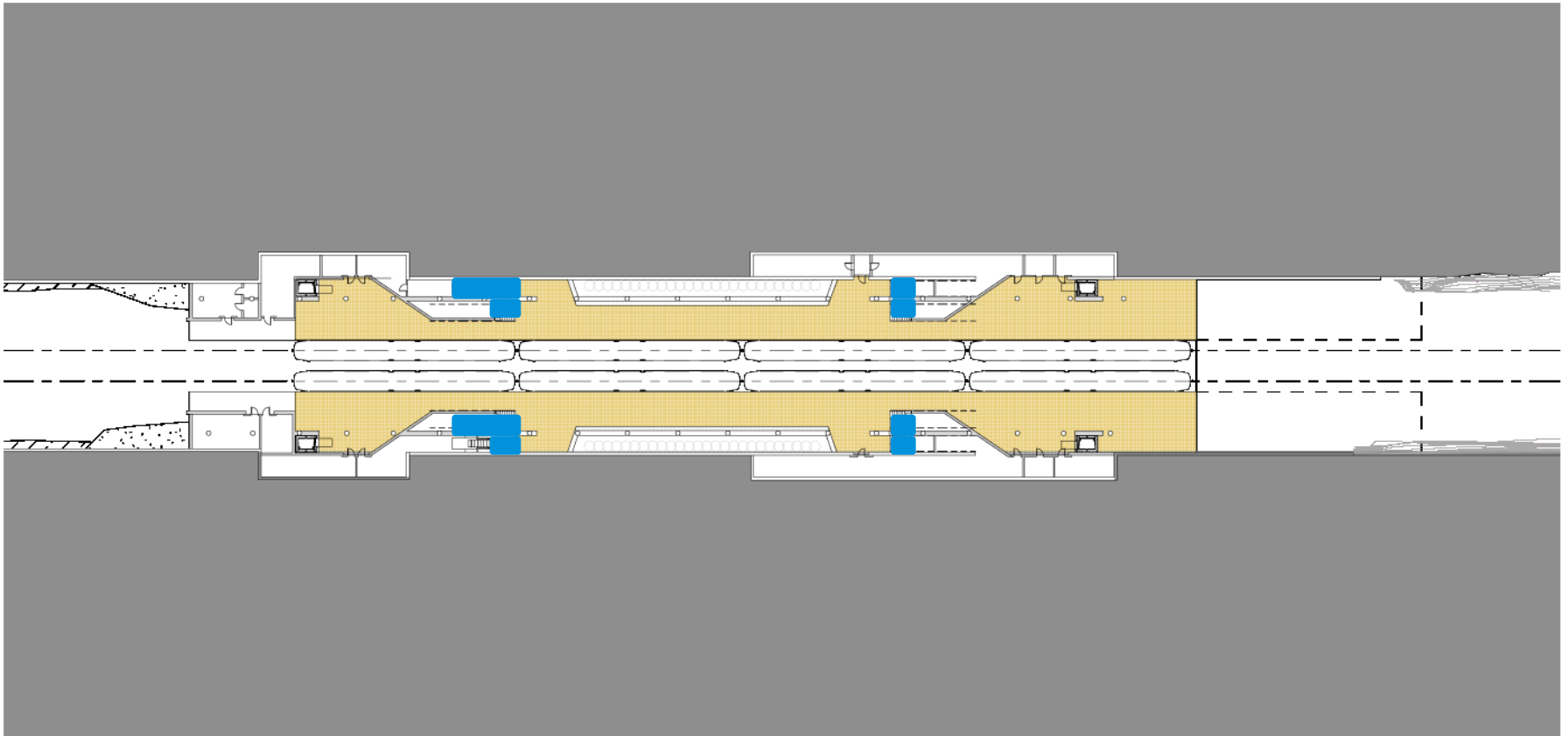
Platform (Below Grade)





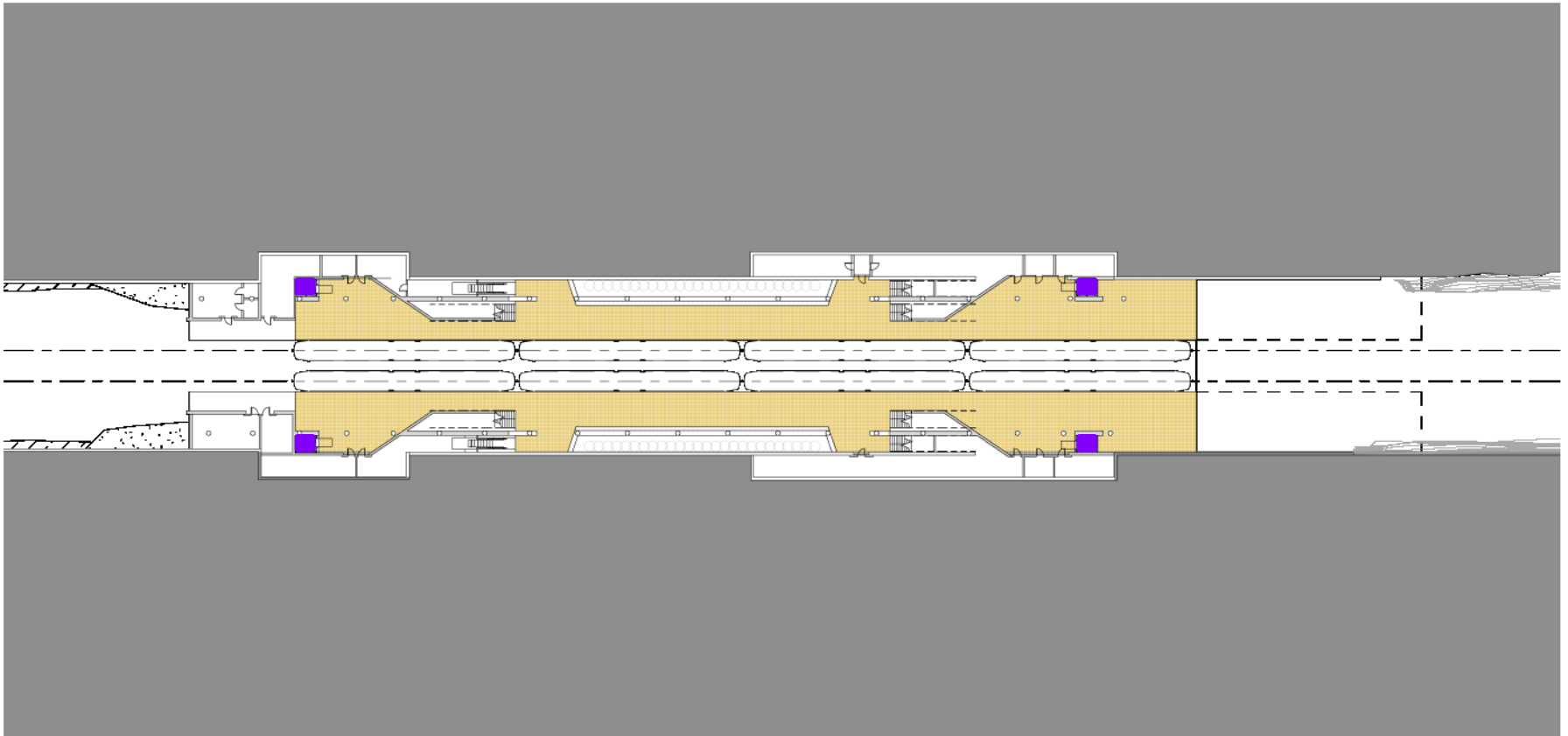
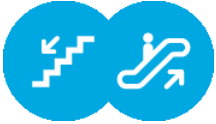
Tunney's Pasture

Platform (Below Grade)



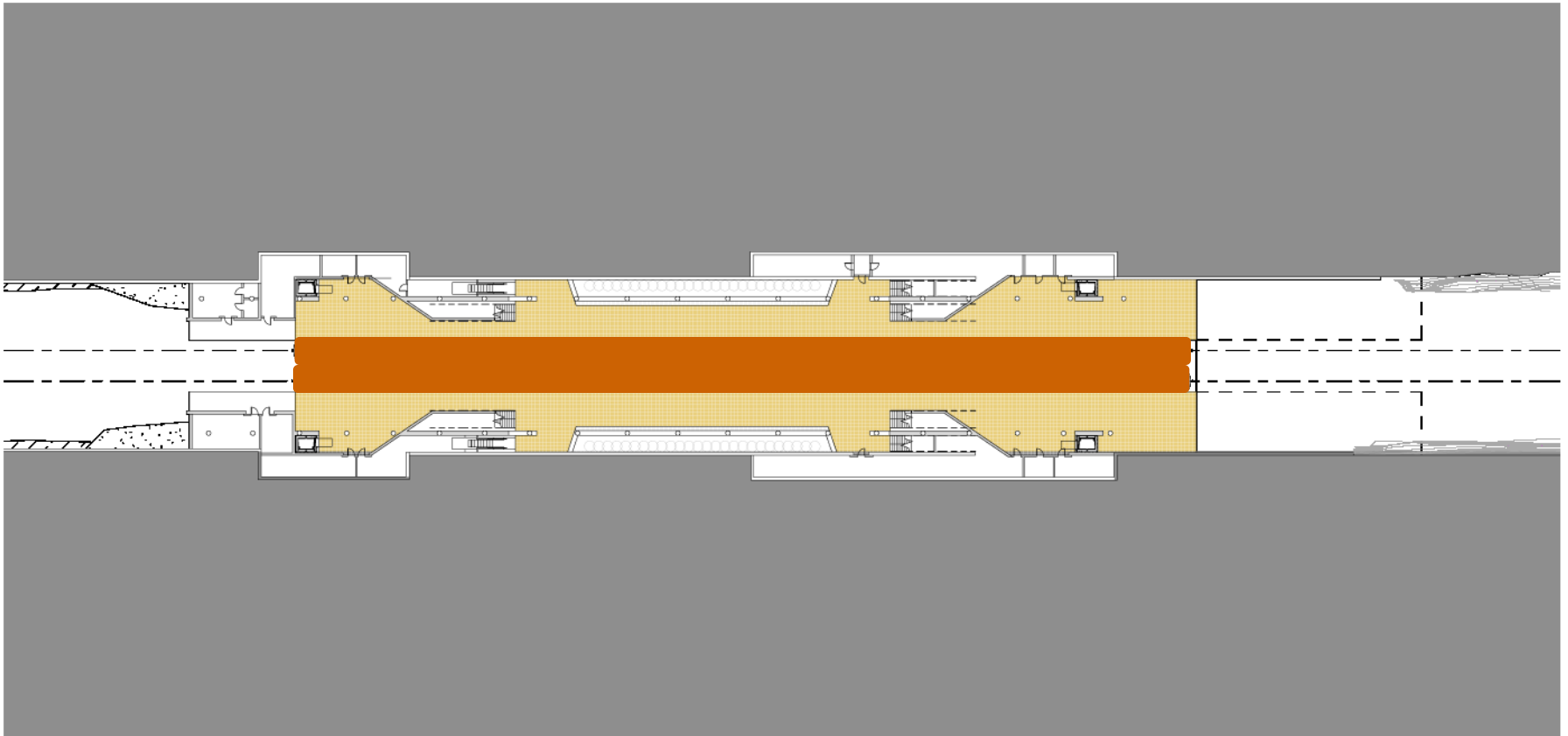
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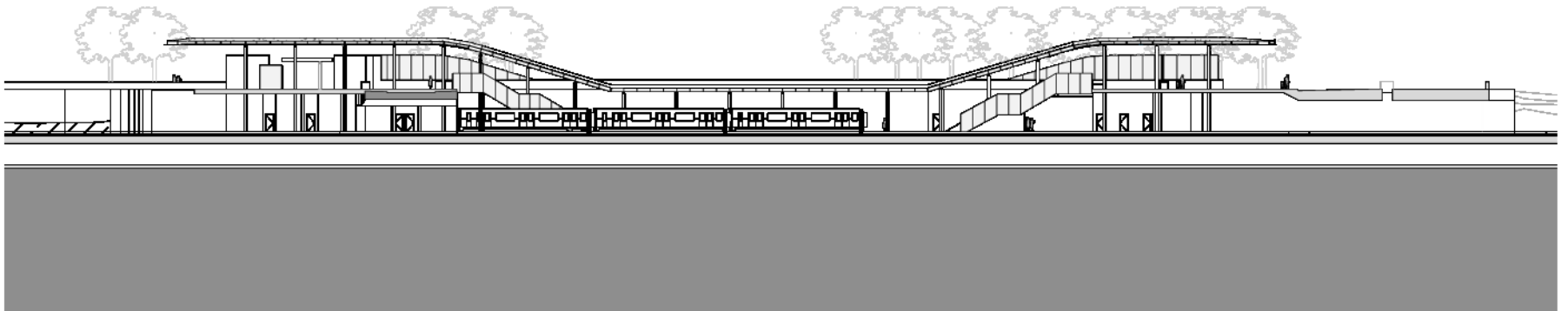
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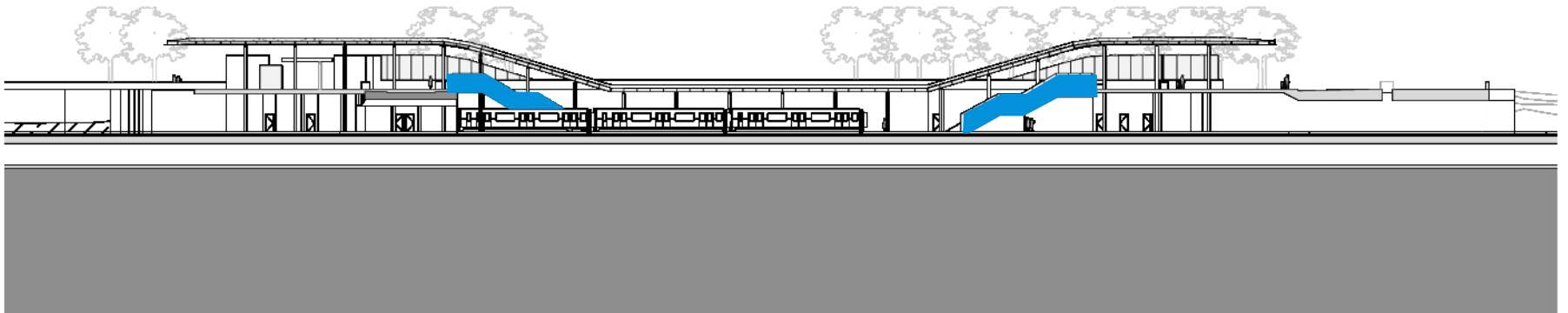


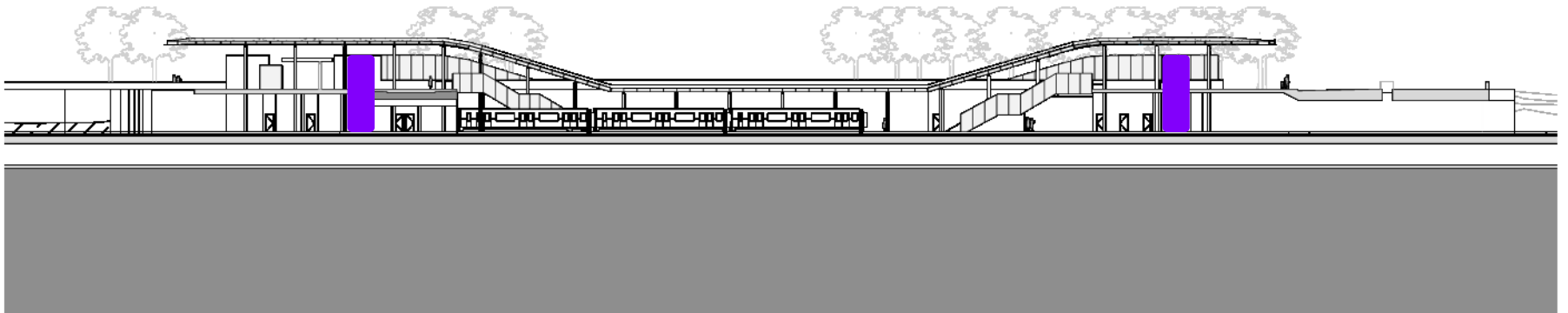
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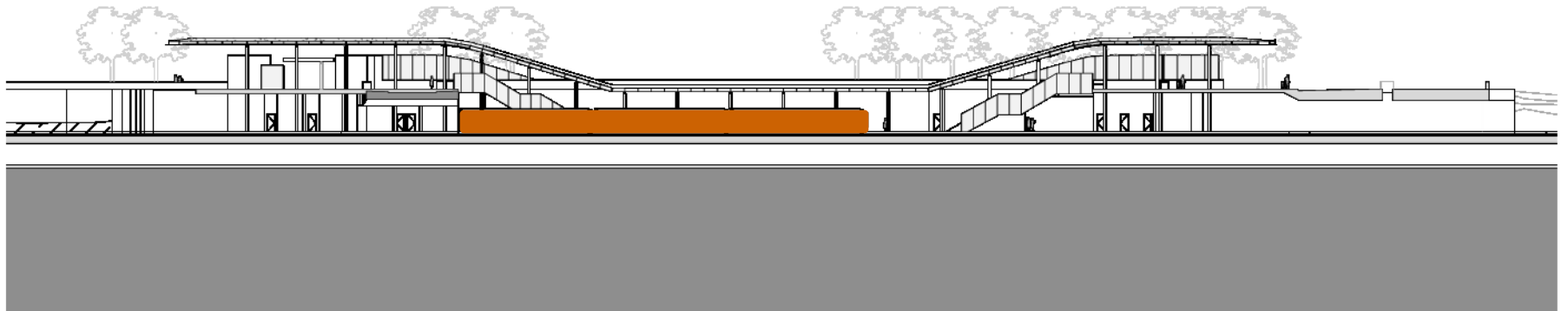
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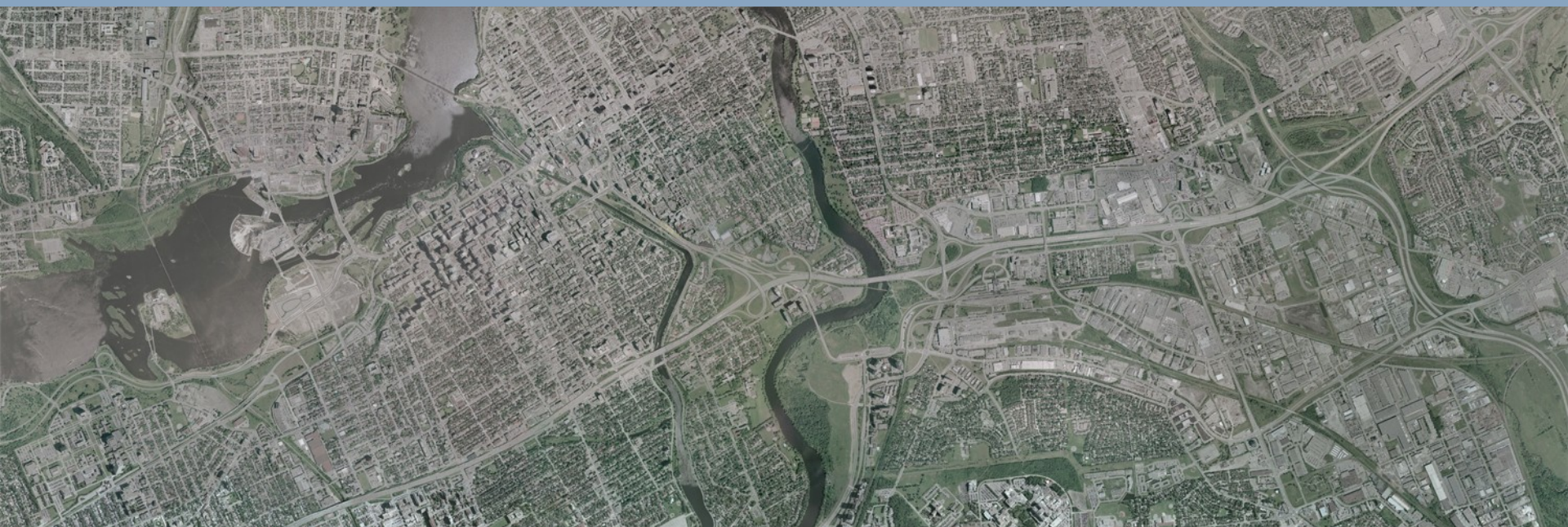


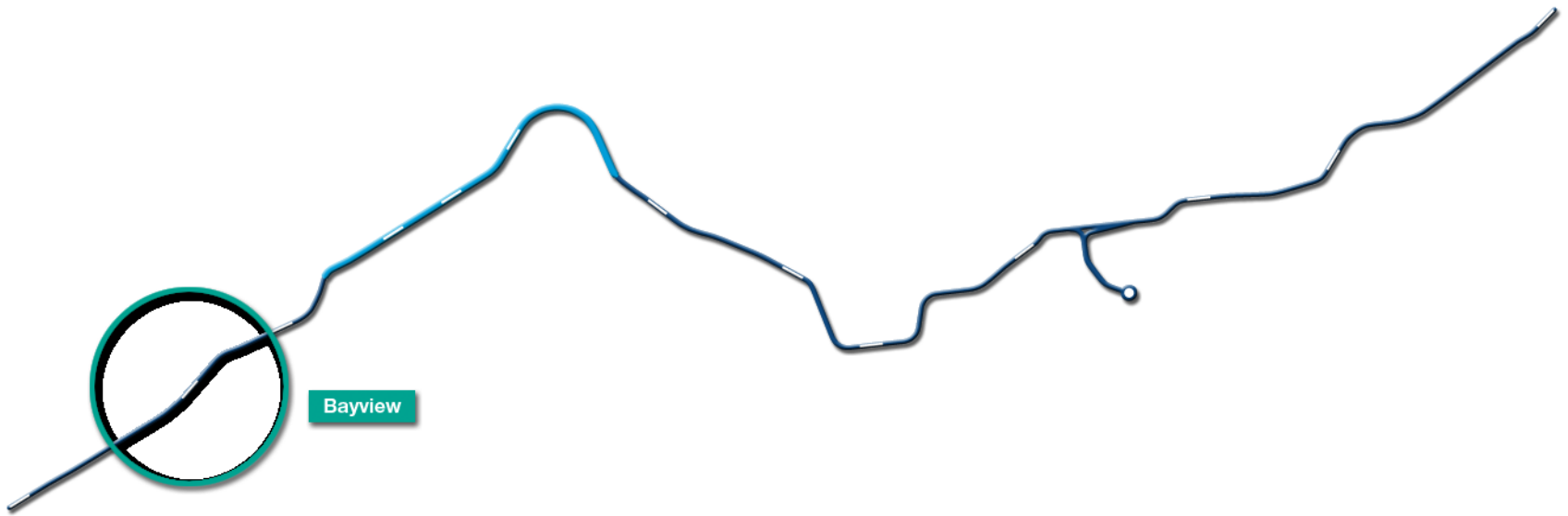


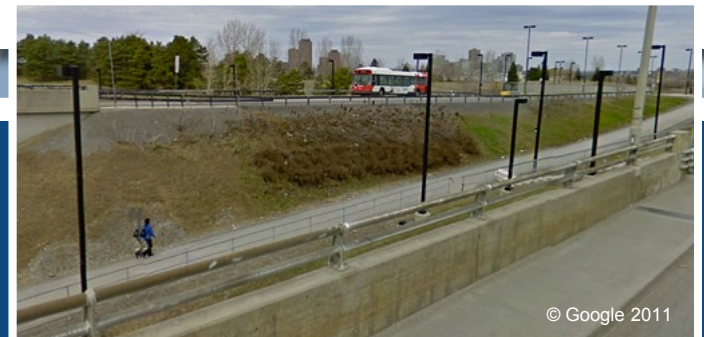
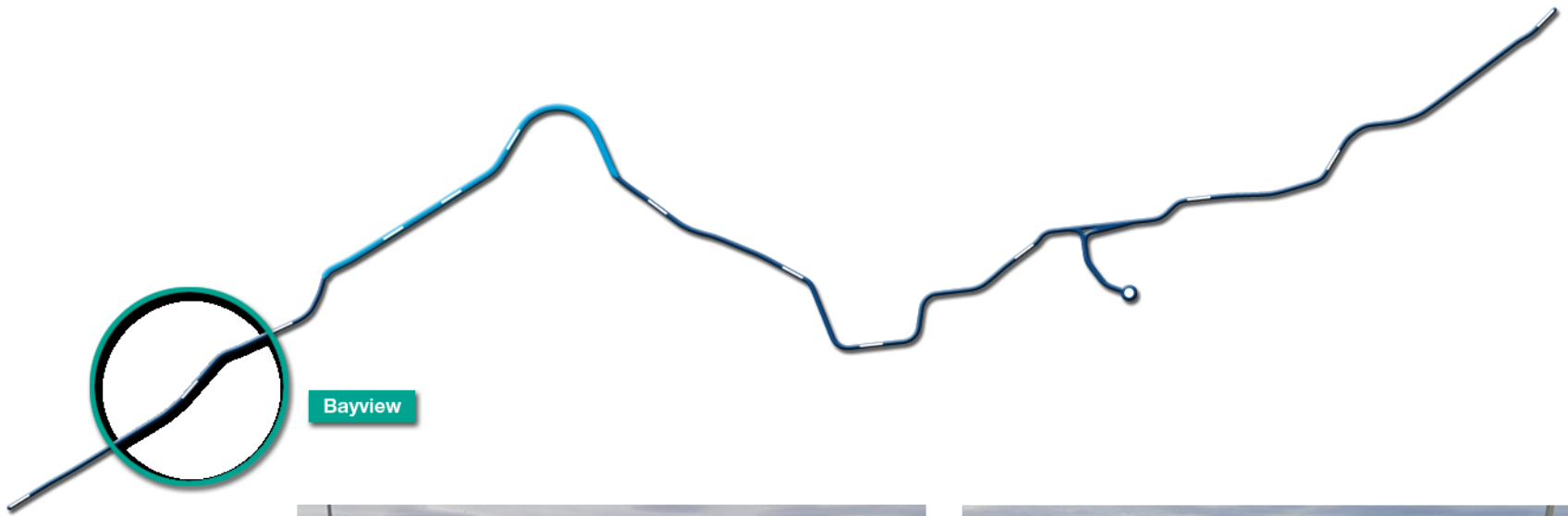
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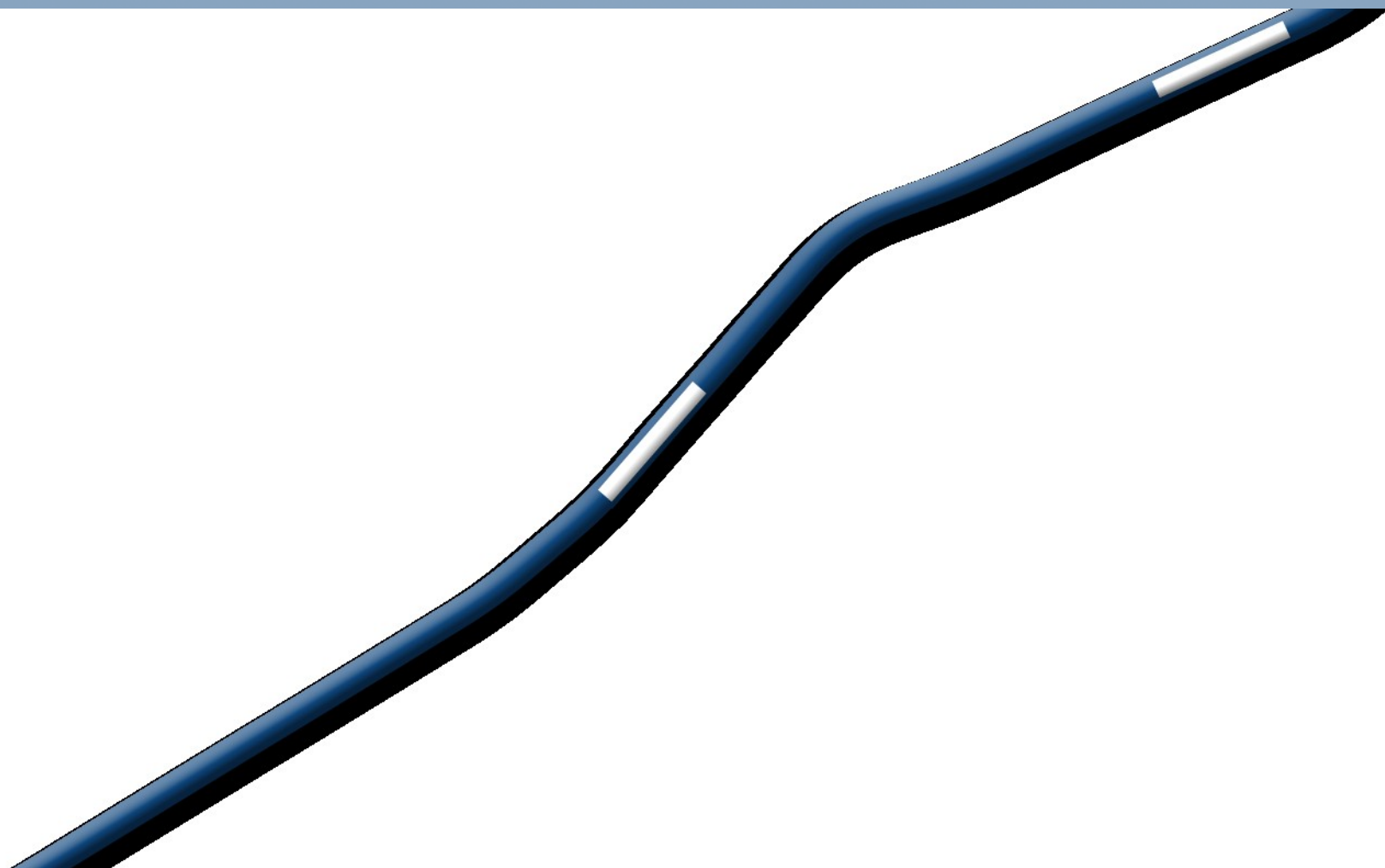
Artist Concept

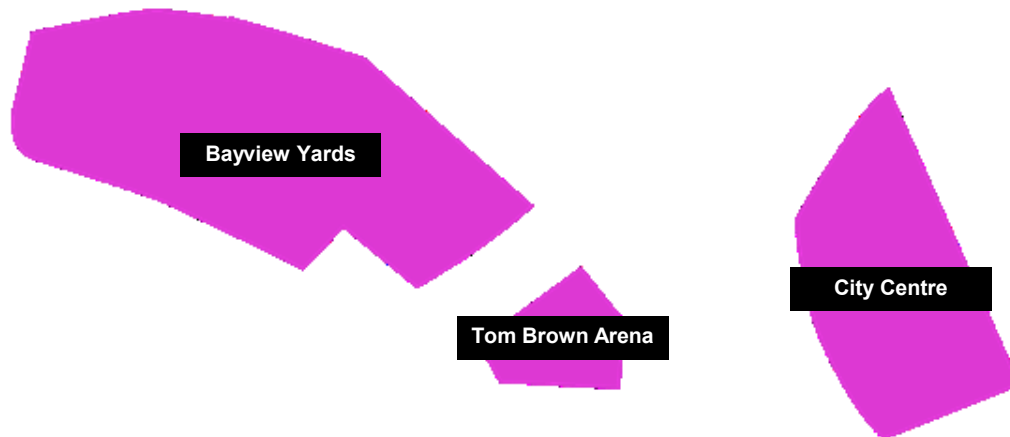




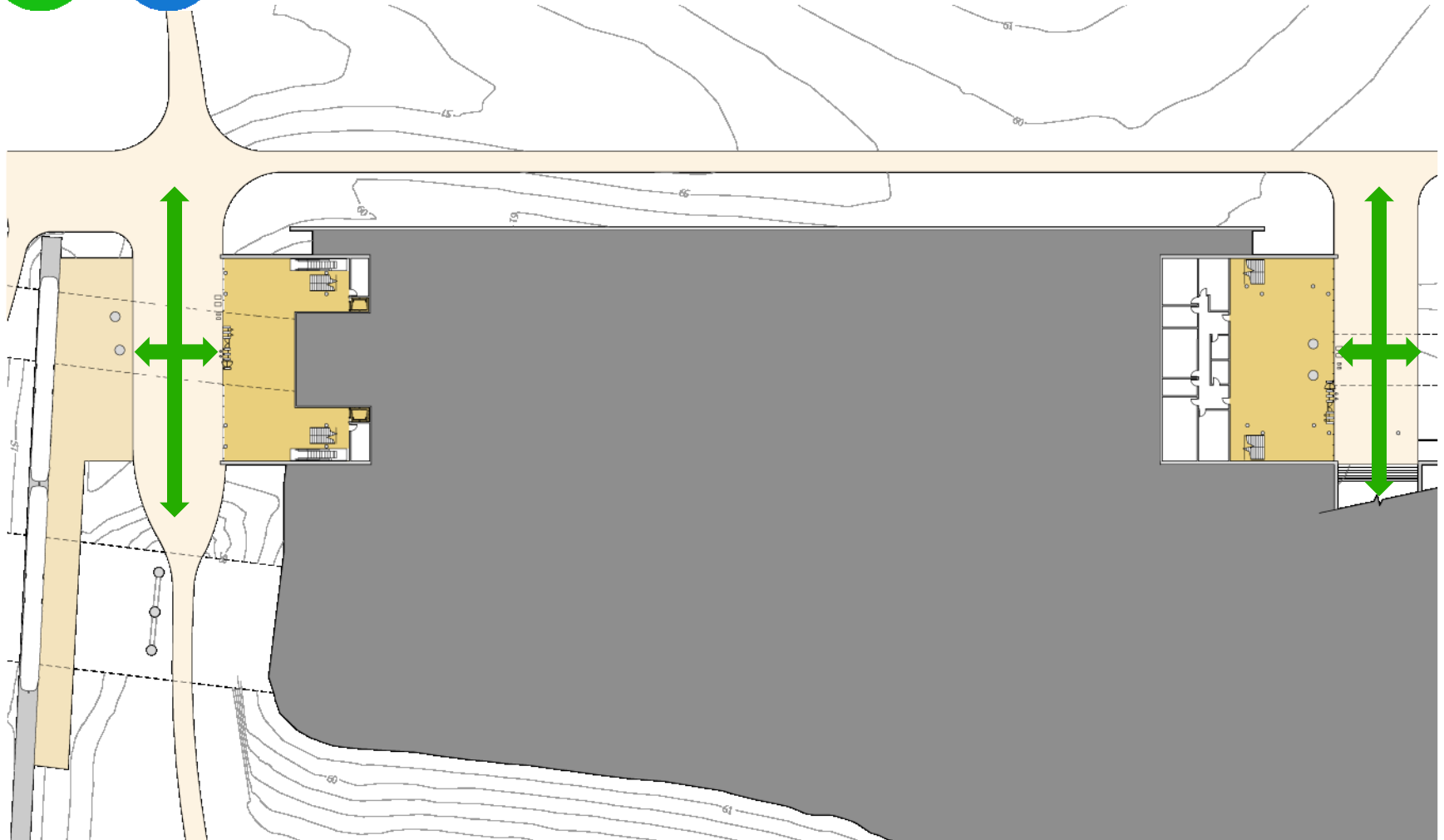




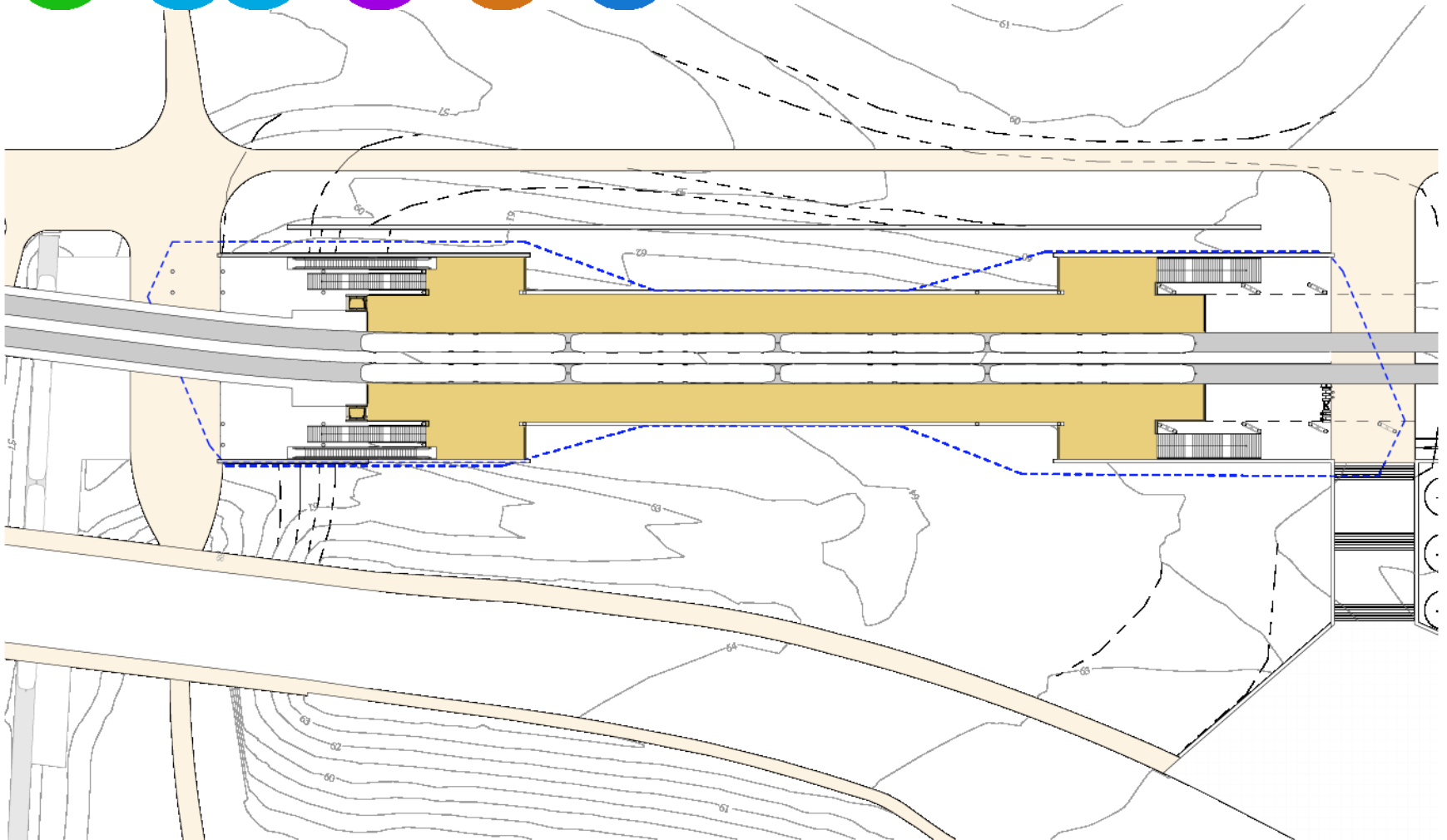


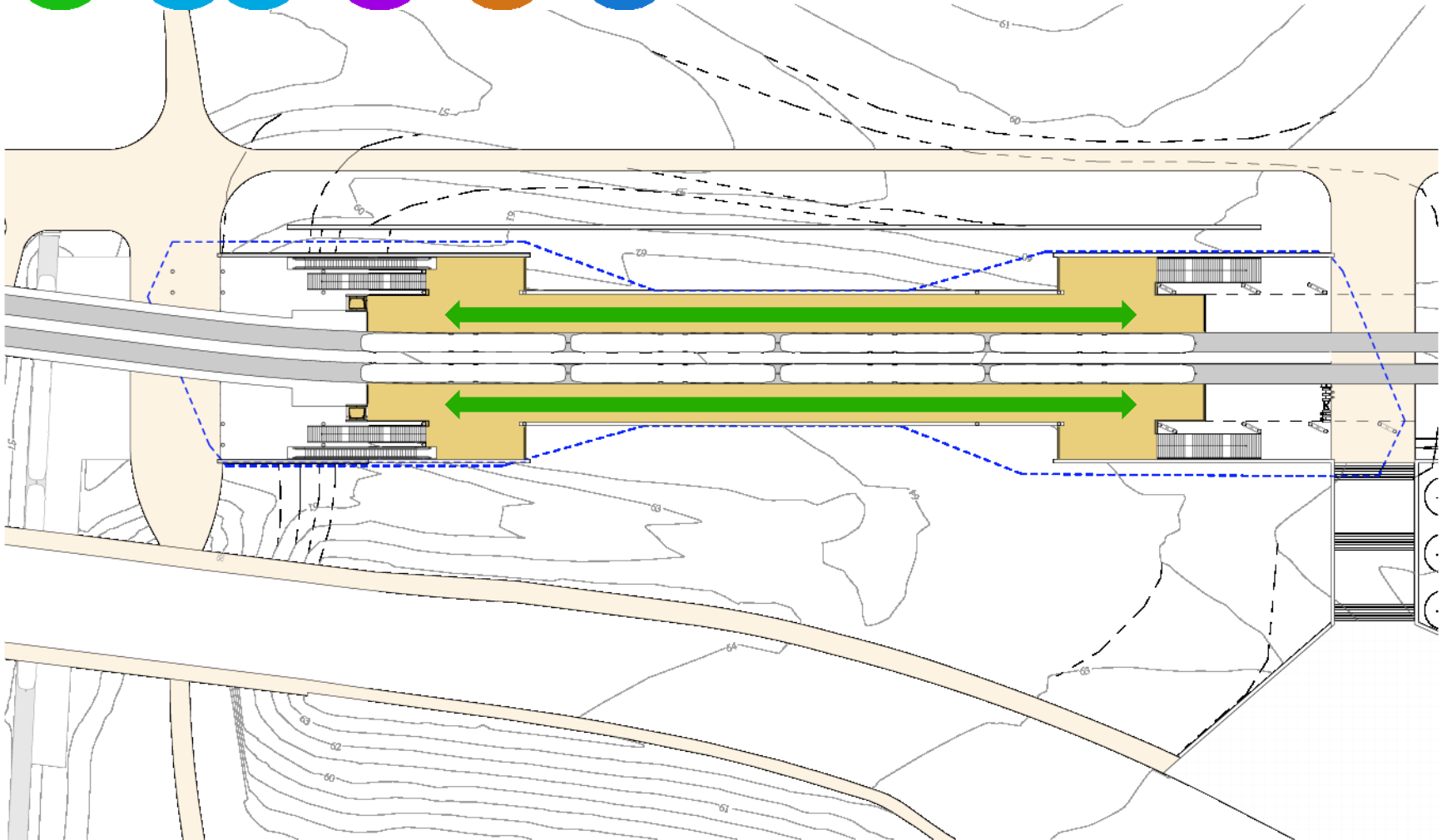


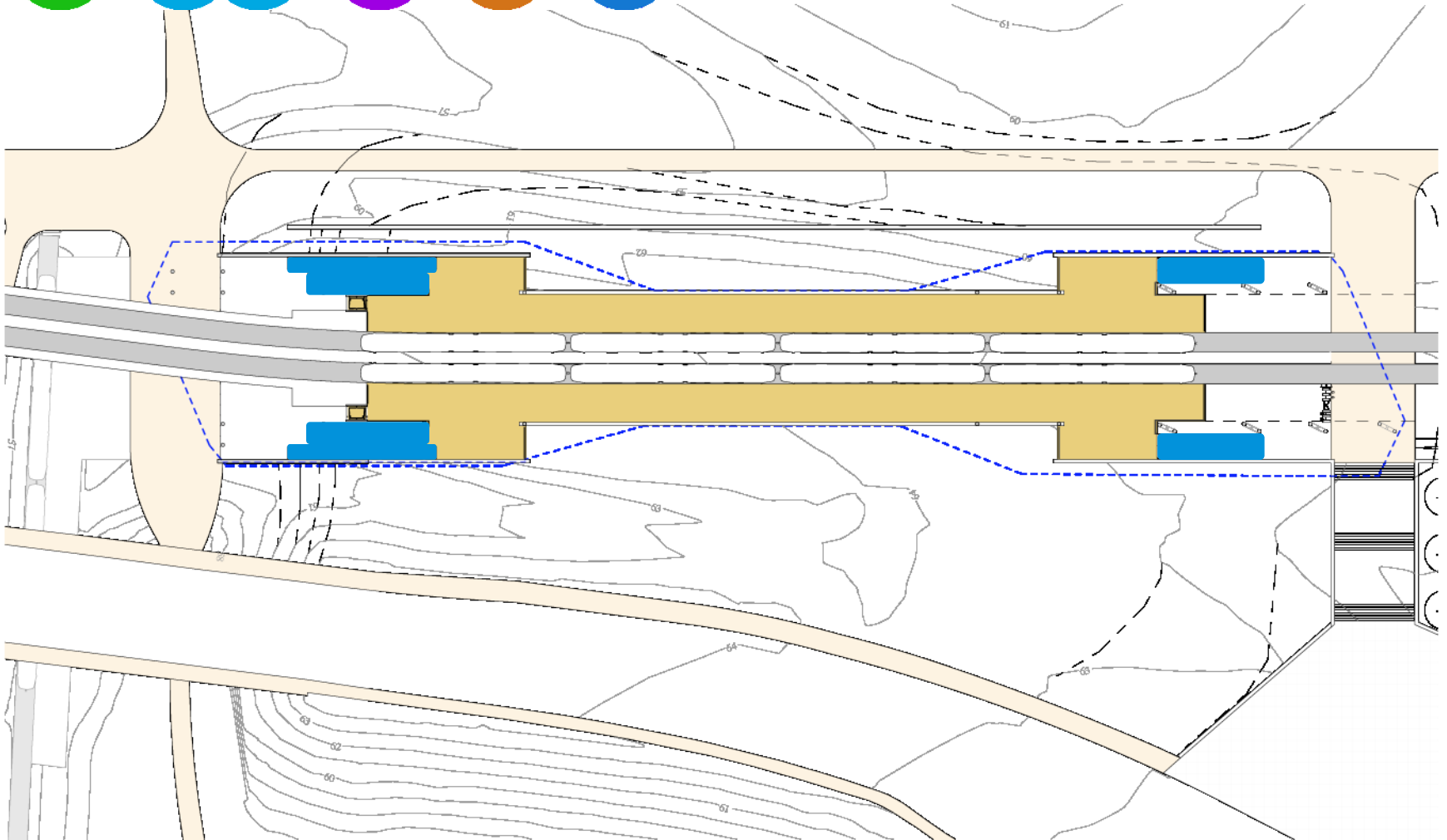


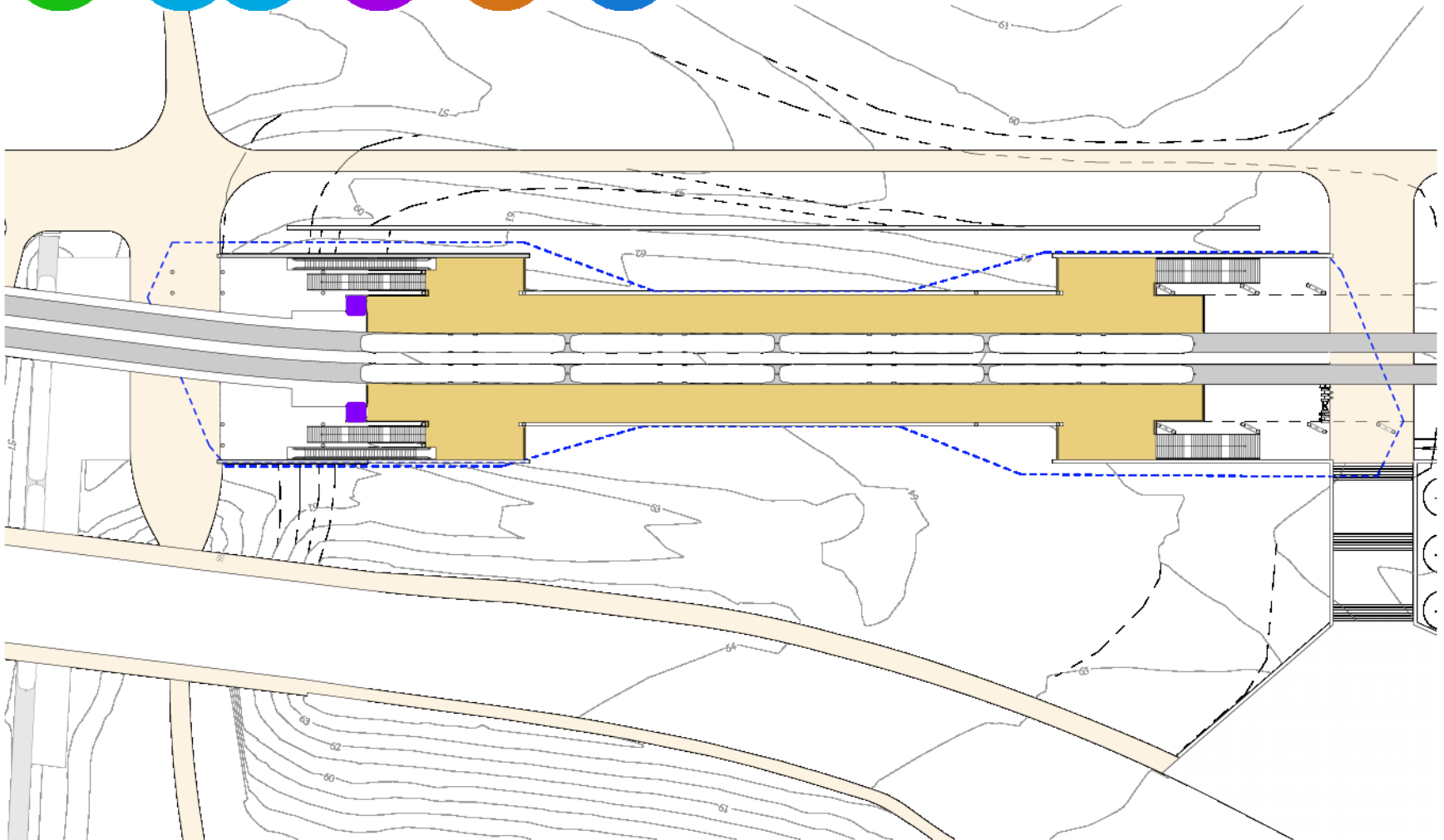


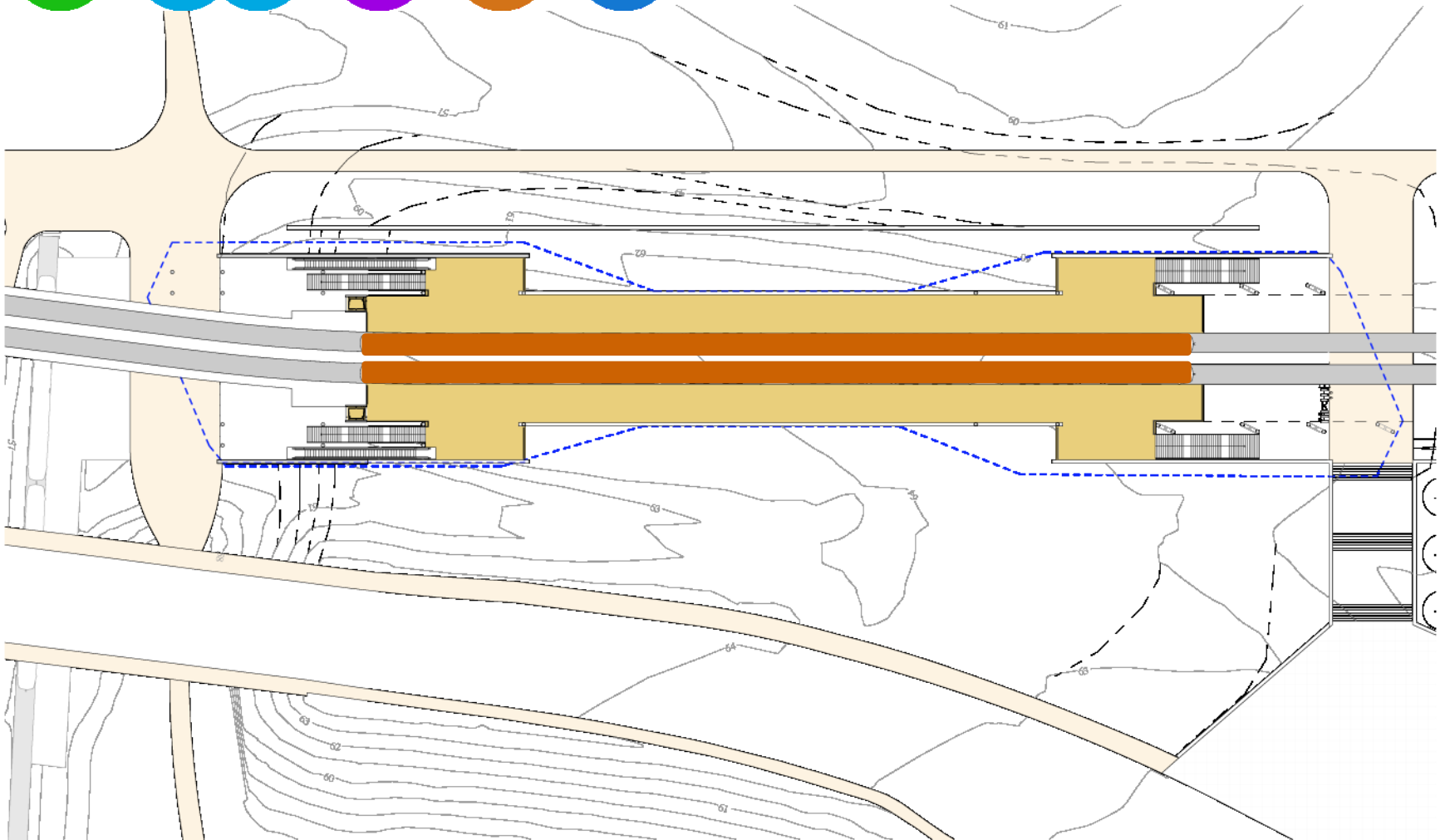


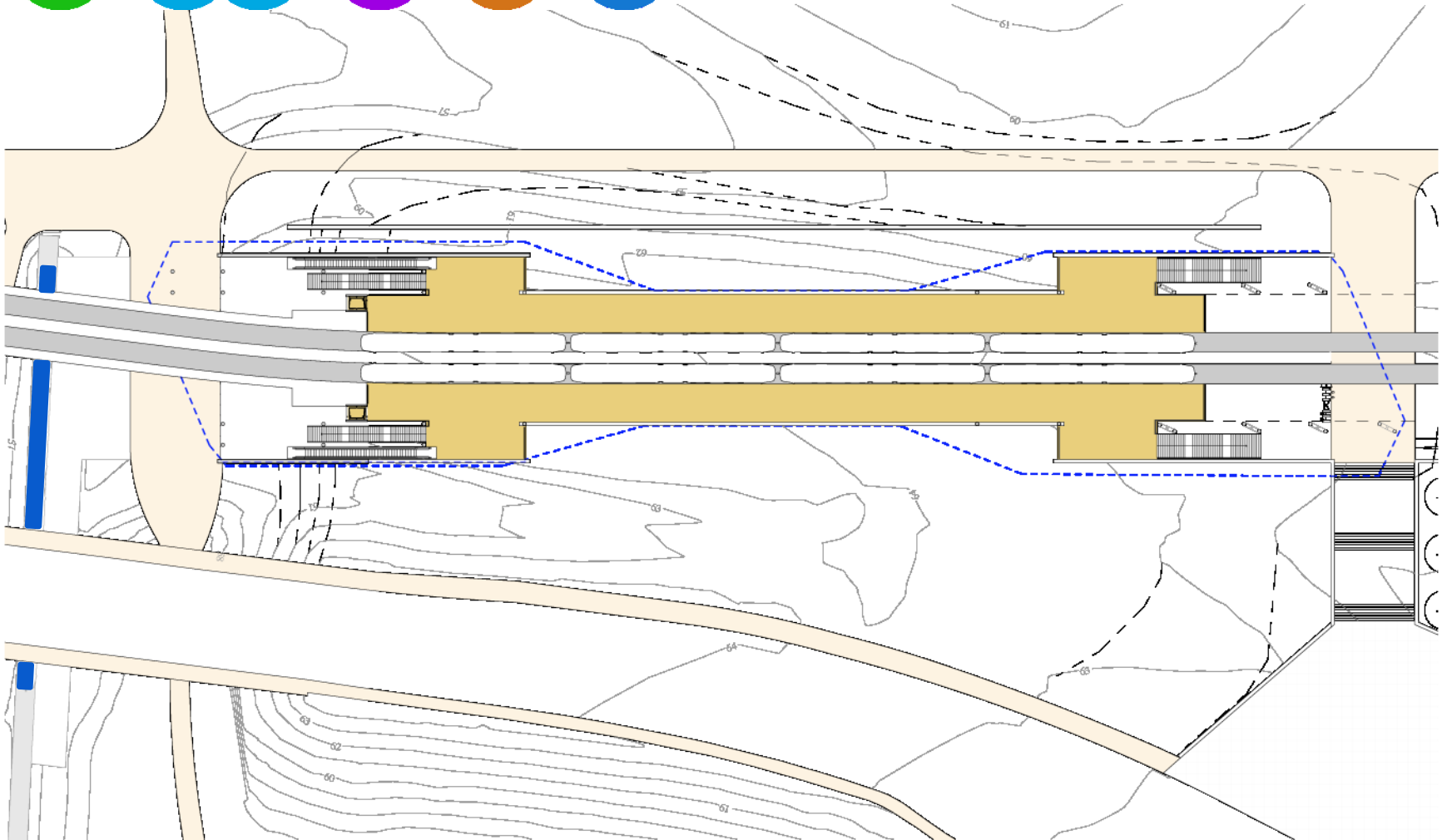


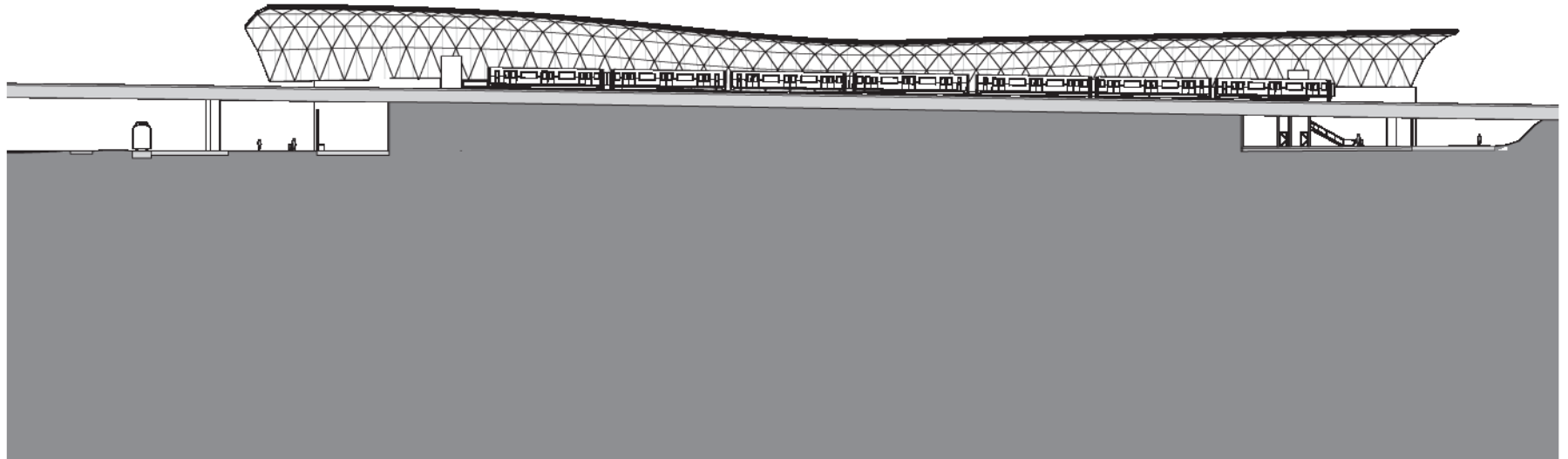


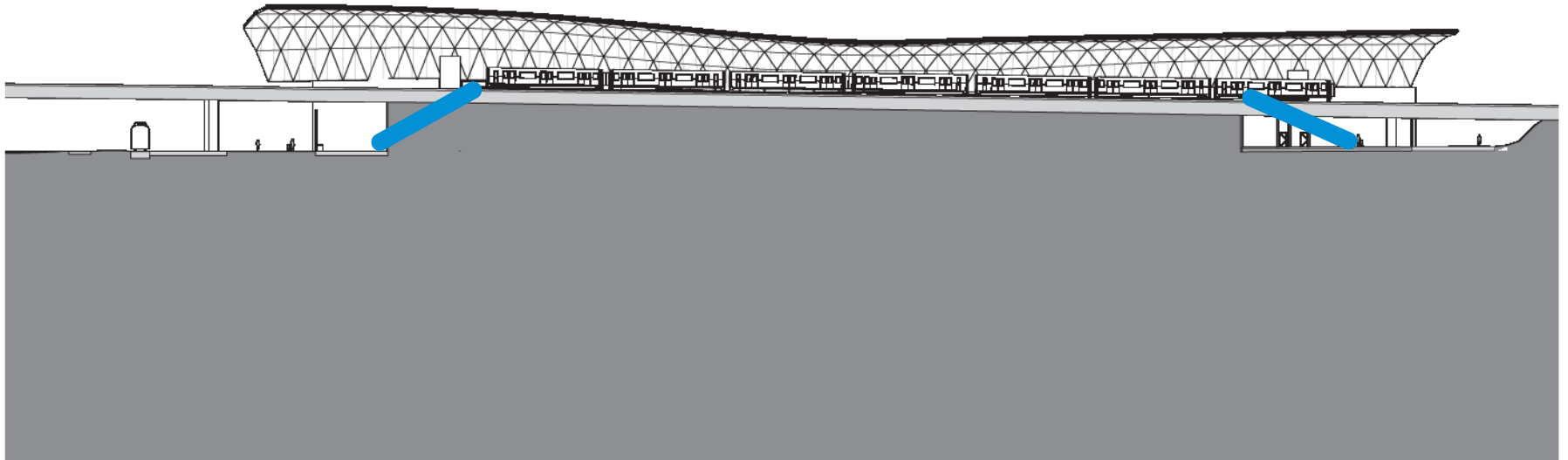


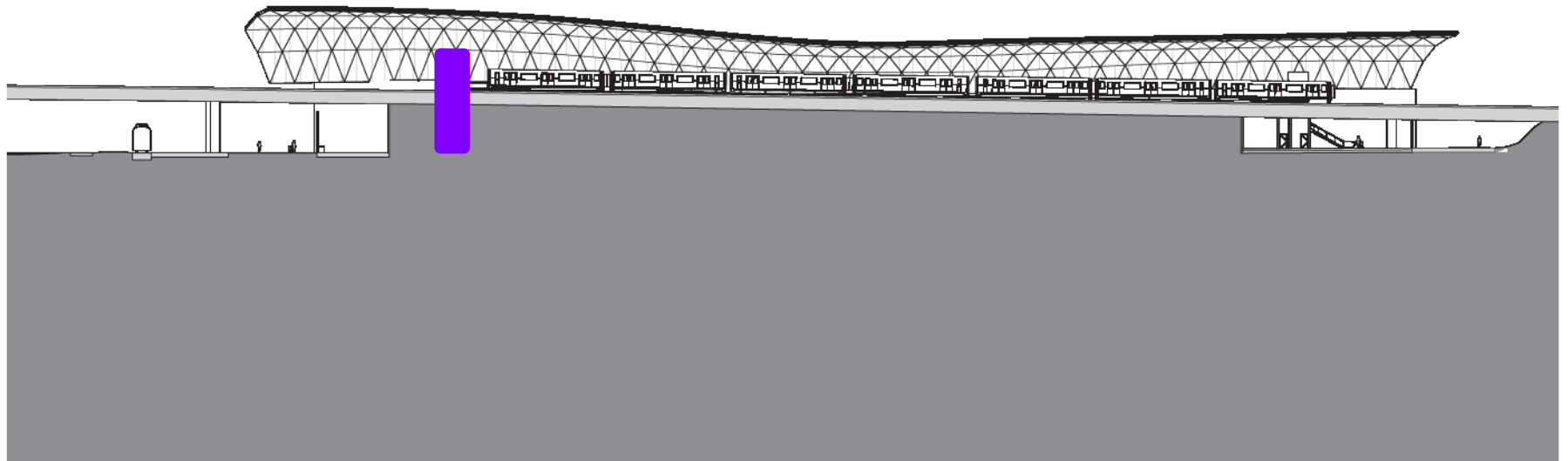


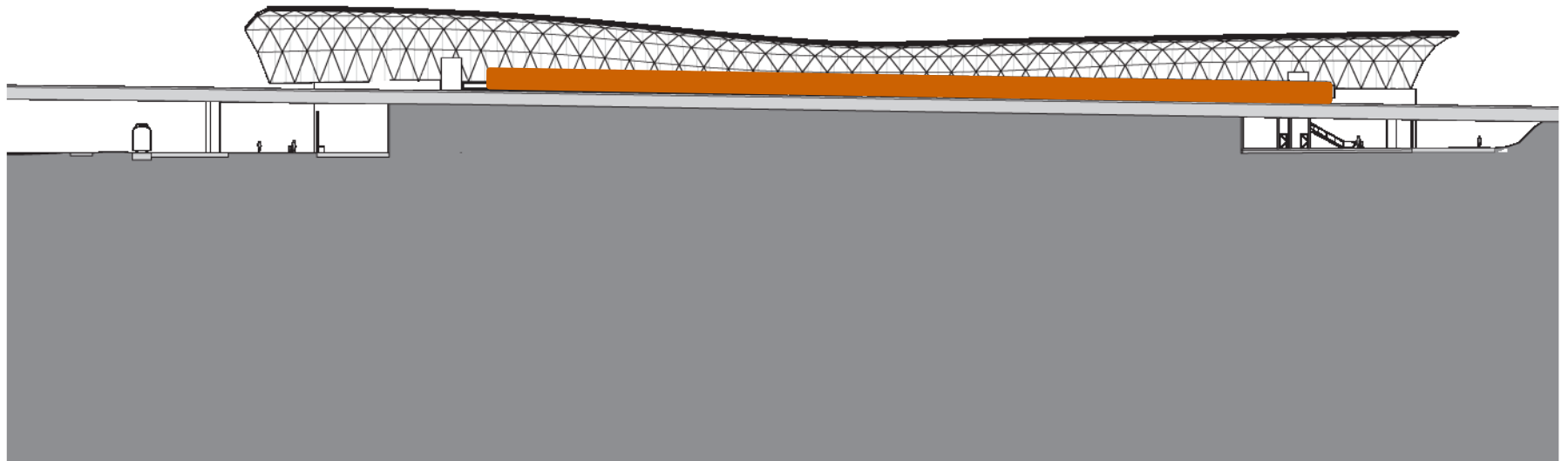




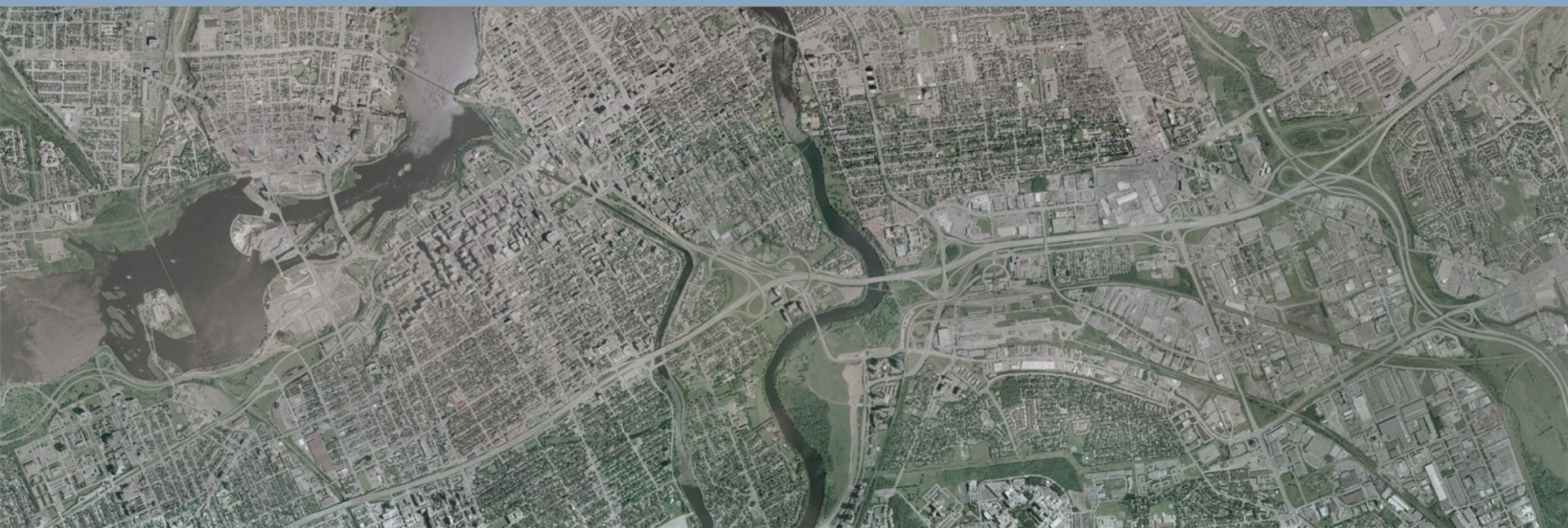


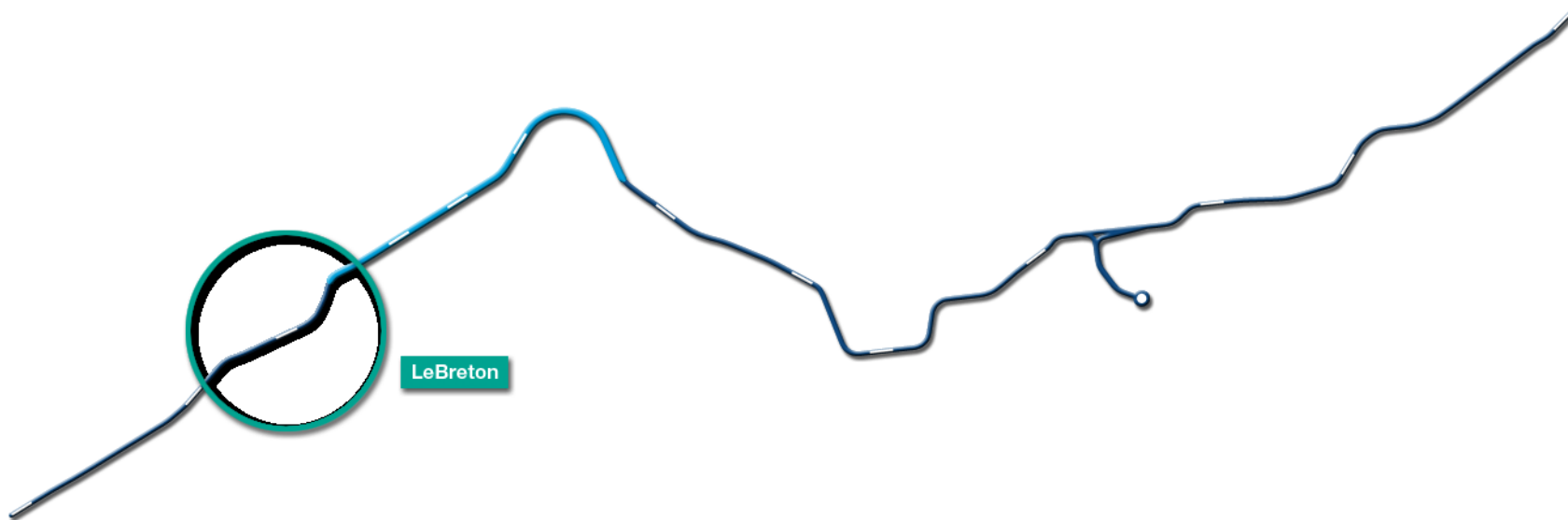


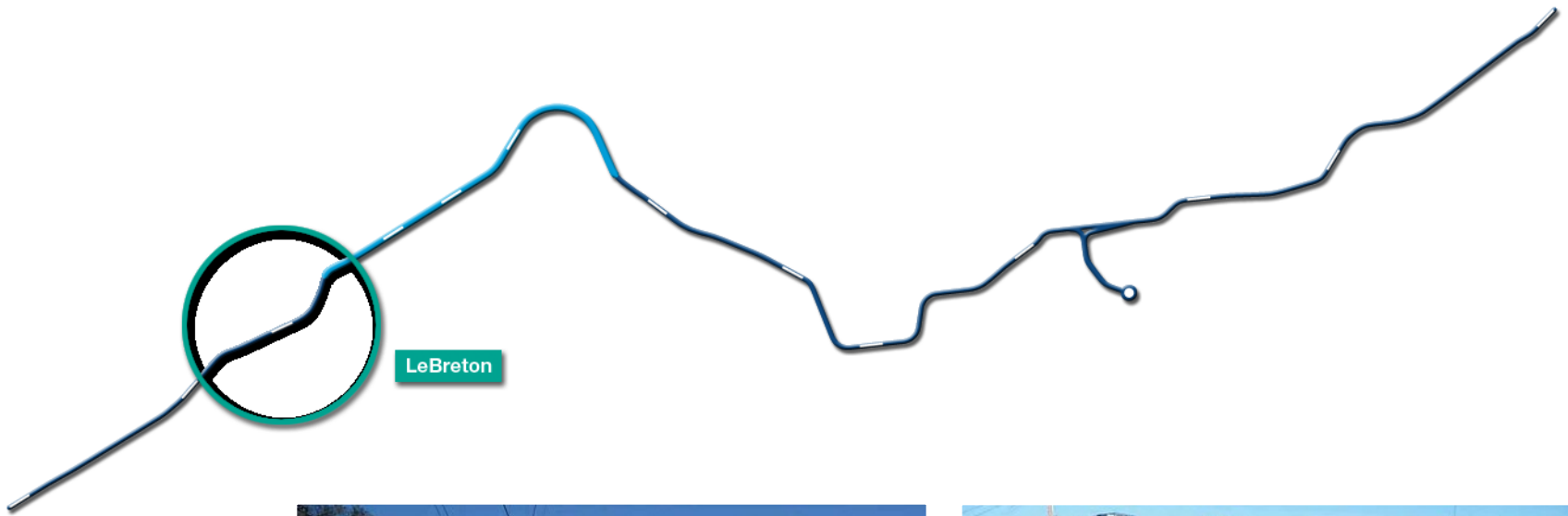


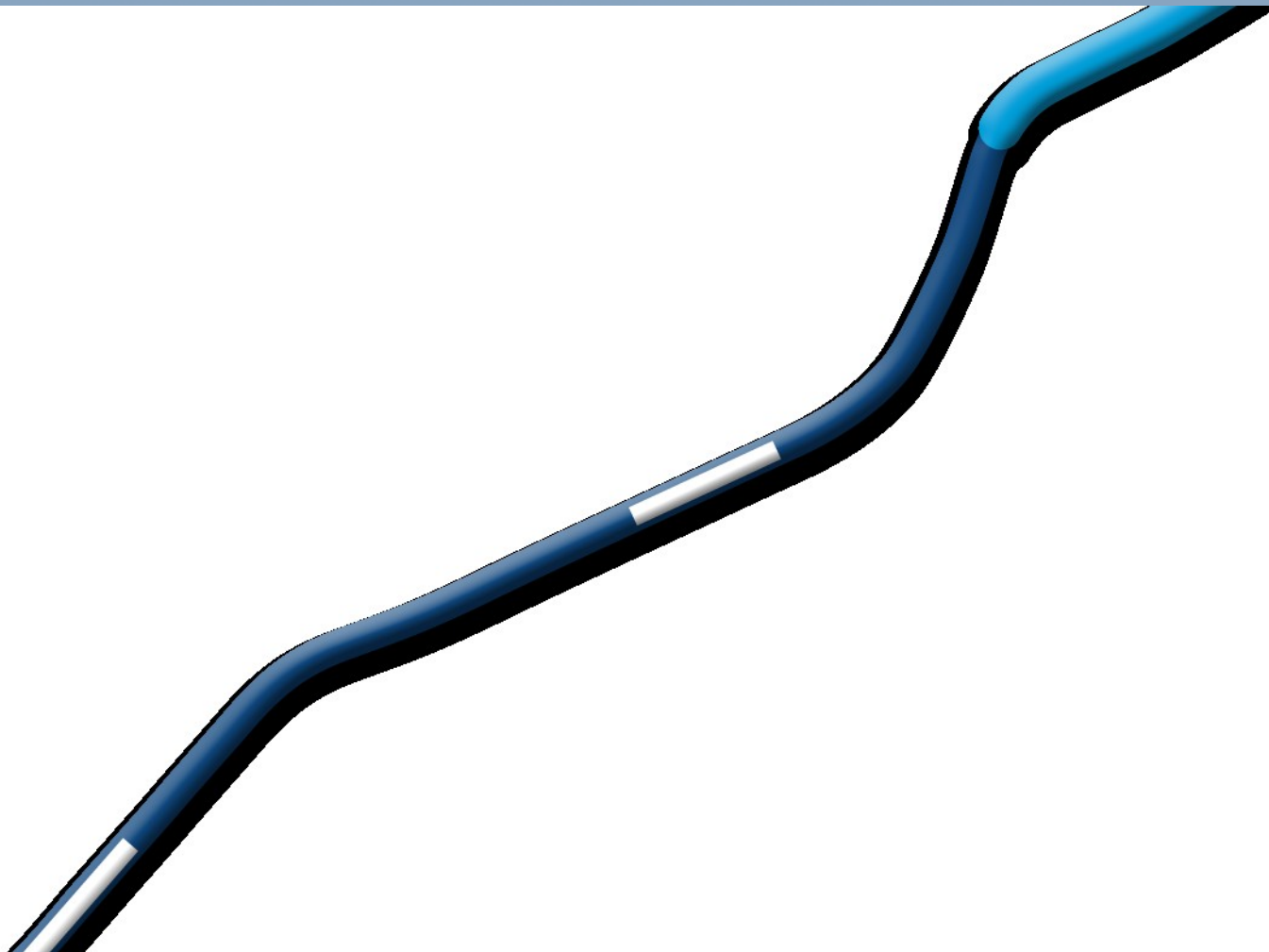










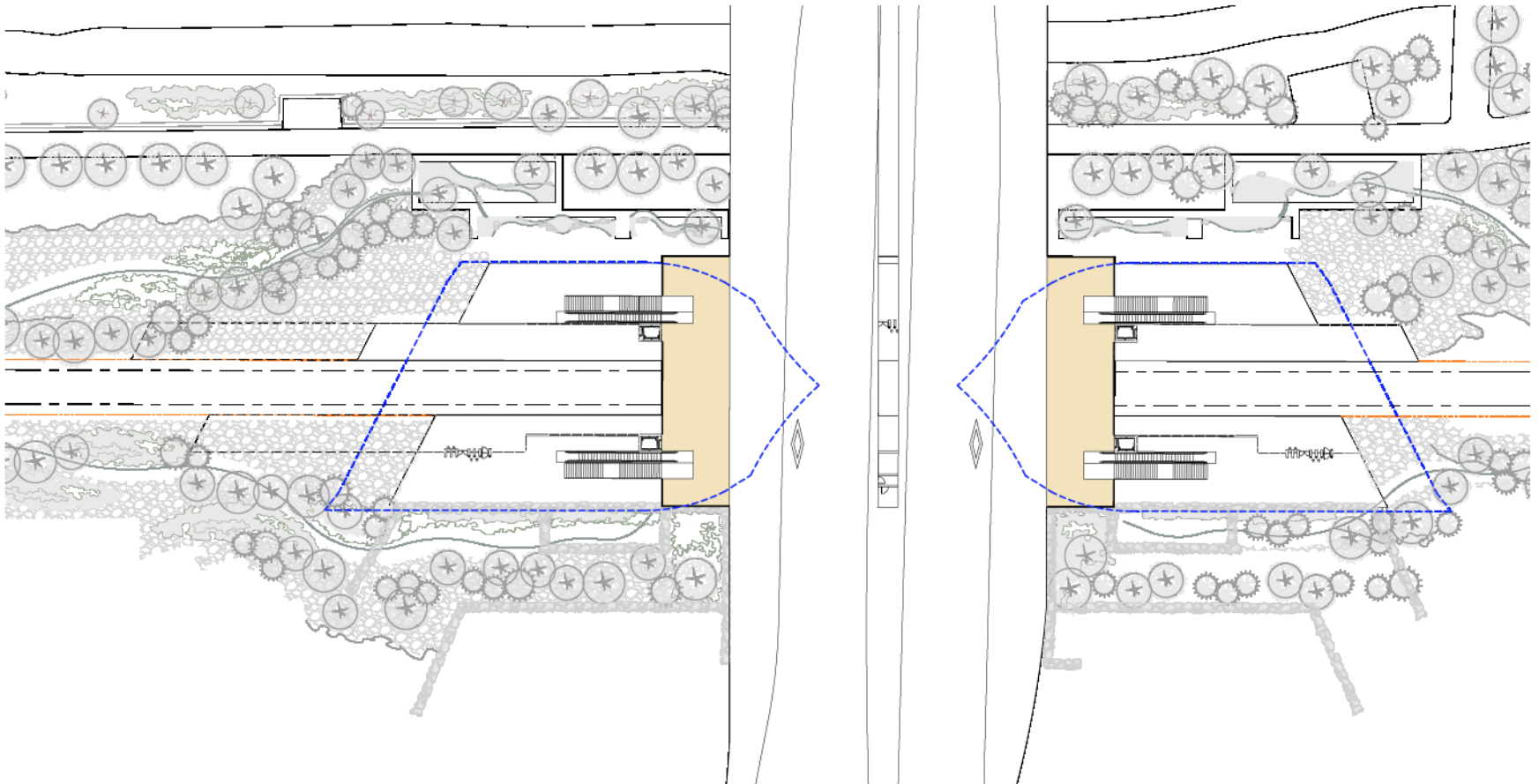


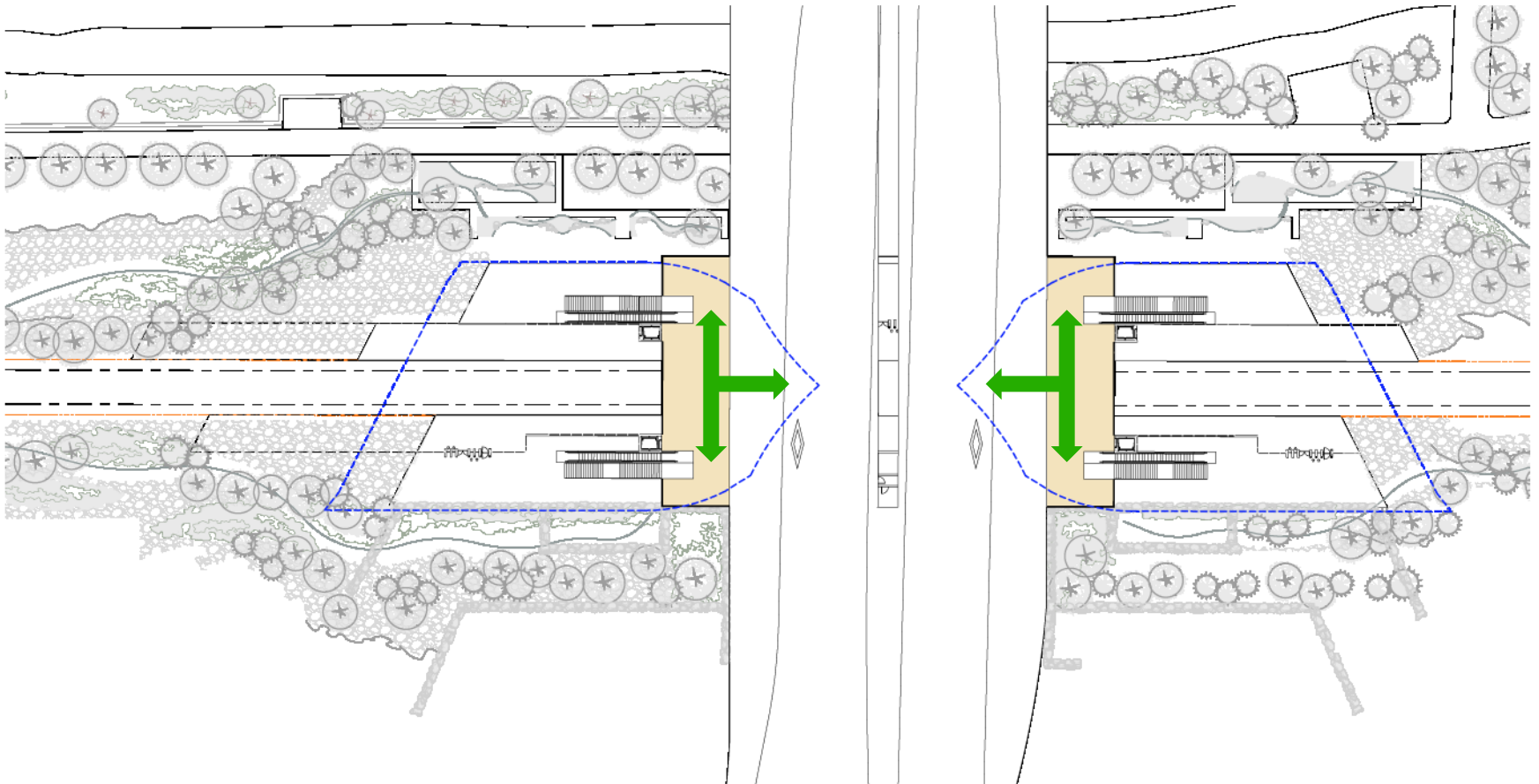


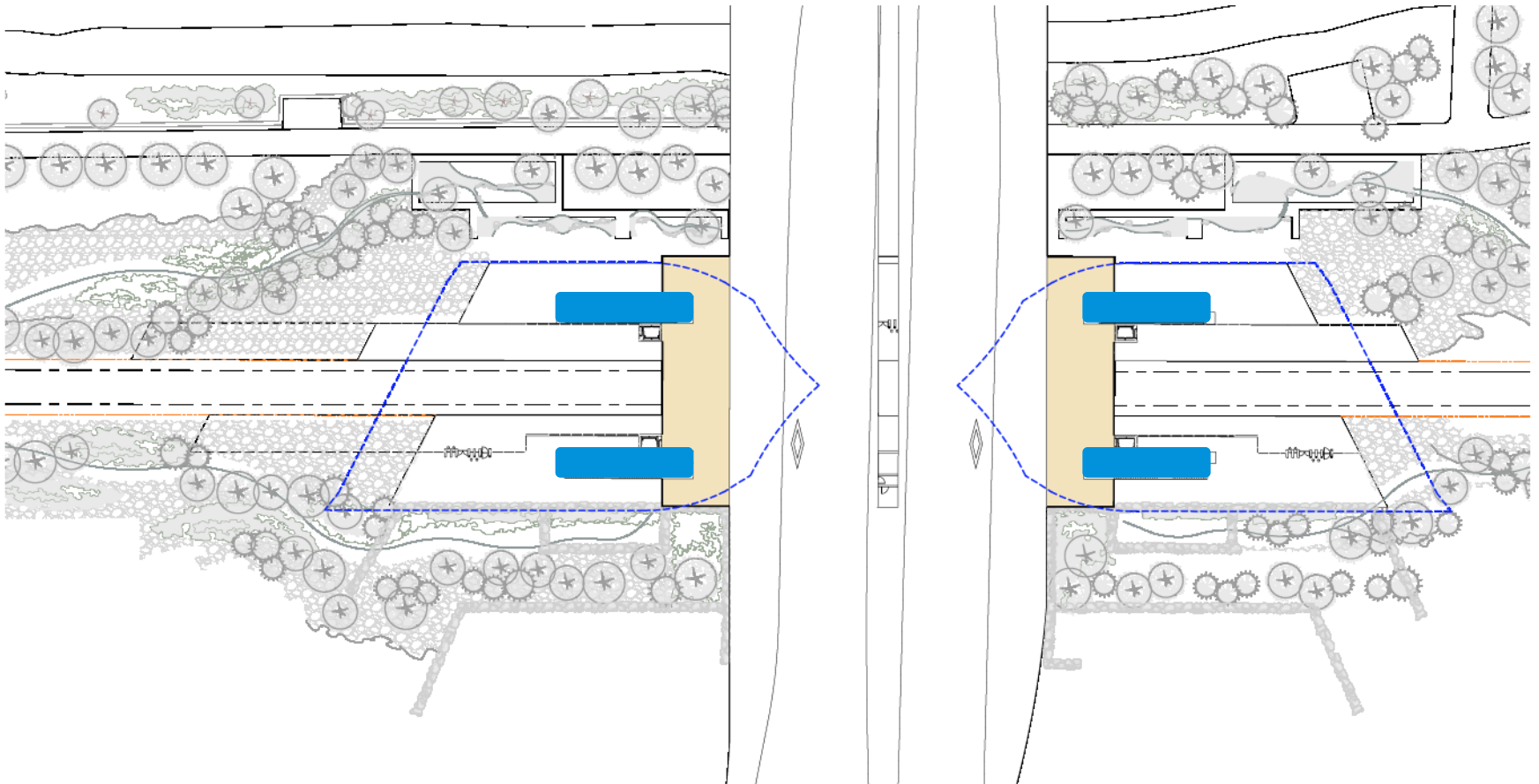


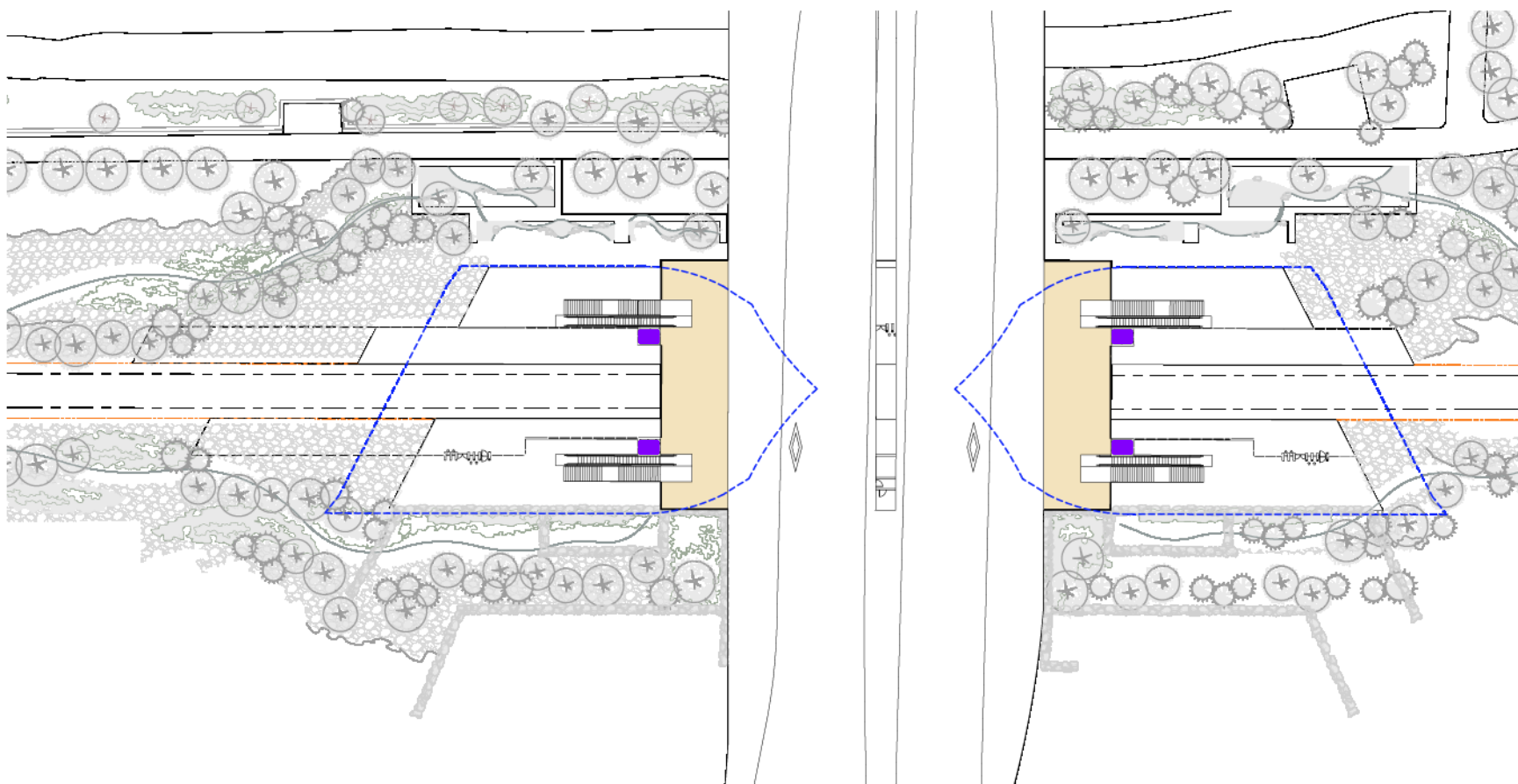
War Museum

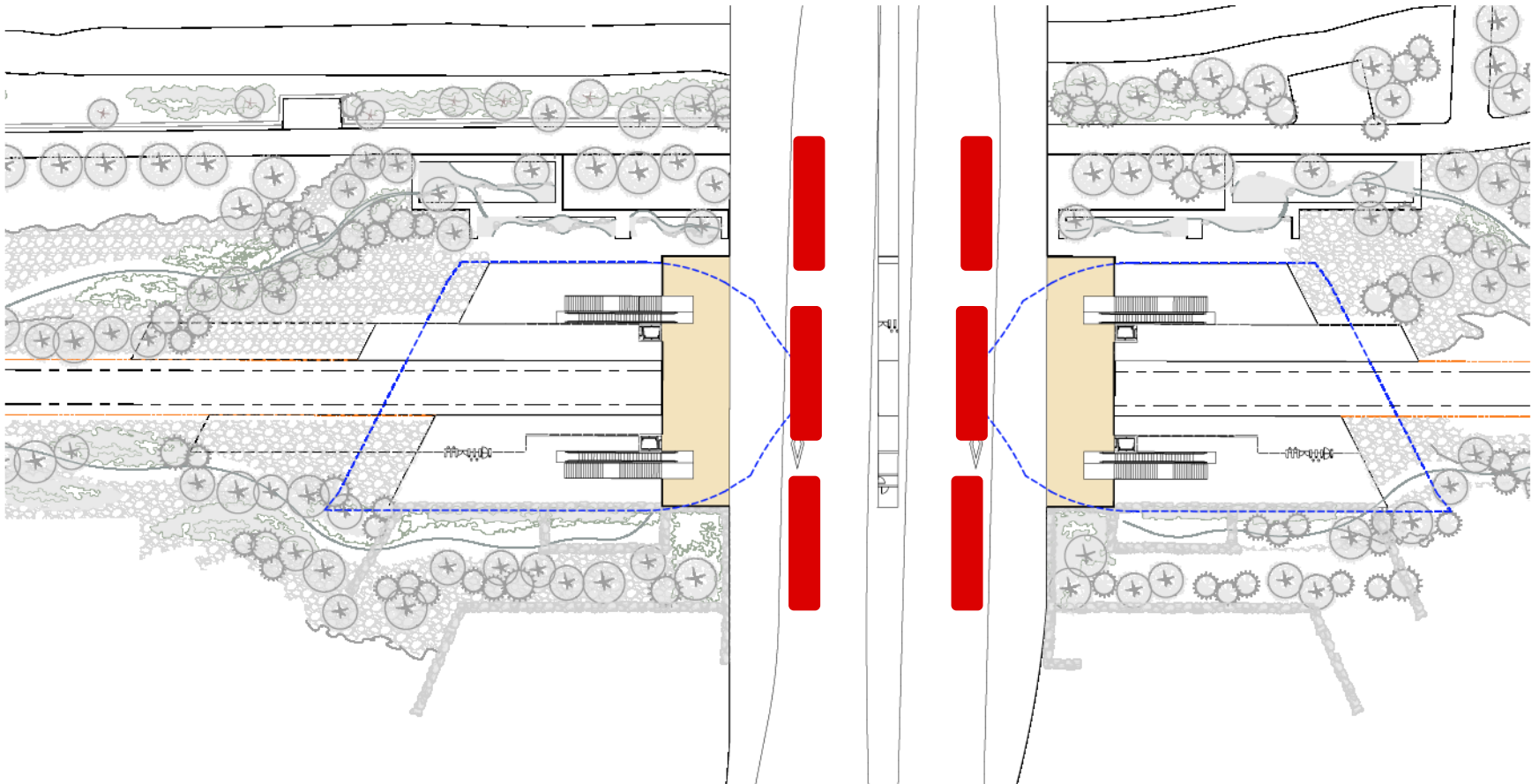
Festival Lands

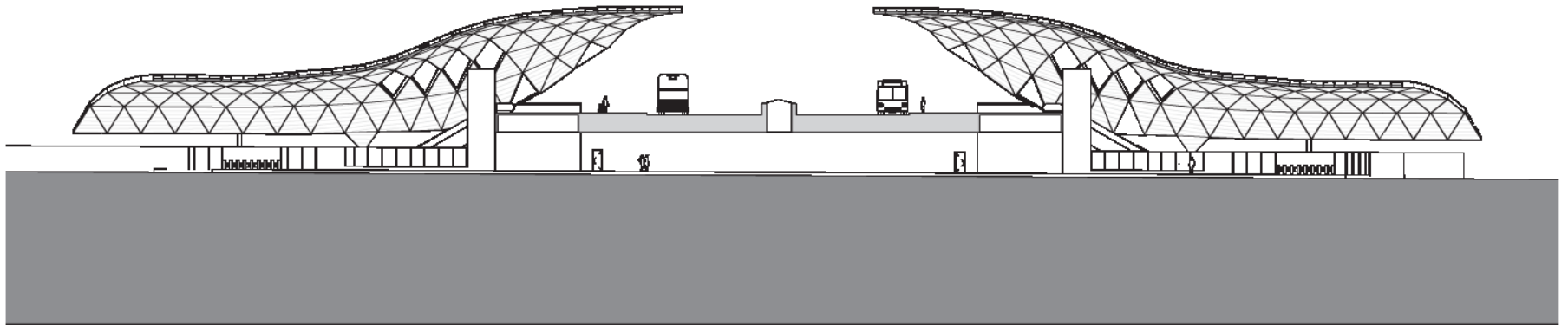


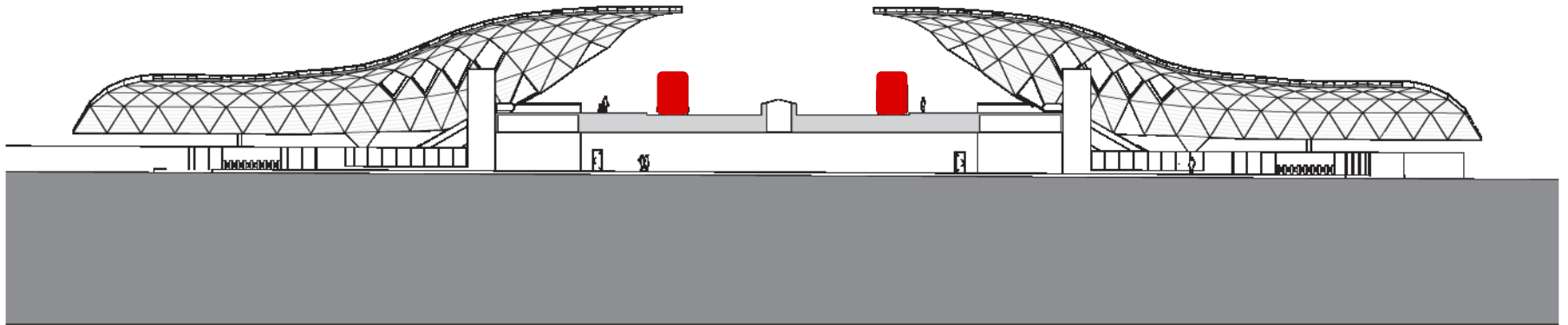
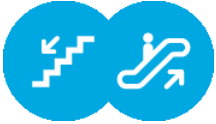


