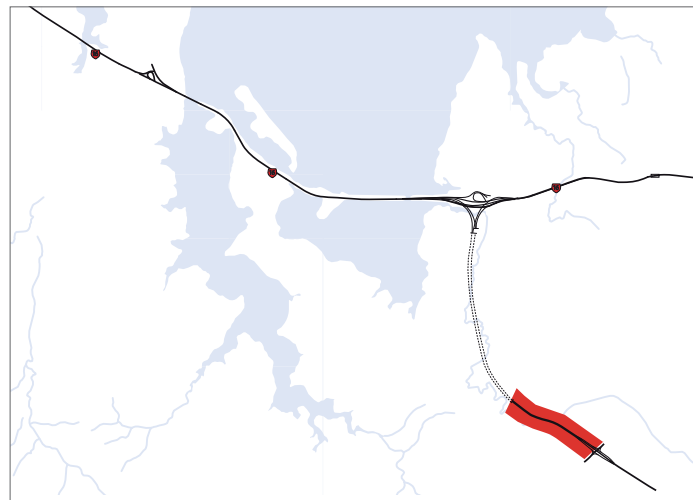


C9 Sector 9 Alan Wood Reserve



C9.1 Existing situation

Sector 9 covers that area of the project from the Maoro Street Intersection to the tunnel portal in Alan Wood Reserve (the 'at-surface' section of the project).

C9.1.1 Movement and connectivity

- Poor physical and visual linkages between the green corridor and the residential areas are due to limited street frontage and the presence of back fences along most of the open space edge
- Alan Wood Reserve Walkway connects New North Road with Hendon Reserve. There is also an off road cycle path through Underwood and Walmsley Reserves, connecting Sandringham Road Extension and Richardson Road via both parks. The cycleway ultimately ends at War Memorial Park in Sandringham
- The stormwater channel through the Reserve, while narrow, constrains east-west movement except where informally 'bridged' or as pedestrians jump it.

C9.1.2 Landscape, planting, views

- The irregular shape and open character of Alan Wood Reserve and the railway designation corridor together create a generous linear park area
- Oakley Creek runs in a natural, meandering channel in more westerly sections of the park, with the east being heavily channelized and in many places, flanked by volcanic rock walls
- There is limited noteworthy vegetation within Alan Wood Reserve, of mostly exotic species. The southern end of the corridor within this sector is heavily infested by willow. Some native revegetation has been carried out along the creek margins
- The area south of Alan Wood Reserve is elevated and offers views across the corridor towards Mount Albert.

C9.1.3 Urban form

- Alan Wood Reserve is flanked by residential neighbourhoods (Mt Albert and New Windsor) of mostly stand alone dwellings with private gardens
- Bulky and utilitarian industrial buildings line Stoddard Road, with a group of small scale retail units at the corner of Stoddard and Richardson Roads. The Stoddard Road node has poor quality building stock, somewhat run-down
- West of the industrial area is the residential area of Mt Roskill. The adjoining residential areas feature mostly stand alone, one and two storey dwellings
- Housing immediately adjacent to Hendon Park and Alan Wood Reserve turns its back on the open spaces; solid back fences define the park edges. There is some overlooking from the upper slopes of New Windsor but in general the subdivision pattern does not support good interaction between public streets, public parks or reserves, and edge uses.

C9.1.4 Open space amenity

- The linked grassed fields of Alan Wood Reserve and Hendon Park are the dominant public open space in this sector, and these continue a semi-connected spine of open space that runs from the mouth of the Oakley Creek corridor at Waterview through to War Memorial Park in Mt Roskill
- Both reserves are generally undeveloped, flat grass spaces, although there is some riparian vegetation around the margins of Oakley Creek. This vegetation is a mix of regenerating natives and exotic weed species
- The reserve, while having a large number of entries from adjacent streets, suffers from a number of CPTED issues including lack of street visibility, lack of passive surveillance from neighbouring properties, constrained entries with blind spots caused by tall fences, and blind spots caused by dense mid height riparian vegetation
- The lack of development and run-down facilities, coupled with graffiti/vandalism encouraged by the CPTED problems above gives the park a generally 'unsafe' character
- There are three soil-based playing fields in Alan Wood Reserve/Hendon Park, one of which is fully in Council ownership, and two which are fully or partially within leased or designation land. All have a degree of lighting for night time usage.

C9.1.5 Structures

- There are no existing structures within the sector.



Figure C-9.1: Photo 9-1 Hendon Avenue looking towards the Stewart Road intersection

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Figure C-9.2: Photo 9-2 View looking south along Olympus Place towards Alan Wood Reserve



Figure C-9.3: Photo 9-3 Existing training field at Alan Wood Reserve



Figure C-9.4: Photo 9-4 View south over Alan Wood Reserve towards Mount Albert (proposed Olympus Bridge location)



Figure C-9.5: Photo 9-5 View west over leased Council playing field on NZTA land bordering Hendon Park

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Figure C-9.6: Photo 9-6 Alan Wood Reserve looking west along proposed motorway alignment



Figure C-9.7: Photo 9-7 View down Richardson Road towards Stoddard Road shops (proposed Richardson Road bridge location)



Figure C-9.8: Photo 9-8 Existing Stoddard Road shopping centre looking up Richardson Road towards proposed bridge



