Section C ▶
Sector Design Concepts

This section of the Framework describes the design concepts for individual sectors of the route.

For each of these sectors:

- The existing layout of the corridor is presented as an overlay on aerial photographs
- Key points about the existing conditions are illustrated and described
- The concept design of the corridor is presented, with key works elements identified
- Key features of the works are described and illustrated in detail
- Visualisations or sketches of the future finished environment are included for key locations along the corridor.

The accompanying text to the illustrations identifies which elements of the concept design form part of the core WRR - Waterview Connection Project, and which are aspirational and may, in time, be delivered by other agencies or in partnership with NZ Transport Agency.

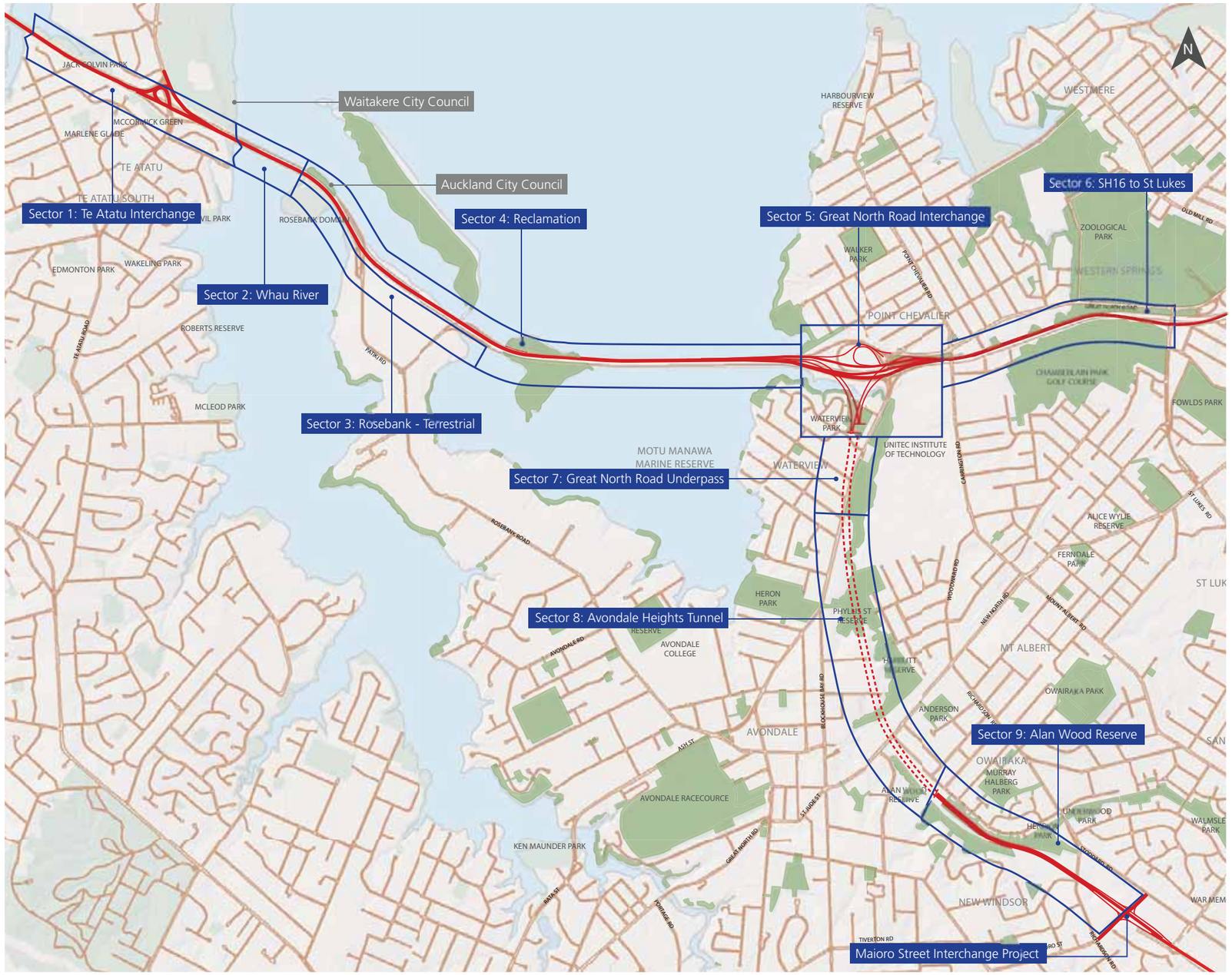

Figure C-1.1: Project sectors

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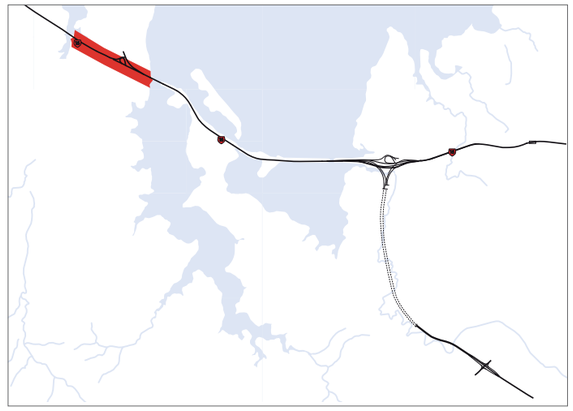
C1 Sector 1 Te Atatu Interchange



Sector 1 involves the widening of the motorway, extension of the interchange ramps, widening of Te Atatu Road through the interchange area, and extension of the northwestern cycleway path through to Henderson Creek. The corridor is relatively constrained, surrounded by existing residential development.

Henderson Creek

C1.1.1 Existing situation

The motorway west of Te Atatu interchange is tightly constrained by established and stable land uses, with large amounts of mature vegetation creating a strong 'green corridor' character.

Movement and connectivity

- Two general traffic lanes in each direction with an eastbound bus shoulder
- No local roads or paths crossing the motorway
- The northwestern cycleway route uses local roads parallel with the motorway, to the south, connecting with a route along Henderson Creek.

Landscape setting and views

- Falling topography from Te Atatu ridge to Henderson Creek
- The southern boundary has a variable local topography, while the north side is almost level
- To the south there is mature vegetation throughout the residential area and along the motorway edge
- North of the motorway, Jack Colvin Park is surrounded by large numbers of mature vegetation, including along the motorway edge
- Views into the corridor are largely screened by the mature vegetation, with a reciprocal sense of enclosure for motorway users
- There are a number of electricity transmission lines and pylons close to the route.

Urban form

- To the south is the periphery of an established residential area centred around Edmonton shops
- Te Atatu village to the north is a designated Growth node in the Regional Growth Strategy
- Residential areas to the north are separated from the motorway by Jack Colvin Park. This is used for competitive rugby, and abuts Henderson Creek to the west. The Park includes a club building, car parking and some informal spectator seating immediately adjacent to the motorway. Rutherford College and Primary School are just north of the park, with catchments straddling the motorway.

Structures

- The existing Henderson Creek motorway bridges are outside the scope of works, and will be addressed through a separate project. There are no other major structures in this area.

Figure C-1.3: Looking west from Te Atatu Road

Figure C-1.5: Mature trees lining the motorway

Figure C-1.7: Existing interface with Jack Colvin Park

Figure C-1.2: Aerial view of sector 1 from the north

Figure C-1.4: Henderson Creek and connecting off-road path

Figure C-1.6: Existing residential dwellings adjacent the corridor

Figure C-1.8: Sports pitch, clubhouse and seating, Jack Colvin Park

Figure C-1.9: Henderson Creek existing plan

Figure C-1.10: Henderson Creek concept plan

C1.1.2 Design concept

The motorway will be upgraded with additional movement capacity, within treatment of the corridor boundaries to address the effects of this change on surrounding land uses.

Movement and connectivity

- One additional general vehicle lane will be added in each direction
- A westbound bus shoulder will be created
- The northwestern cycleway will be extended from Te Atatu interchange along the southern edge of the motorway corridor, connecting with paths at McCormick Green and Henderson Creek.