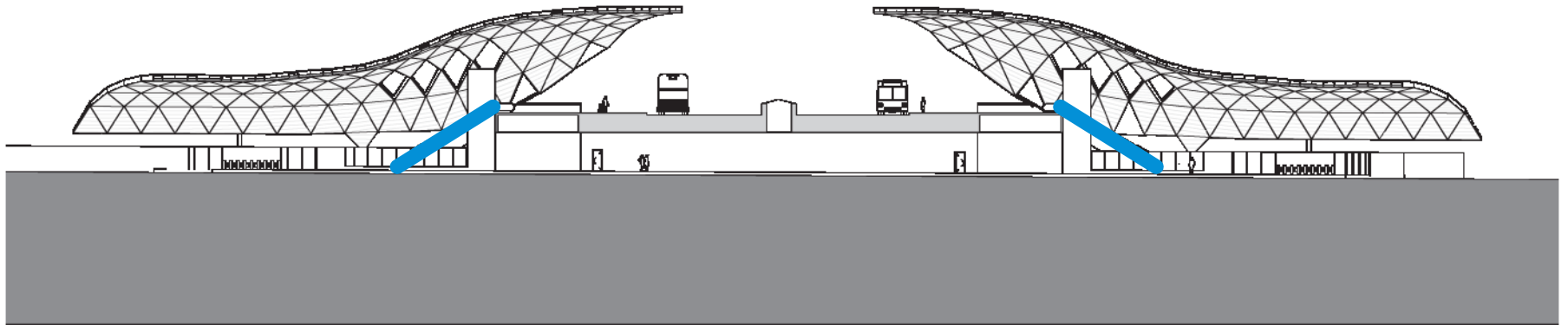


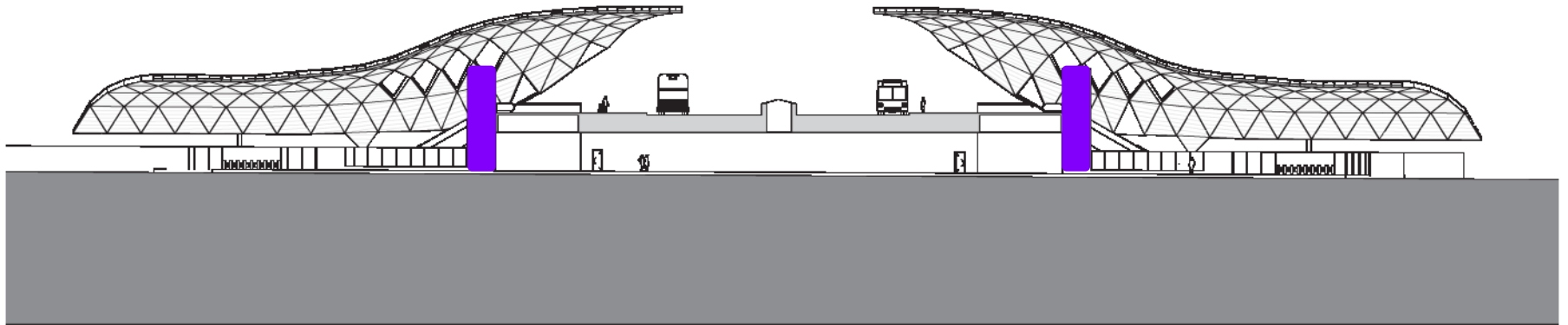


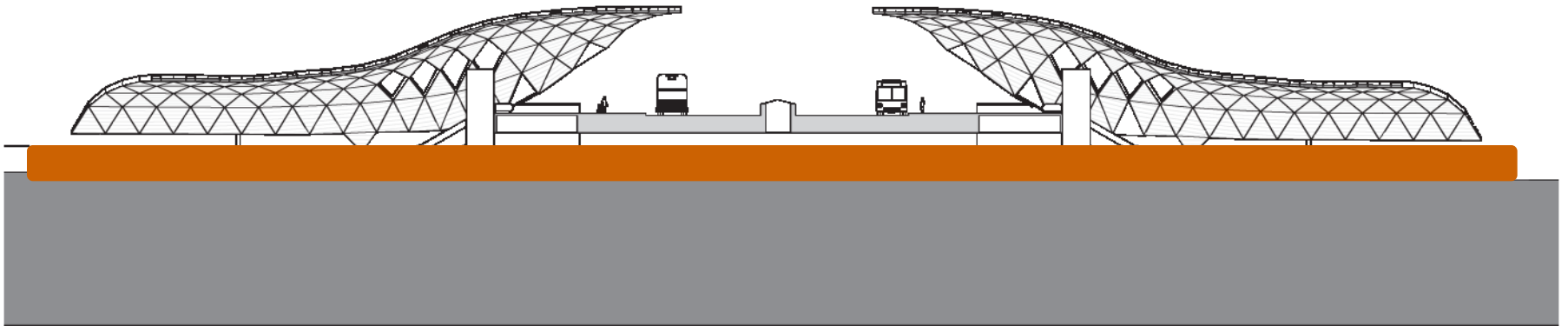


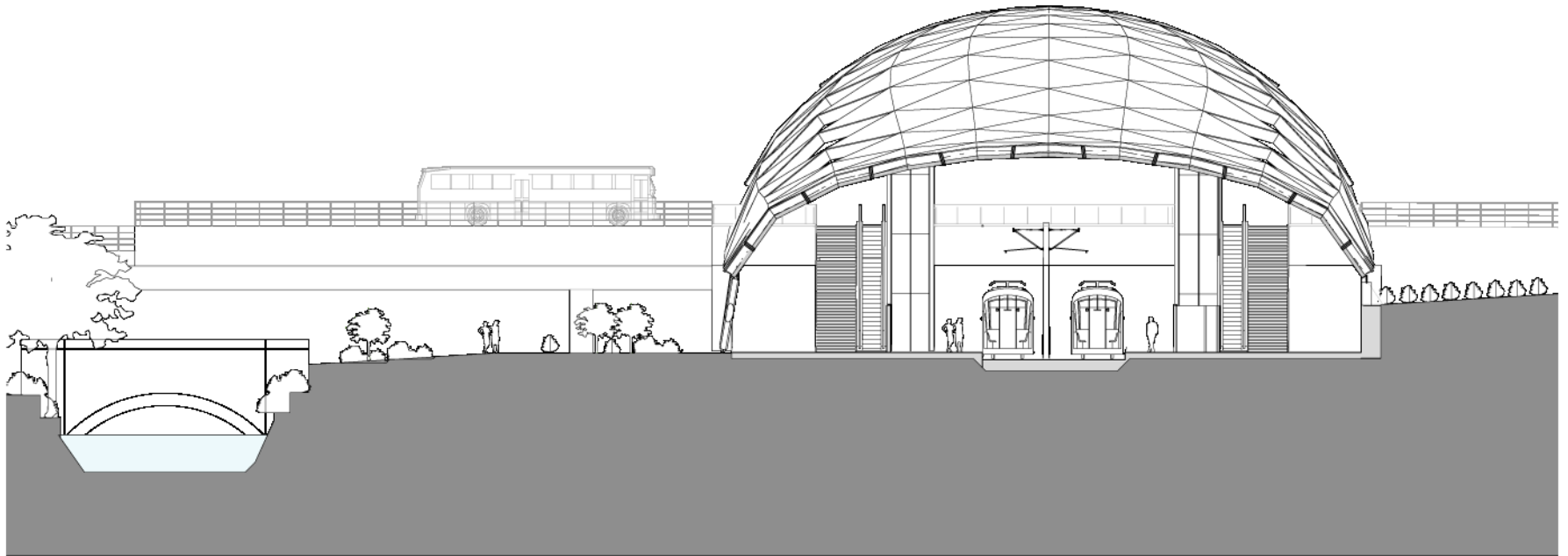


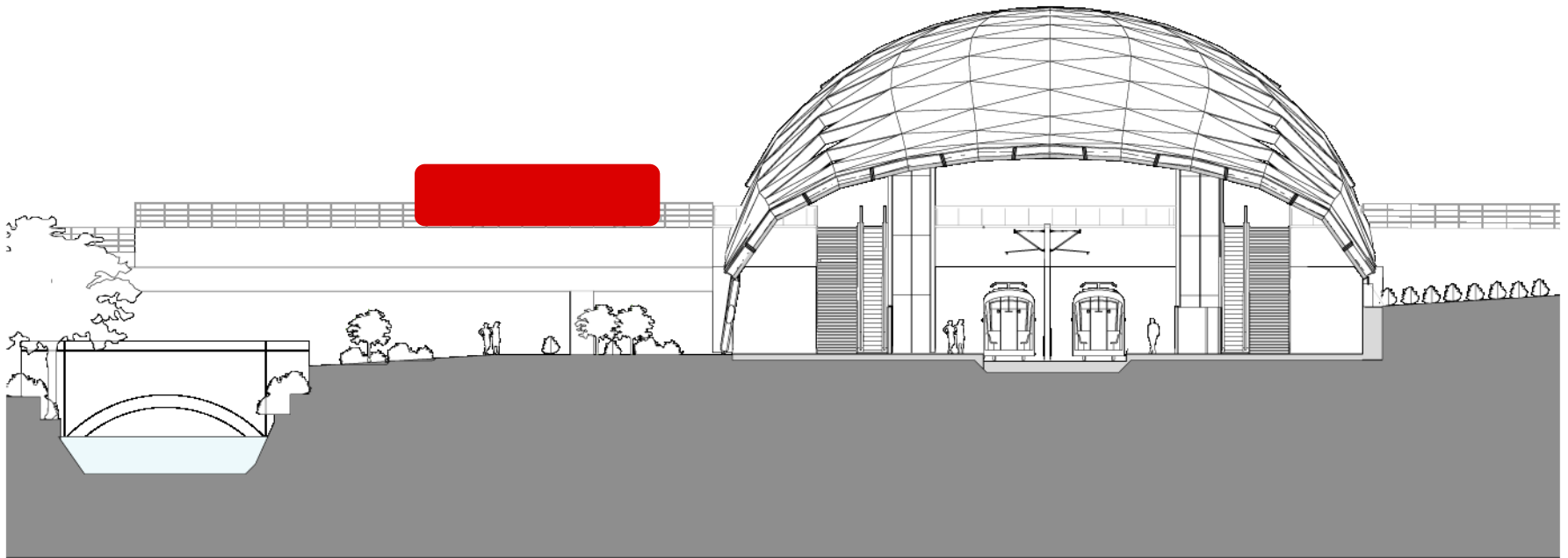


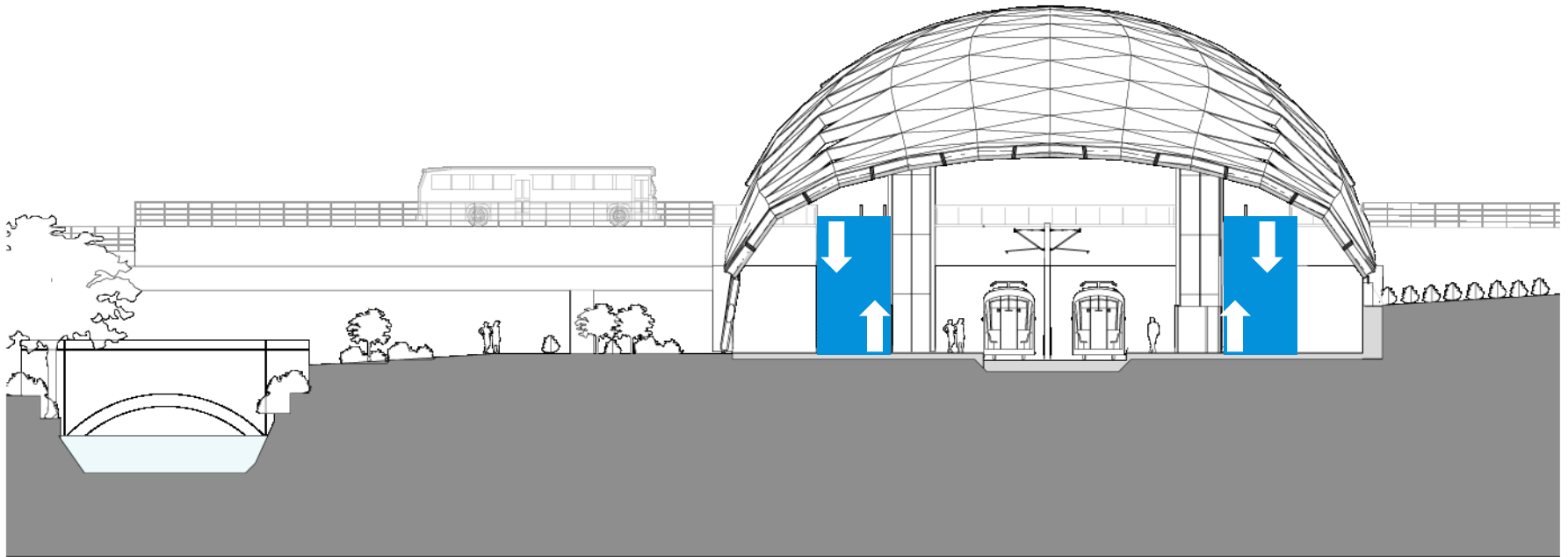


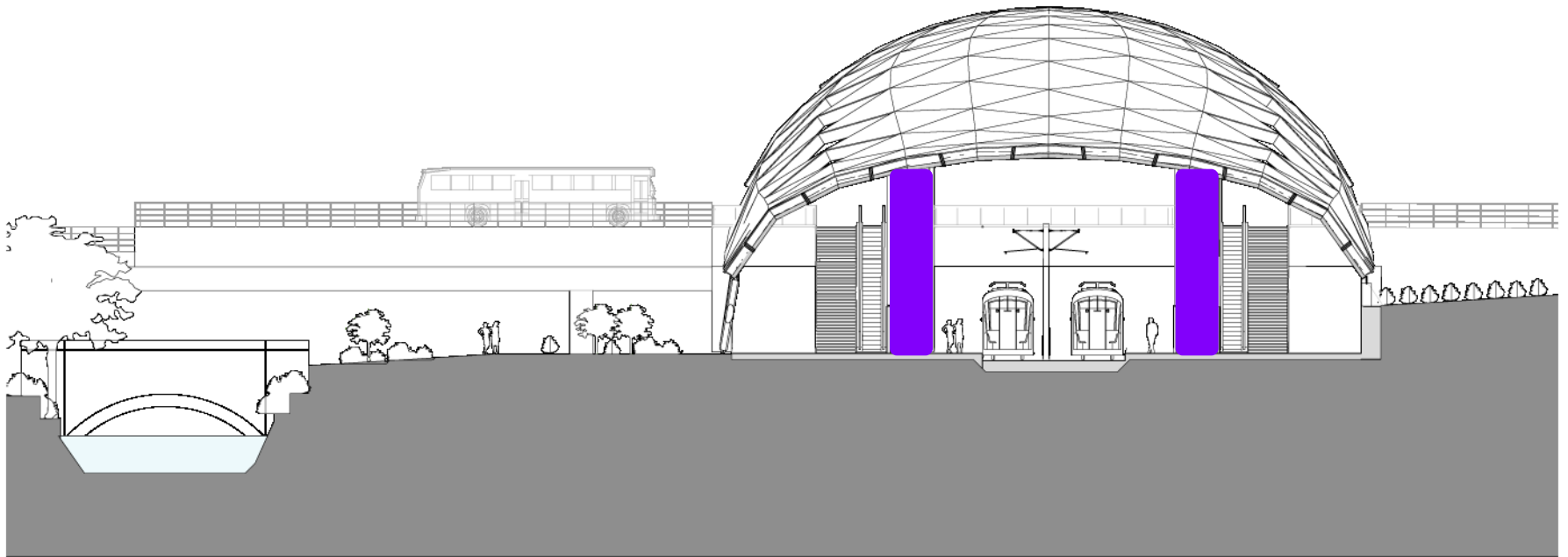


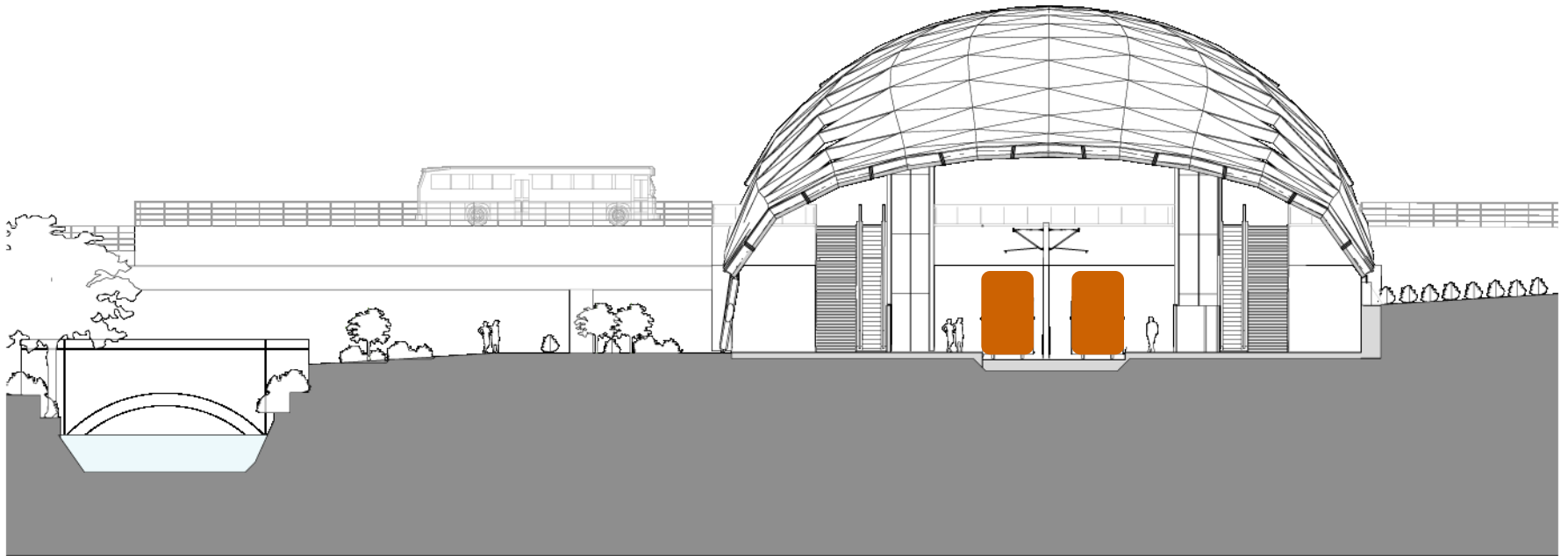


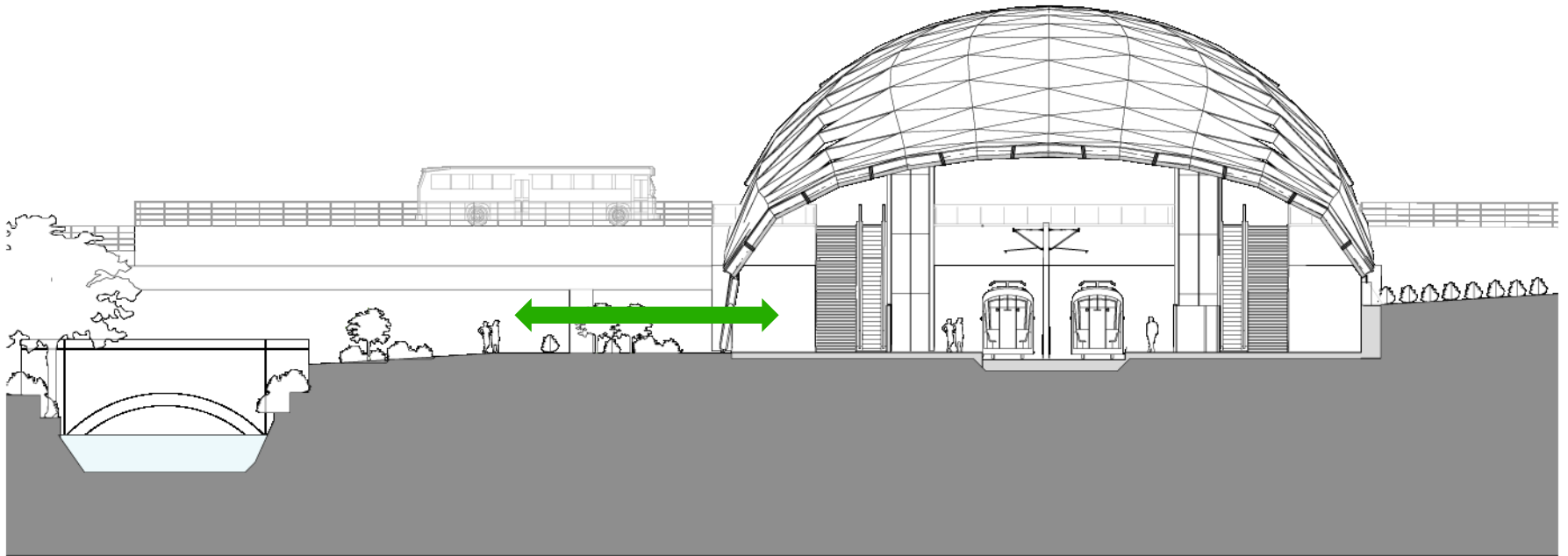




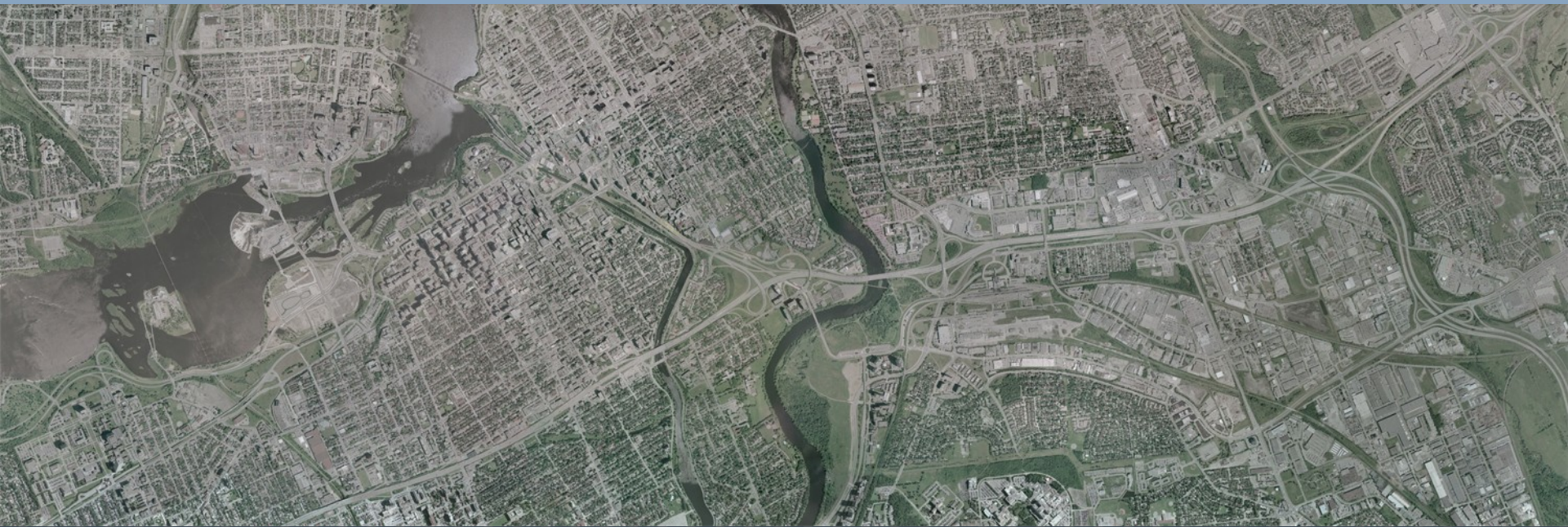


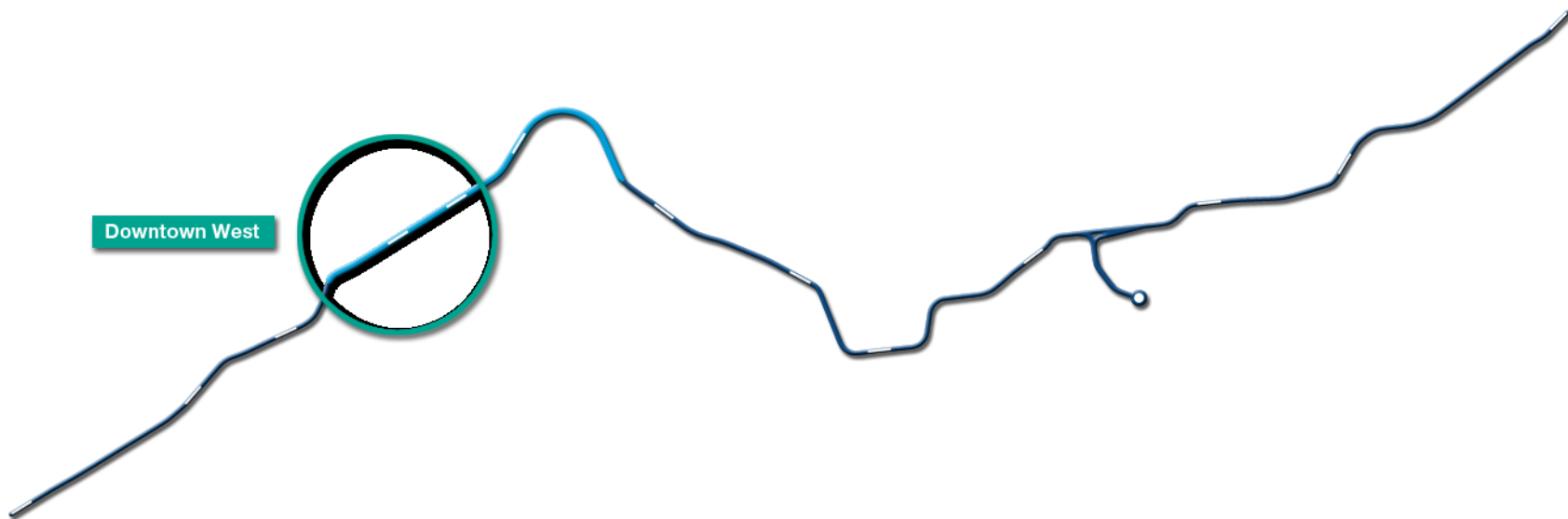


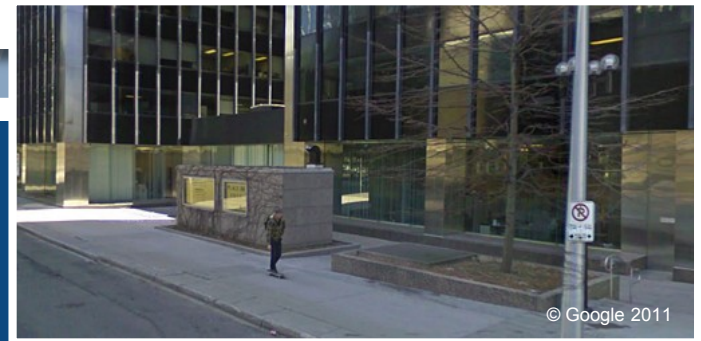
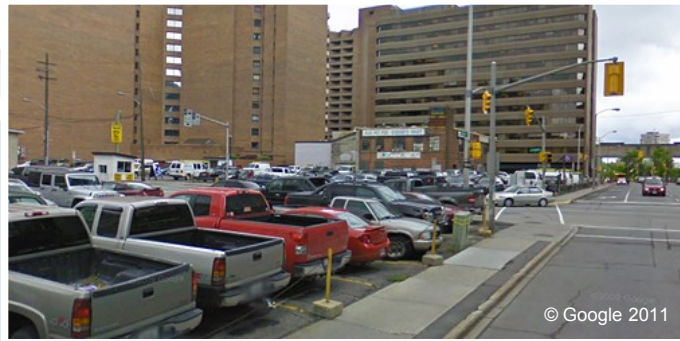


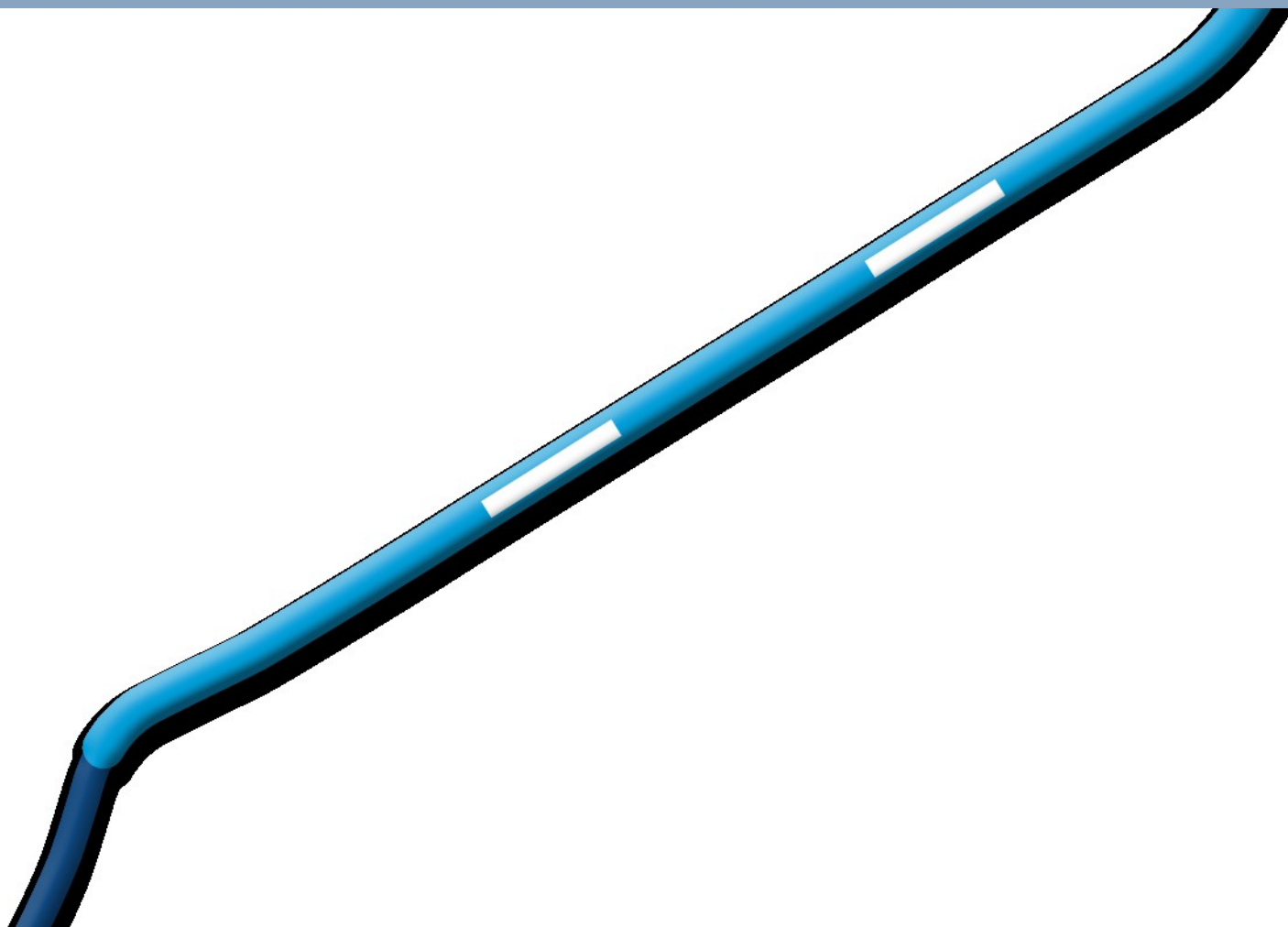


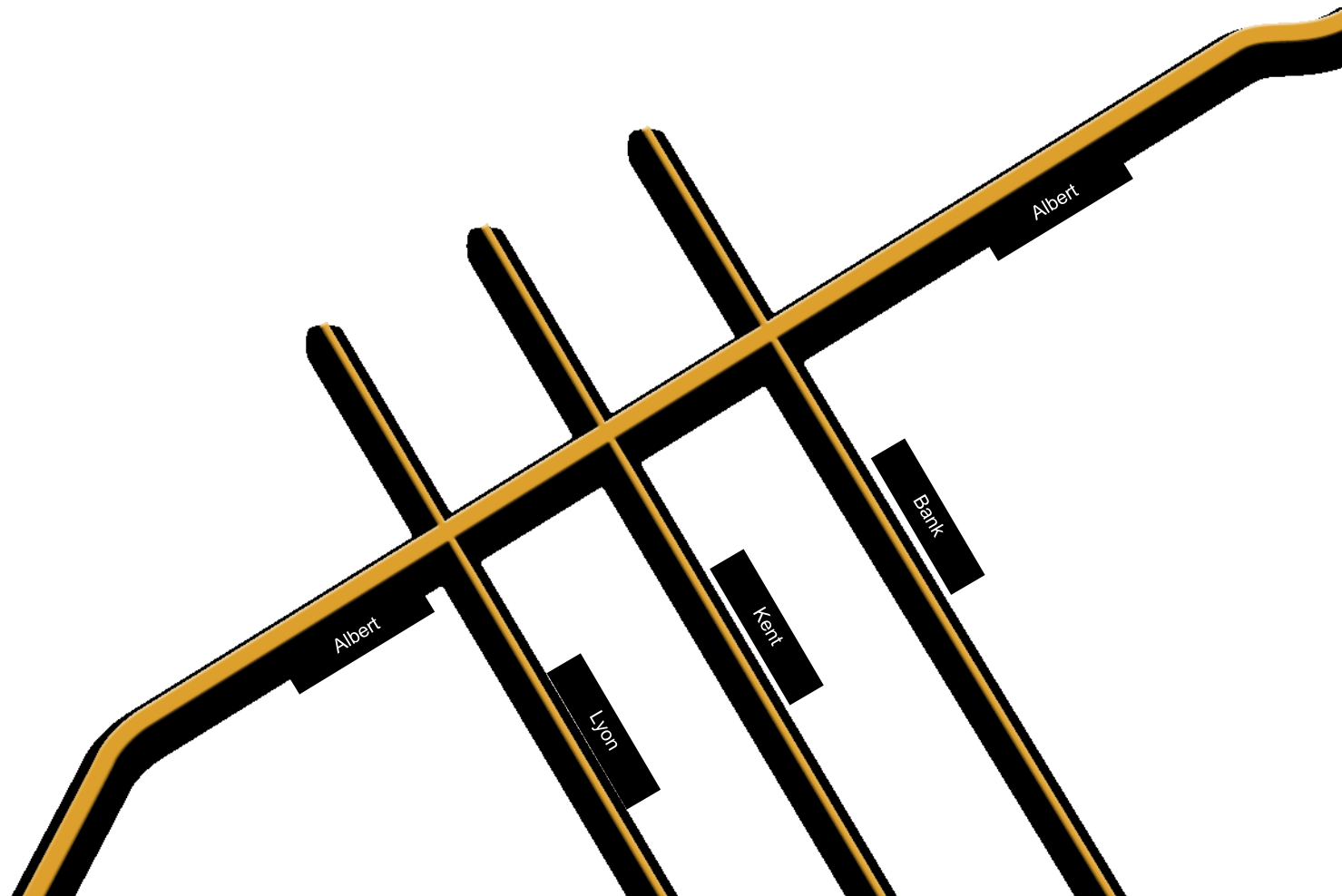








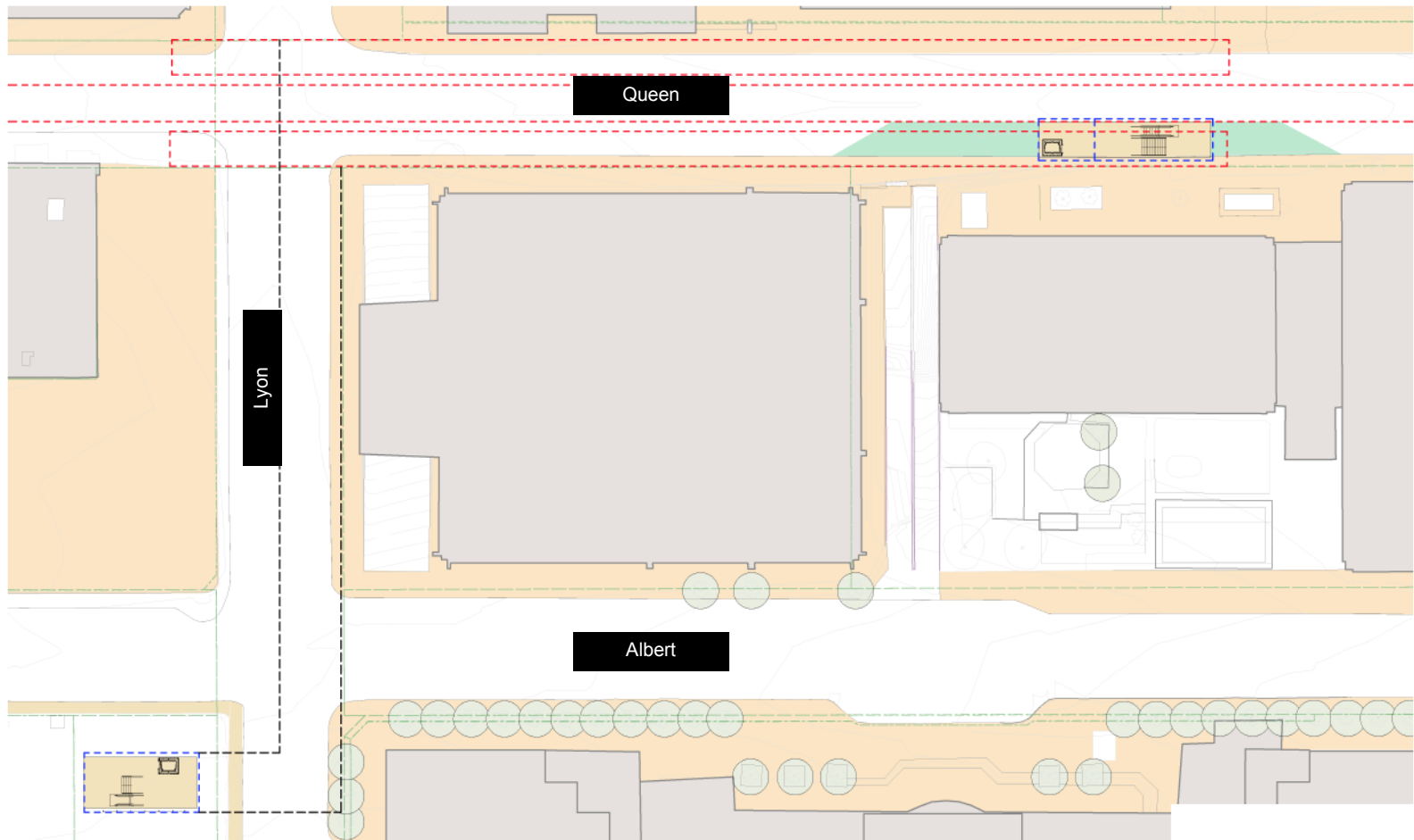


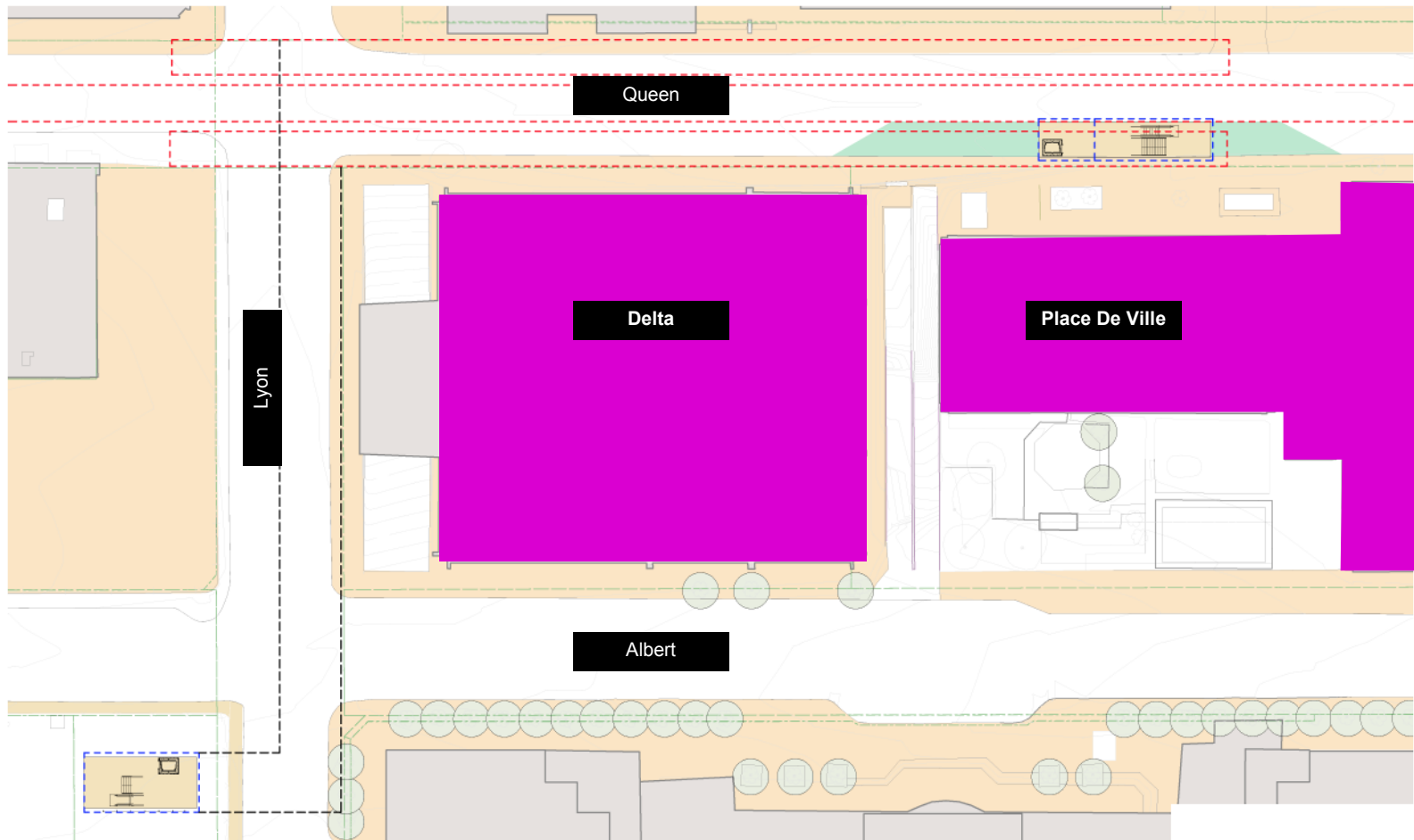




Place De Ville

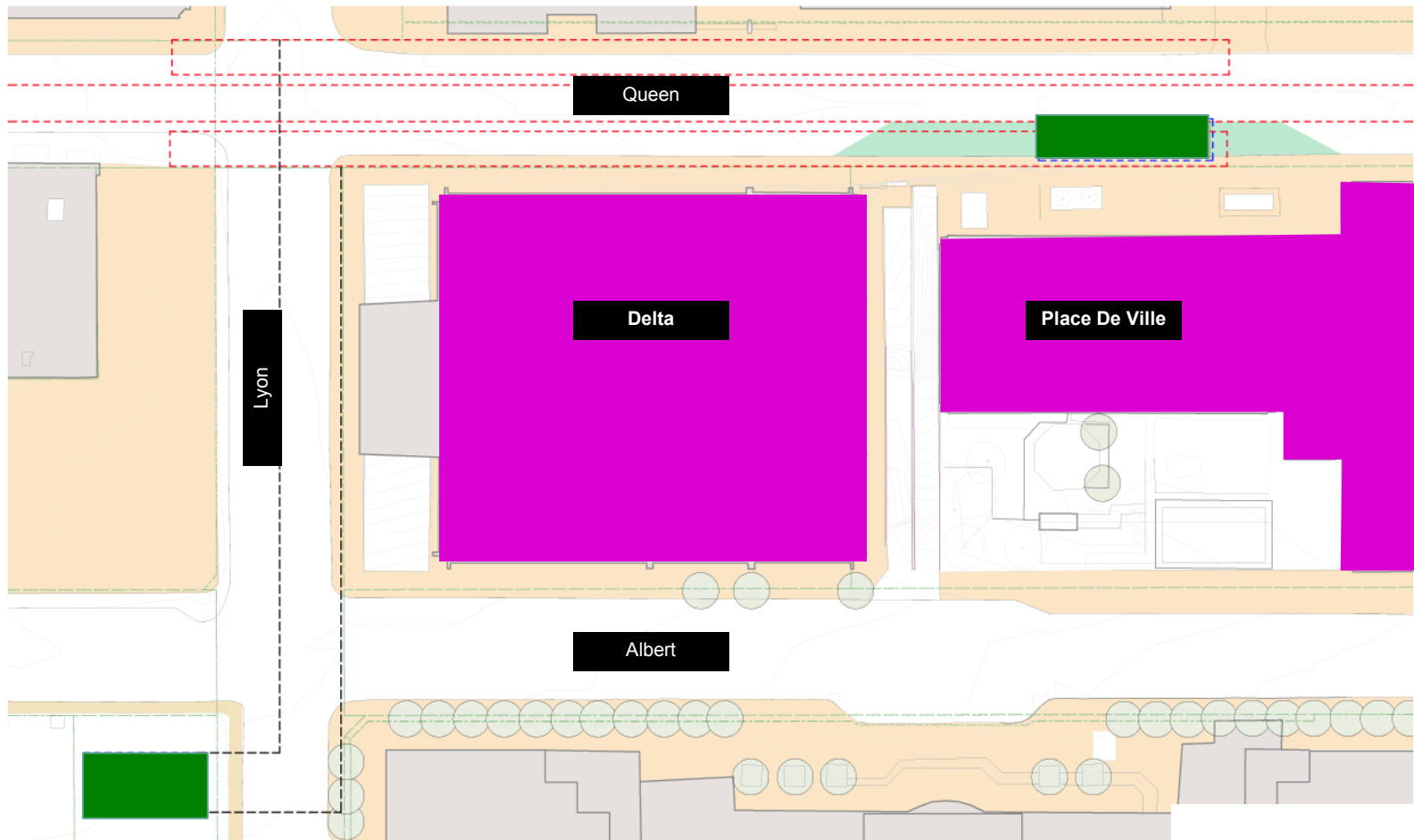
Sun Life





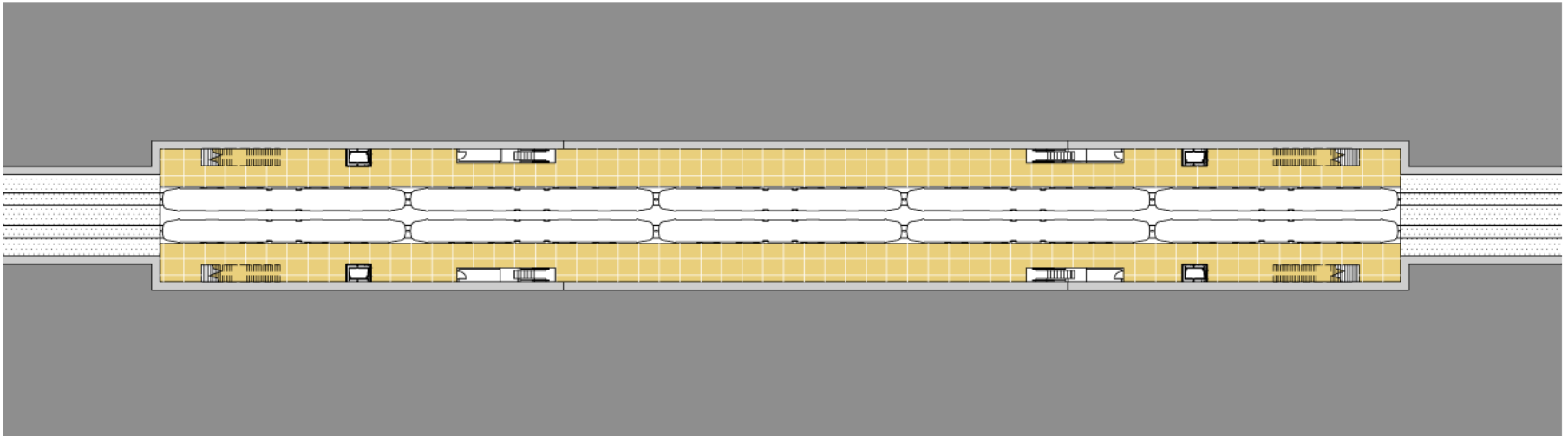
Downtown West

Entrances (Street Level)



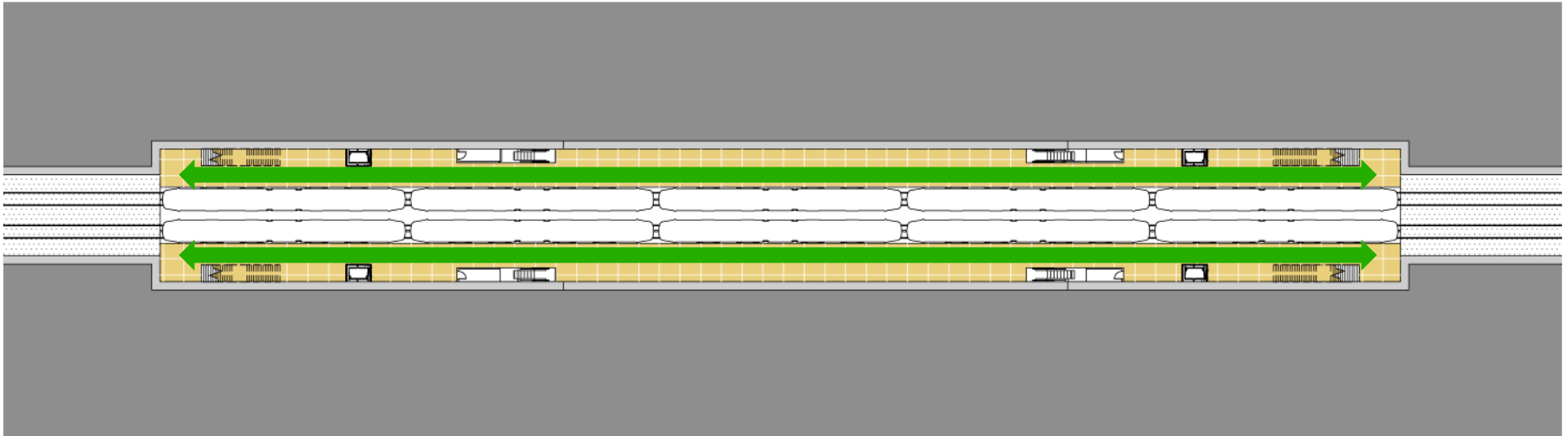
Downtown West

Platform (Inside Tunnel)



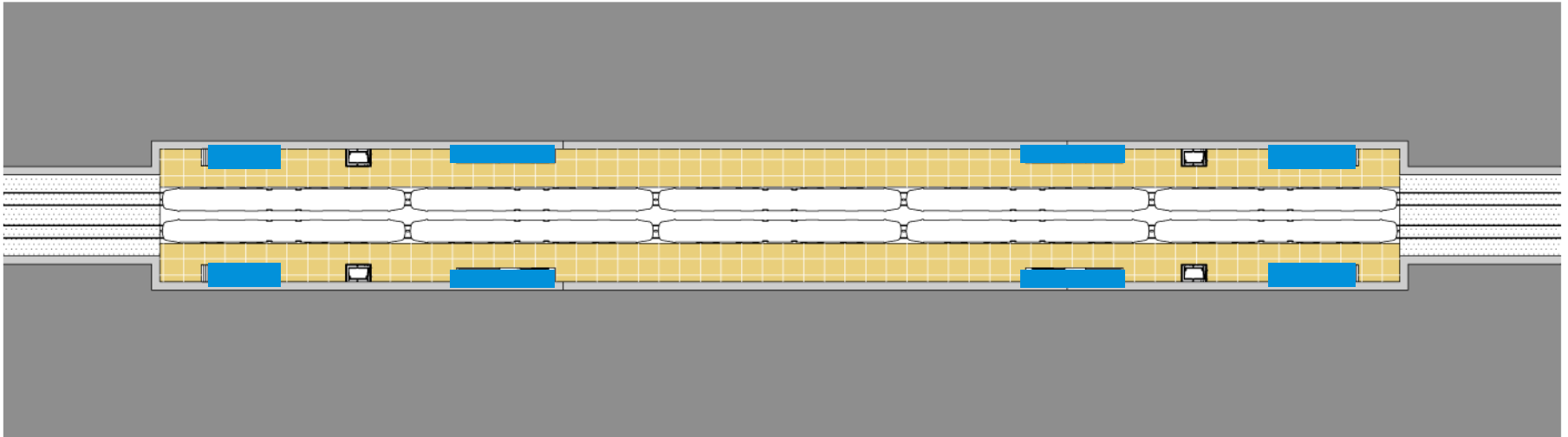
Downtown West

Platform (Inside Tunnel)



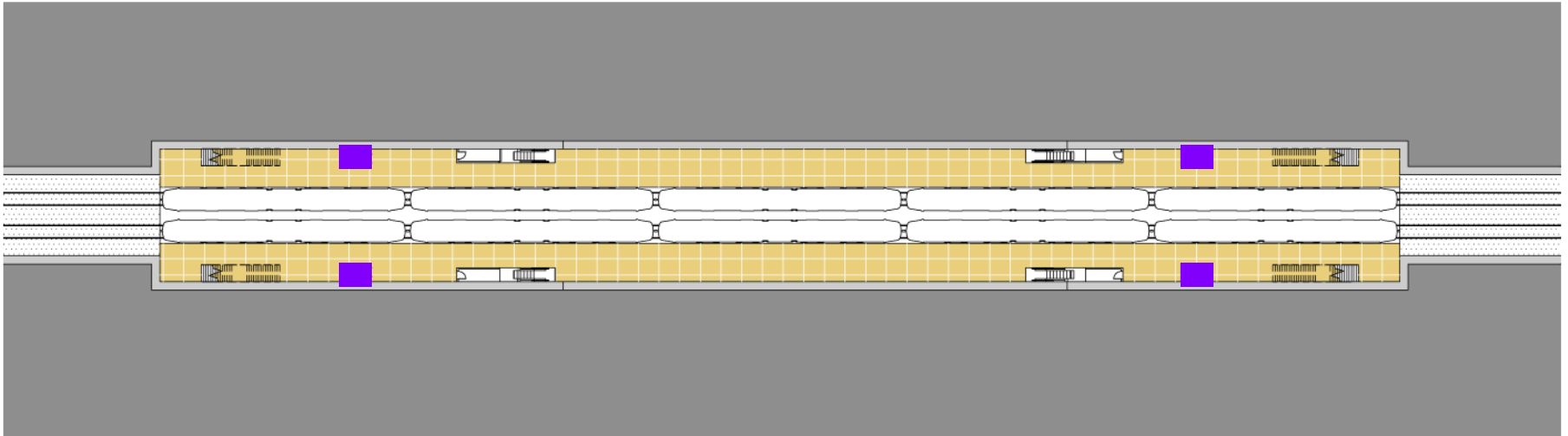
Downtown West

Platform (Inside Tunnel)



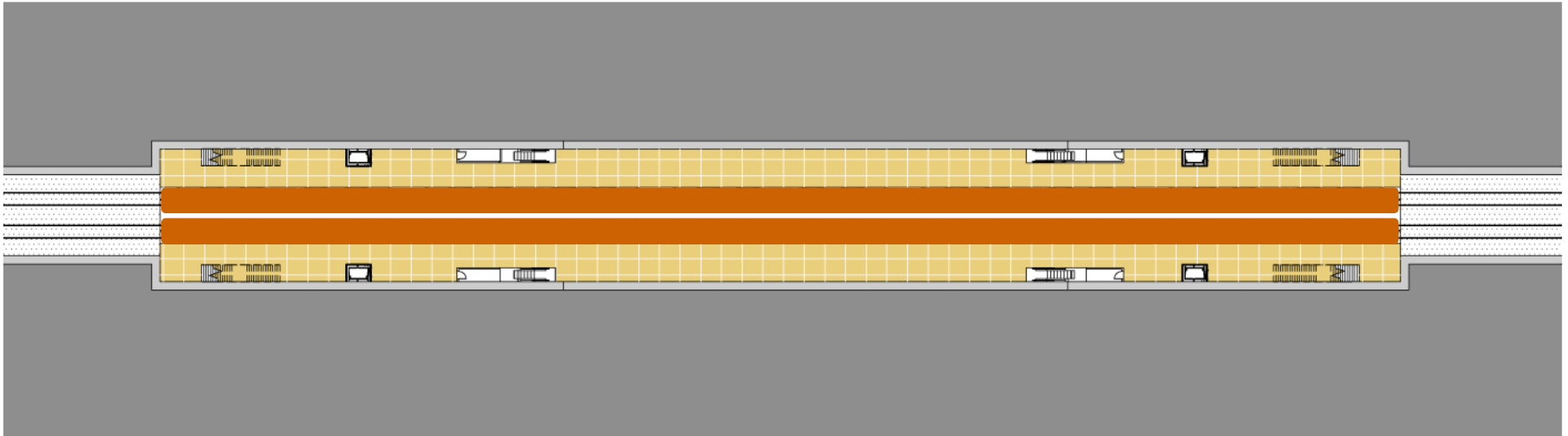
Downtown West

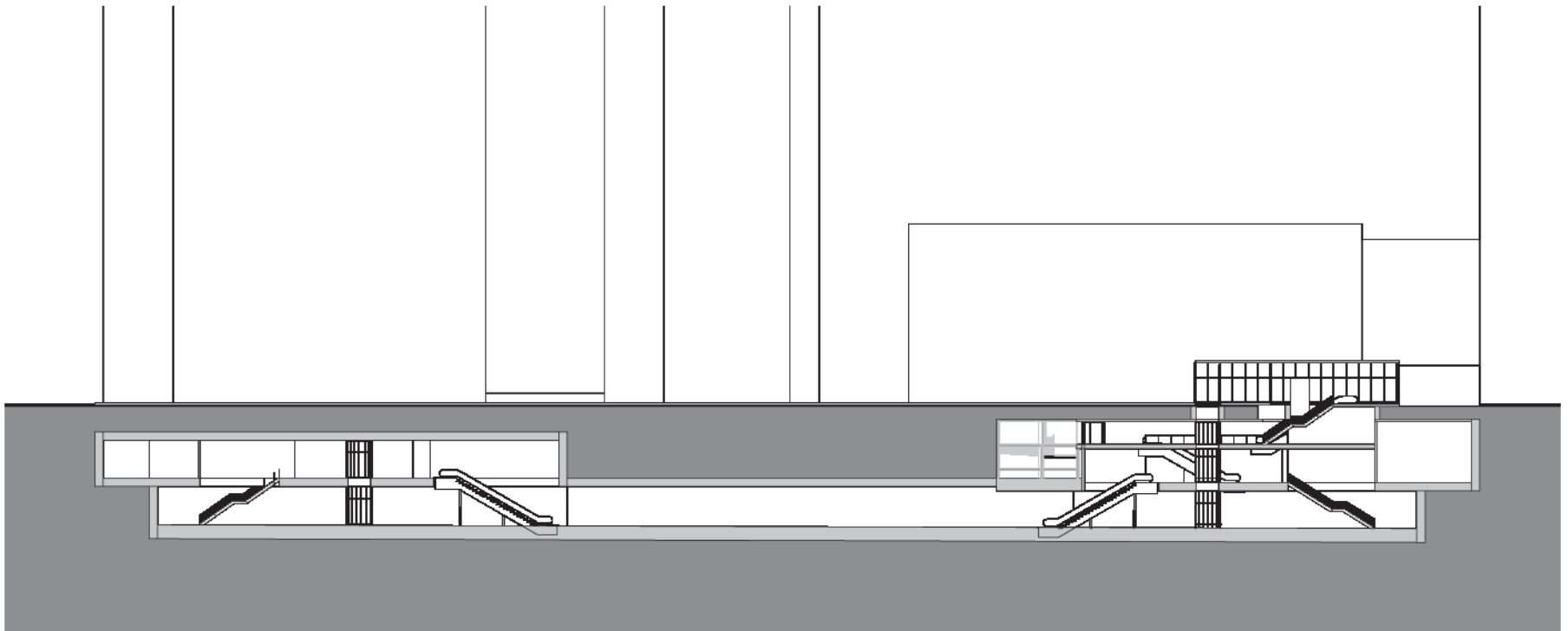
Platform (Inside Tunnel)

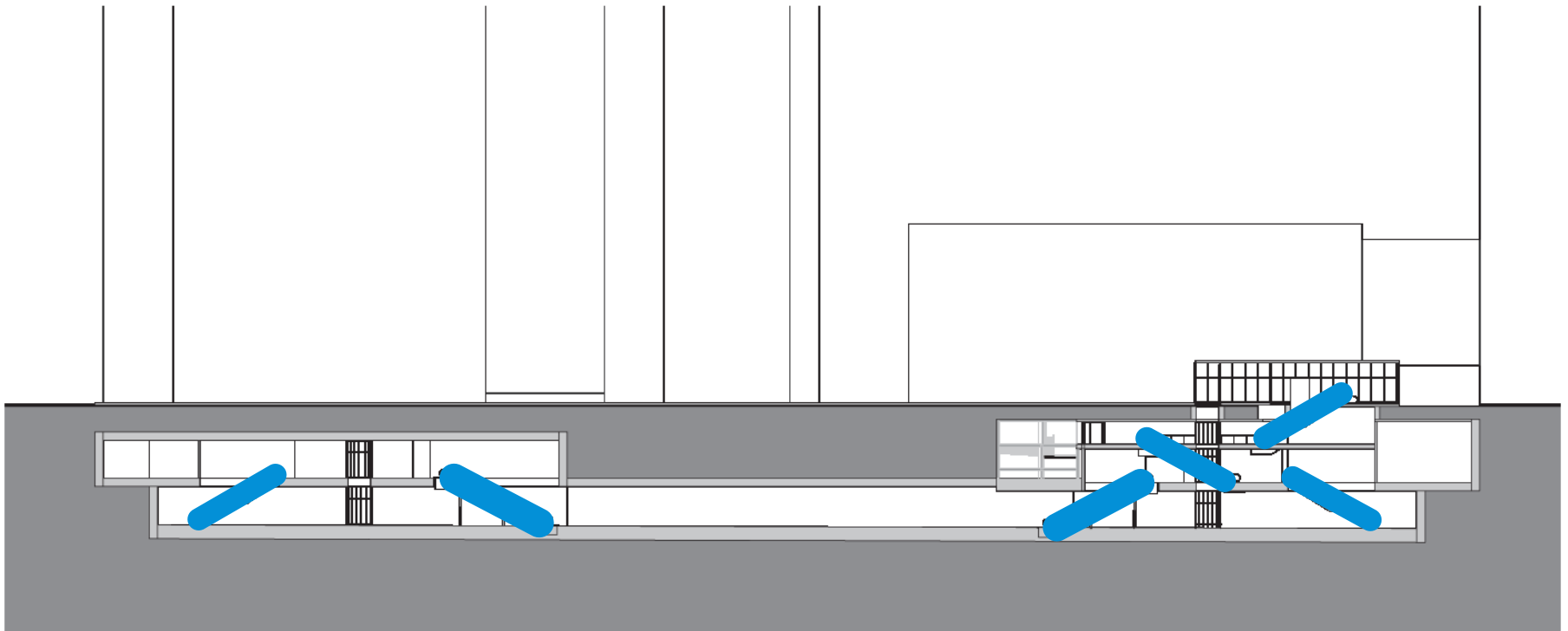


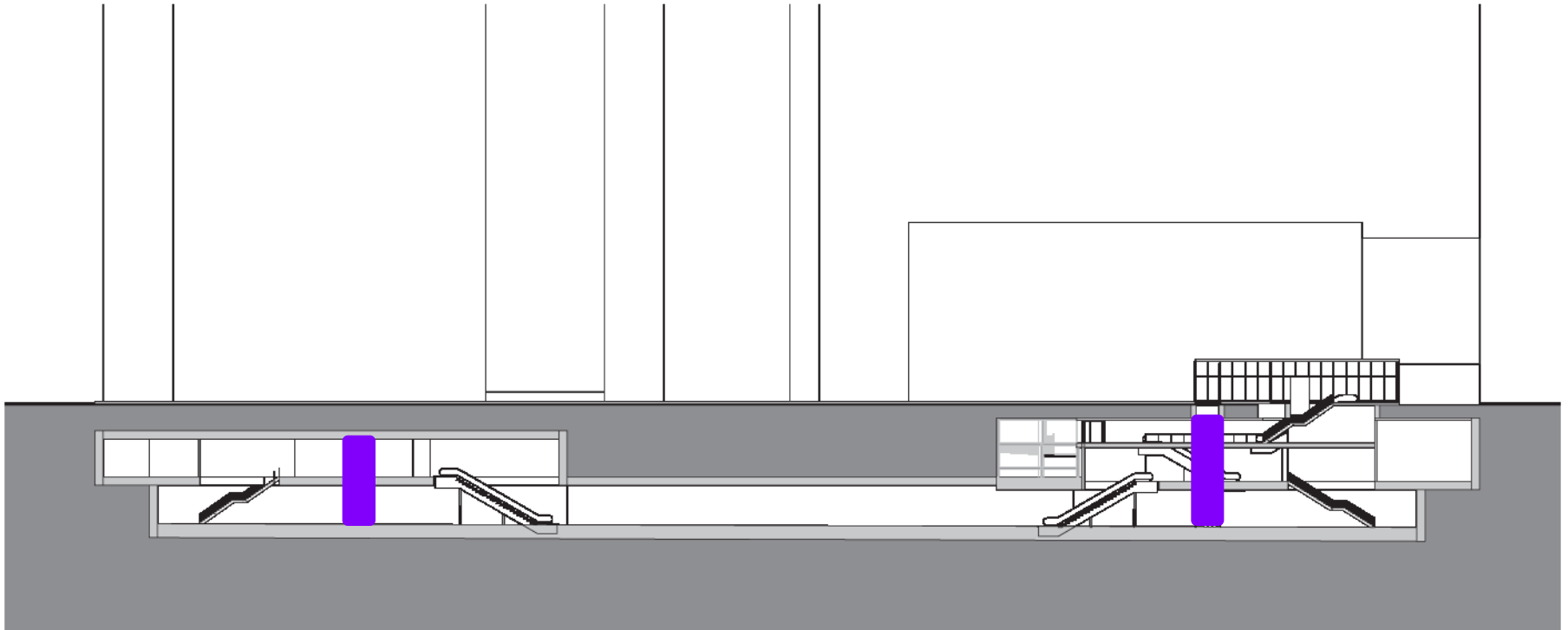
Downtown West

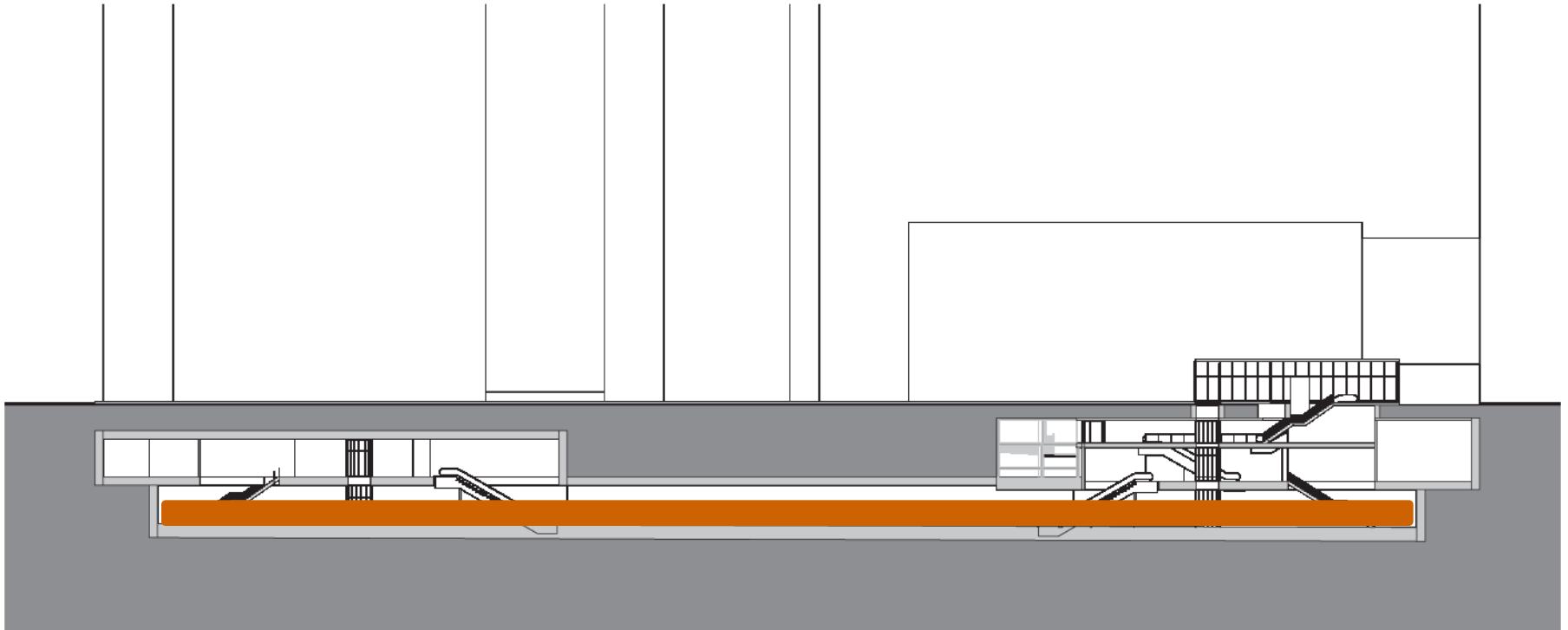
Platform (Inside Tunnel)

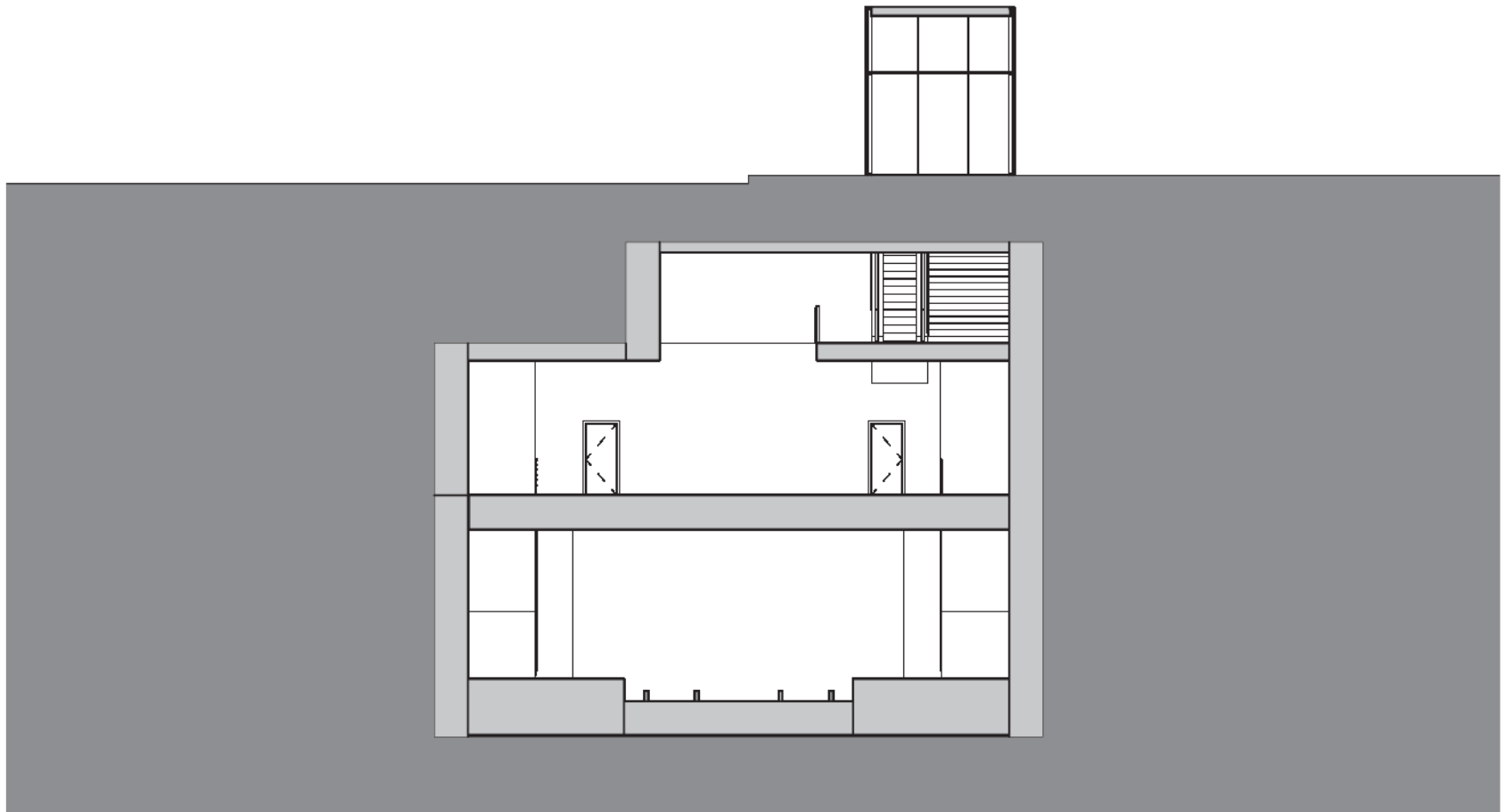


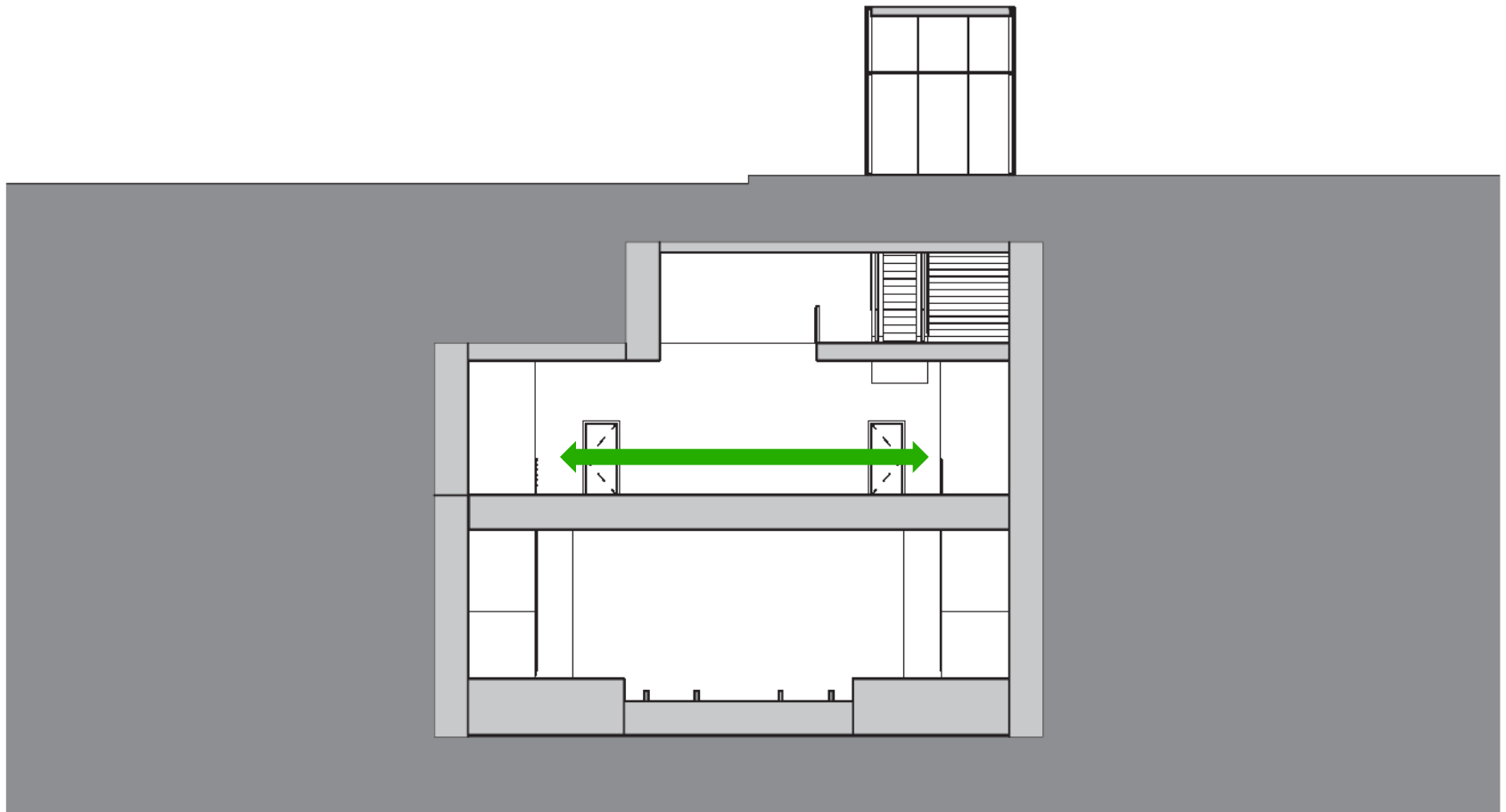


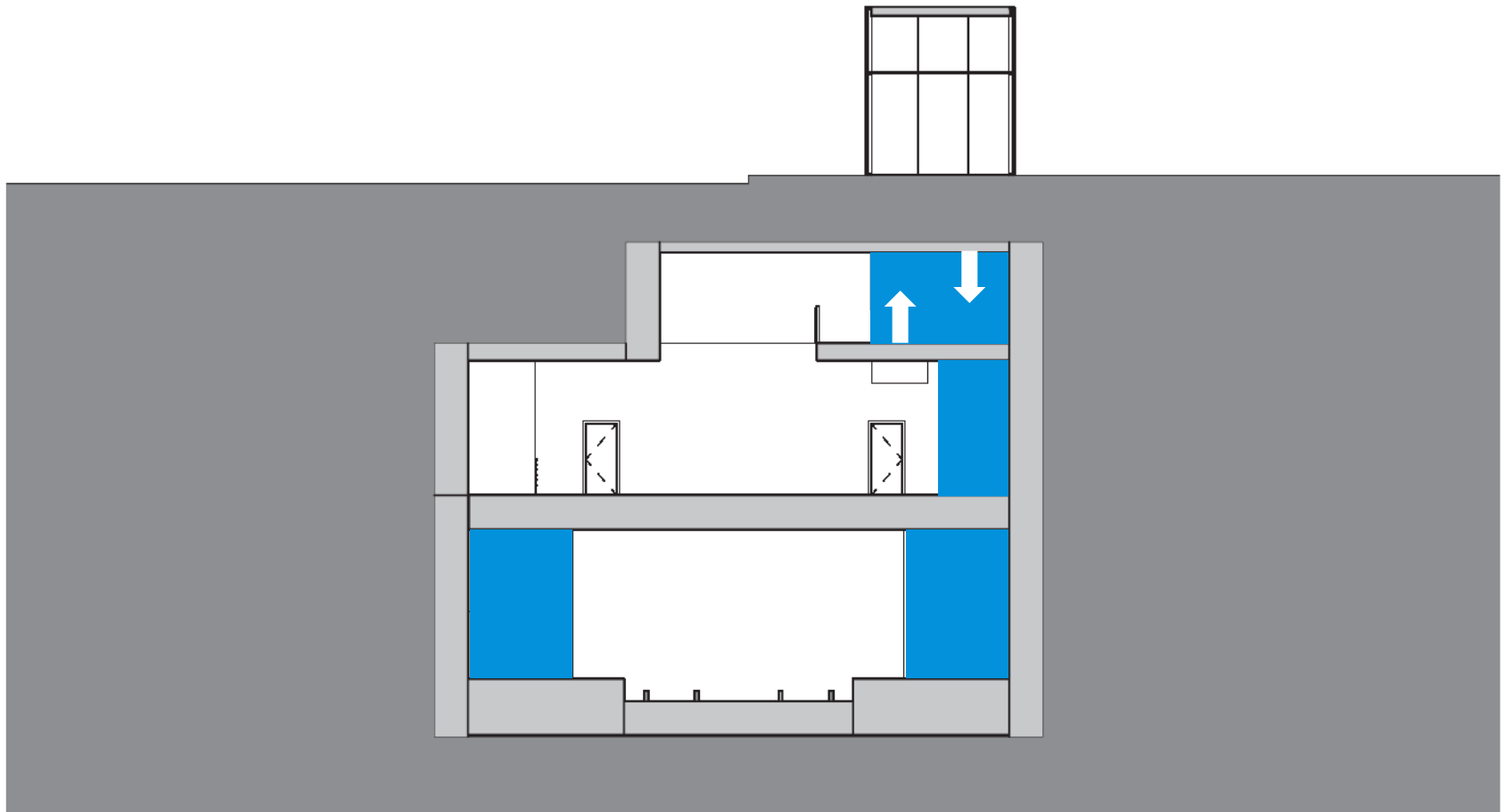


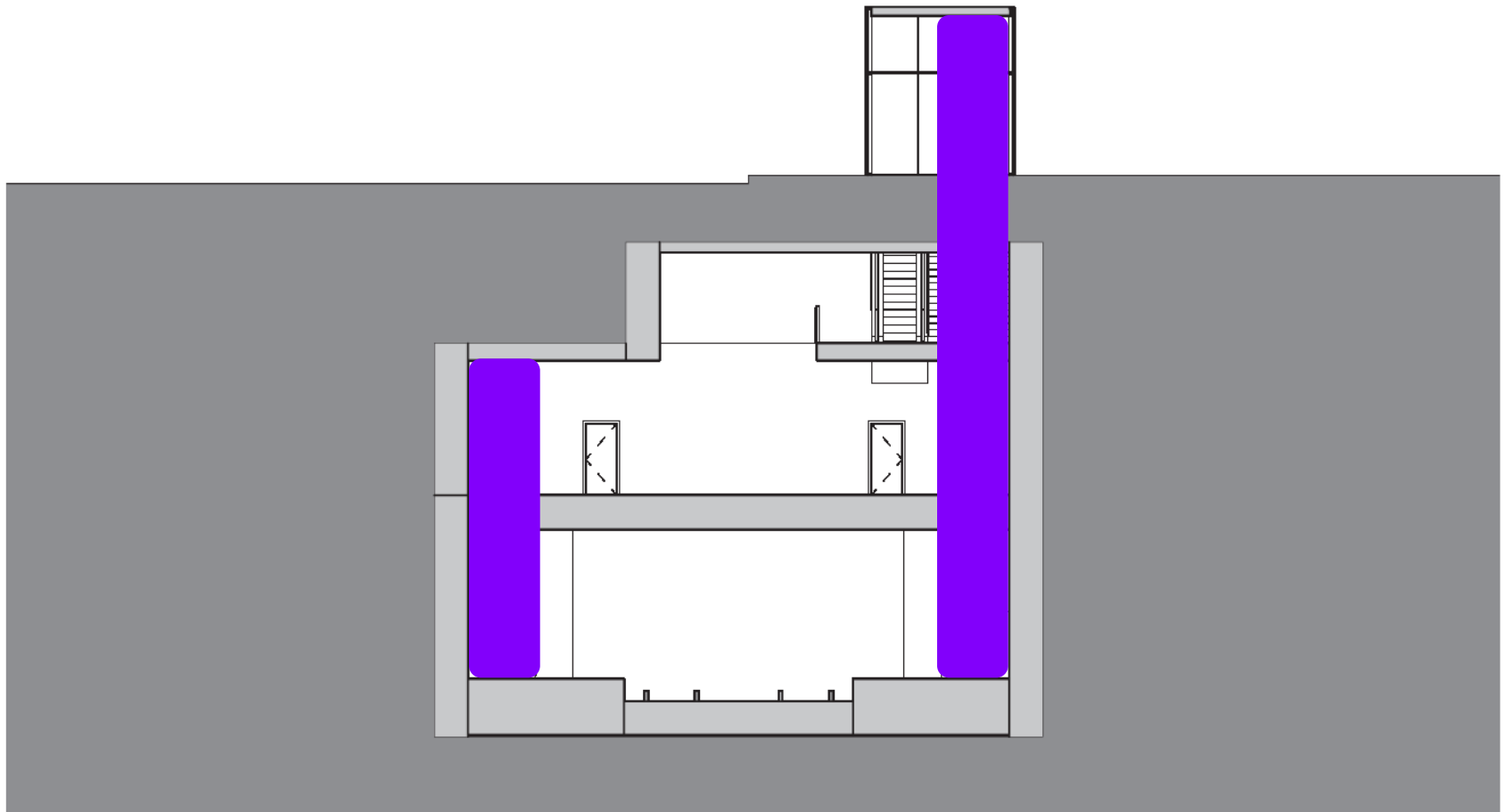


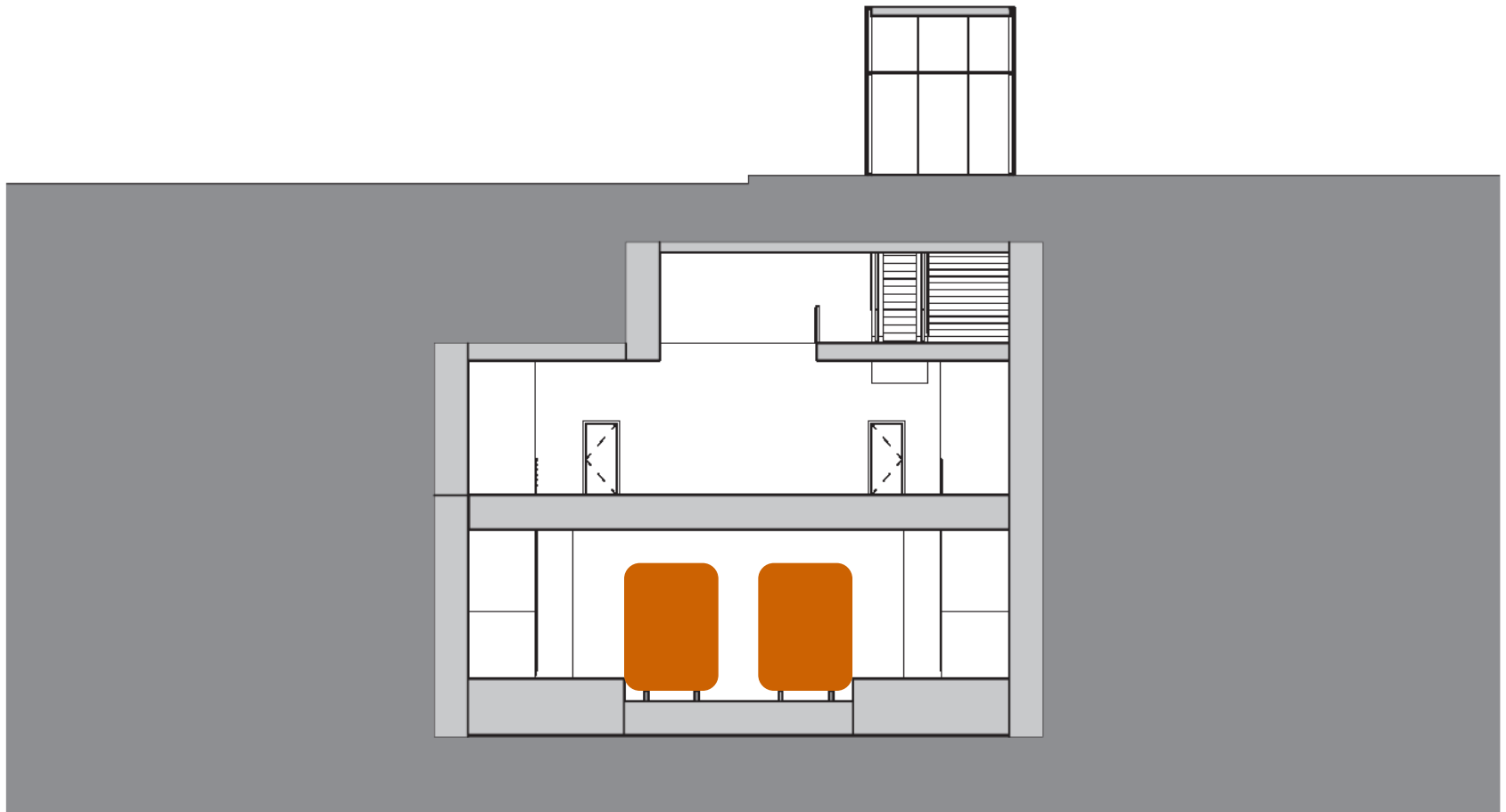




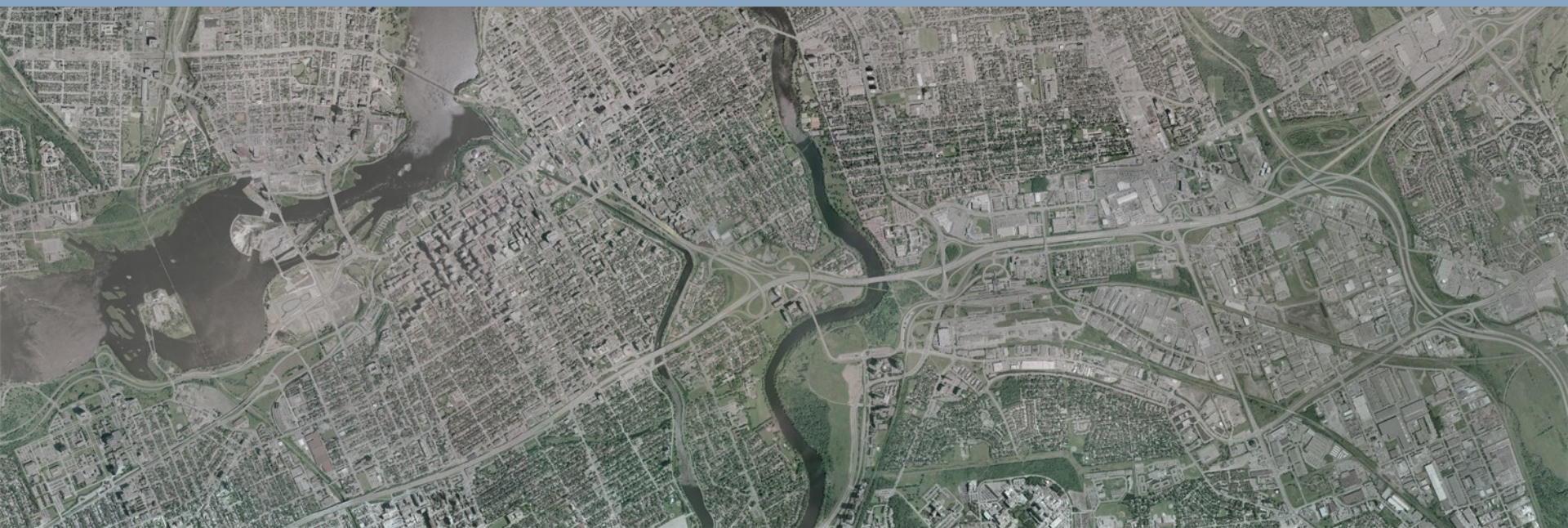


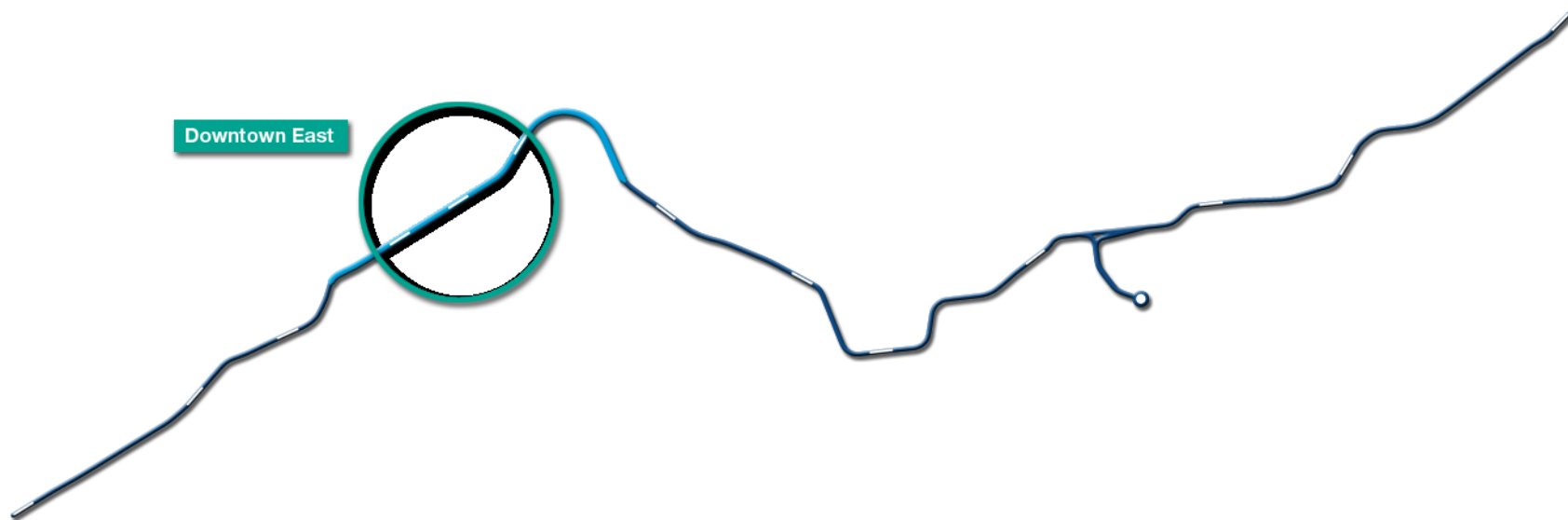


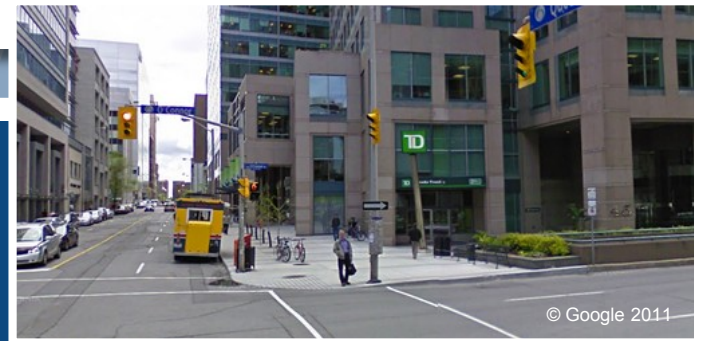
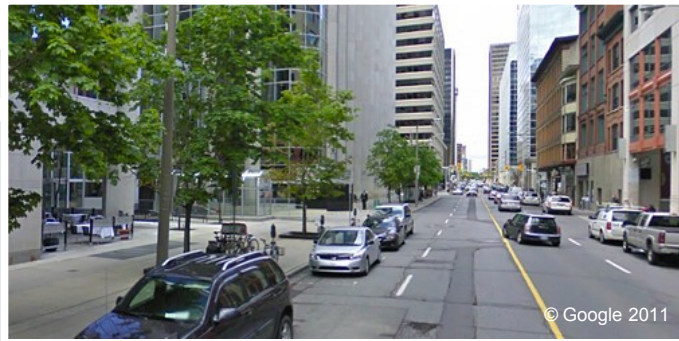
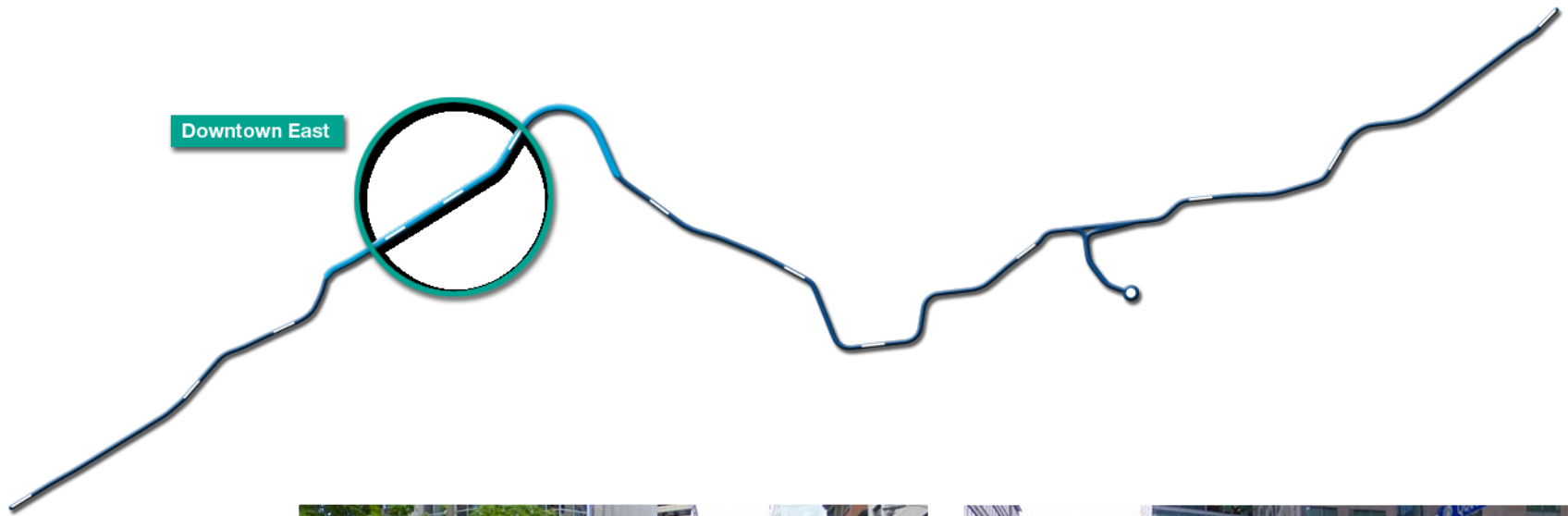