Figure C-9.9: Photo 9-9 View east from proposed Richardson Road bridge location



Figure C-9.10: Alan Wood Reserve existing plan

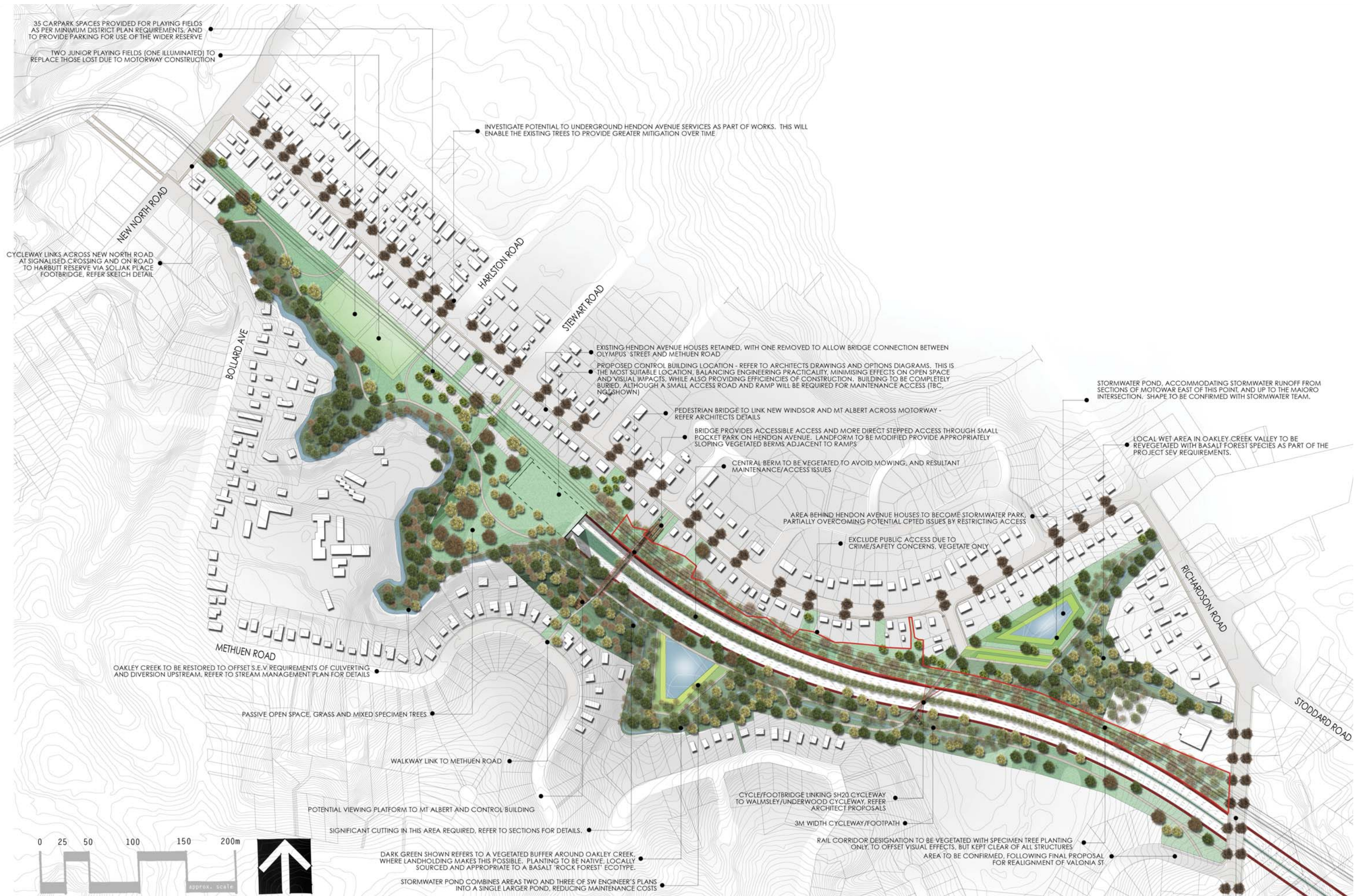


Figure C-9.11: Option A Alan Wood Reserve concept plan with buried ventilation building

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C9.2 Design concept

C9.2.1 Movement and connectivity

- The WRR cycleway is proposed to run northeast/southwest through Alan Wood Reserve/Hendon Park, improving both north/south and east/west connectivity, as far as the southern tunnel portal. Extension of the cycleway further north, beyond this point, may be undertaken by ACC in partnership with the NZTA
- Limited space within the proposed highway corridor constrains the positioning of any pedestrian / cycle bridges and their approaches
- Pedestrian / cycle bridges play an important role in both accessing and activating the open space, and in contributing to a better-used environment will also contribute to safety and the perception of safety:
 - A new bridge connection is required at Hendon Park to connect to the Walmsley/Underwood cycleway as part of the core project.
 - A future pedestrian bridge is envisaged on axis with Olympus St to connect two areas of open space (Olympus Reserve behind Owairaka District School and Brydon Place Reserve), and the neighbourhoods of New Windsor and Mt Albert, when the rail line is built. This bridge is not part of the core project but may be pursued by others. The location maximises a view to Mt Albert and links at high level to Methuen Road.
- The cycleway connects to the Maioro Sector cycleway under the proposed Richardson Road bridge and to the Avondale Heights sector via an at-grade signalised crossing of New North Road next to Pak n Save
- Pedestrian connections to the local street network are provided at regular intervals, and all major intersections have wide street frontages, being a minimum of 20m width. Connections are made to Richardson Rd, Valonia St, Methuen Rd, Bollard Ave, New North Road and Hendon Ave.