Landscape, planting, views

- Much of the mature planting along the corridor boundaries will be removed to facilitate widening of the motorway and introduction of the cycleway extension
- New planting including trees will be introduced along the northern boundary with Jack Colvin Park wherever possible. The scale of the planting will be maximised where constraints such as the playing field dimensions and presence of overhead power lines do not prevent this
- New planting along the southern side will be limited to small scale shrubs along the cycleway
- New stormwater treatment ponds with landscape planting to the north-west, on limited reclamation.

Urban Form

- The sporting faclities within Jack Colvin Park will be maintained largely as existing. Retaining walls will be used to limit the extent of works adjacent the club house. New spectator seating will be fitted between the motorway boundary and the playing field, which will remain as existing
- Some dwellings will be removed on the southern side to facilitate extension of the cycleway, especially where power pylons constrain space.

Structures

- New noise walls will be provided along the southern boundary to mitigate effects on residential properties.

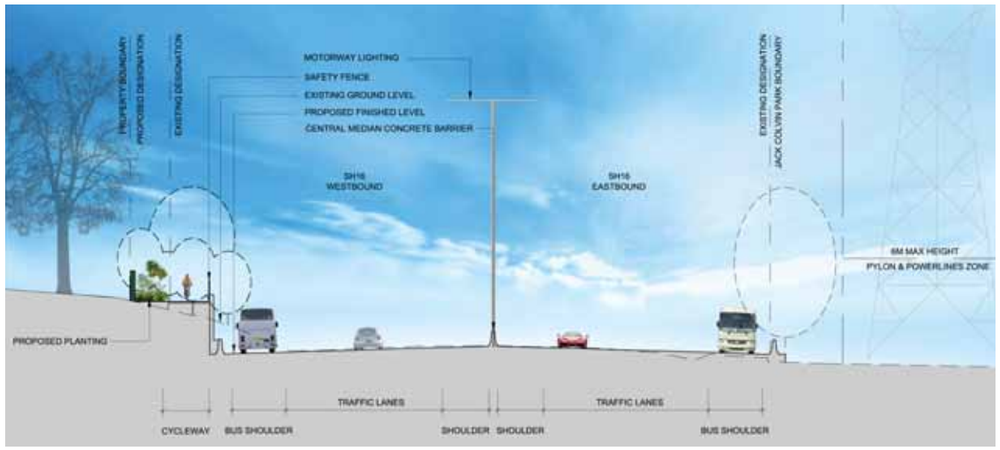


Figure C-1.11: Future cross-section at CH5850

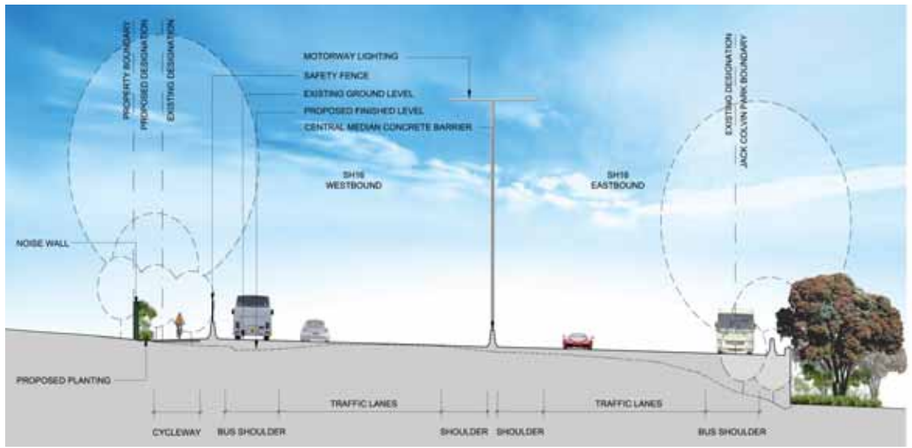


Figure C-1.12: Future cross-section at CH6075

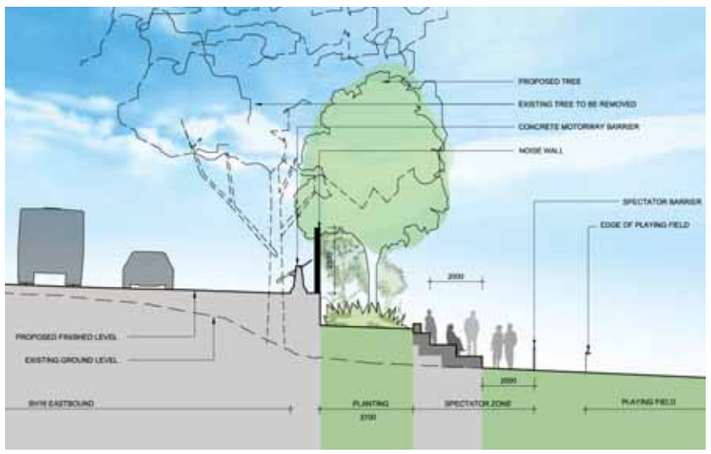


Figure C-1.13: Northern boundary section at halfway line of main playing pitch

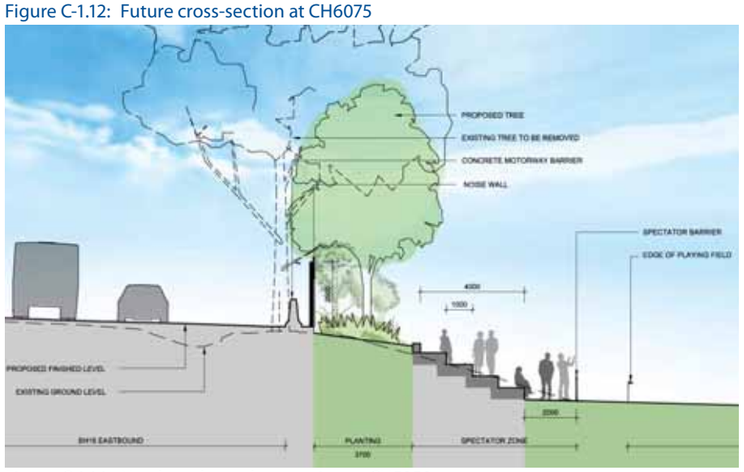


Figure C-1.14: Northern boundary section at CH5950

Te Atatu Interchange

C1.2.1 Existing situation

Sector 1 includes significant improvements to the Te Atatu Interchange. These include enlarging and re-configuring off and on ramps to accommodate additional lanes and to provide for bus shoulder and priority for buses and other High Occupancy Vehicles (HOVs).

Movement and connectivity

- Vehicle capacity on the overbridge is limited
- Clearance height of the bridge is below standard
- Peak flows often exceed ideal operating capacity, despite two east-bound on-ramps. West-bound off-ramps back up onto main carriageway
- Recent HOV priority measures and ramp signalling
- Constraints at Lincoln Road also regularly cause traffic to back up through to Te Atatu and beyond
- The pedestrian underpass creates CPTED concerns. Recent pedestrian and cycle improvements have not addressed all issues. Signal cycle timings lead to undesirable and unsafe pedestrian movements
- Te Atatu road geometry uses motorway rather than appropriate urban street standards, reinforcing community separation effects
- Road layouts and capacities on adjoining roads, particularly Te Atatu Road to the south, create traffic flow constraints and conflicts
- The sole motorway crossing, but the local area does not appear to need new link routes.

Landscape, planting, views

- Te Atatu Road follows the line of the peninsular ridge
- From Te Atatu Road bridge distant views of Auckland and the sea. Viewpoint identified in the Waitakere City District Plan
- West of interchange the route drops from the ridge; more suburban character with enclosing trees
- East of the interchange the coastal escarpment sharply defines the setting and character:
  - Eastbound, the escarpment cutting restricts views of the water, then reveals expansive views of the harbour, boats, the CBD and volcanic cones
  - Westbound, the cutting forms an enclosing gateway to Te Atatu
- Views into / over the corridor from houses at east end of Alwyn Avenue
- Views into and over the corridor from elevated dwellings on Te Atatu Road.