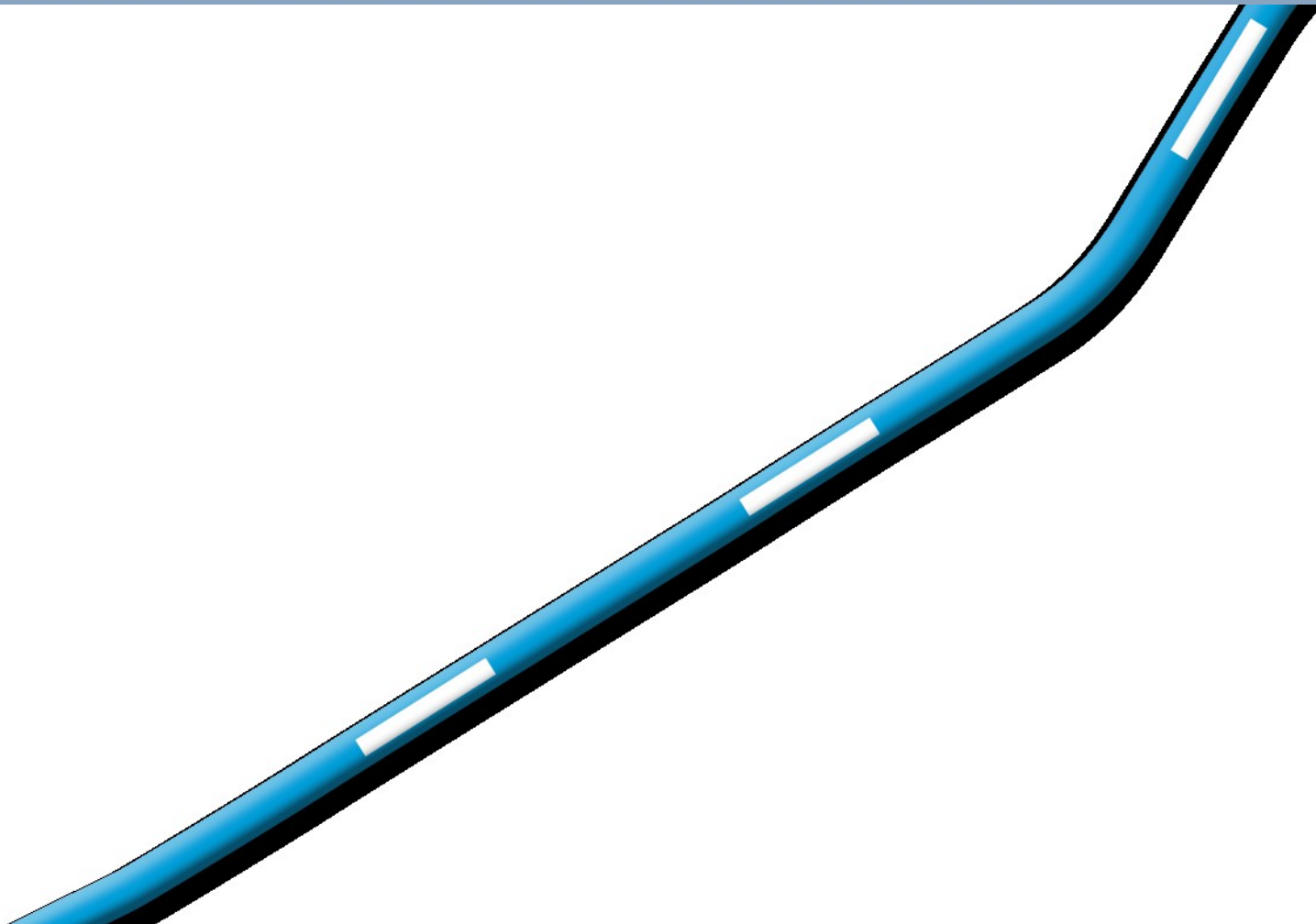


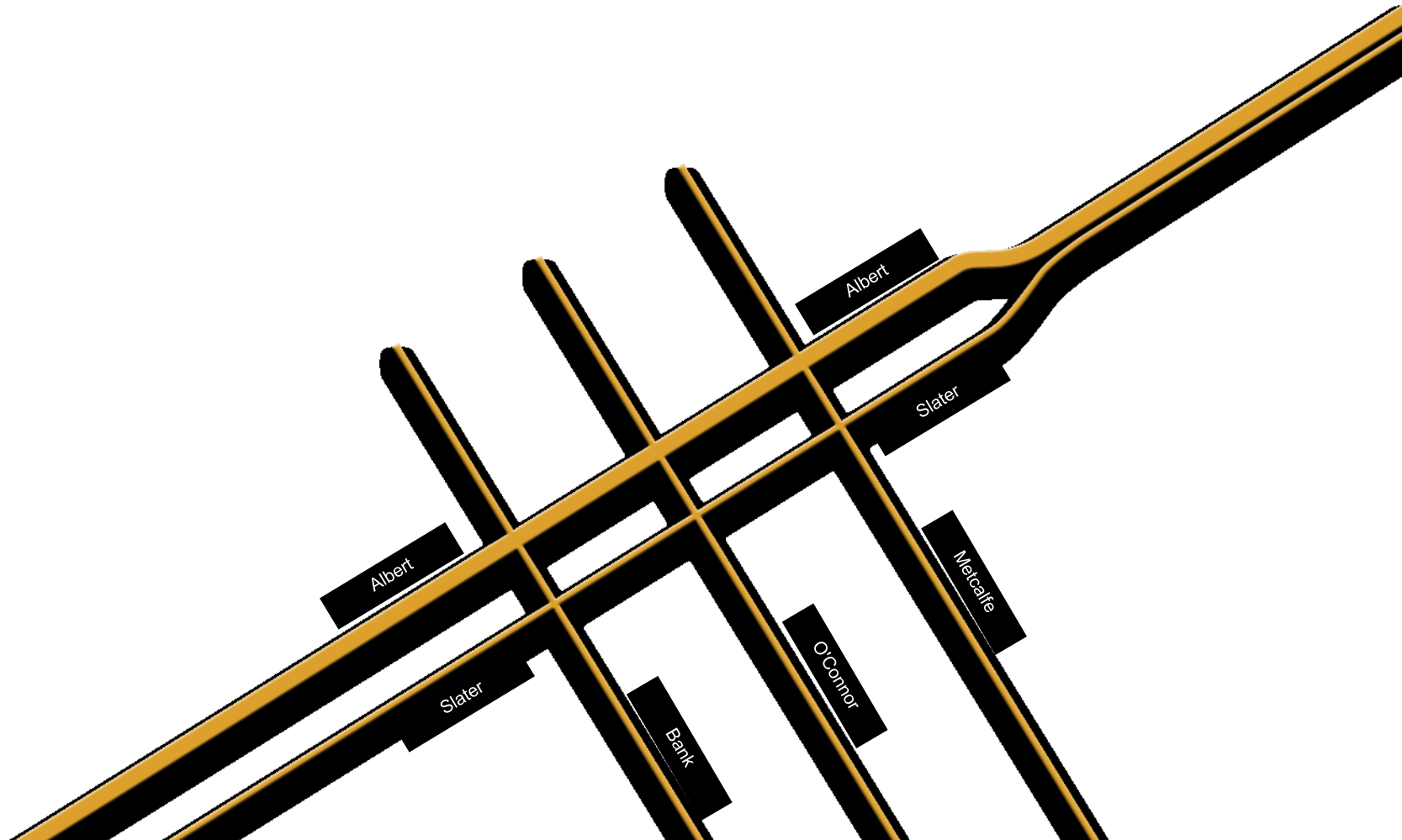


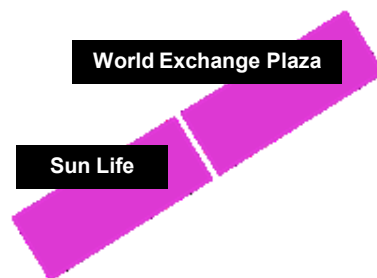


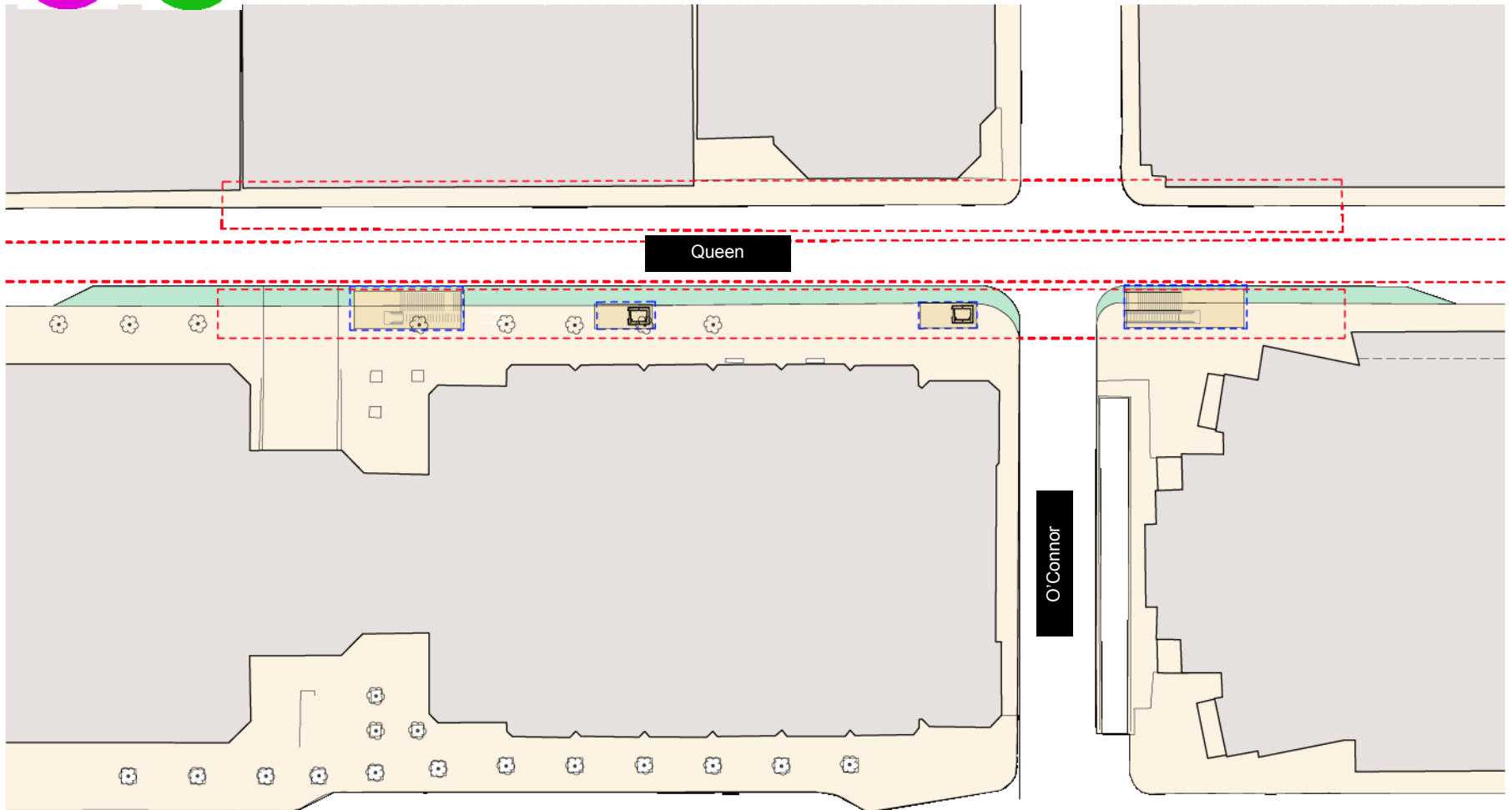


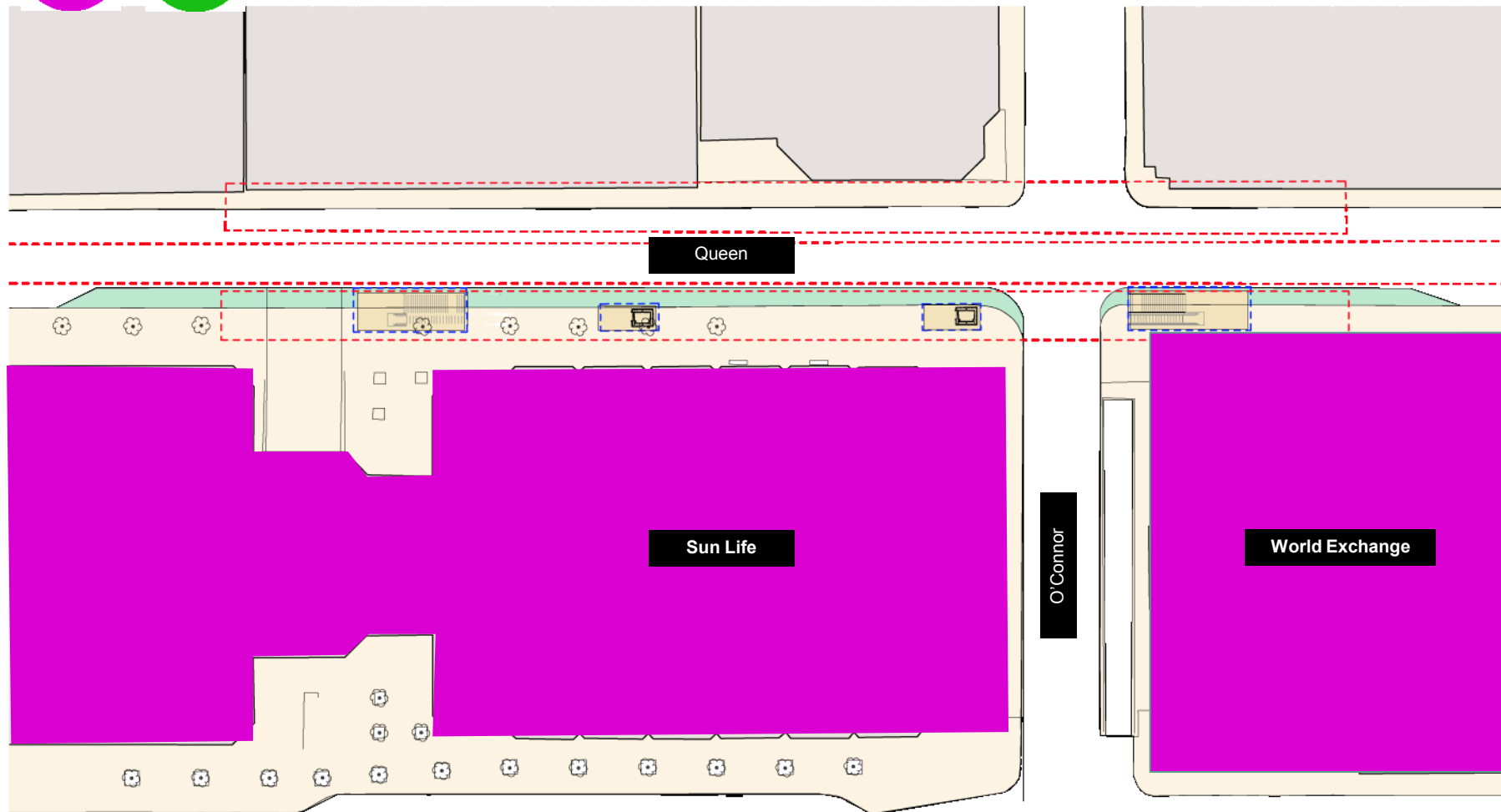


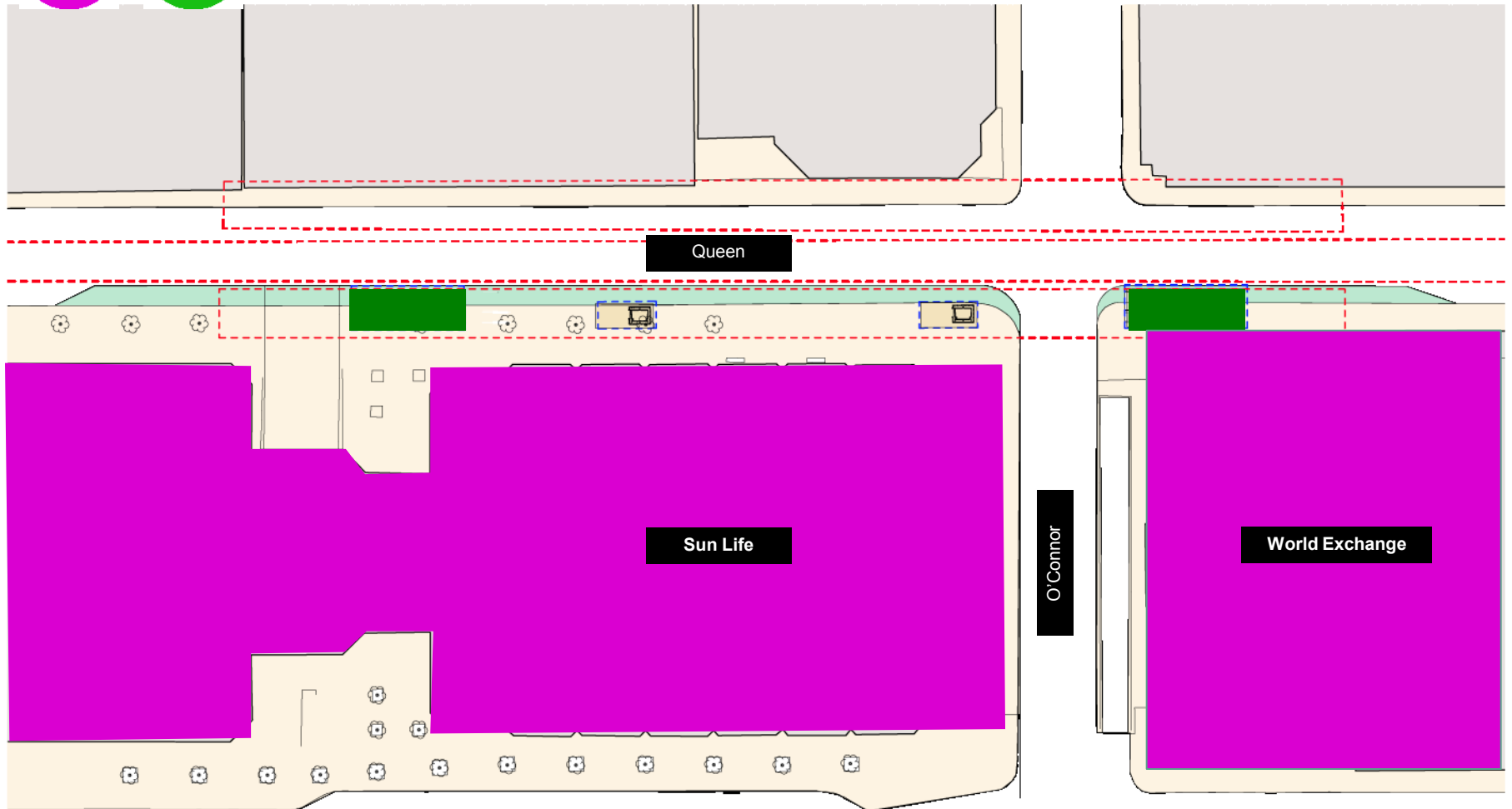






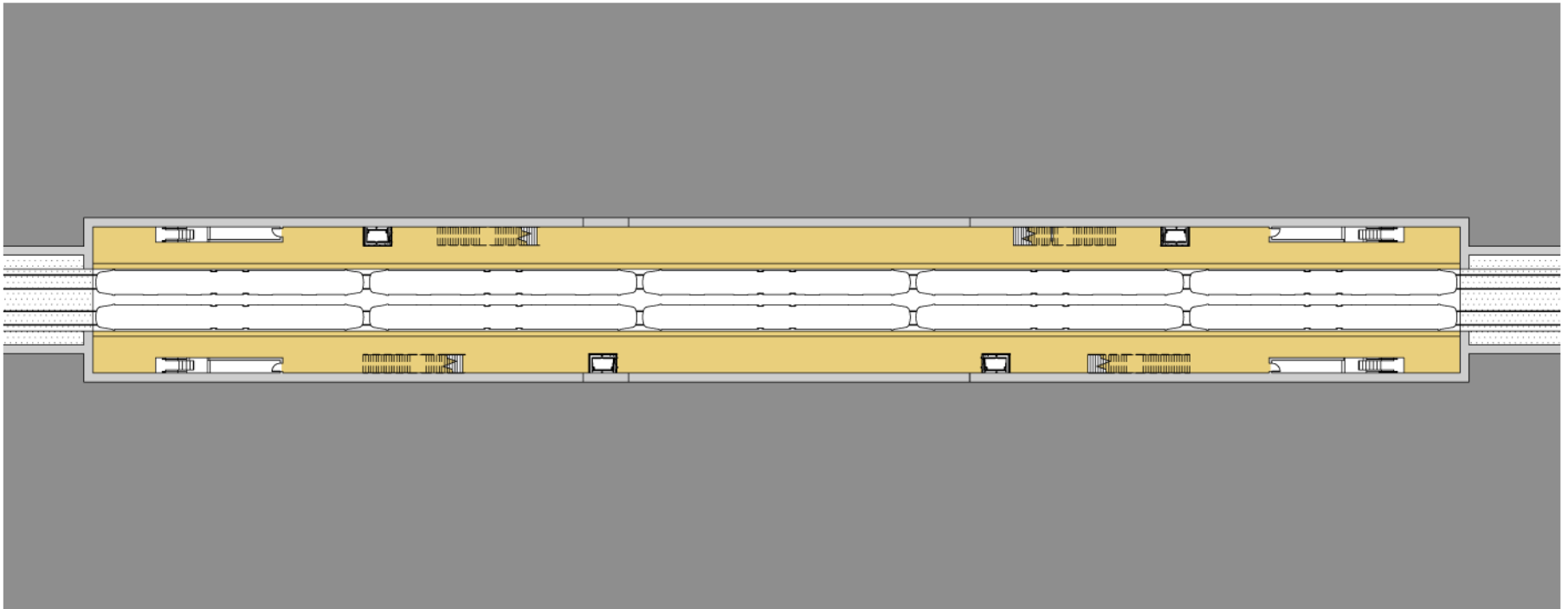






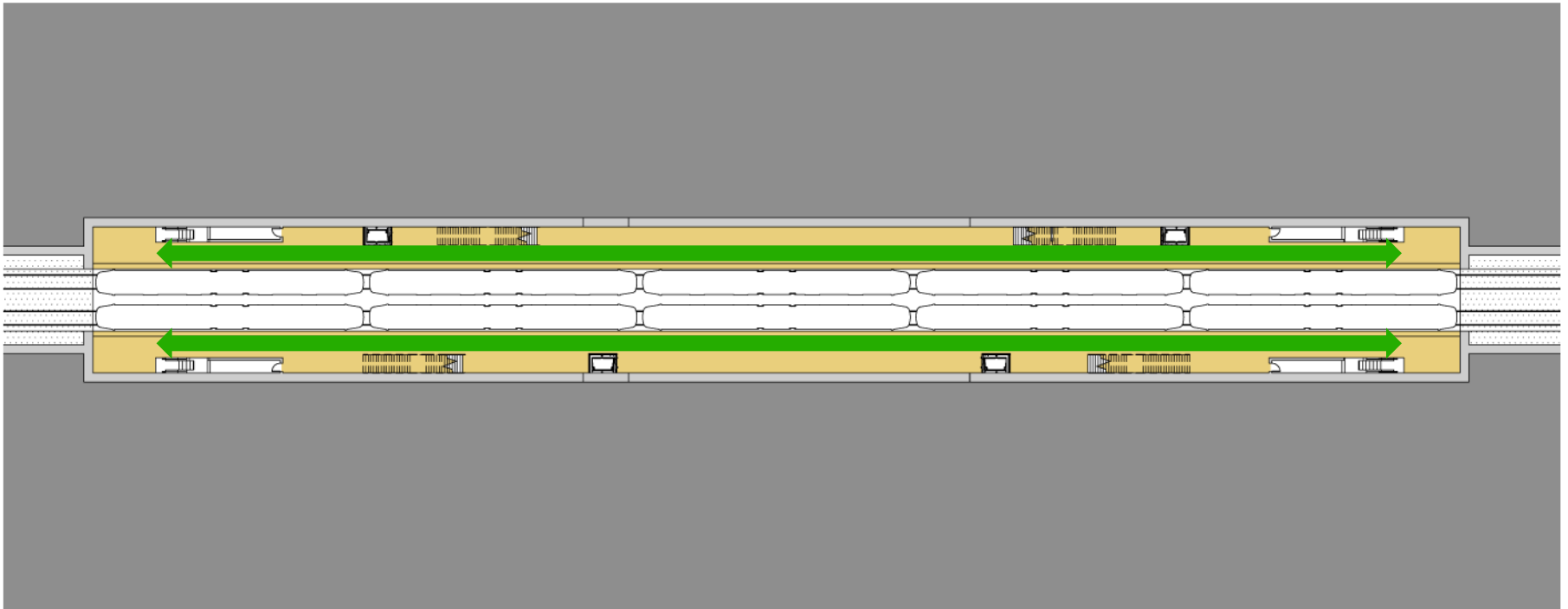
Downtown East

Platform (Inside Tunnel)



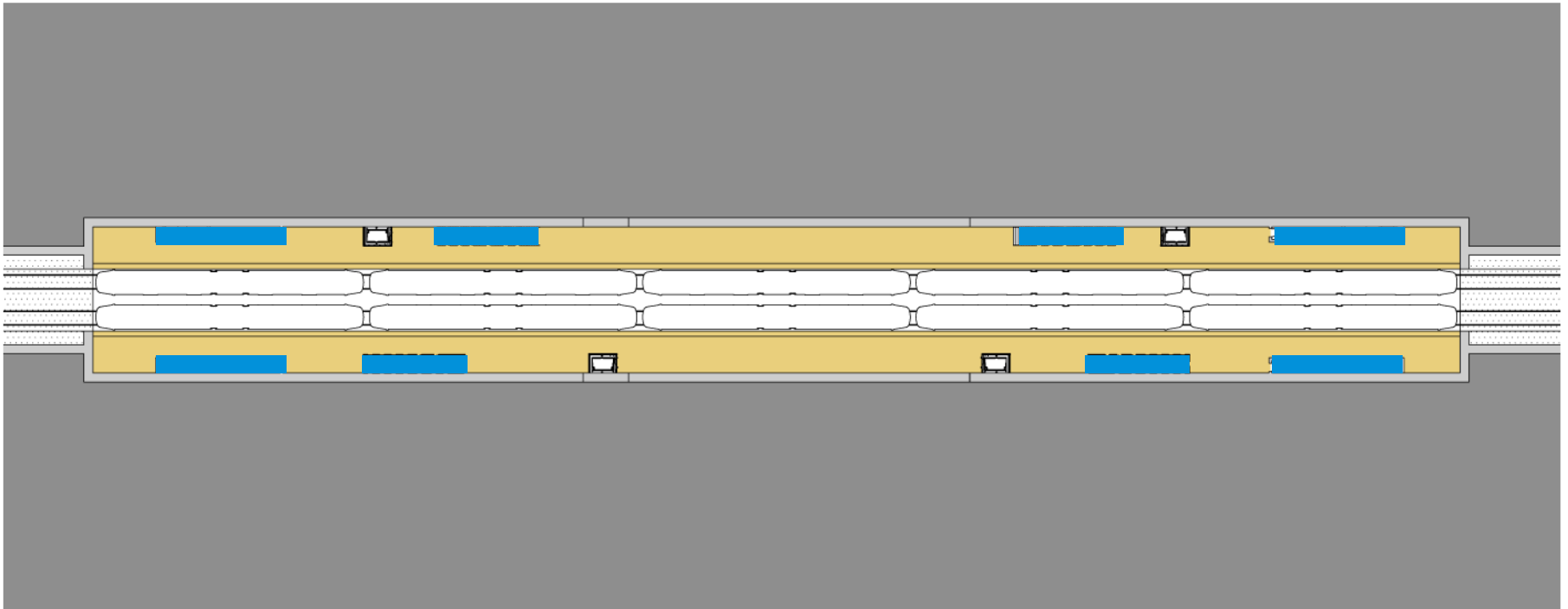
Downtown East

Platform (Inside Tunnel)



Downtown East

Platform (Inside Tunnel)



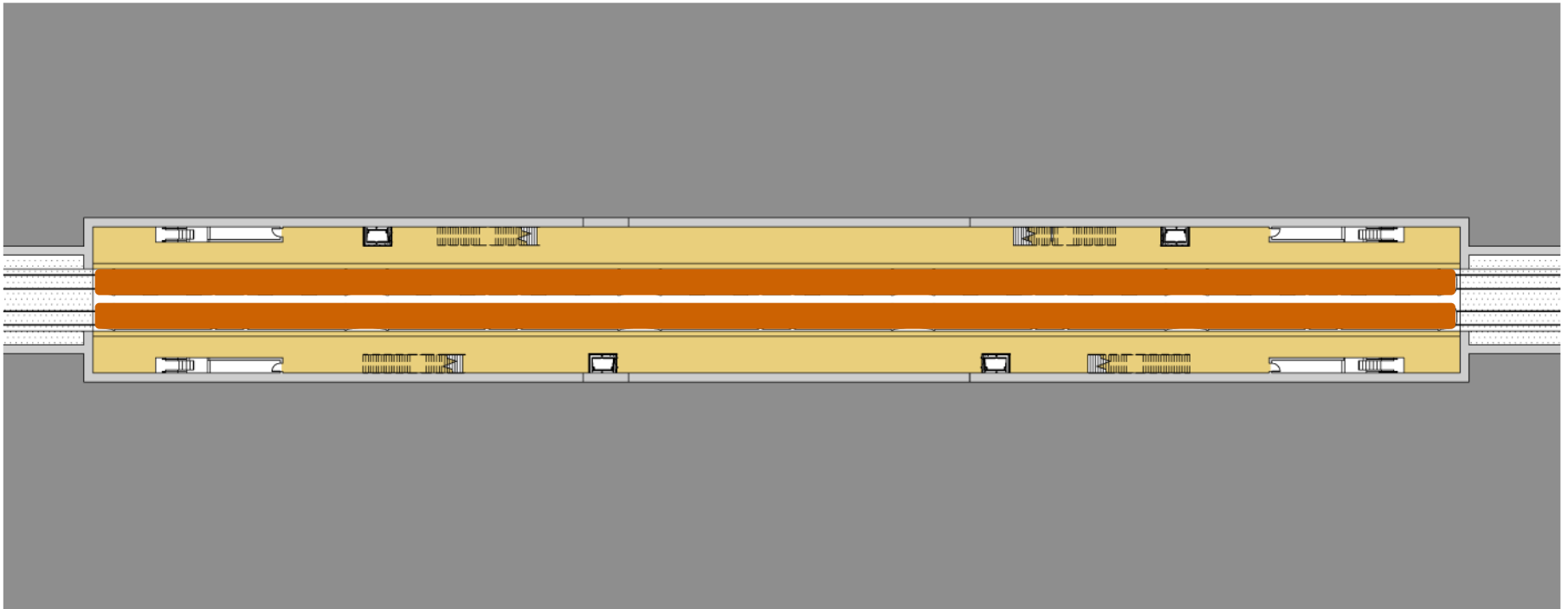
Downtown East

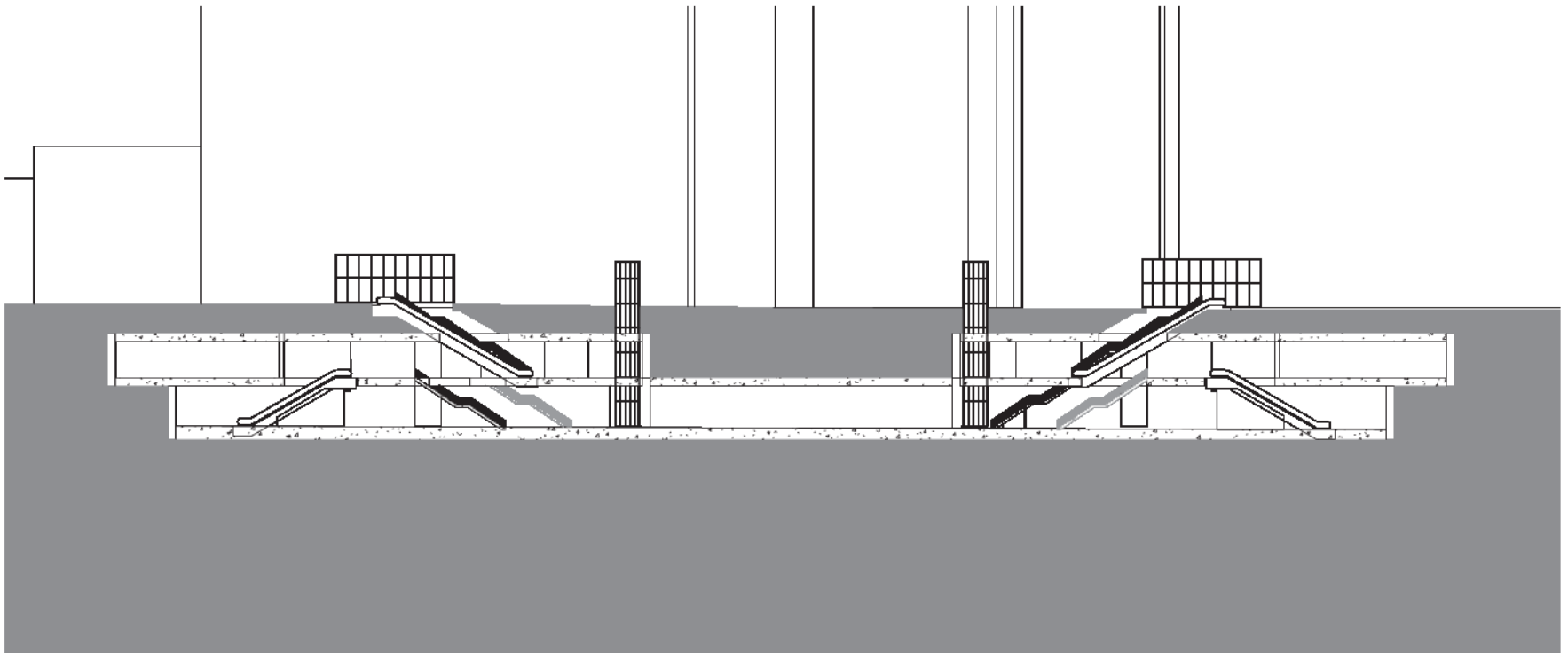
Platform (Inside Tunnel)

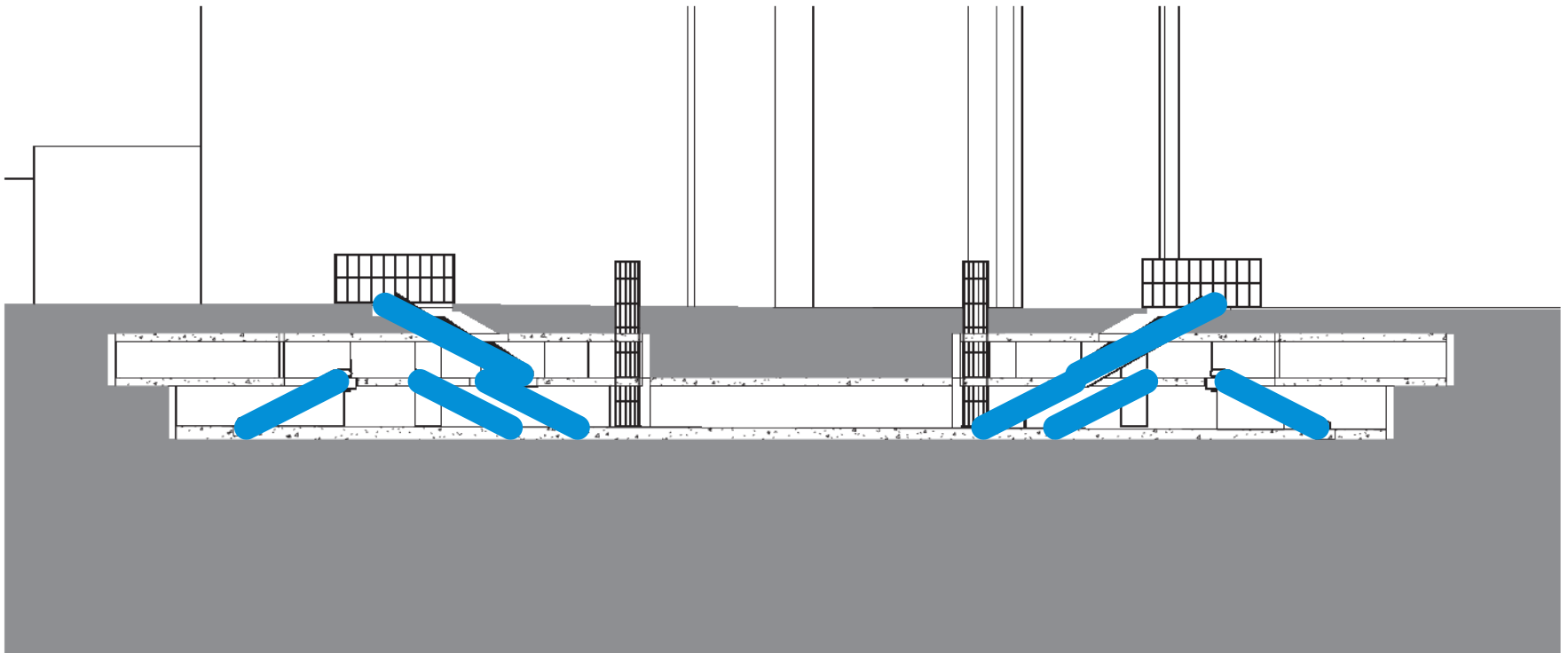


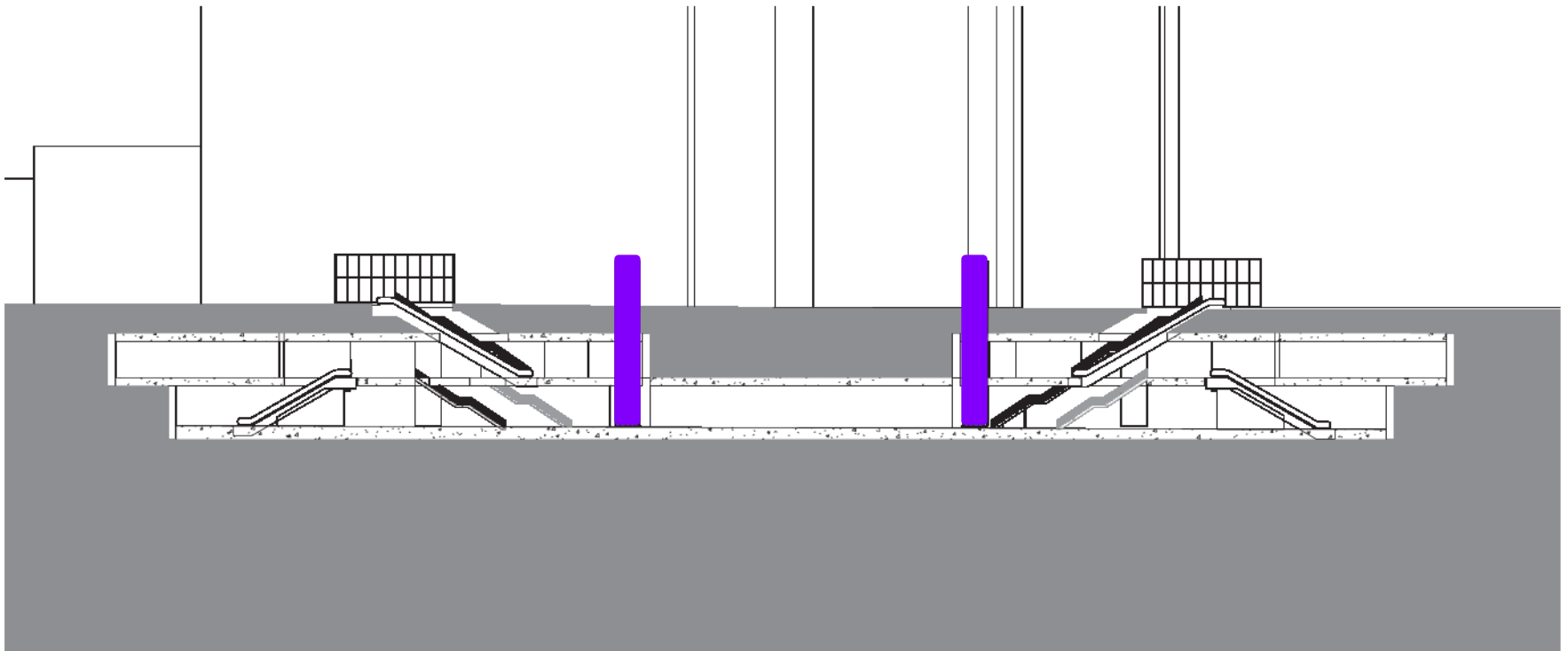
Downtown East

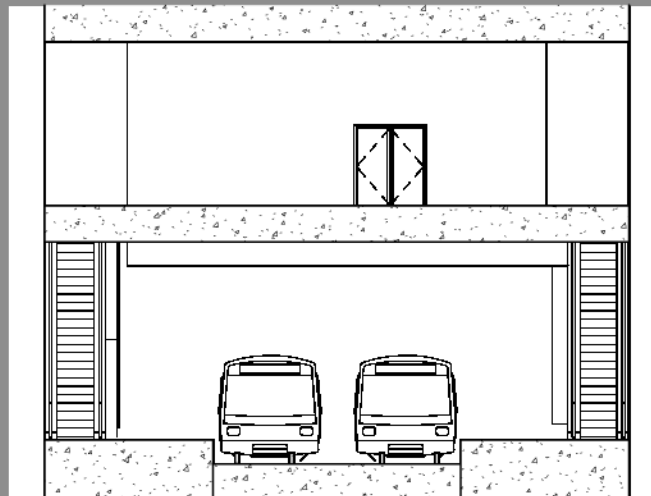
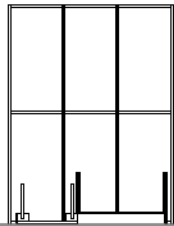
Platform (Inside Tunnel)

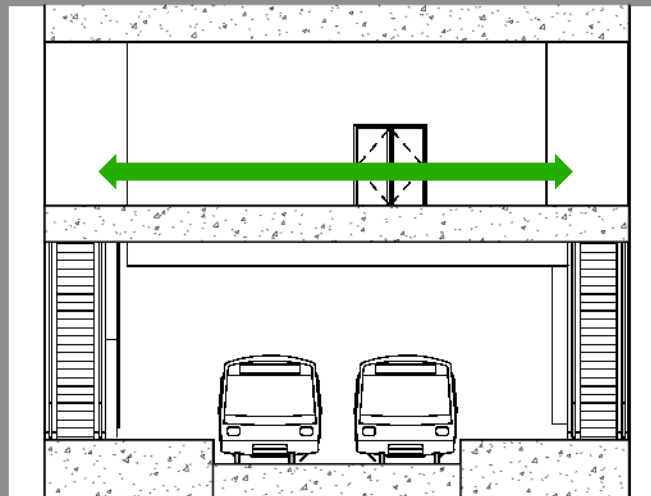
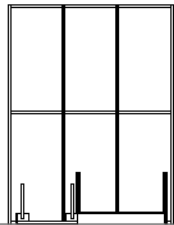


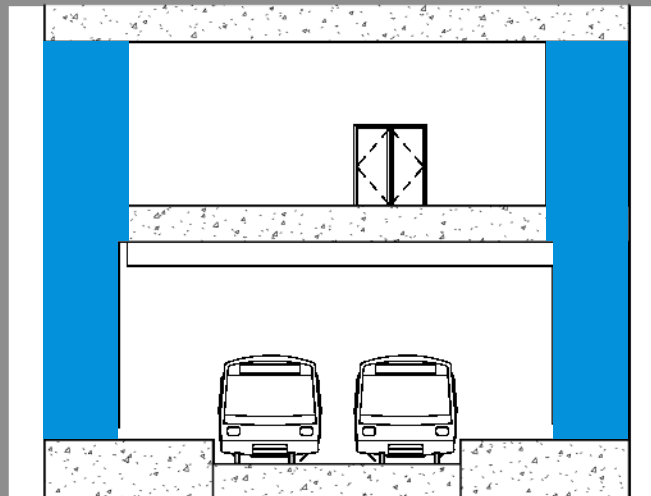
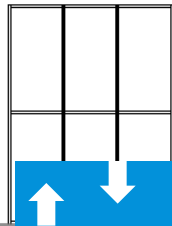


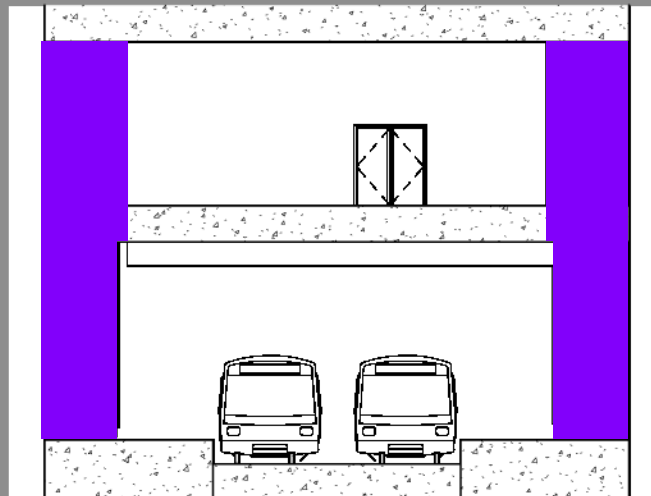
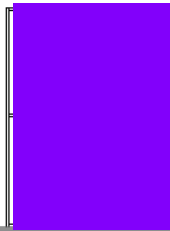


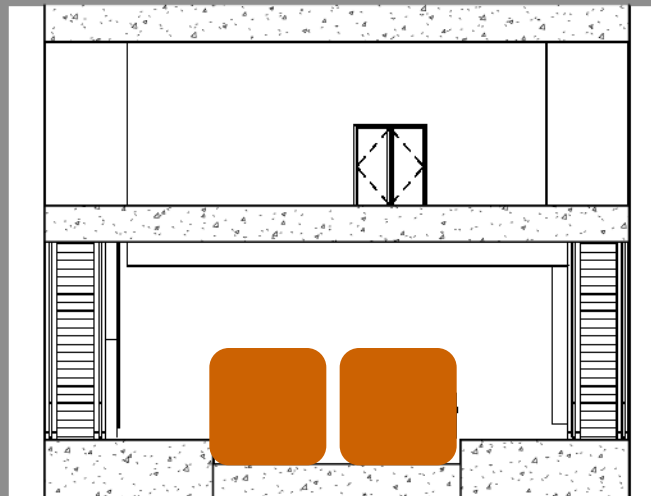
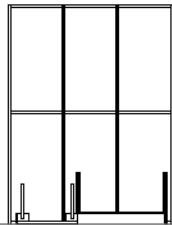




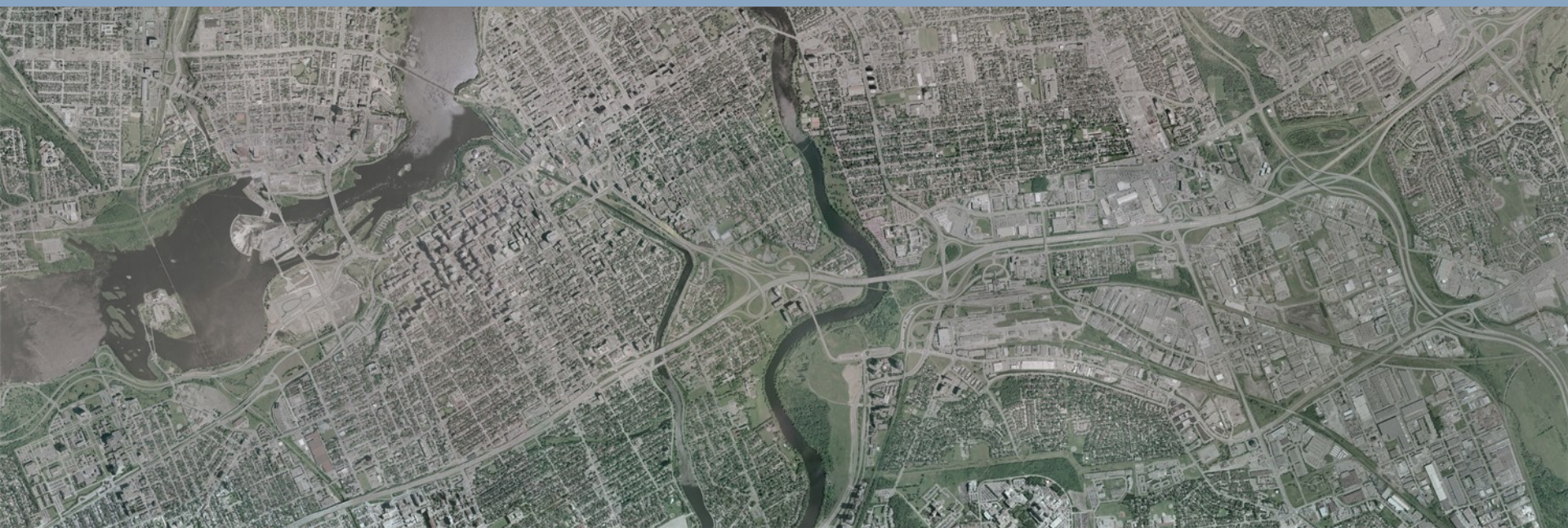


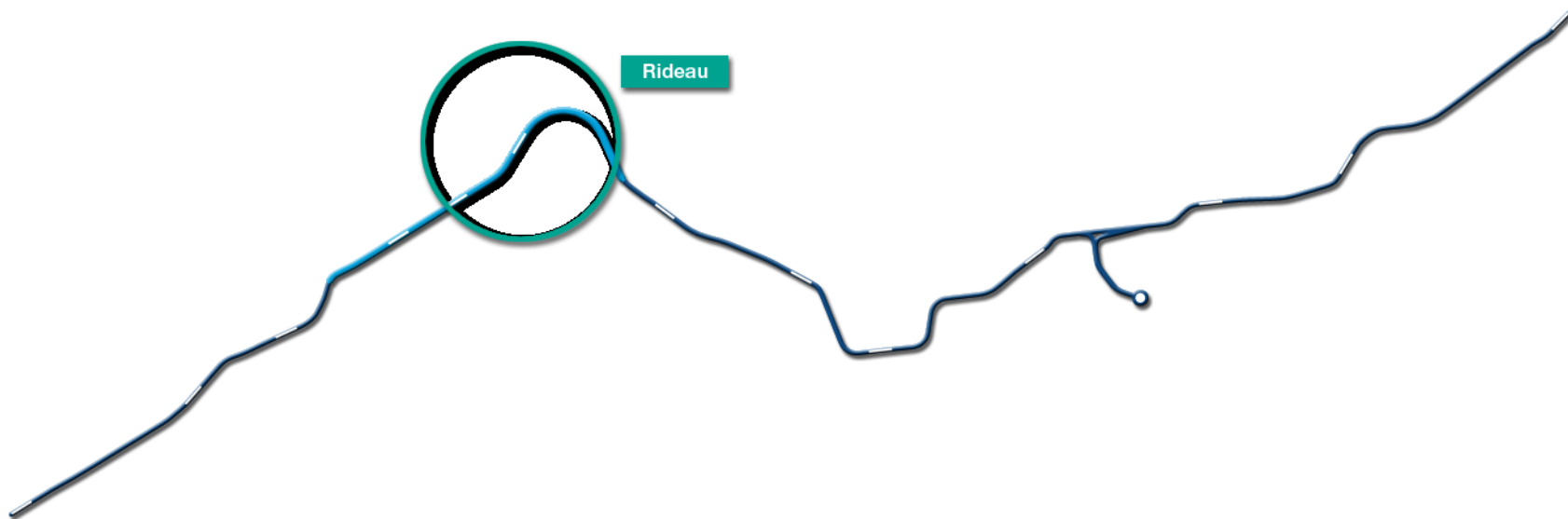


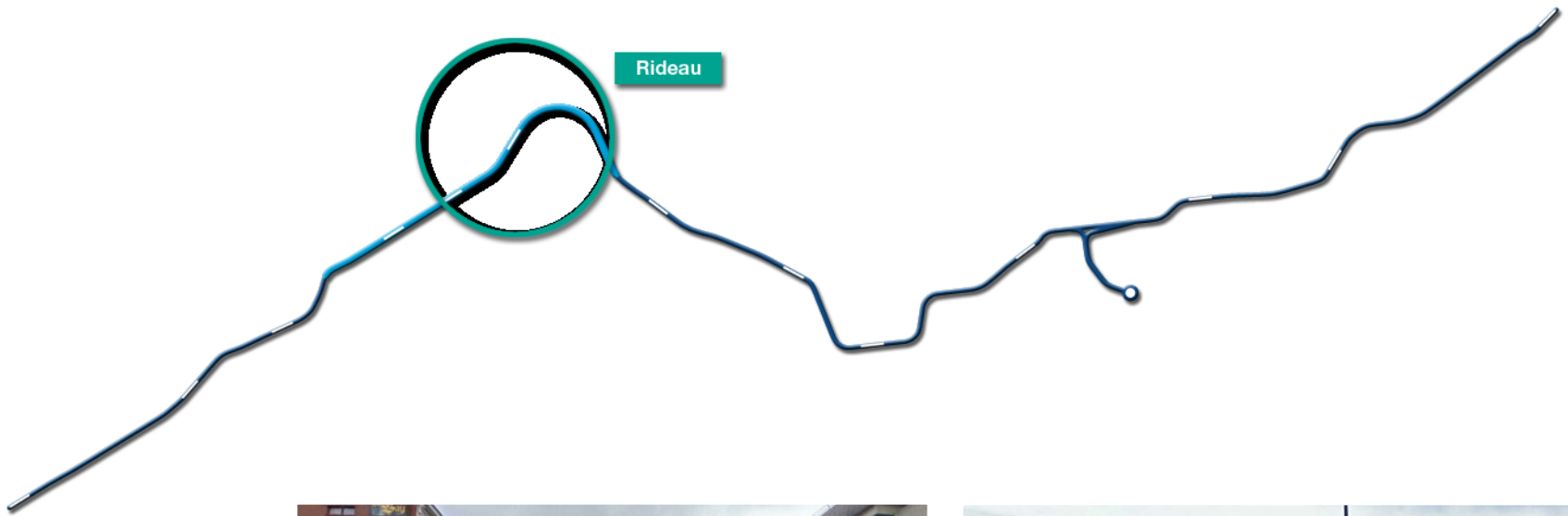


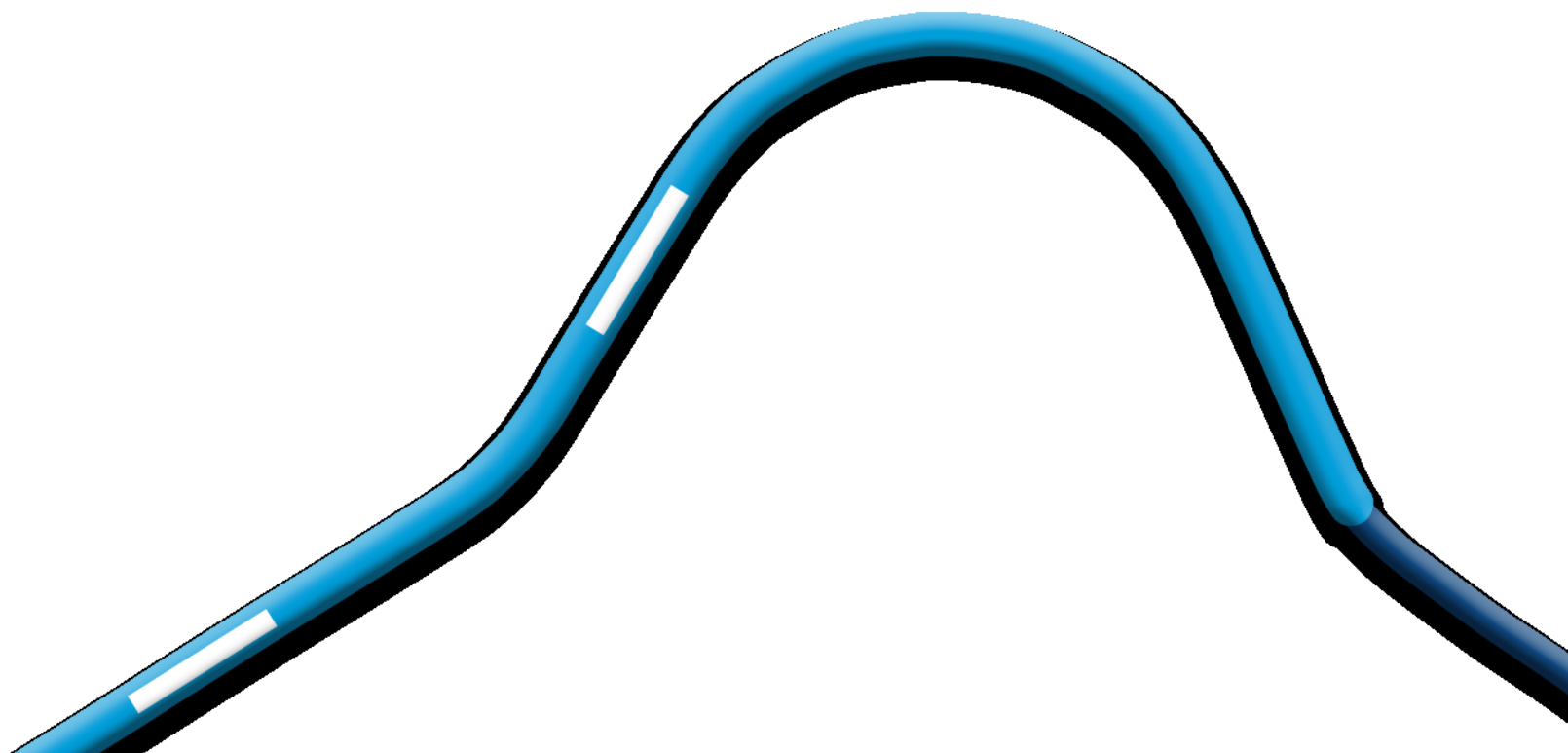


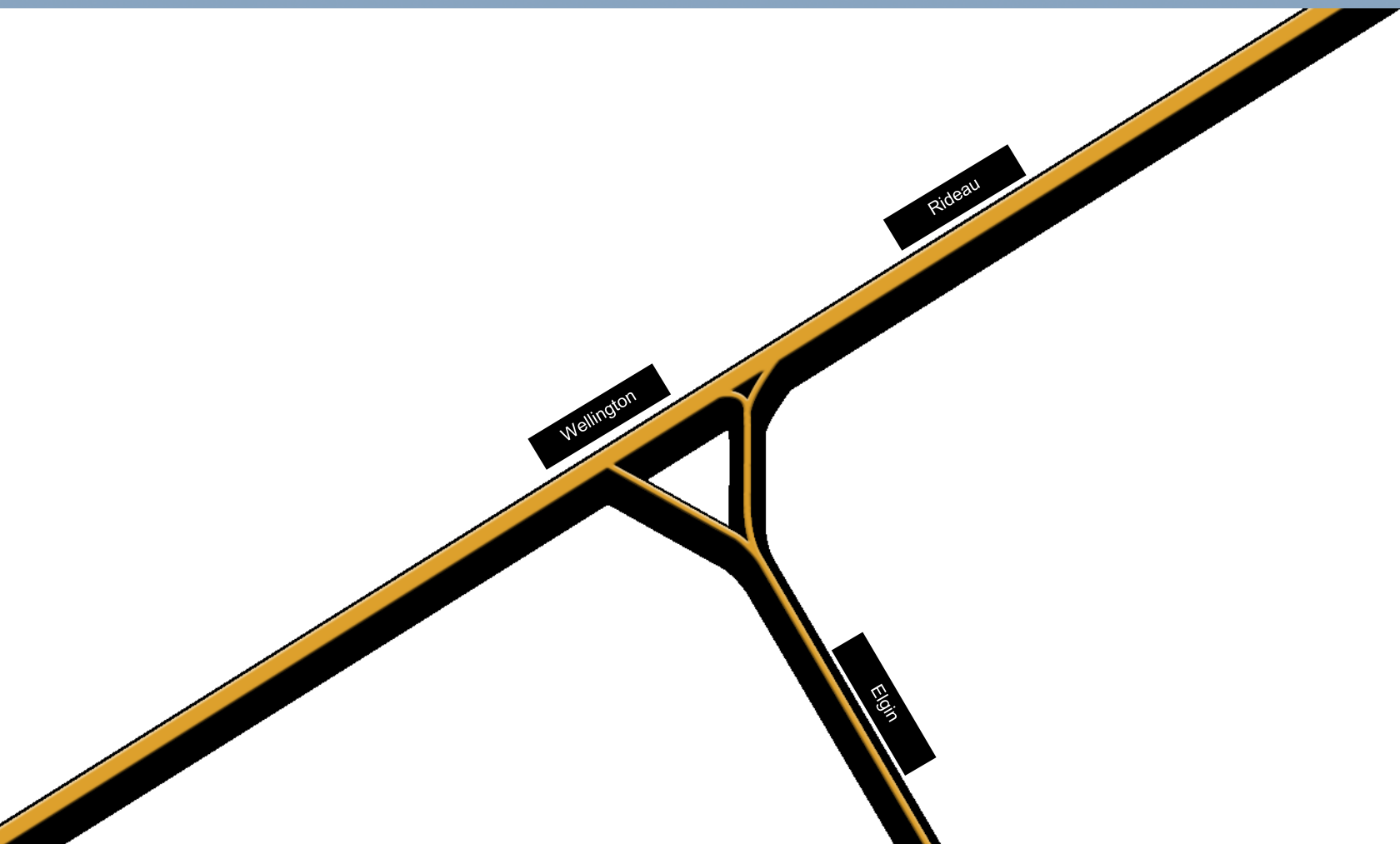


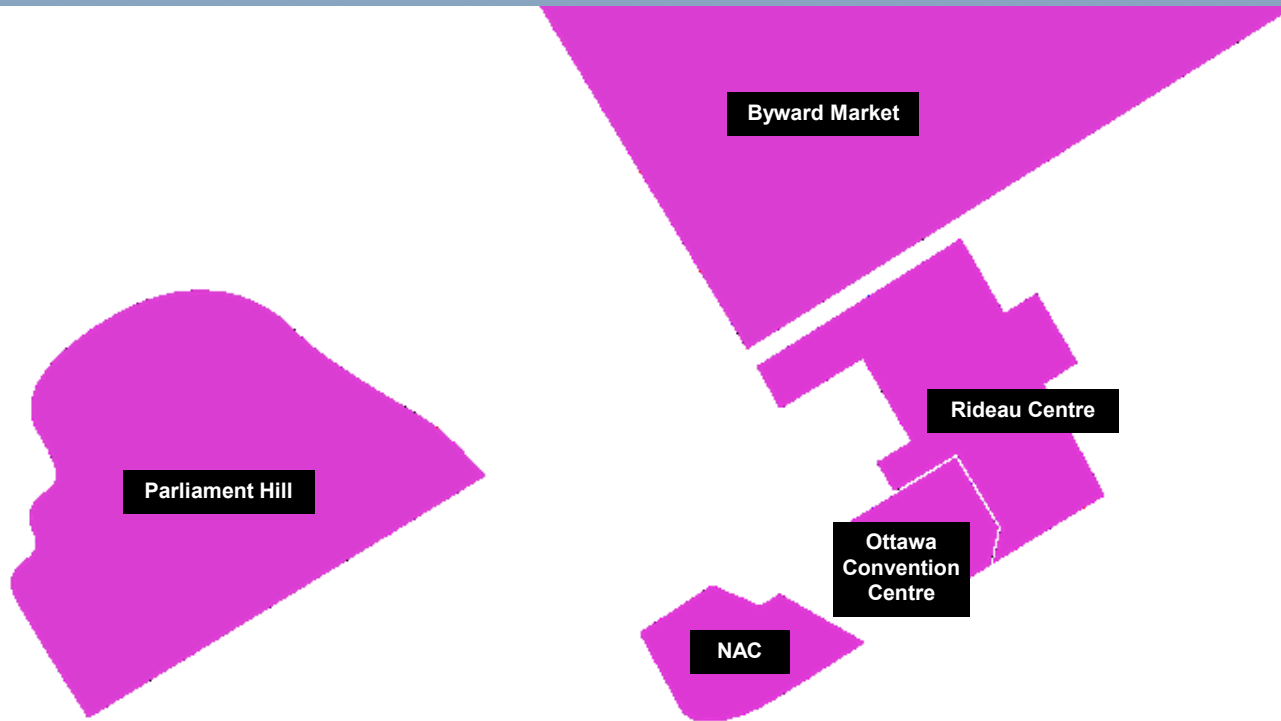


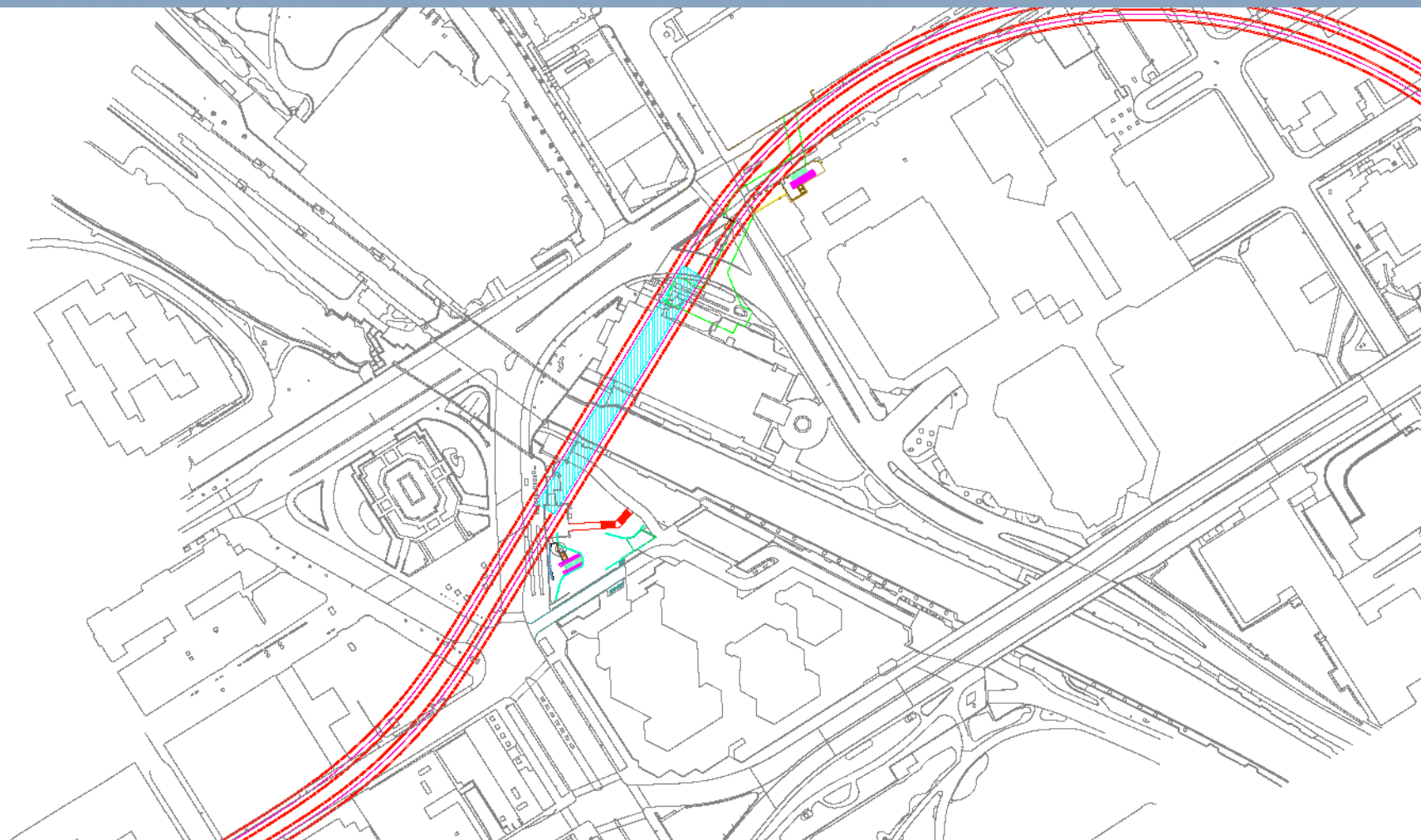






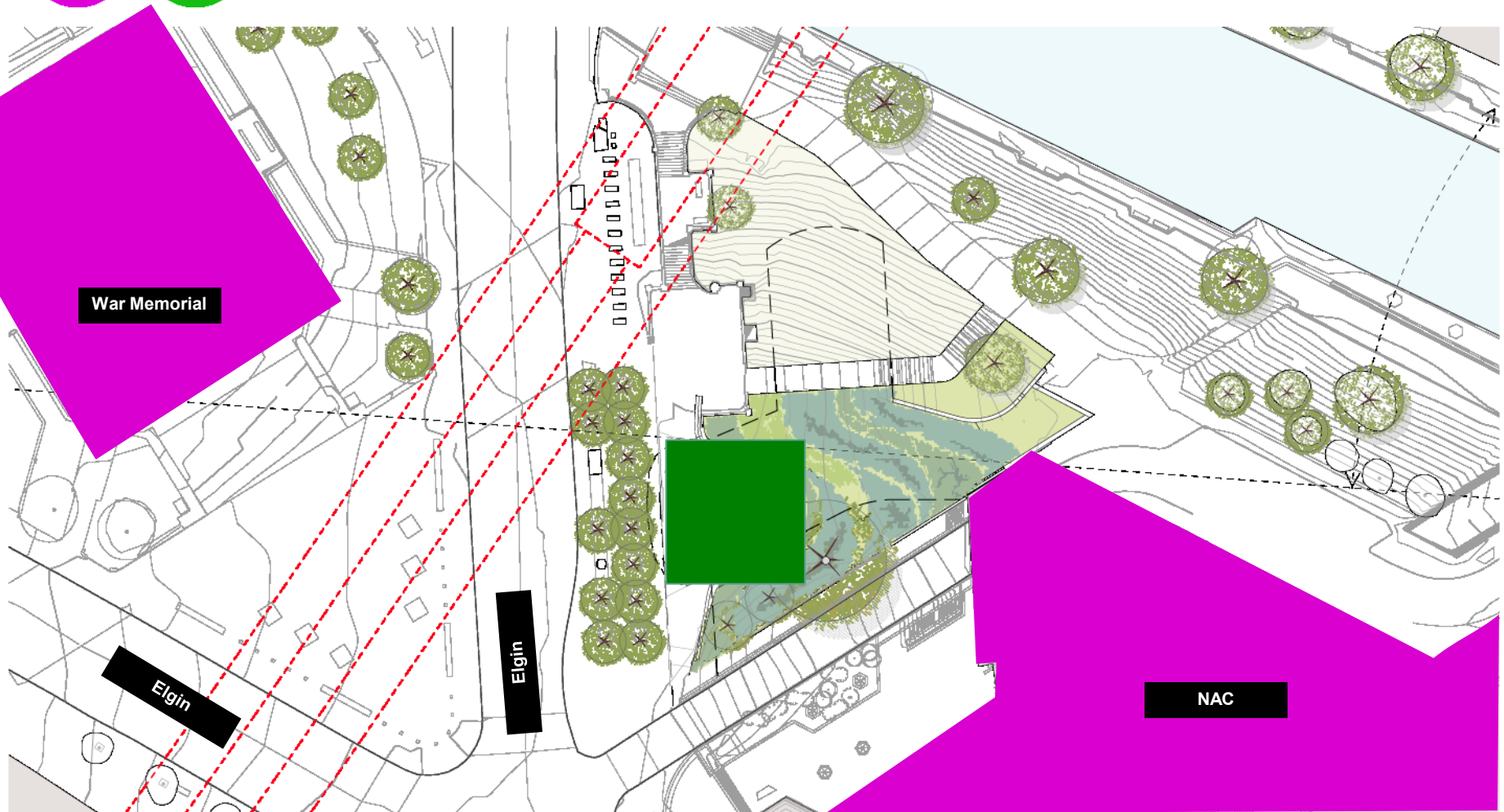


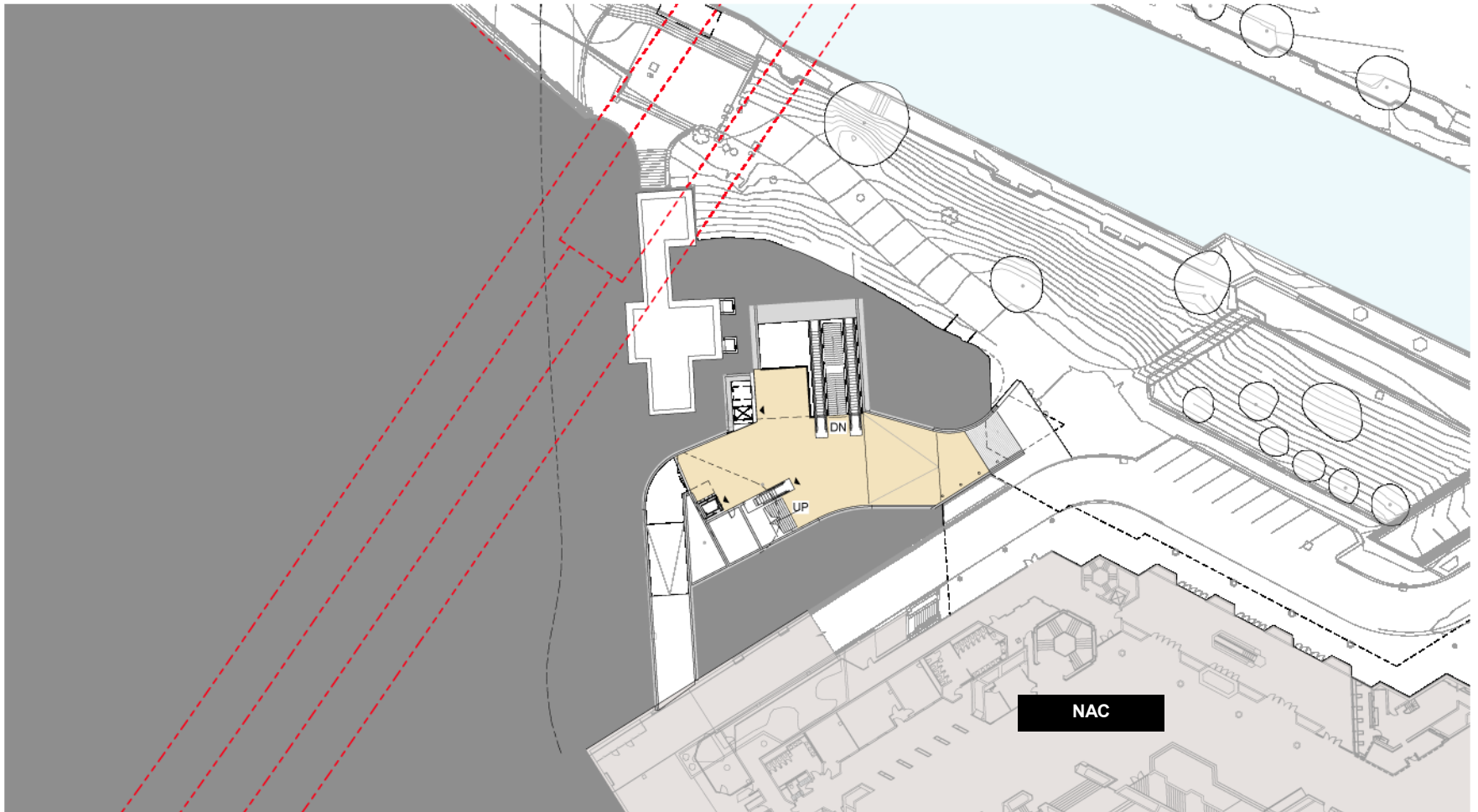
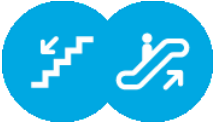


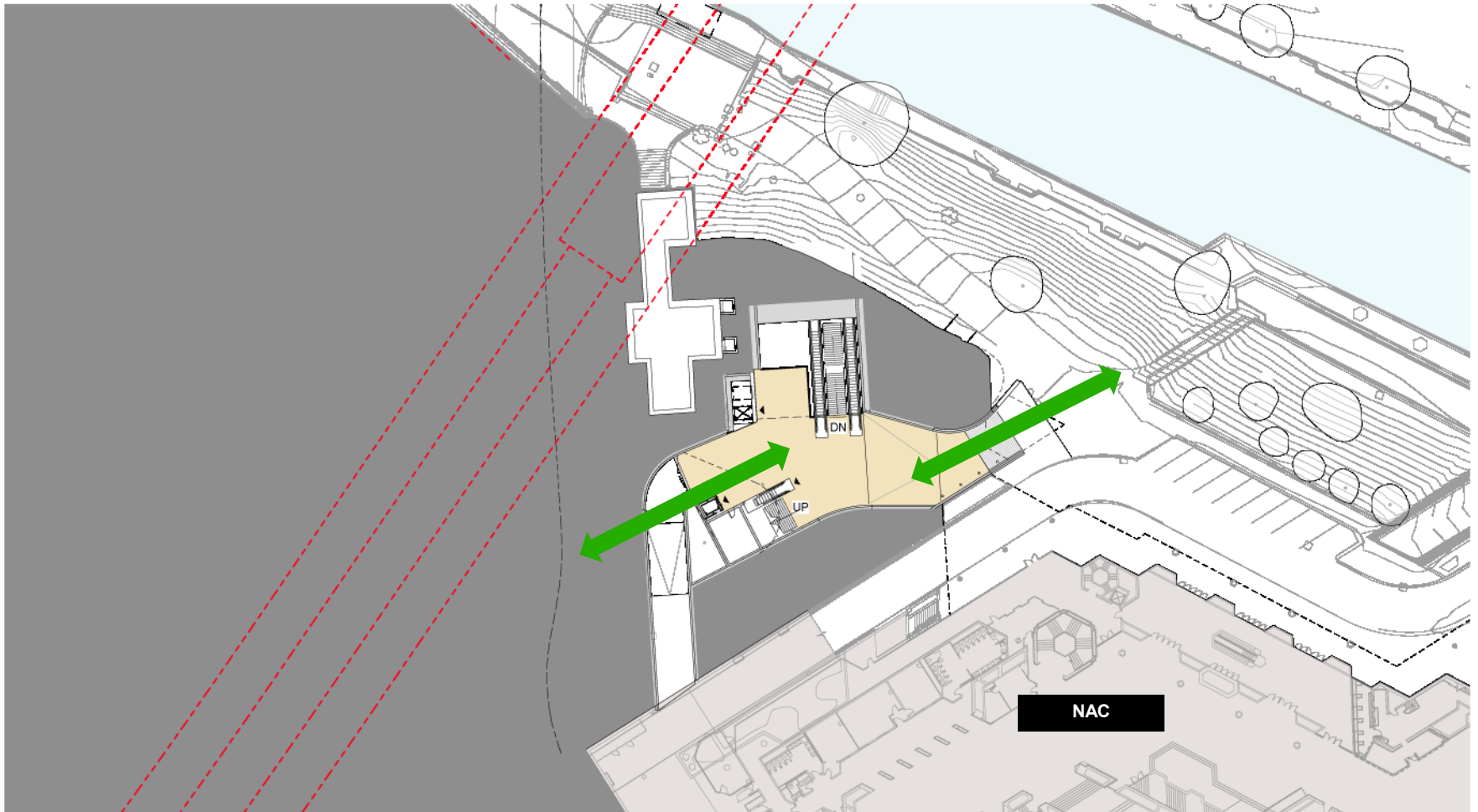


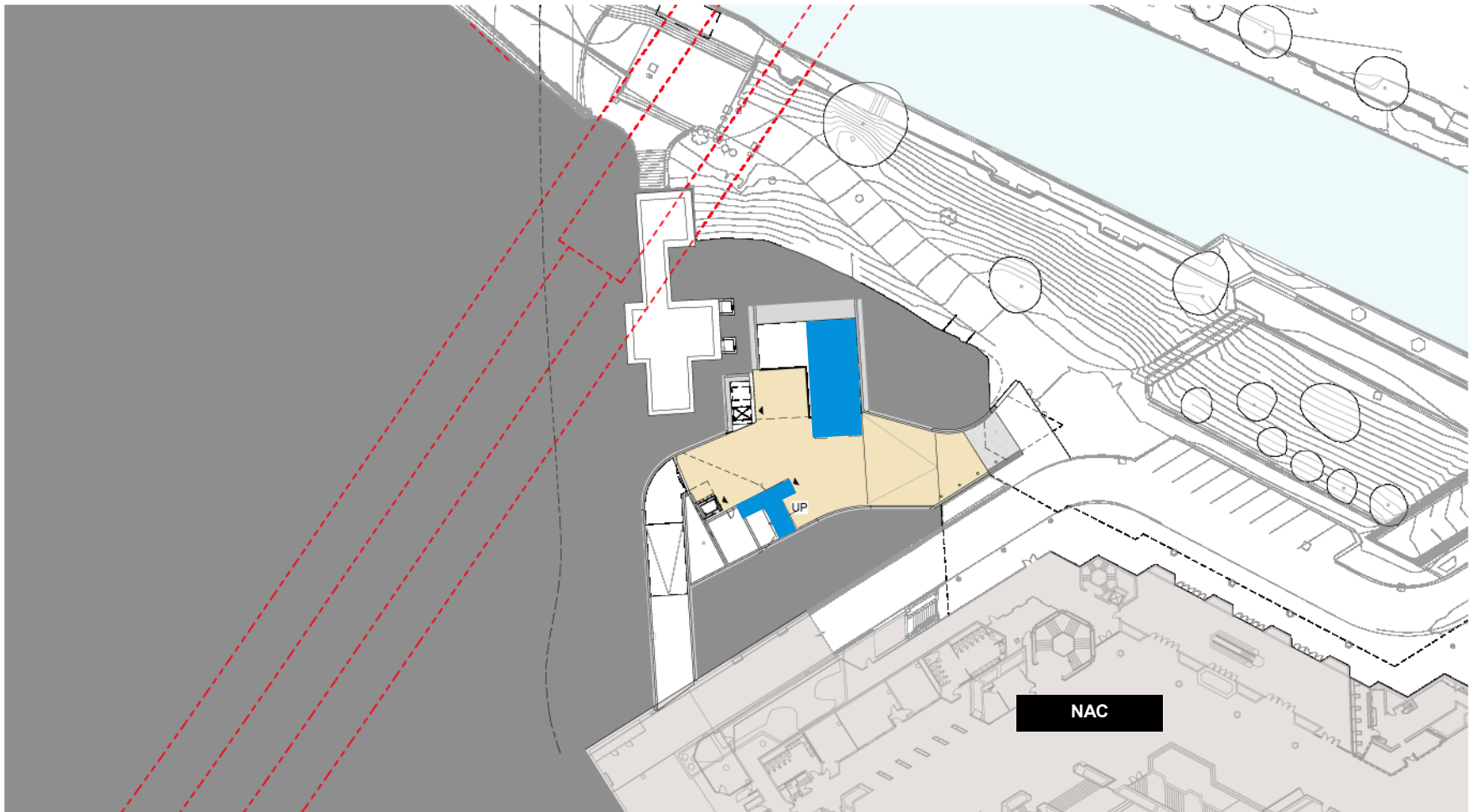


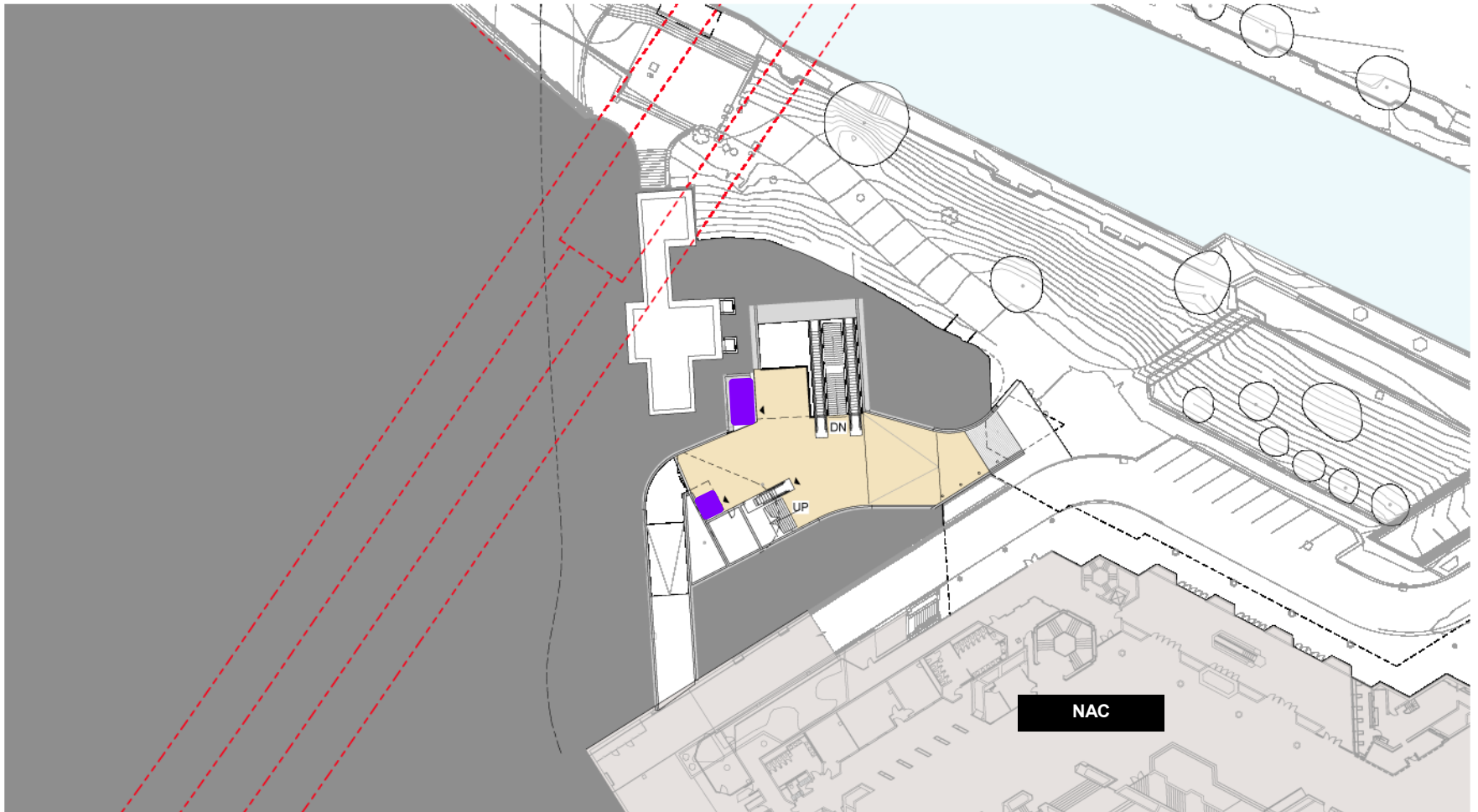
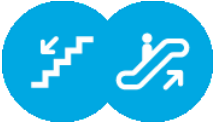