C9.2.2 Landscape, planting, views

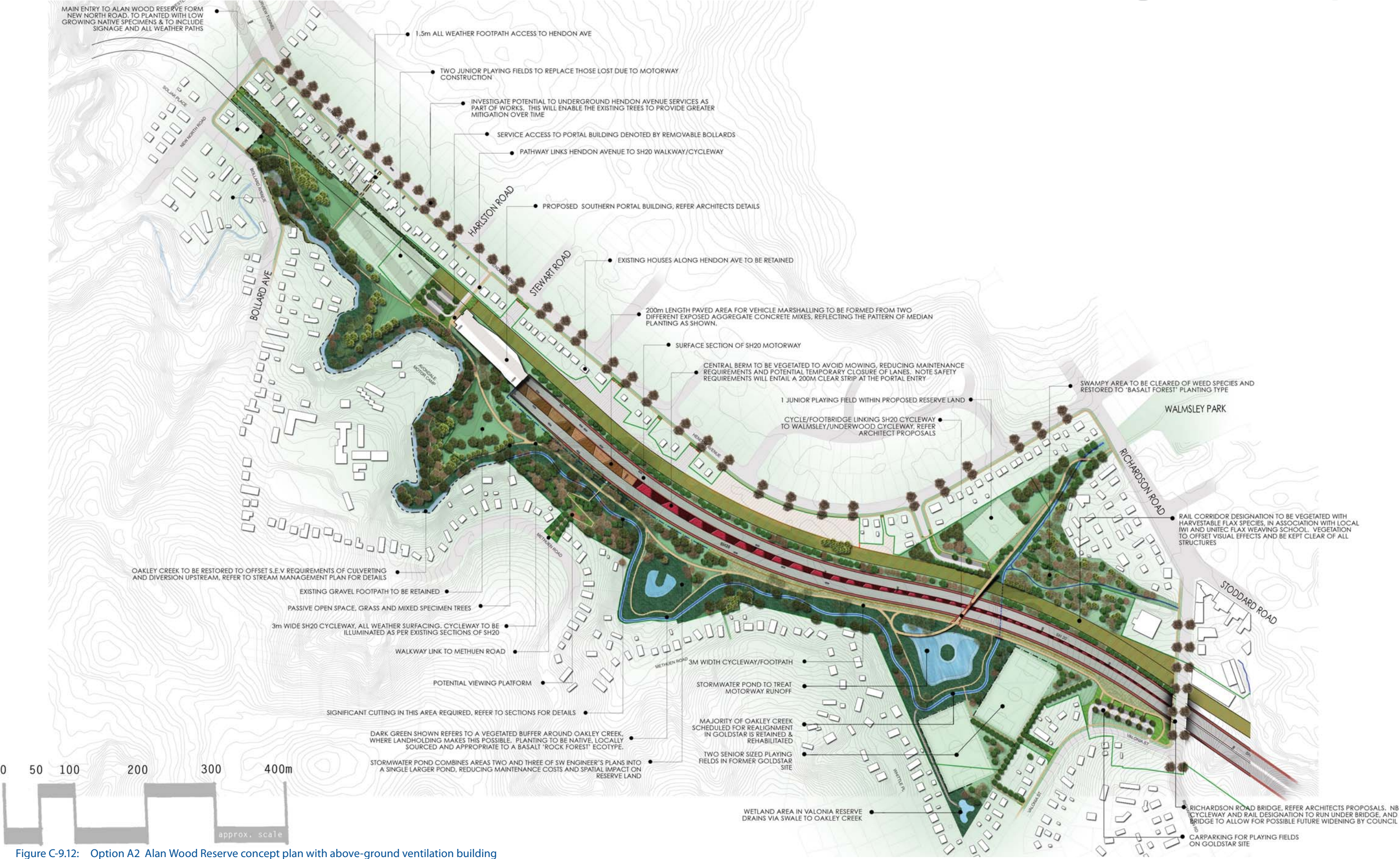
- The riparian margins of Oakley Creek in this area will be restored, with improvements to the base, side slopes and surrounding vegetation aimed at improving habitat and carrying capacity of the waterway. This work will be carried out to offset the ecological impacts of channelising a section of an unnamed upstream tributary, as well as stream diversions and a culvert section in Alan Wood Reserve
- Two stormwater ponds are to be created, one within the park and one within the Goldstar site (edging Hendon Park and bounded by properties on Valonia Street and Whattie Place), to hold and treat runoff from the motorway surface. Their location reflects:
 - long term sustainability (ie. continued pumping of water not required)
 - the ability to integrate with the stream realignment and ecological restoration
 - the limited access to the current reserve from New Windsor (Methuen Road) (due to the existing stream) and the further increased disconnection from the Owairaka community by the road / rail corridor. Replacement of alternative open space to create useable areas consolidated and easily accessible to the local community is therefore proposed
 - the contribution that passive reserve area makes to the amenity of the surrounding area, many aspects of which can be retained (e.g. through the provision of the cycleway and proposed planting and landscaping of the pond and stream)
- Stormwater ponds will be planted with native edge vegetation, and overlooked by pathways, platforms and signage explaining the process of water treatment undertaken as part of the works
- Significant vegetation planting is proposed as part of the project, including riparian vegetation, screening vegetation to the motorway and park amenity planting. Riparian and screening vegetation is to be native and natural in form, while park amenity planting will likely be a combination of exotic and native species

- There are three protected sightlines to the cone of Mt Albert in this sector listed in the District Plan, although sightline A3 is designated for removal as part of the current review process. Designs of the motorway and all structures have taken these into account, including the existing A3 sightline
- Significant views to Mt Albert are available from the raised area of ground across the creek south of Olympus Avenue
- The Hendon cycle and Richardson Road bridges will also afford views to the side slopes and summit of Mt Albert. Elevated views of the restored Oakley Creek habitat and Alan Wood Reserve will also be available from all three overbridges in this sector, in addition to views of the motorway corridor itself
- Conversely, the intent has been to minimize views of the motorway from all other areas of public open space and cycleway connections. This has been achieved through a combination of noise walls, path orientation, planting and bunding
- Due to the topography and intervening structures/vegetation, views to the proposed motorway corridor are mainly limited to those residential areas flanking the current Alan Wood Reserve area
- Views to the motorway from adjacent residential areas will be blocked as far as possible by the planting of dense, quick growing native vegetation.