Urban form

- Residential buildings, single and double storey, adjacent the corridor
- Some abrupt edges and land use interfaces
- To the northeast is an area of open land which may offer a variety of future land use options. There are a number of protected historic heritage sites (such as the brickworks) in this area, none of which are expected to be affected by the proposed works.

Structures

- Overbridge is a collection of structures with simple abutments
- Two overbridge walkways, one a discrete structure, one part of road deck
- The pedestrian underpass is a narrow concrete tunnel.

Figure C-1.15: Photo 1–1 Existing view east, located west and south of the Whau River

Figure C-1.16: Photo 1–2 Panorama based on existing view from Te Atatu overbridge

Figure C-1.17: Photo 1–3 View north adjacent to Te Atatu Road, south of the motorway

Figure C-1.18: Photo 1–4 View north towards pedestrian underpass and cloverleaf ramp

Figure C-1.19: Photo 1–5 Existing view south of overbridge and cloverleaf ramp

Figure C-1.20: Te Atatu Interchange (i) existing plan

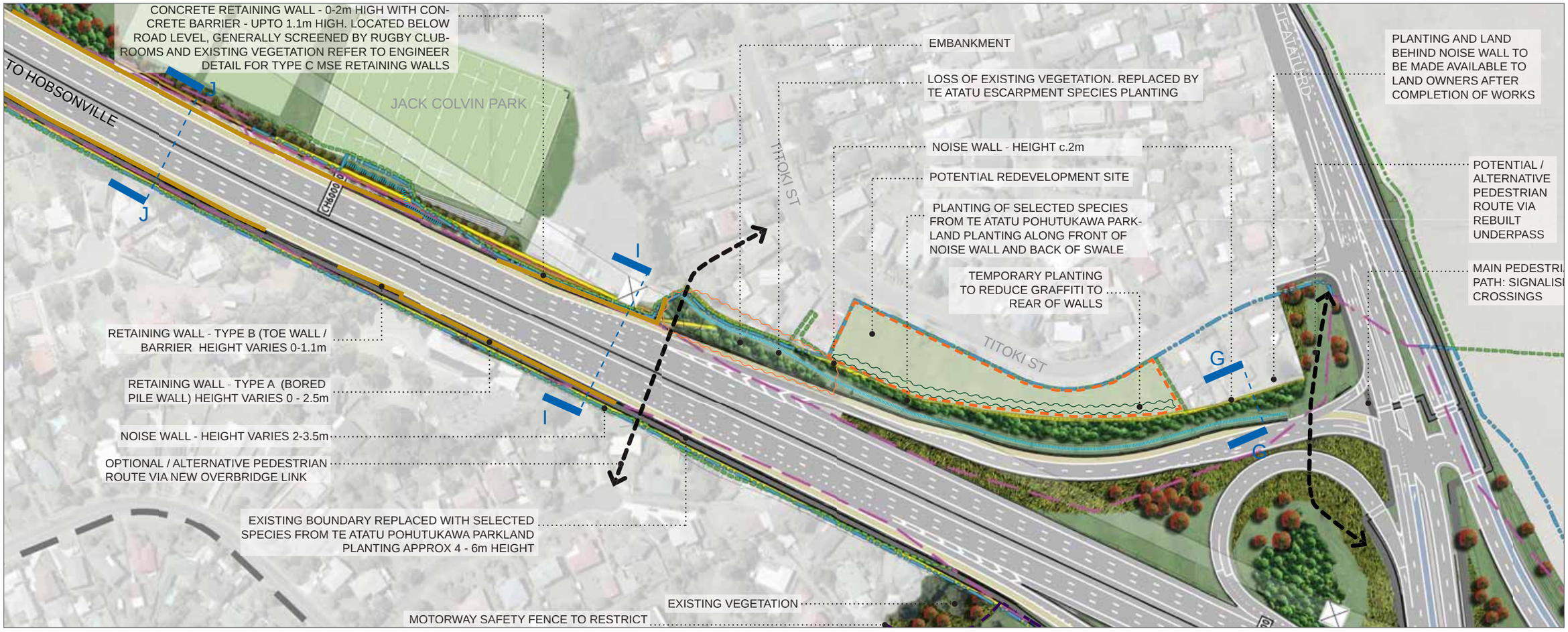