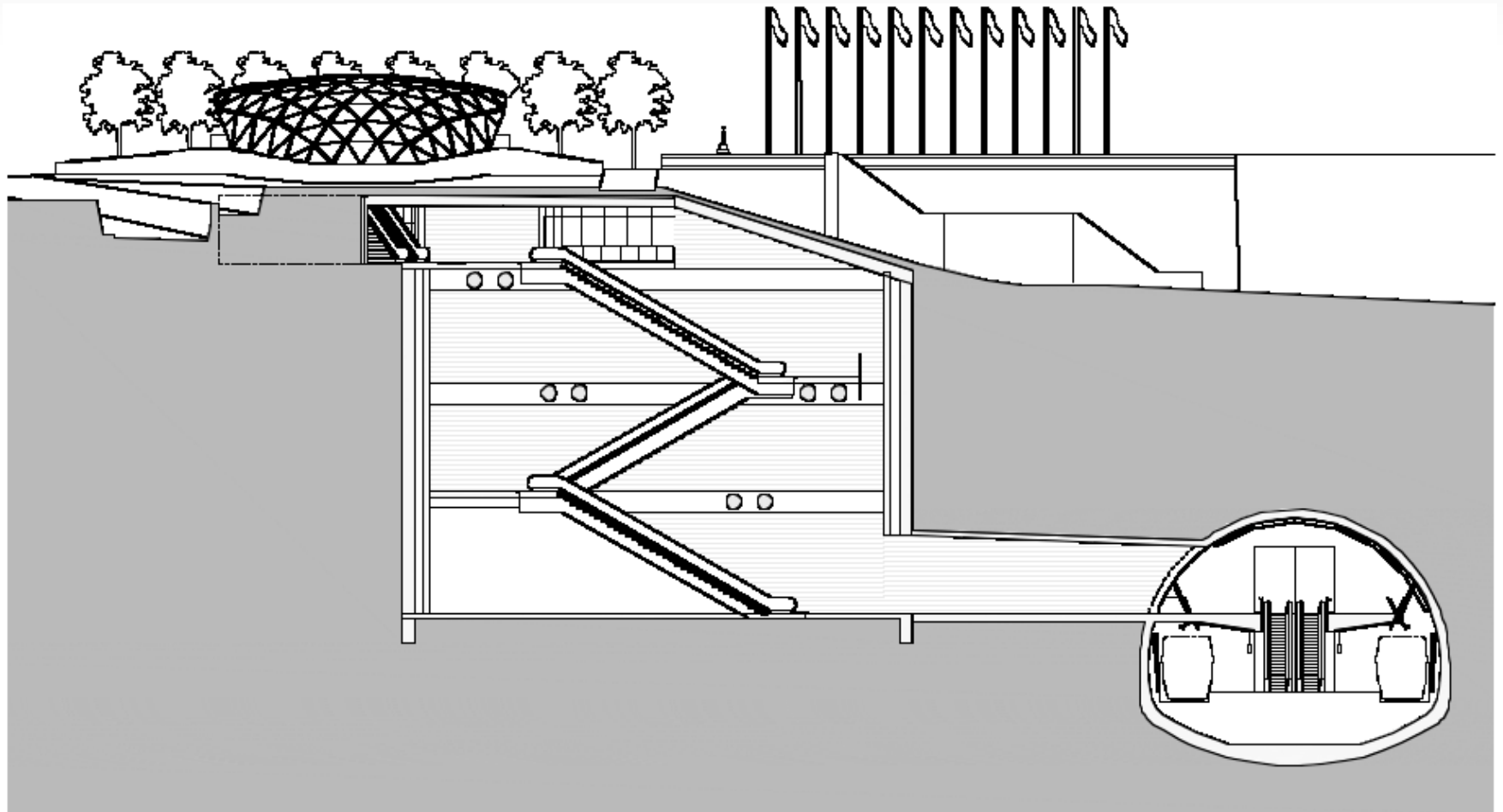


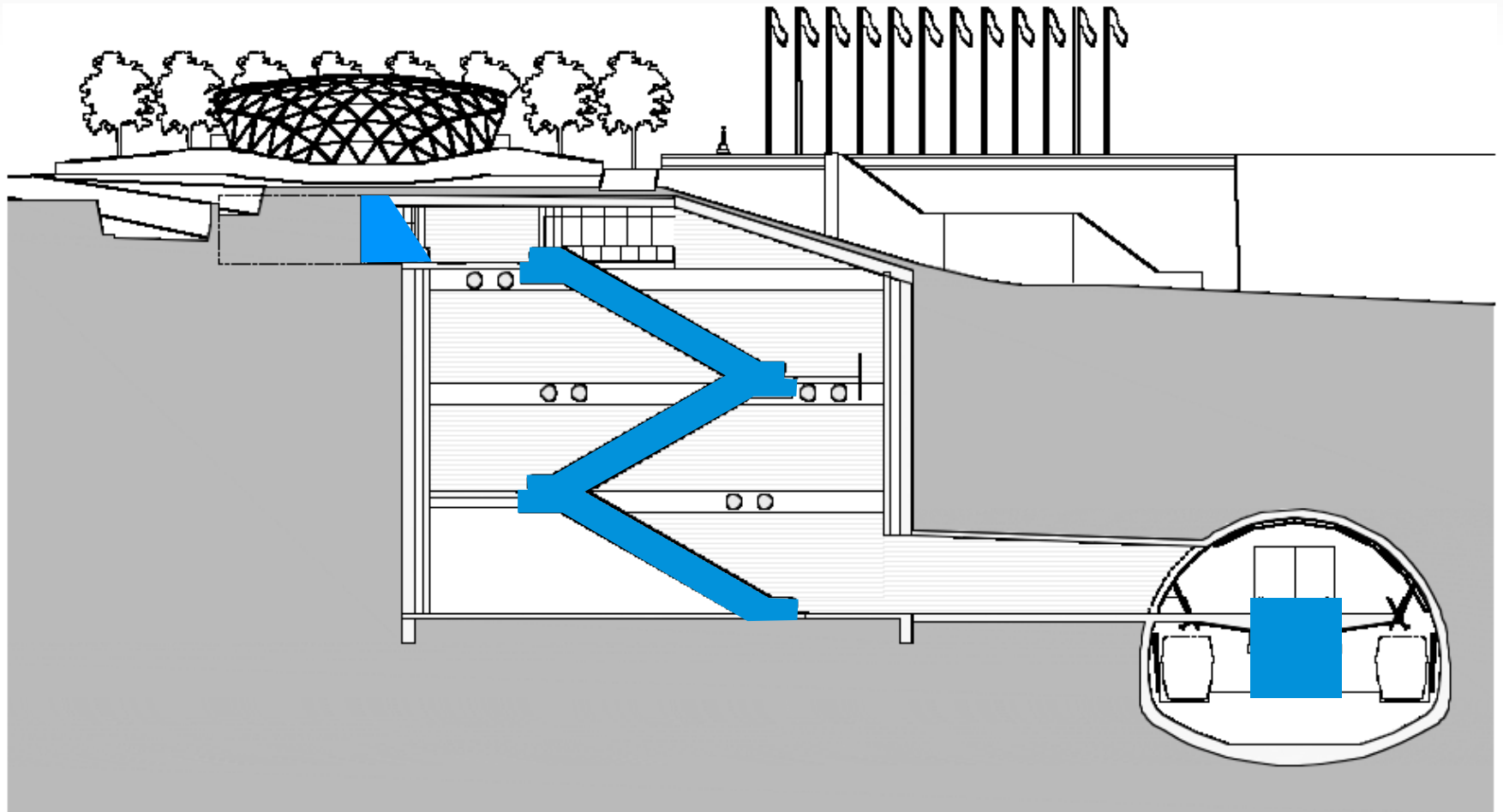


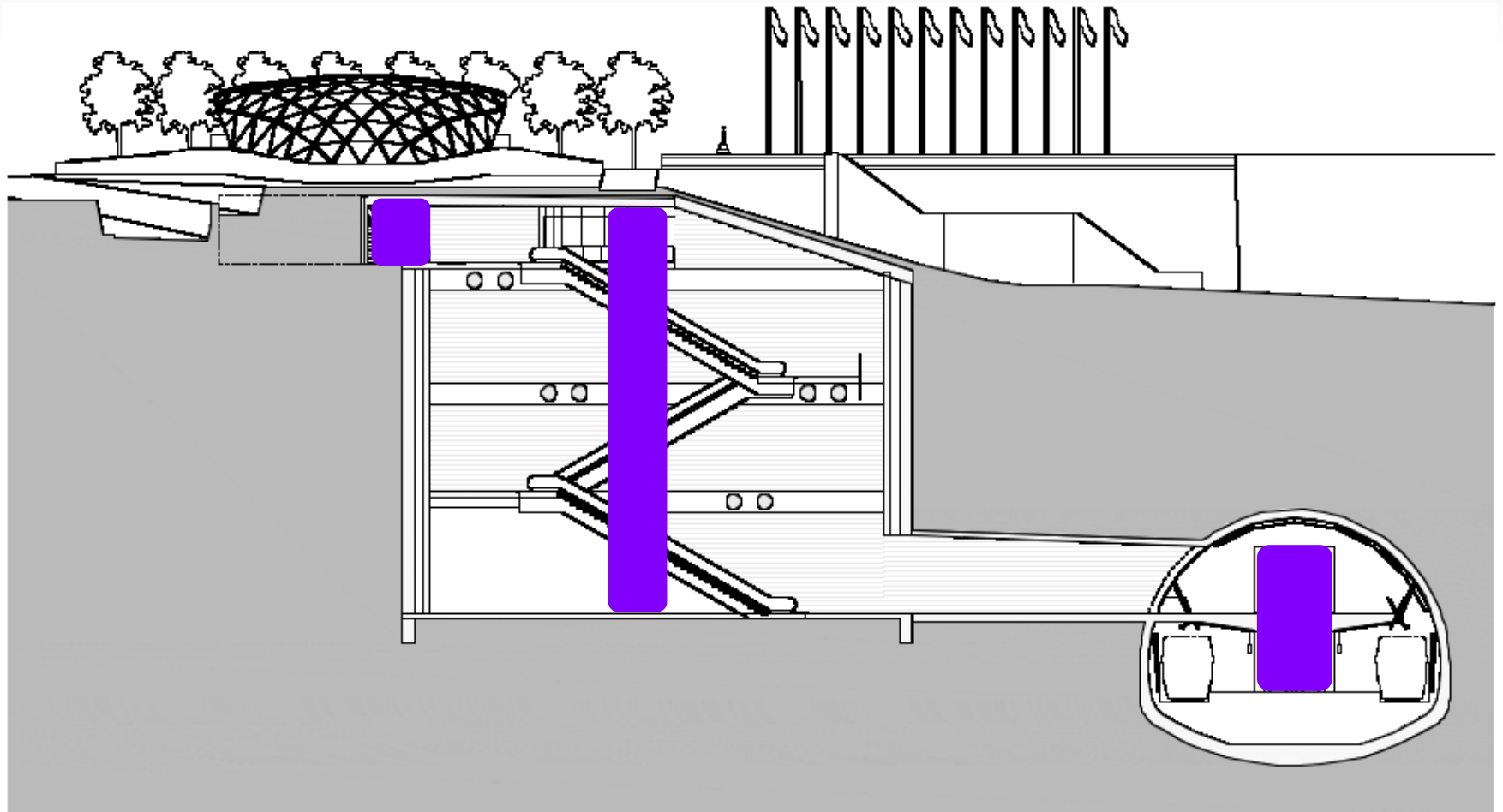


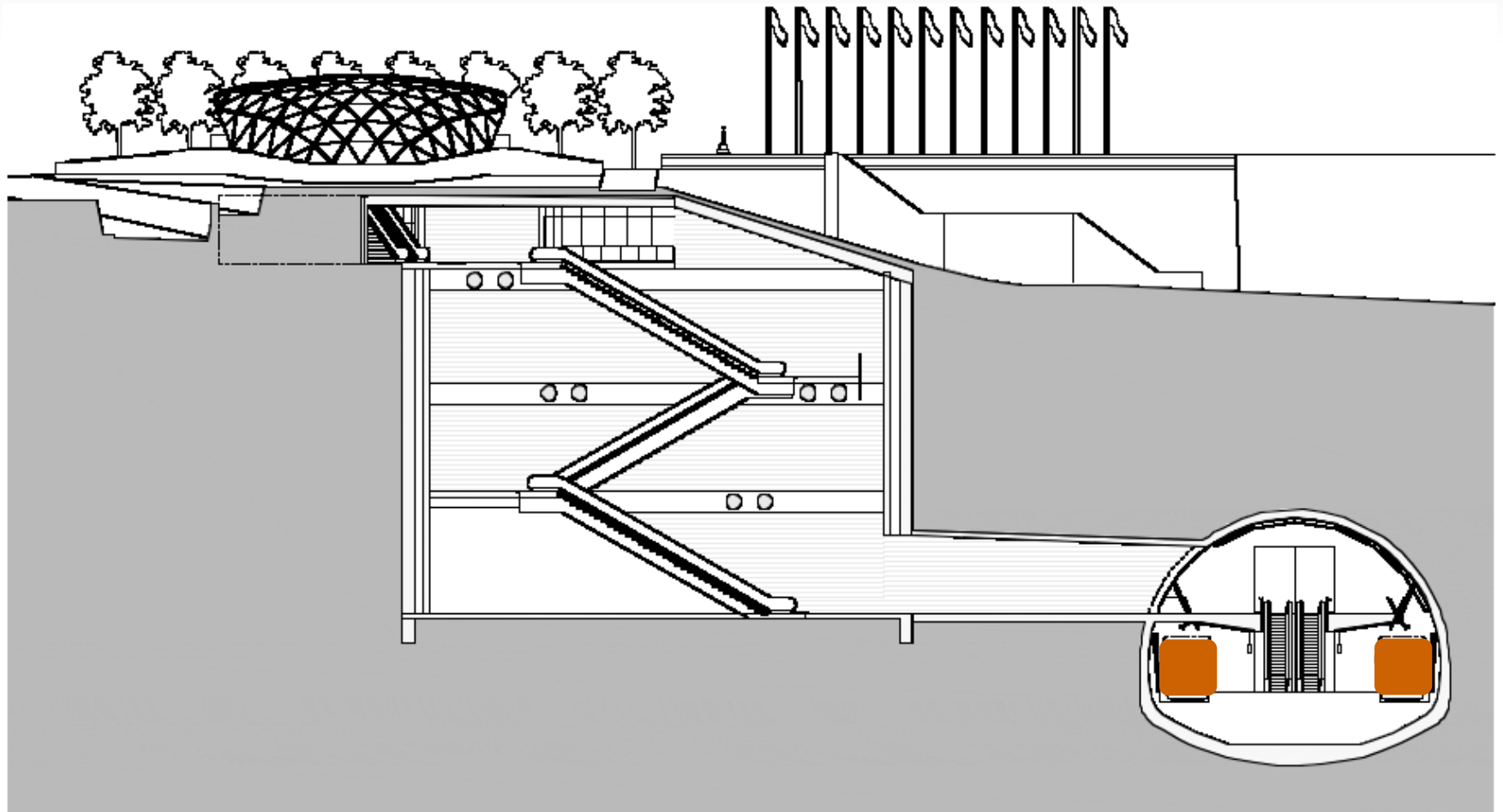


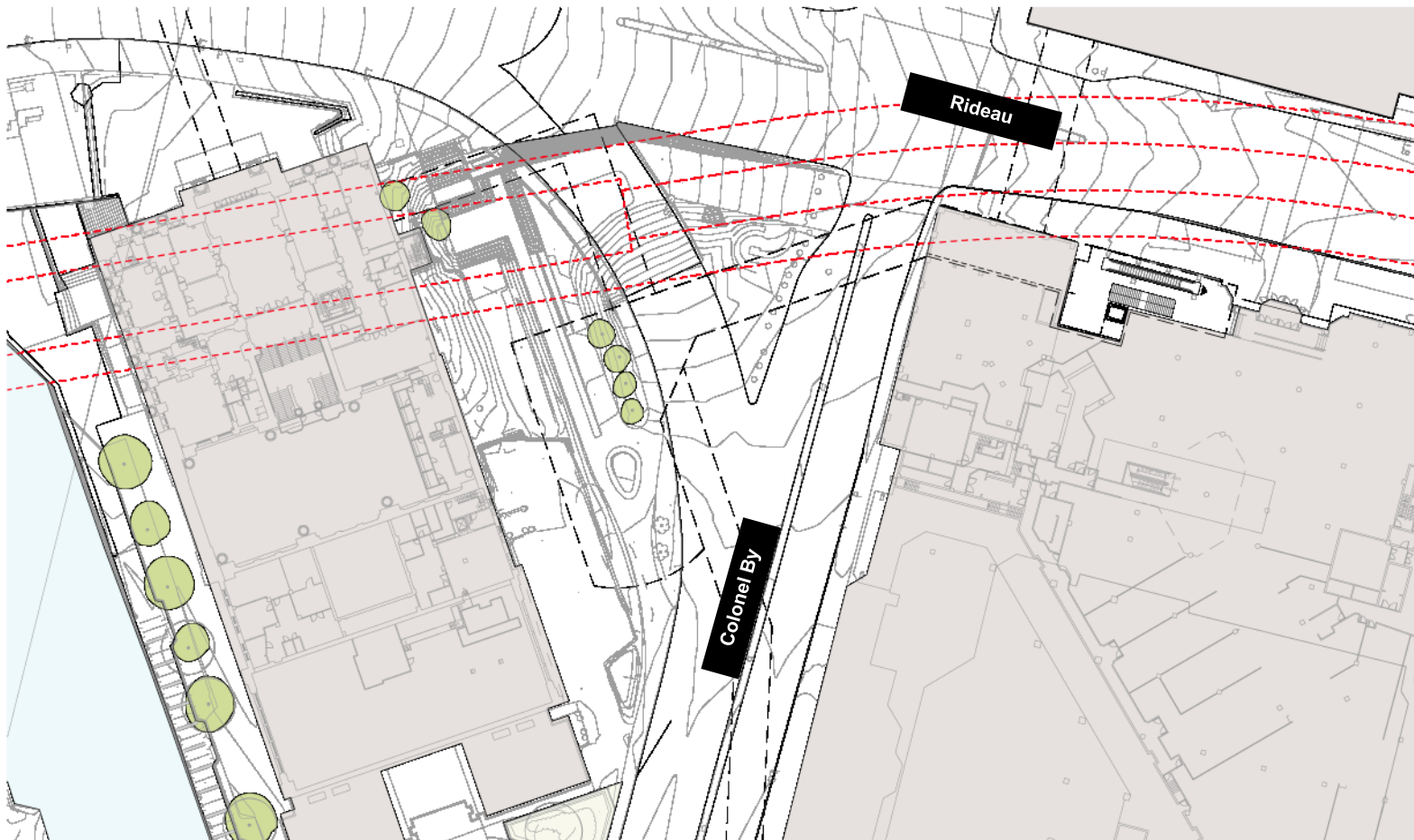




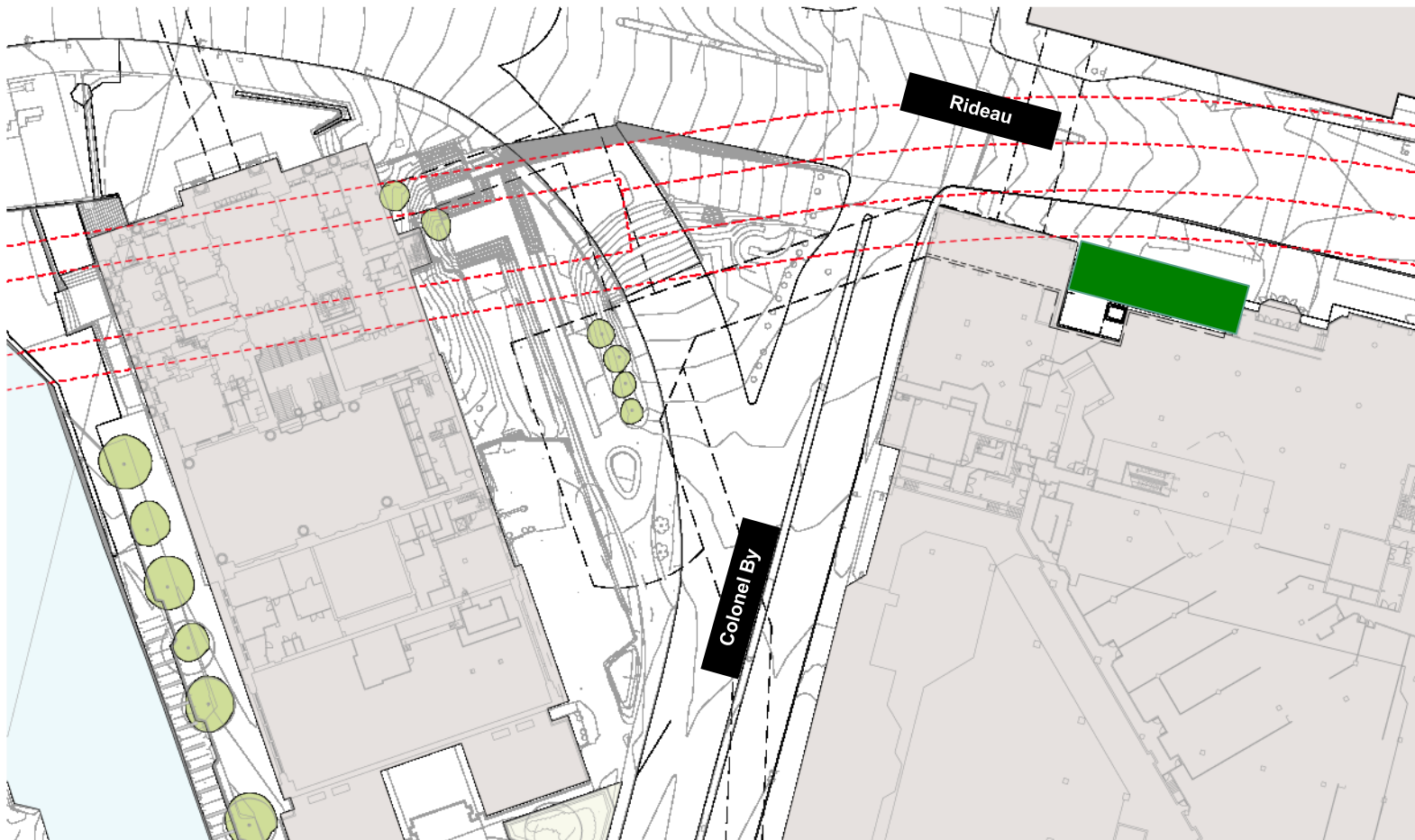


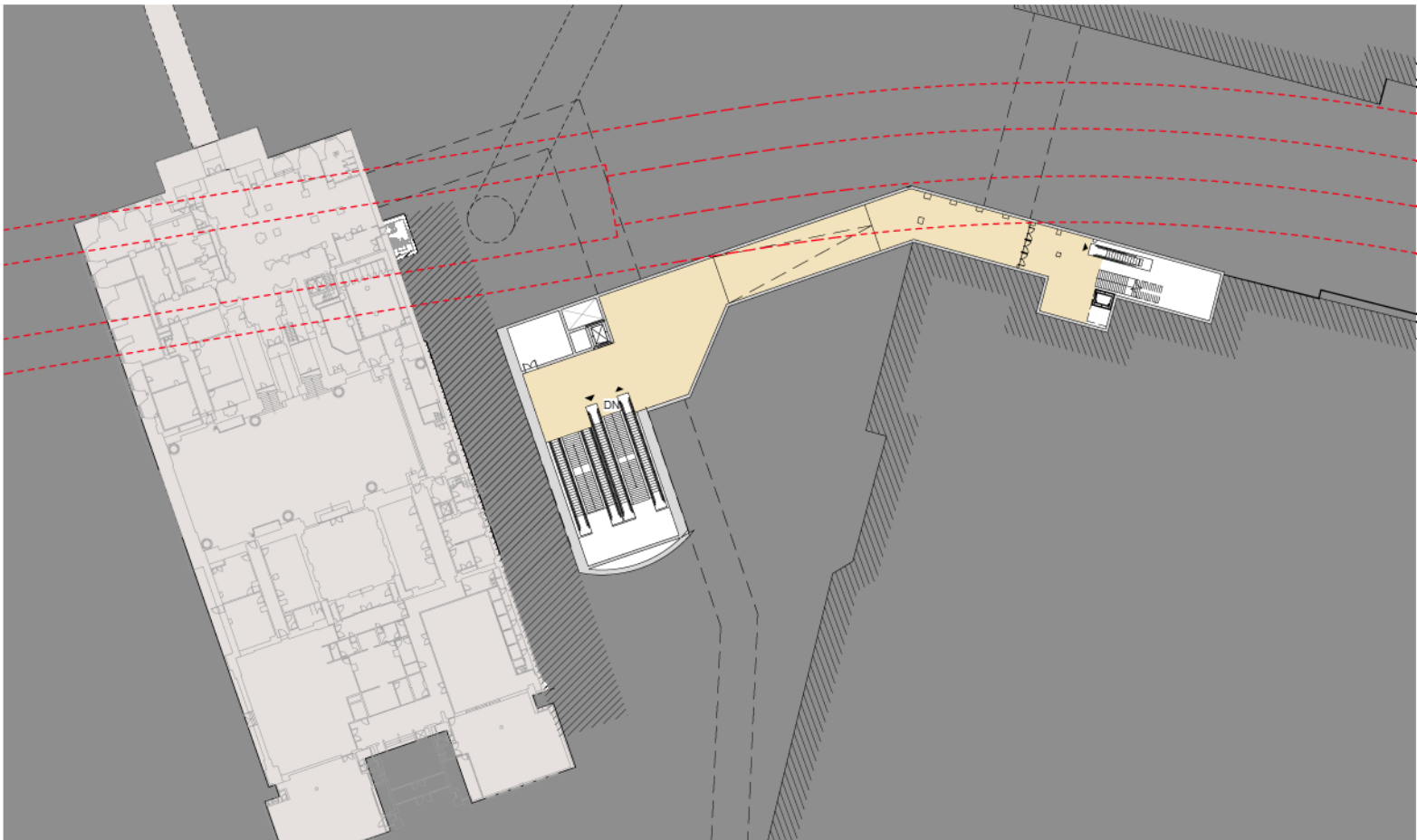


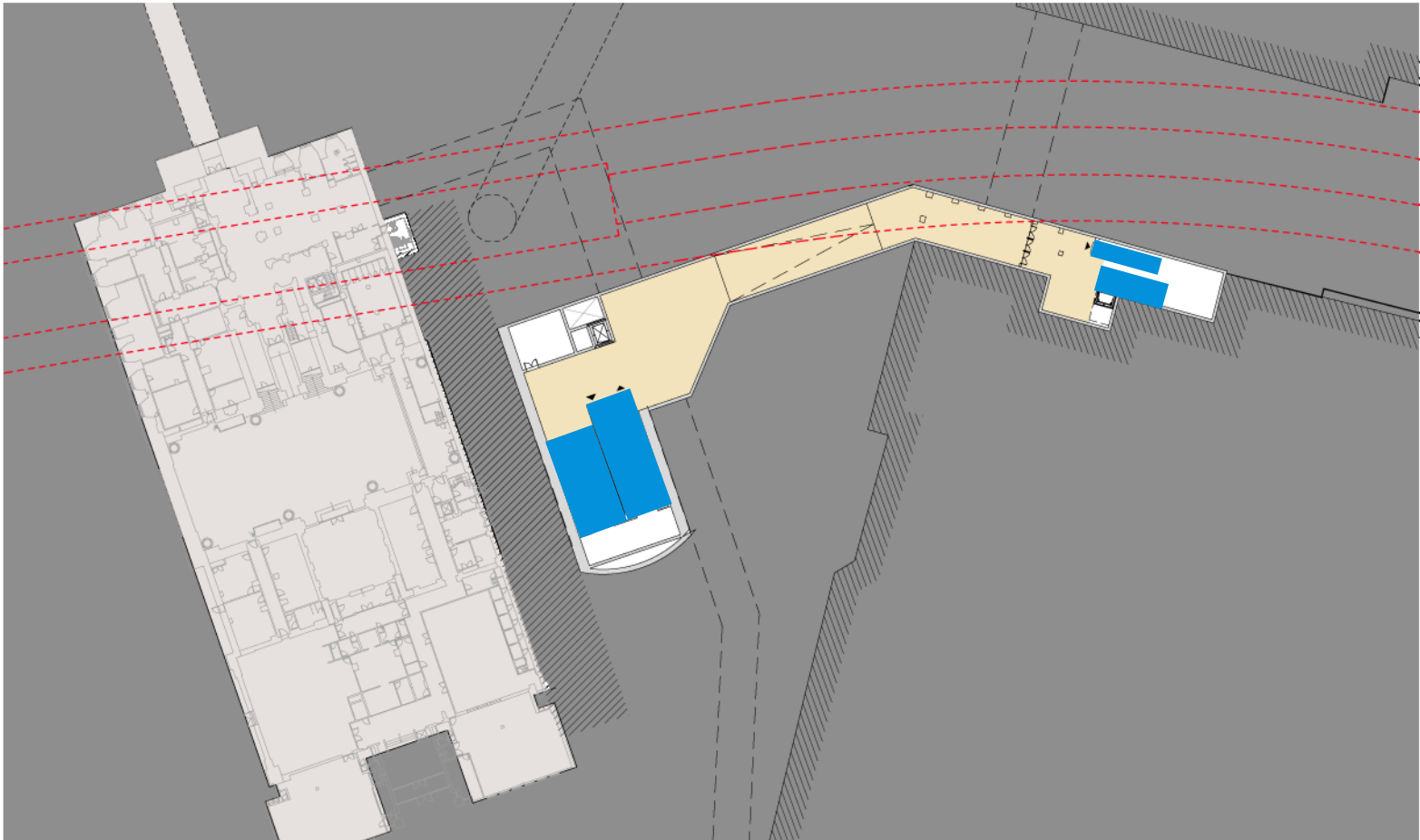


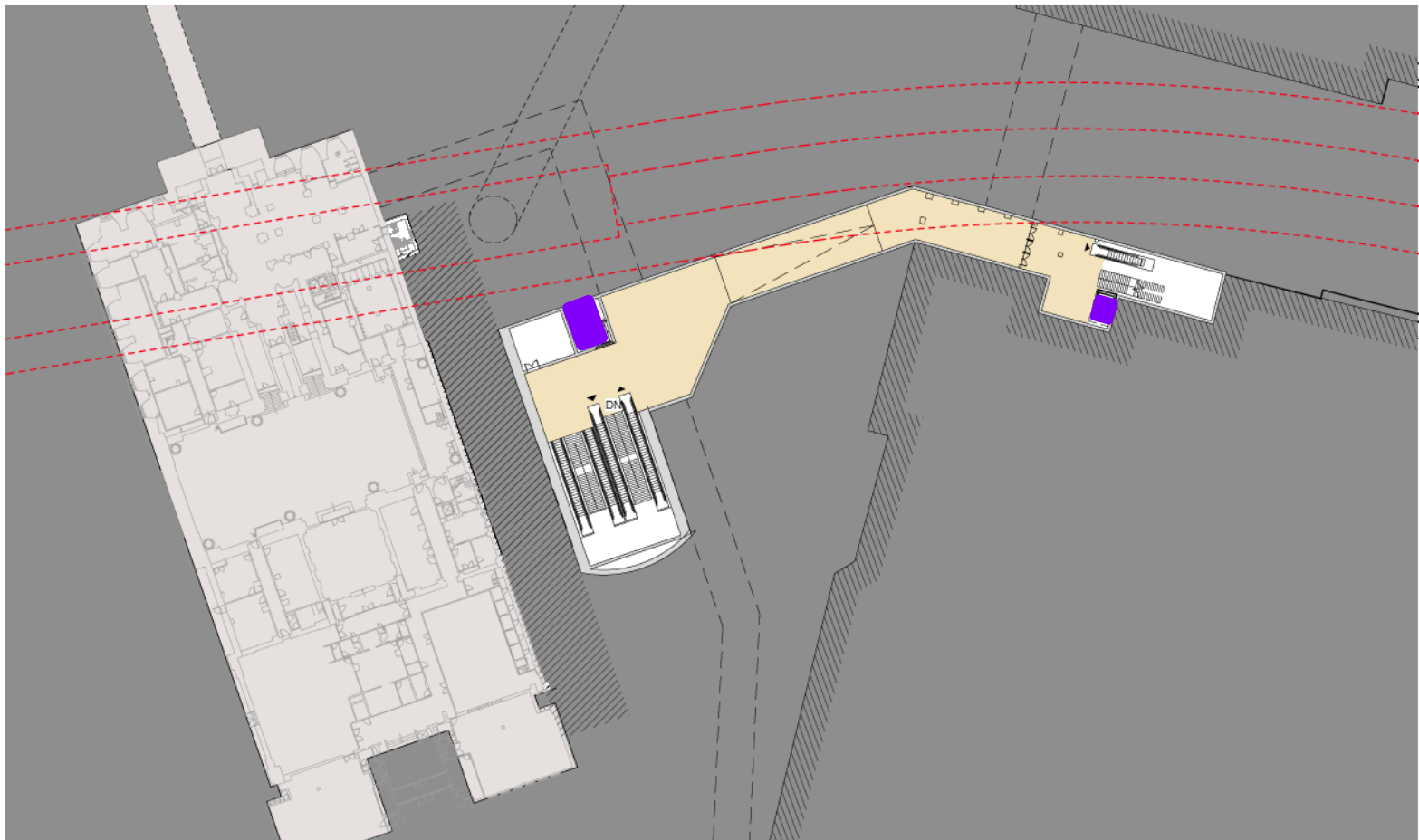


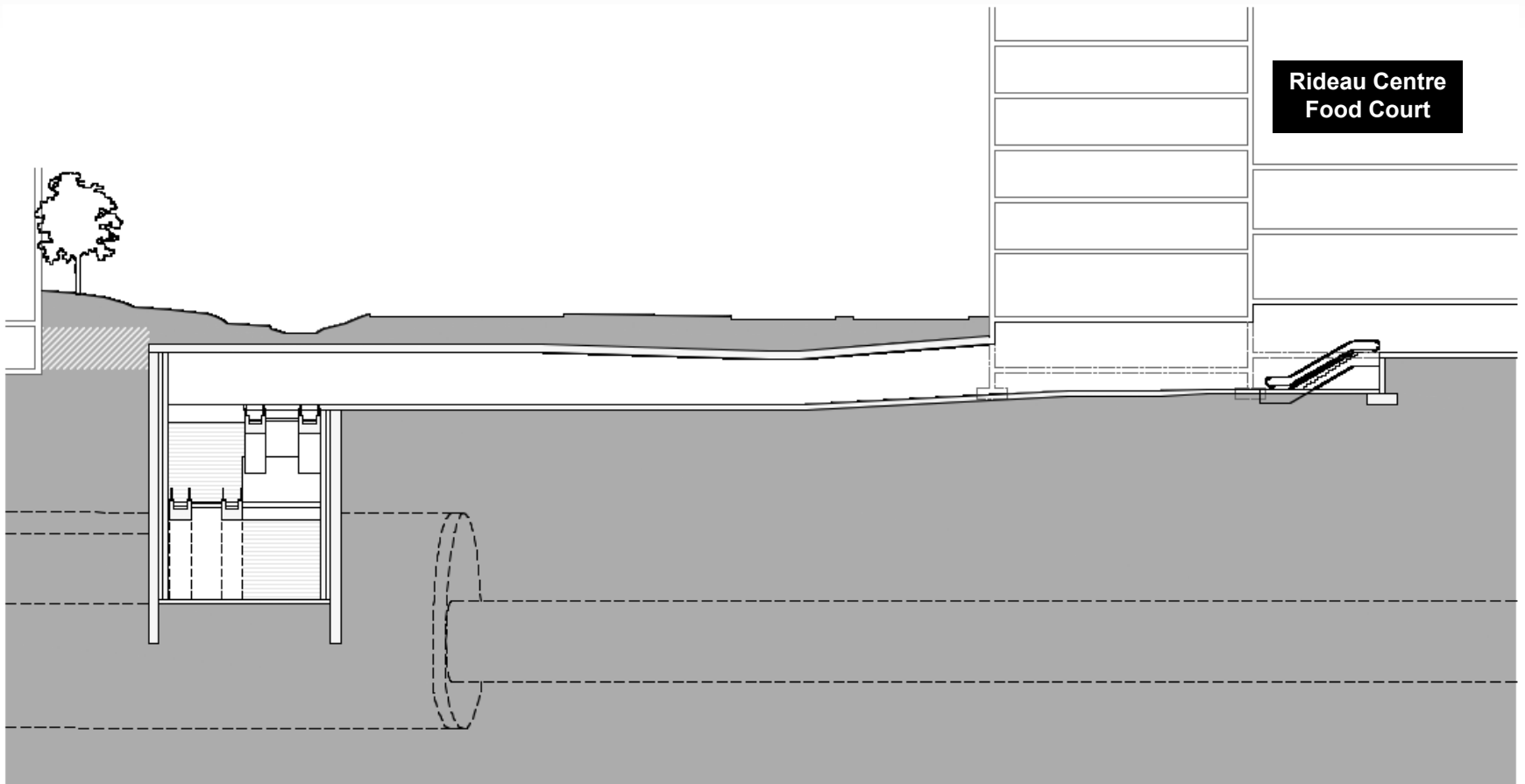


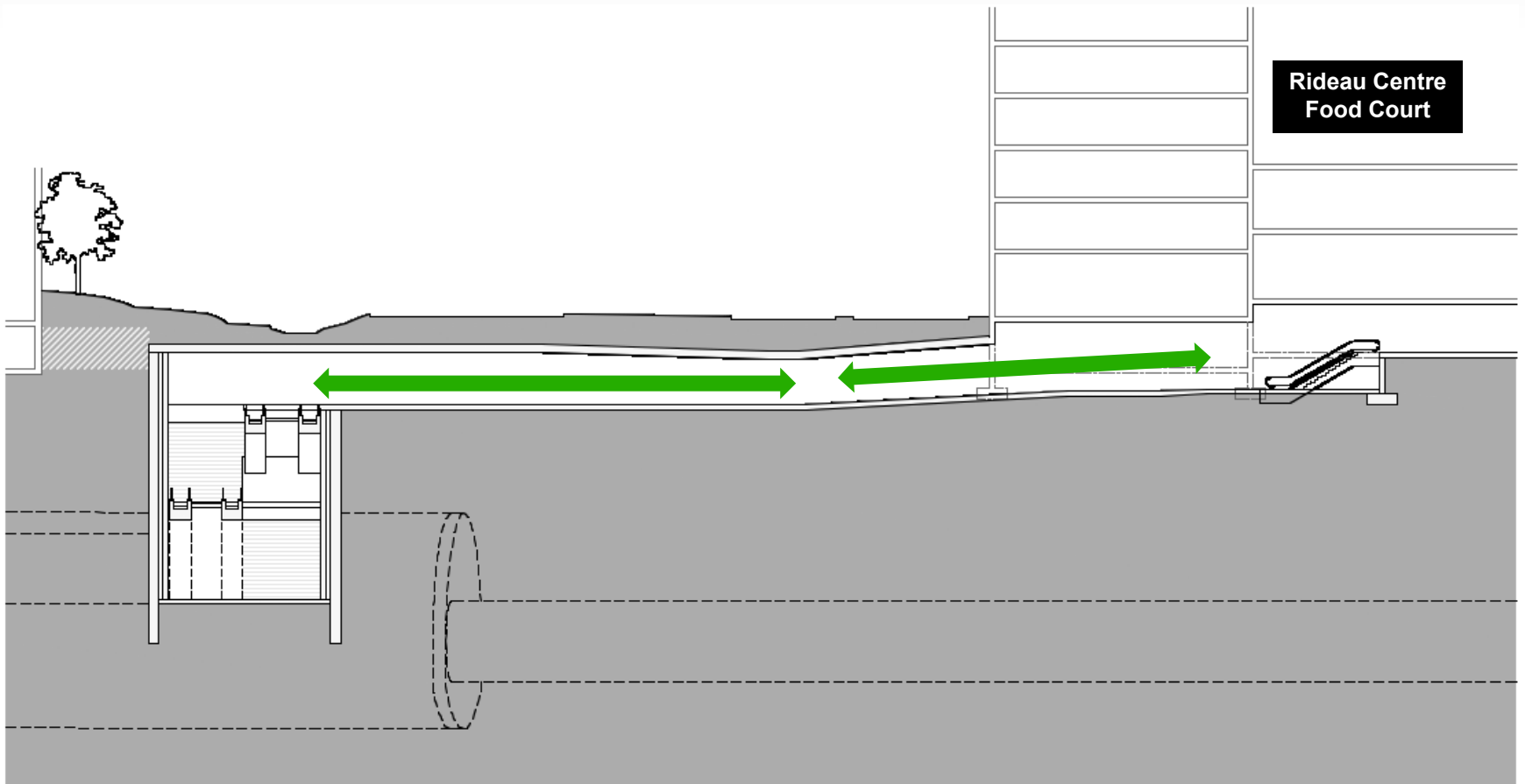


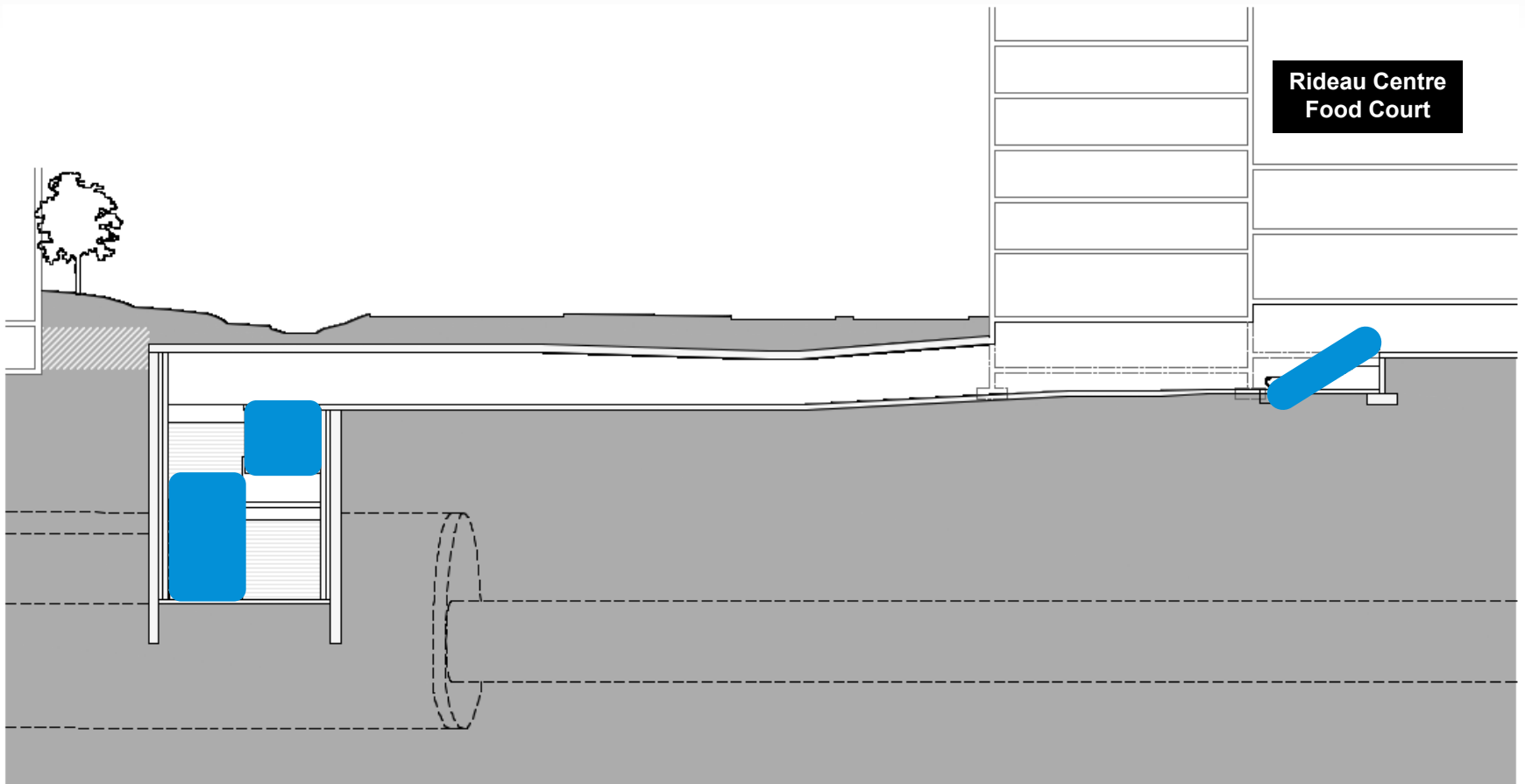


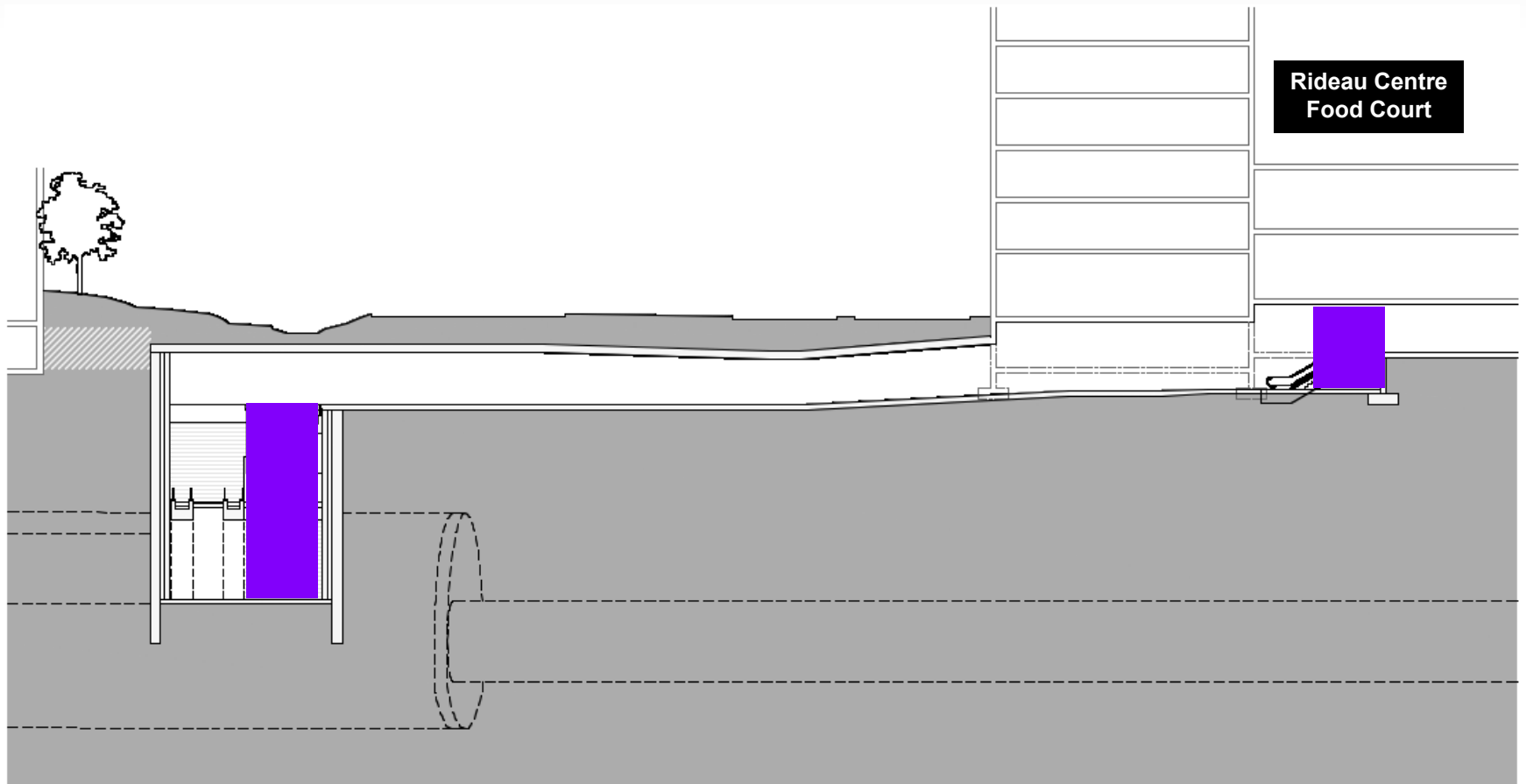


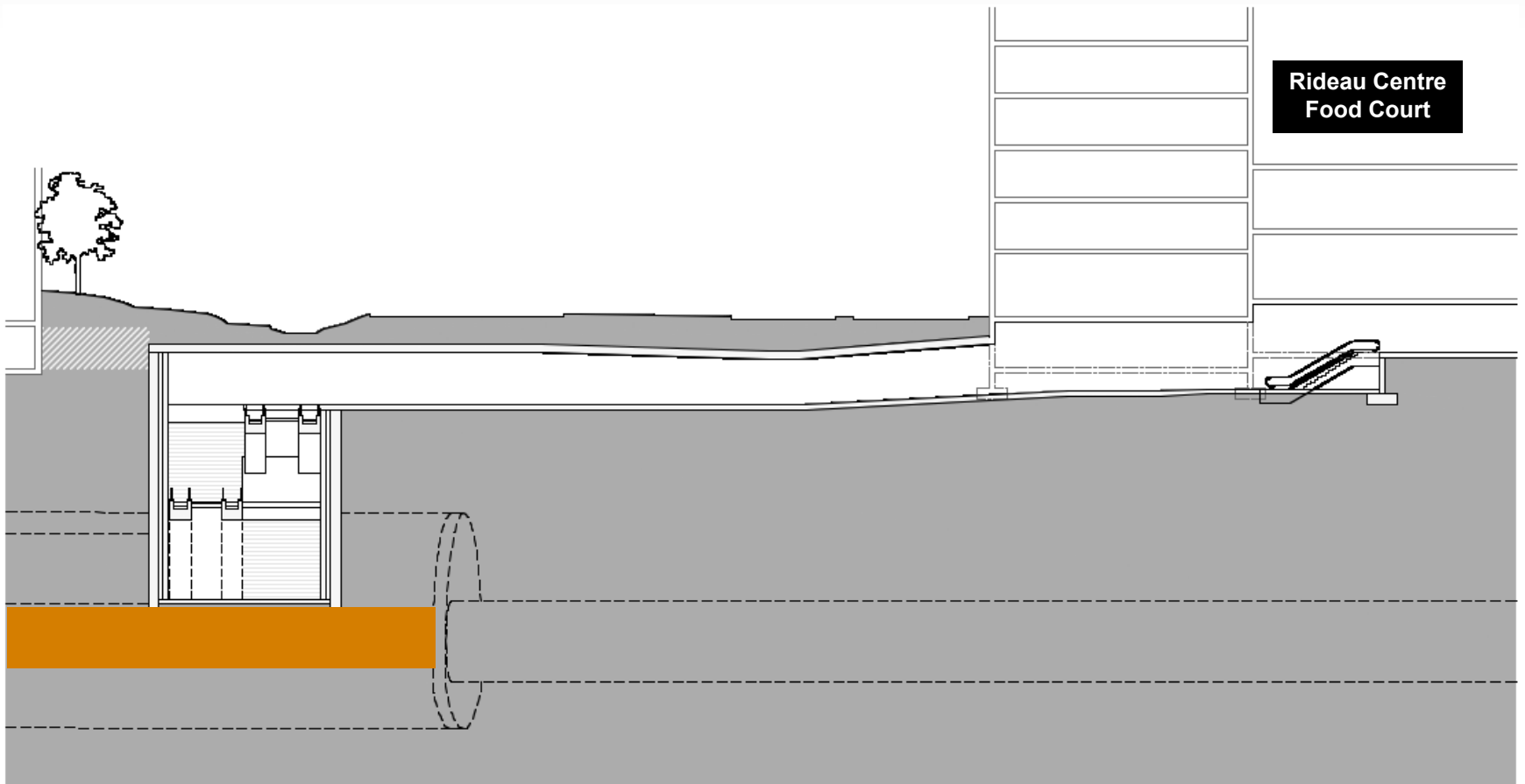


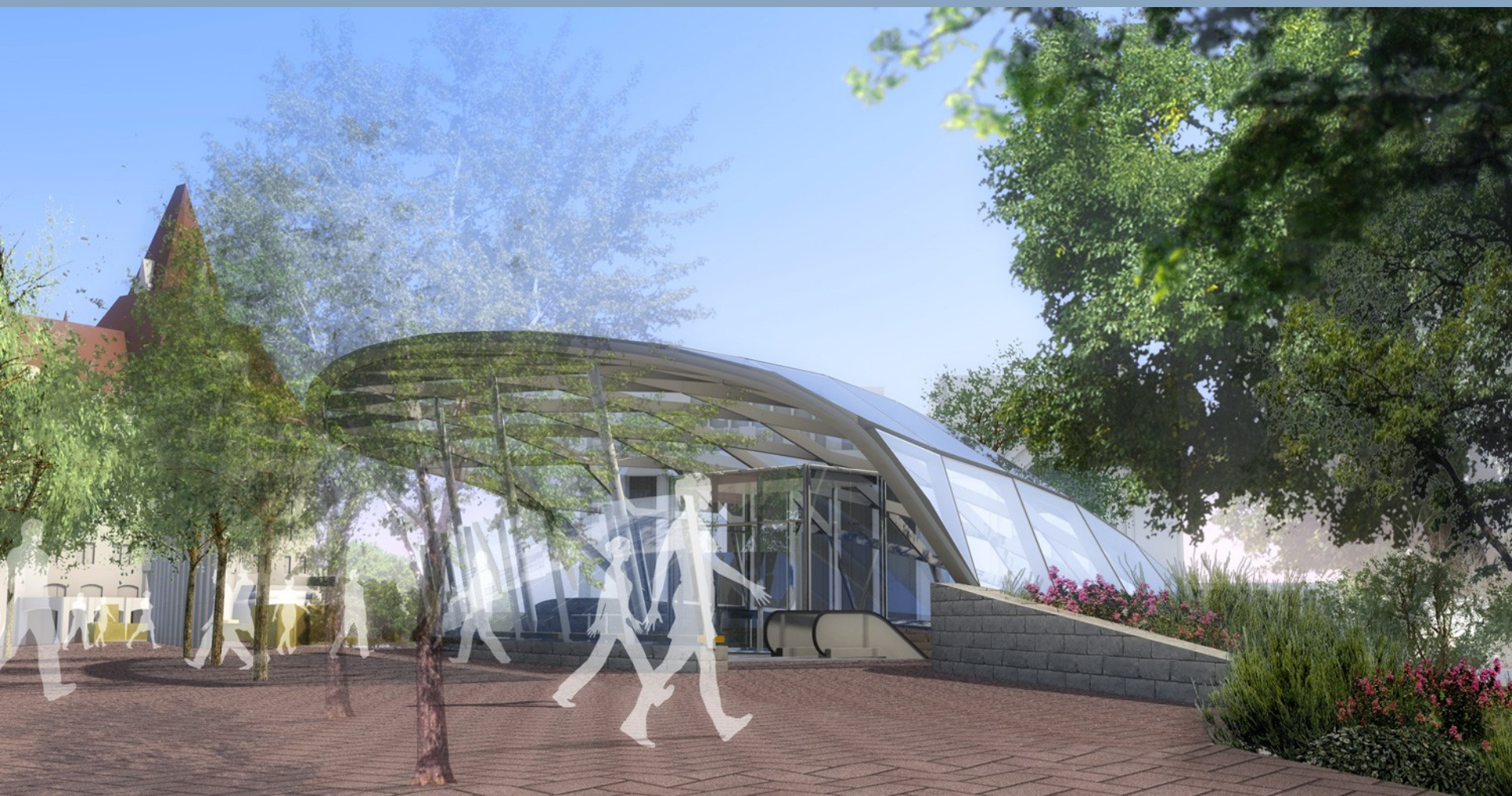


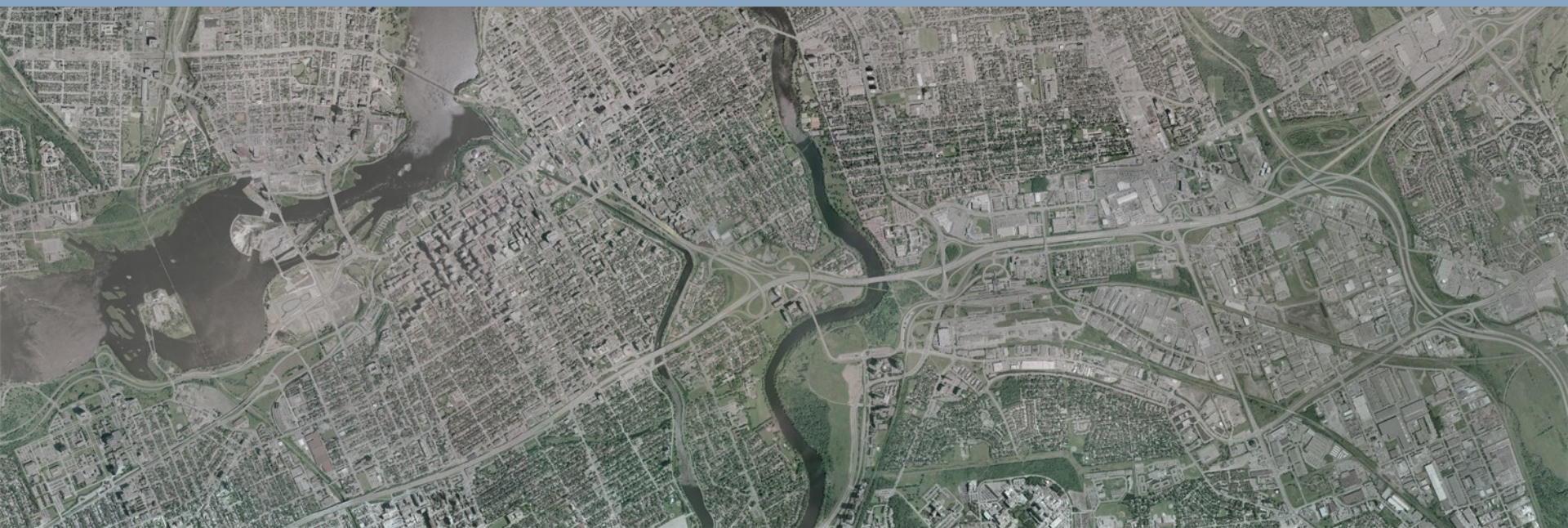


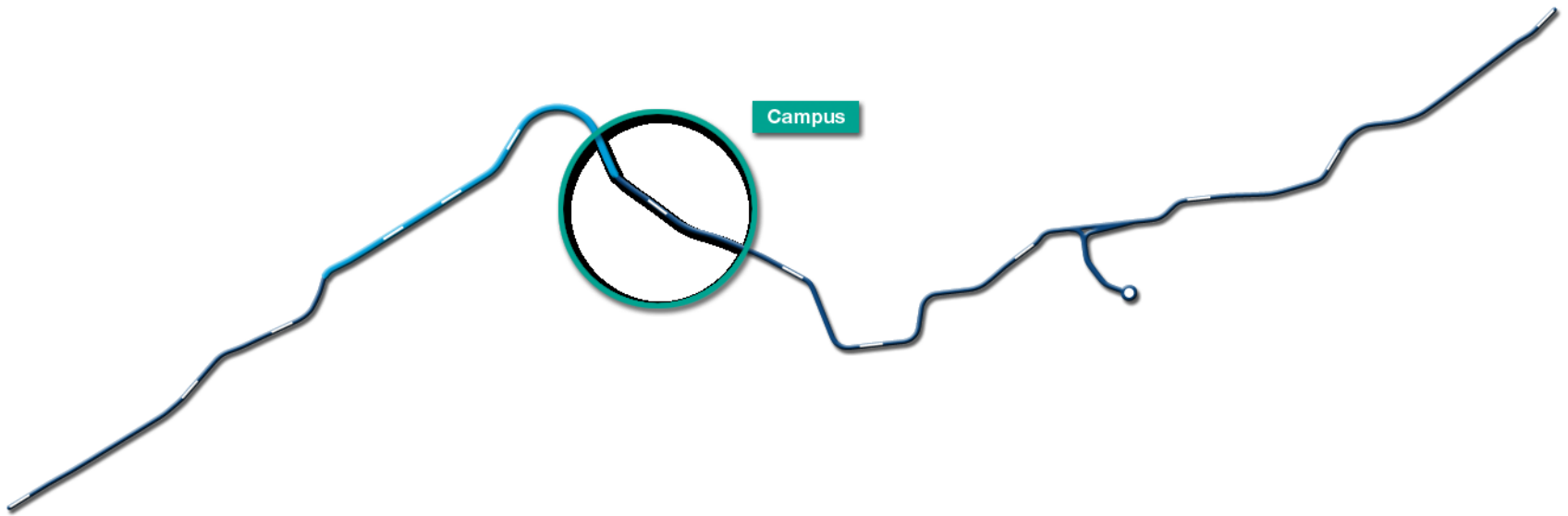


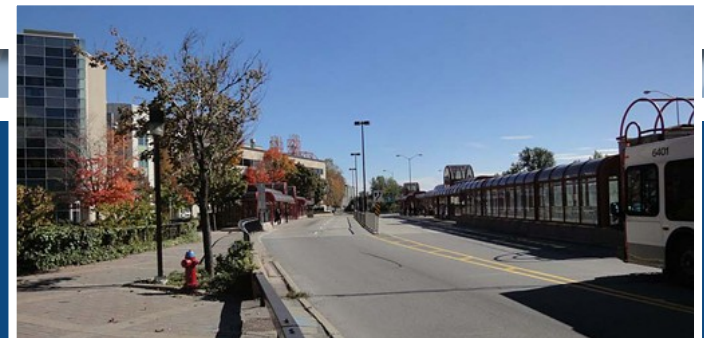
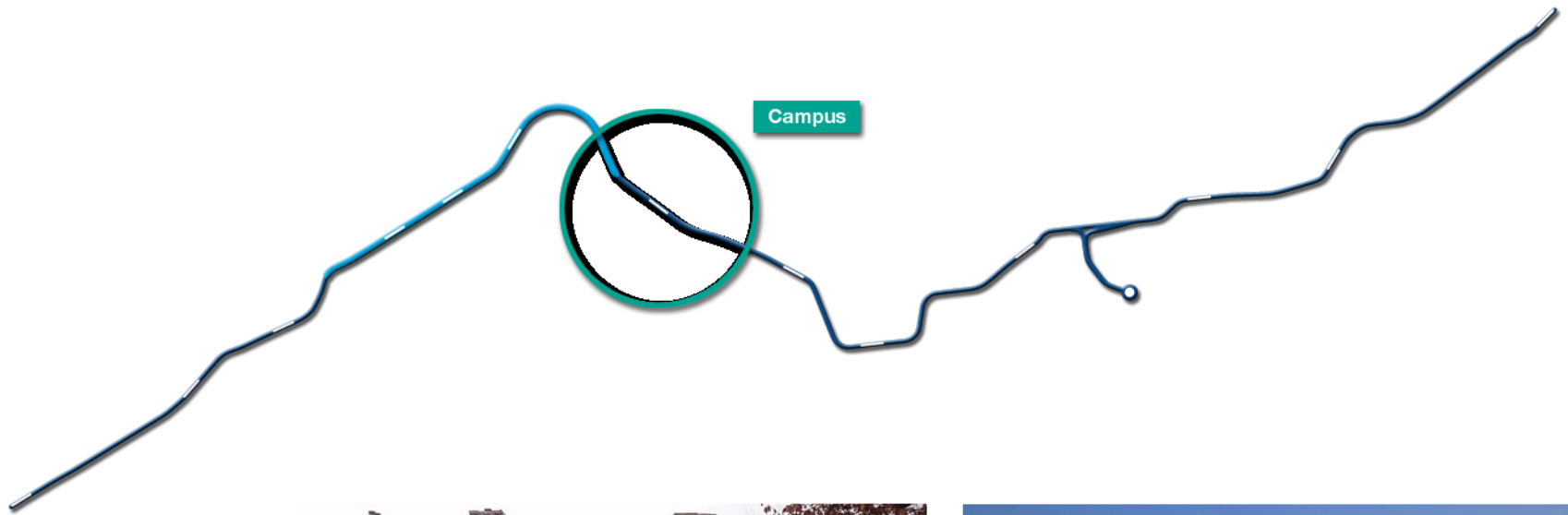


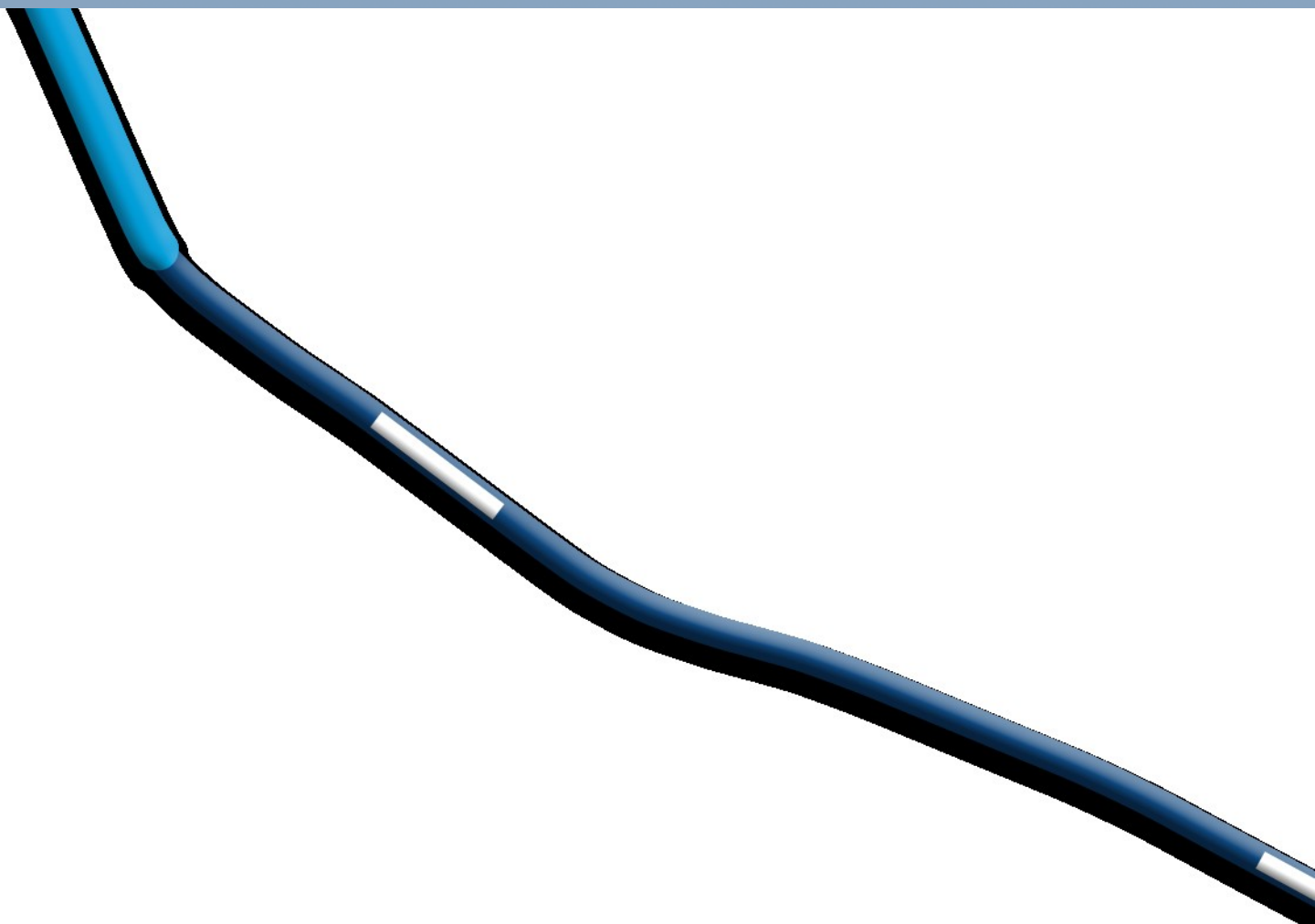


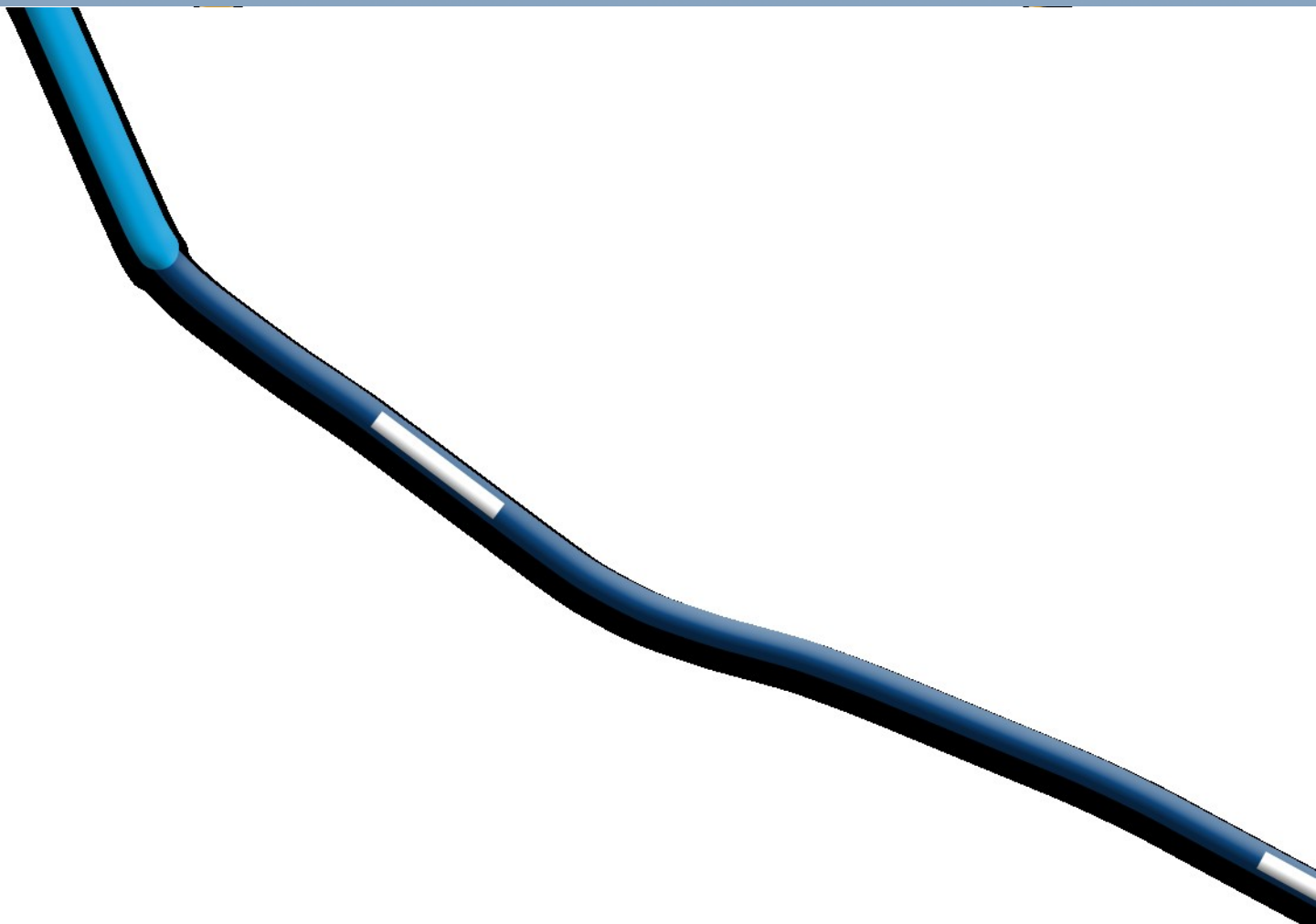






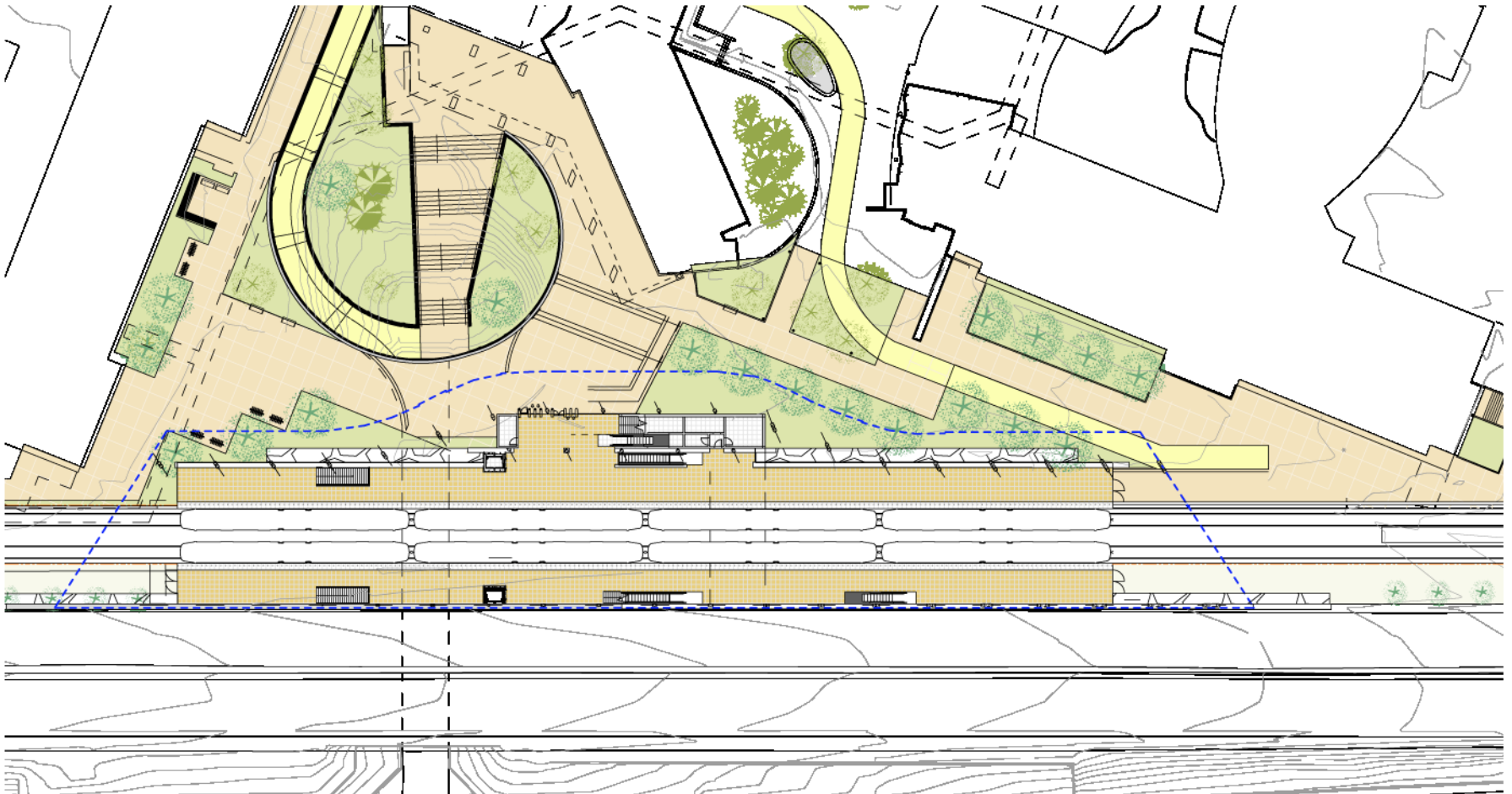


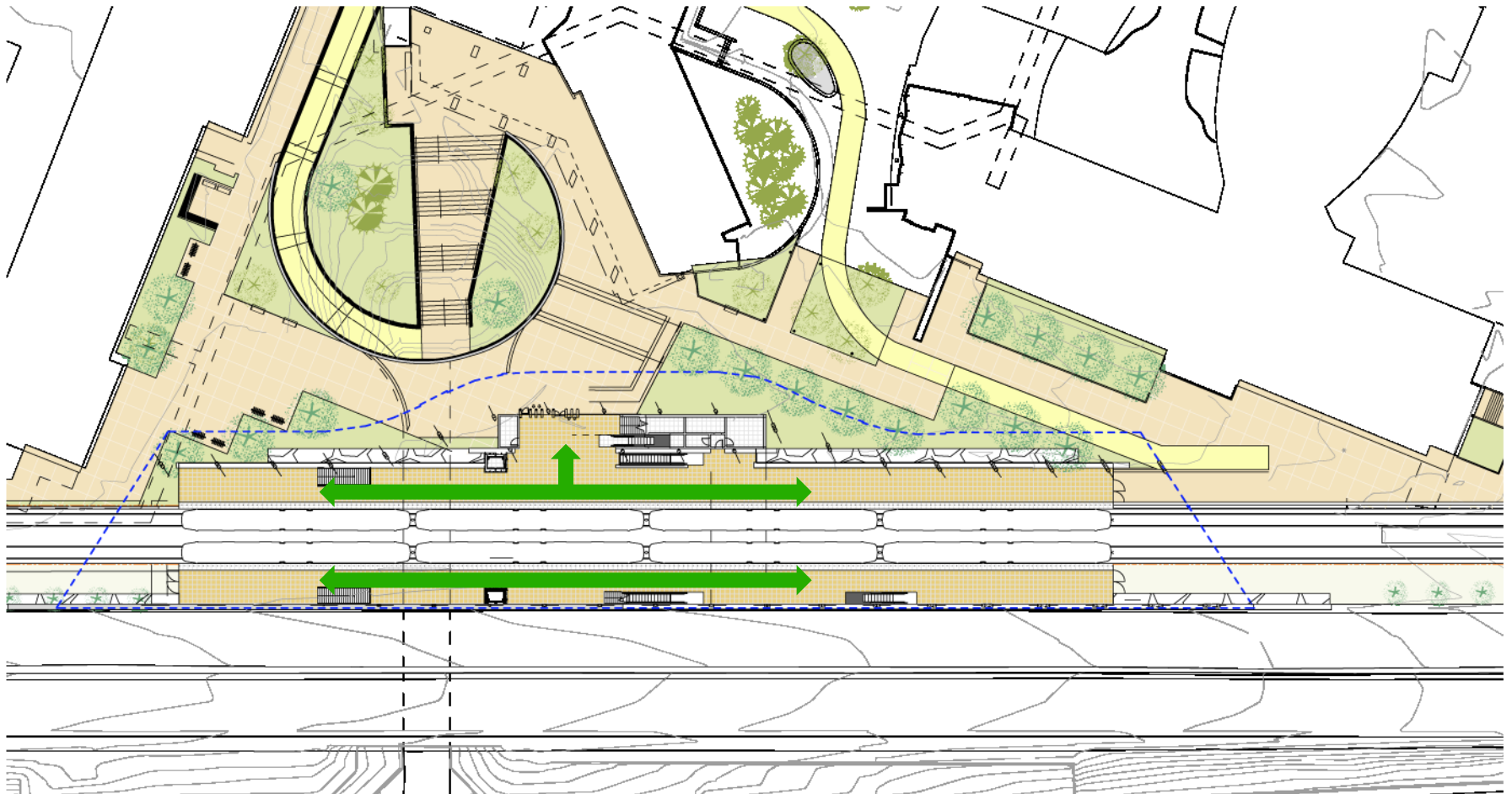


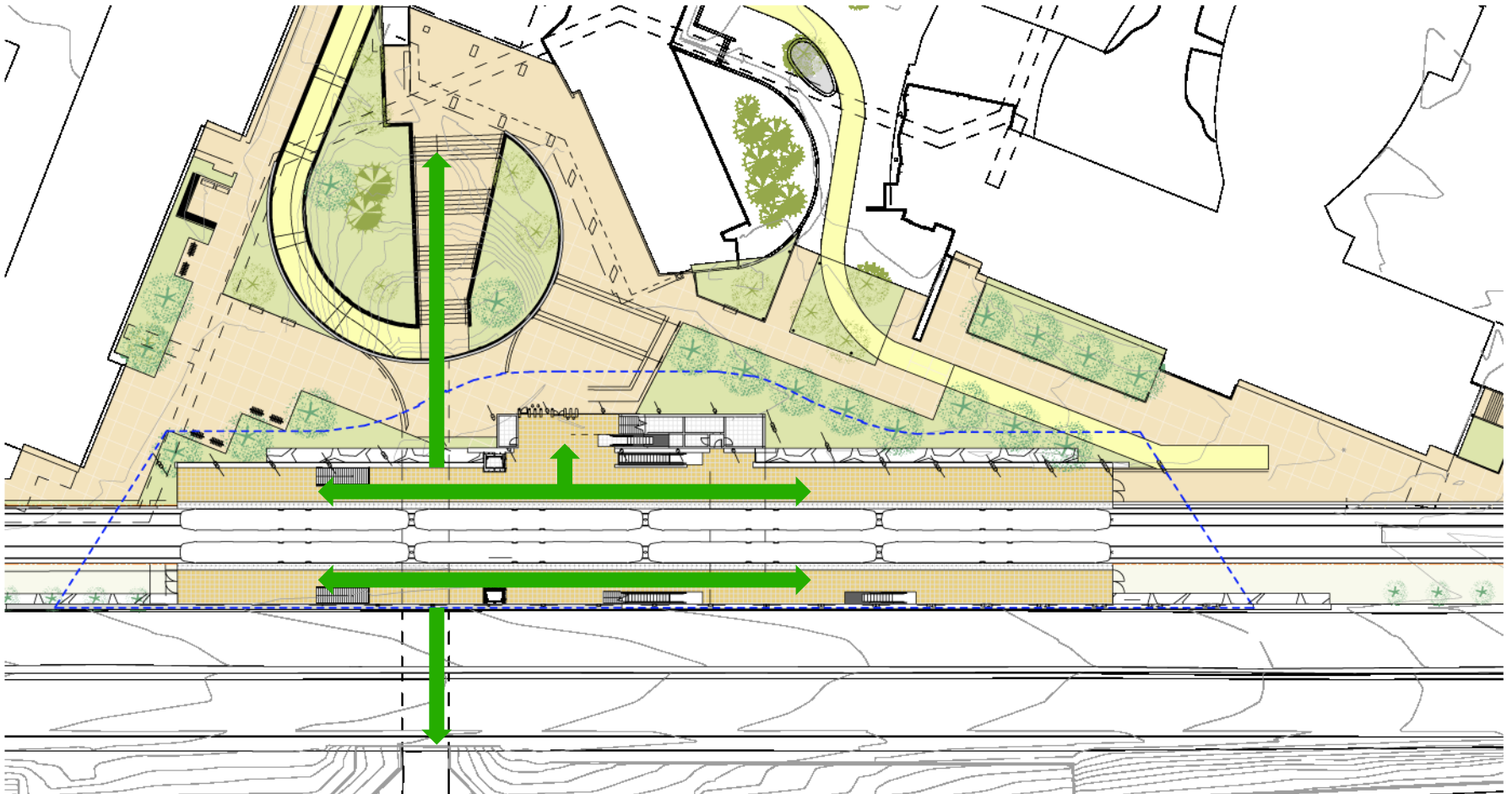


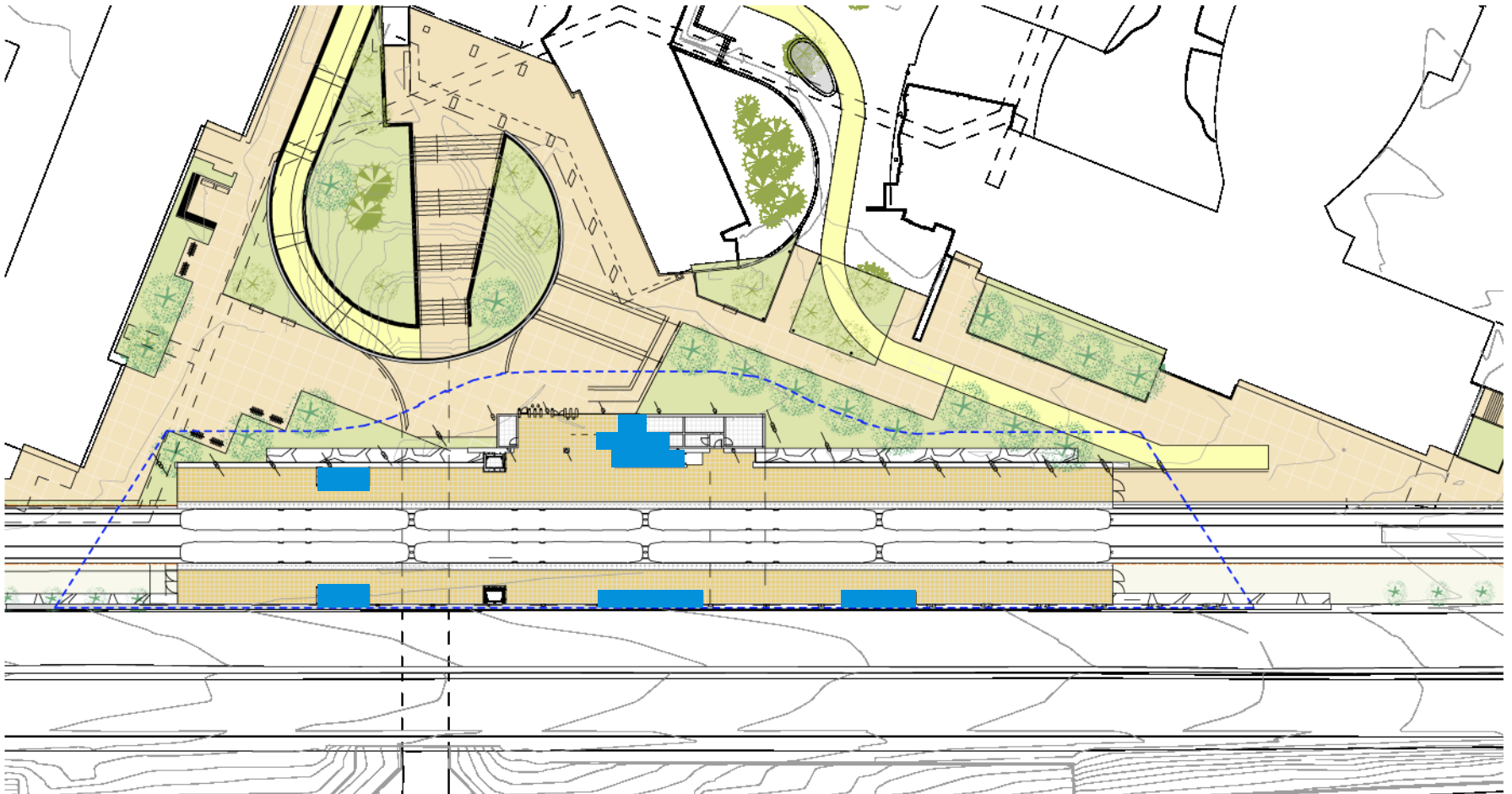


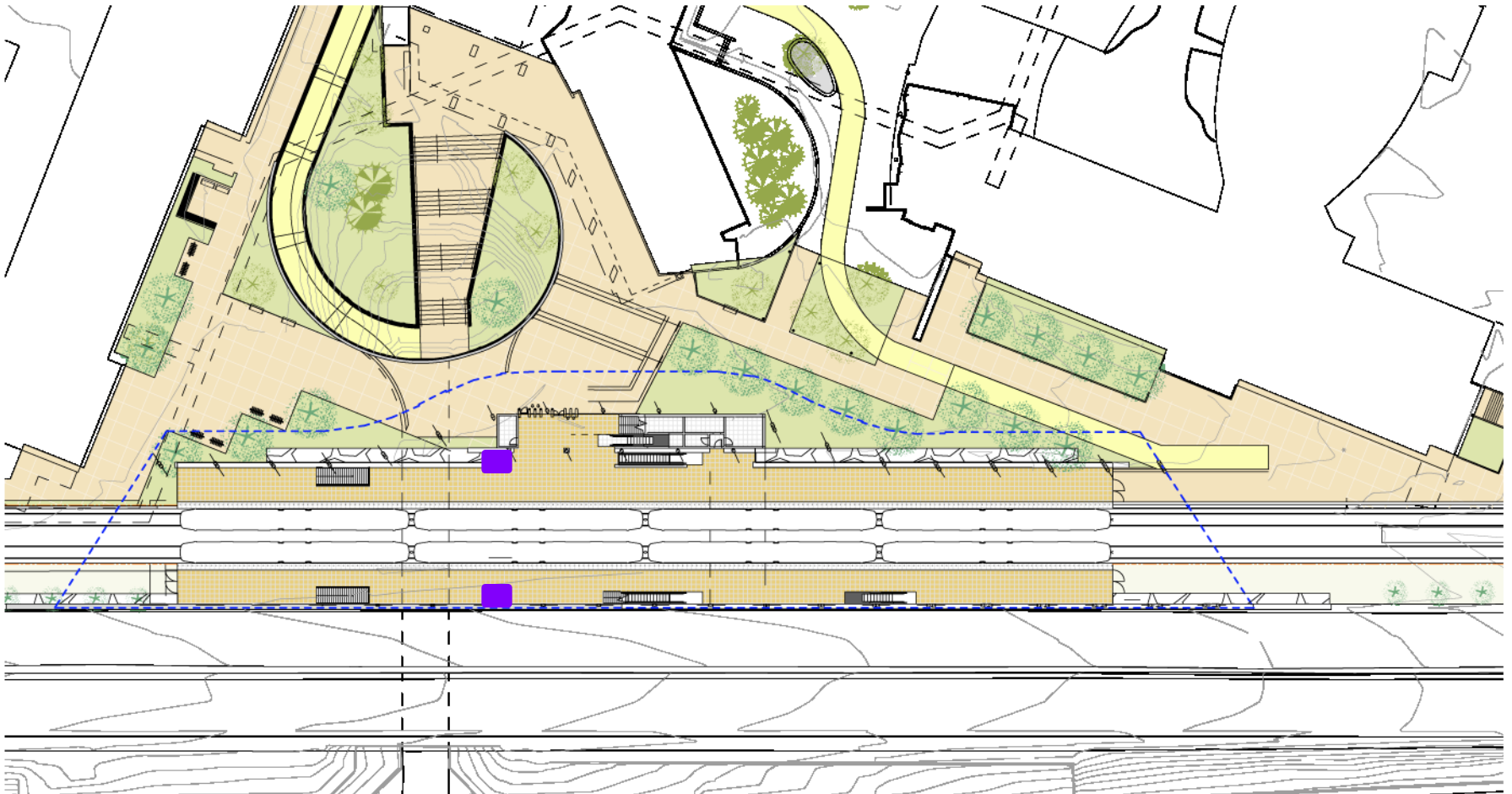
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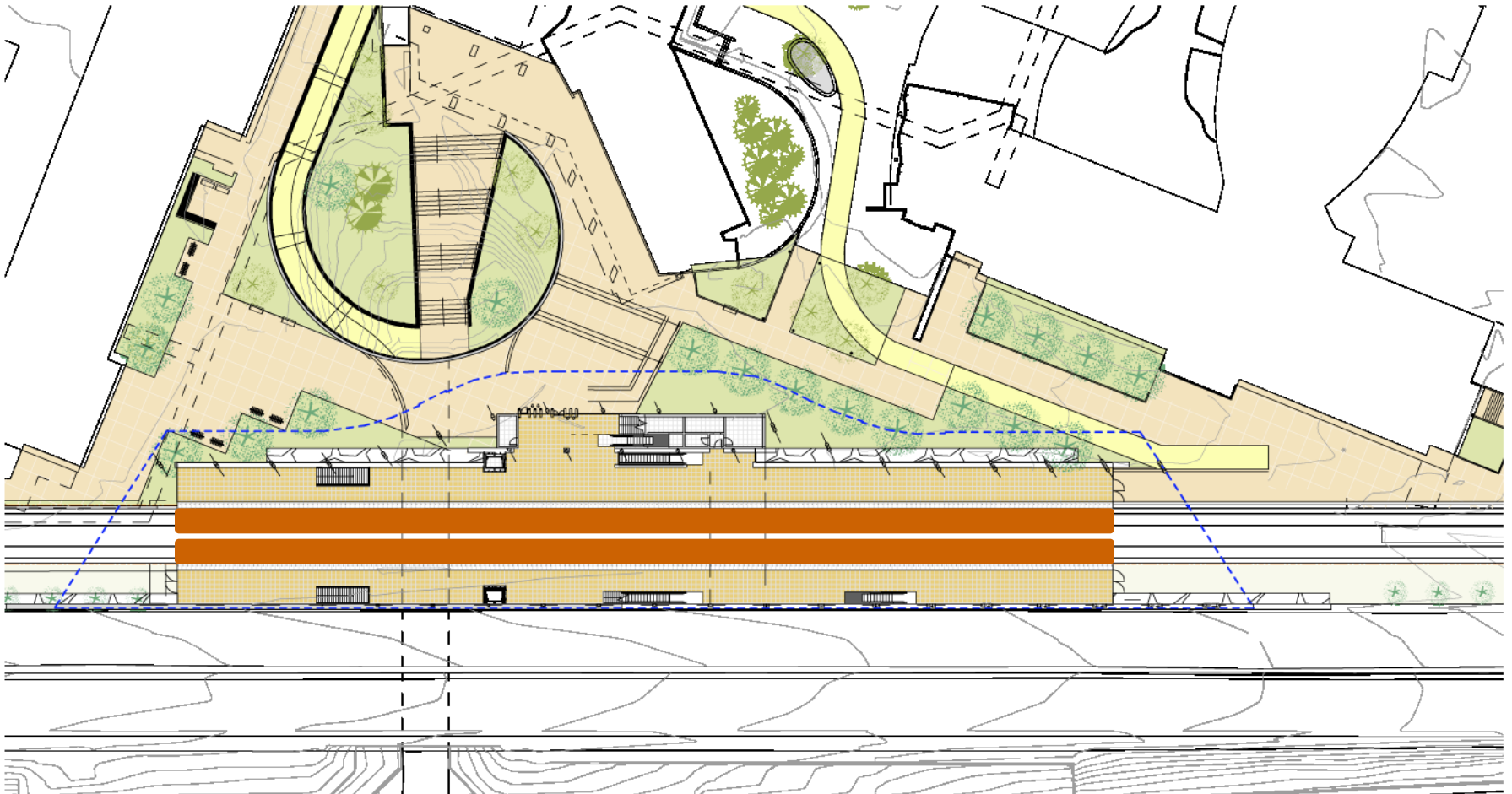