C9.2.3 Urban form

- Figure C-9.11 shows a potential arrangement of Alan Wood Reserve with retention of houses along Hendon Avenue, with the ventilation building buried underground (Option A1). This and Option B were developed prior to the ability to include the Goldstar site in open space calculations. Figure C-9.12 illustrates the design concept including the former Goldstar site and with the ventilation building above ground (Option A2). Refer to Figure C-9.23 for a more detailed concept plan for the Goldstar site; and to the text and illustrations in Section C.9.2.6 Ventilation Building and Stack following for more detail on the underground and above-ground options
- Future redevelopment of Hendon Avenue to a more compact housing form is encouraged to make up the number of residential properties lost to the motorway construction. This is illustrated in Option B (C-9.13)
- The form of future housing illustrated in the long term concept plan shows attached (terrace) houses with windows and private outdoor space oriented away from the motorway, and ancillary uses (eg. garages) providing an additional buffer. This concept was developed to replace the quantum of housing lost through the motorway project. A higher intensity form of housing (for example 3-4 storey apartments with underground parking) would also be a suitable building type here
- This model may be pursued by other agencies or other landowners in the future and is not precluded by the current alignment. Should the area be redeveloped, a comprehensive approach involving an overall masterplan is likely to lead to better outcomes than piecemeal development
- Post construction of the Project, the motorway designation over this corridor and over the existing rail land will be rolled back and the land transferred to KiwiRail (or returned to KiwiRail control as applicable). While the rail corridor use will be subject to KiwiRail agreement, the landscape concept shown is an approach suggested by the urban and landscape design team.

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Figure C-9.13: Option B Alan Wood Reserve concept plan - longer term partnership option

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C9.2.4 Open space amenity

- The uptake of the 'undeveloped' motorway designation through Alan Wood Reserve will result in a perceived loss of open space, although upon completion of the project, the quantum of vested reserve area in this sector will in fact be maintained
- The intention of the longer term indicative design is to demonstrate how areas of open space may be consolidated, maximising their useability, until such time as the rail line is constructed. Safety and visibility issues are dealt with by having large areas of reserve frontage to Hendon Avenue at the east and west ends of the park. This allows for both community/passive reserve space, as well as restoration of the three playing fields currently located in the reserve
- The cycleway and restored stream corridor form a green link between these areas of open space, and to the wider community
- The overall quantum of leased/freehold sportsfields would be increased by one
- The concept design would also allow a linked green connection south of the motorway for the cycleway, bridge abutments and ramp access, and the realigned sections of Oakley Creek. This linear strip of space running between the motorway, creek and the backs of properties along Methuen Road and Valonia Street will form a pleasant cycling and walking linkage connecting adjacent neighbourhoods and open spaces
- Two diversions of Oakley Creek within Alan Wood Reserve and one within the Goldstar property, and a section of culvert will be required to accommodate the alignment. A significant amount of stream restoration work (including bank and channel improvements and edge revegetation) is proposed throughout the reserve, informed by a Stream Ecological Valuation (SEV) report carried out for Oakley Creek
- Development of the Goldstar site for active open space is proposed as an option that assures Council of long-term unencumbered active open space. Refer to Figure C-9.23 for an indicative concept layout.