Figure C-1.21: Te Atatu Interchange (ii) concept plan

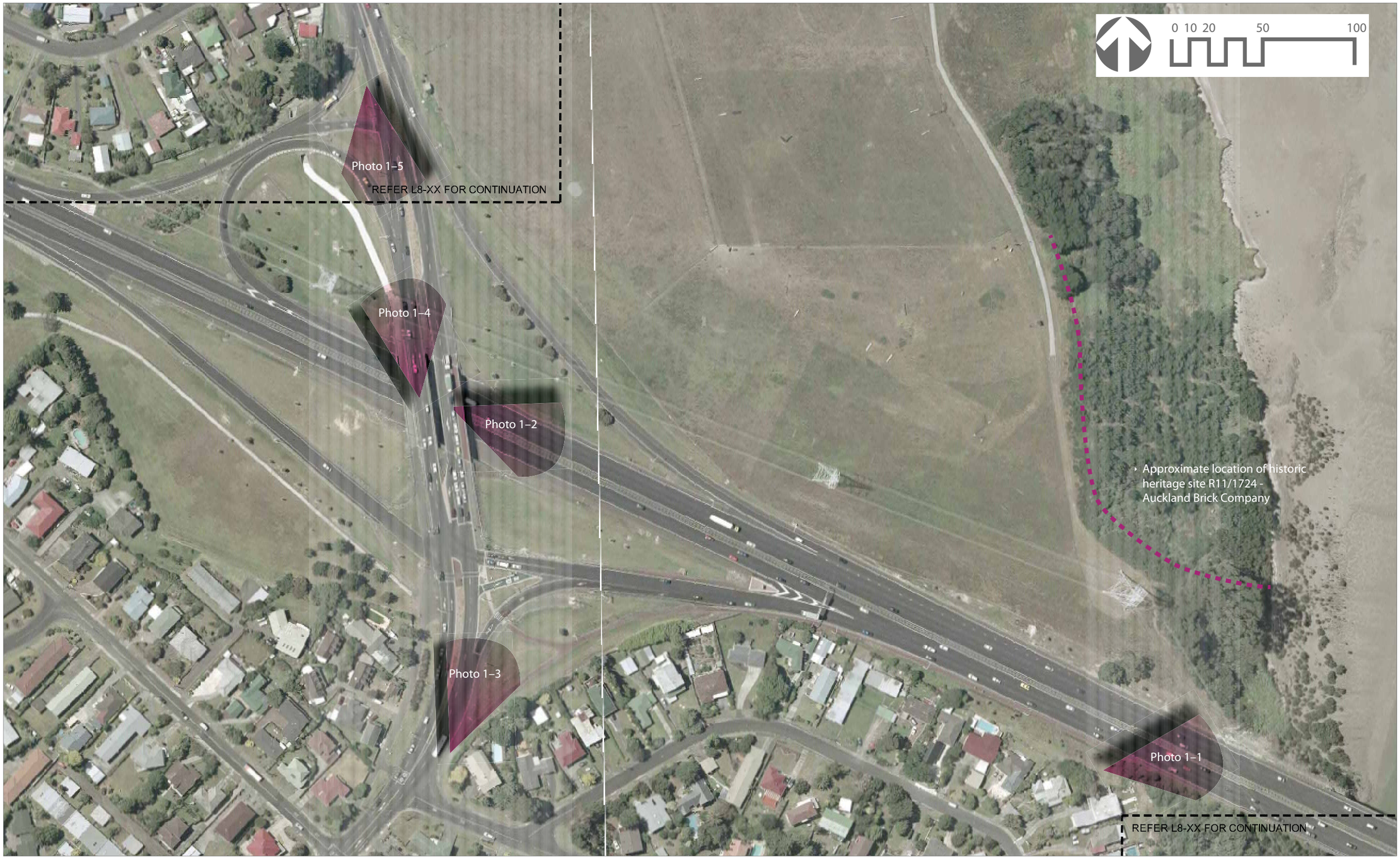


Figure C-1.22: Te Atatu Interchange (ii) existing plan

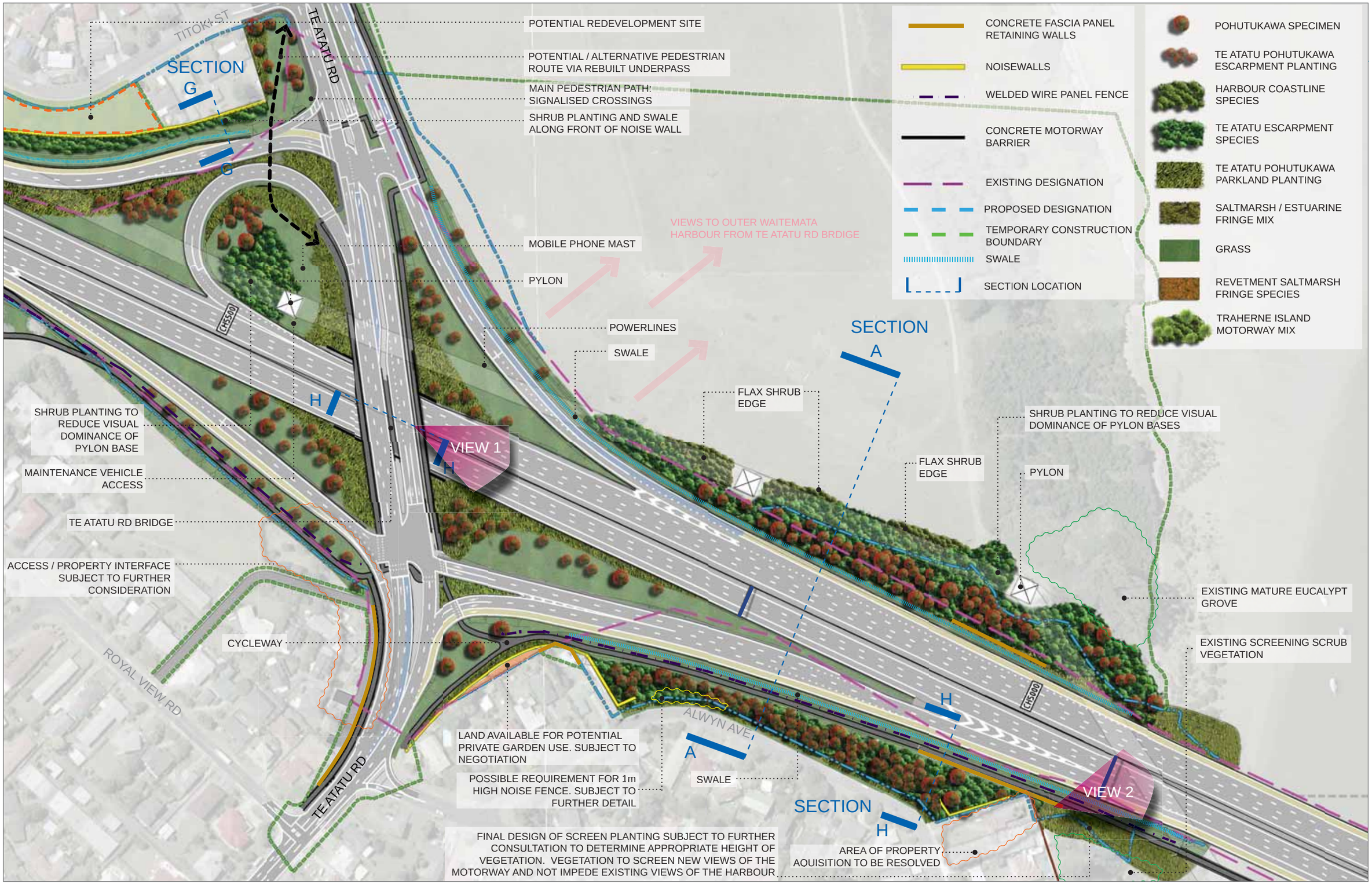


Figure C-1.23: Te Atatu Interchange (ii) concept plan

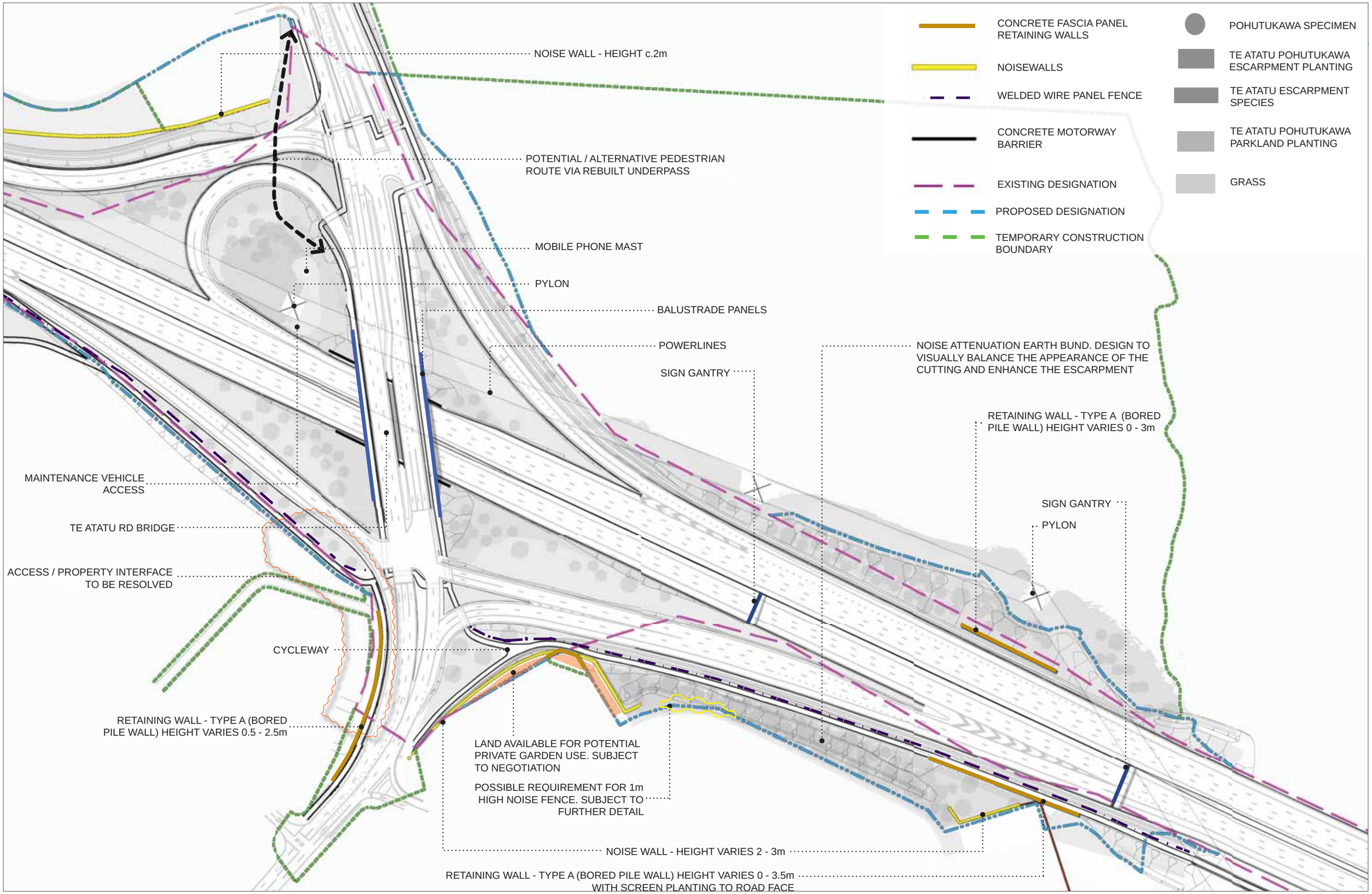


Figure C-1.24: Te Atatu Interchange (ii) concept plan – hard elements

C1.2.2 Design concept

Movement and connectivity

- Number of lanes is increased on Te Atatu Road overbridge
- Off-ramps are longer and wider to reduce mainline congestion
- High Occupancy Vehicle priorities refined for freight, bus, shared-car
- Provide at-grade shared use crossings for pedestrians and cyclists through the interchange on desire lines
- Potential additional pedestrian and cyclist facilities include a new underpass at the northern end of the interchange or a new overbridge to the west of the interchange connecting Milich Avenue and Jack Colvin Park
- Pedestrian / cycle crossing signals will be on demand in some locations and coordinated with ramp signals, to minimise impacts on traffic flows.