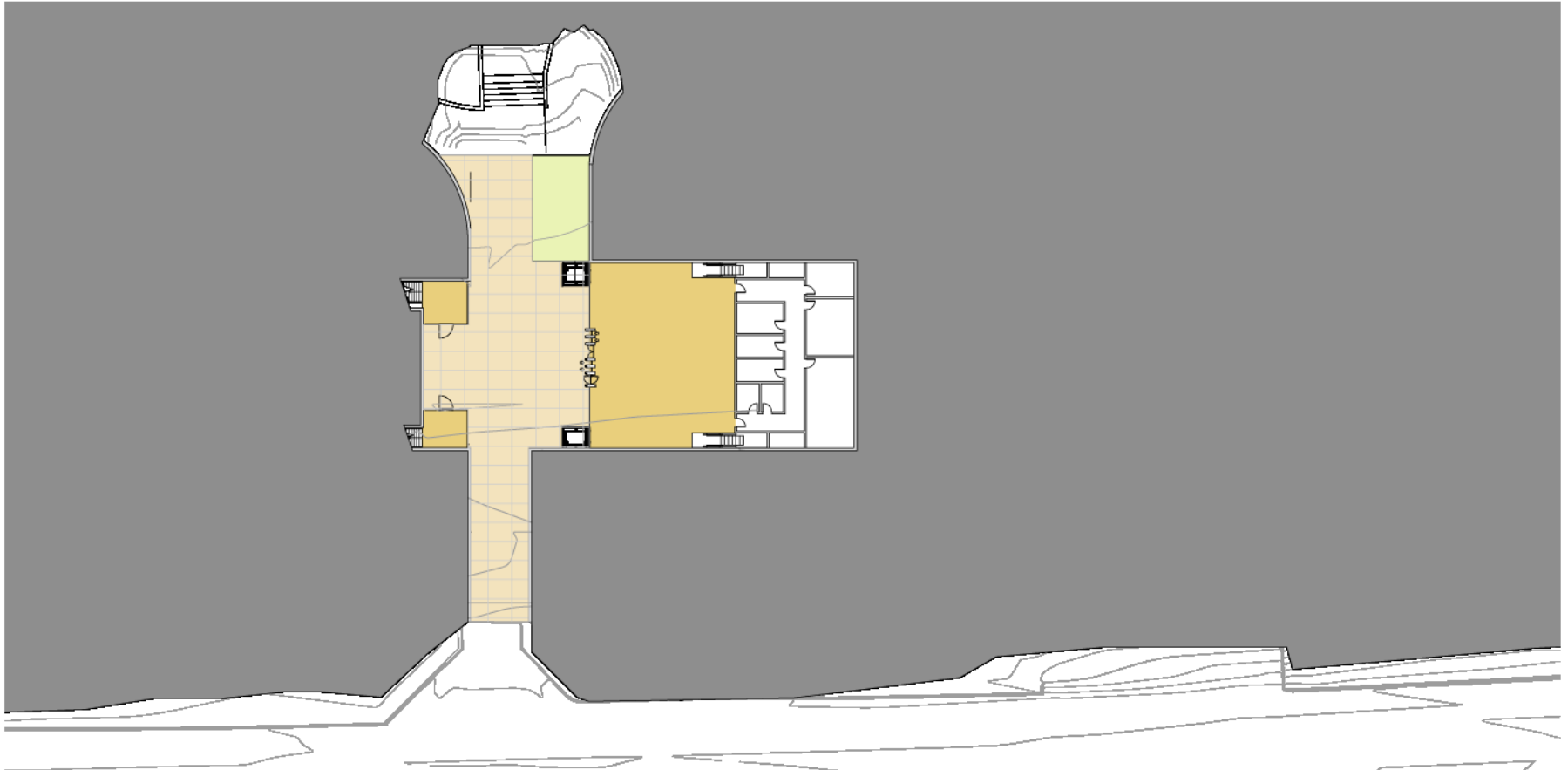


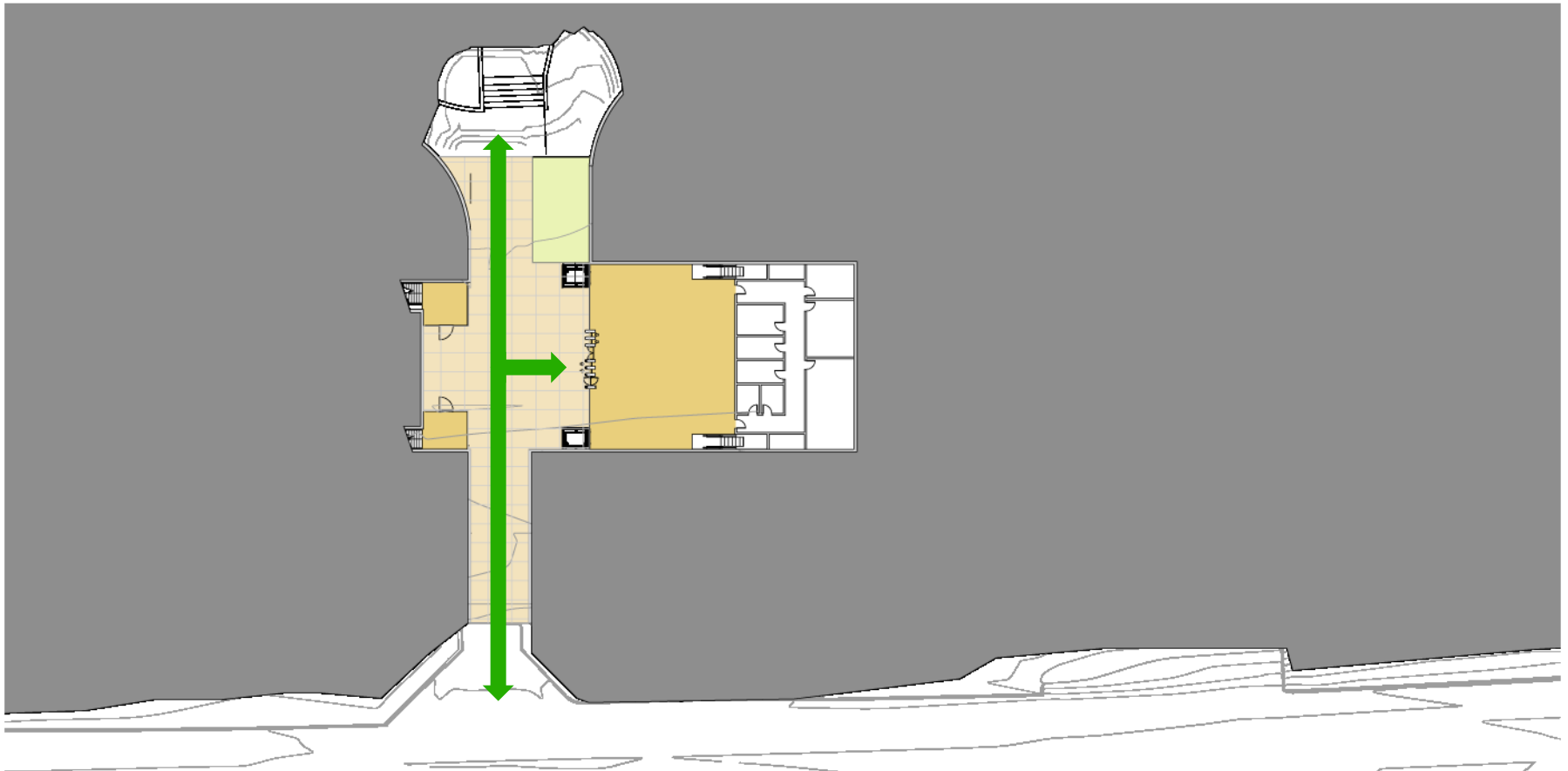


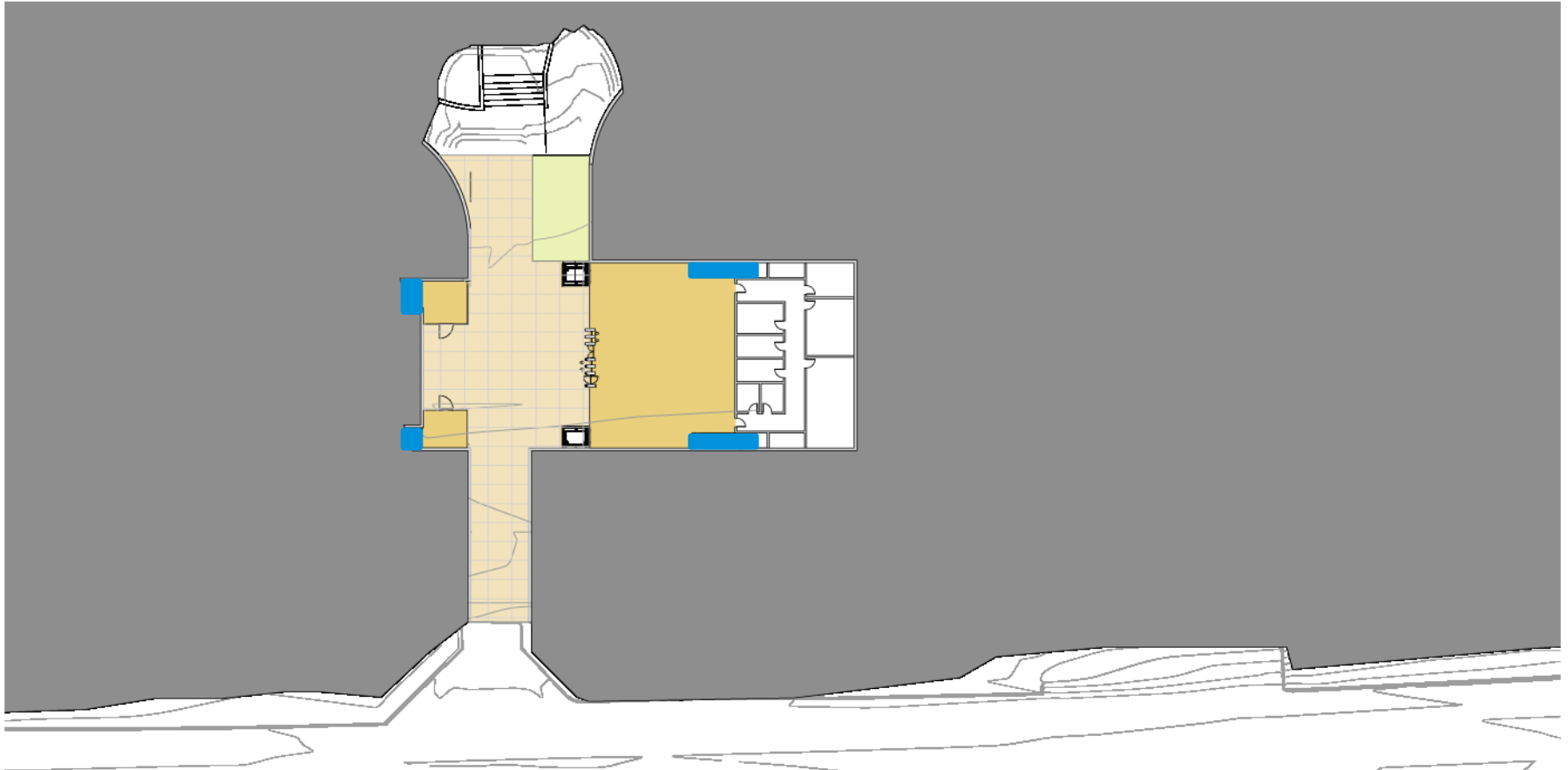


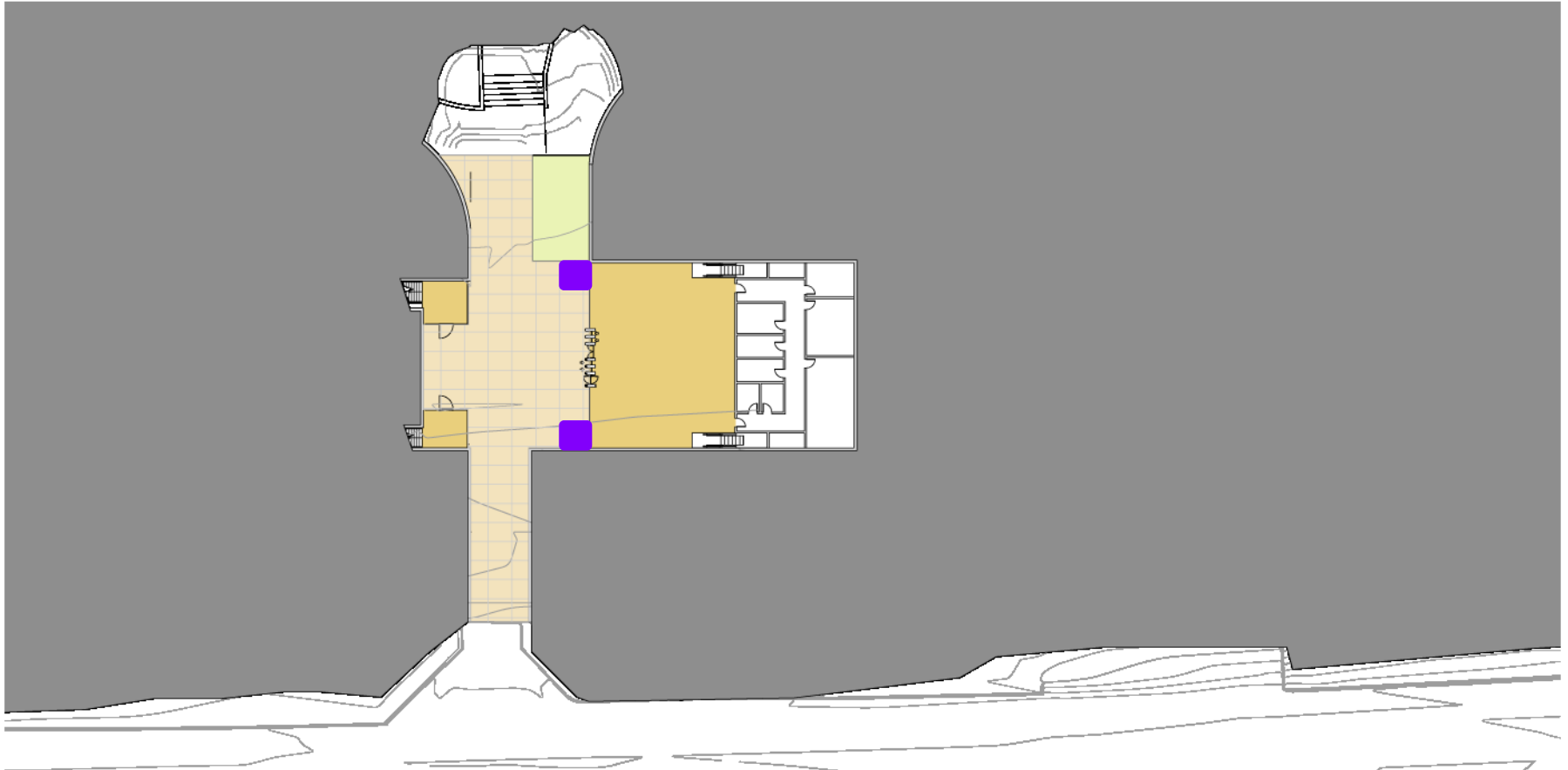
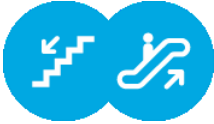


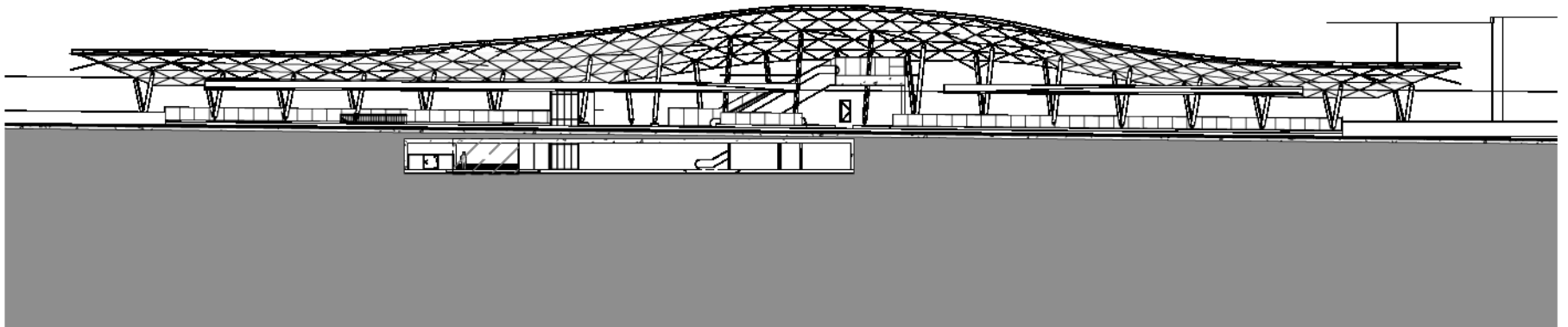


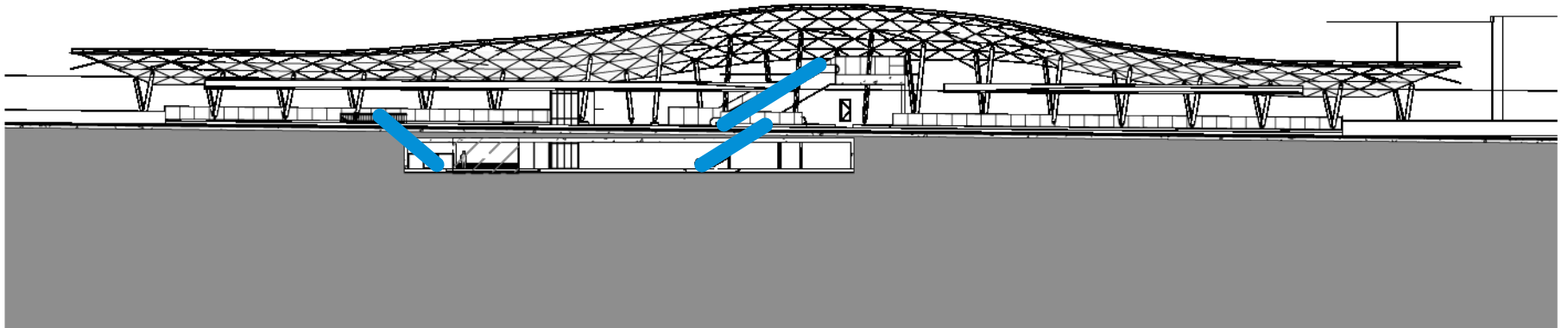


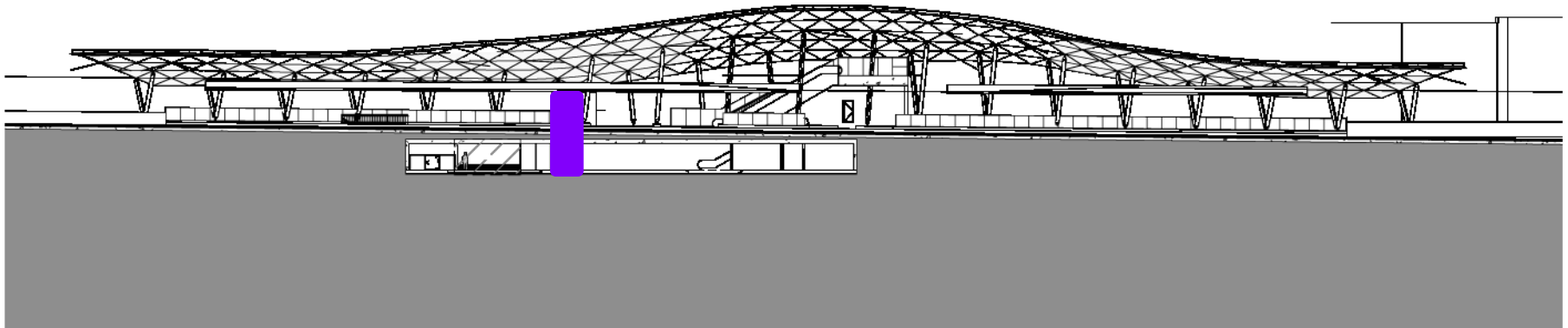


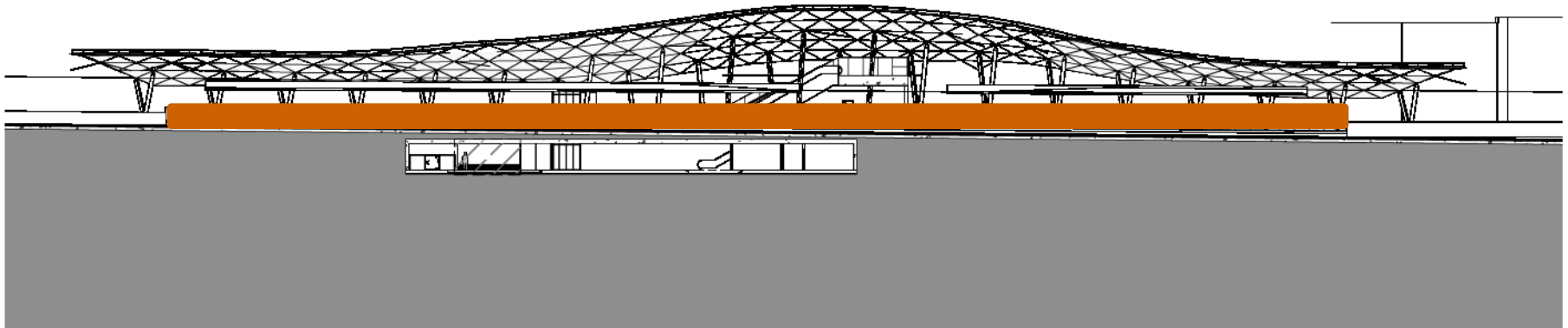


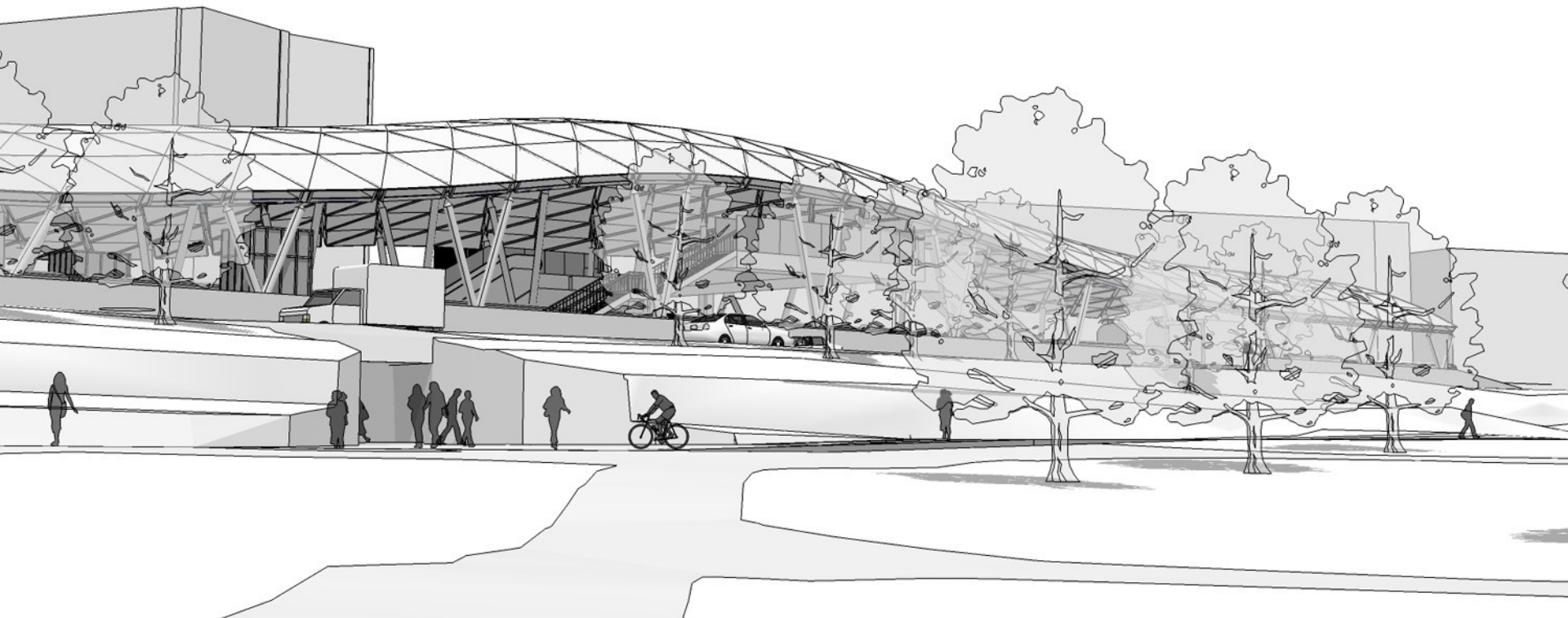


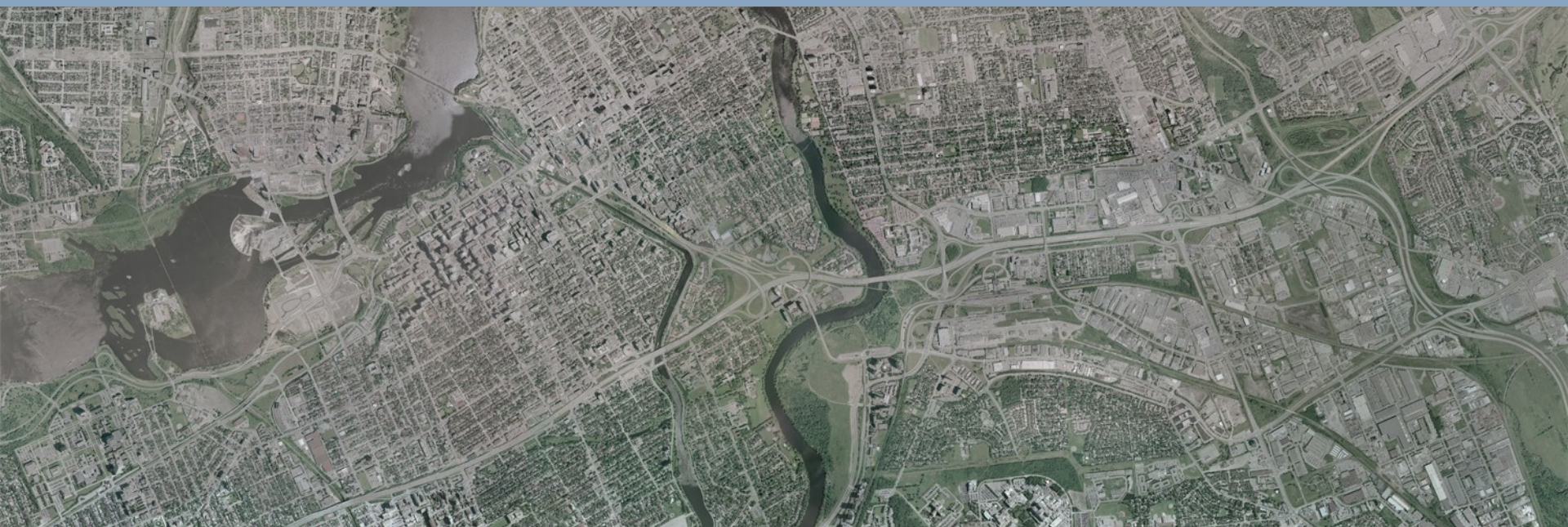


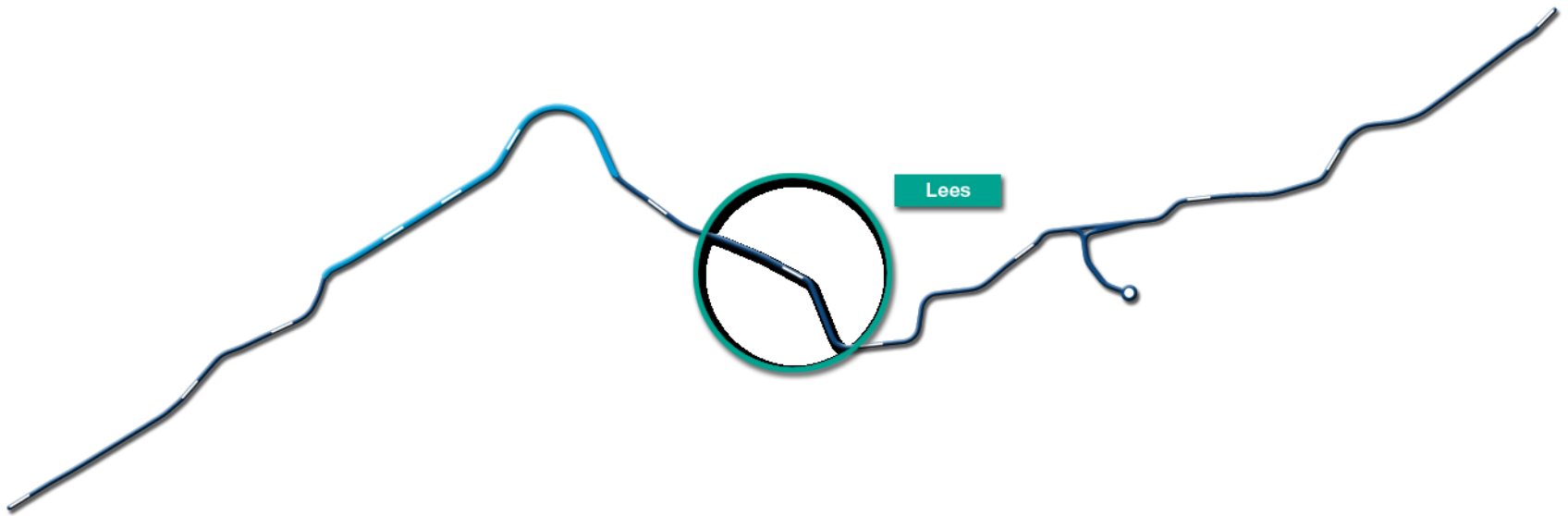


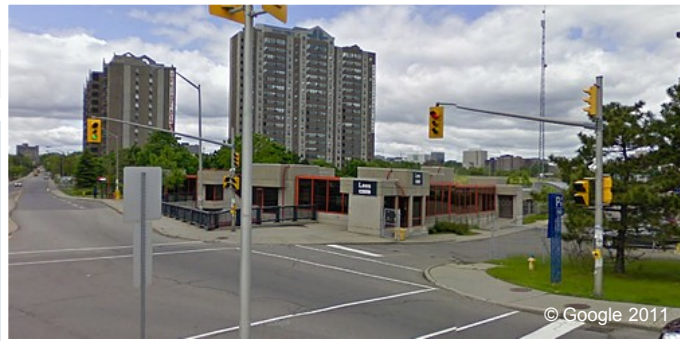
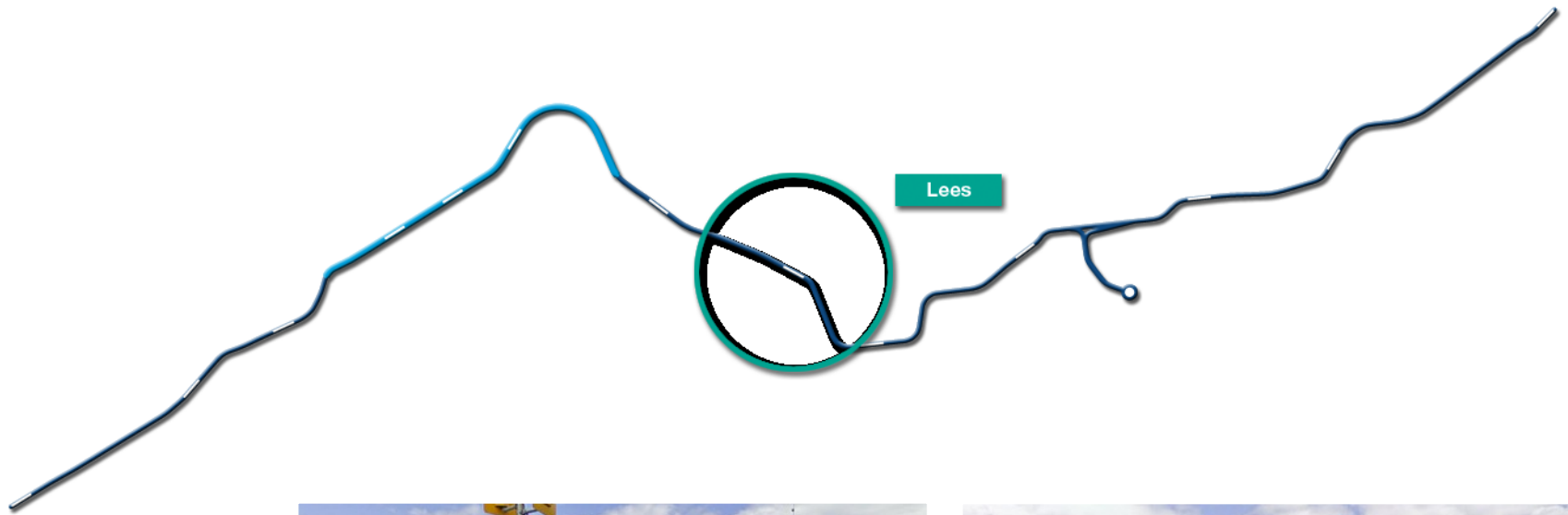