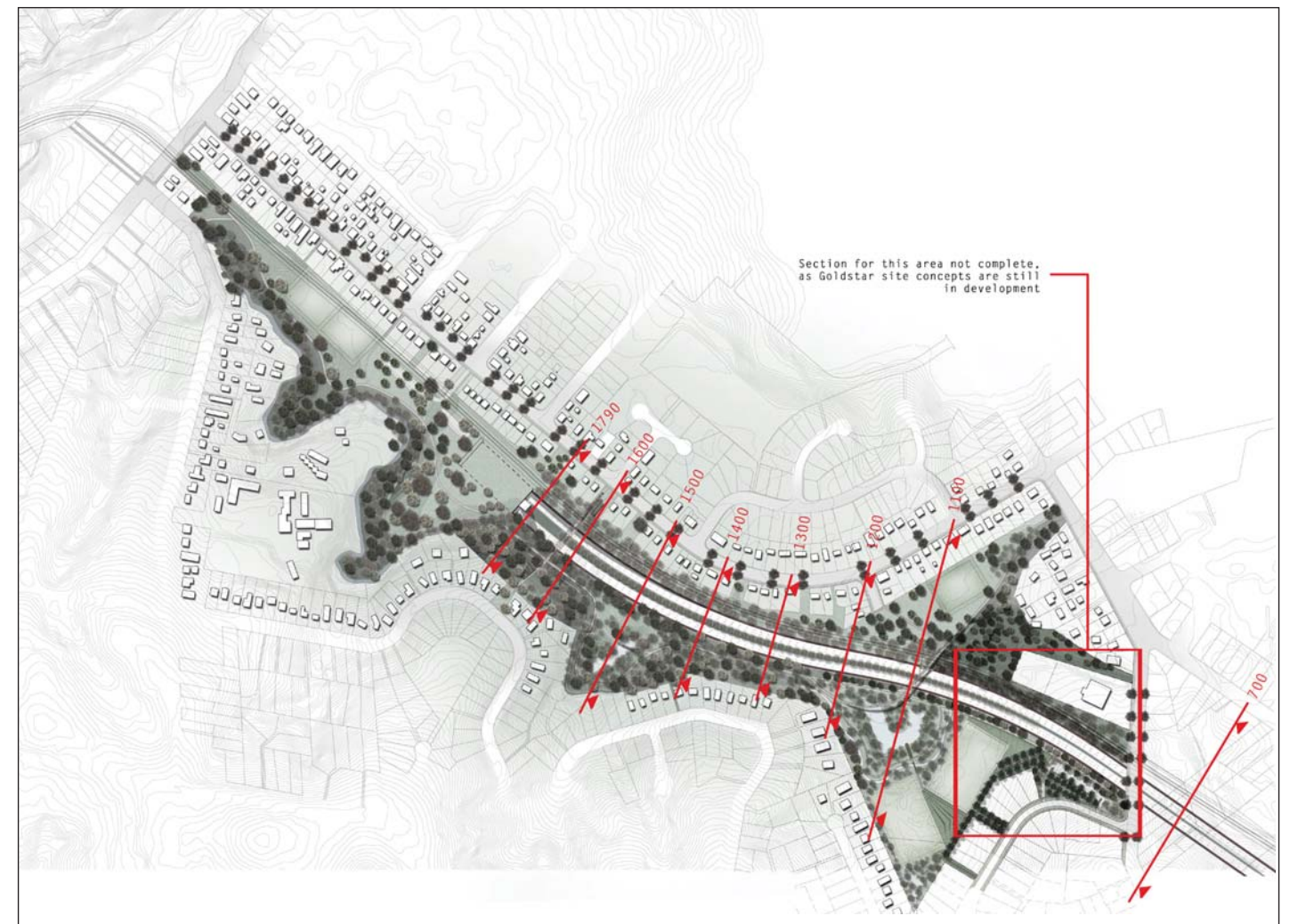


Figure C-9.14: Alan Wood Reserve – key map for sections

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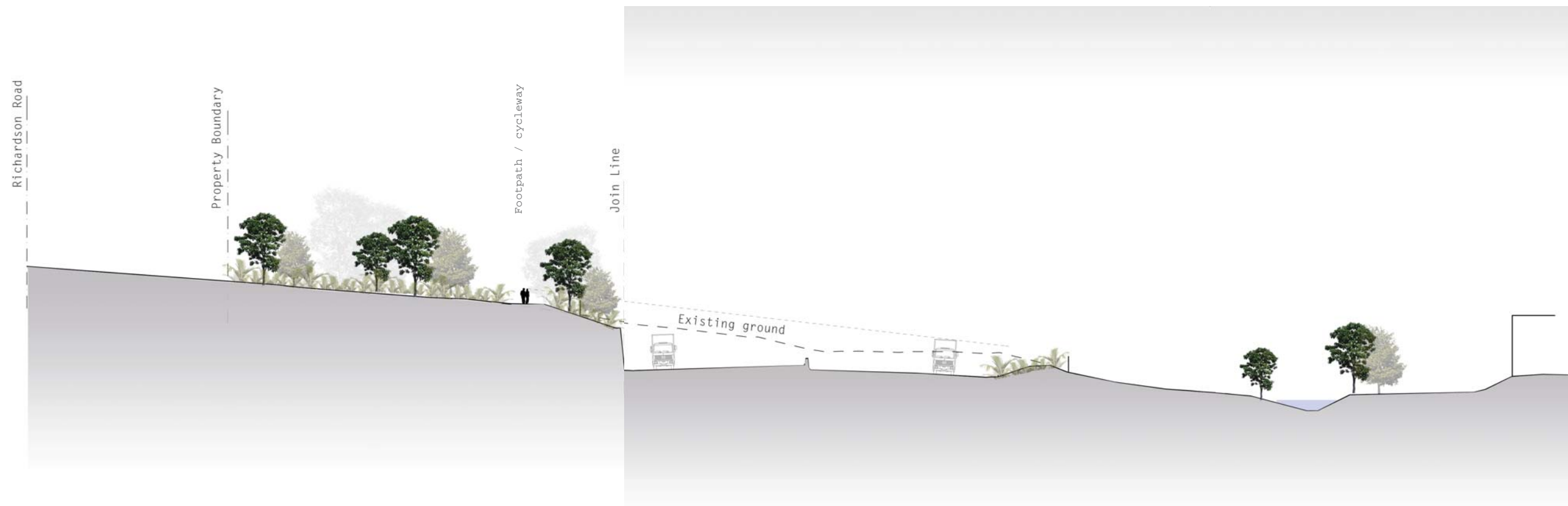


Figure C-9.15: Alan Wood Reserve – future section @ chainage 700

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Figure C-9.16: Alan Wood Reserve – future section @chainage 1100

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Figure C-9.17: Alan Wood Reserve – future section @ chainage 1200