Landscape, planting, views

- Open grassy areas will be enhanced to create a parkland of an equivalent scale and visual impact to the motorway
- Views will be carefully framed by use of planting and earthworks
- The predominant tree species will be pohutukawa
- Cycleway will attract passive surveillance from the motorway and / or adjacent properties. Low plantings between the route and the motorway with canopy trees for shading comfort.

Urban form

- Close proximity to the highway will affect adjacent buildings
- The motorway interface minimises negative impacts by locating planting and fences/noise walls along the designation boundary and by maintaining local access routes
- Recognition of potential land uses and pedestrian access to the north-east
- Dwellings will need to be removed in several locations. Potential development on residual sites has been integrated where this is possible.

Structures

- Overbridge decks are widened and replaced where necessary
- New pedestrian span on east side of Te Atatu Road bridges

  The edges of the Te Atatu Road bridges facing the motorway corridor will receive distinctive new guardrail constructions (Fig. C1-31). These elements will help unify the bridge group. They differ from other road bridges along the SH16 corridor because they denote Te Atatu Road as an important urban gateway, and are intended to contribute positively to the local identity and sense of place

- Noise walls (Fig. B-12) are designed in conjunction with earthworks to reduce size. They will allow anti-graffiti coating
- All noise walls will be double-faced
- Planting in front of noise walls will reduce casual access where possible
- Walls near the cycleway are located to permit passive surveillance from the carriageway and related public open spaces
- Residents will be offered new planting on their side of the noise walls to visually soften them
- Pressed metal W-pattern safety barriers will be used alongside on and off ramps, and should be integrated into the wider landform and structures
- Concrete barriers (max 800mm high) with railings on top will be used to separate traffic and pedestrians on Te Atatu Road overbridge.

Figure C-1.25: Visual of proposed view eastwards from Te Atatu overbridge (View 1)

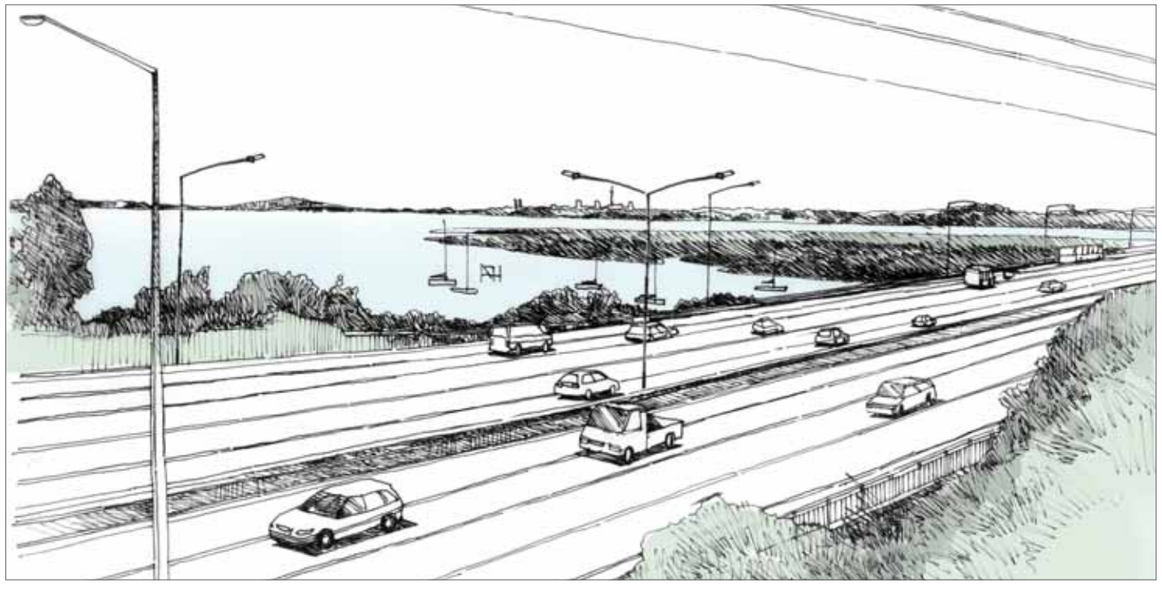


Figure C-1.26: Concept sketch of proposed view from southwest of Whau bridge (View 2)

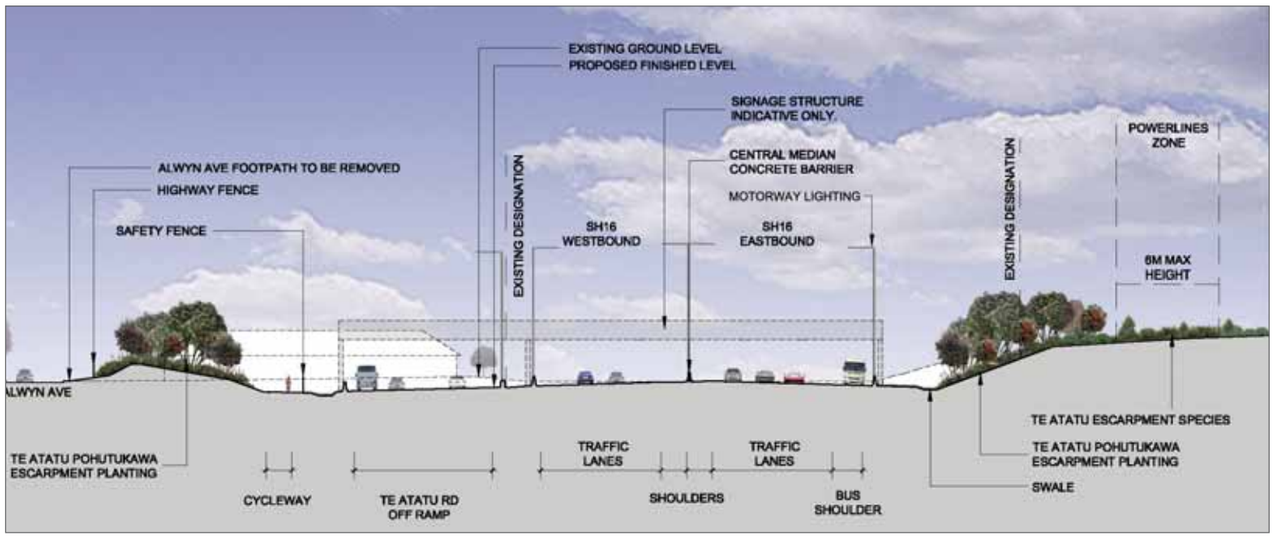


Figure C-1.27: Future cross-section at Te Atatu westbound off-ramp compared with existing arrangement