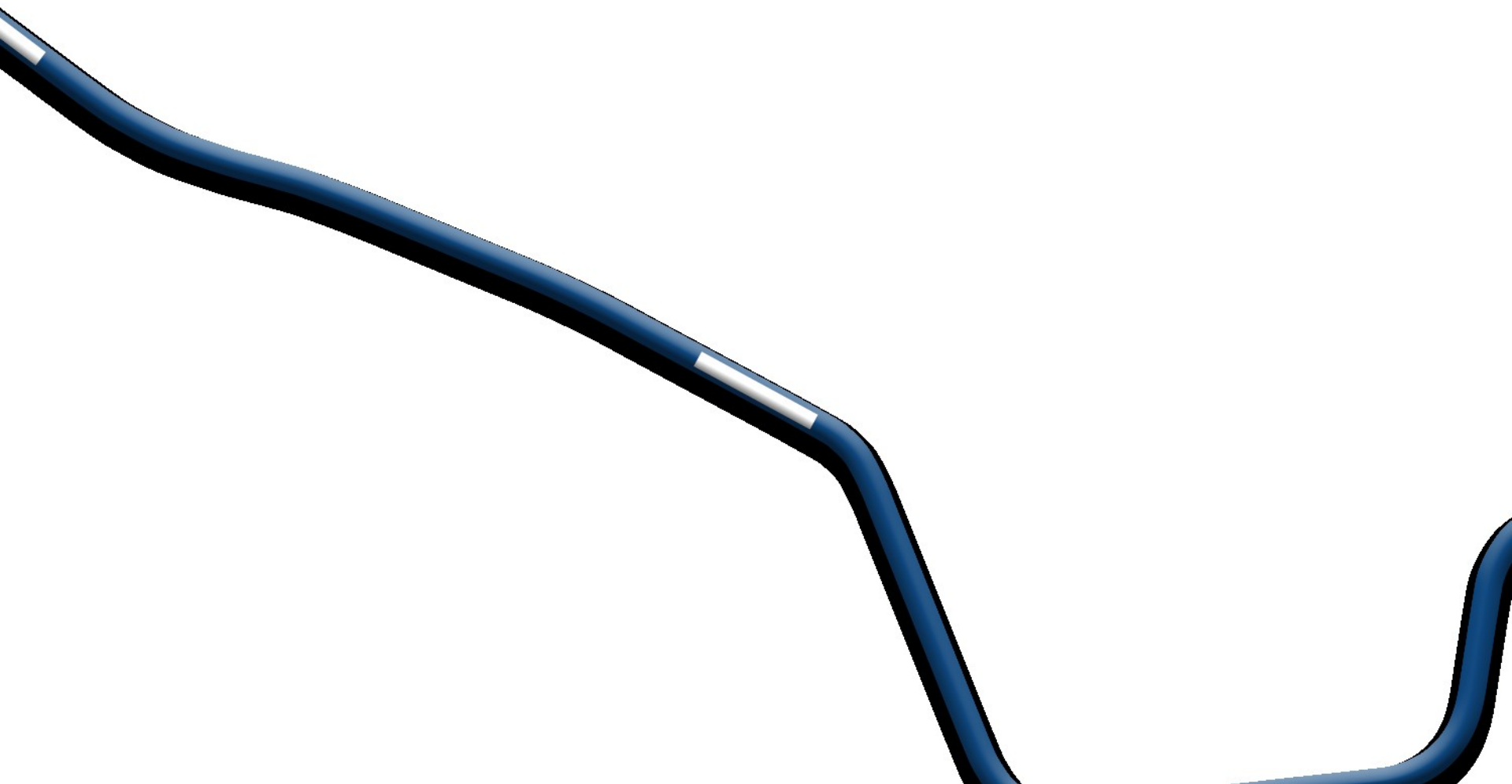


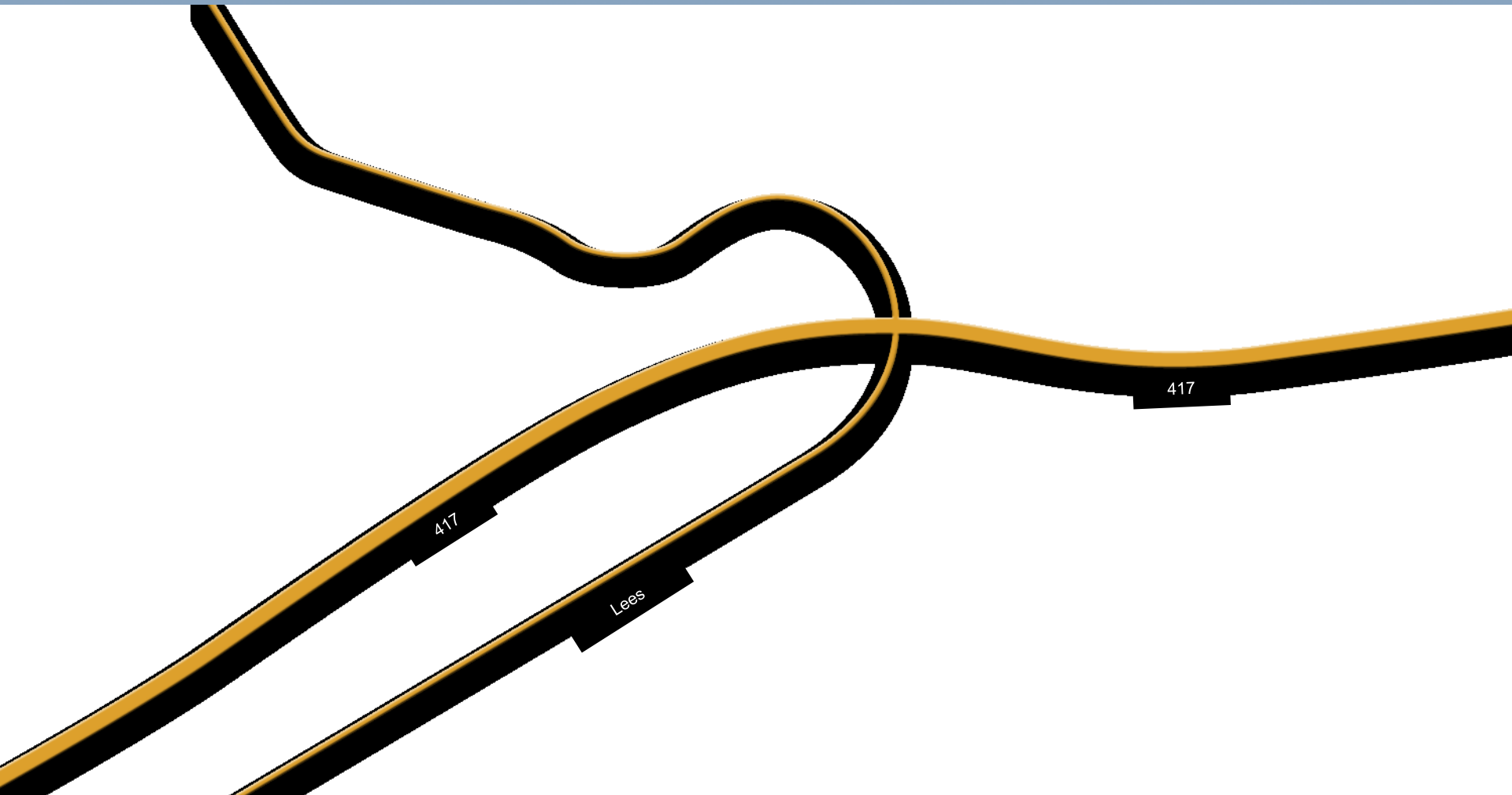


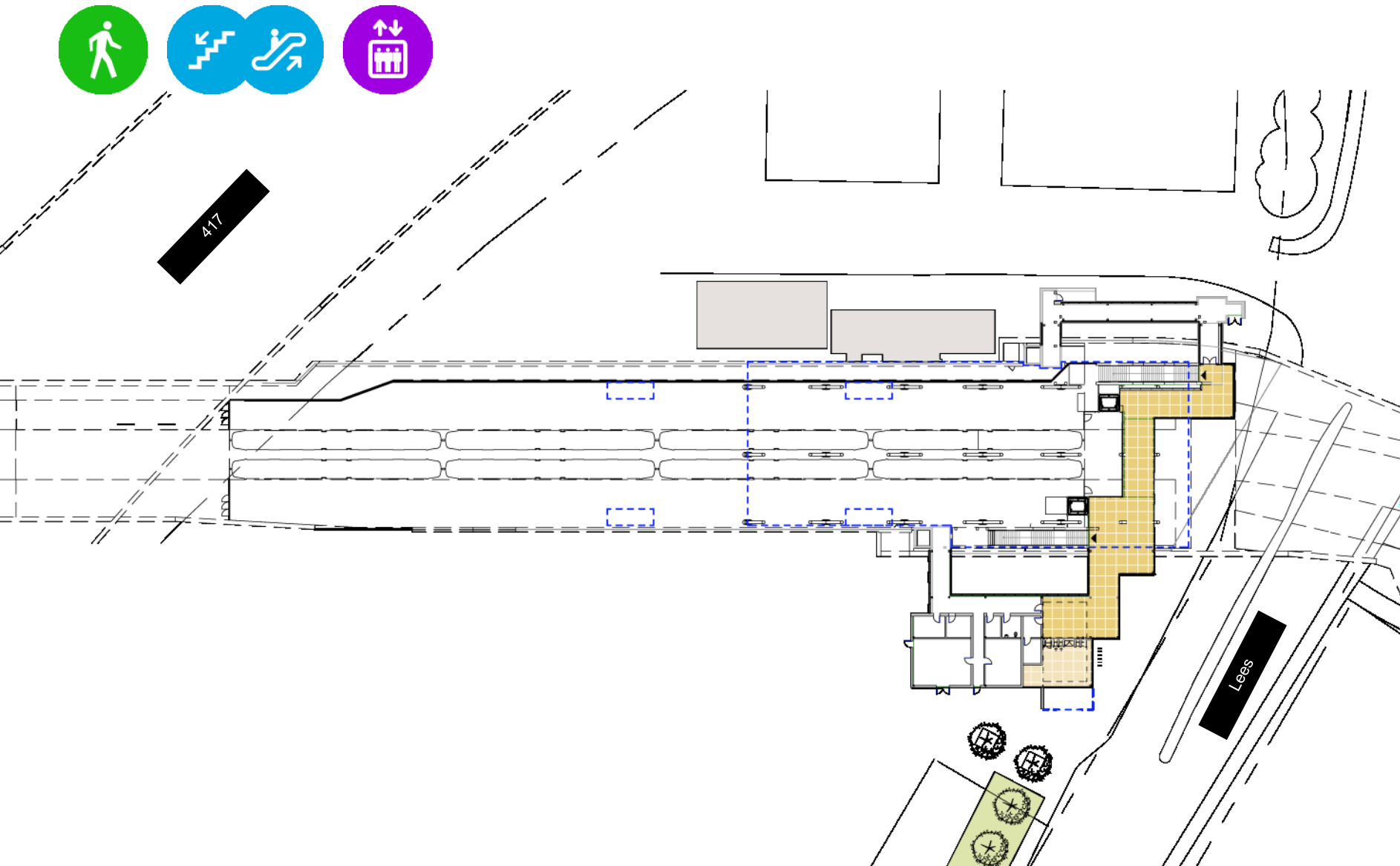


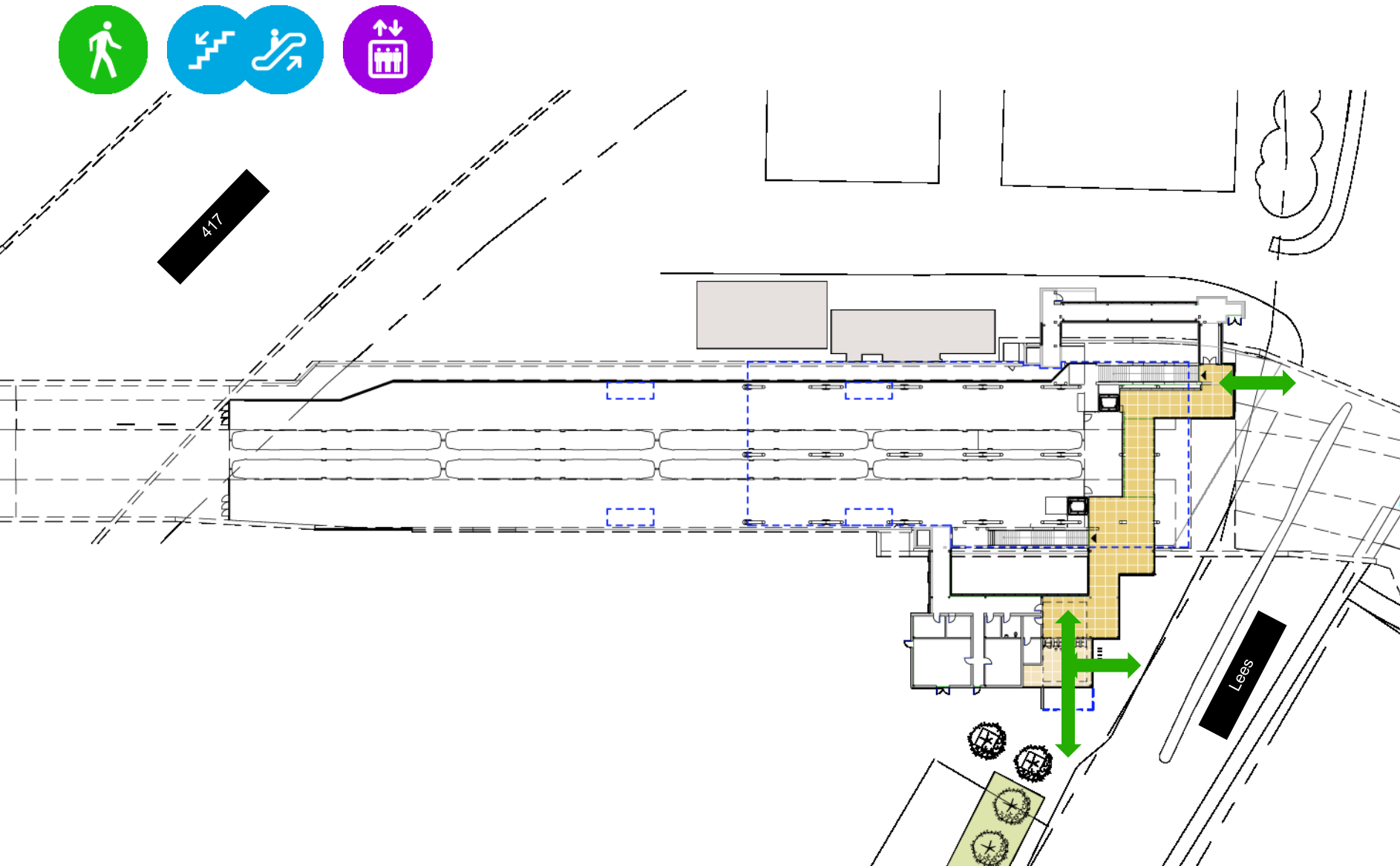


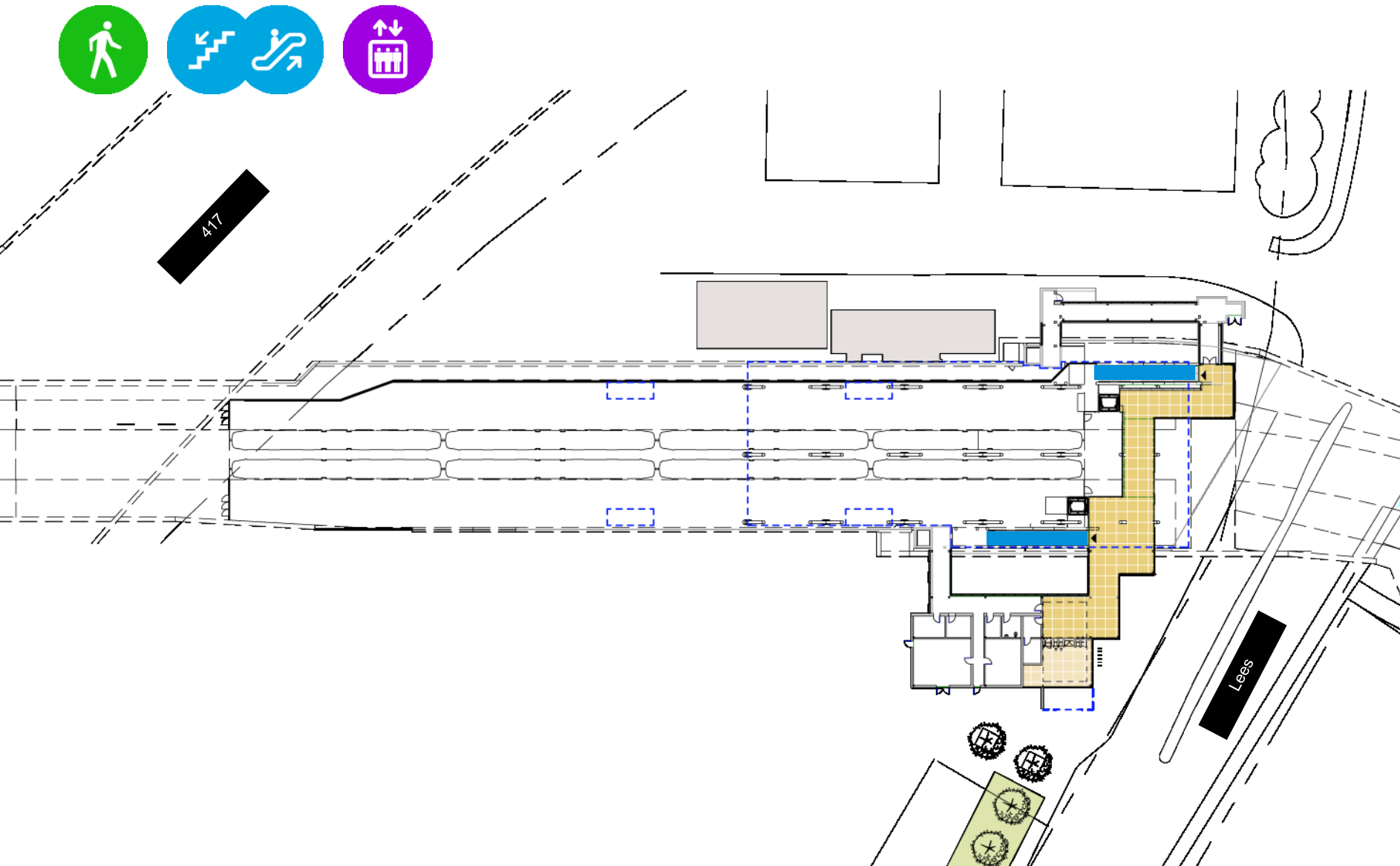


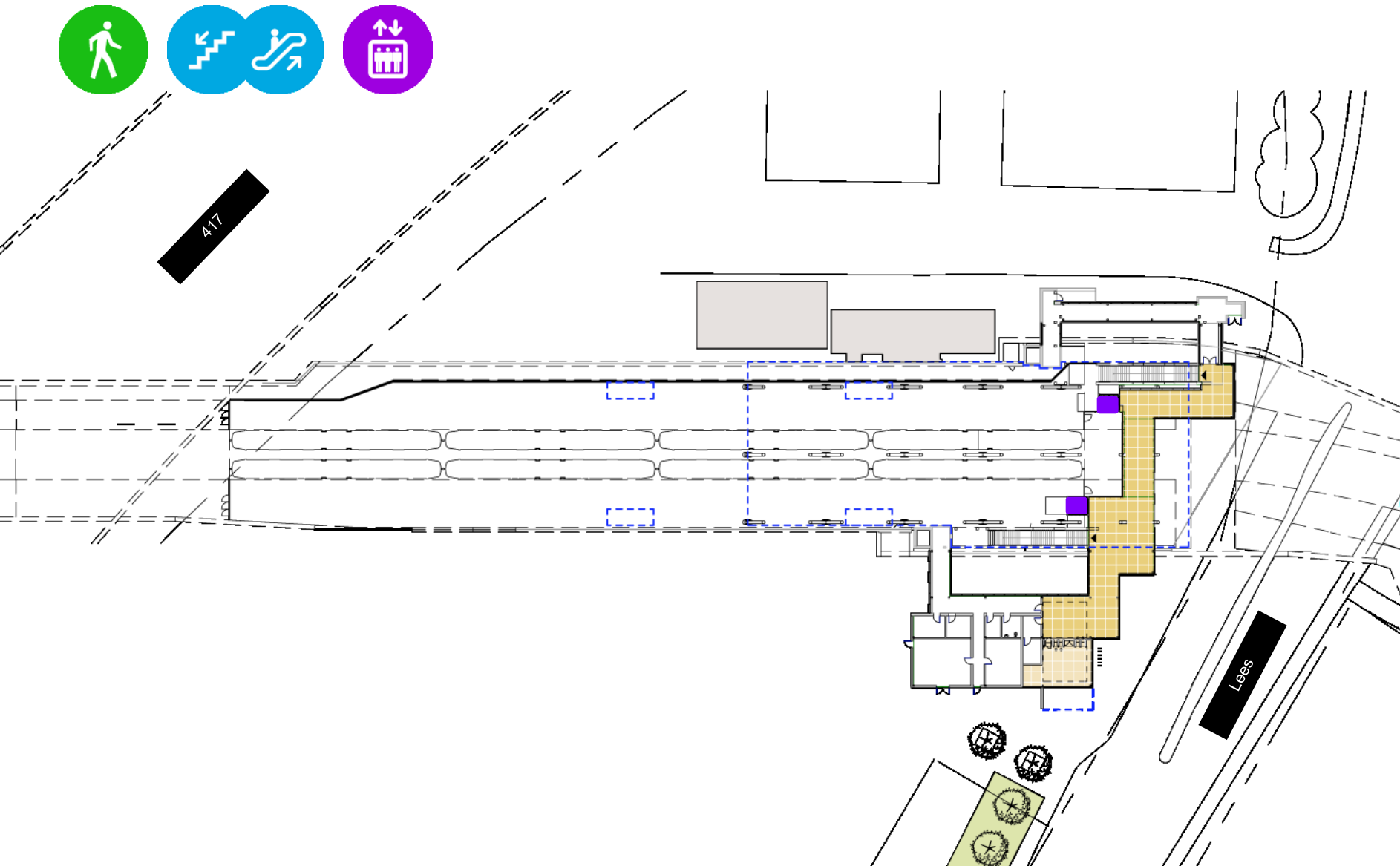


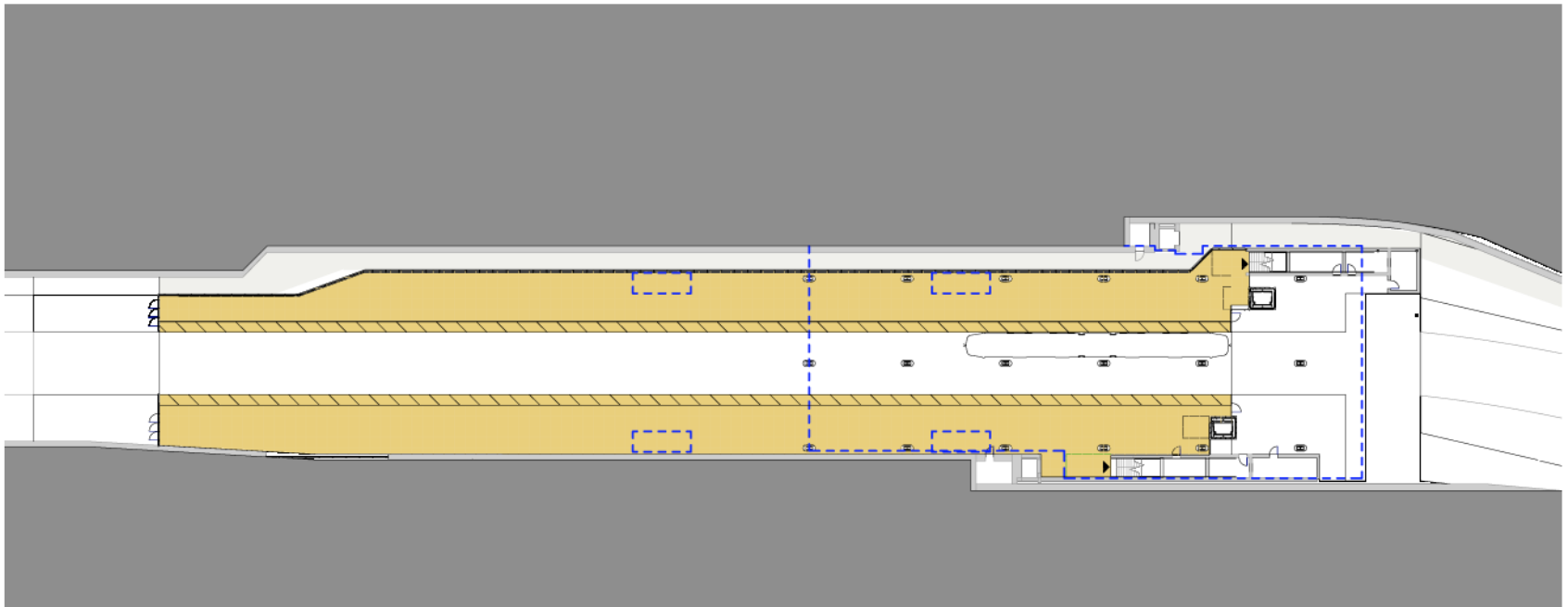


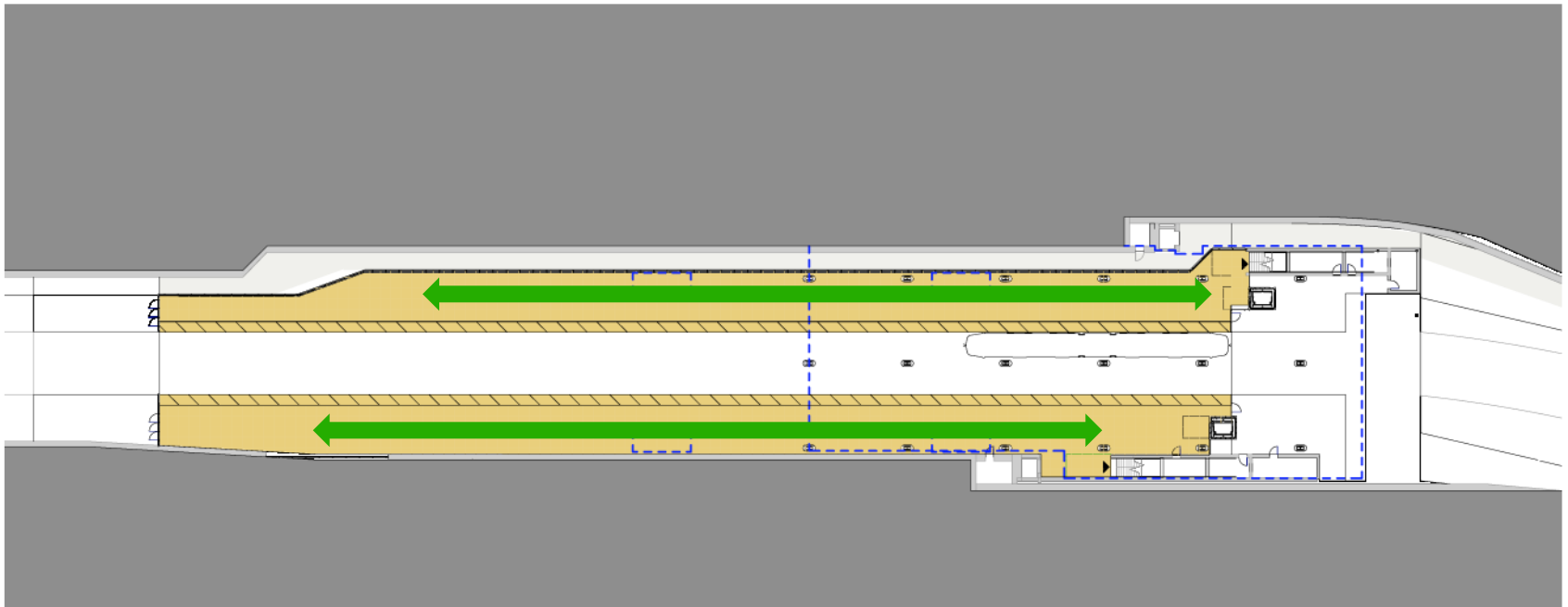


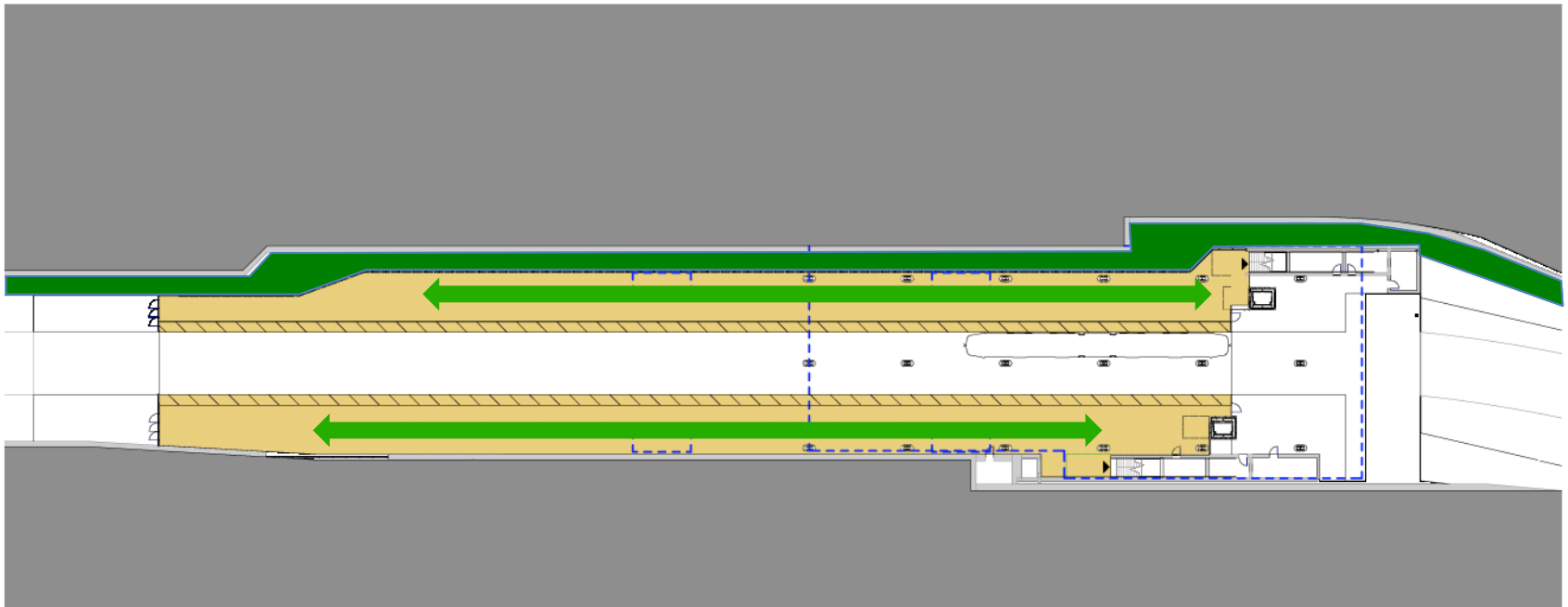


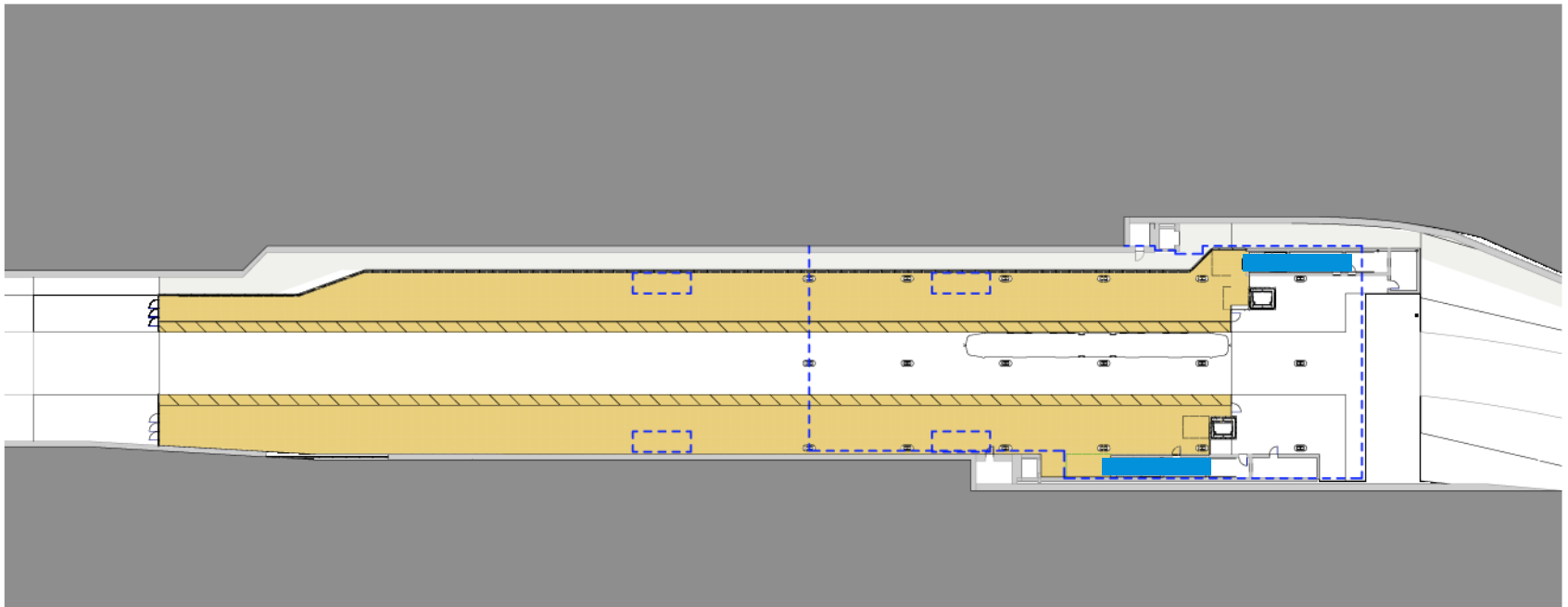


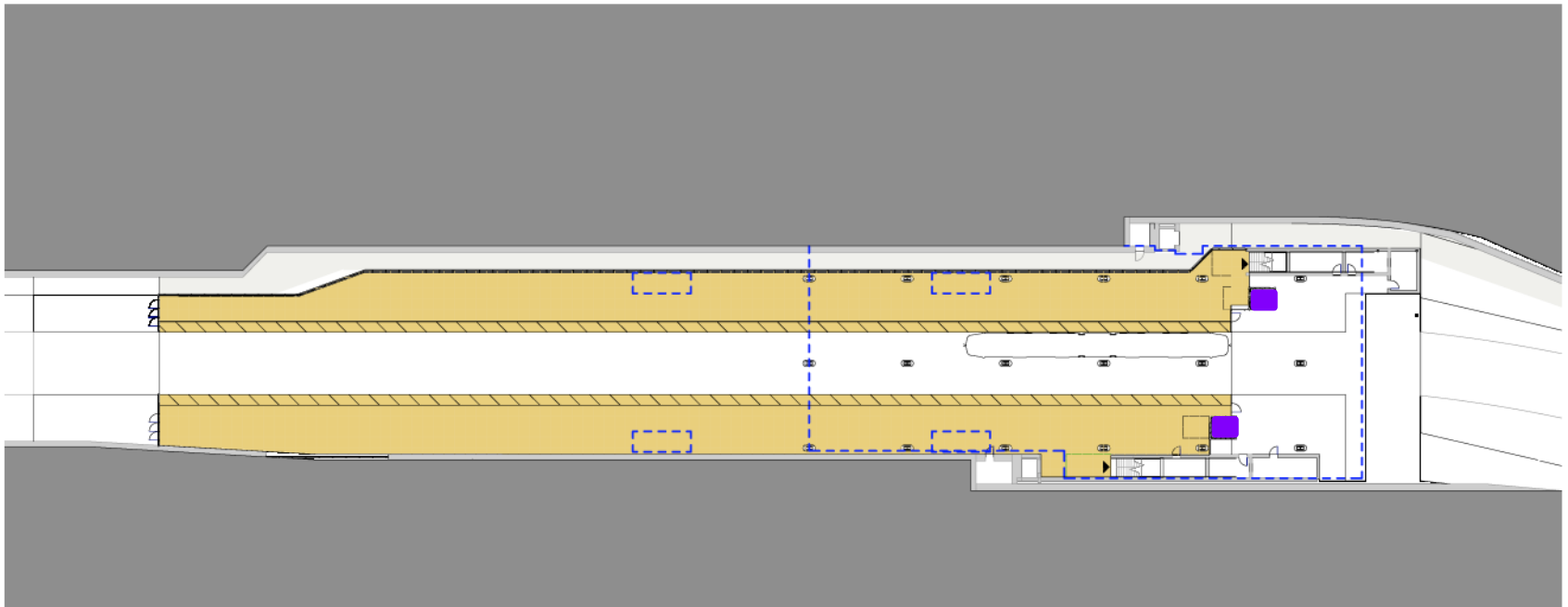


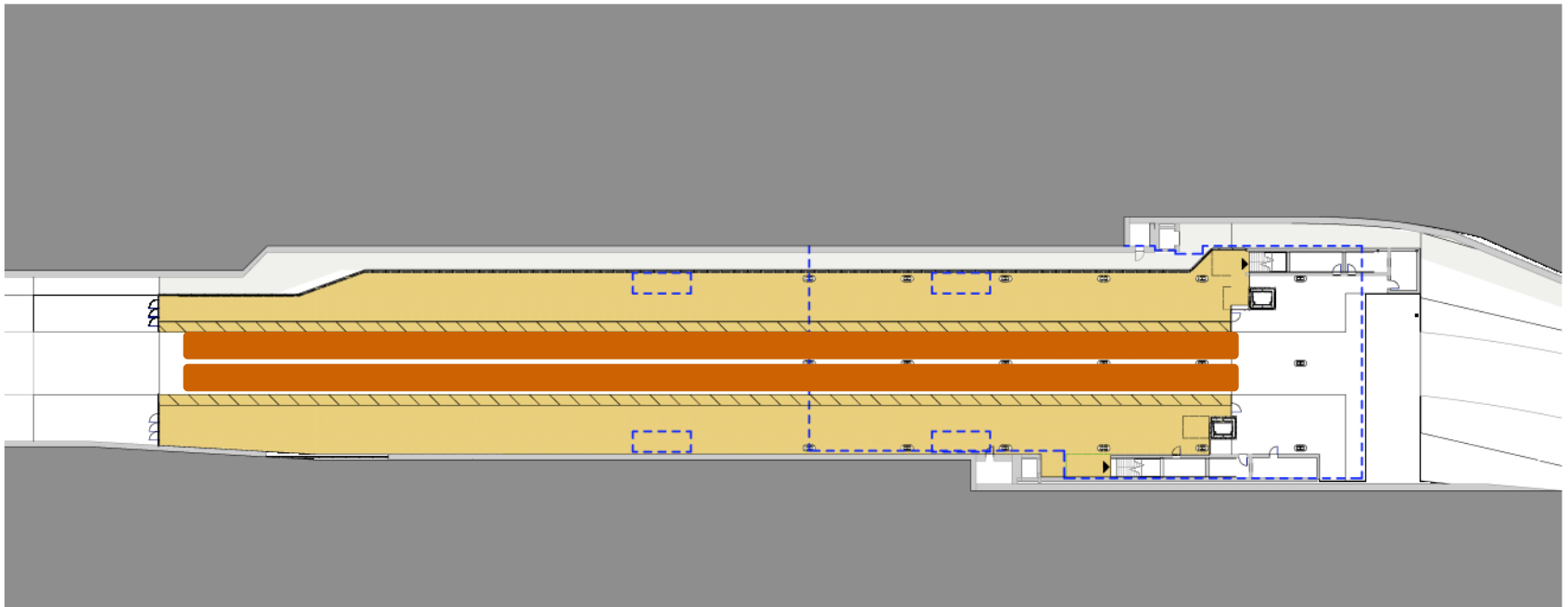




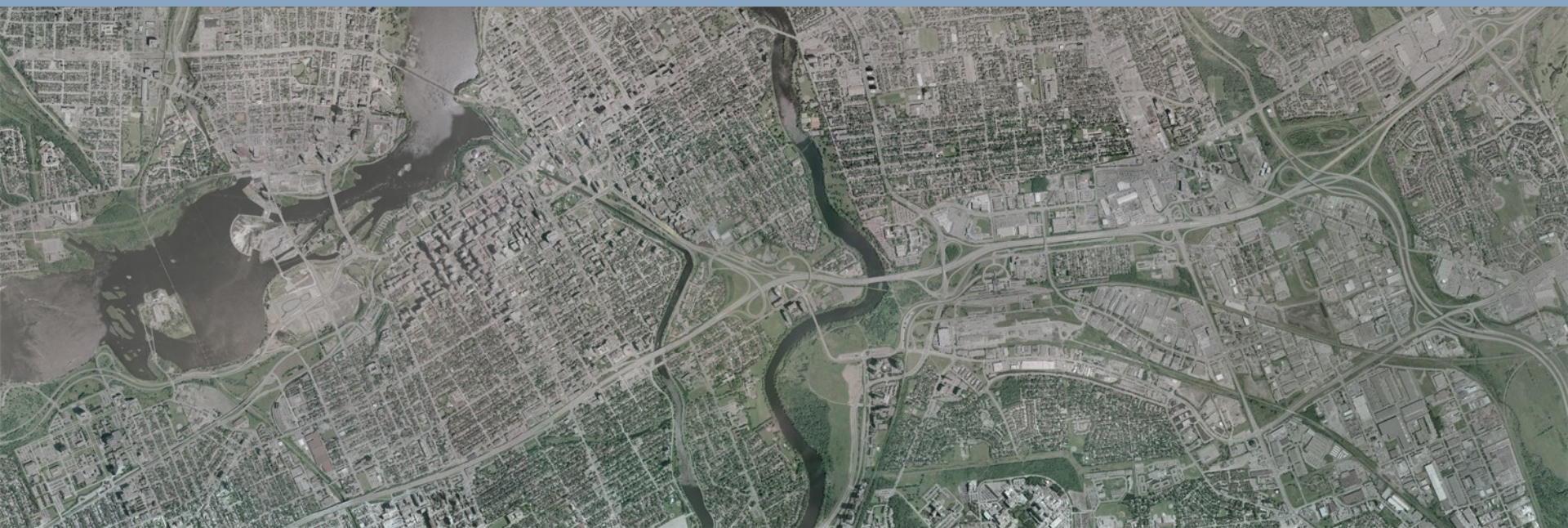


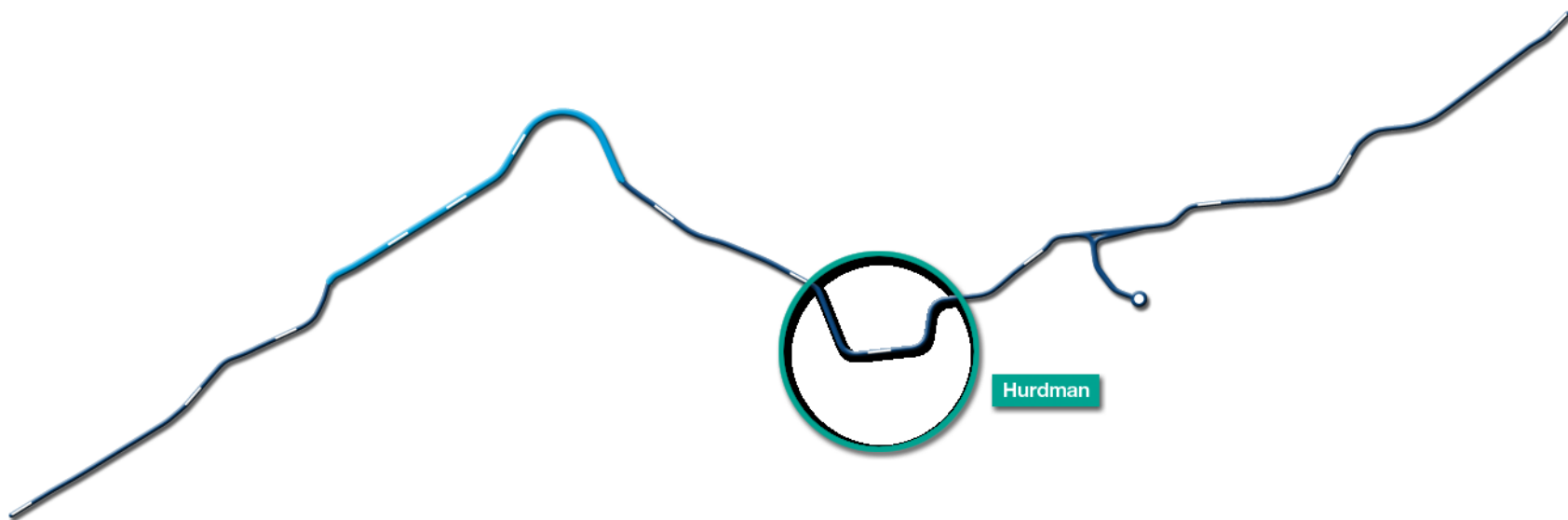


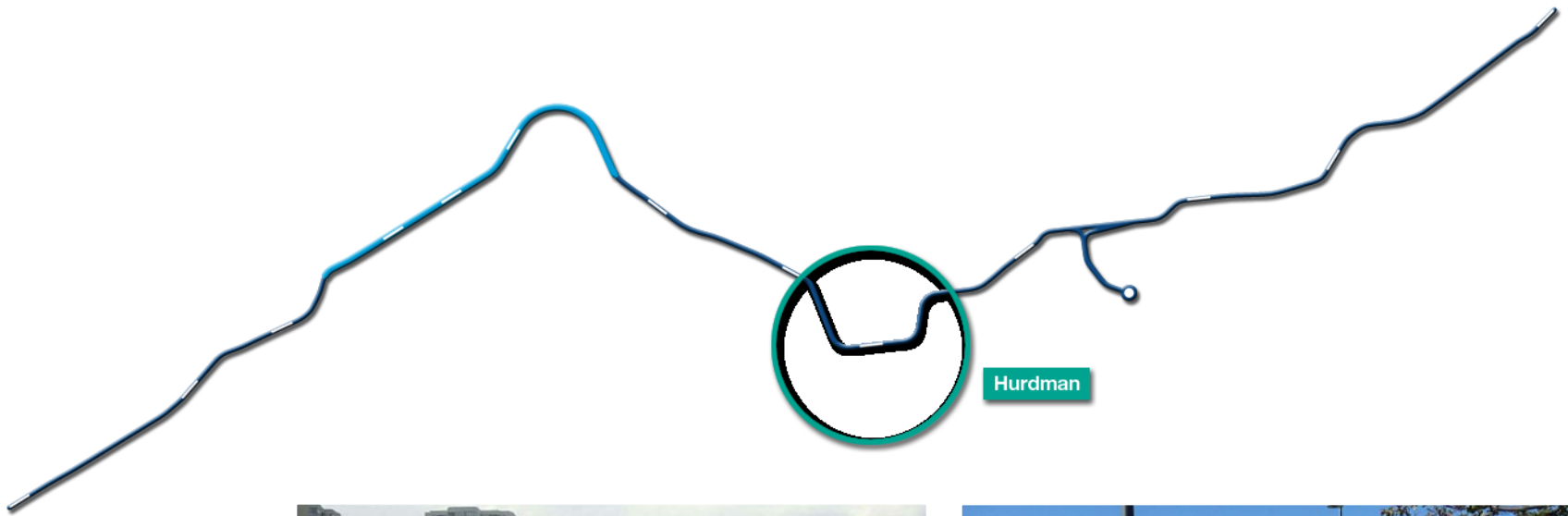


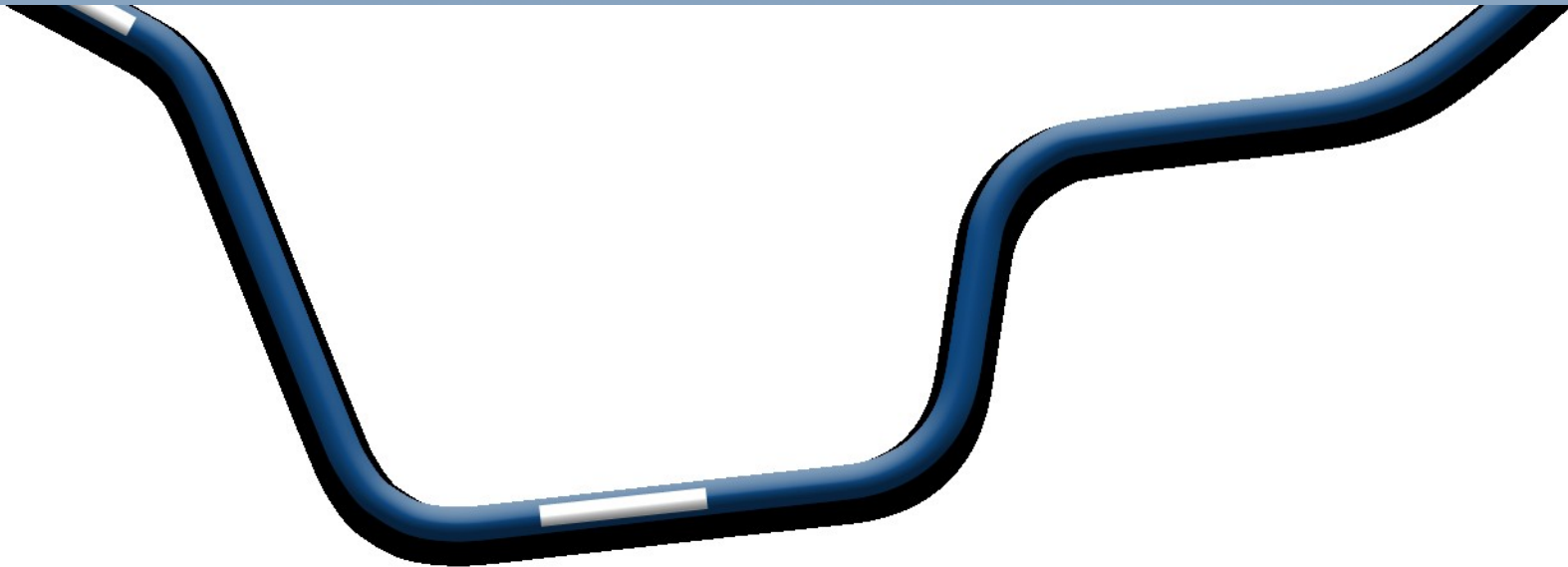


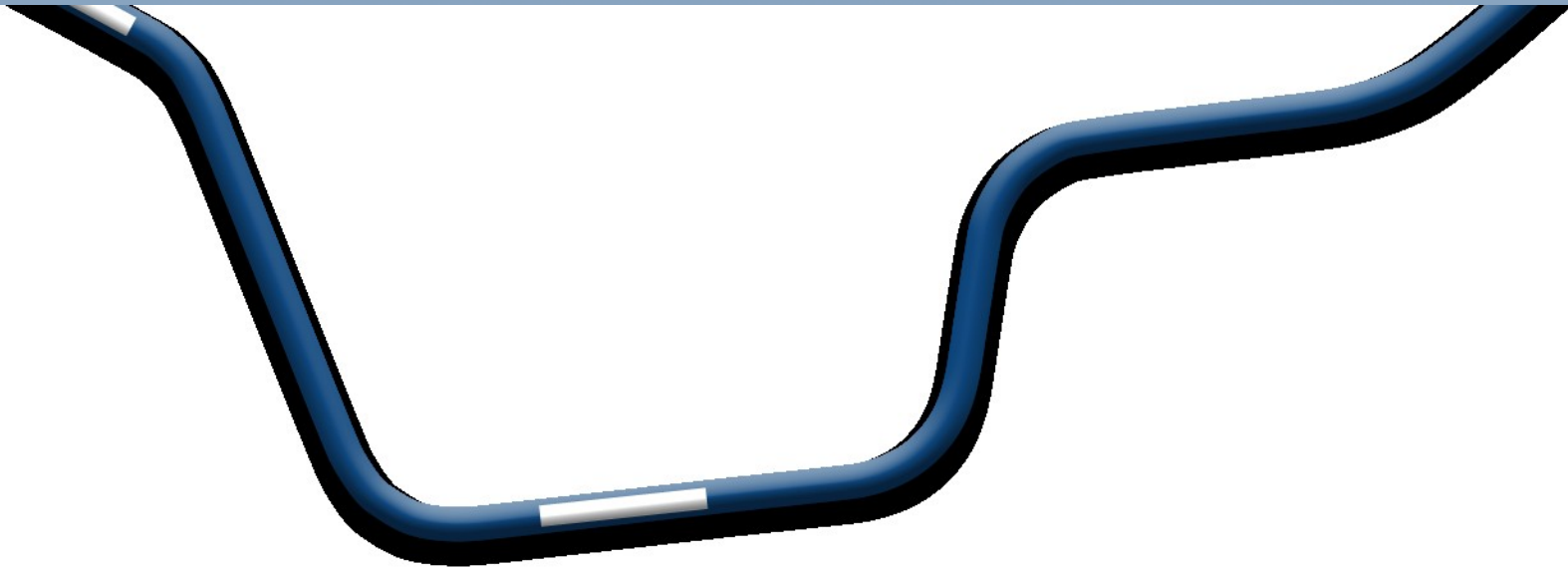


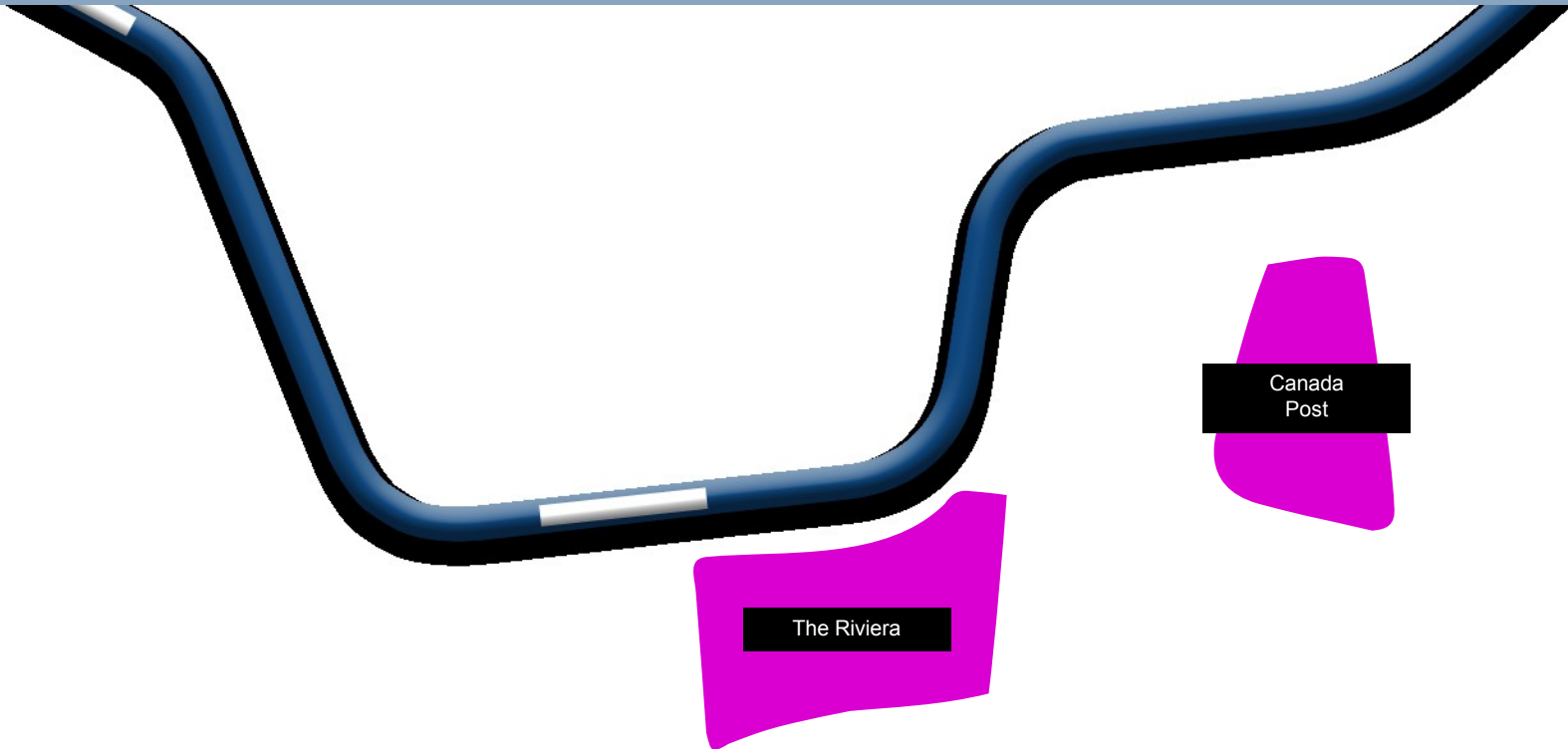


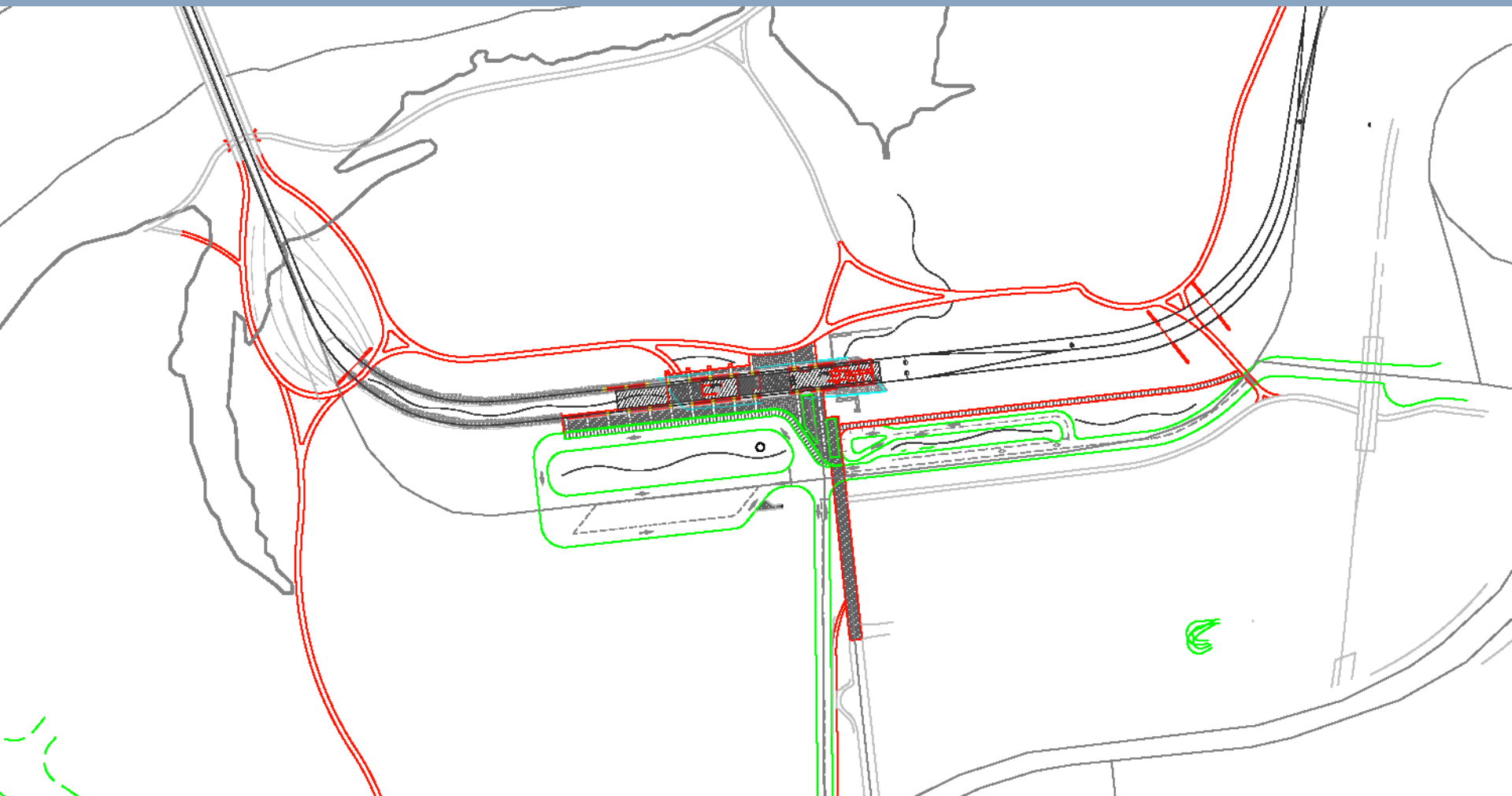


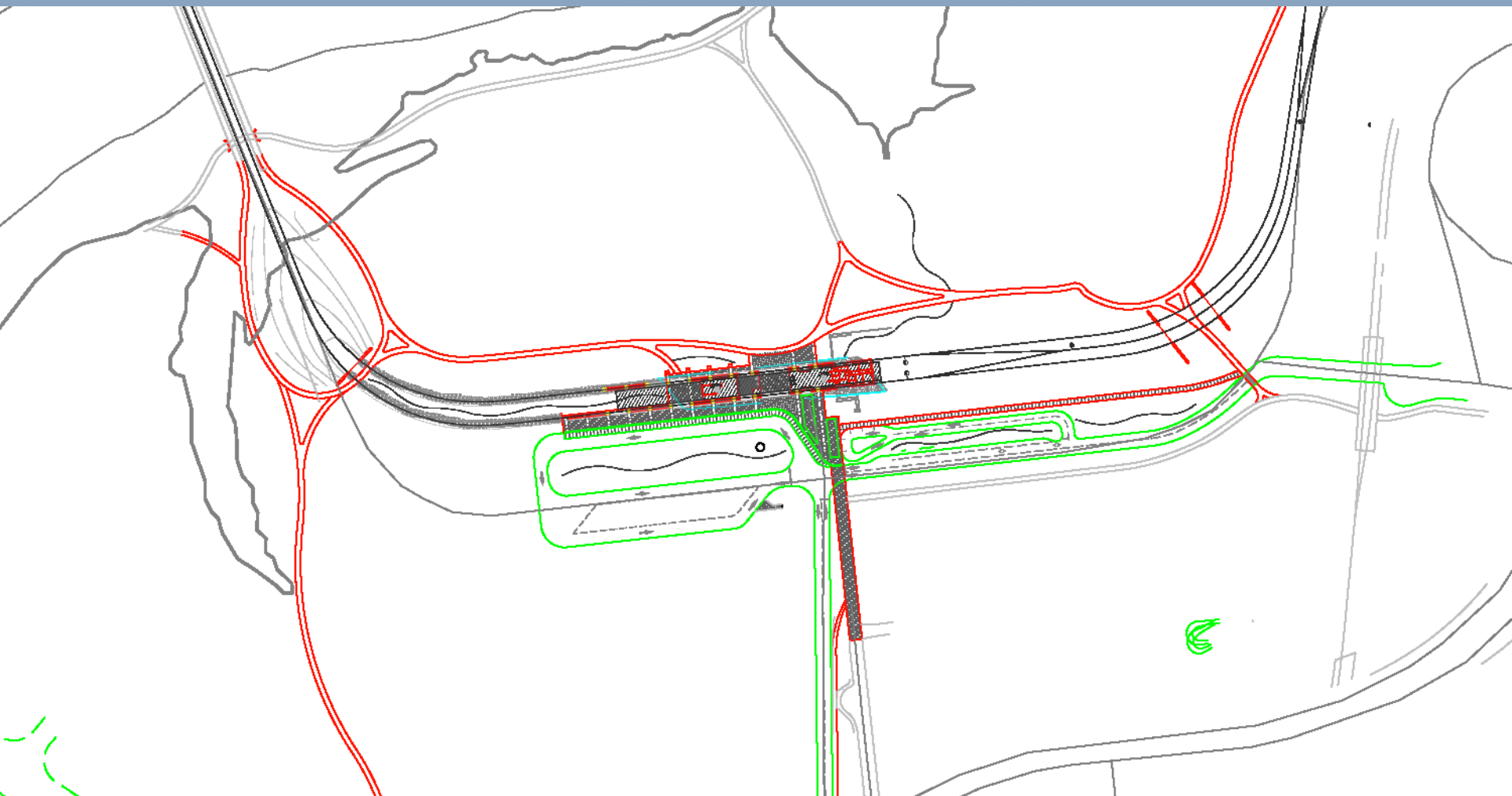


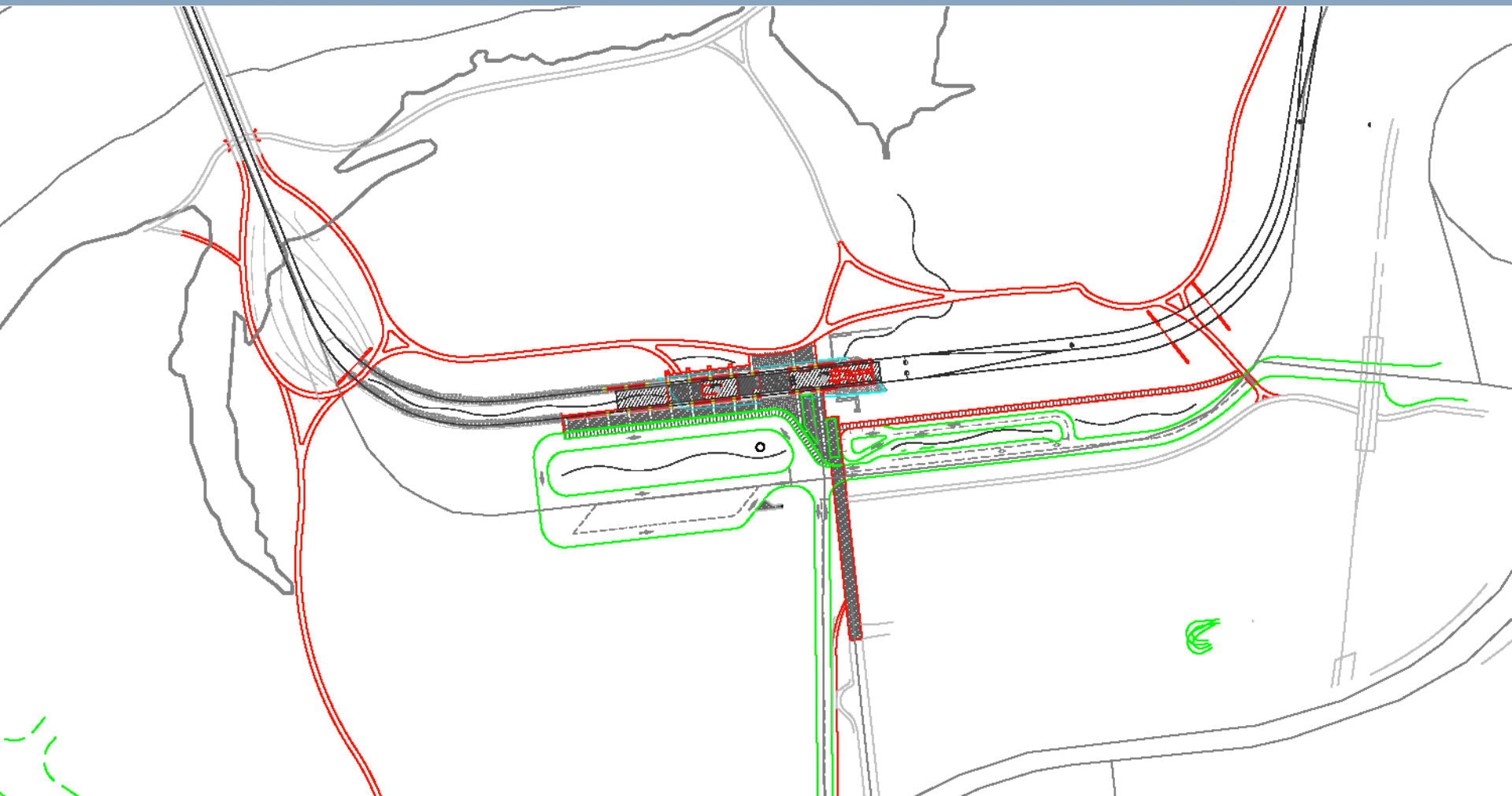


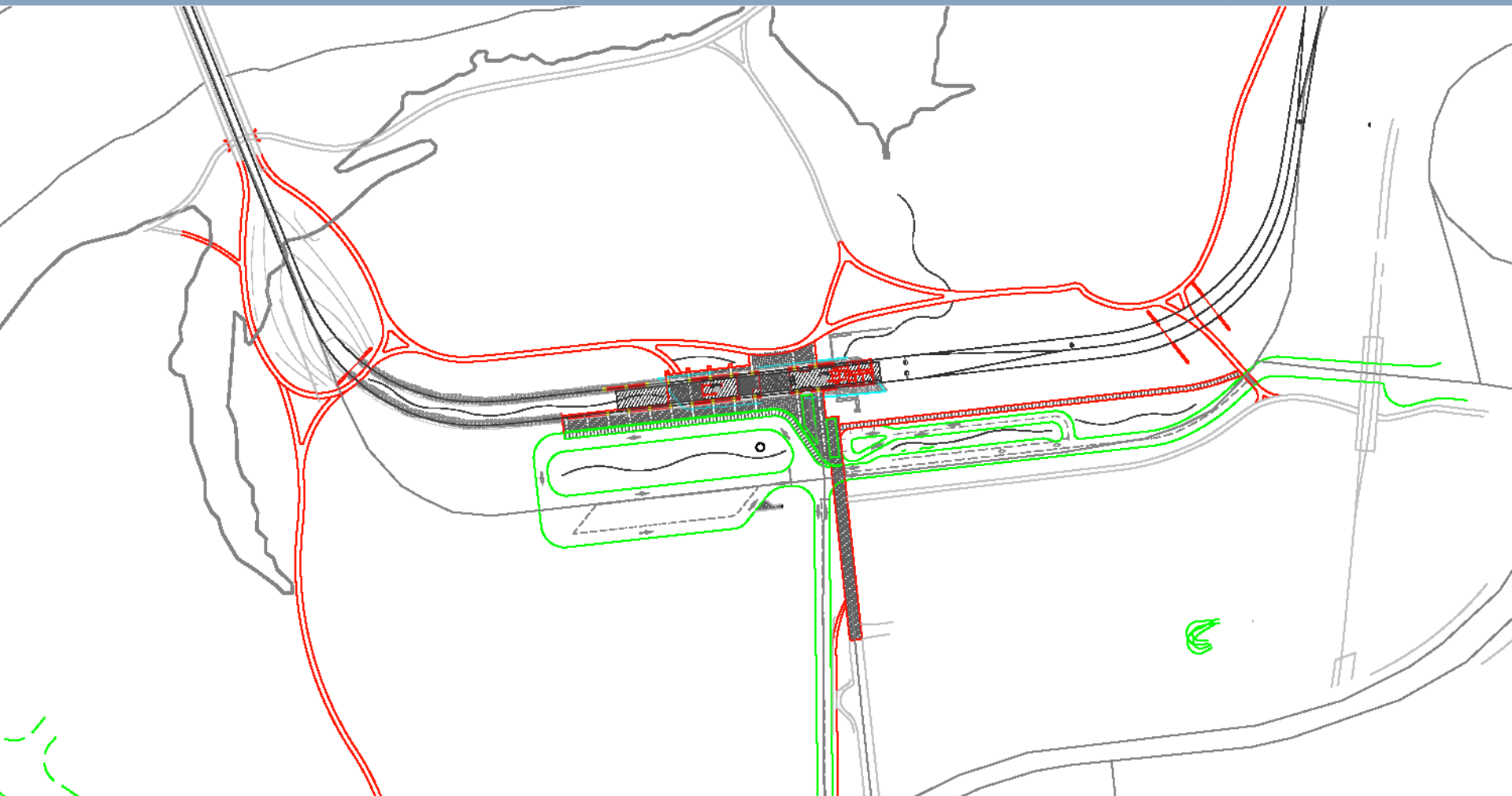


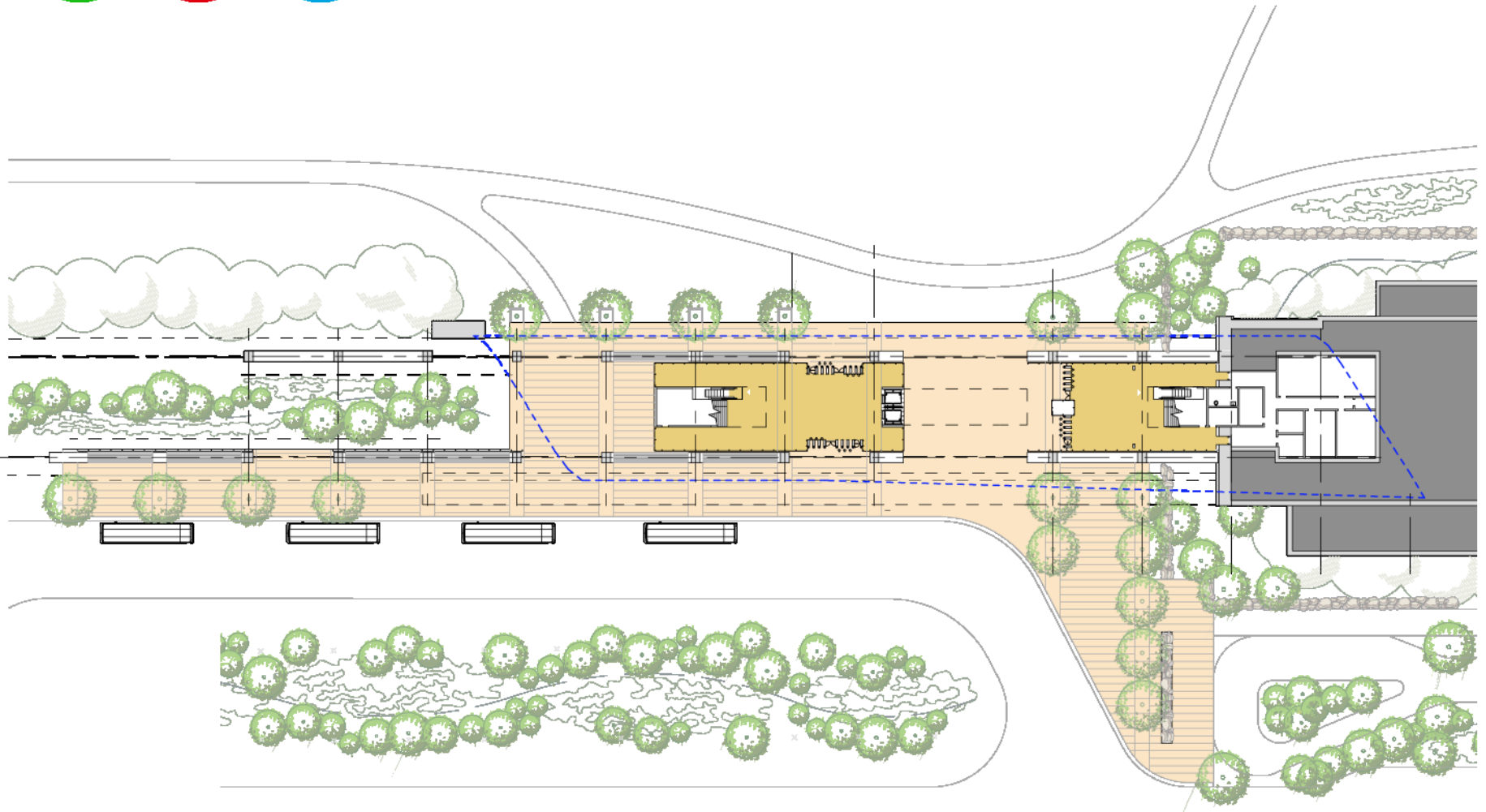


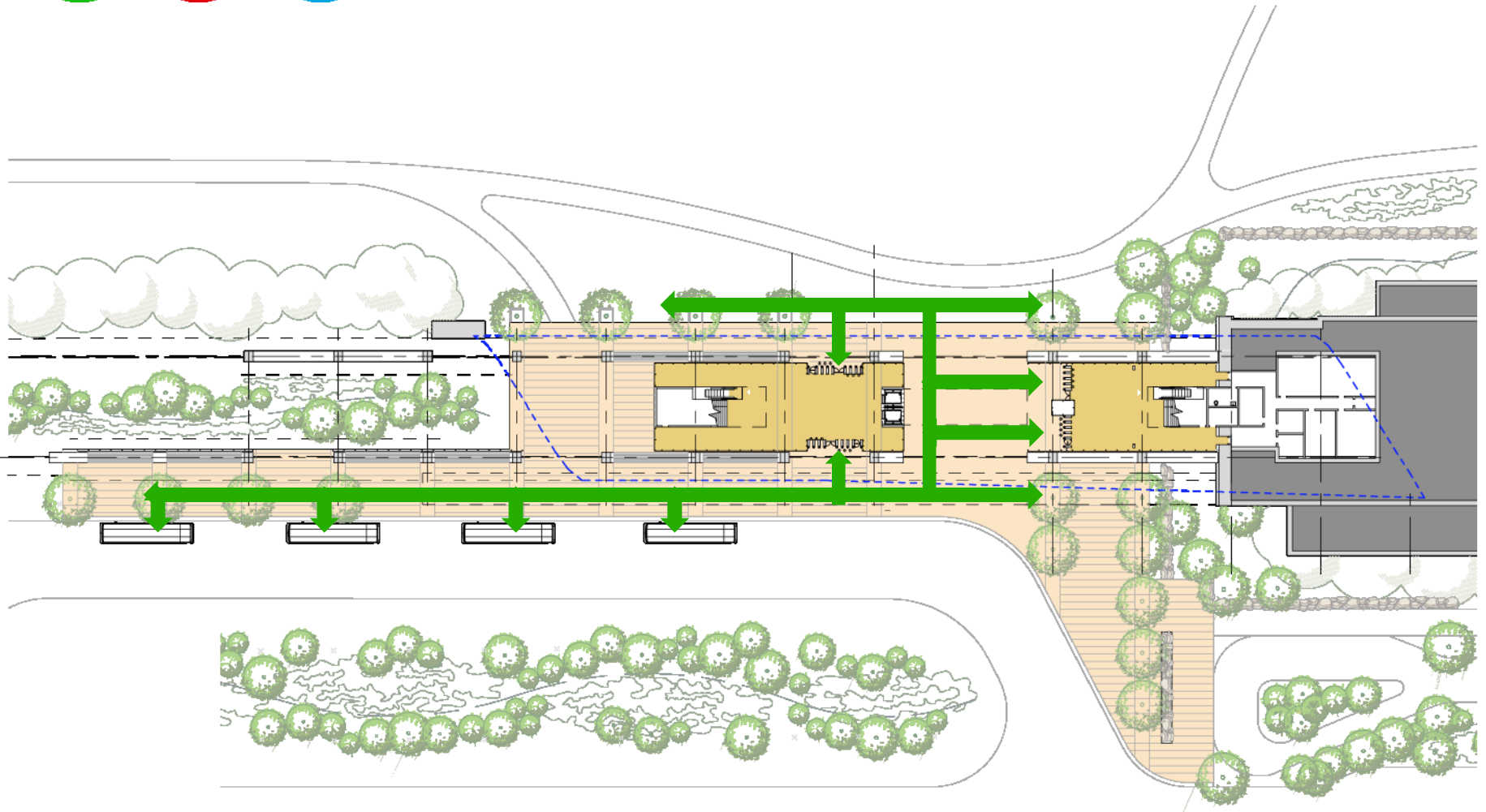


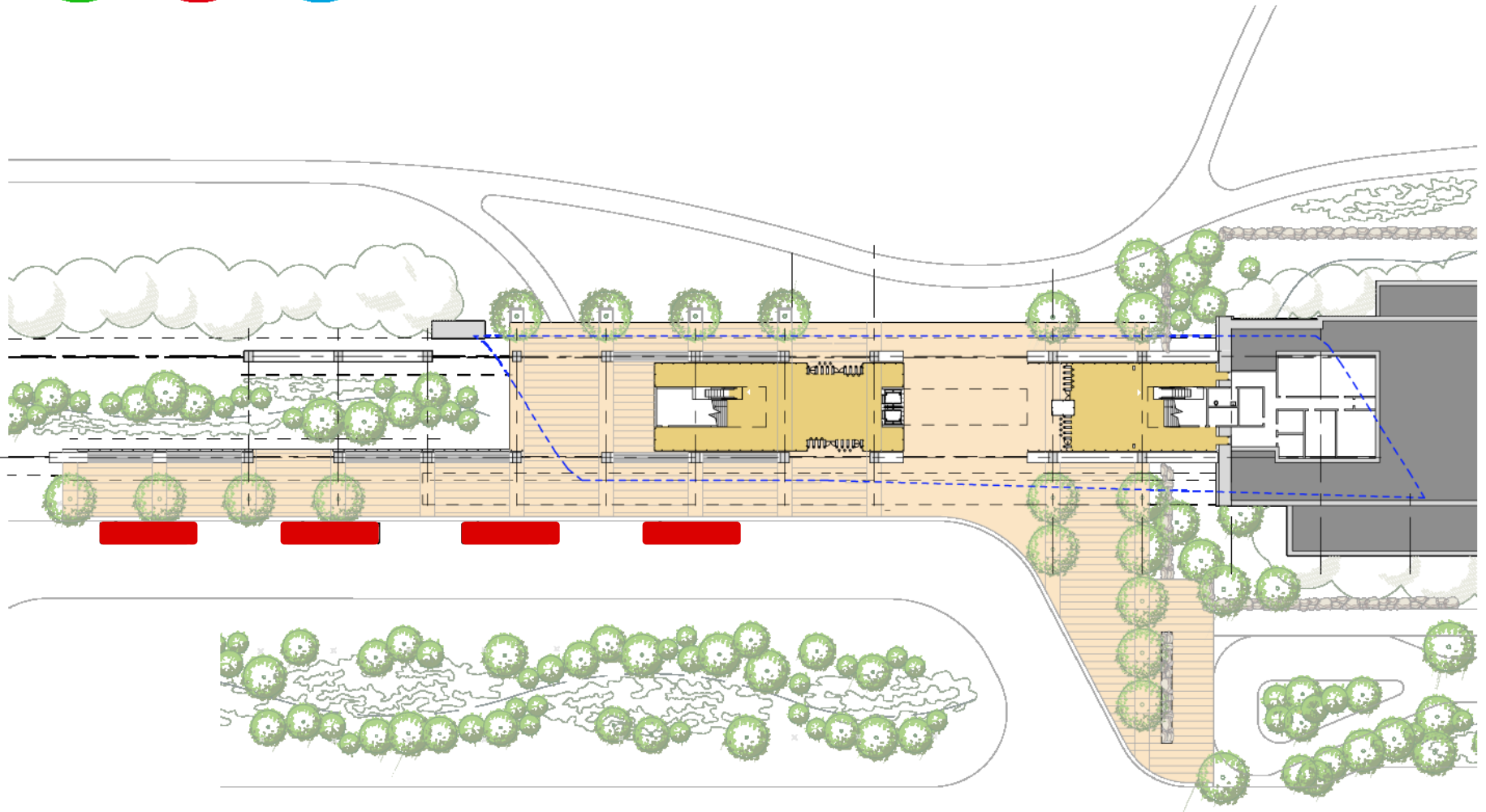


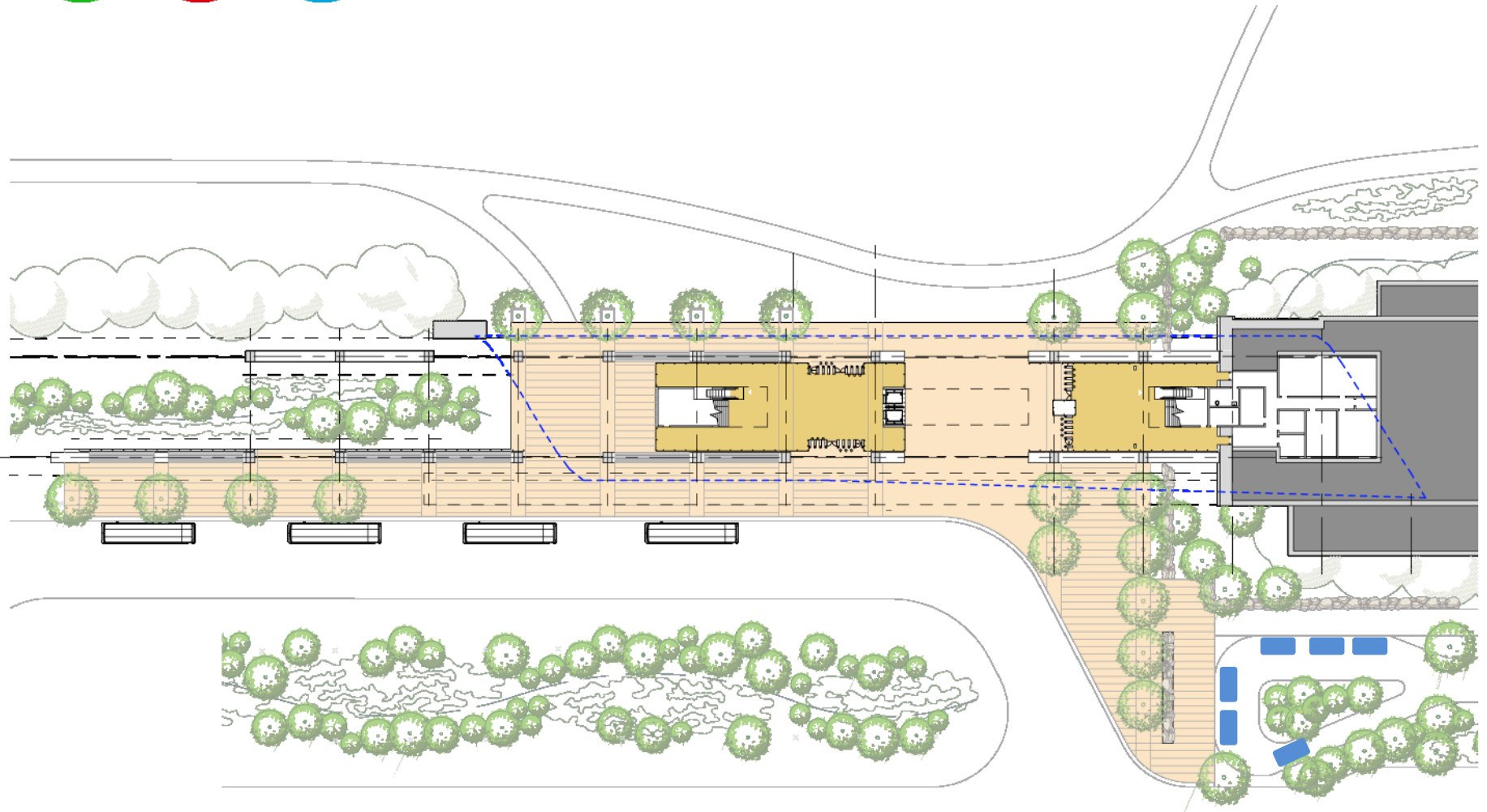


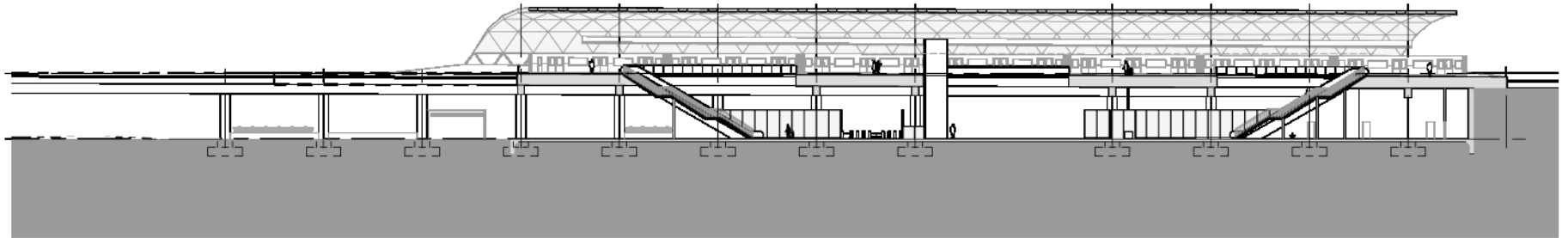


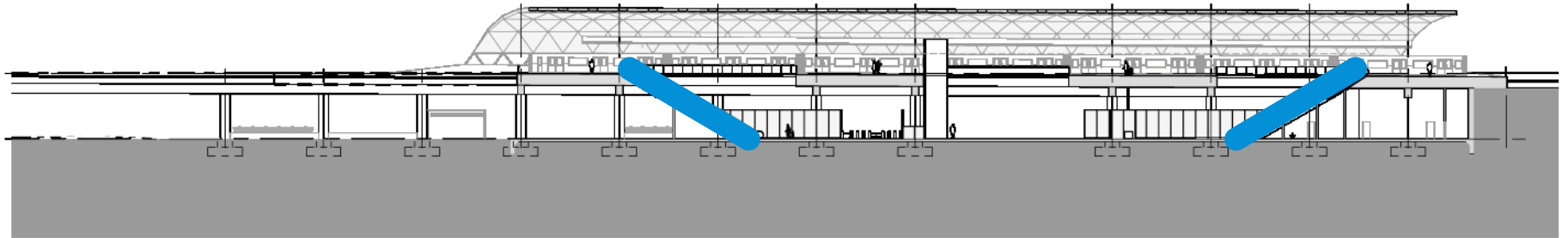


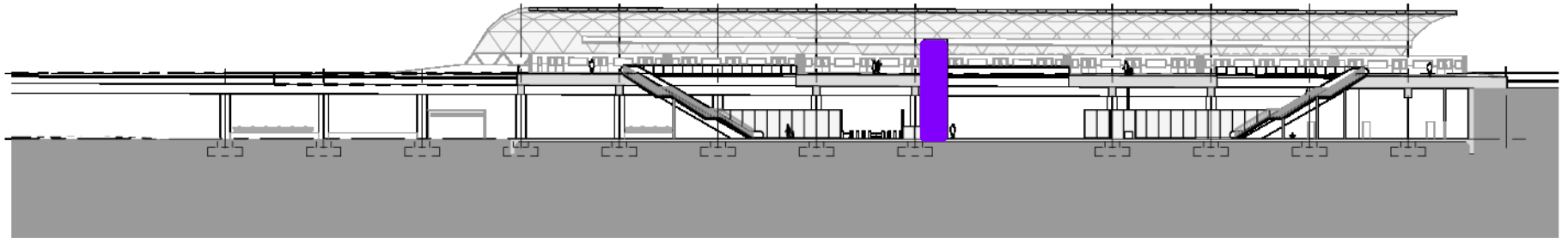


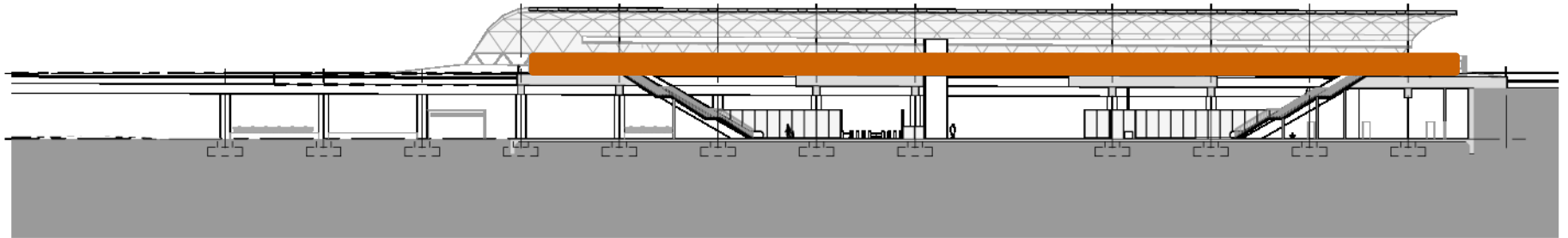


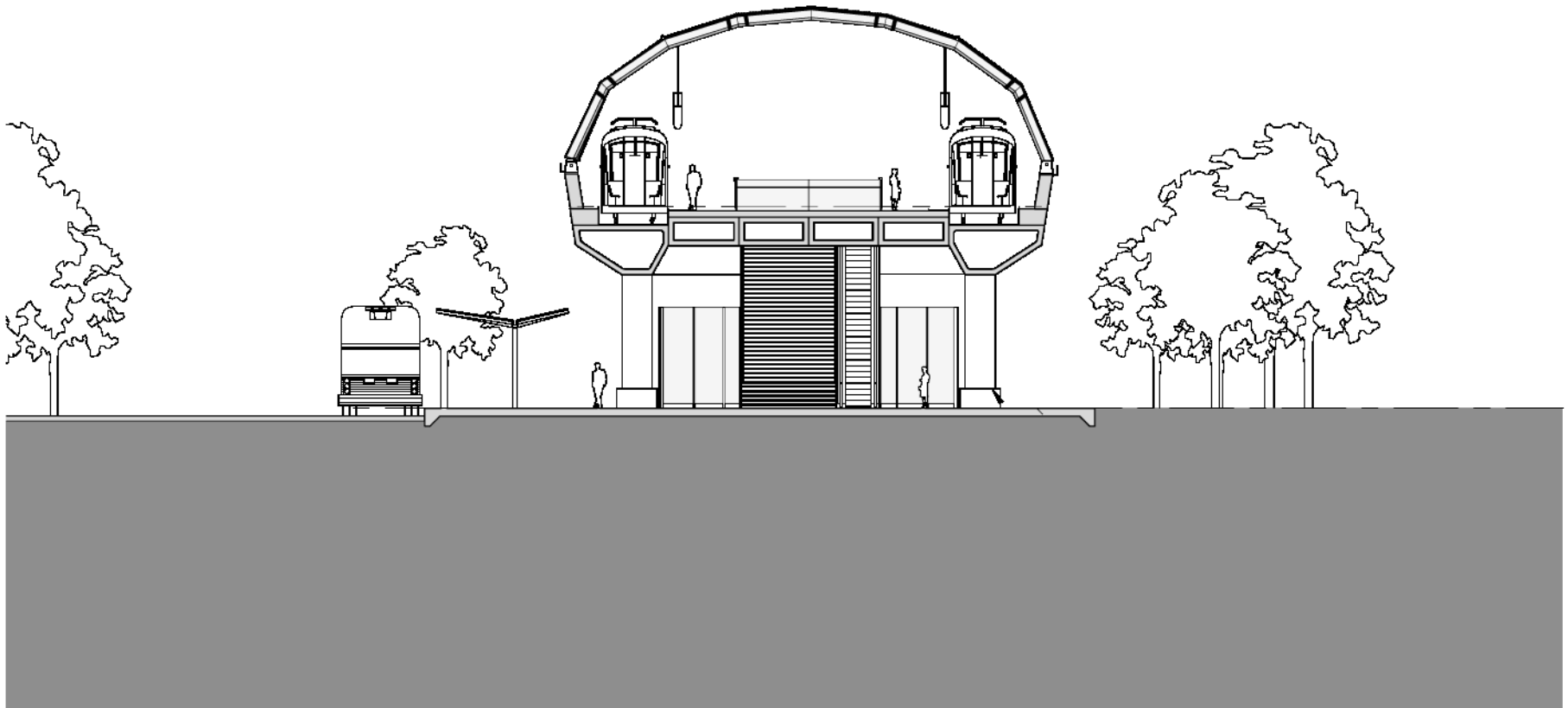


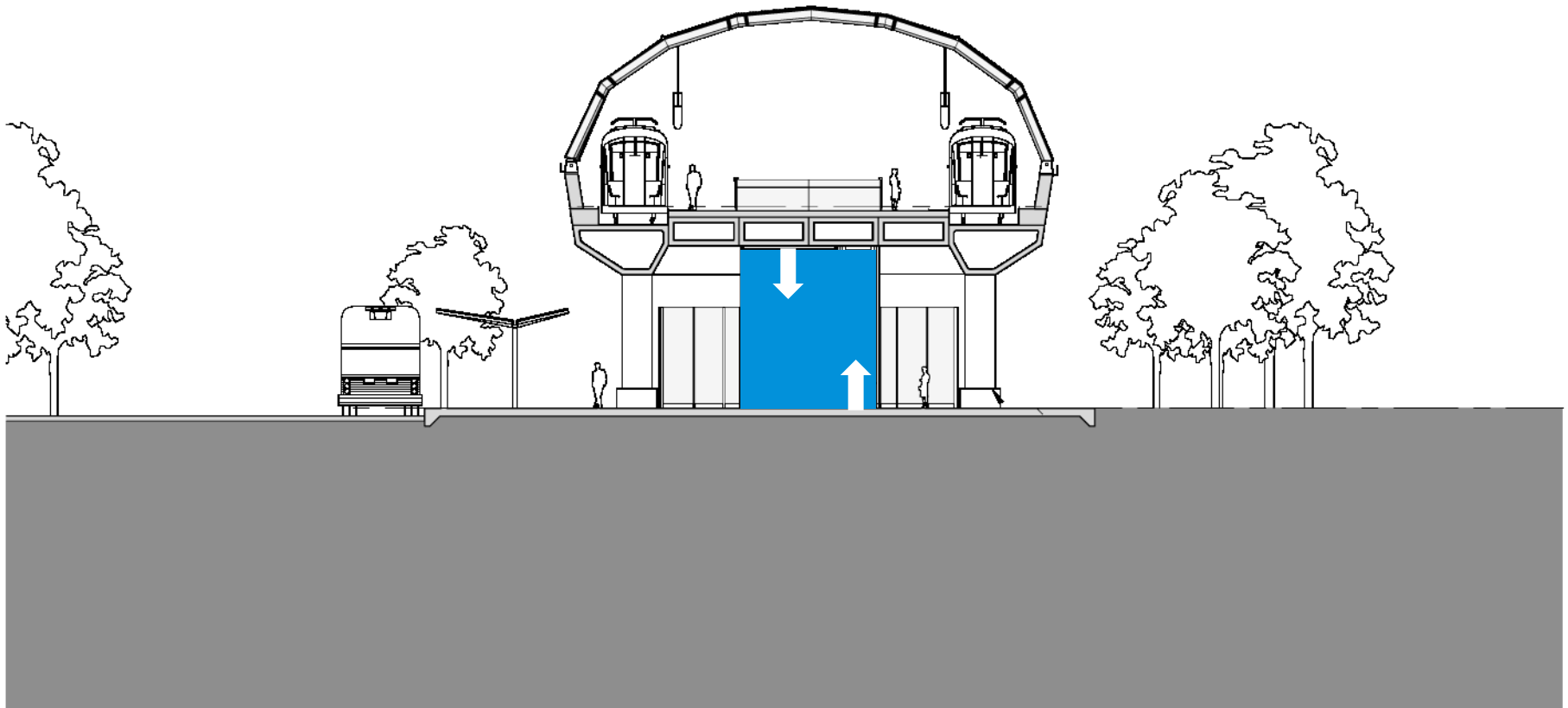


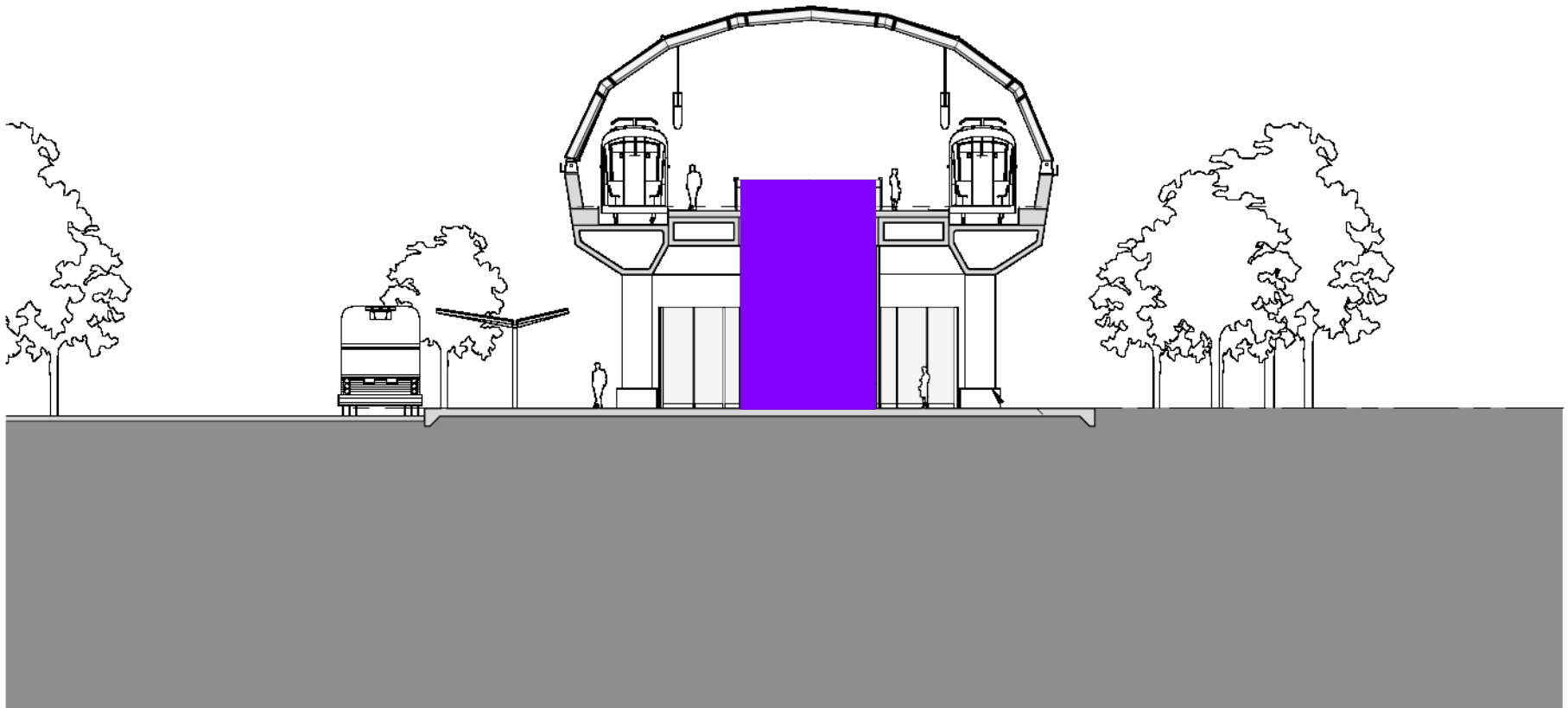


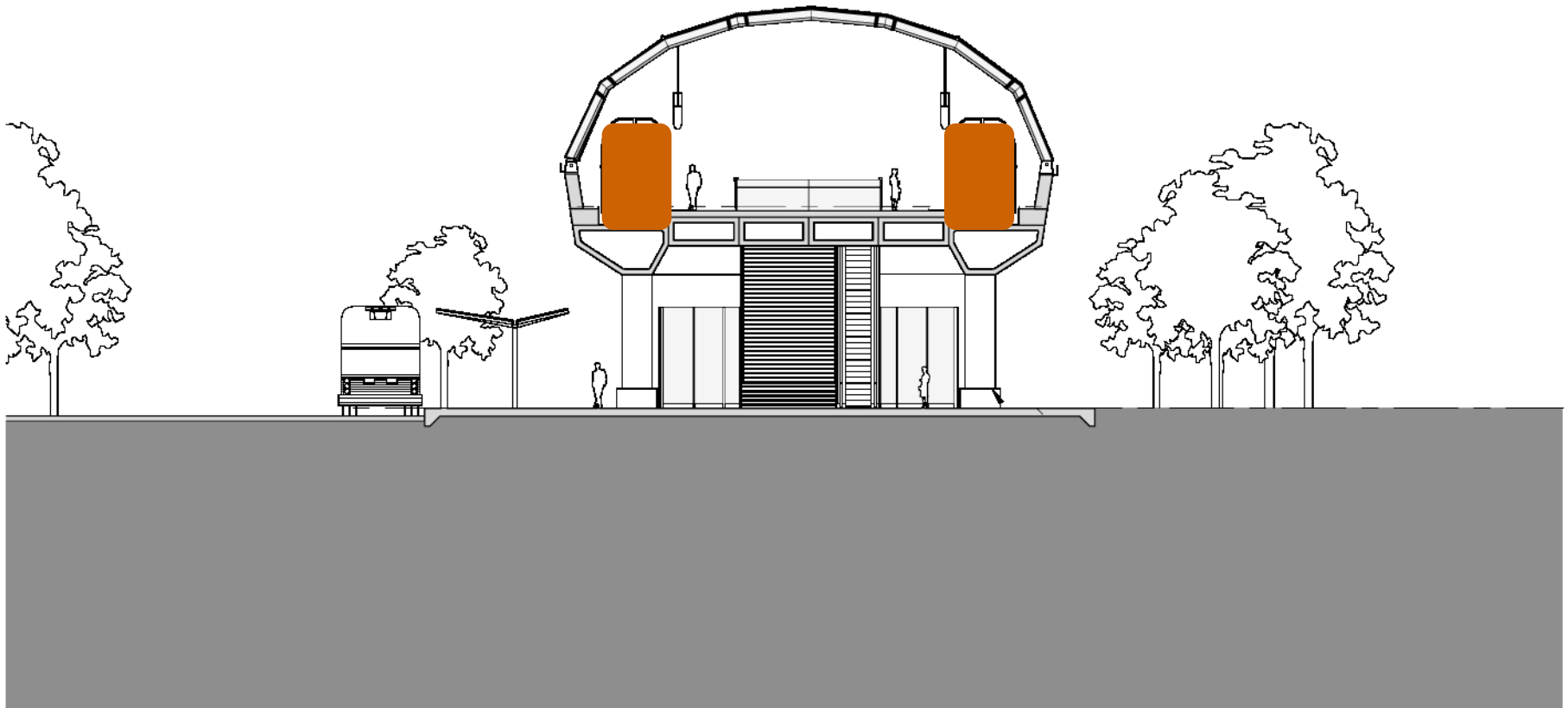








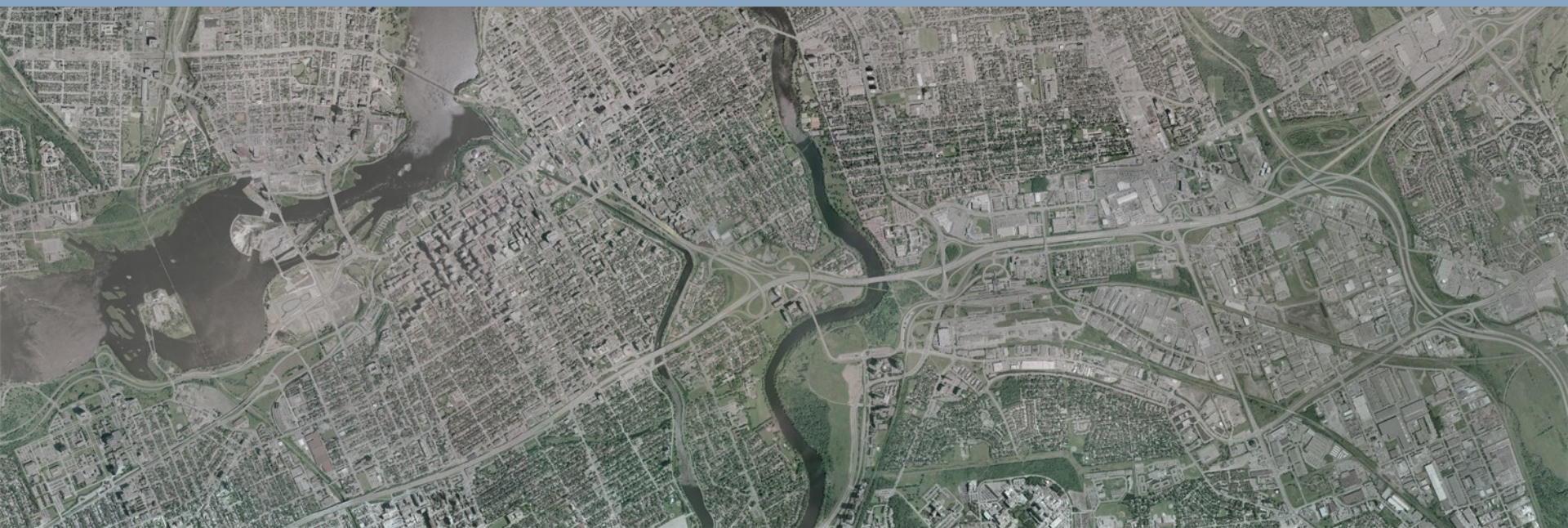


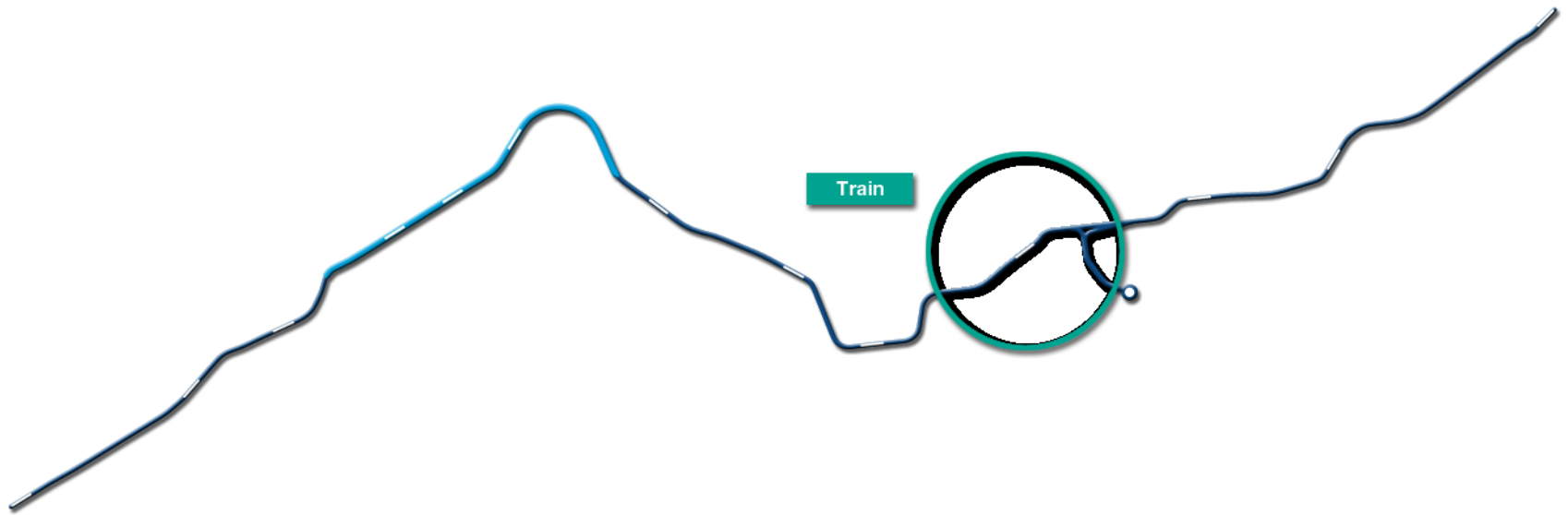


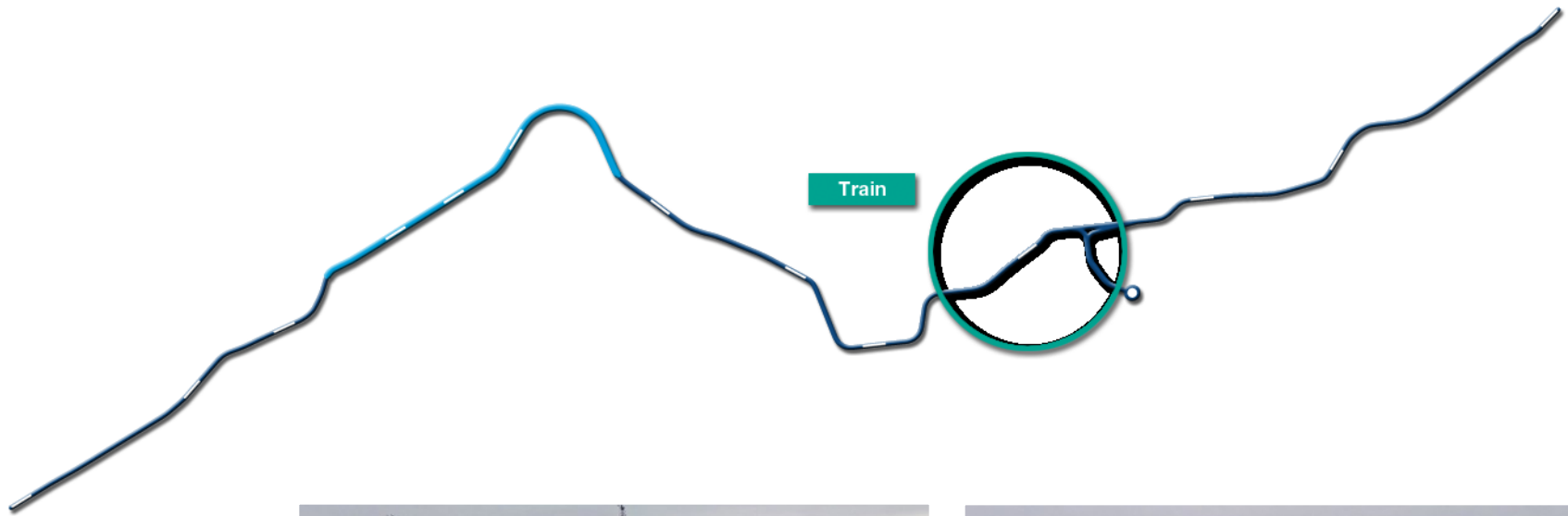




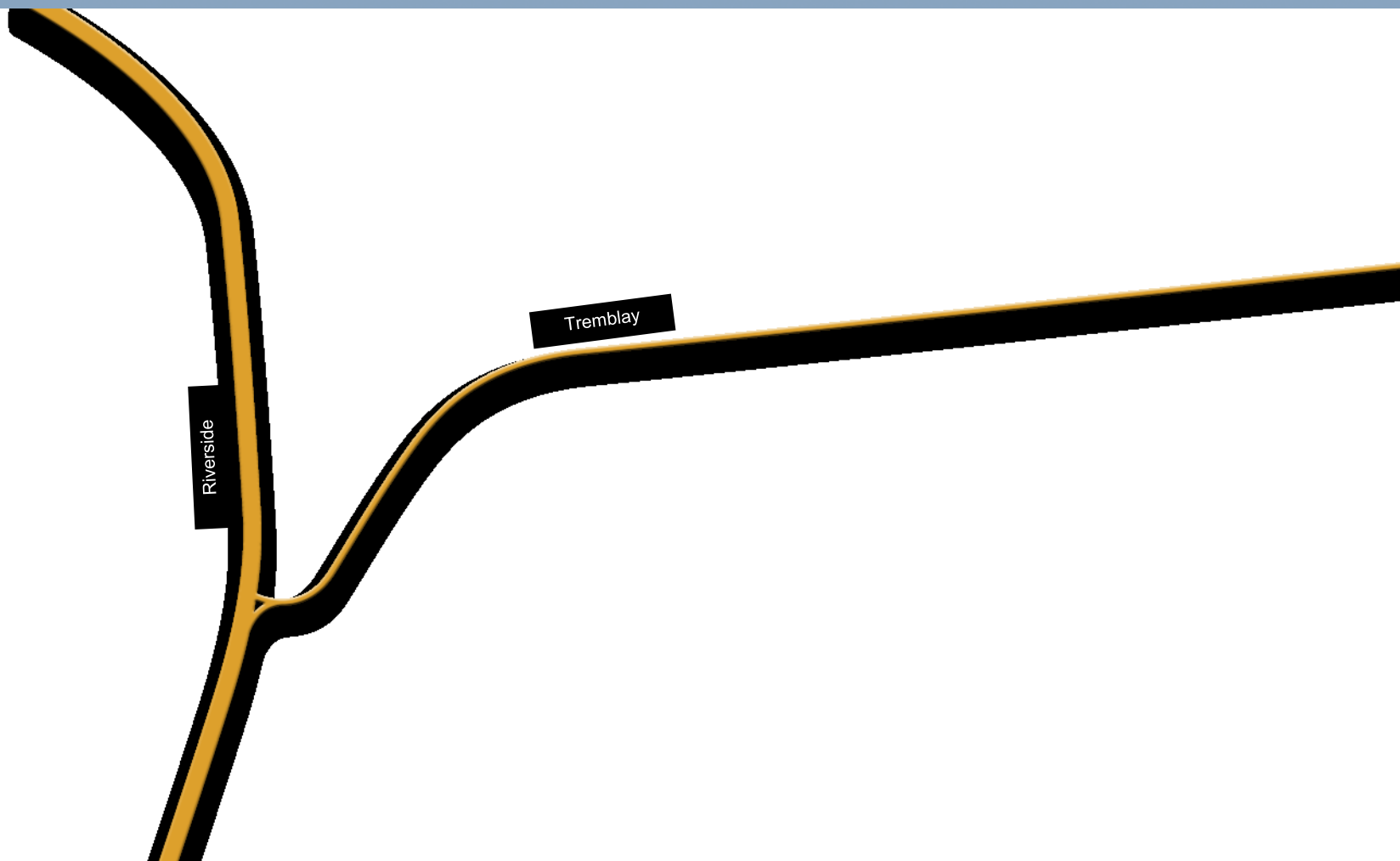














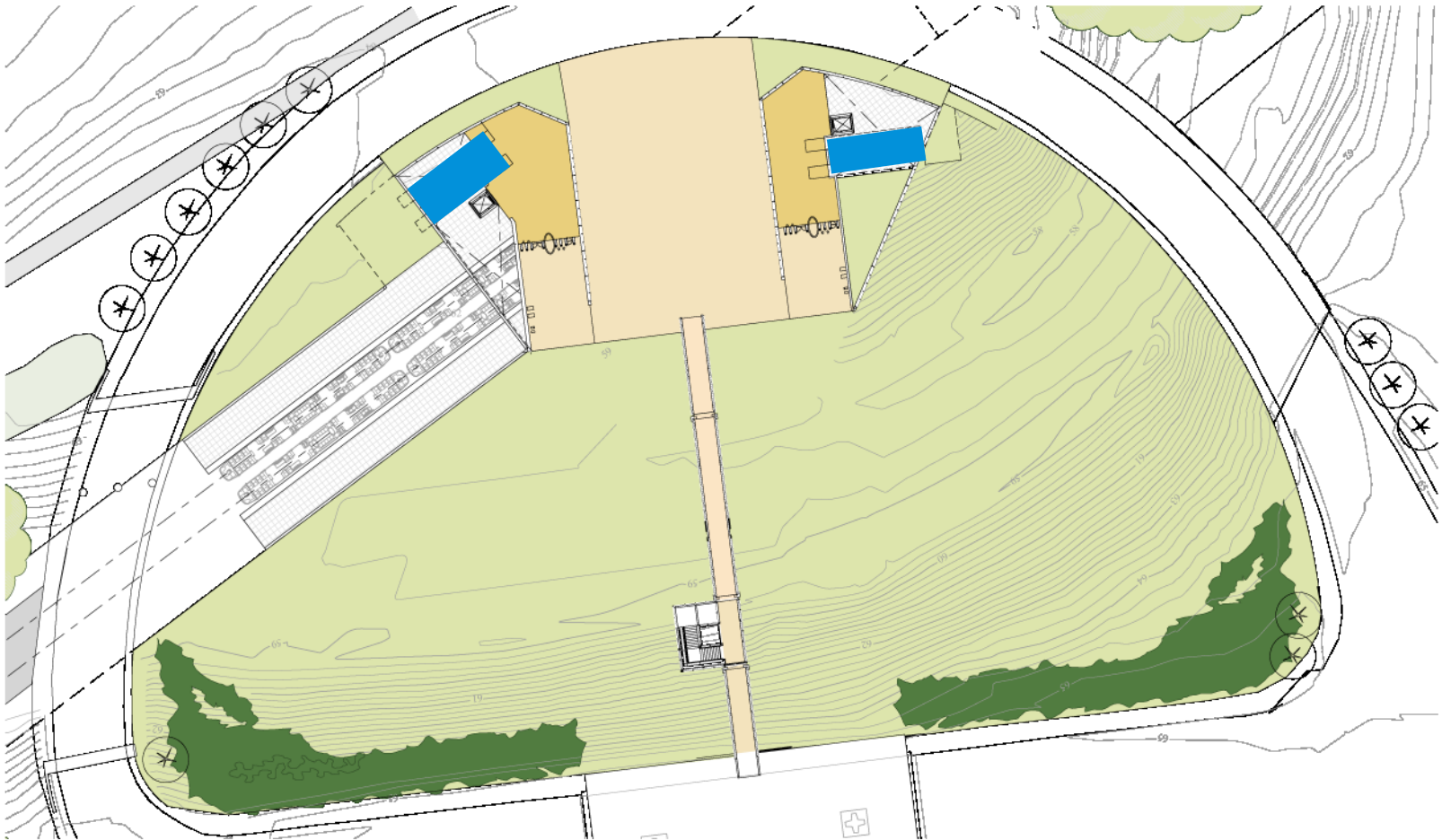
Ottawa Baseball Stadium

Future pedestrian
overpass

VIA Rail Station

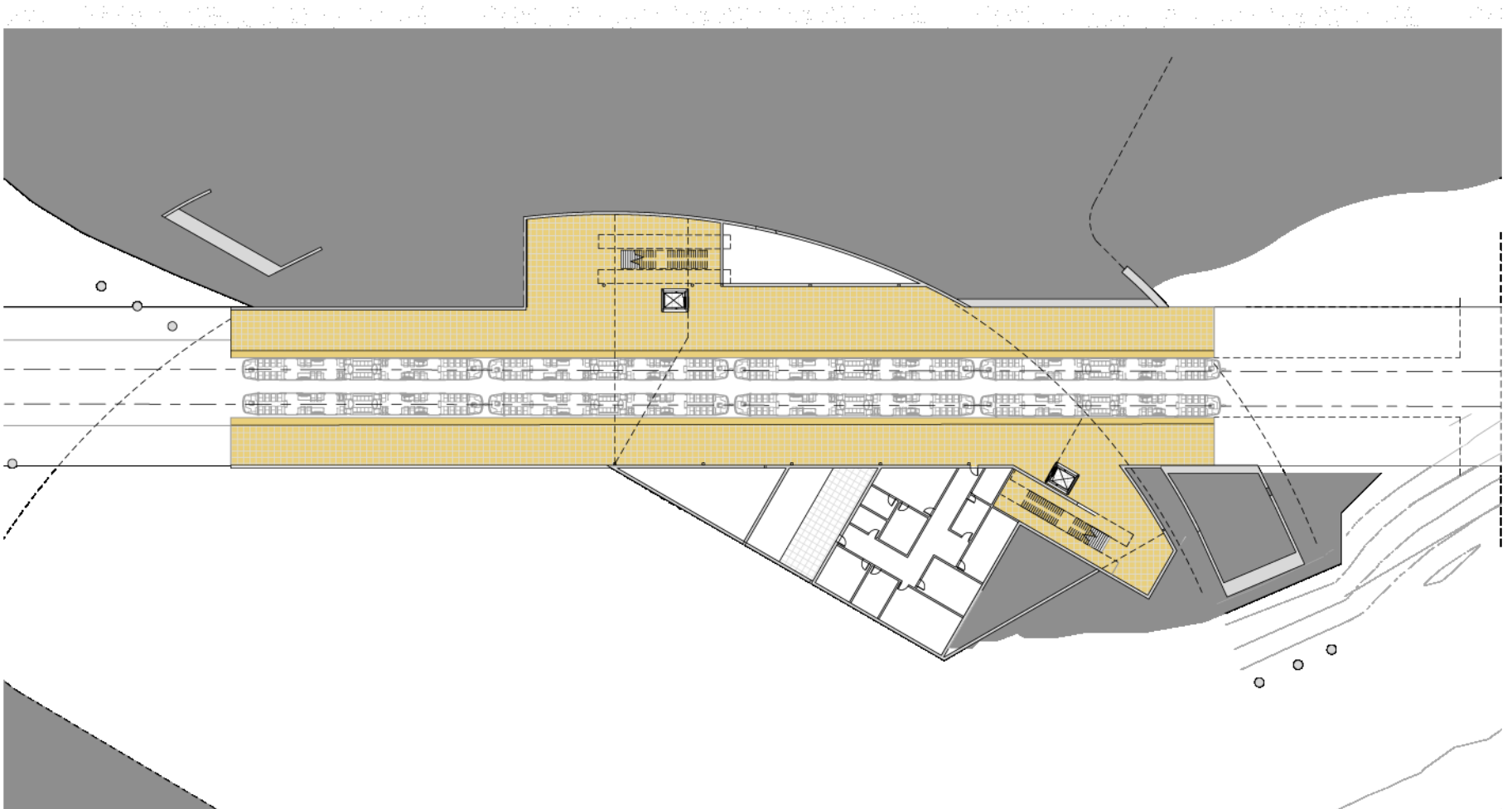


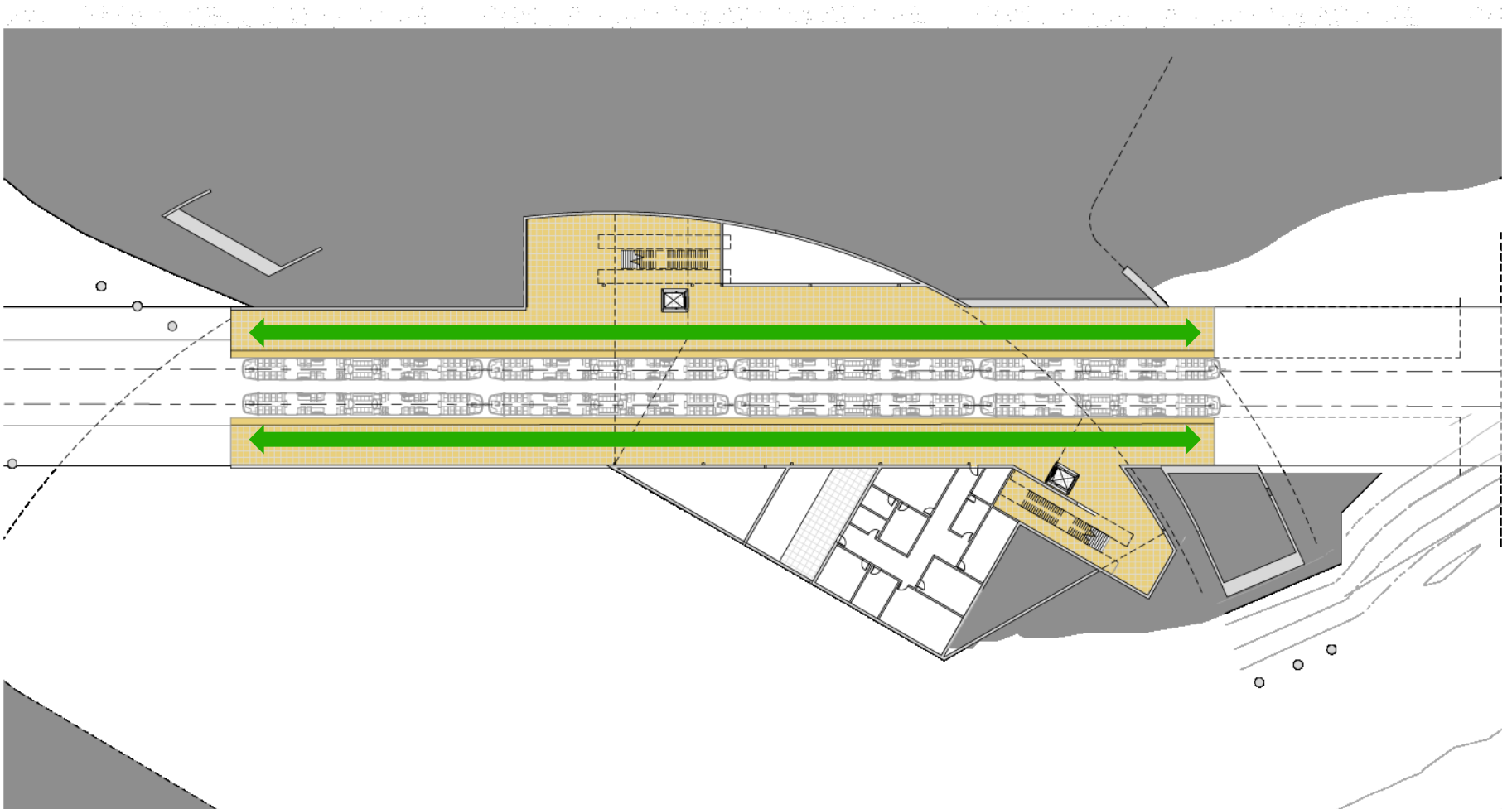


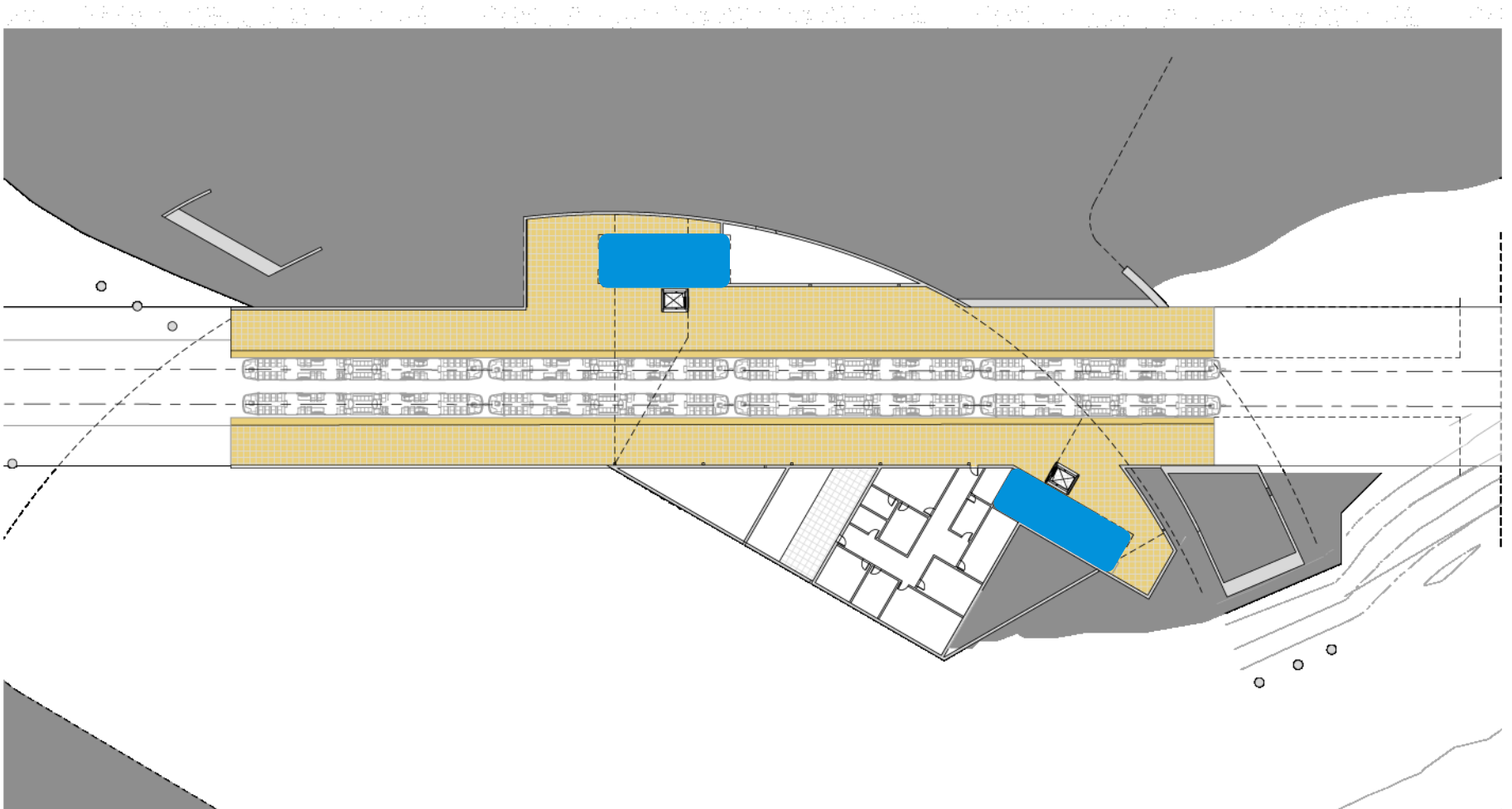


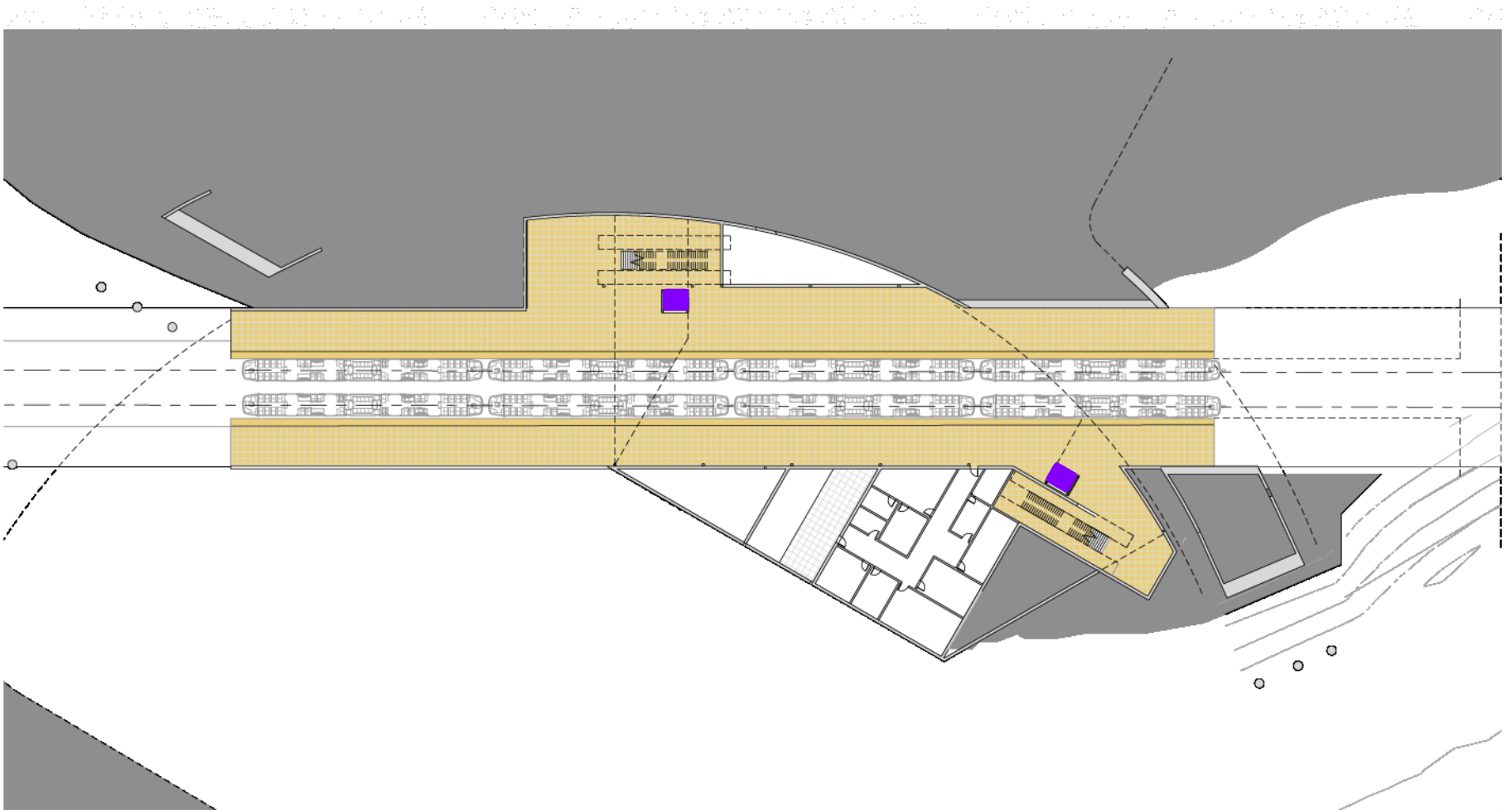
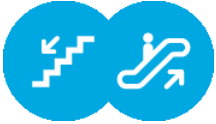


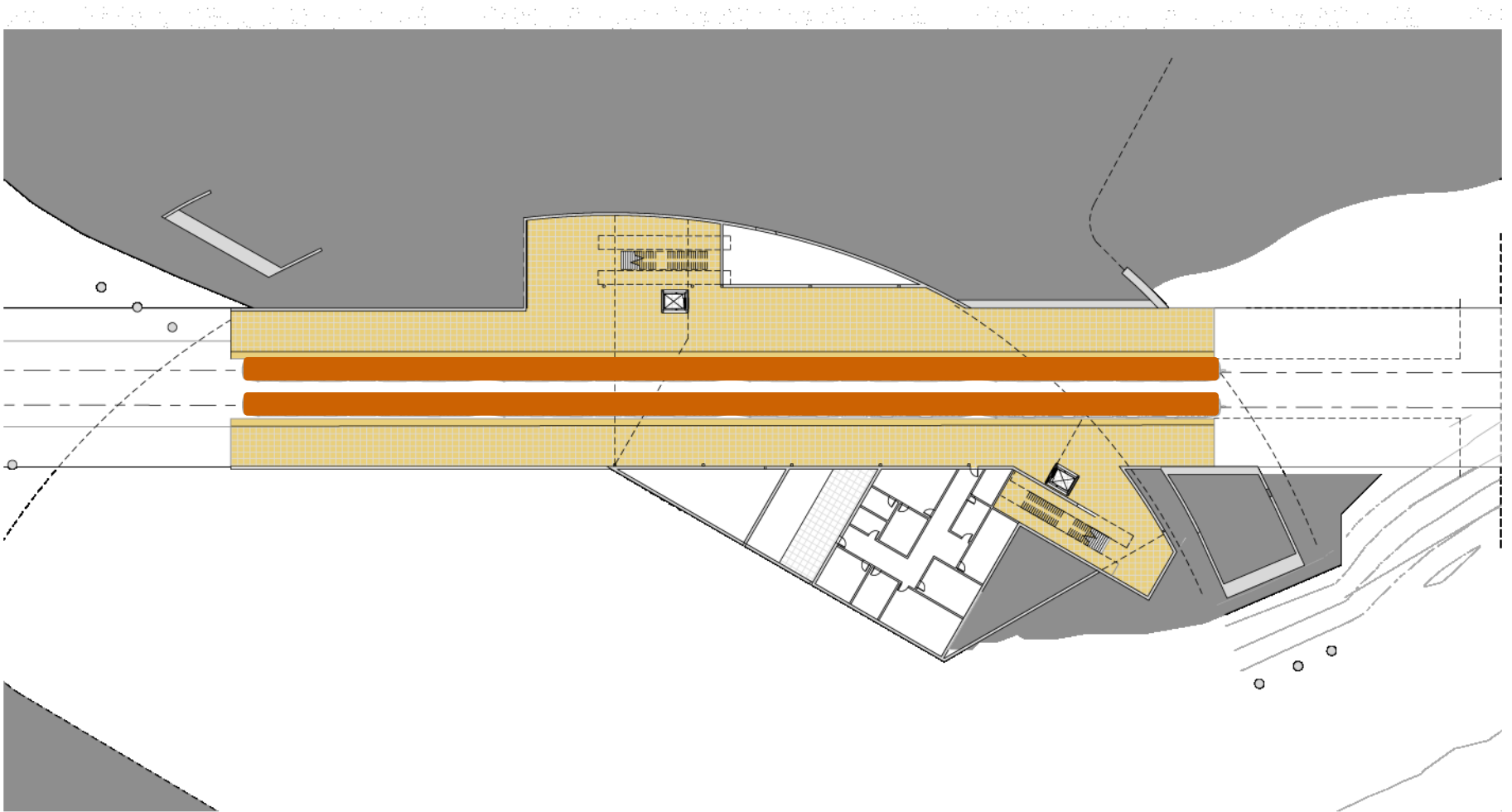


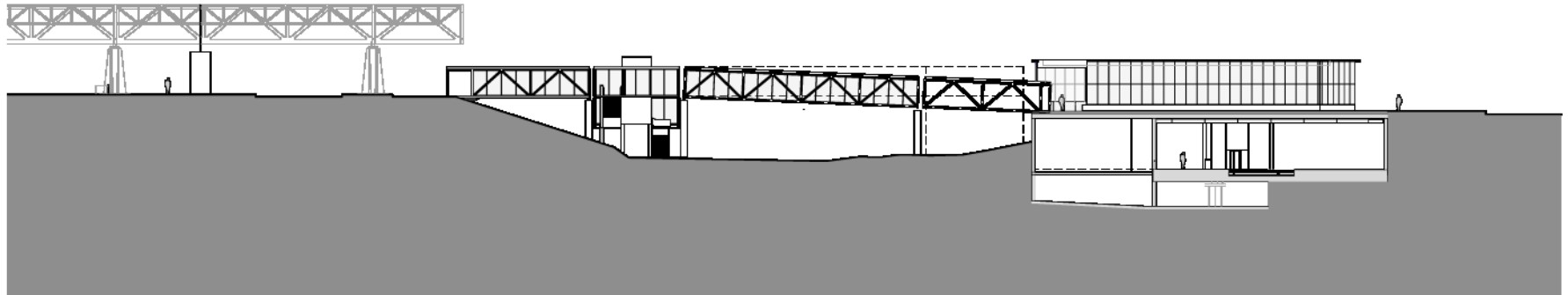


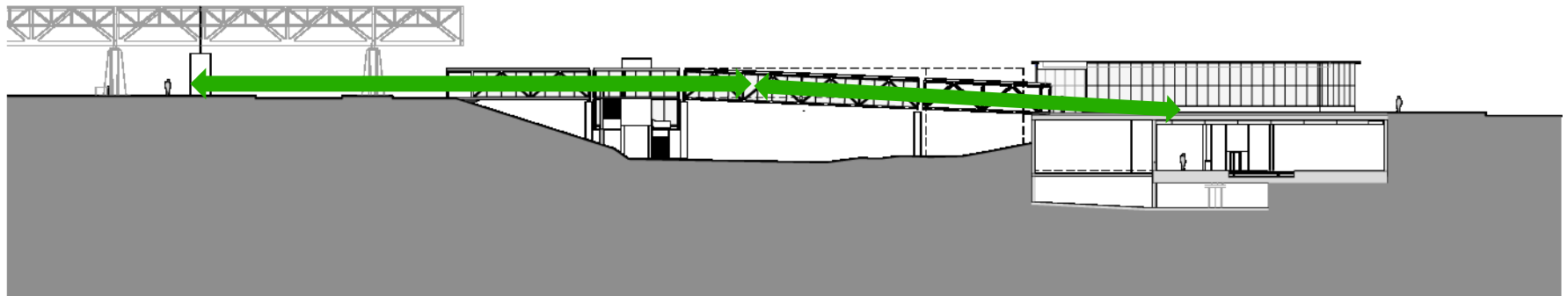


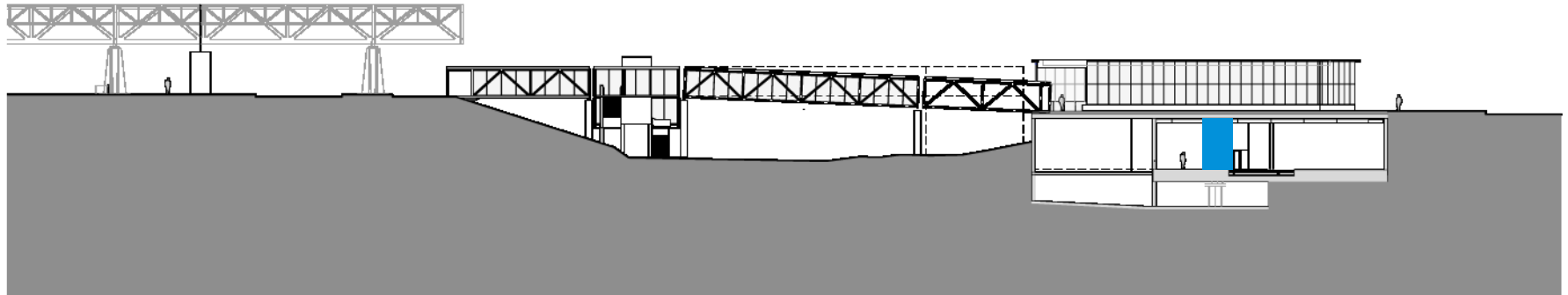
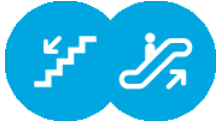


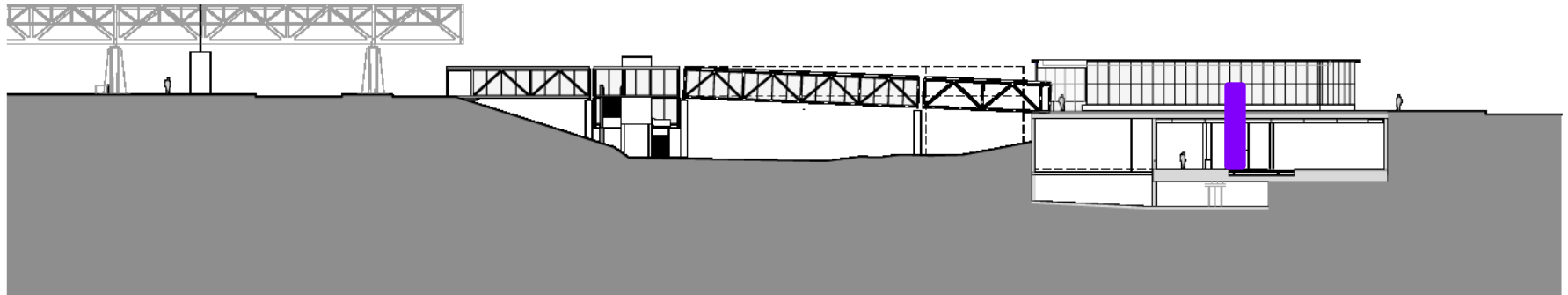


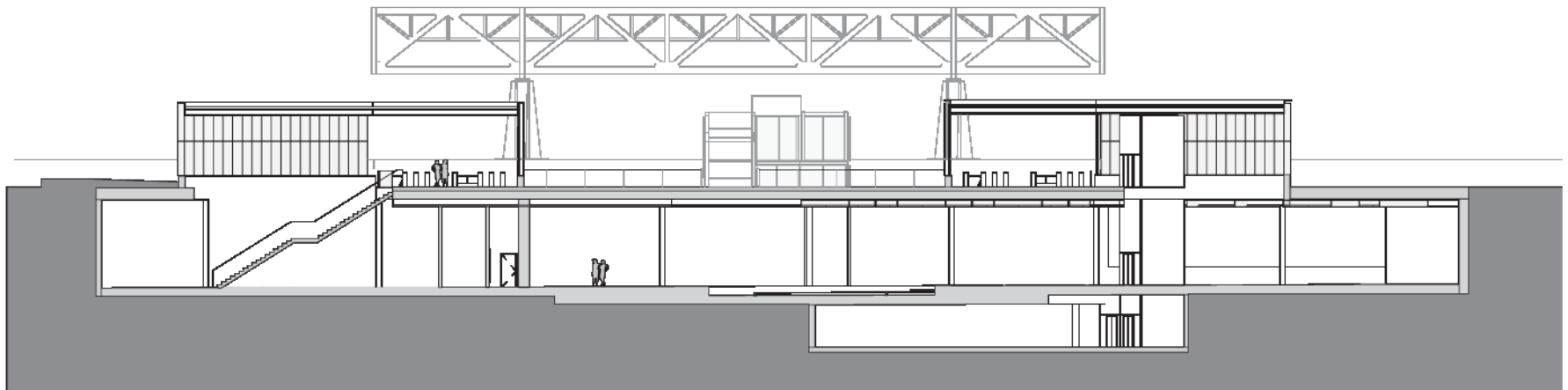


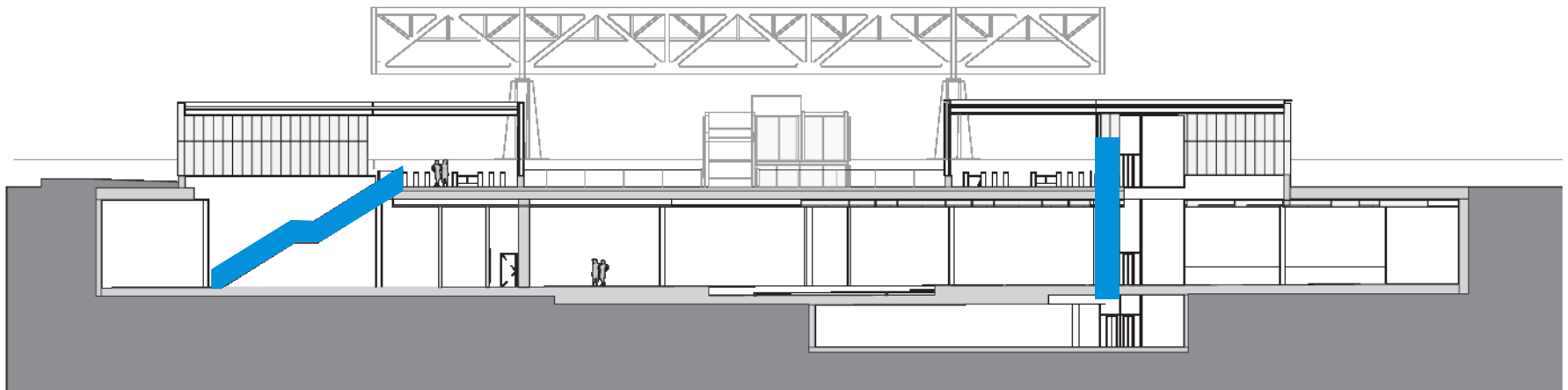


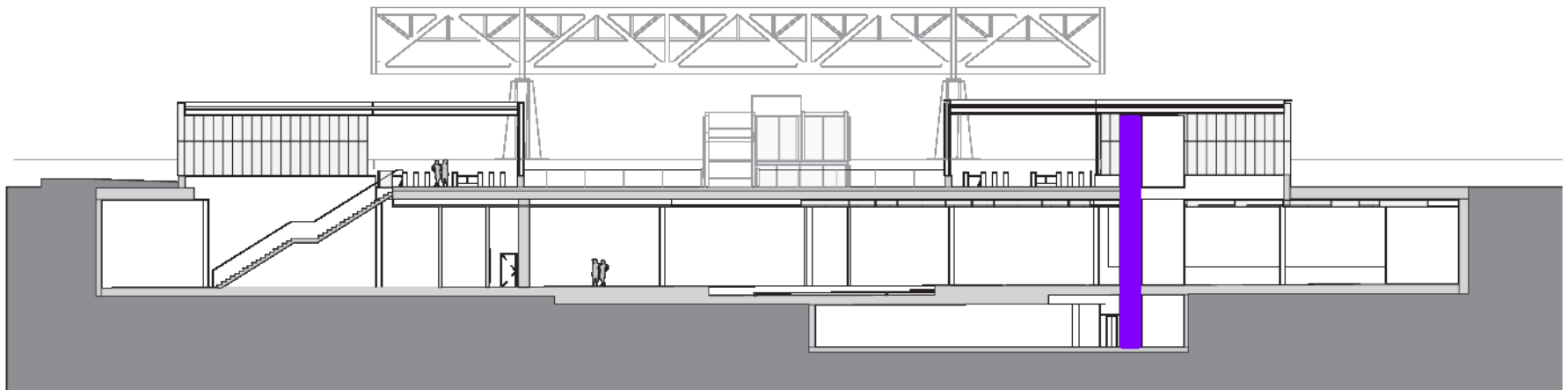


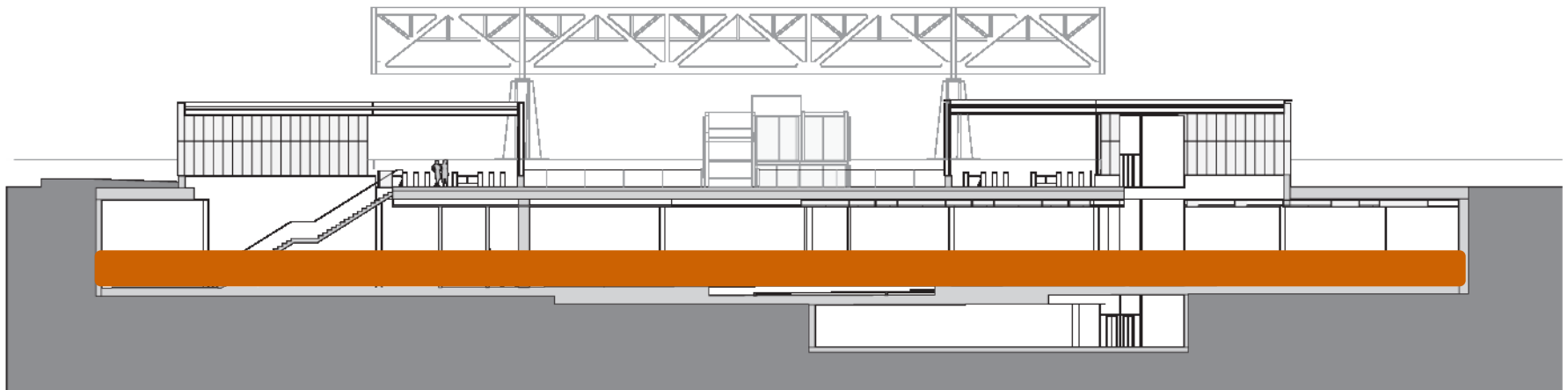












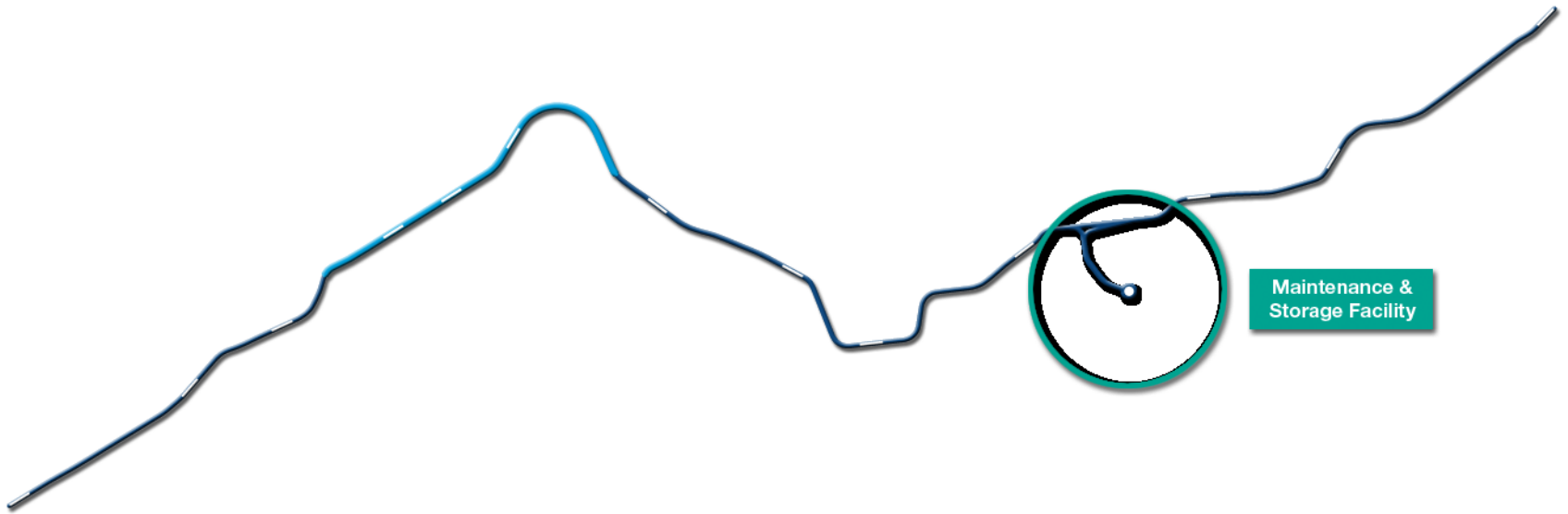




Maintenance & Storage Facility

Context



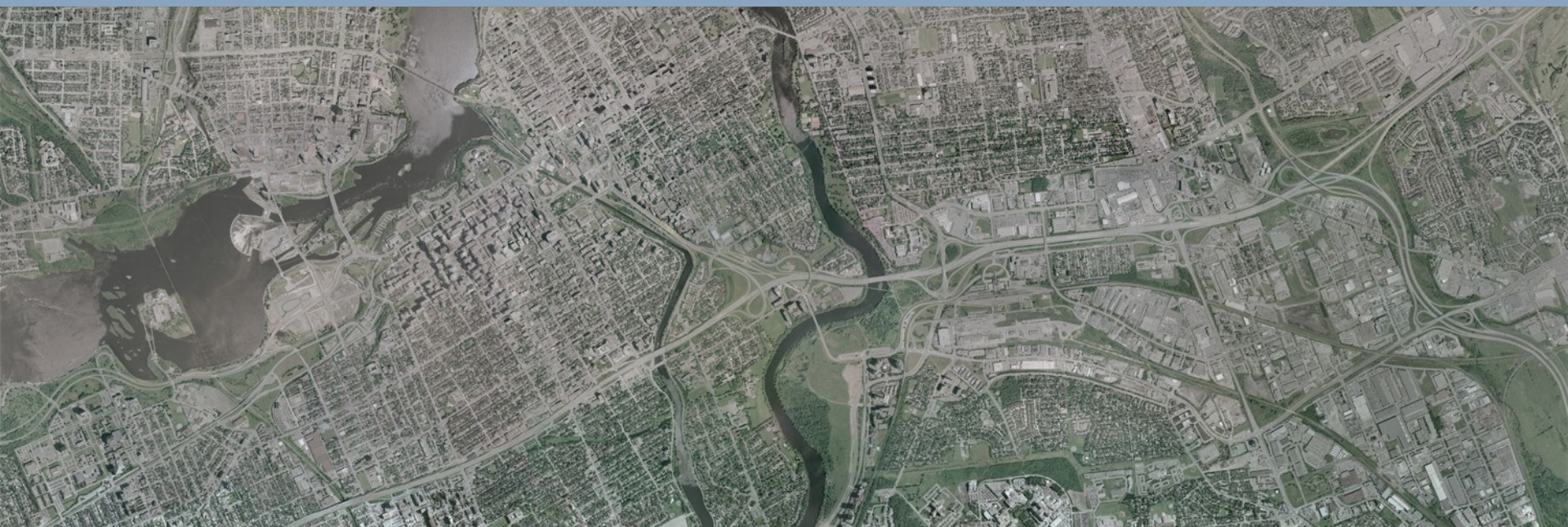


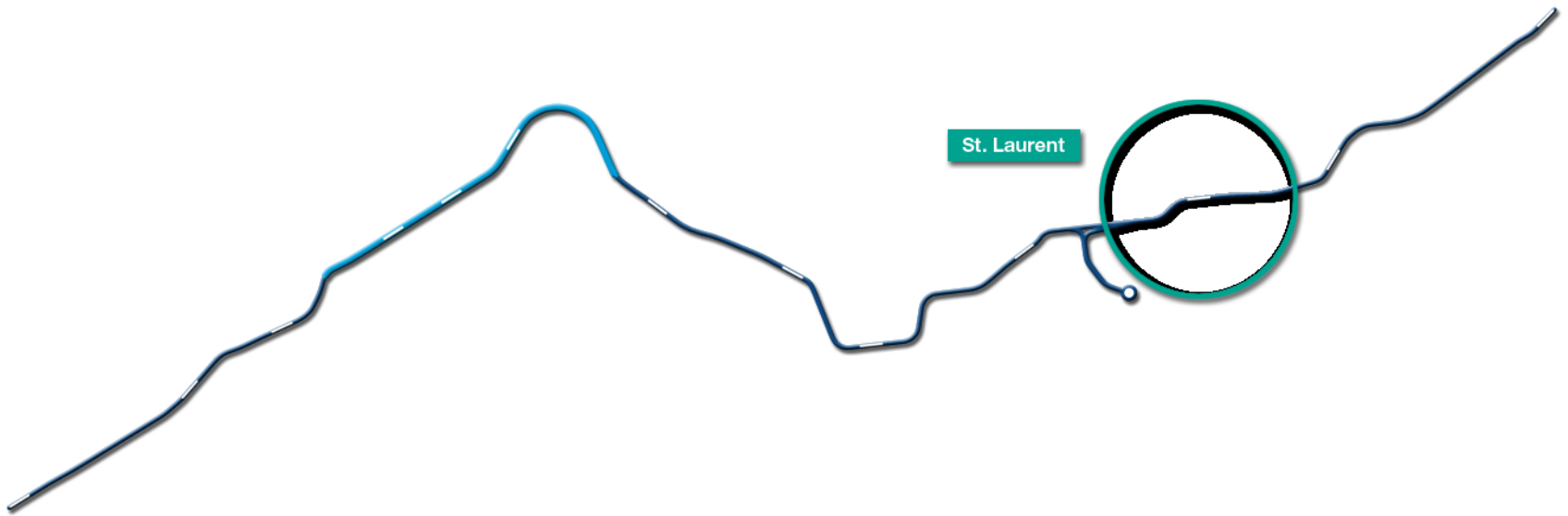


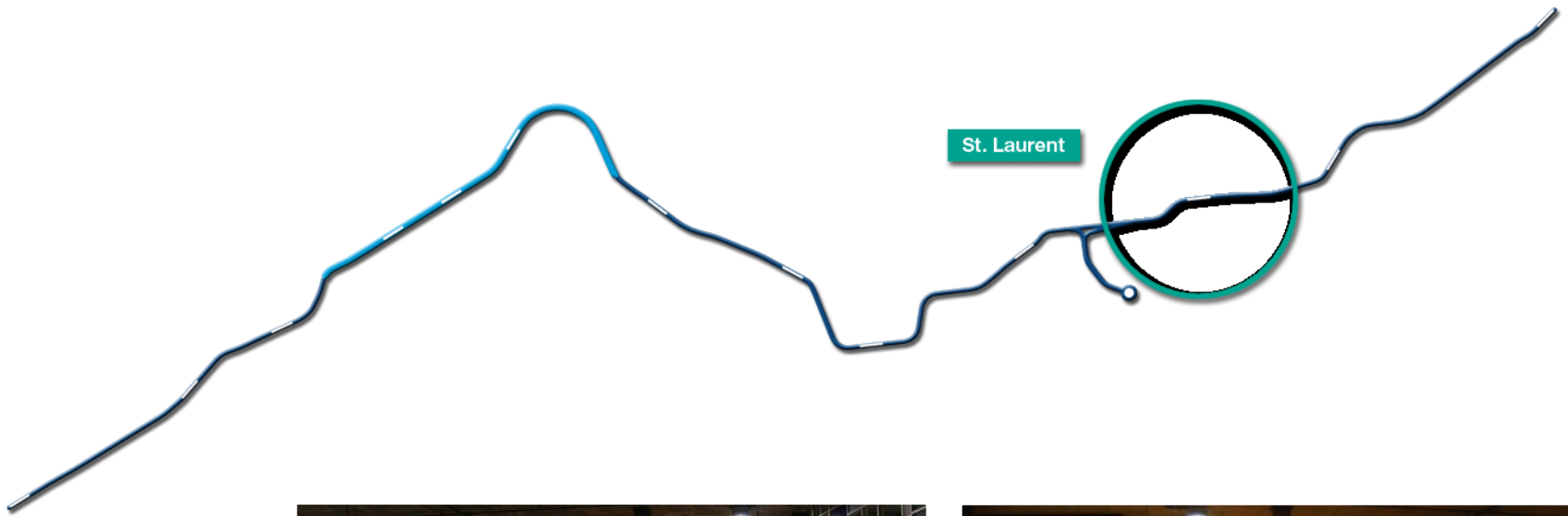
Maintenance & Storage Facility

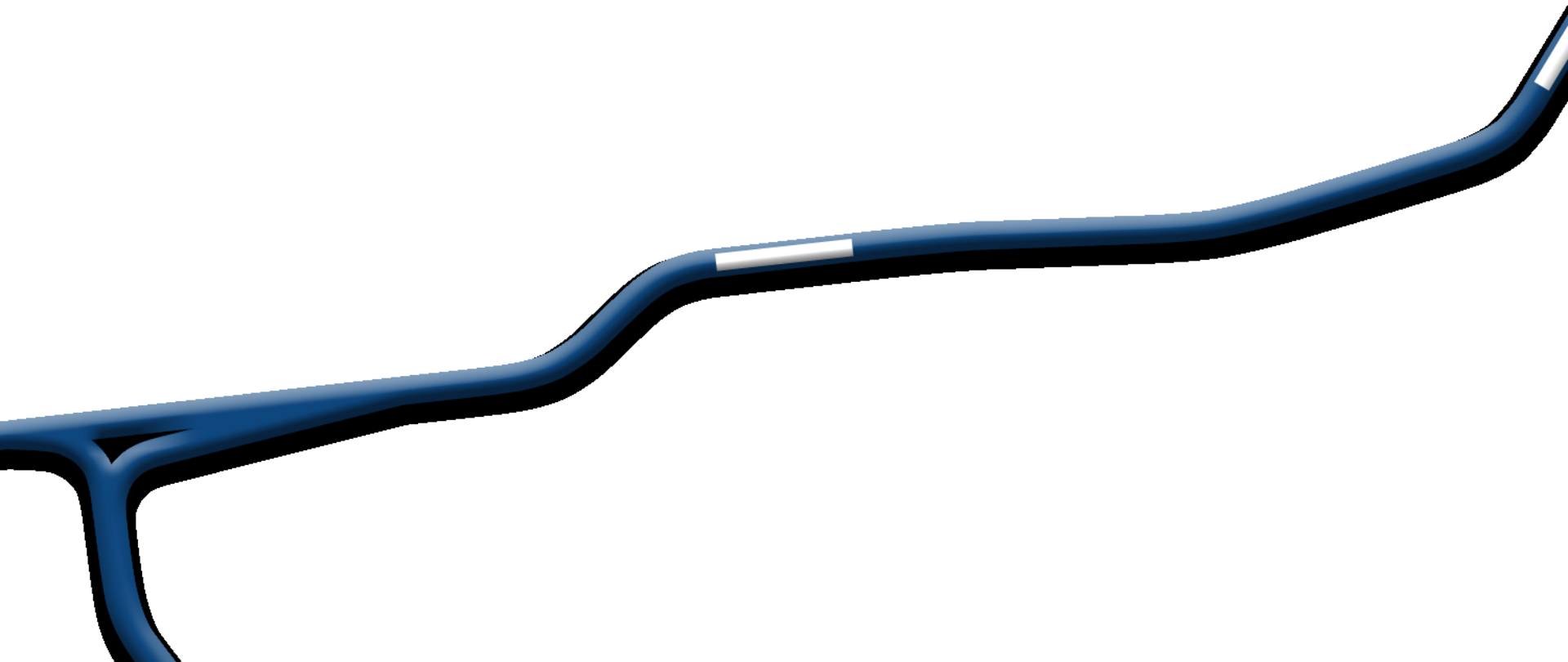
Artist Concept



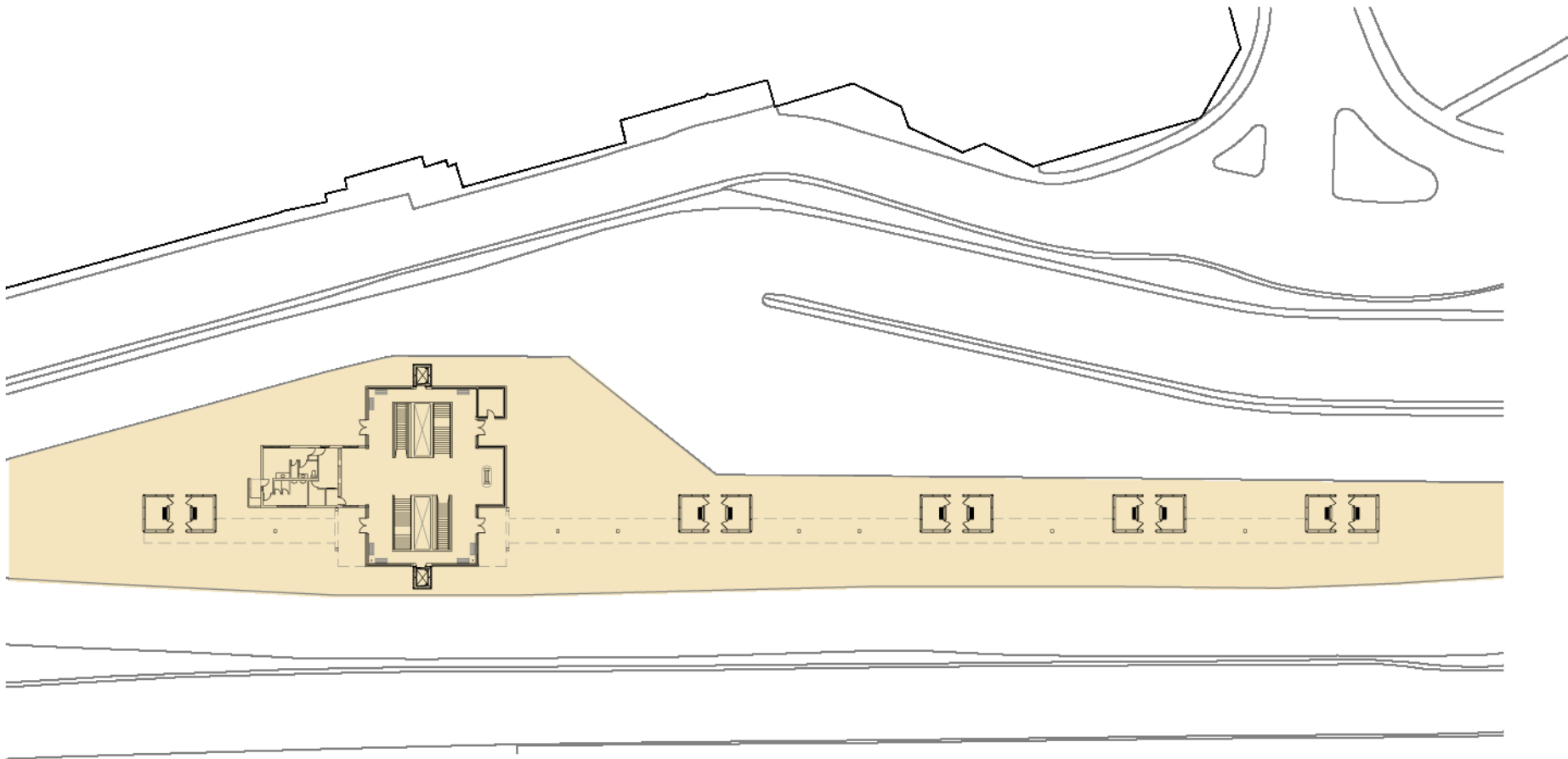
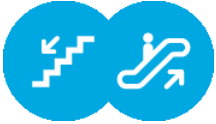