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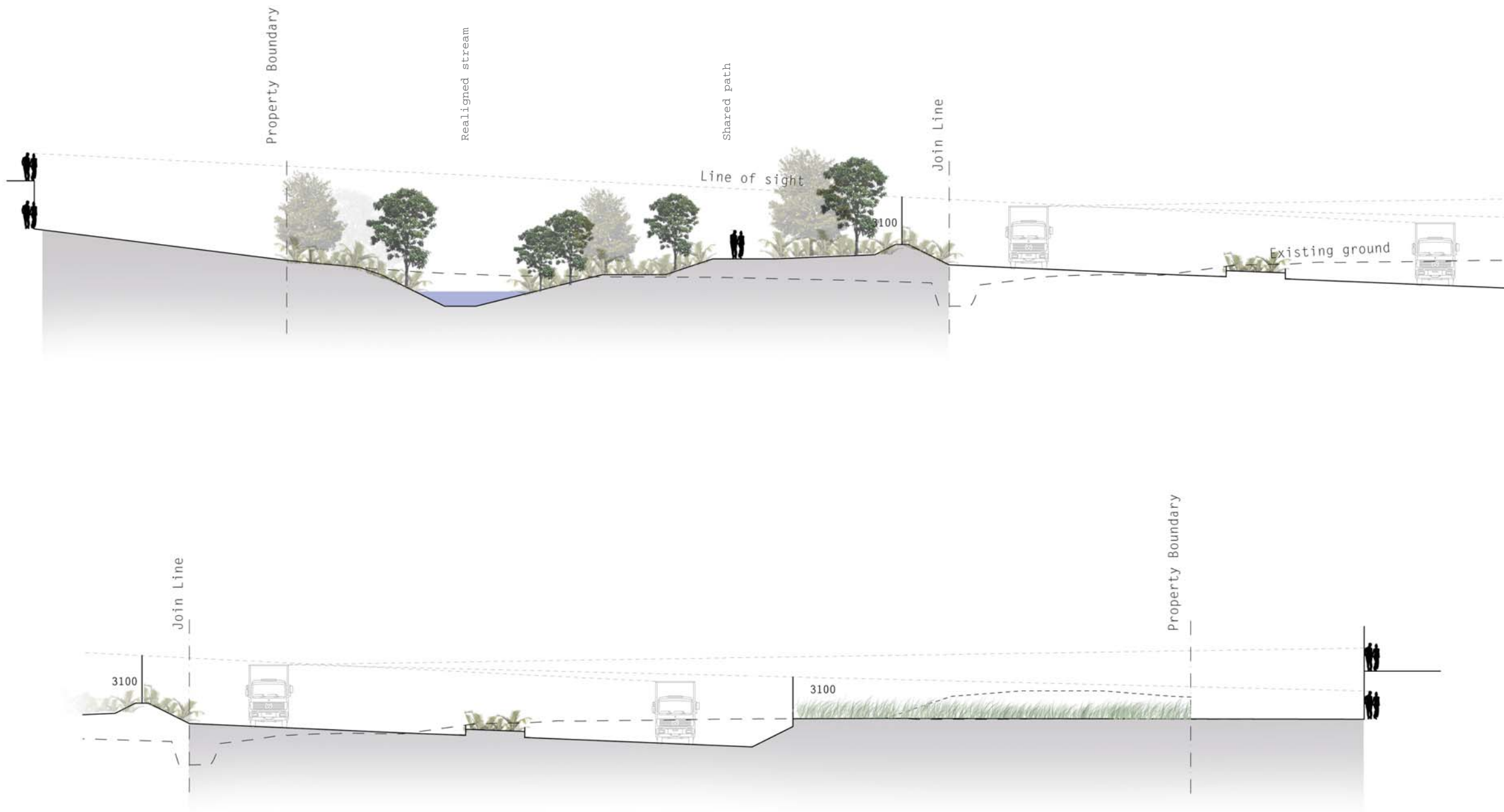


Figure C-9.18: Alan Wood Reserve– future section @ chainage 1300

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Figure C-9.19: Alan Wood Reserve – future section @ chainage 1400

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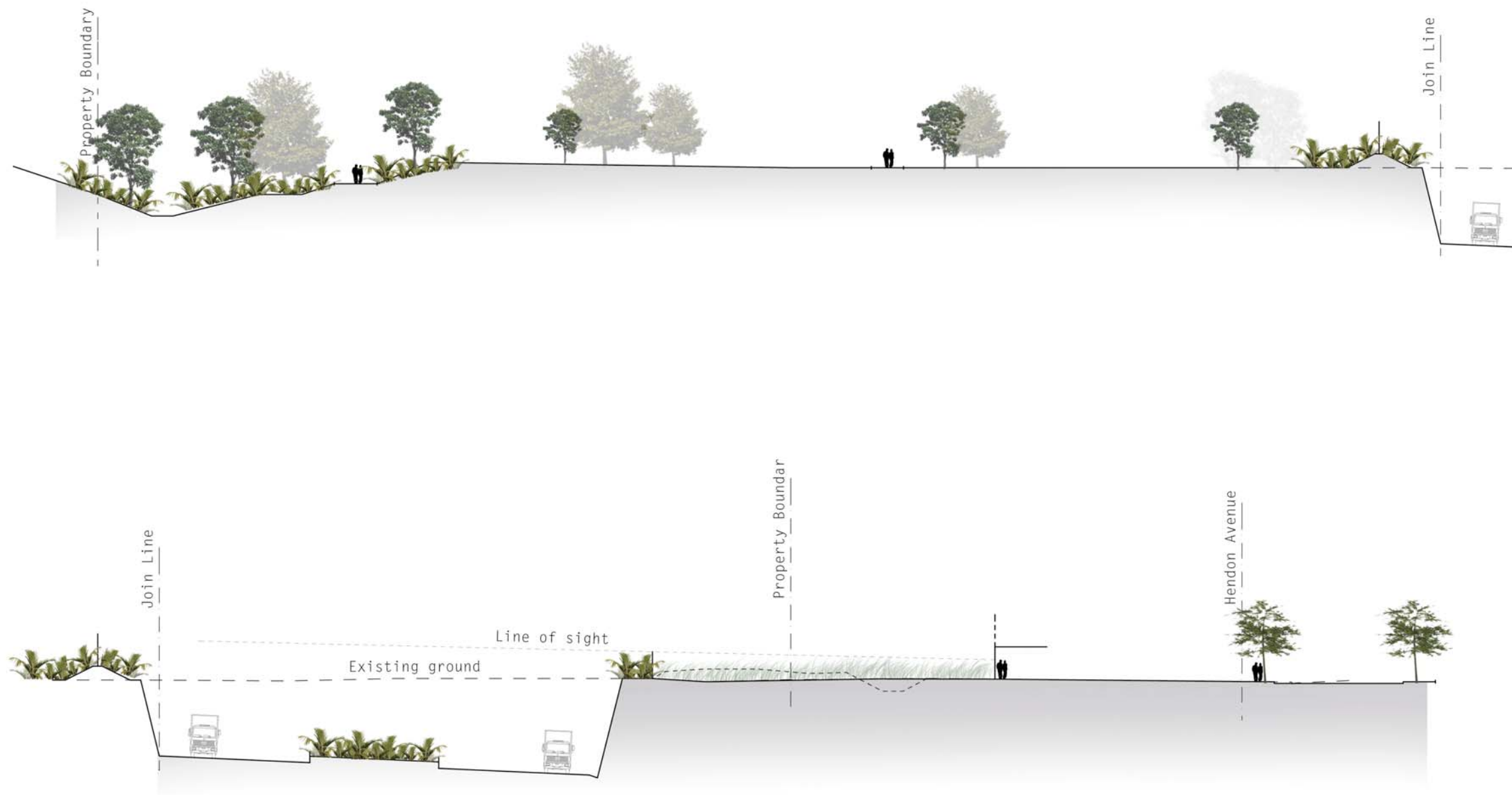