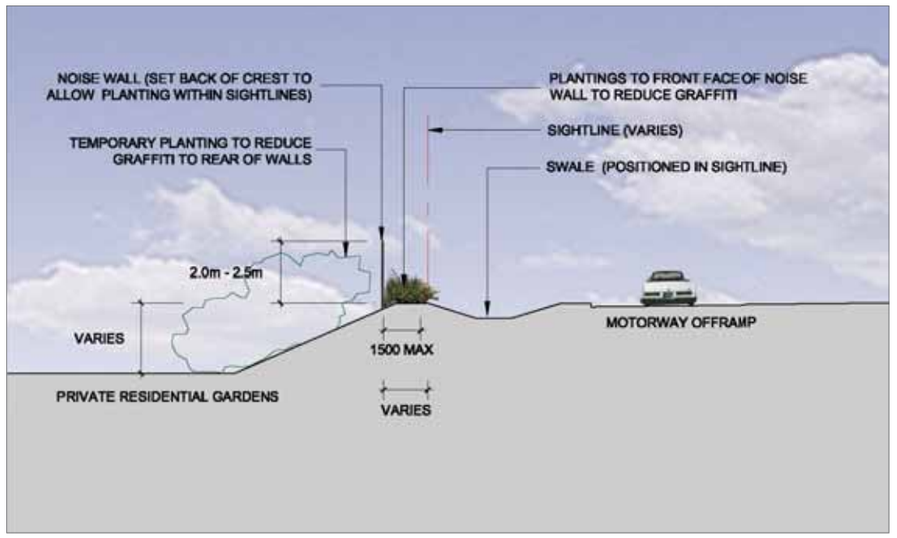


Figure C-1.28: Future cross-section at offramp with Titoki Street property interface

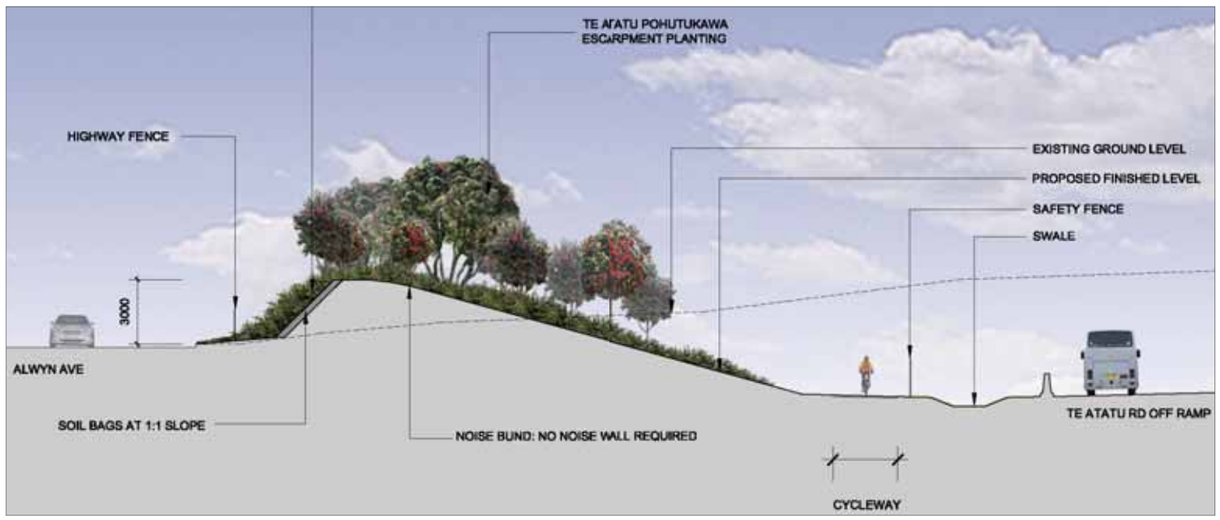


Figure C-1.29: Future cross-section at interface between Alwyn Avenue, cycleway and westbound traffic