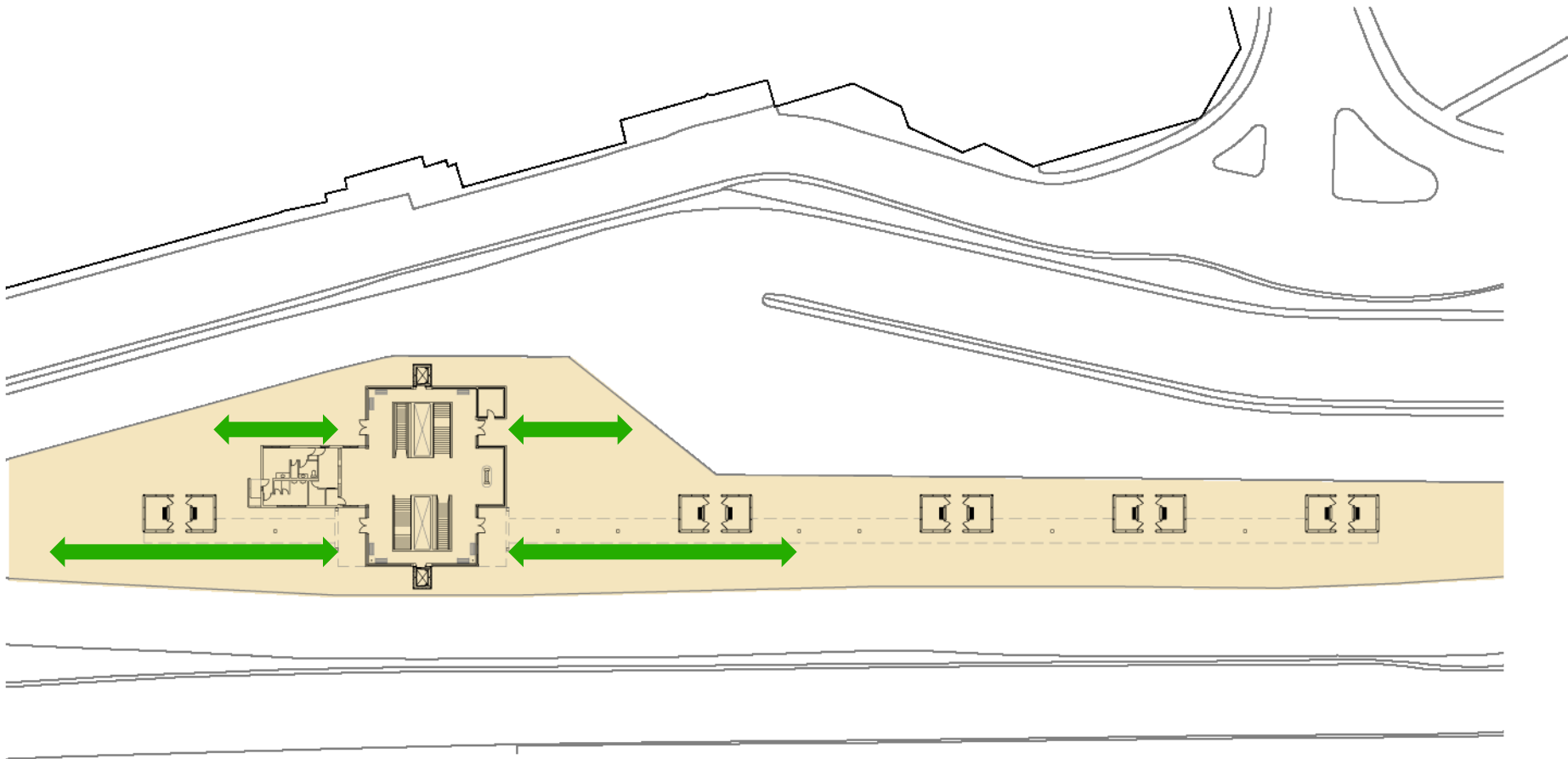


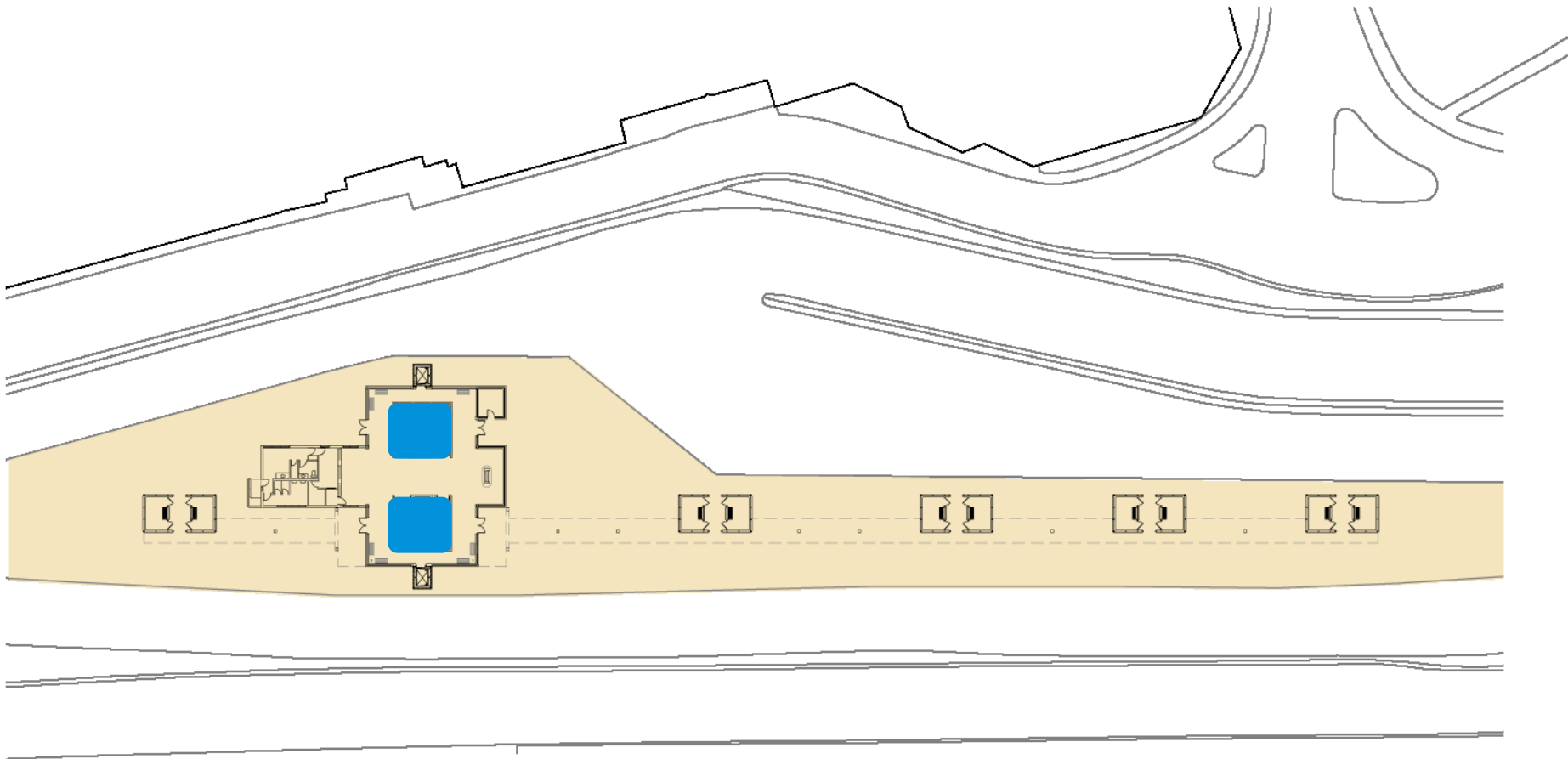


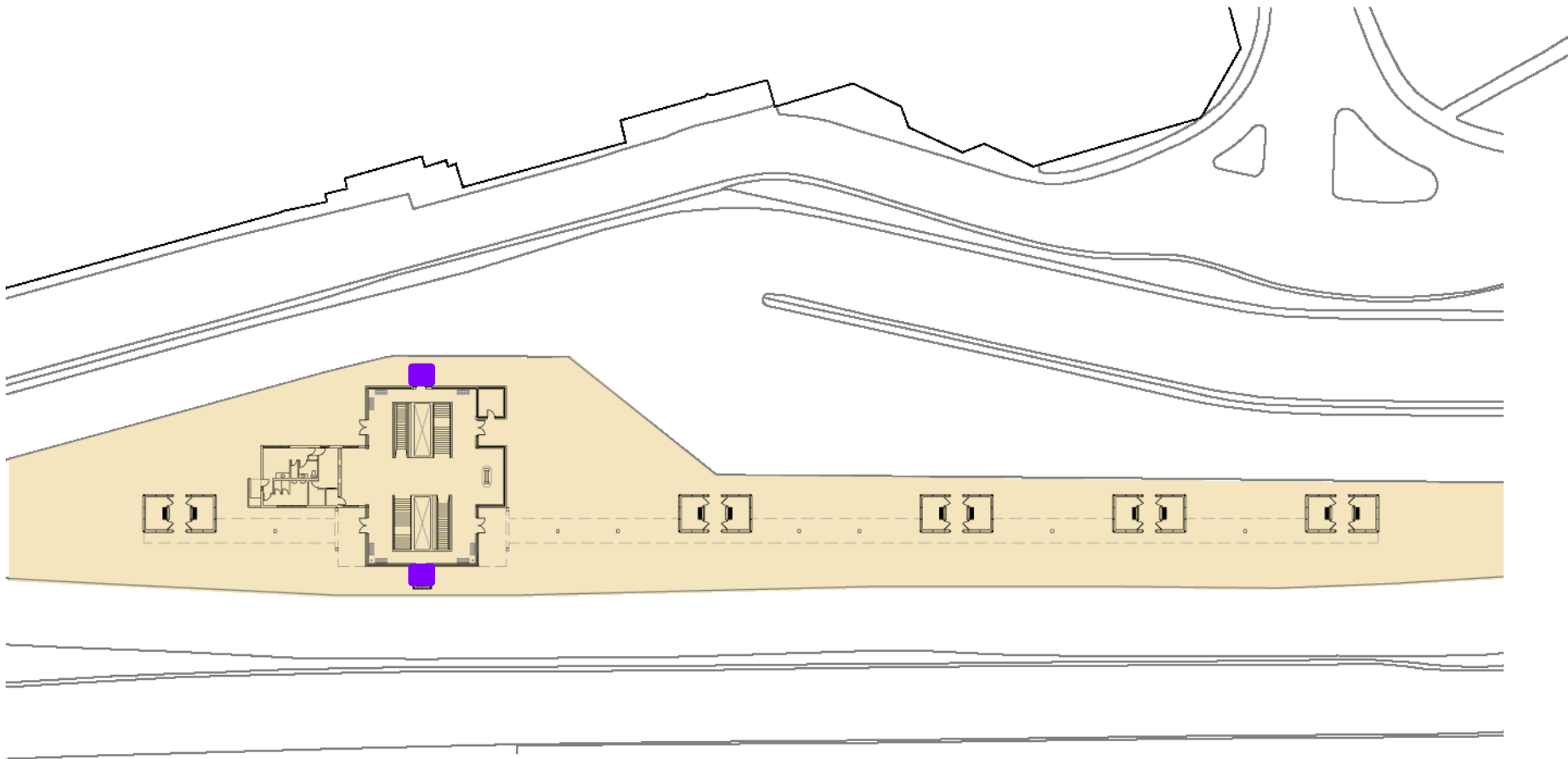


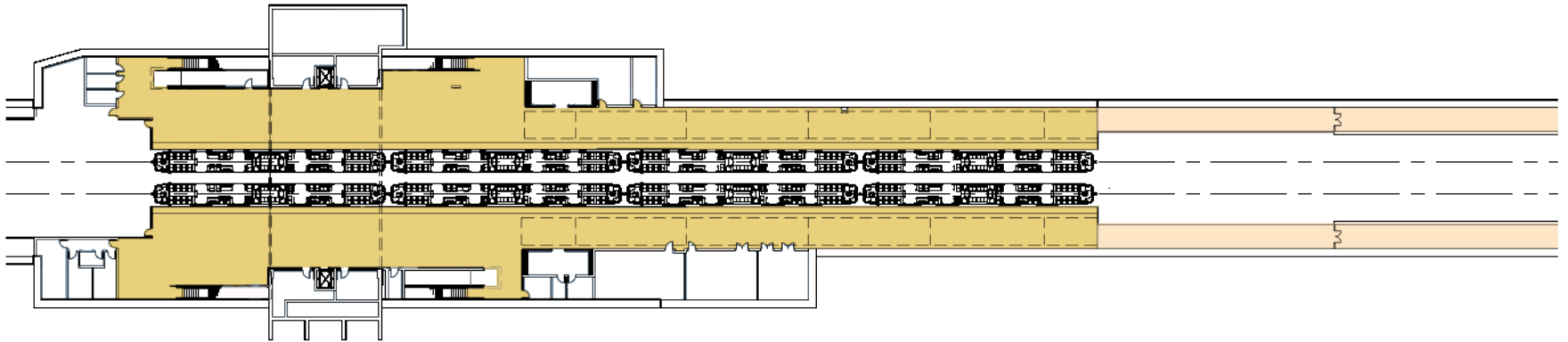


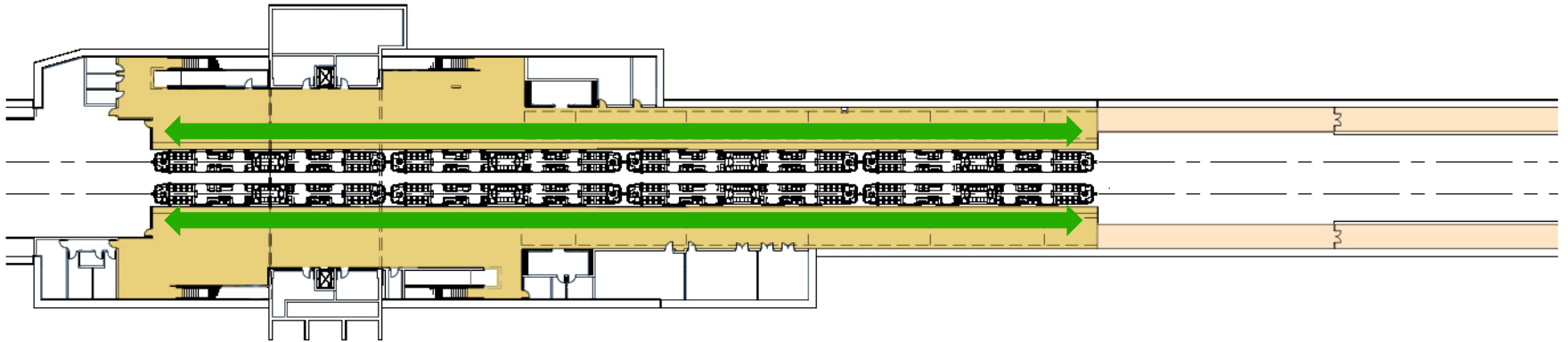


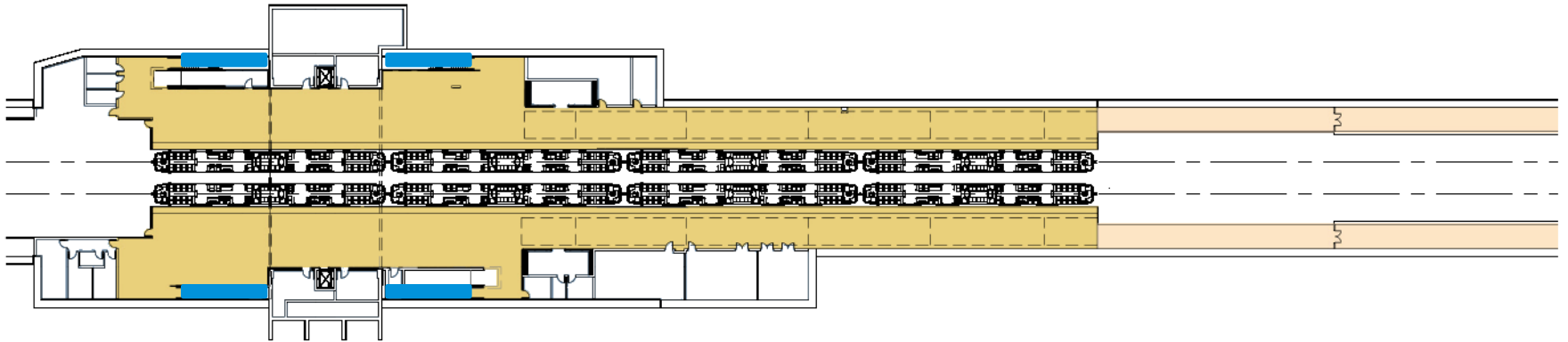


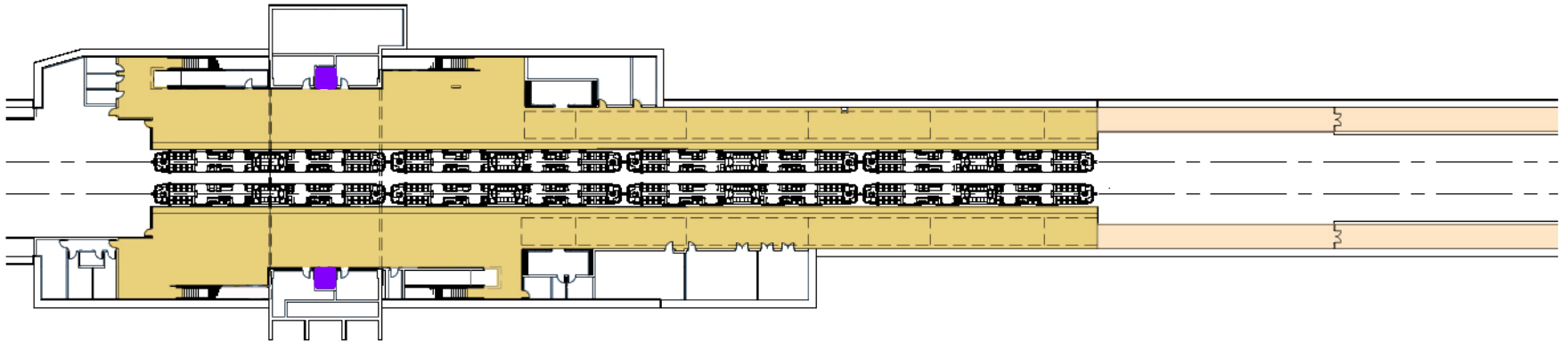


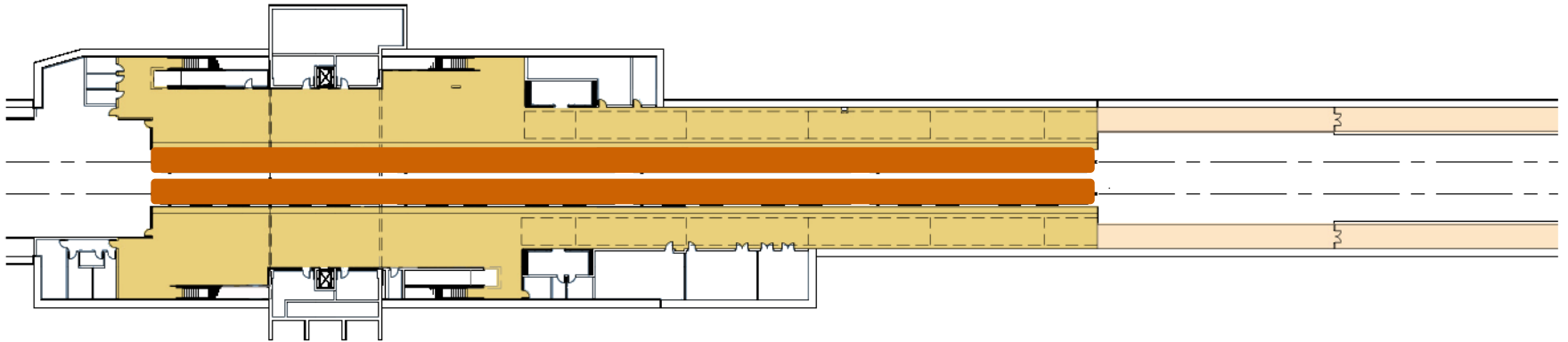


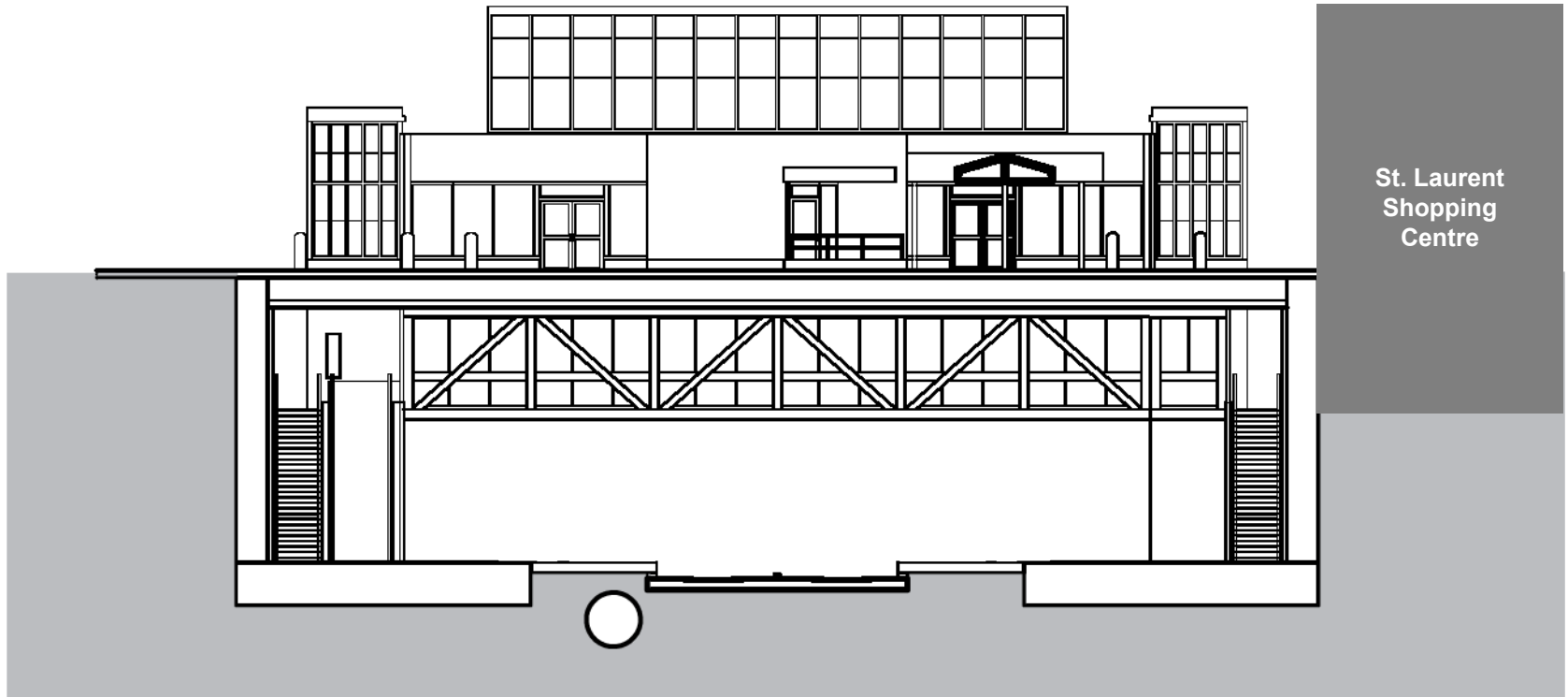


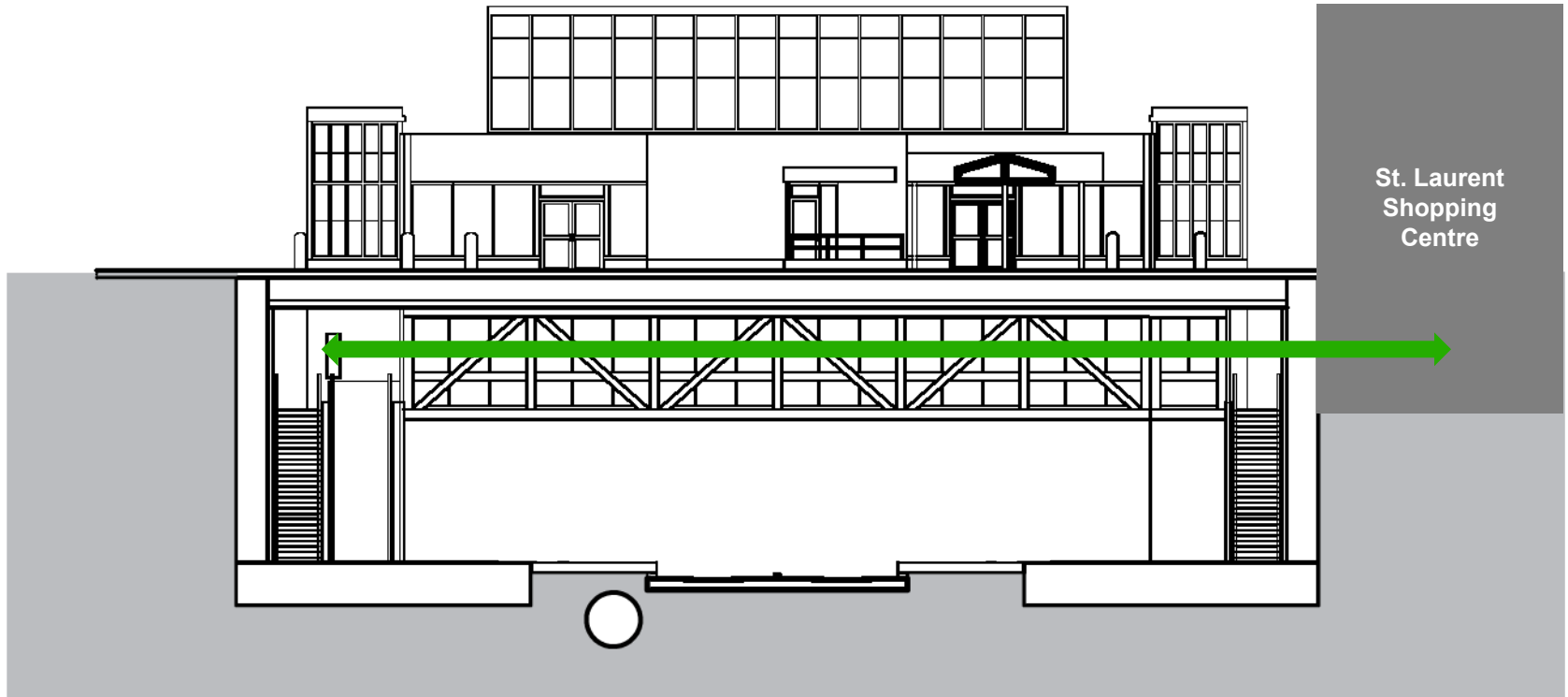


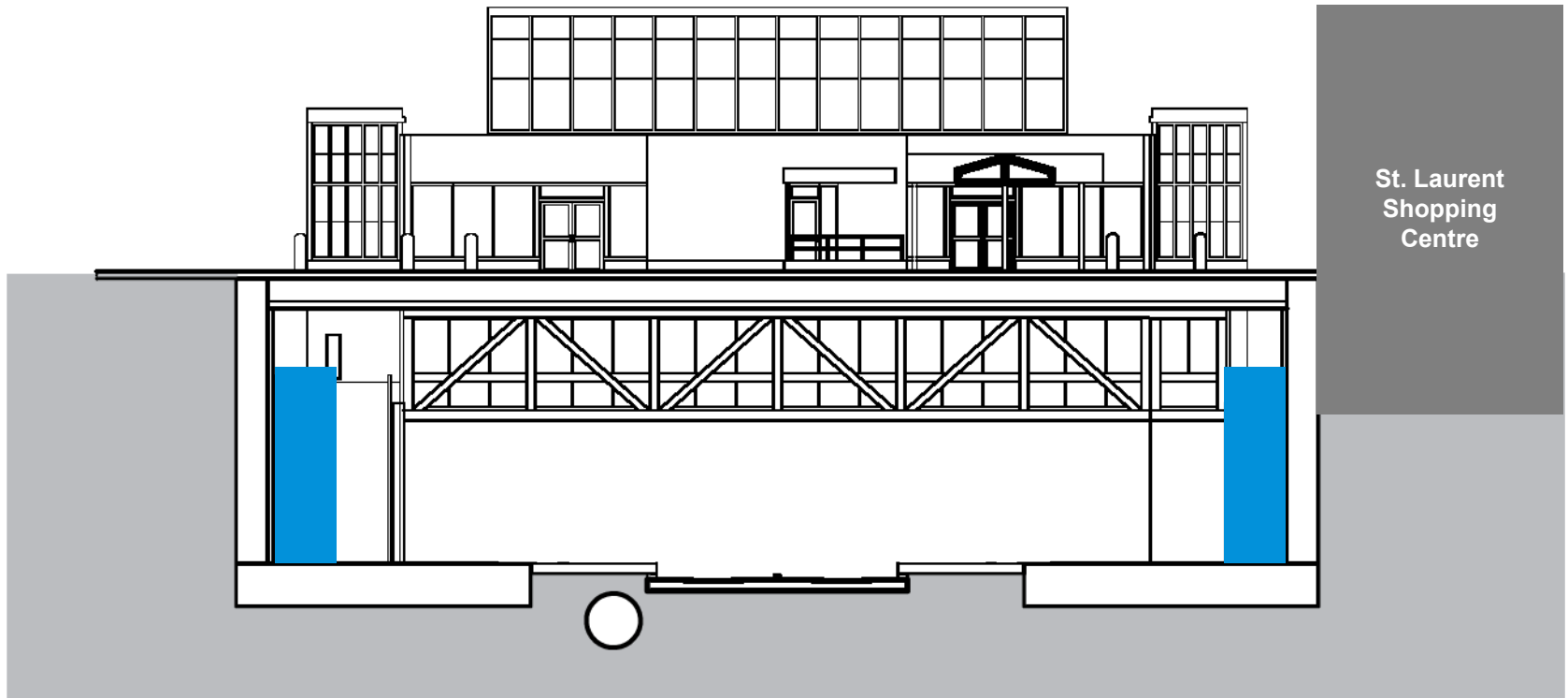


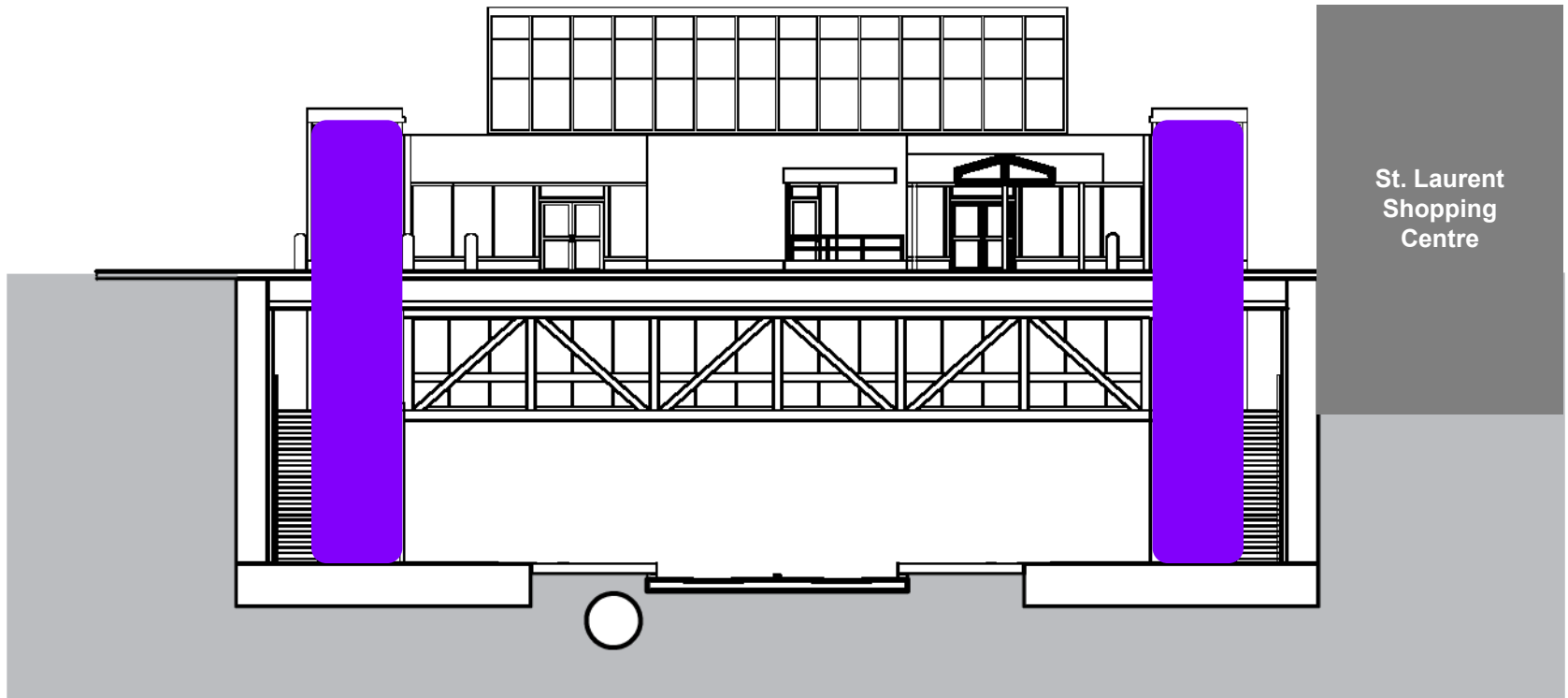


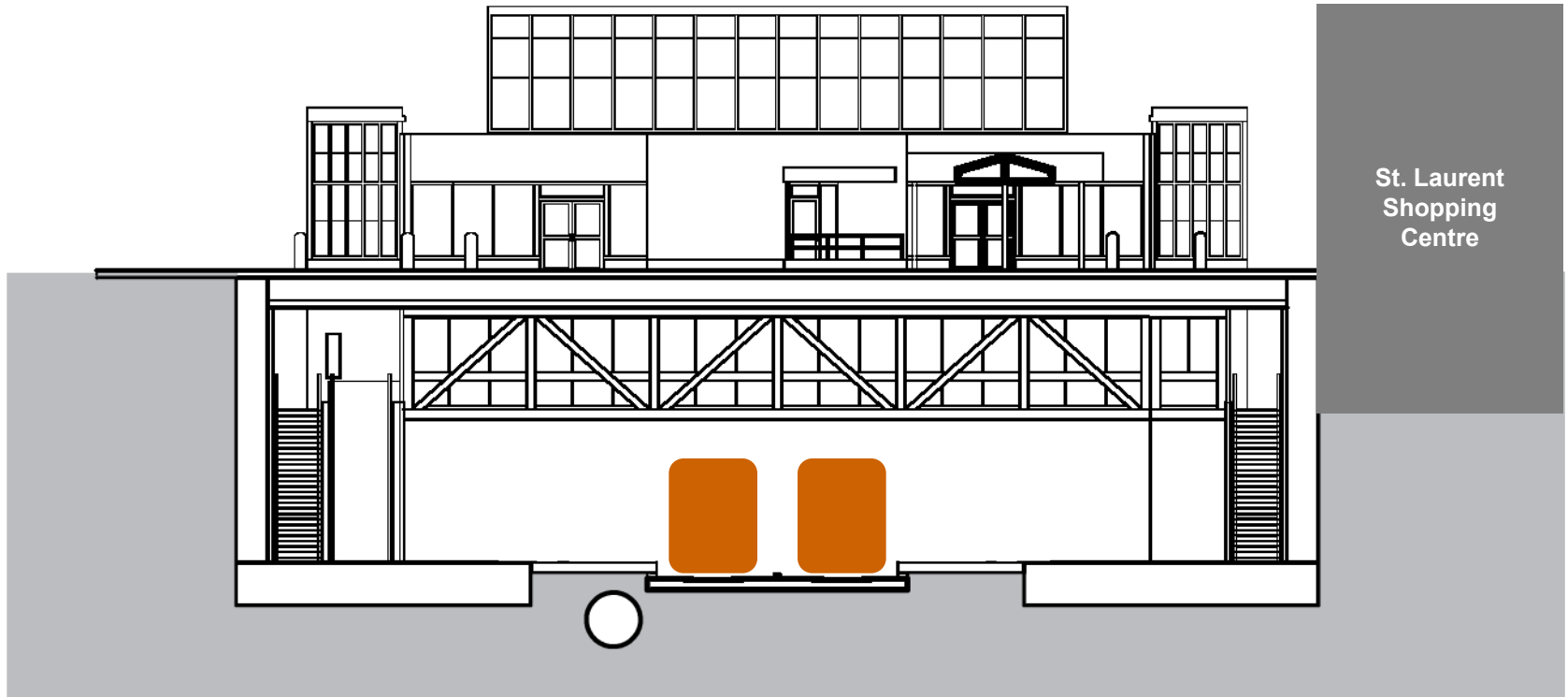




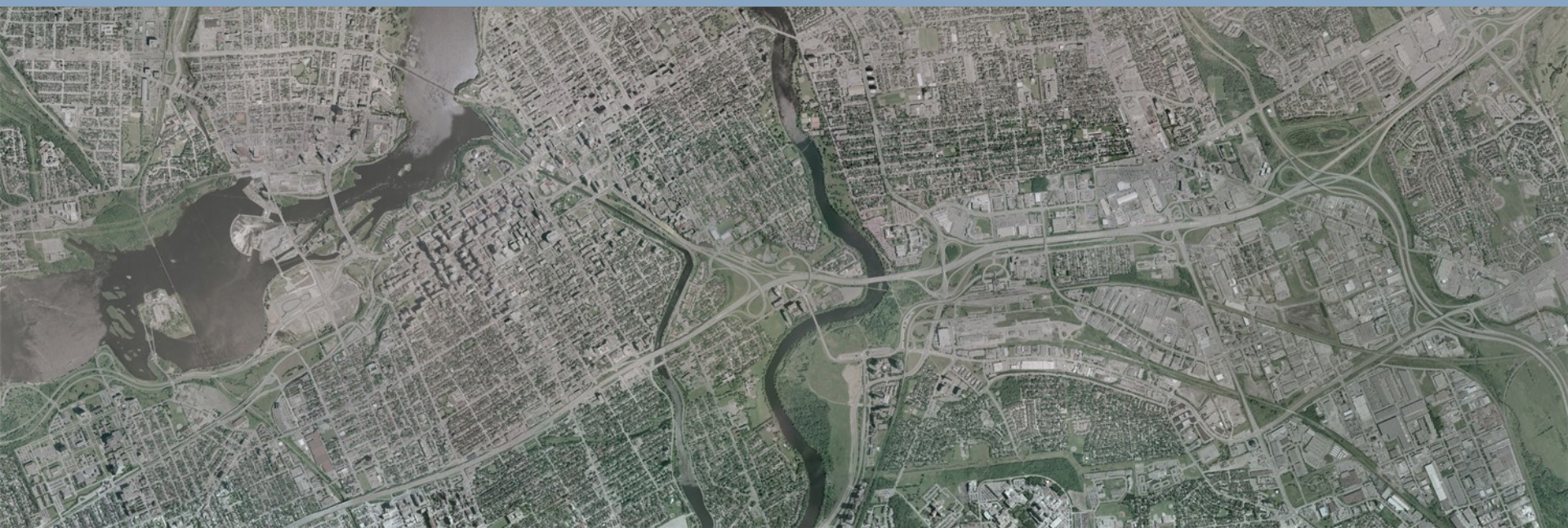


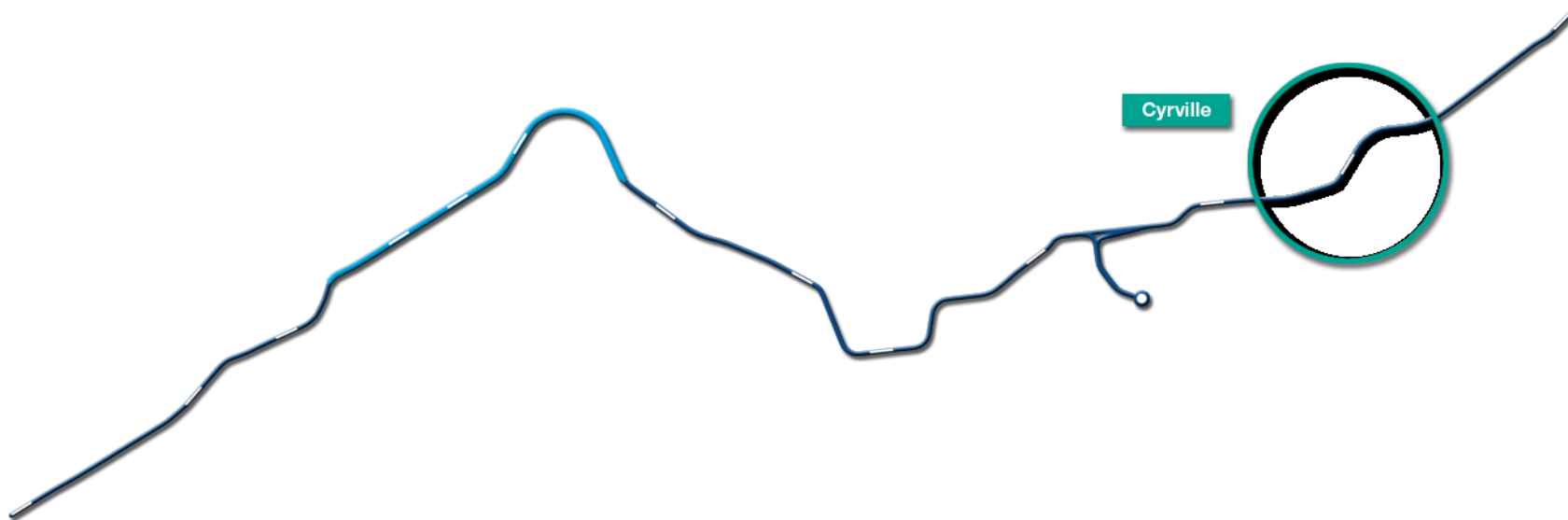


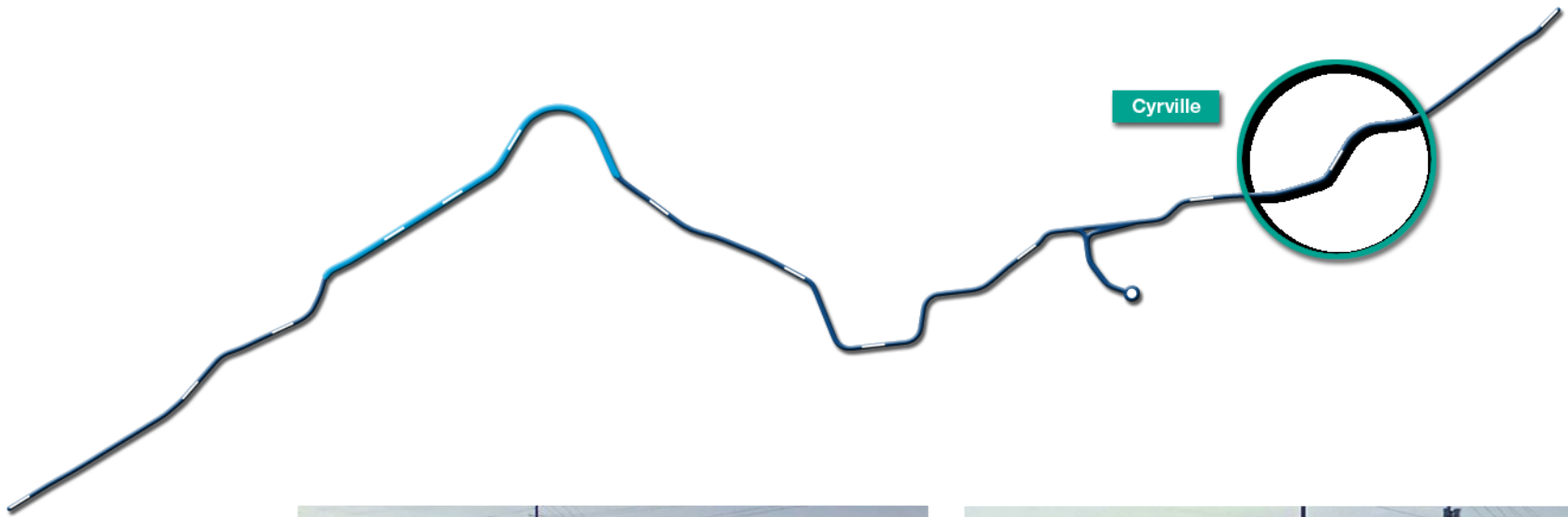


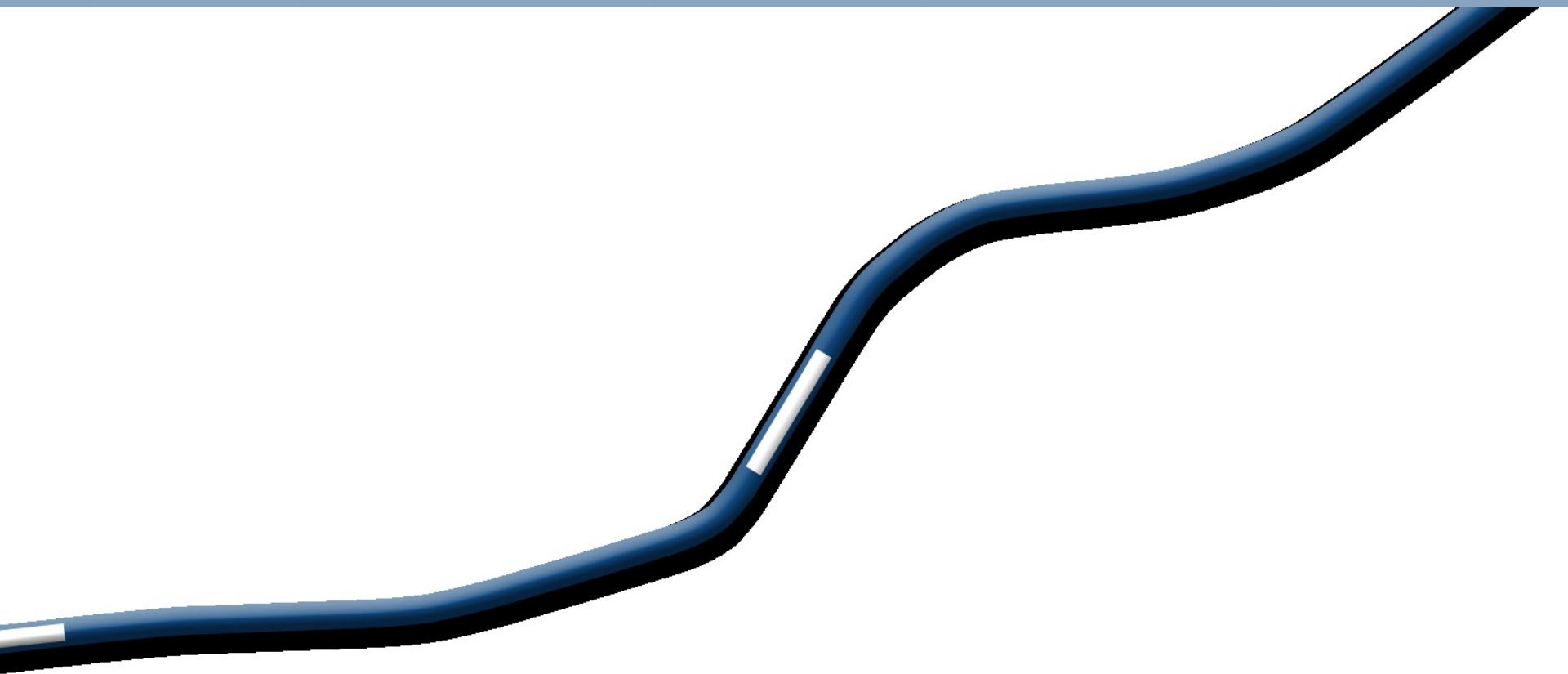


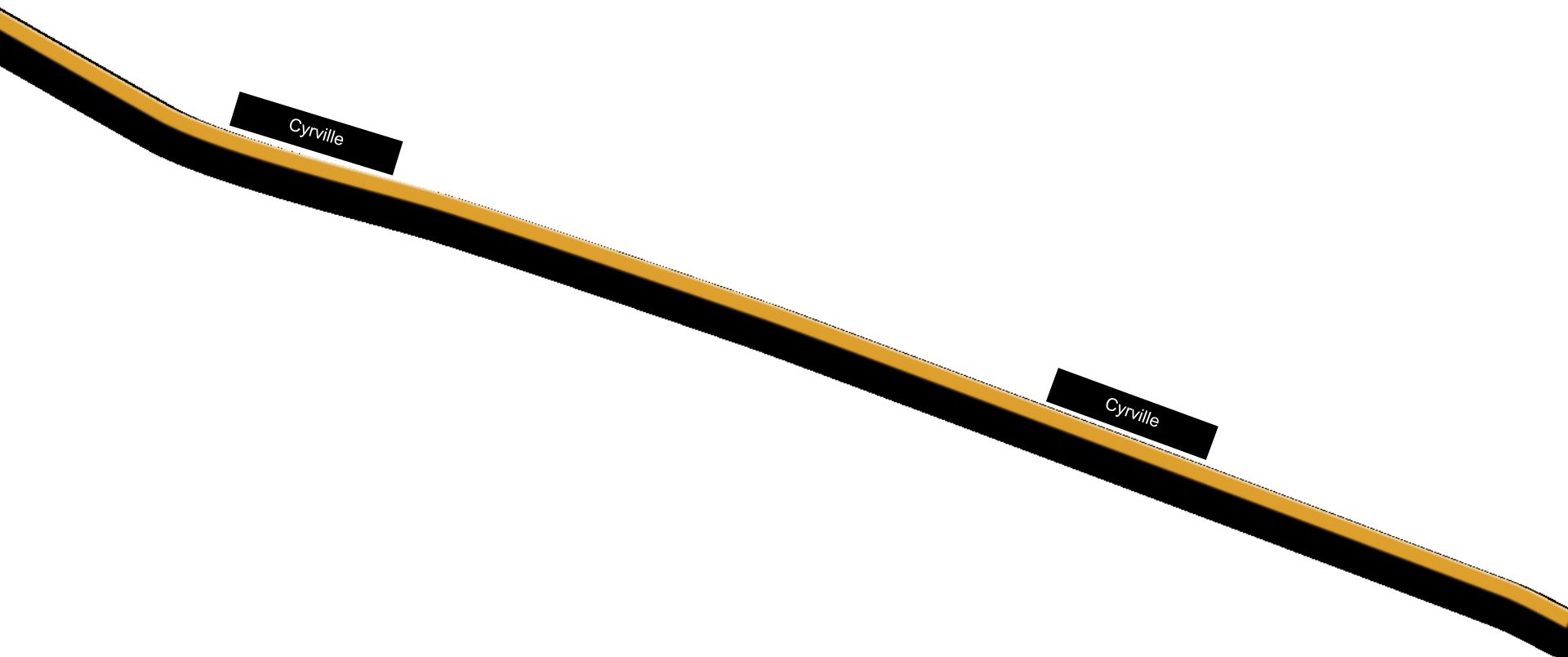








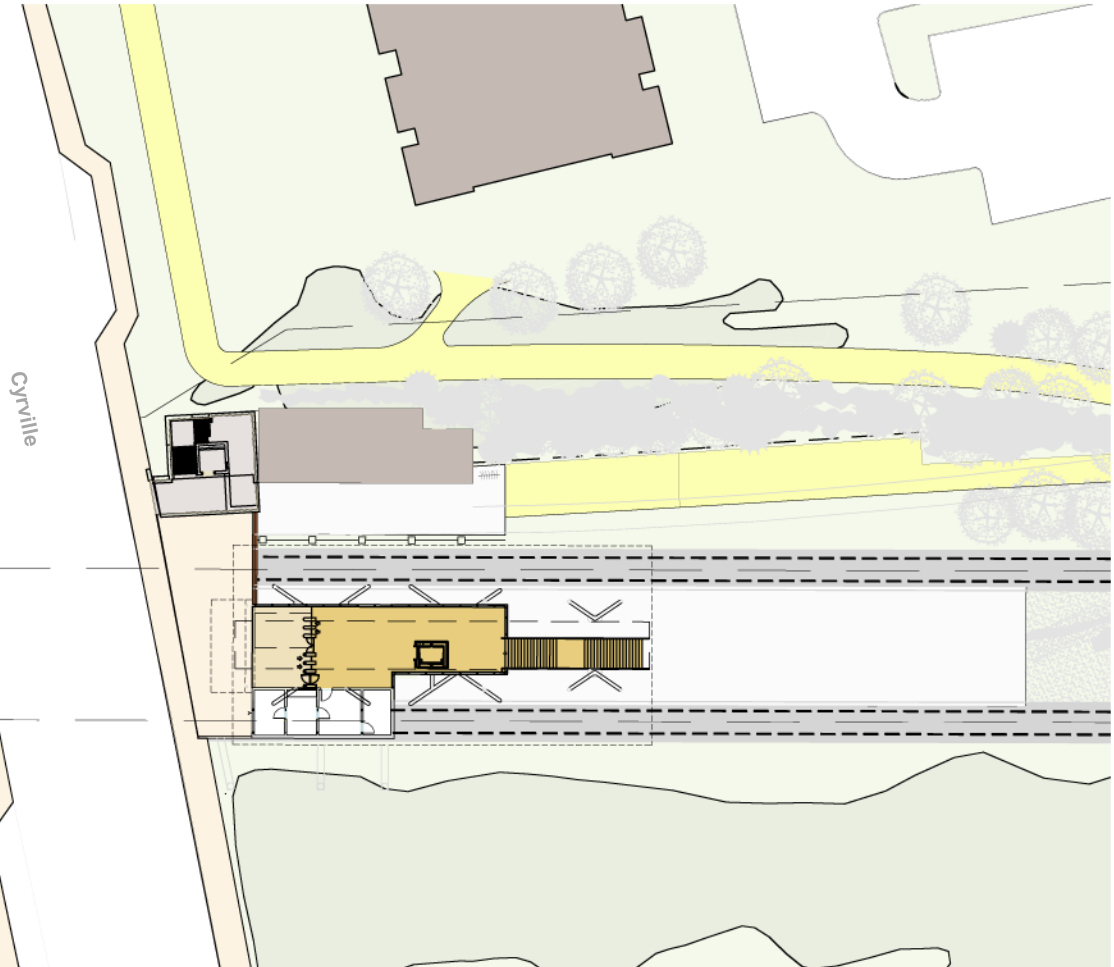
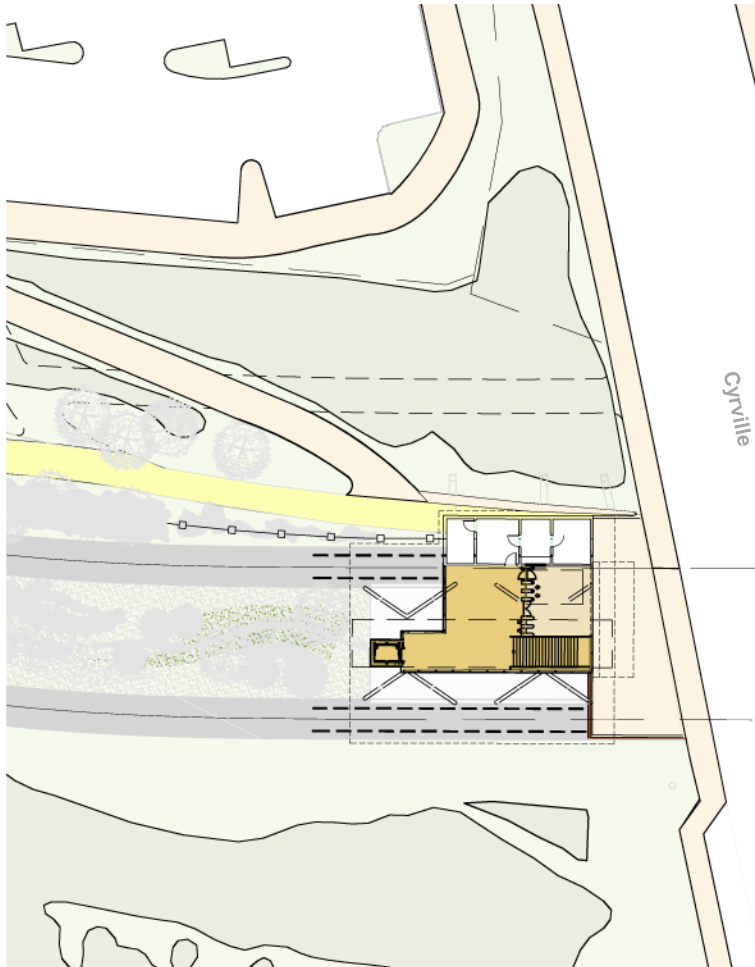


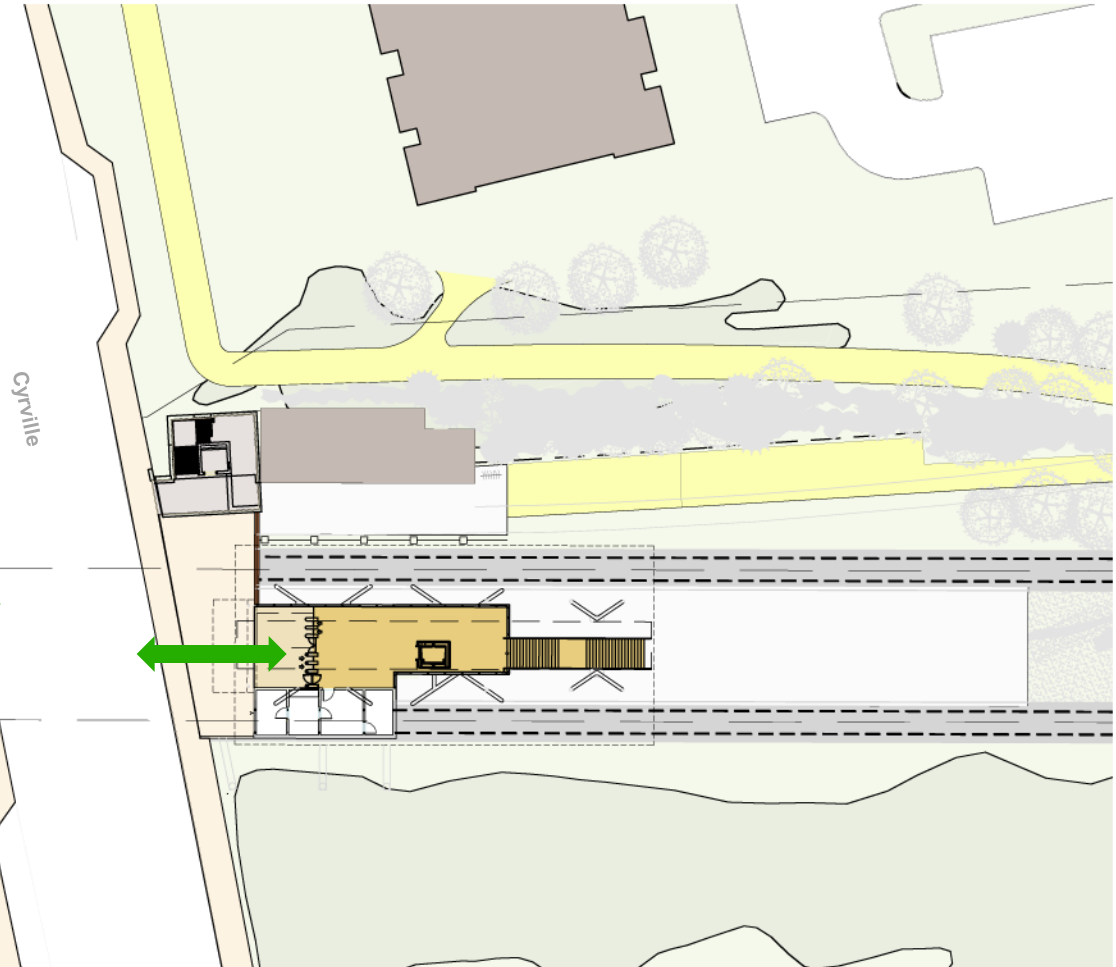
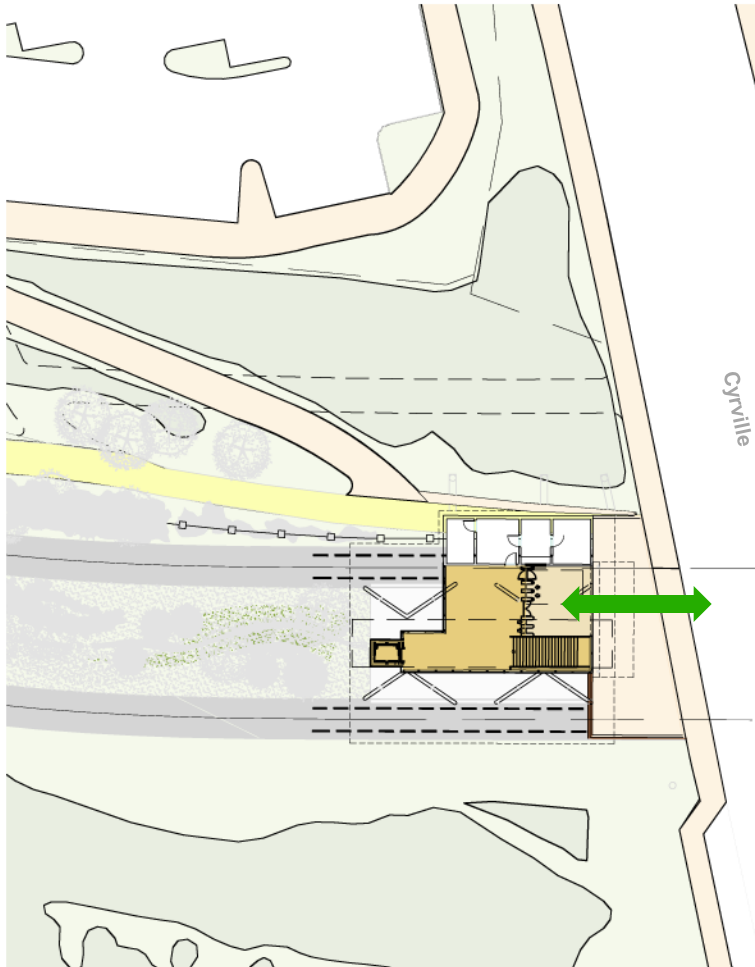


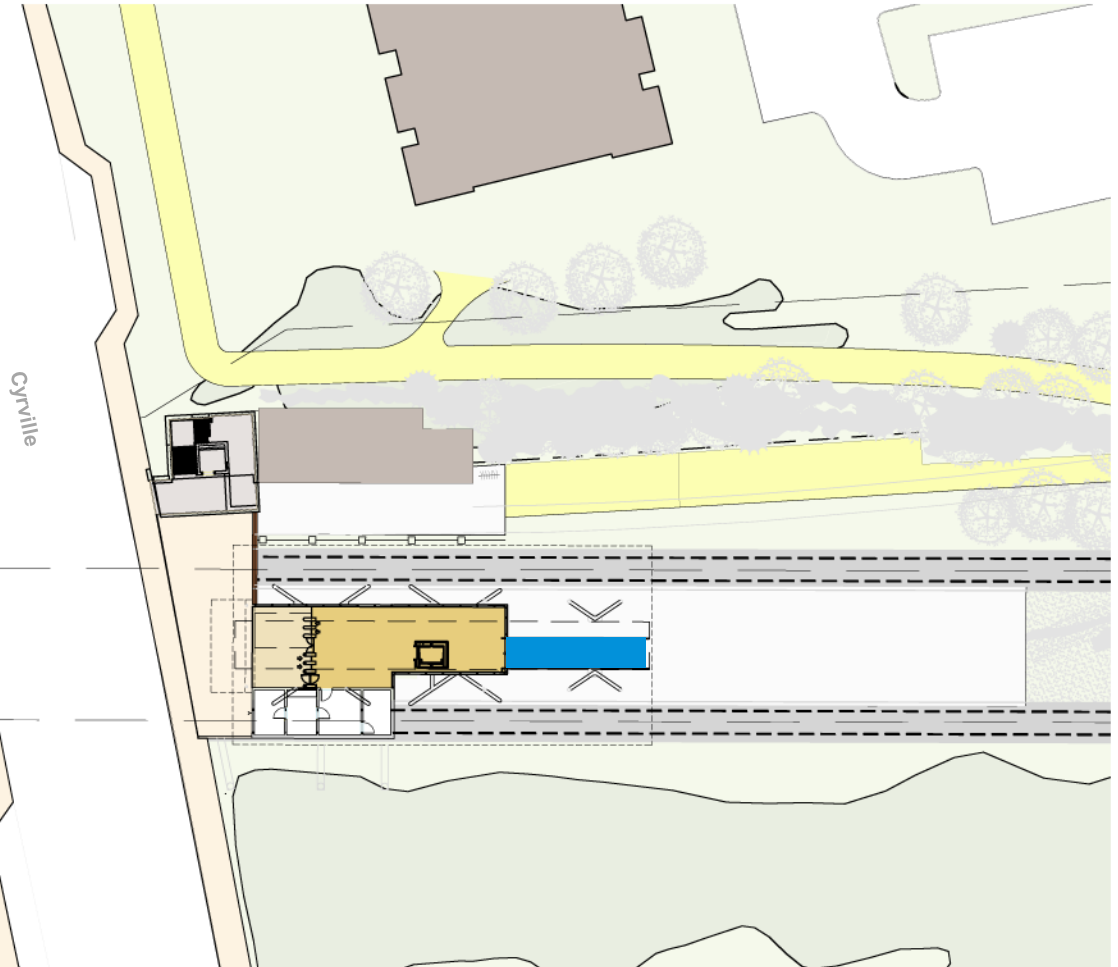
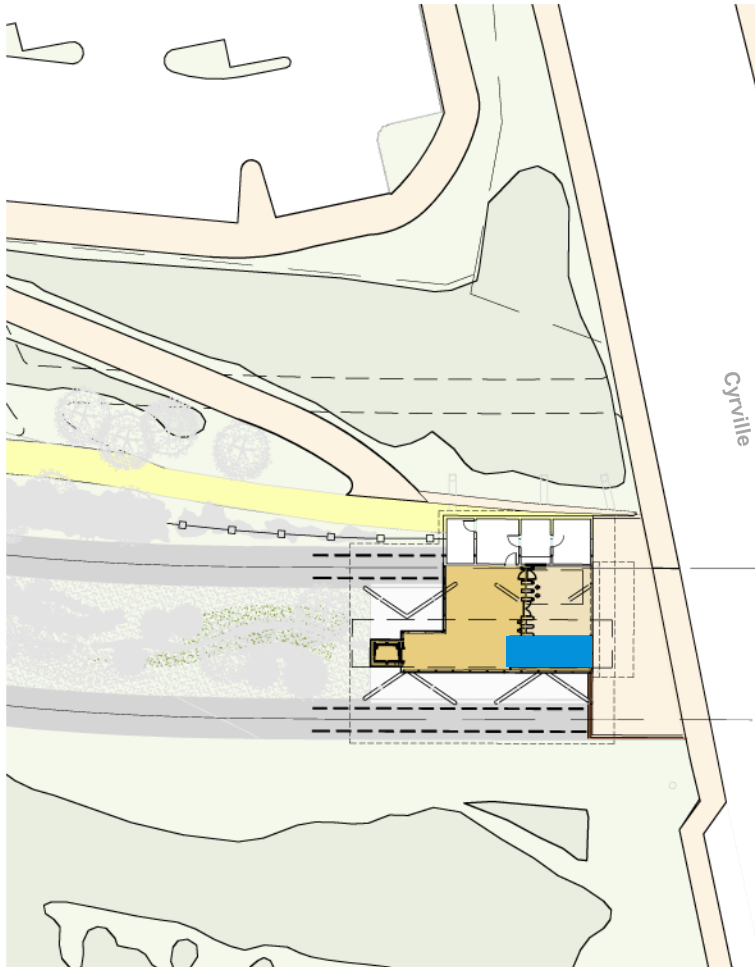


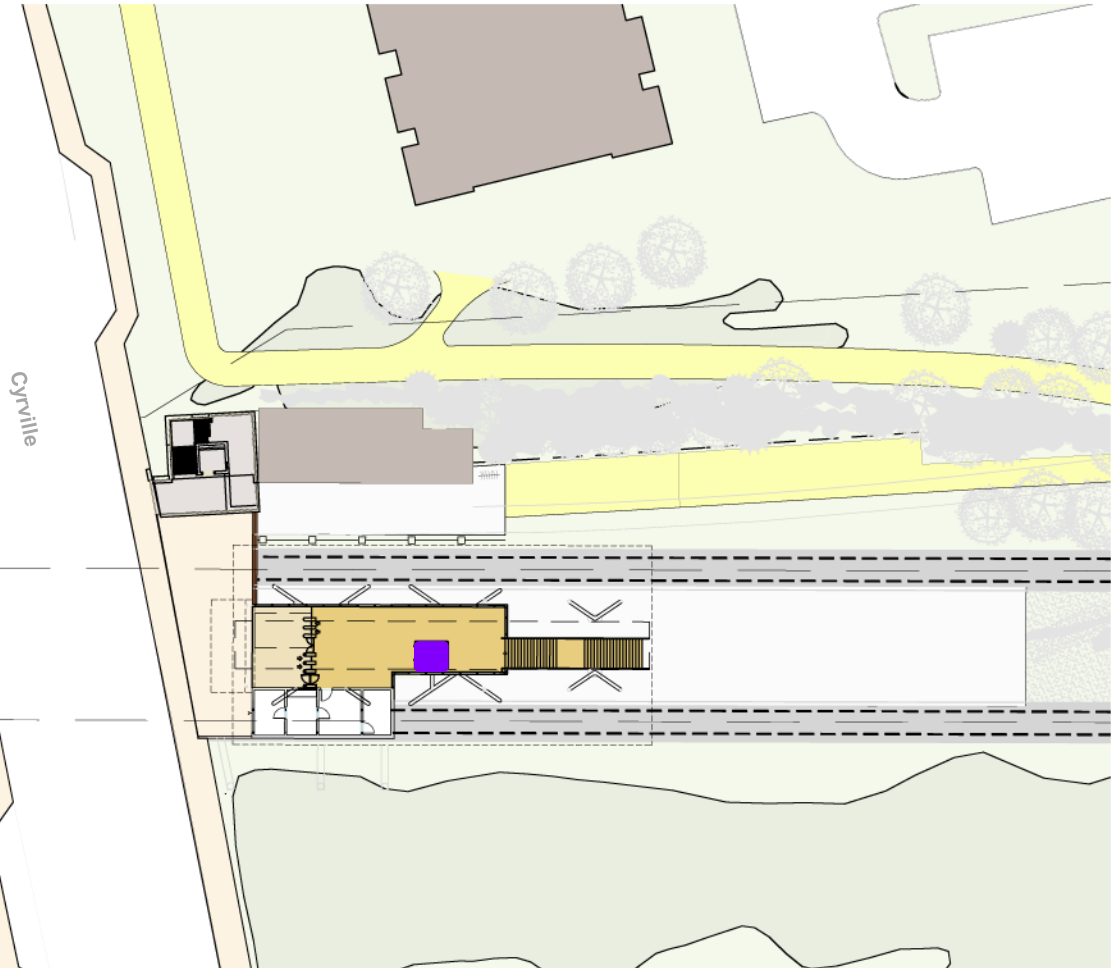
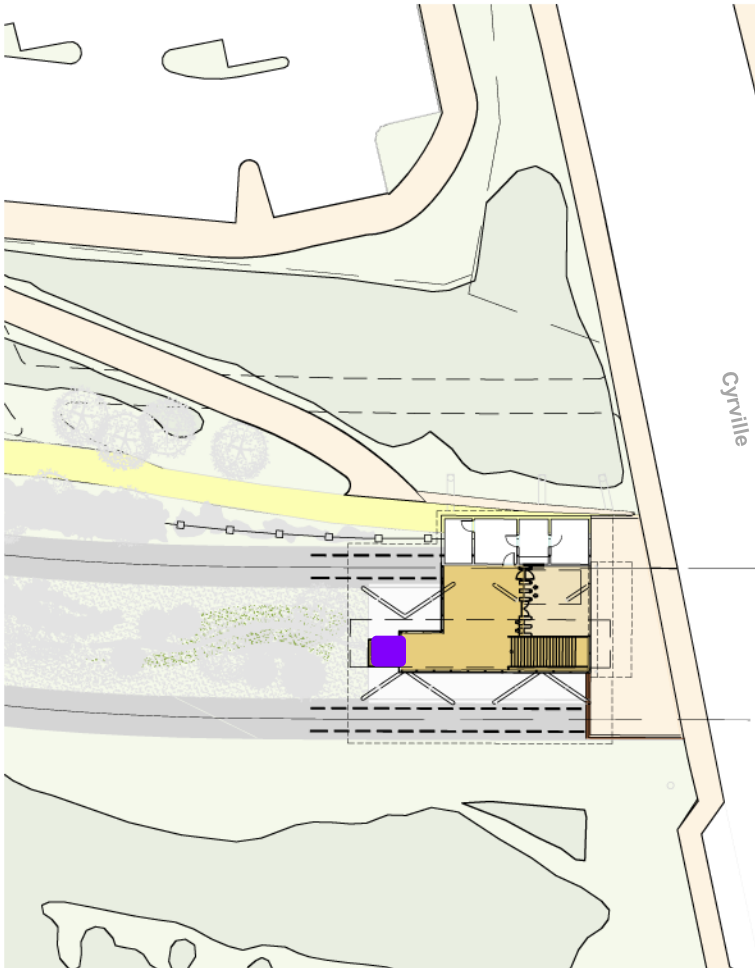
Place des
Gouverneurs