Figure C-9.20: Alan Wood Reserve – future section @ chainage 1500

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Figure C-9.21: Alan Wood Reserve – future section @ chainage 1600

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Figure C-9.22: Alan Wood Reserve – future section @ chainage 1700

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NOTE: THIS PLAN IS UNDER DEVELOPMENT AND REQUIRES DETAILS OF ADJACENT NOISE WALLS AND FENCING AS REQUIRED TO PREVENT BALLS ENTERING THE CREEK/WETLAND SYSTEM TO BE ADDED. THIS IS CURRENTLY UNDER DISCUSSION WITH COUNCIL

Figure C-9.23: Goldstar site proposed concept design

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C9.2.5 Structures

- The structures in this sector include:
 - Portal to tunnel
 - Ventilation building and stack
 - Embankments or trench cut for alignment through Alan Wood Reserve
 - Pedestrian and cycle bridges
 - Cut for SH20 / Rail corridor and bridging of Richardson Road.

C9.2.6 Ventilation building and stack

- The experience of entering the tunnel is intended to reference the experience of entering the volcano. The retaining wall treatment reflects the ‘volcanic highway’ treatment of walls and barriers elsewhere along the Waterview Connection. The stack is treated as a sculptural element, located at and integrated with the tunnel portal
- The basalt rock formations in the vicinity of the southern portal are included and referenced in the design of the approach retaining walls and the portal itself
- Two options were investigated for the design of the ventilation building. Option A is for the ventilation building to be completely buried below natural ground level. This option is the basis of the open space concept designs shown in Figures C-9.11 and C-9.13 to C-9.22 above and is the preferred urban design option. Option B locates the building above ground and is the option being submitted for consenting. Both options position the stack in front of the portal
- In Option A the ventilation building is completely buried below natural ground level, allowing for landscape treatment above and integration with the public open space within Alan Wood Reserve. Because the ground above will be level it can support active as well as passive recreation uses
- This option is preferred by the urban and landscape team because it enables flexibility in the use of the land above, and because the visual impact on adjacent housing would be limited to the stack. Option A is illustrated in Figures C-9.24 – C-9.29 and Option B in Figures C-9.230 – C-9.33 following.



Figure C-9.24: Southern portal approach Concept Option A – artist's impression looking north

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Figure C-9.25: Southern ventilation stack context