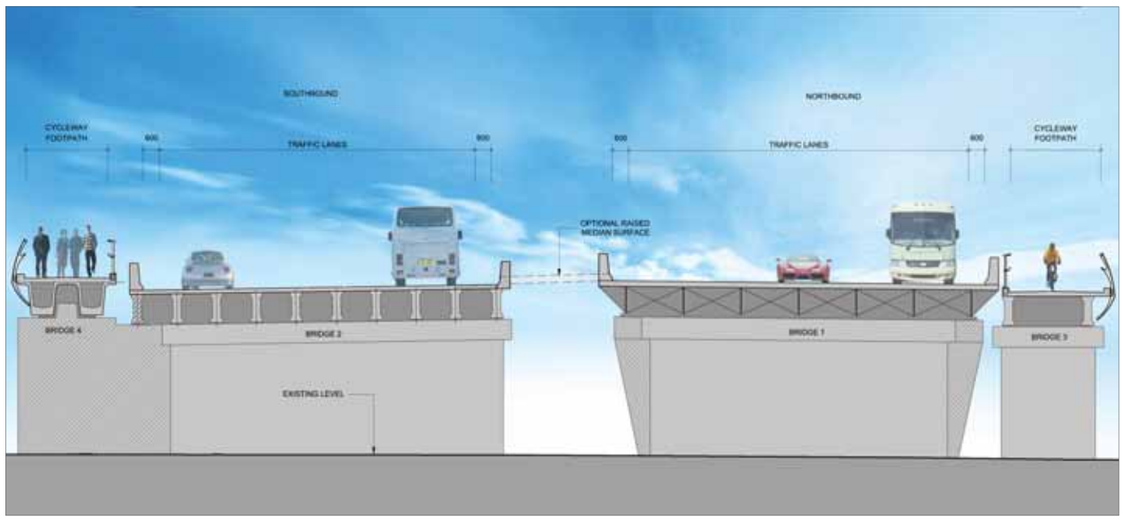


Figure C-1.30: Future cross-section of Te Atatu Road bridges, looking south

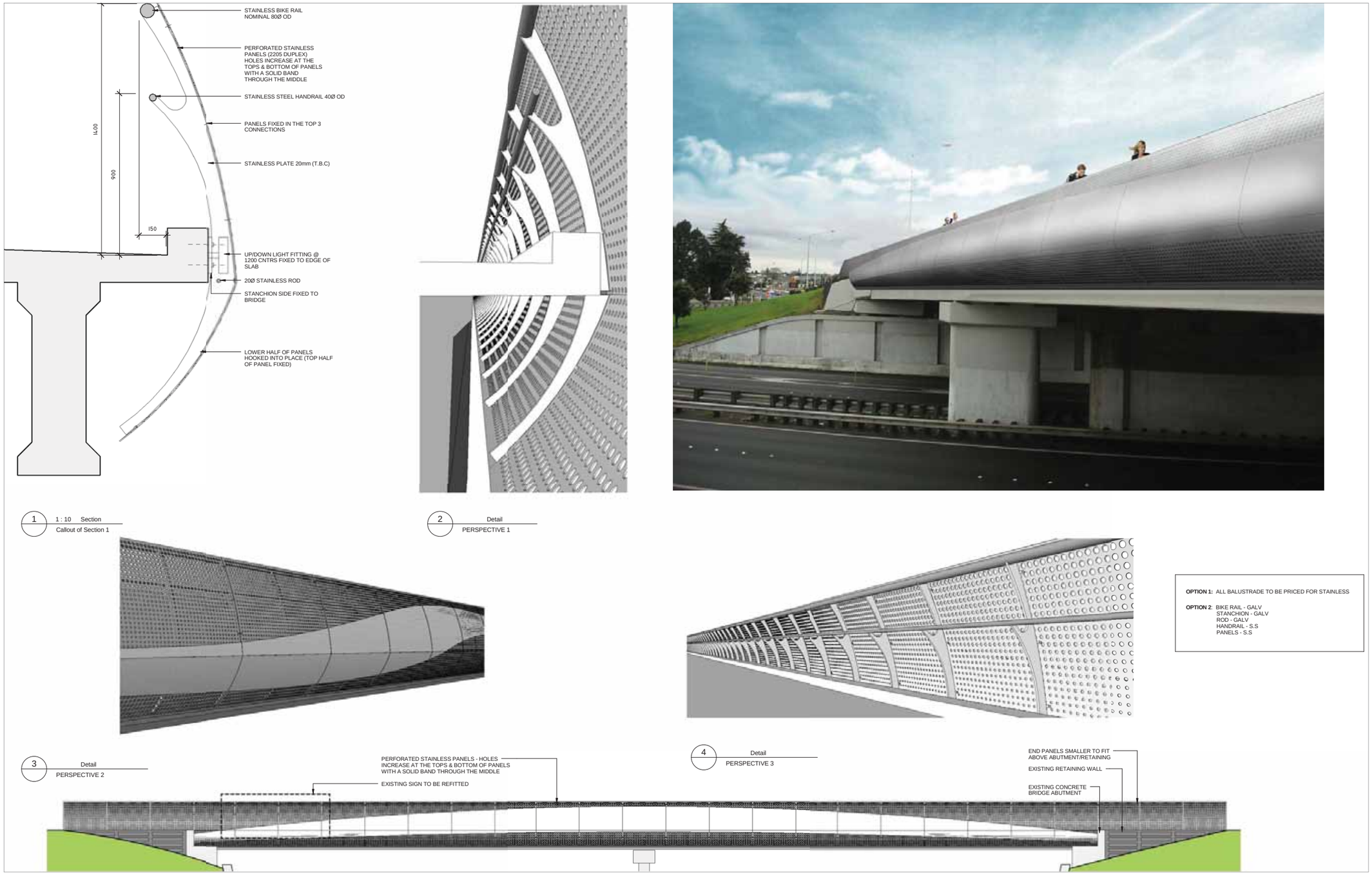


Figure C-1.31: Bridge balustrade concept – detail for Te Atatu Road bridge

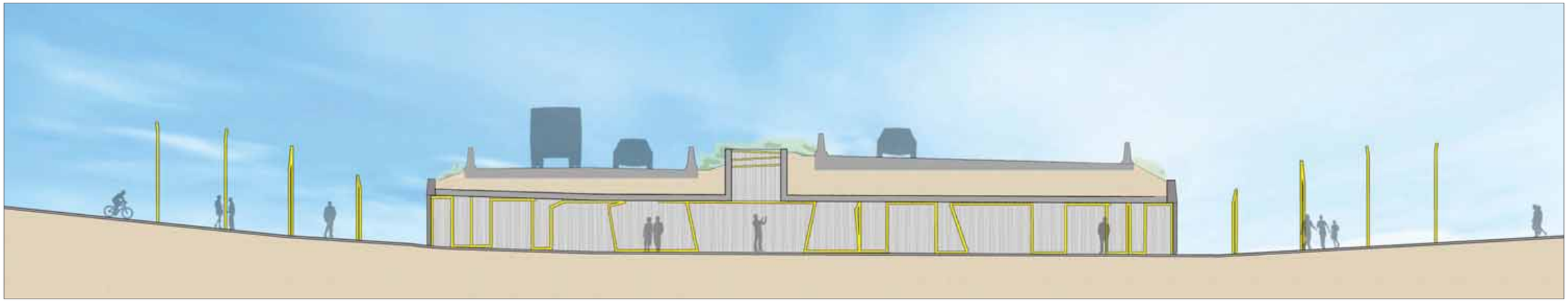


Figure C-1.32: Long section through the optional underpass, showing concept treatement

Optional structures

Pedestrian and off-road cycling connections across the motorway will be provided as at-grade paths along Te Atatu Road.

There are also two additional, optional routes which could be provided through new structures. The first option is the rebuilding of the existing underpass, the second is construction of a new overbridge link between Milich Terrace and Jack Colvin Park.

- If the underpass is to be replaced it will need to be an upgraded structure to avoid potential personal safety (CPTED) issues (Fig. C-1.32 to C-1.35. The structural tunnel should be at least 3m tall, with internal finishes inside this to provide at least 2.5m clear. This is intended to improve the capacity of this route and decrease movement conflicts between pedestrians and cyclists. The underpass will be placed on a difference alignment using new open space created by removal of a dwelling at the northern entry to improve sightlines and surveillance. The underpass will need to be lengthened from 20m to 50m related to the new on- and off-ramp layout
- If a new overbridge is constructed this would provide a new link which creates a direct access from the south side of the motorway to Jack Colvin Park and the site of Rutherford College, school and Kotuku marae, but requires additional property purchase for construction. Two concepts for an overbridge are shown in this document (FigC-1.36 & 37), but require further investigation and consultation feedback before implementation.

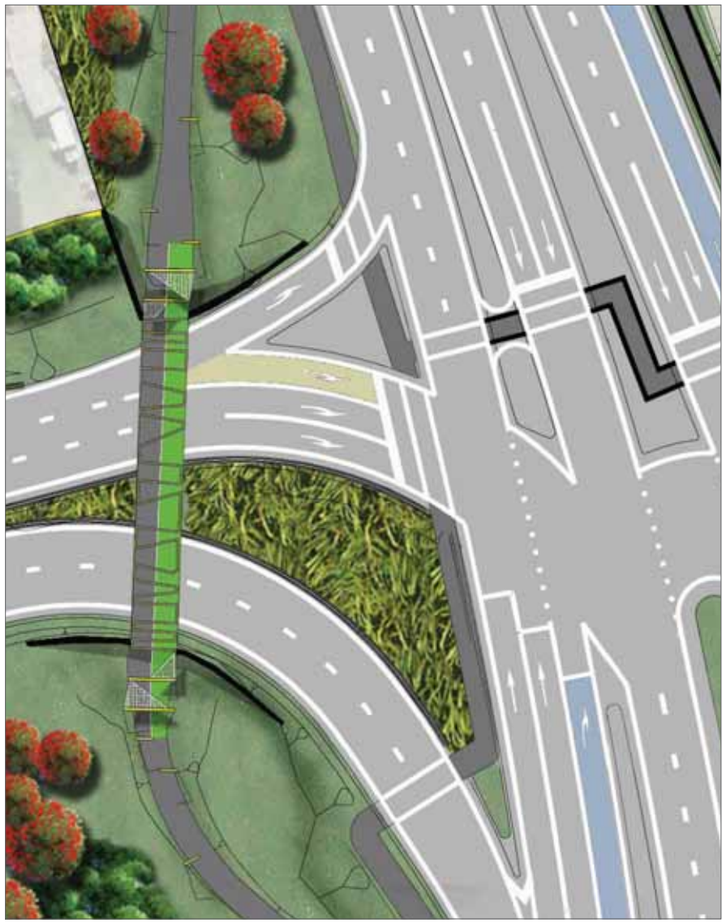


Figure C-1.33: Concept plan of the optional underpass connection

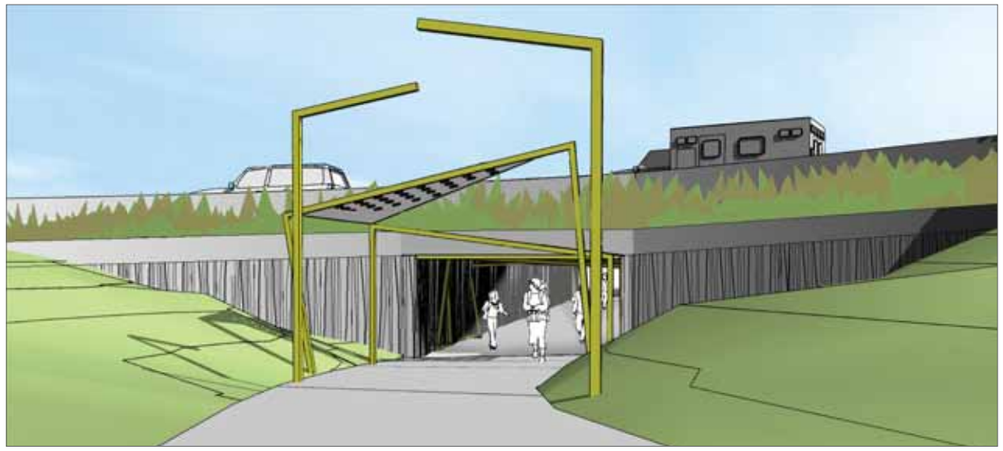


Figure C-1.34: Impression of the optional southern underpass entrance showing draft concept treatment, daytime