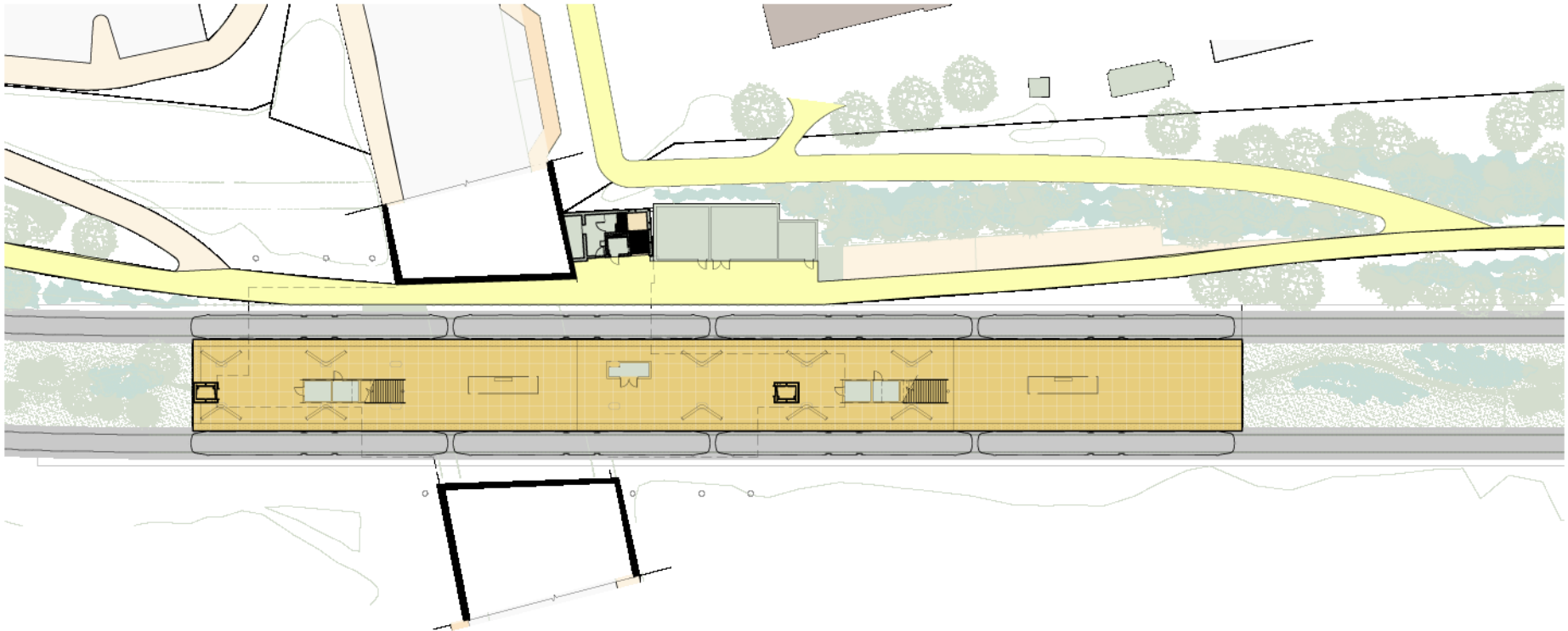


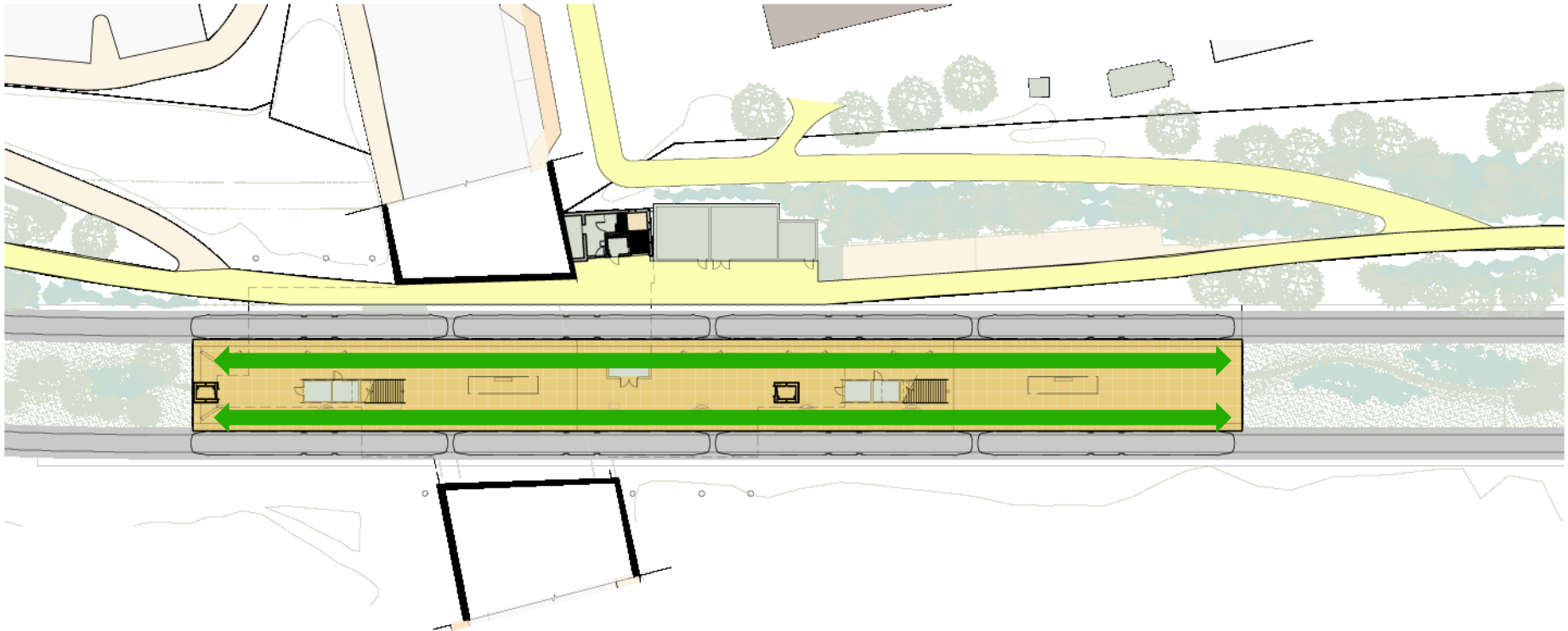


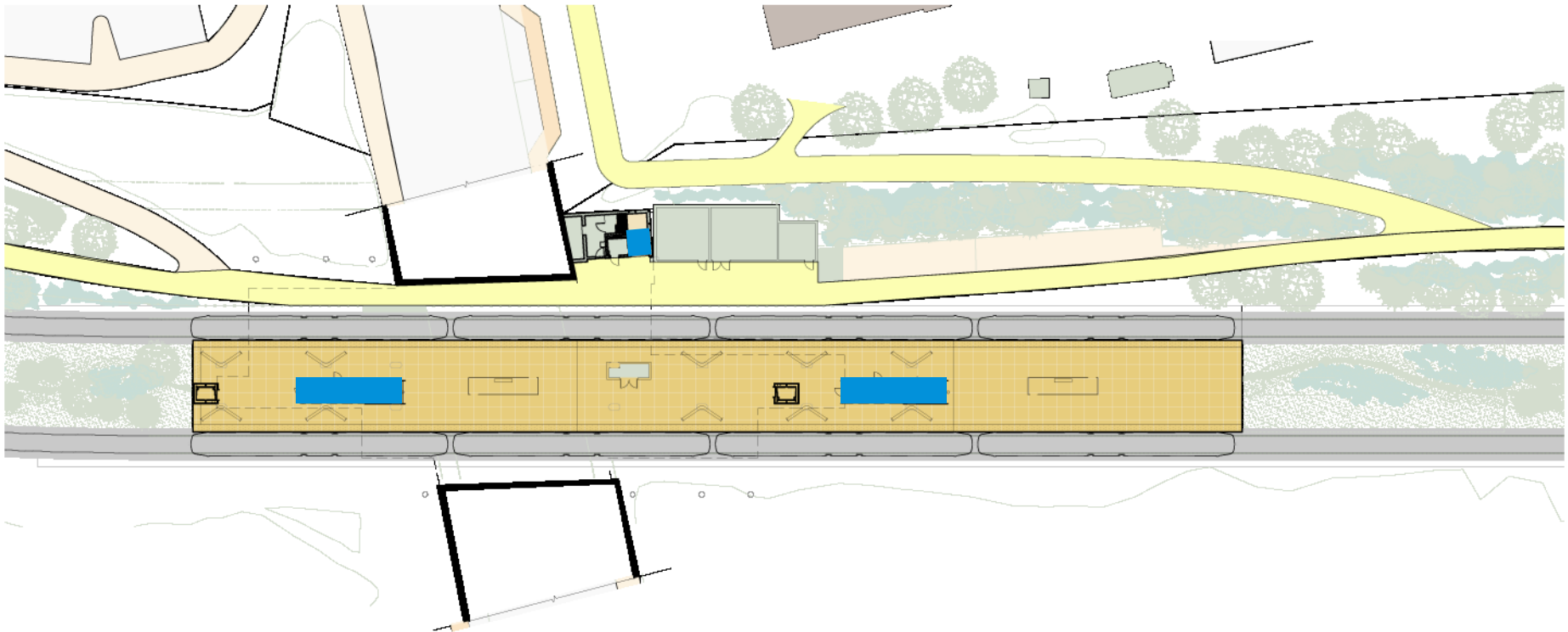


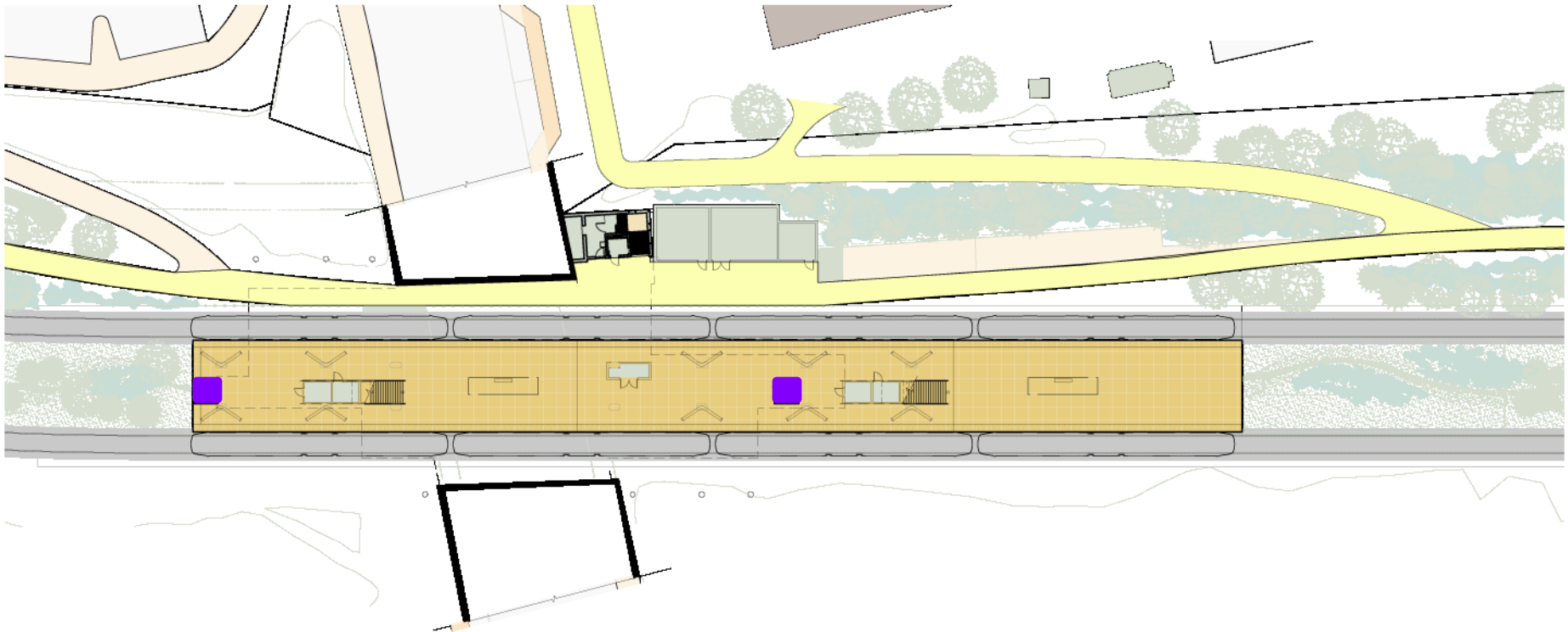


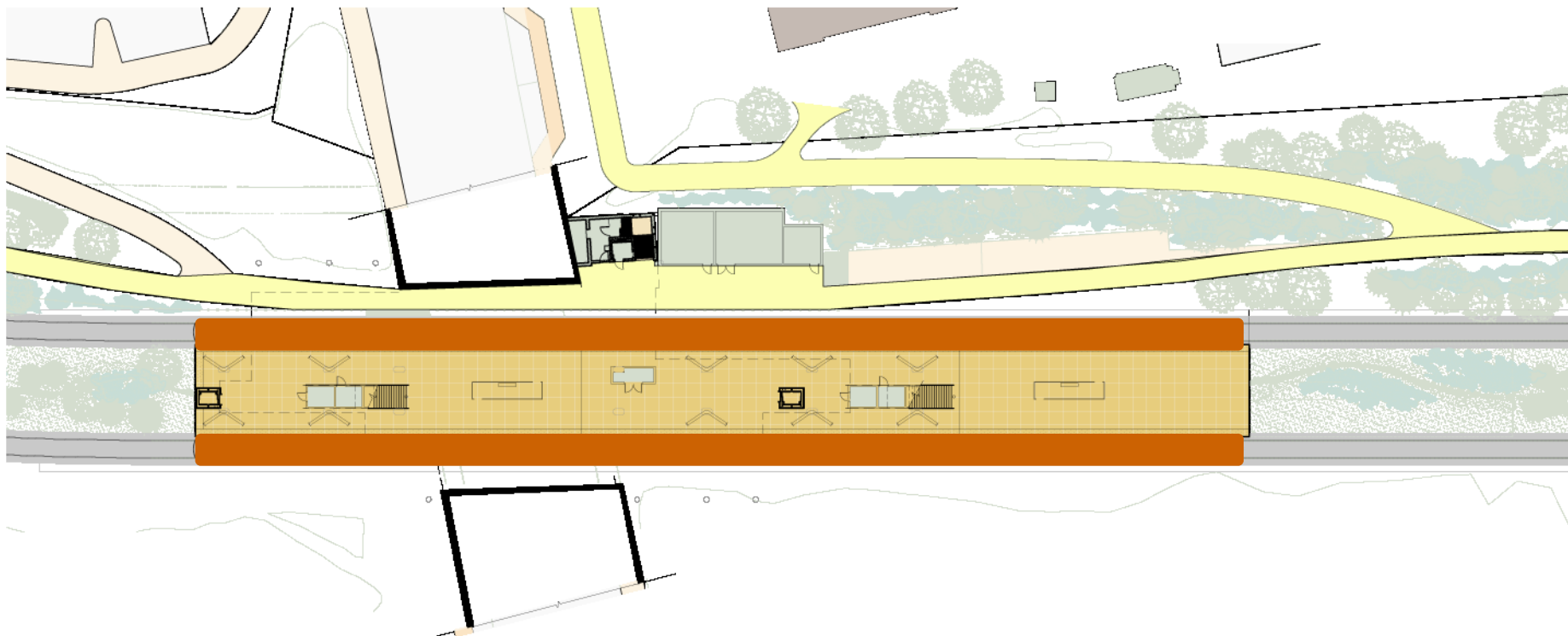


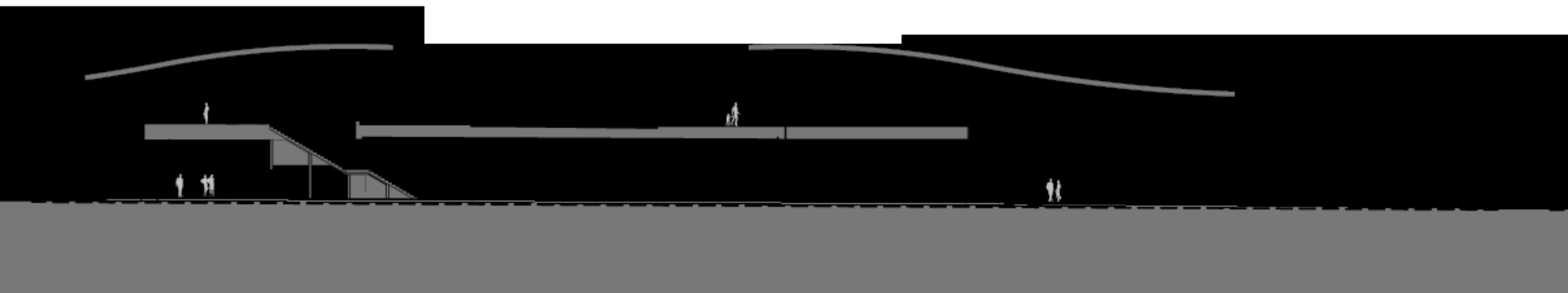


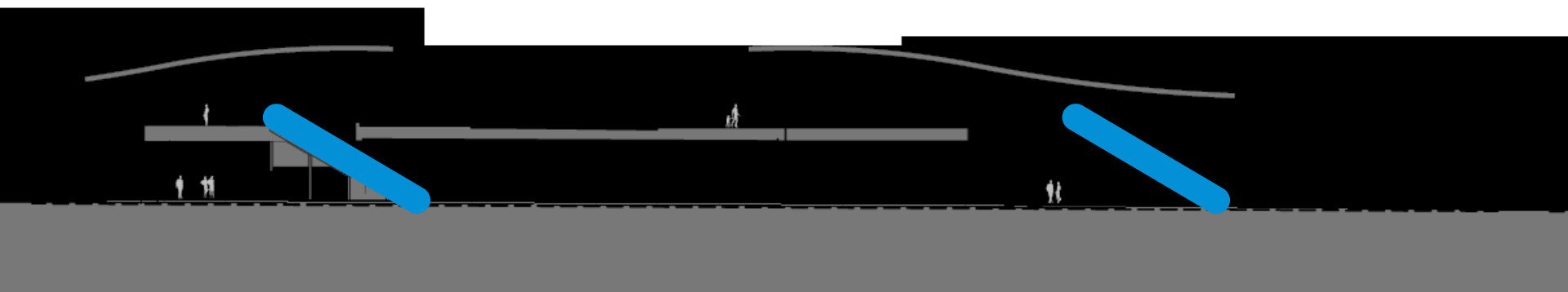


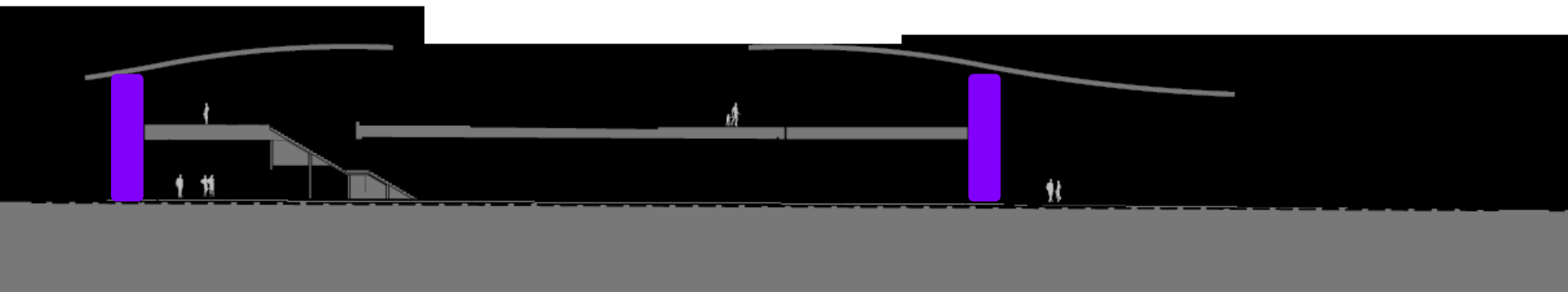


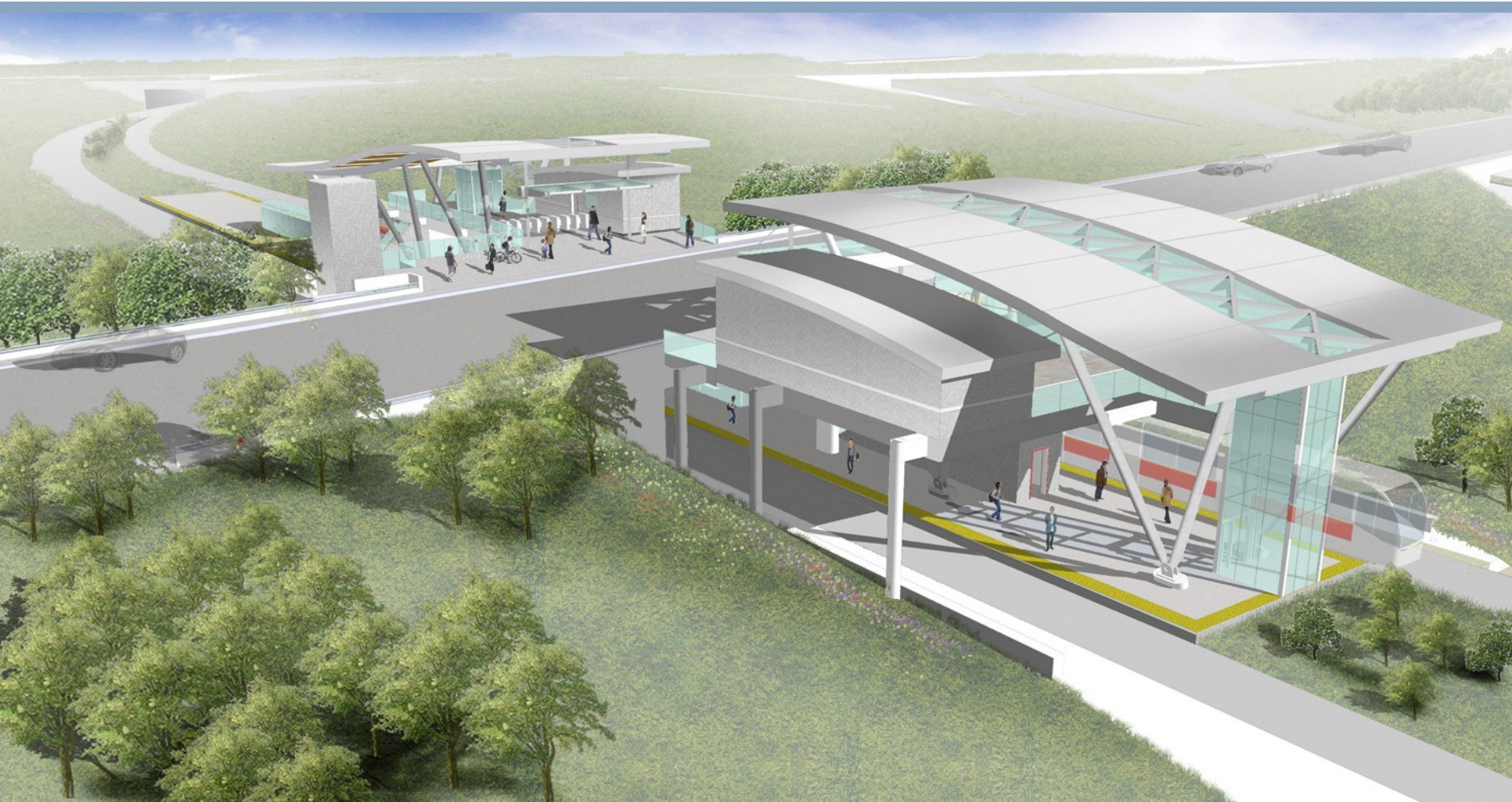


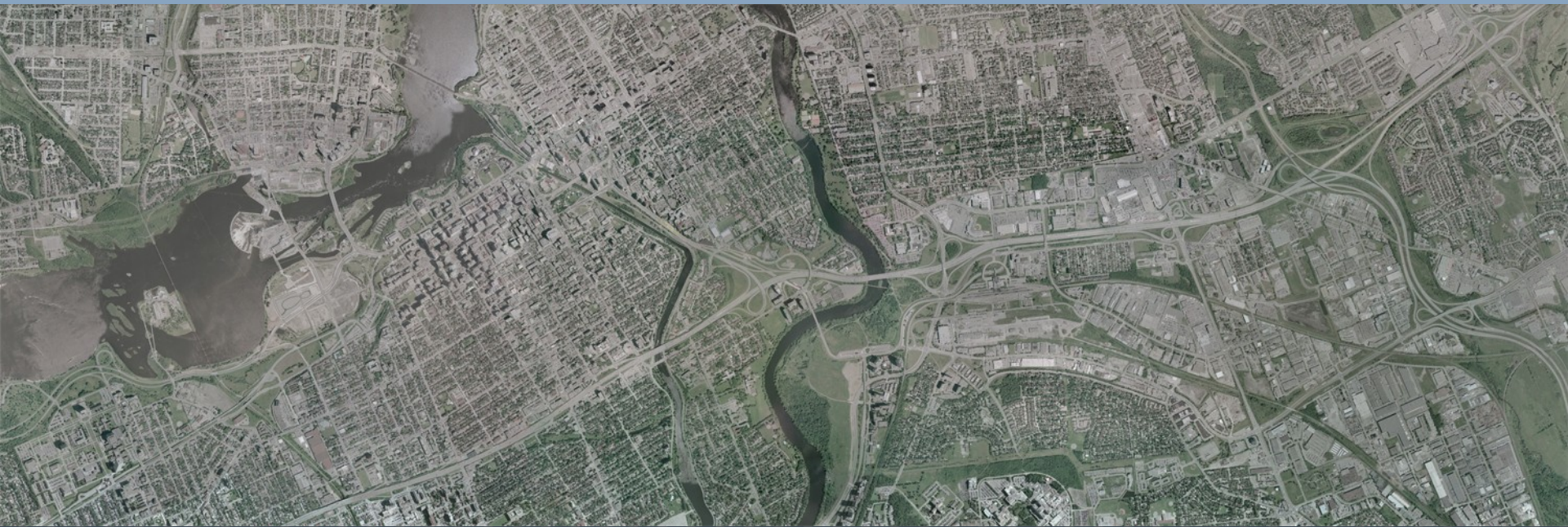


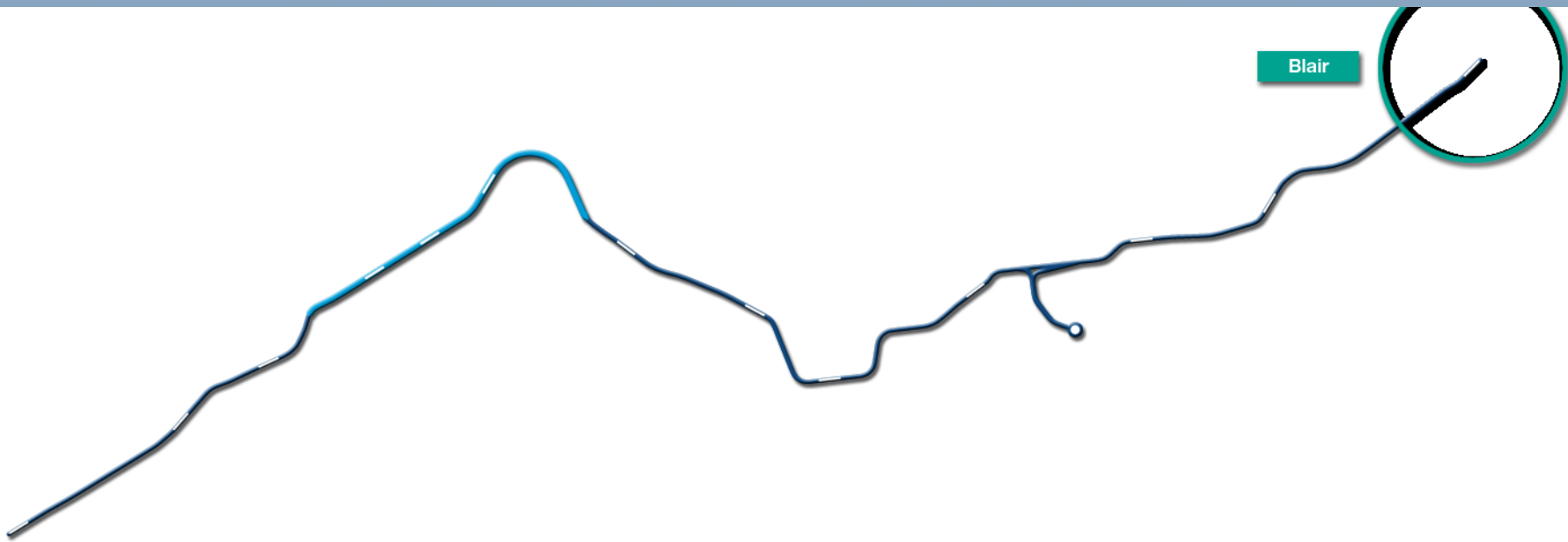


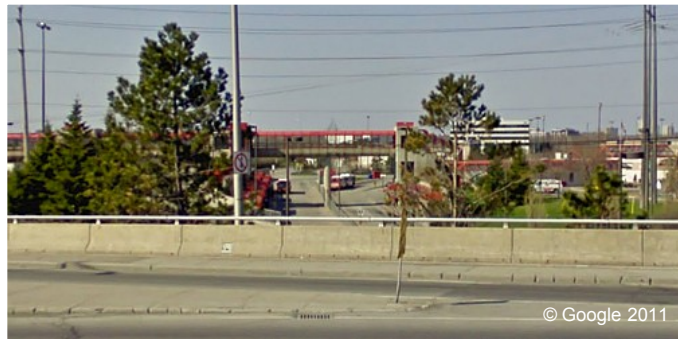
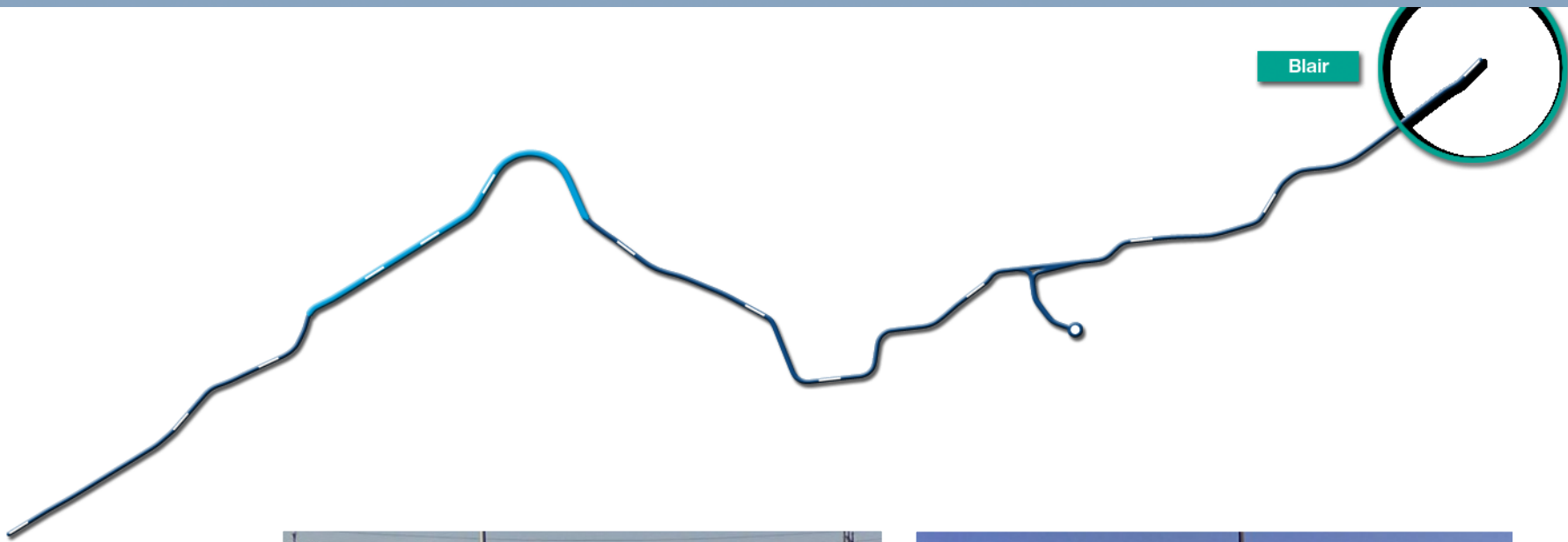


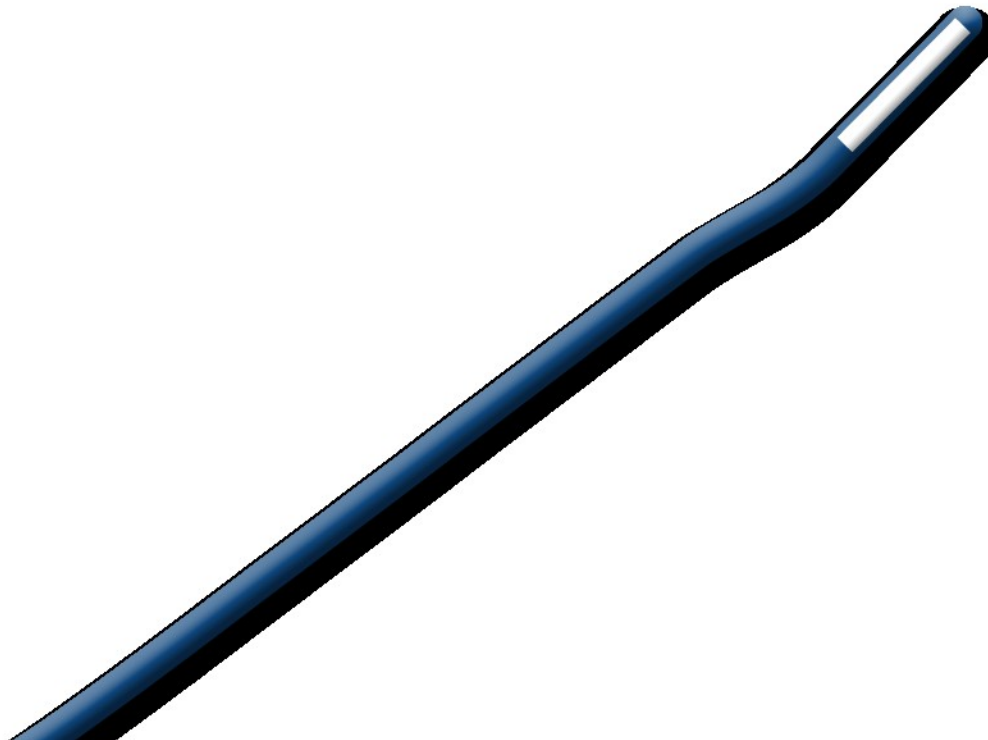


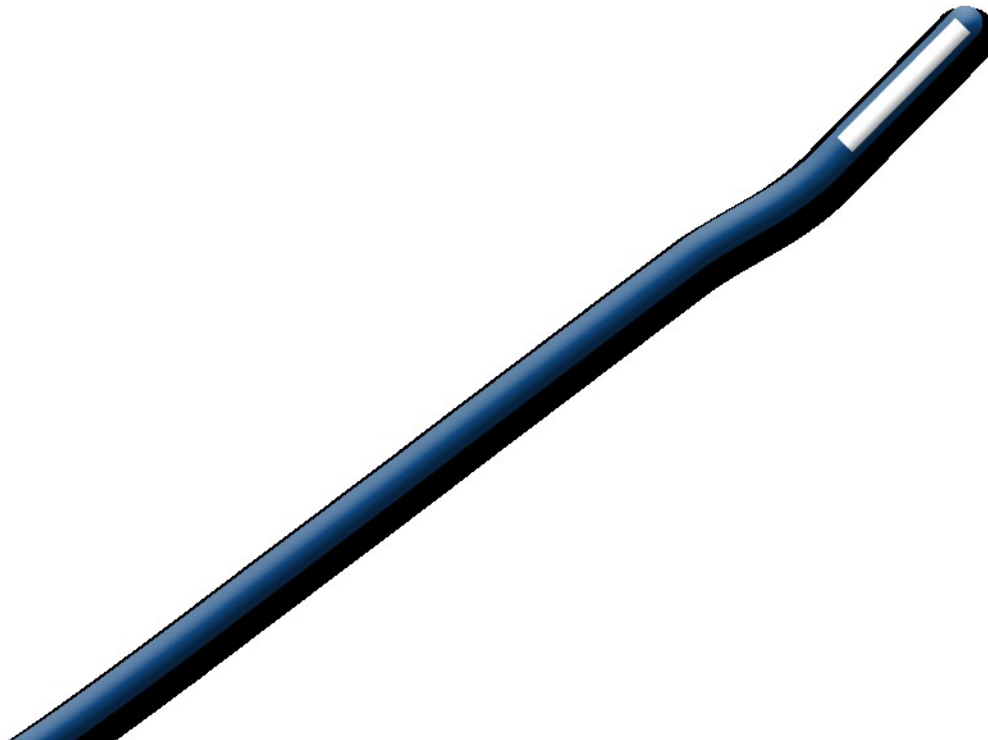


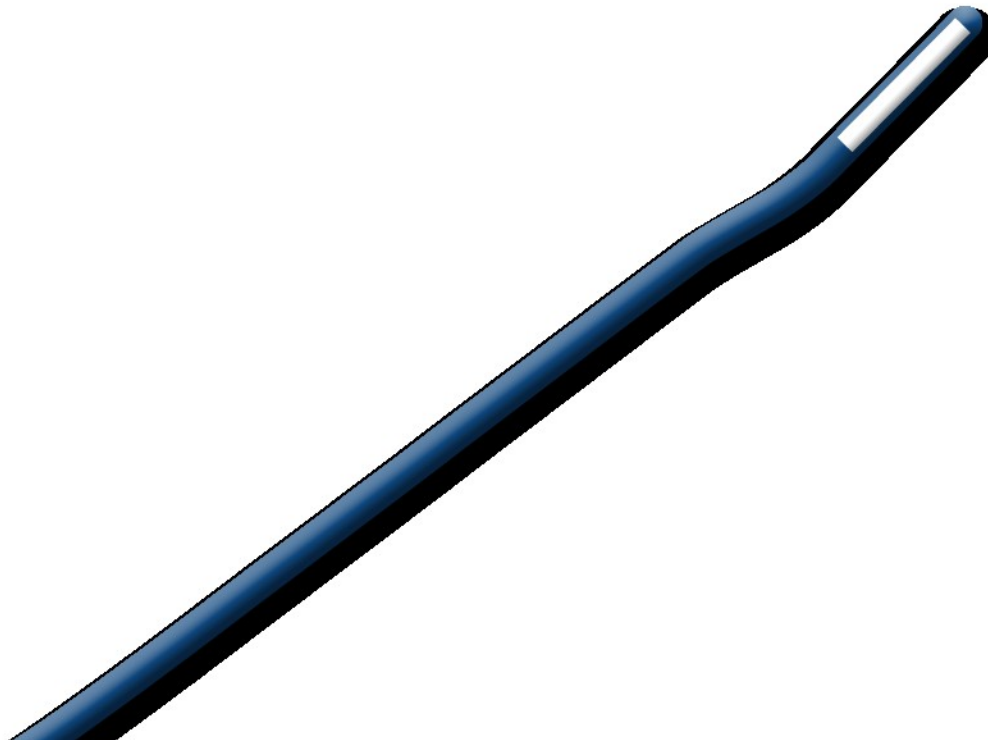


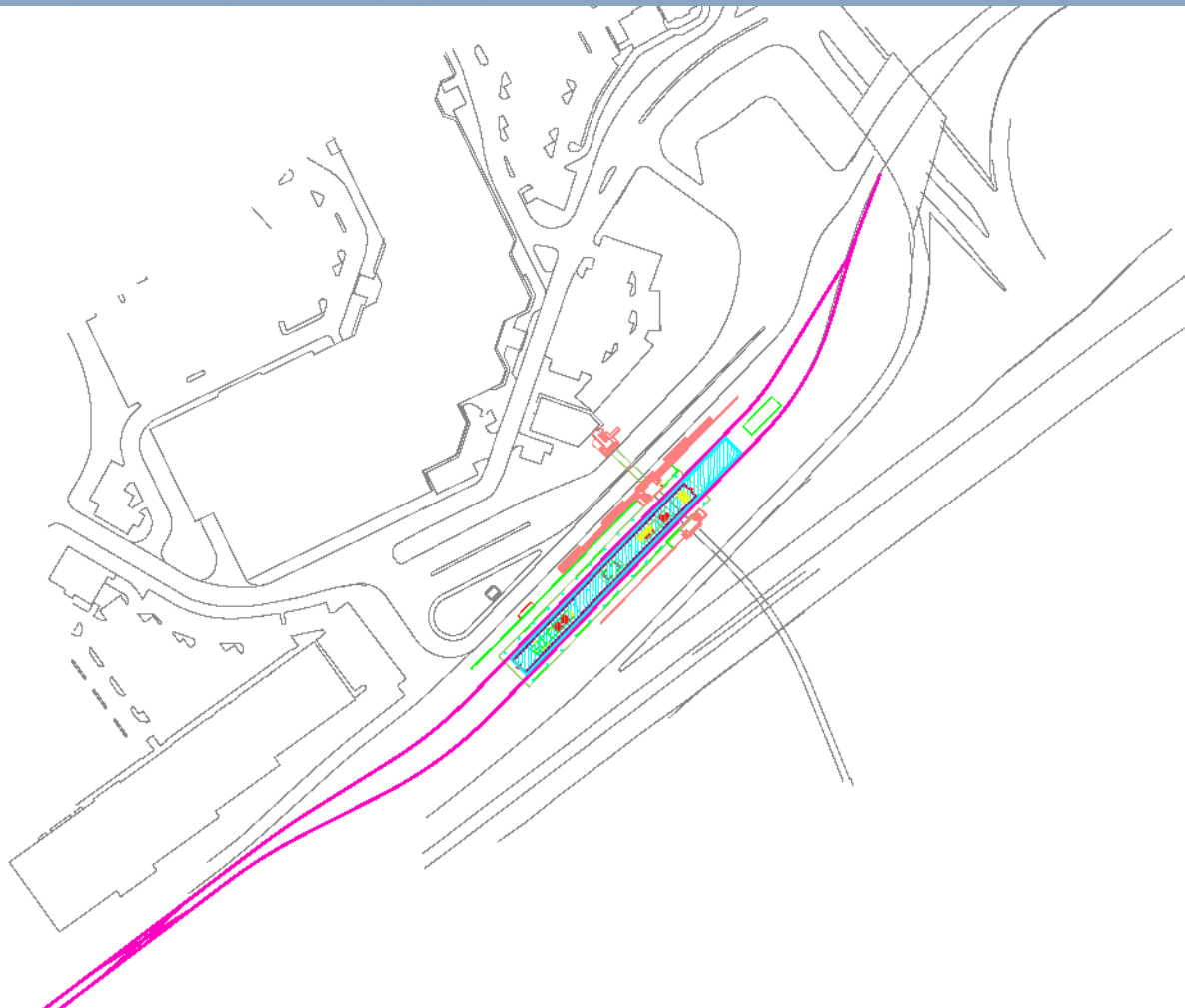


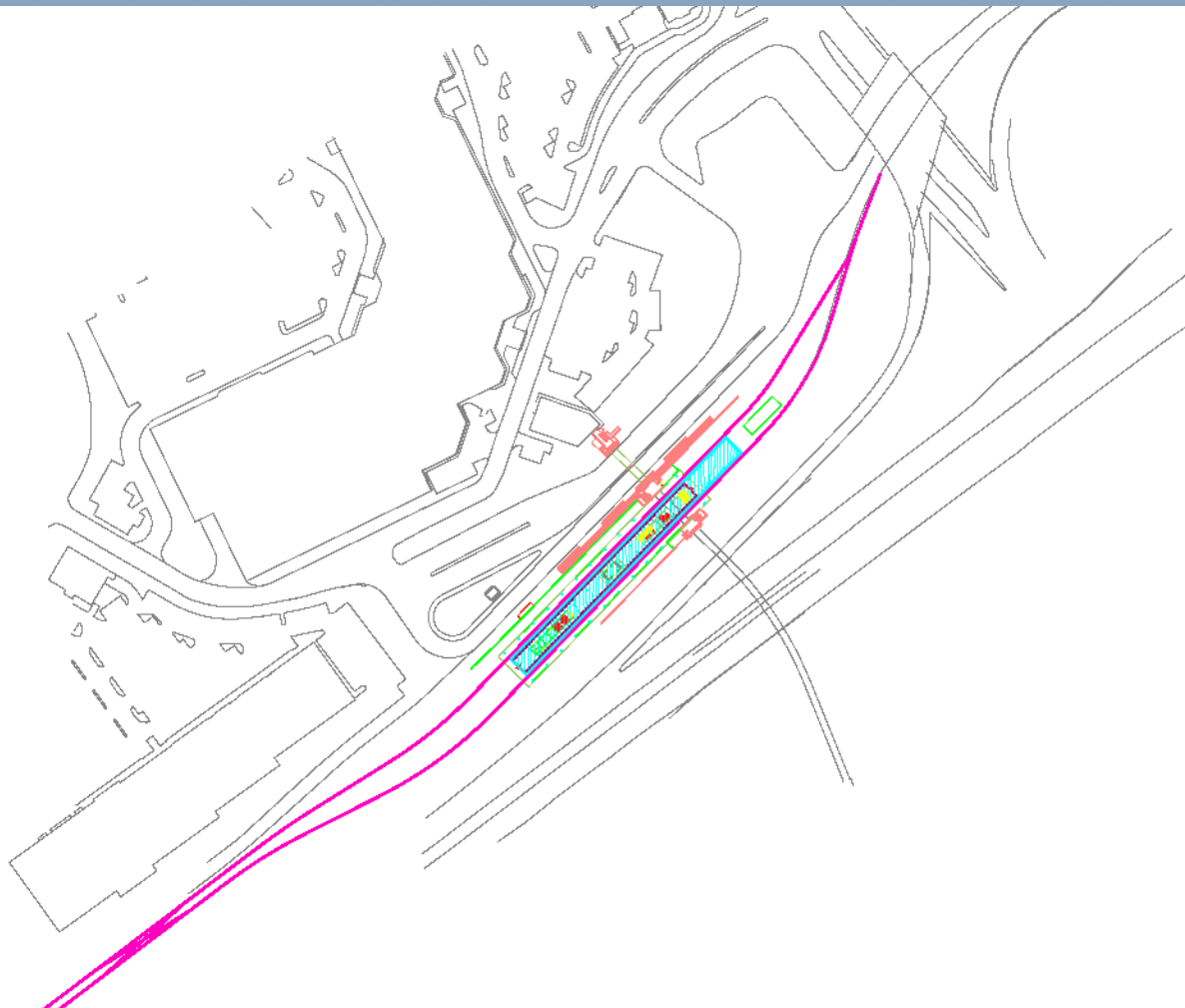


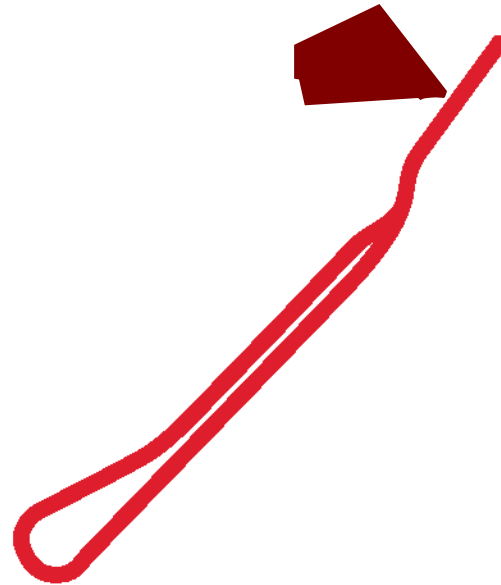


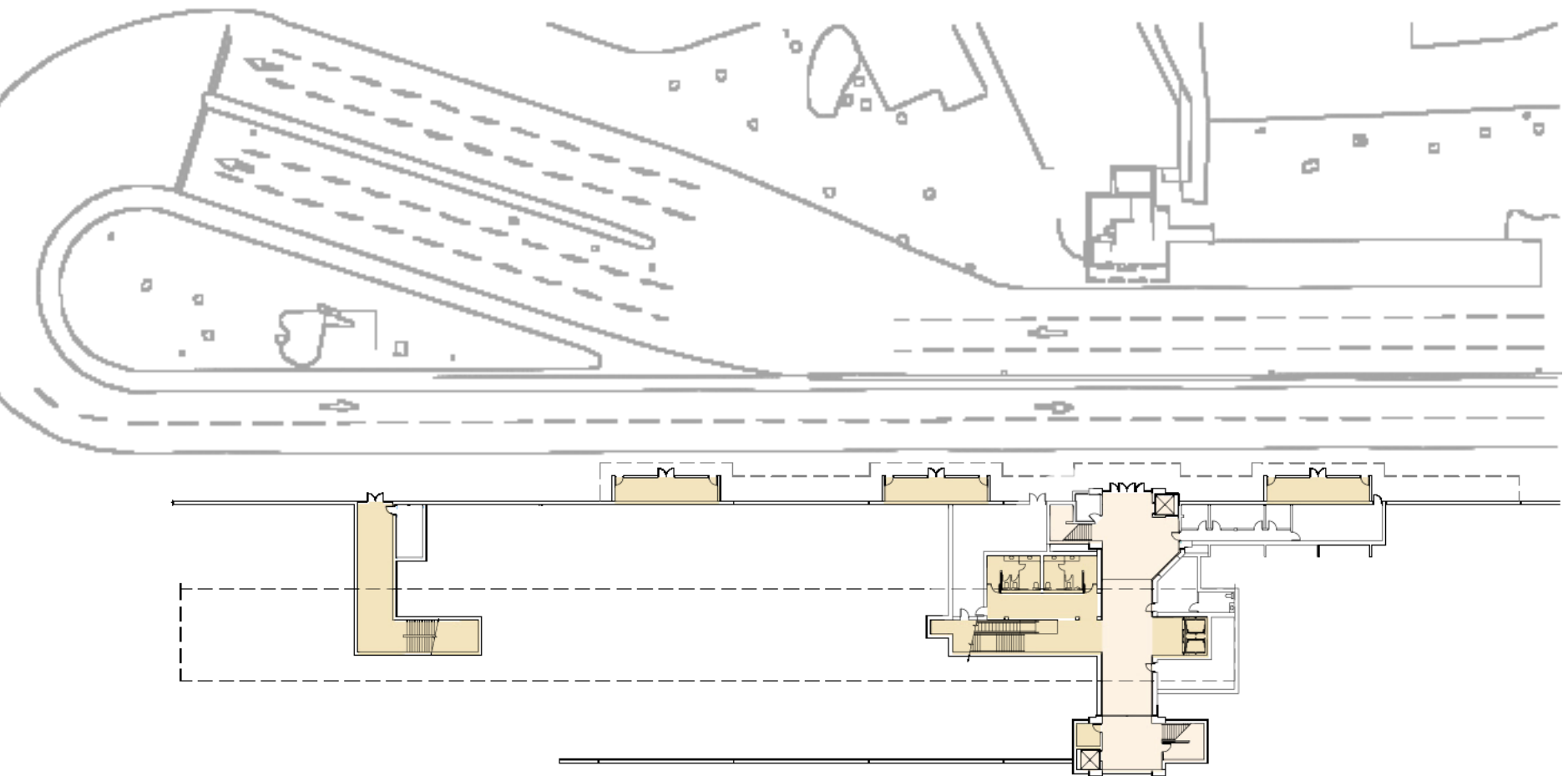


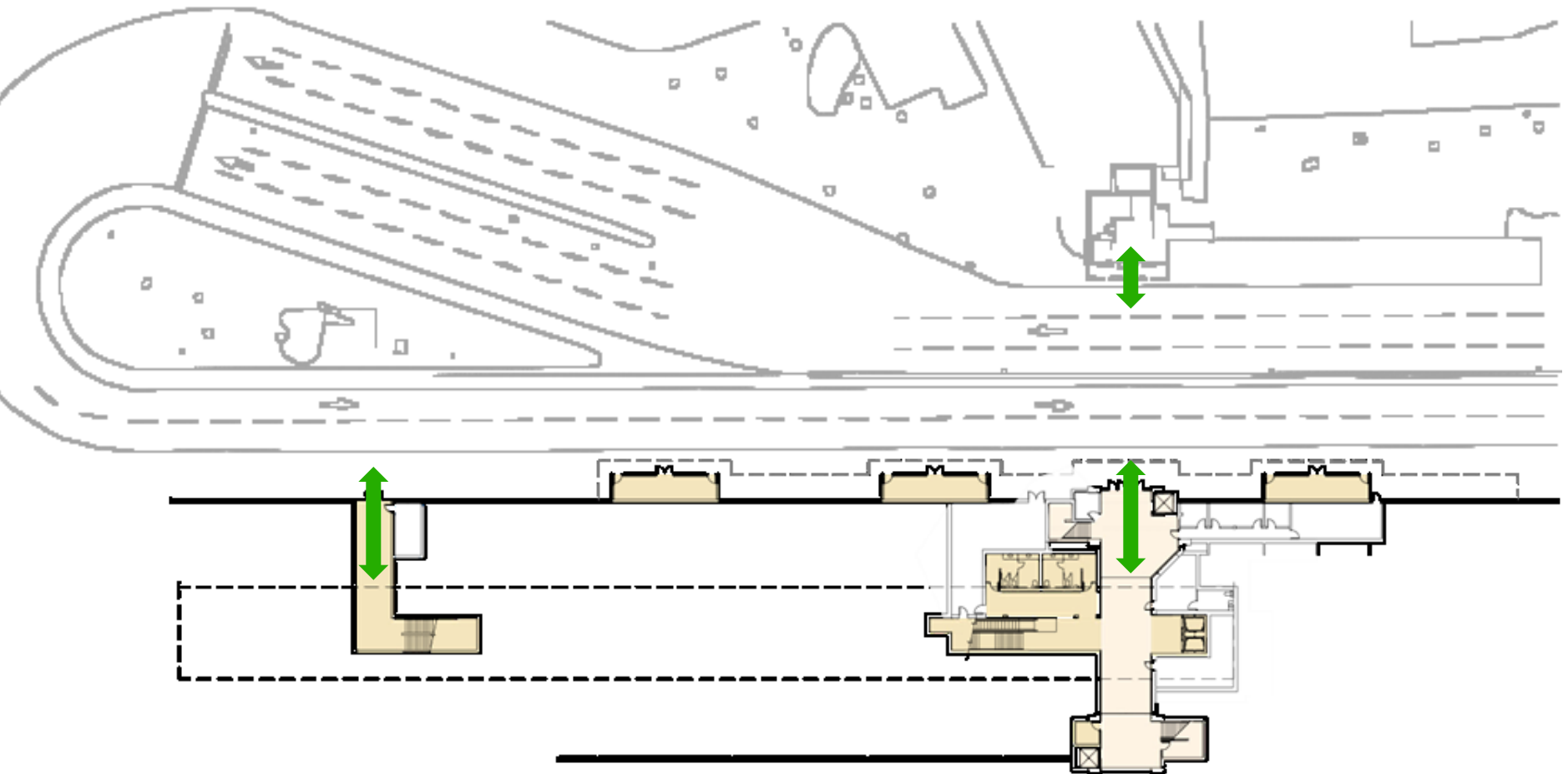


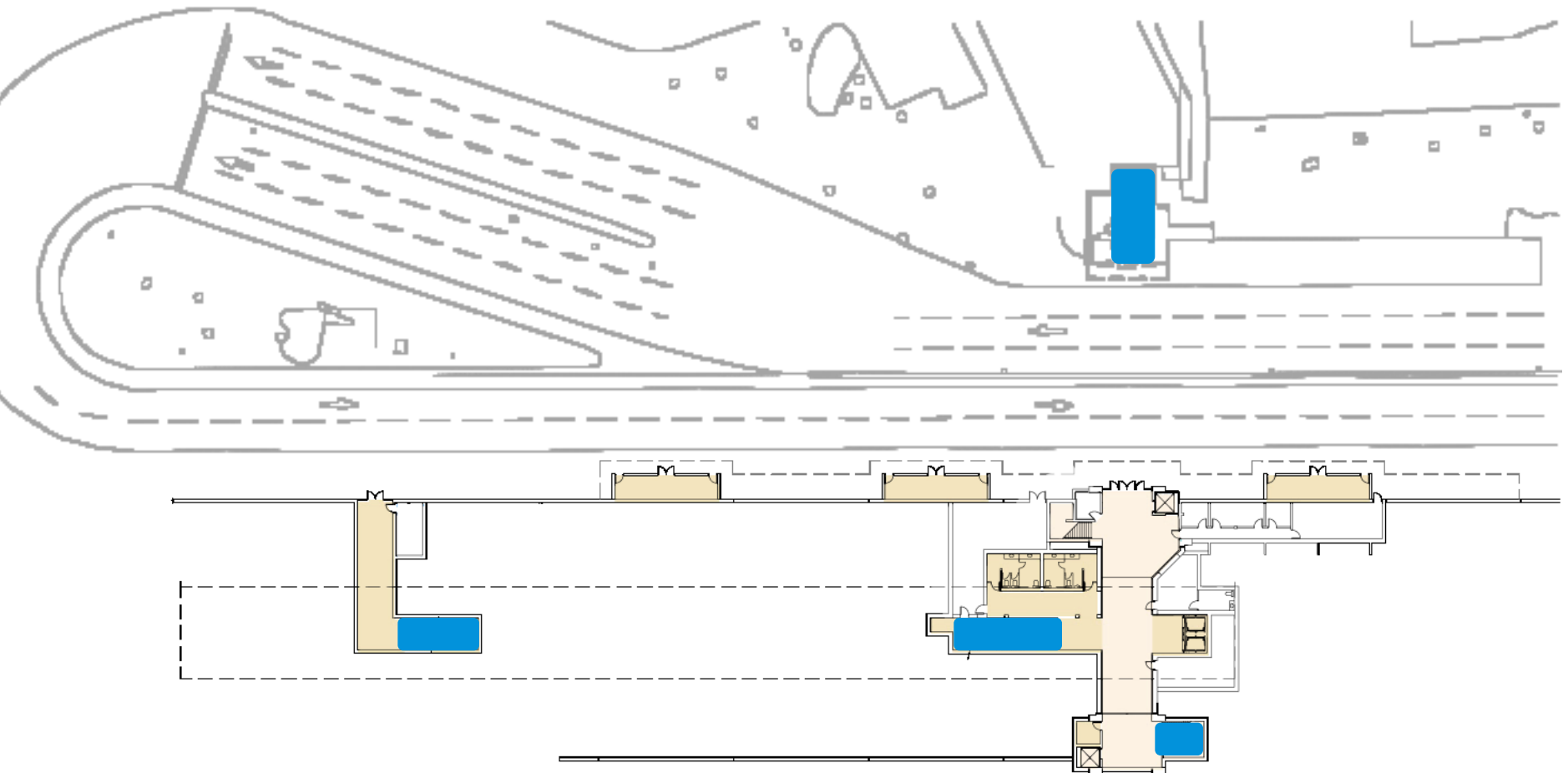


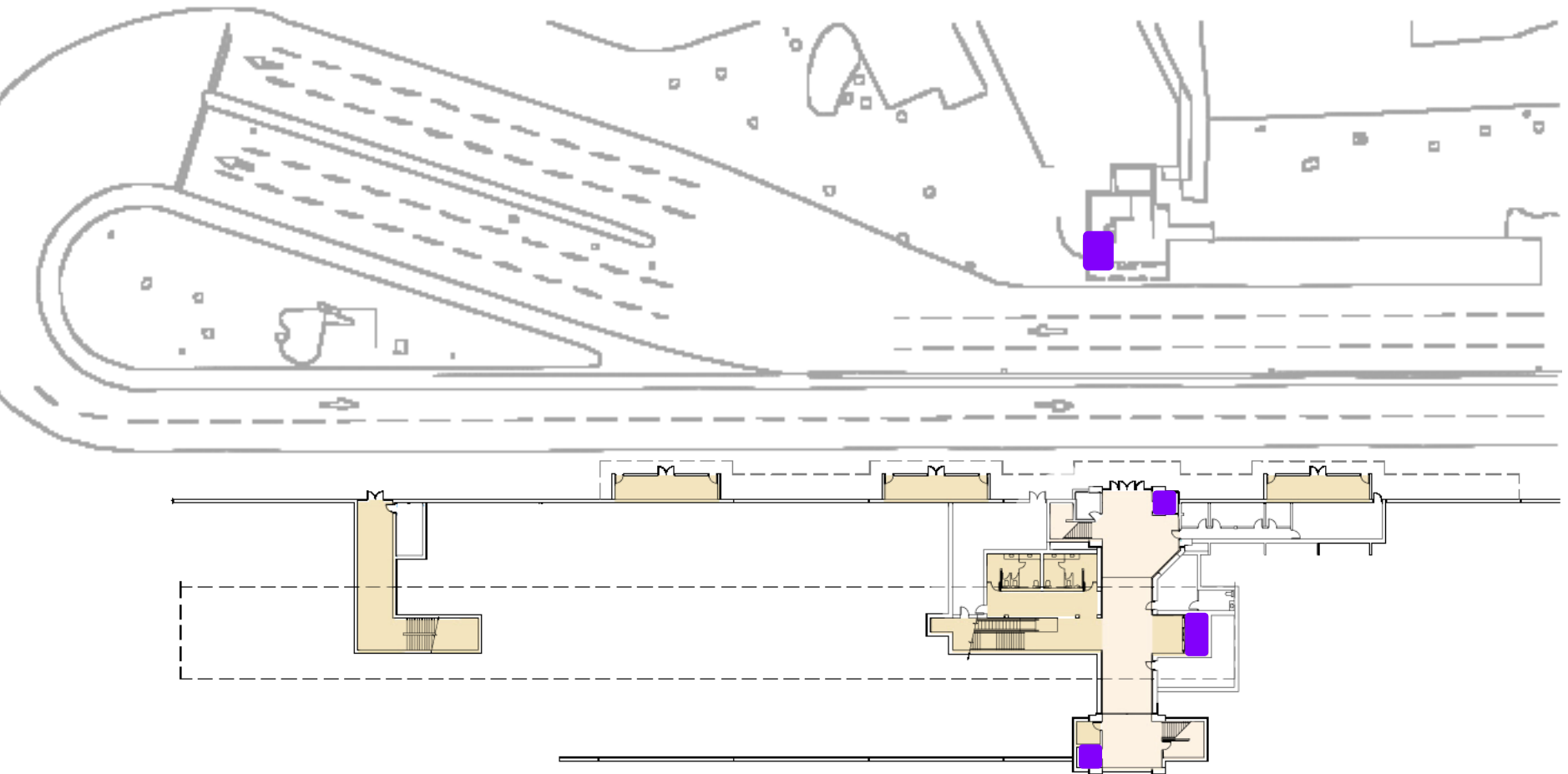


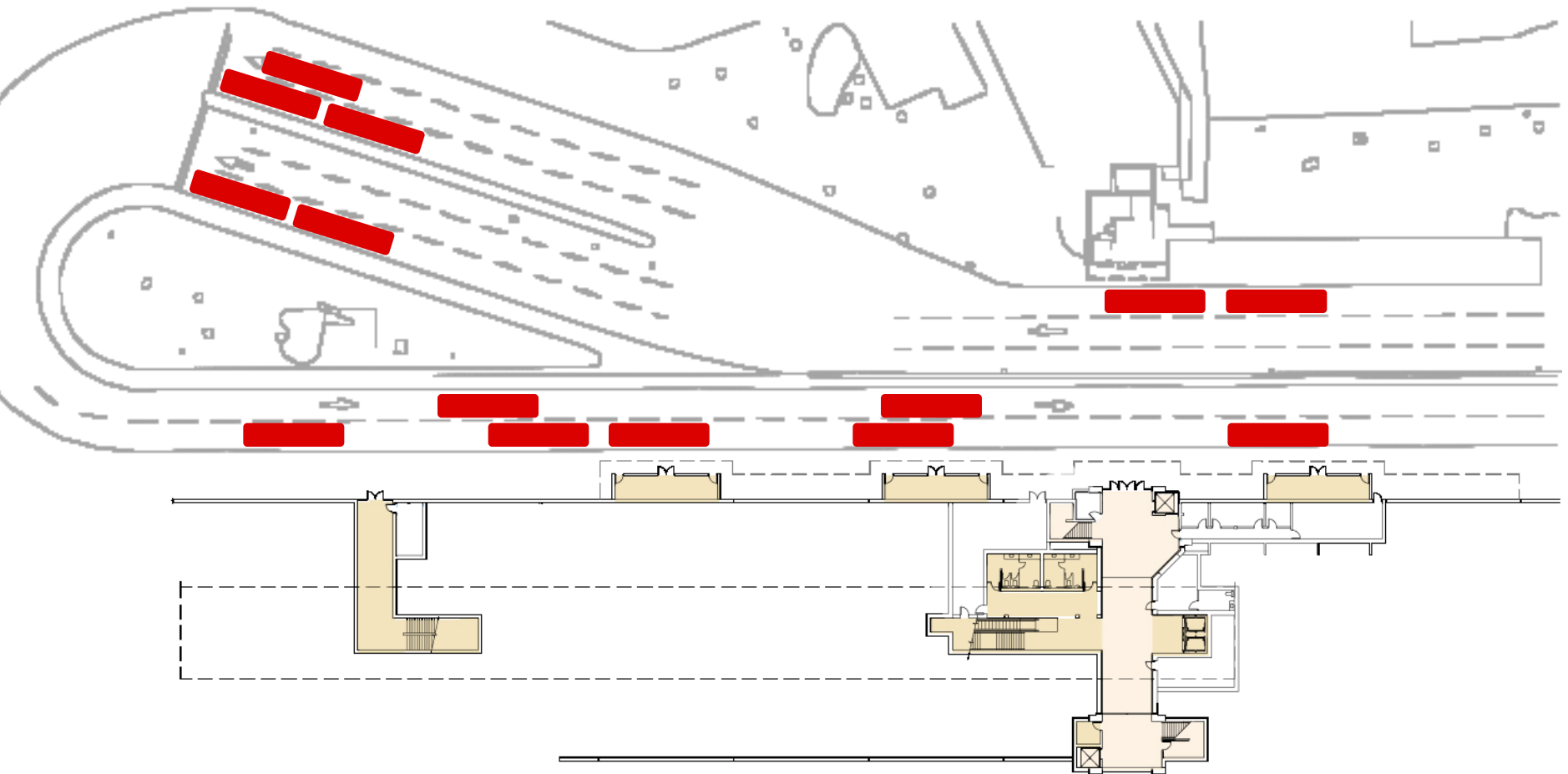


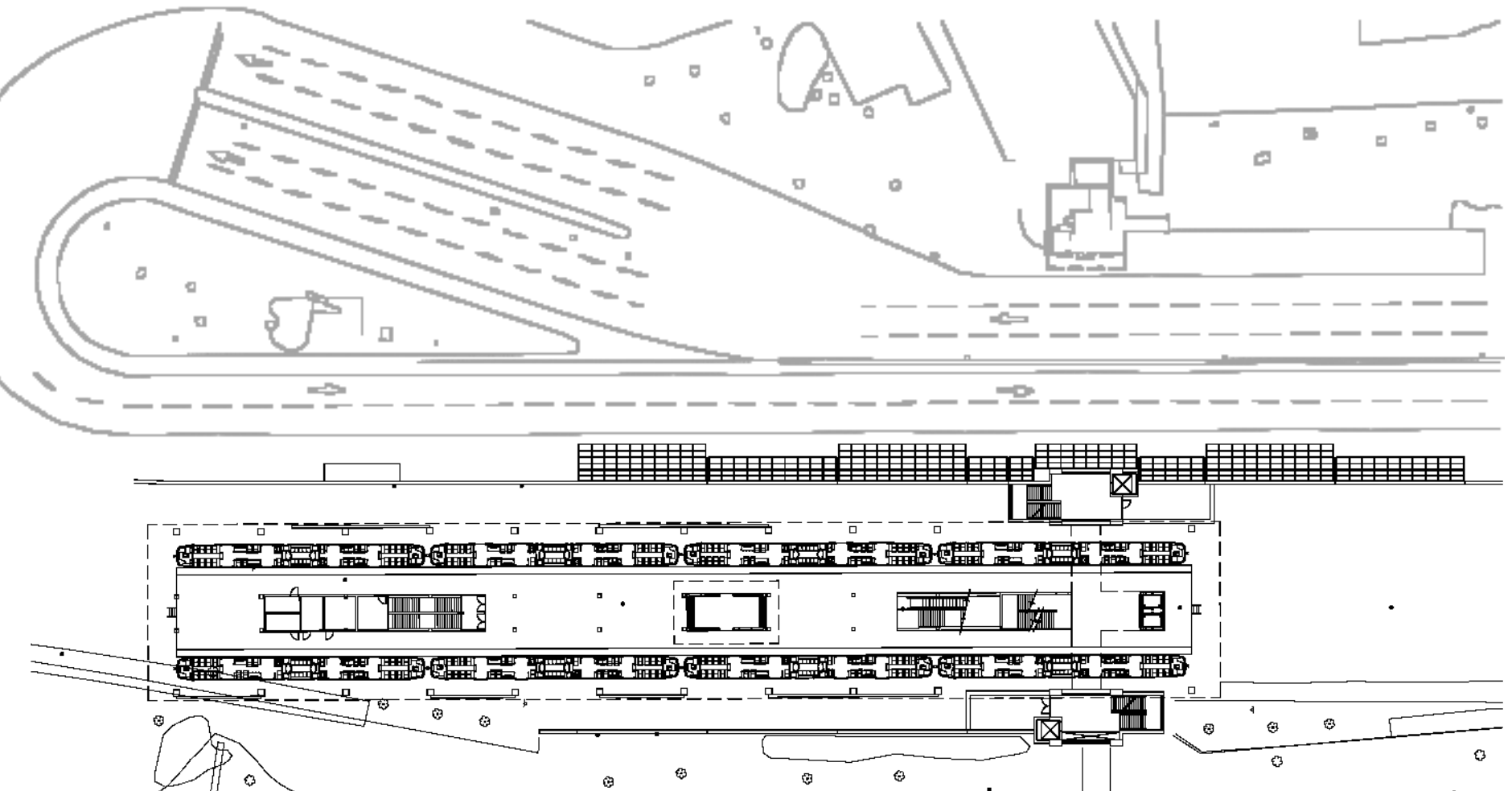


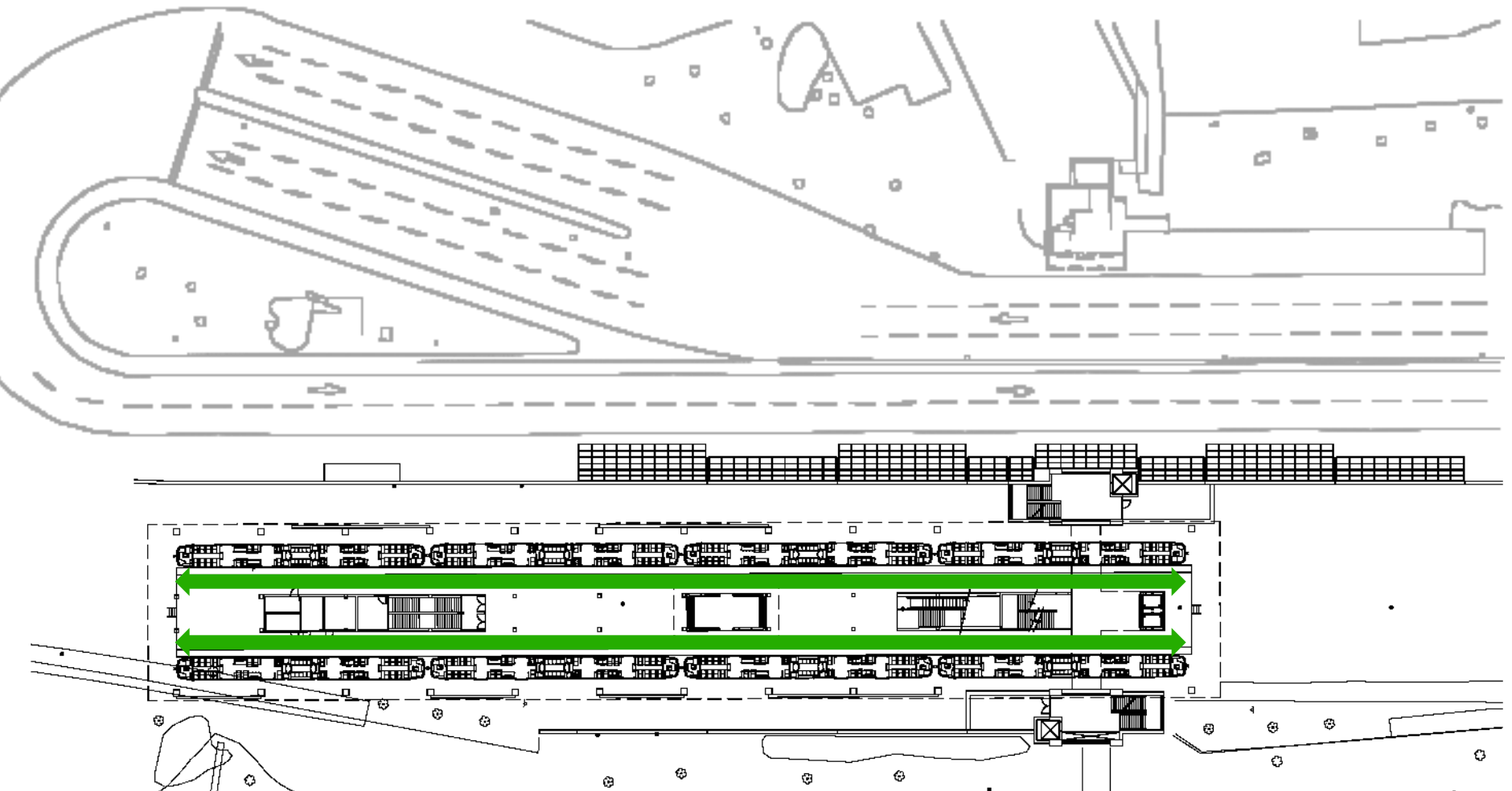


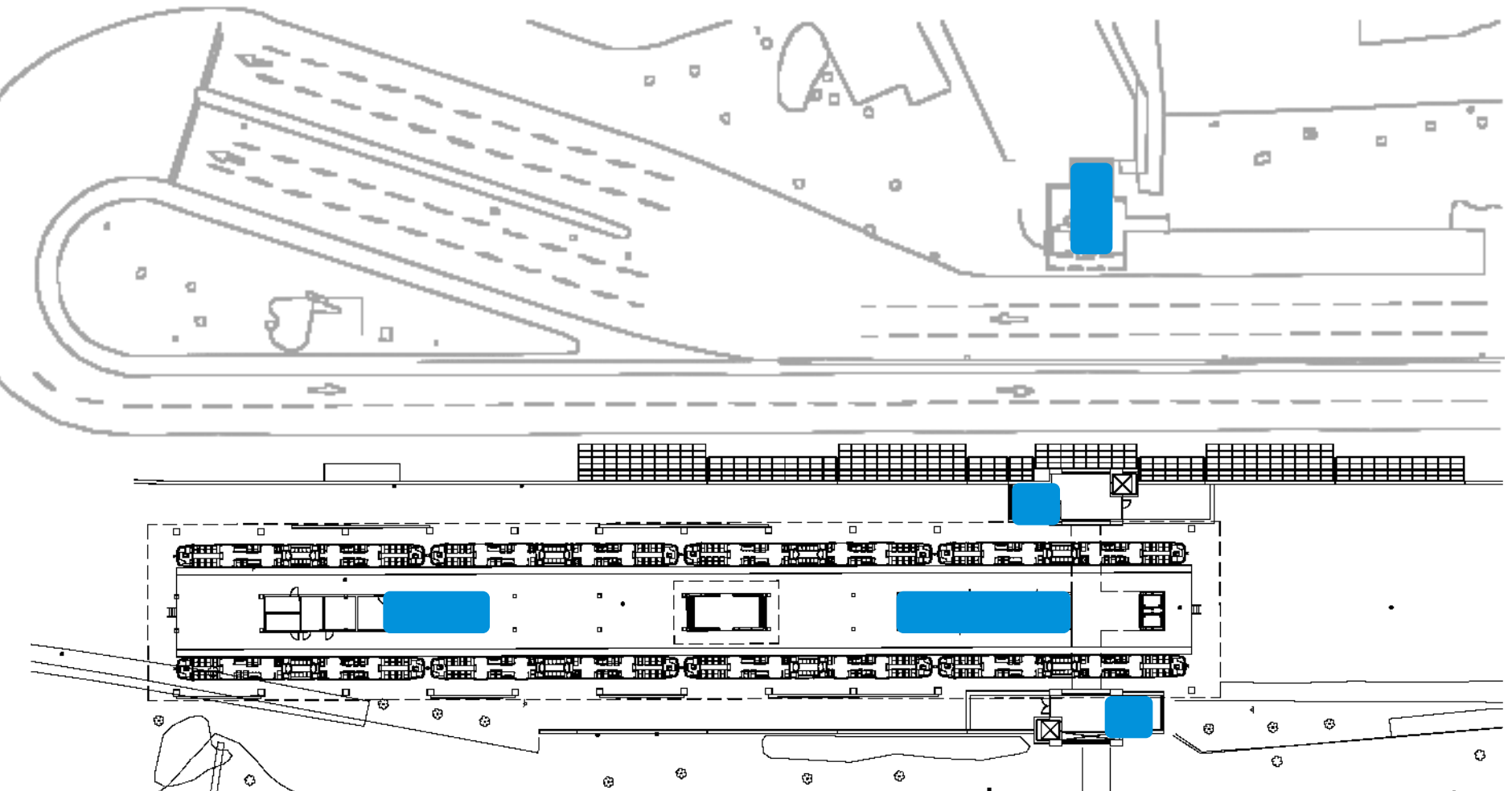


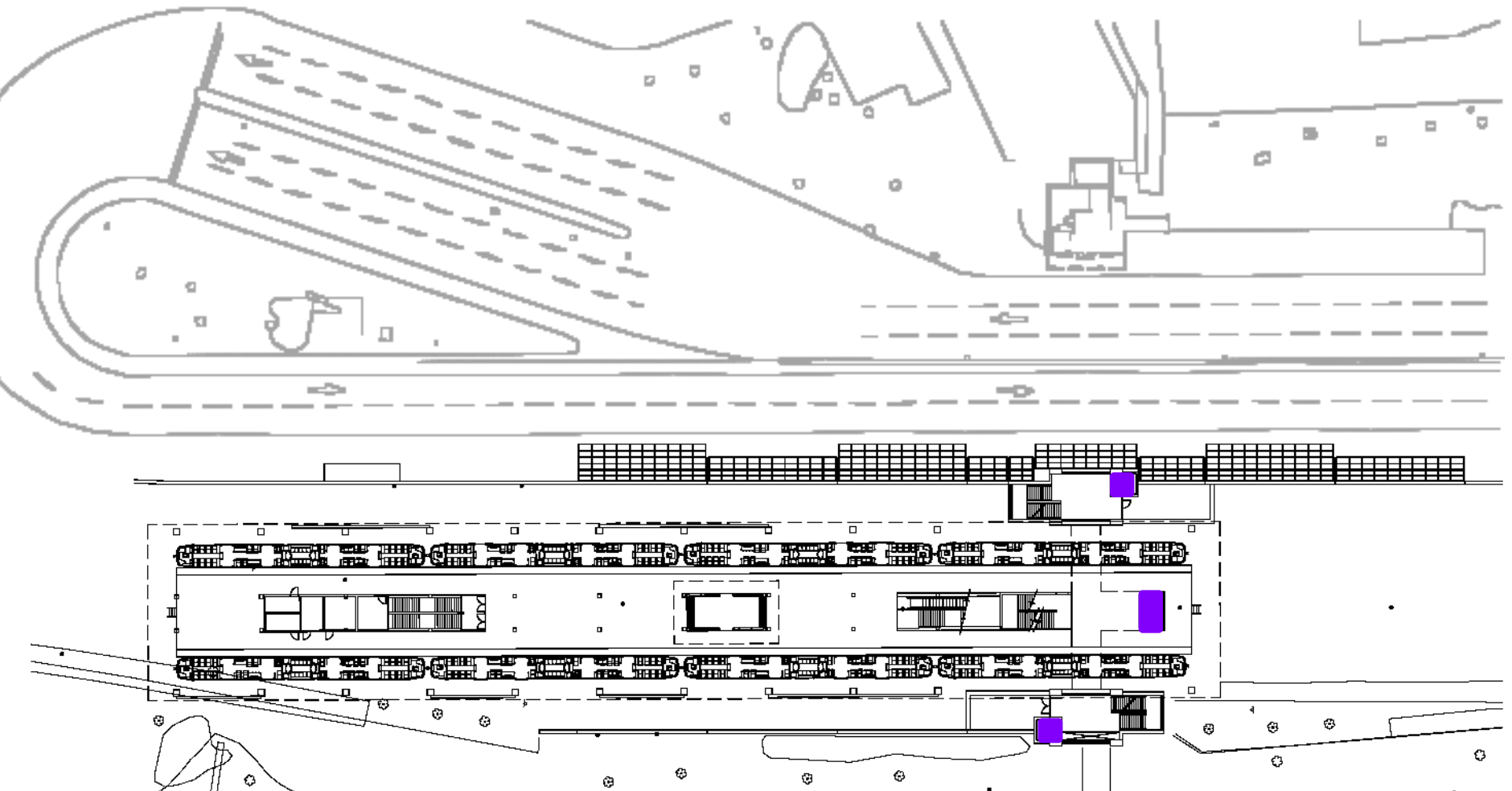


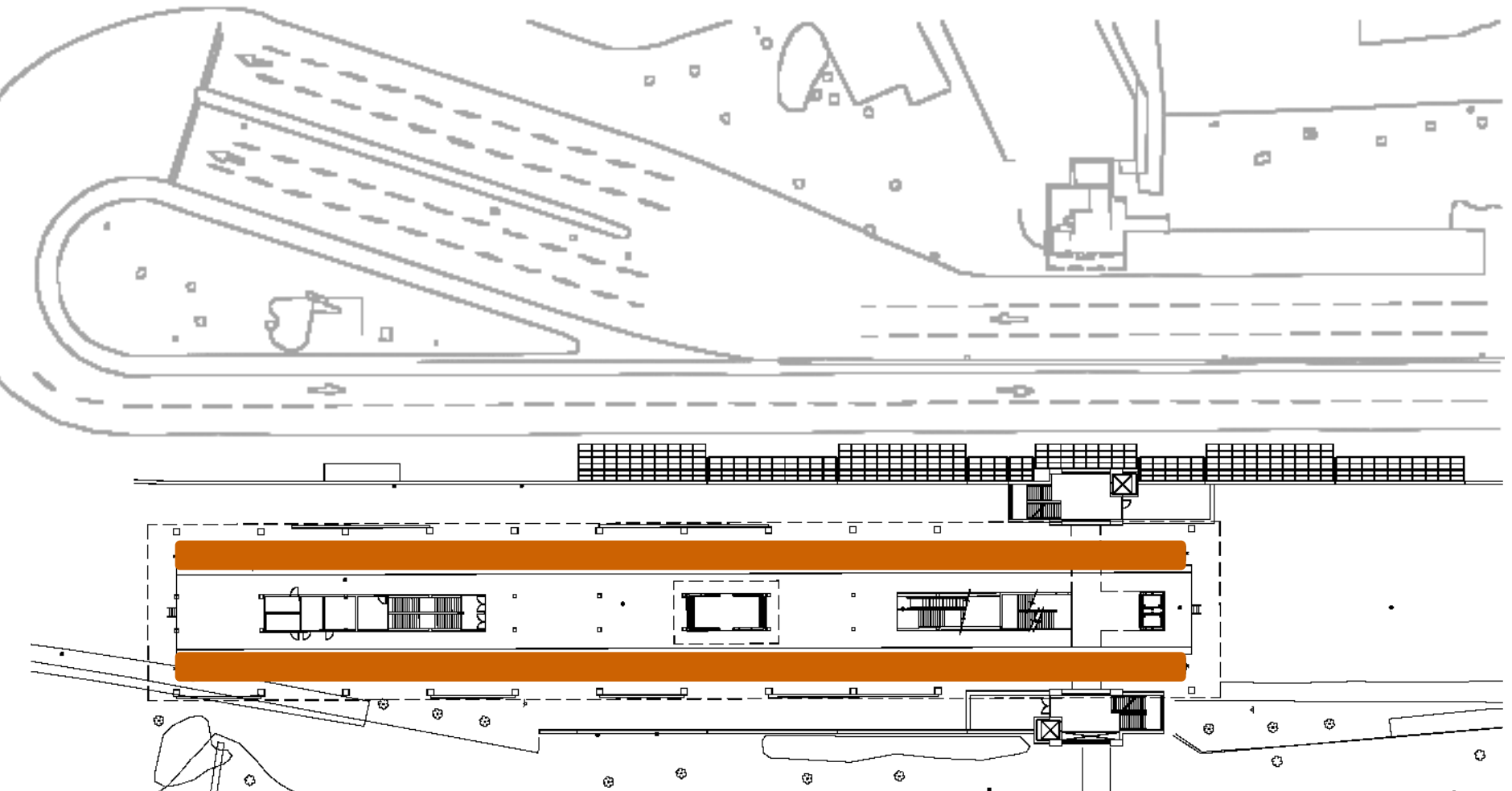


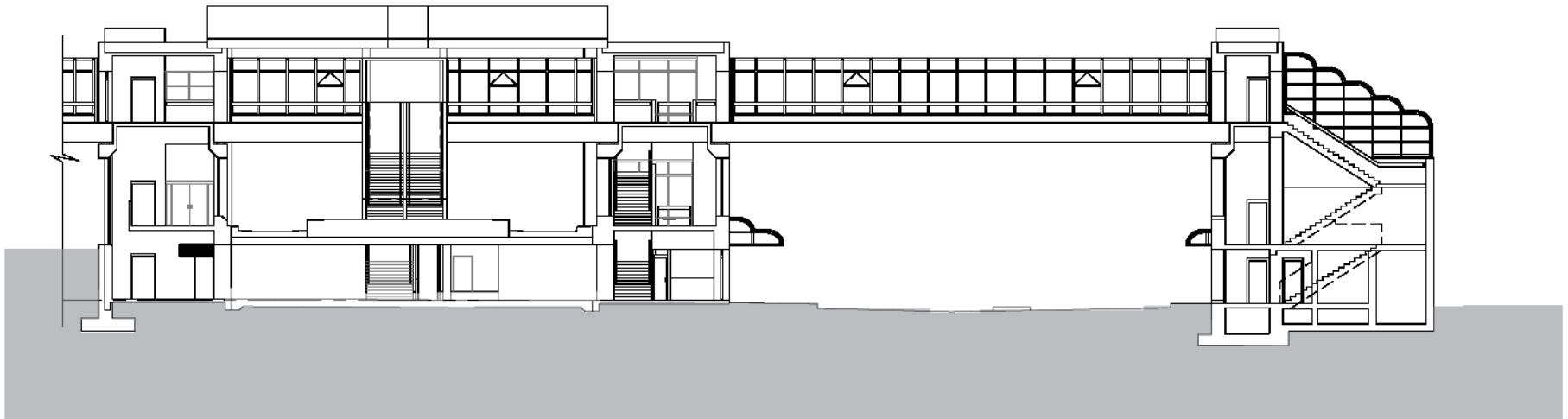


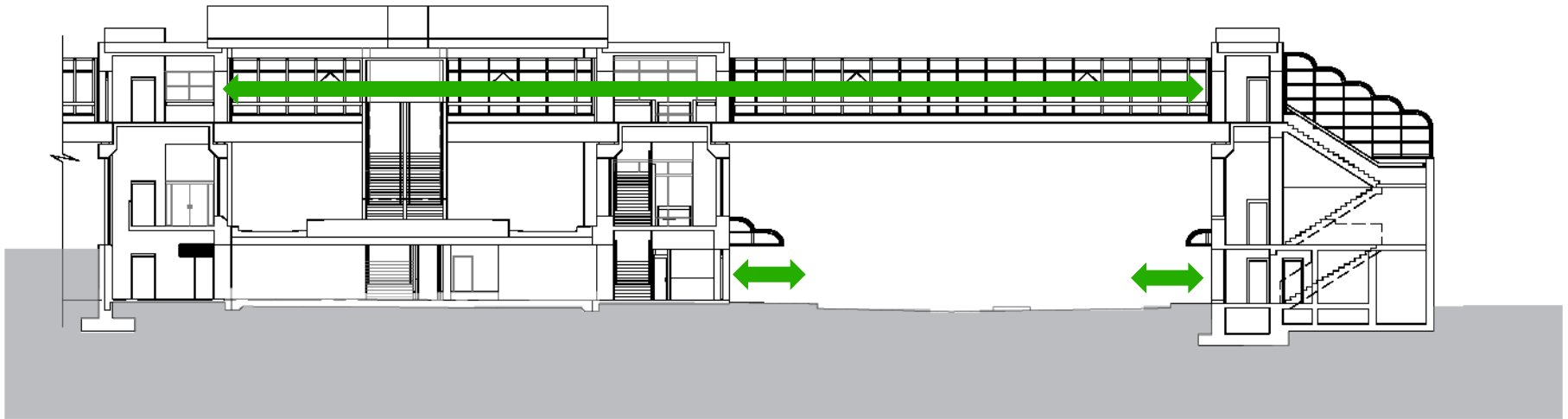


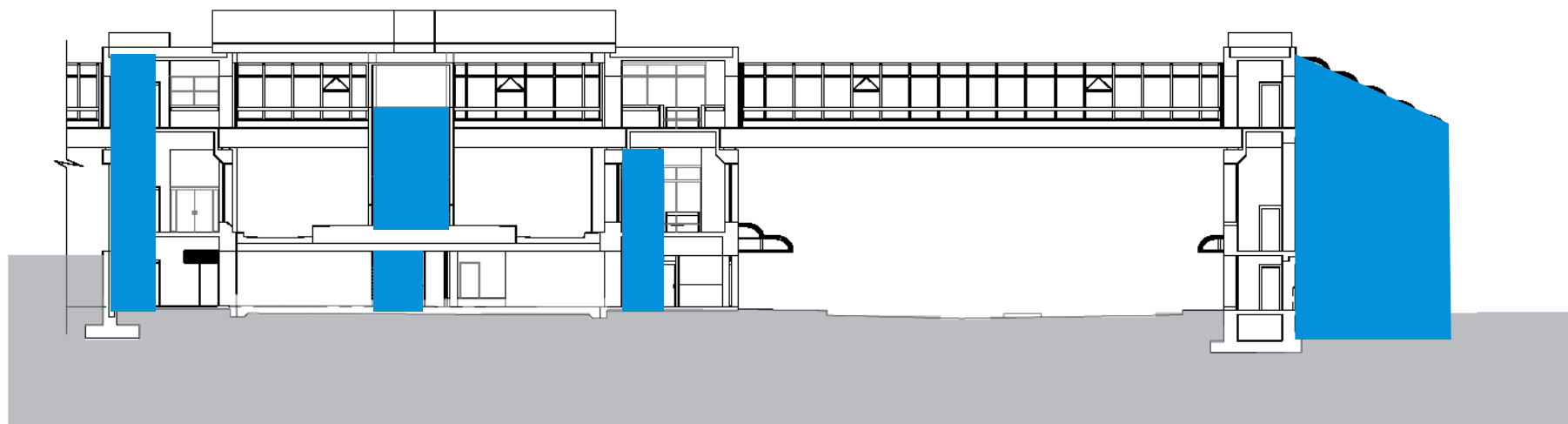


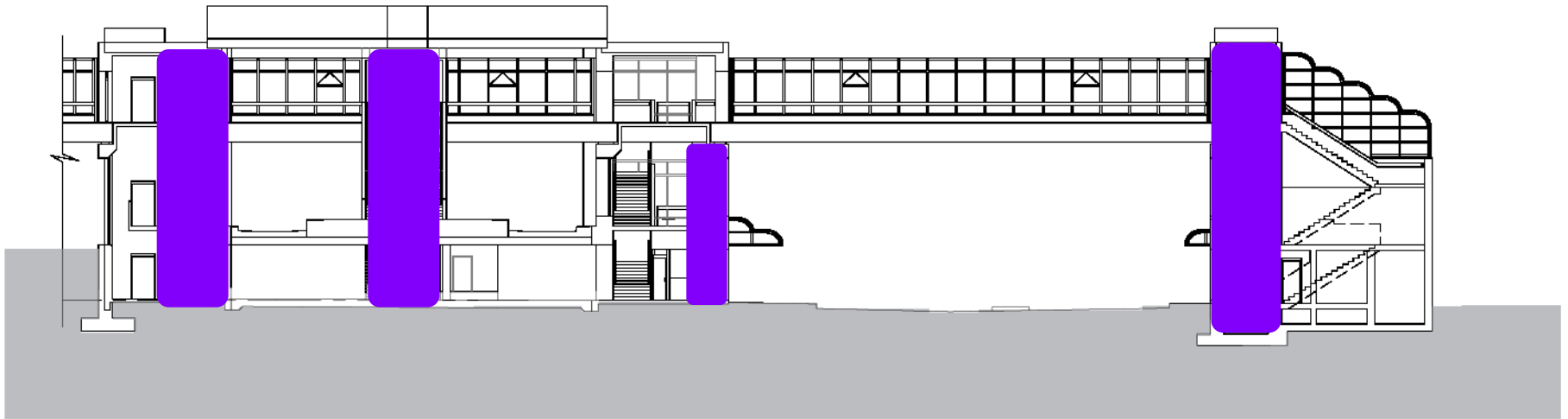


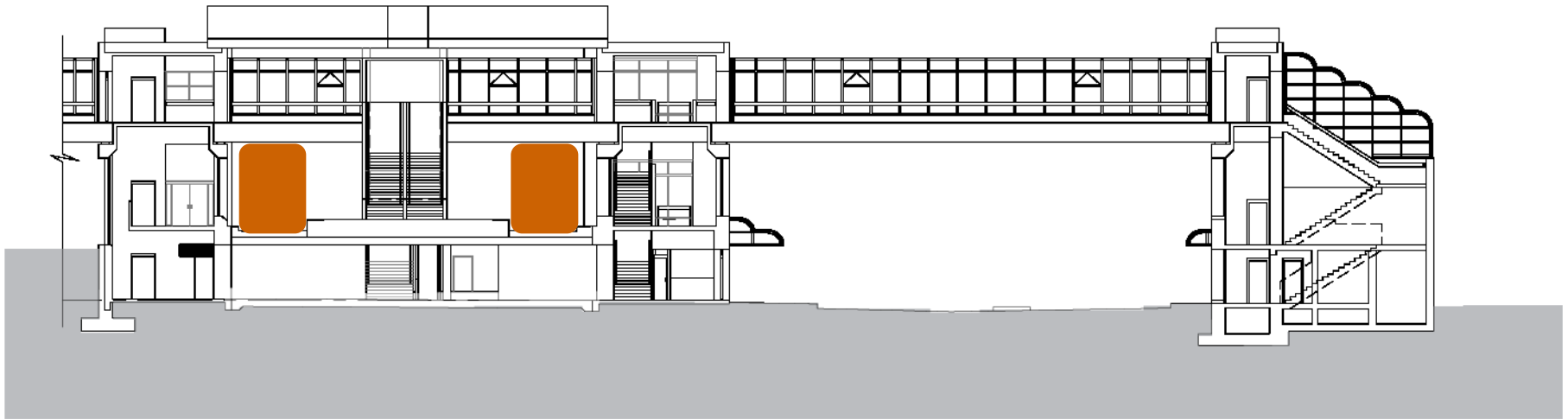


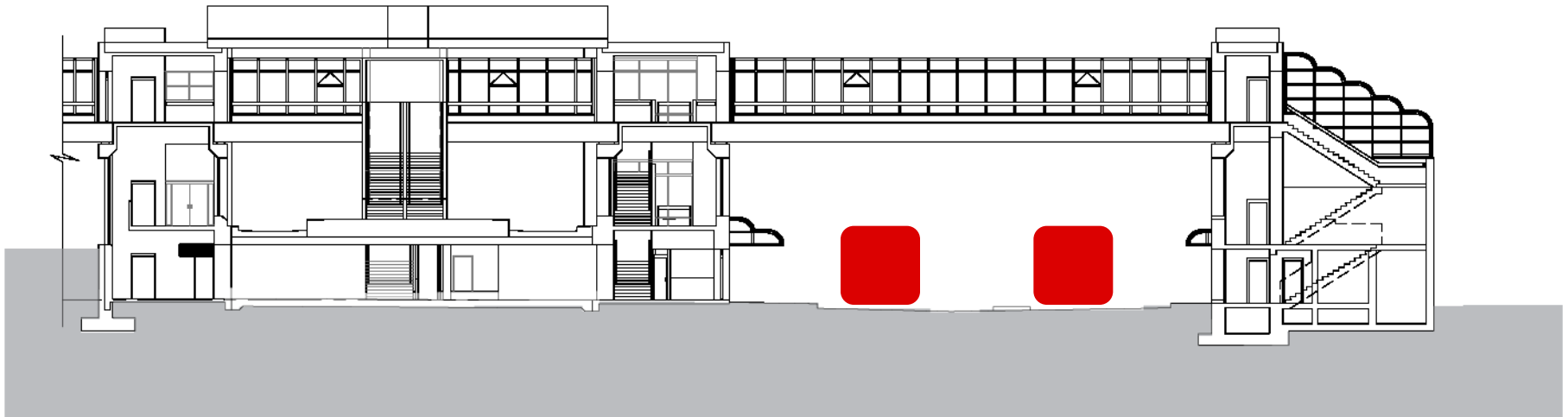


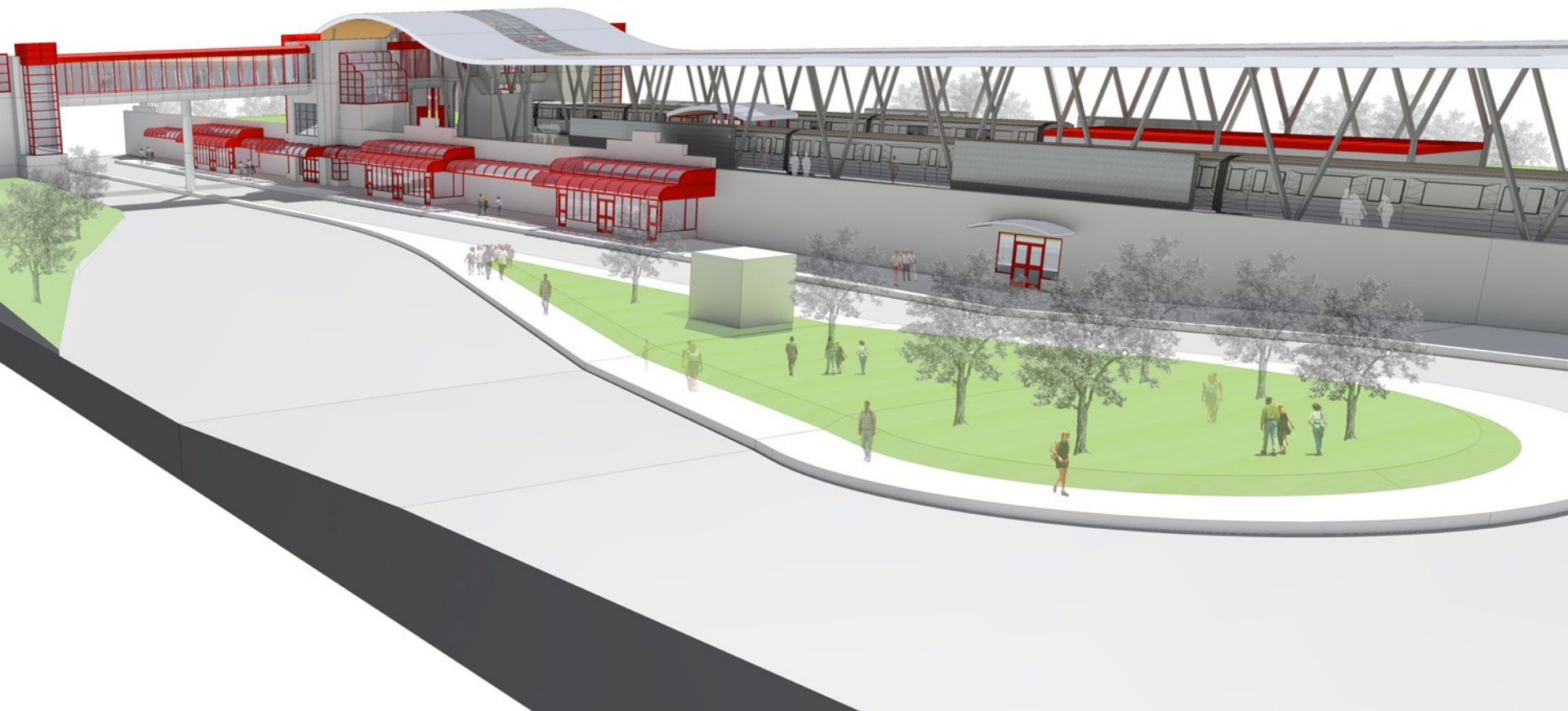














OLRT Implementation Report

UPDATED PROJECT COSTS

- The total project estimate, with the improved tunnel alignment, and other value engineering cost savings to date is *\$1.741 billion in 2009 dollars or \$2.115 billion* in construction dollars.
- *Construction dollars* are dollars that have been escalated to year of construction, and account for the dollar's value in the years that they are spent.

OLRT - Cost Estimate Construction Dollars		
City Costs		
1	Property, Procurement & Planning	\$184 M
2	Program Management (Project Office, Preliminary Engineering & Project Management)	\$148 M
3	Retained Risk Contingency	\$65 M
CITY Subtotal		\$397 M
Constructor Costs		
4	Construction	
a)	Tunnel	\$493 M
b)	Stations	\$284M
c)	Maintenance and Storage Facility	\$116M
d)	Track Work	\$128 M
e)	LRT Systems (power, signals, ventilation, etc) and Vehicles	\$523M
f)	Civil Works (structures, detours, utility relocations, etc.)	\$174M
Constructor Subtotal		\$1718M
Total		\$2.115 B

- The City will require the construction consortium to provide private financing of up to \$400 million of the construction costs to stand behind overall contract performance.
- Private sector construction teams will be asked to provide a Design Build Finance Maintain proposal with a fixed-price to complete the construction and maintain the system for a minimum of 15 years.



OLRT Implementation Report

INFRASTRUCTURE ONTARIO

- Based on Council's direction, staff undertook an assessment of Infrastructure Ontario (IO) as the potential Commercial Procurement Lead for the OLRT project.
- Determined significant benefits to the City from working with Infrastructure Ontario:
 - *Success with fixed price on time delivery*
 - *Aggressive risk transfer models*
 - *Private sector familiarity*
 - *AFP/P3 Experience*
- Report recommends engaging IO as the Commercial Procurement Lead.



OLRT Implementation Report

THE PATH FORWARD

TIMING	PROJECT ELEMENT
✓	Preliminary Engineering Commencement
✓	OLRT Update to Council
✓	Schedule Acceleration & Procurement Report to Council
✓	Affordability Update
✓	OLRT Cost and Design Report
✓	Request for Qualifications Issued
Oct 2011	Request for Proposals Issued
Dec 2012	Firm selected to Design-Build-Maintain system
2013	Construction Begins
2018	System in Service

QUESTIONS ?