Figure C-1.35: Impression of the optional southern underpass entrance showing draft concept treatment, night-time

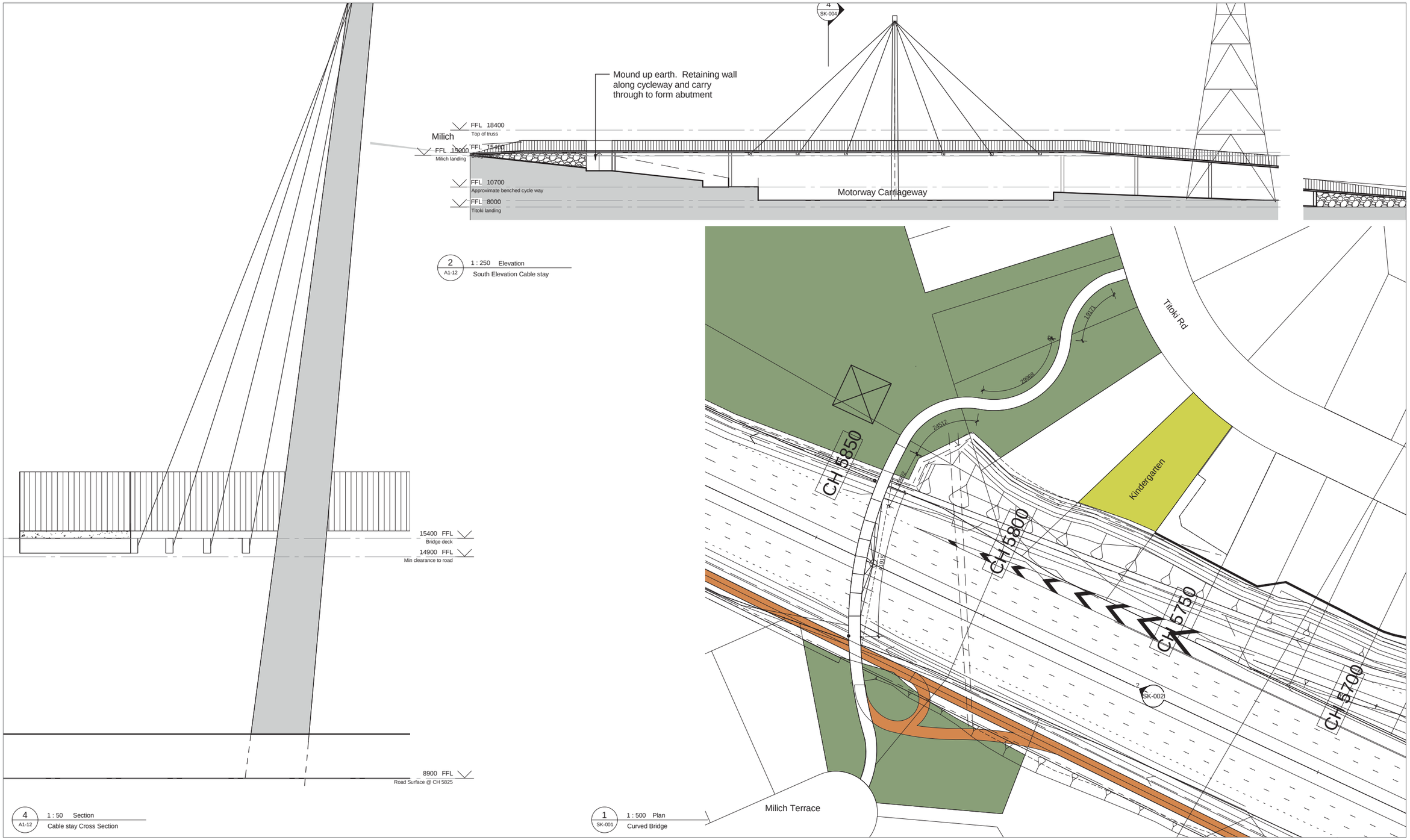


Figure C-1.36: Potential future Milich Avenue - Jack Colvin Park footbridge – preferred concept option, Cable-stayed curved plan

Western Ring Route ▸ Waterview Connection

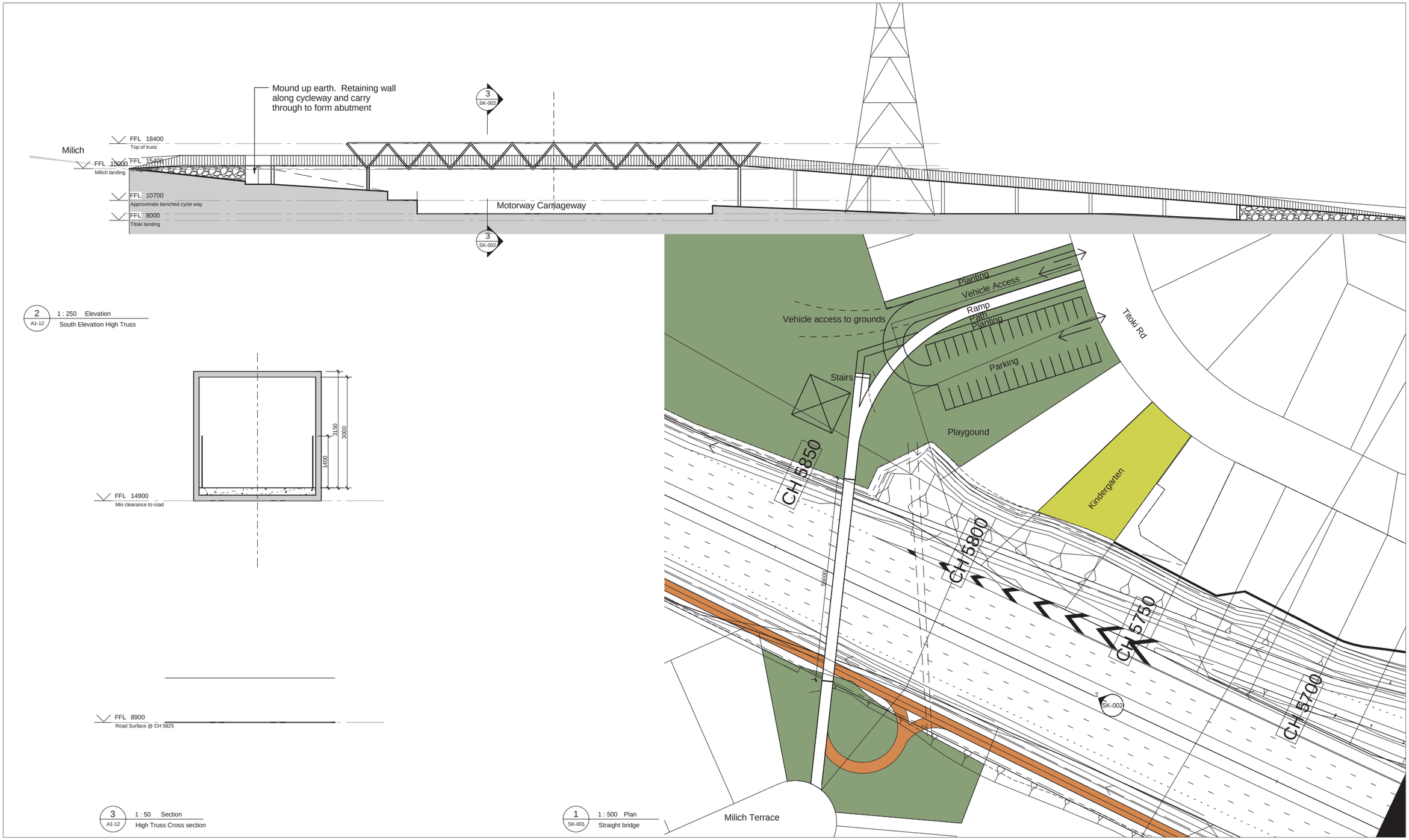


Figure C-1.37: Potential future Milich Avenue - Jack Colvin Park footbridge - secondary concept option, high truss, straight plan