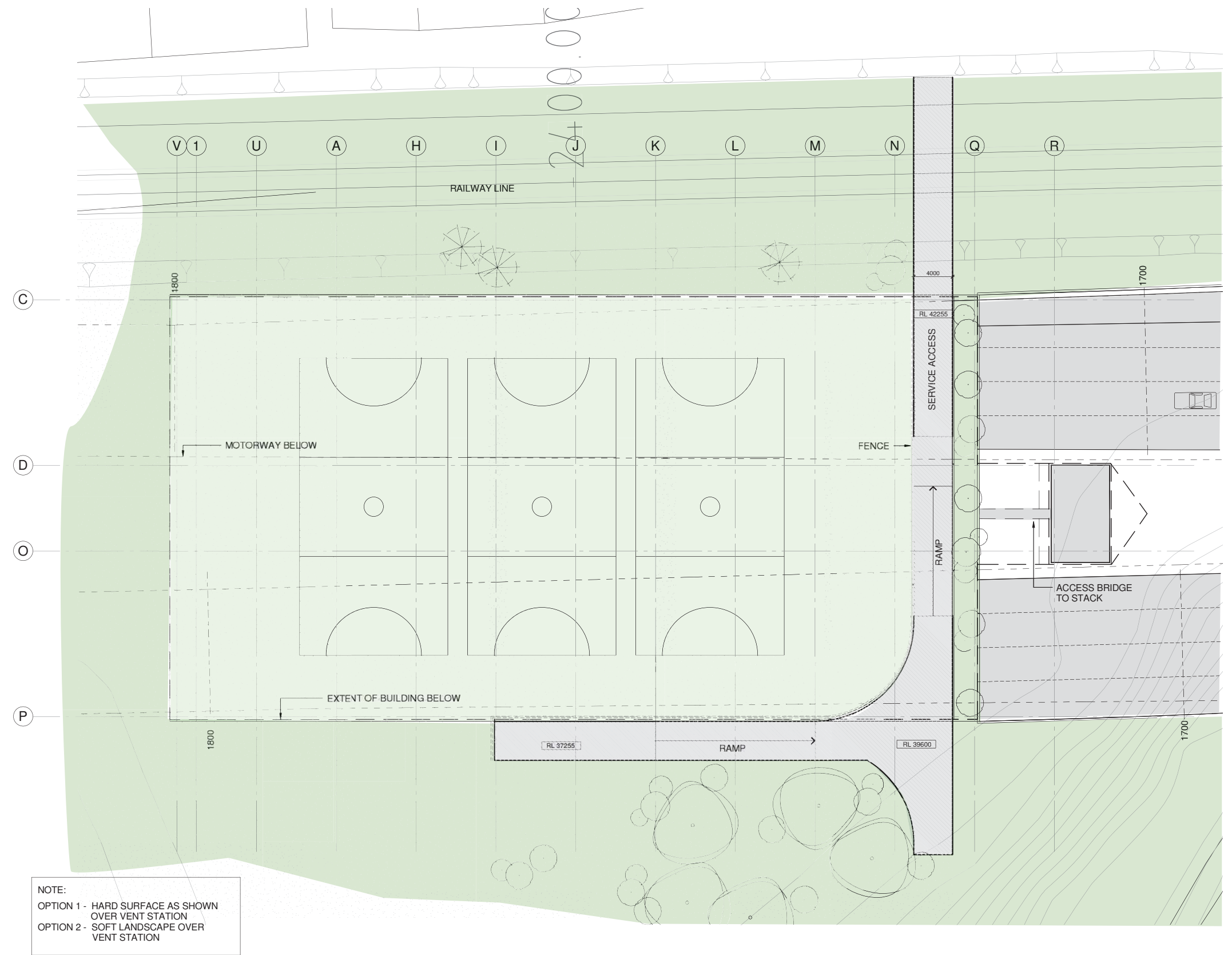


Figure C-9.26: Southern ventilation building Concept Option A – location plan

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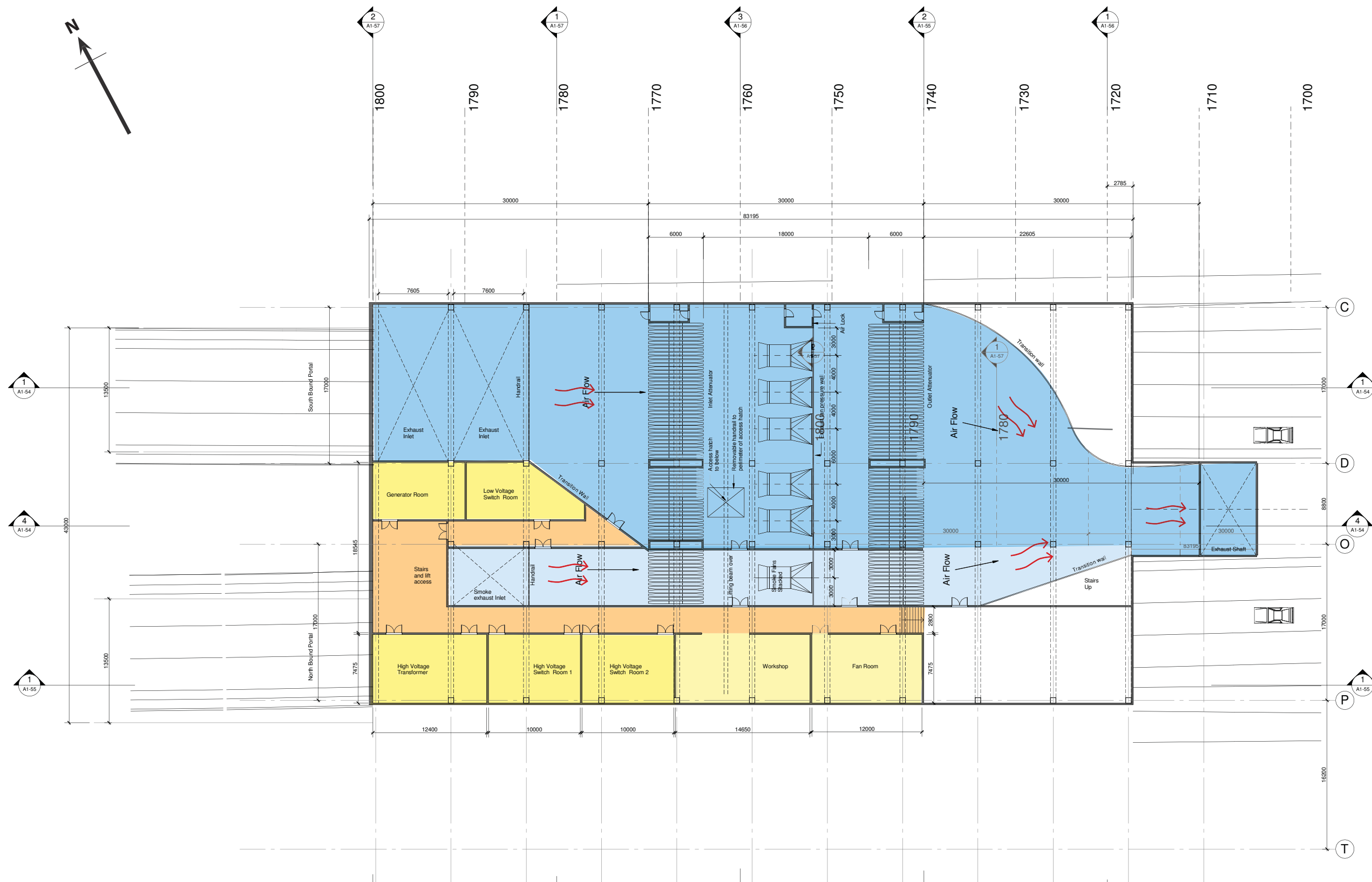


Figure C-9.27: Southern ventilation building Concept Option A – floor plan

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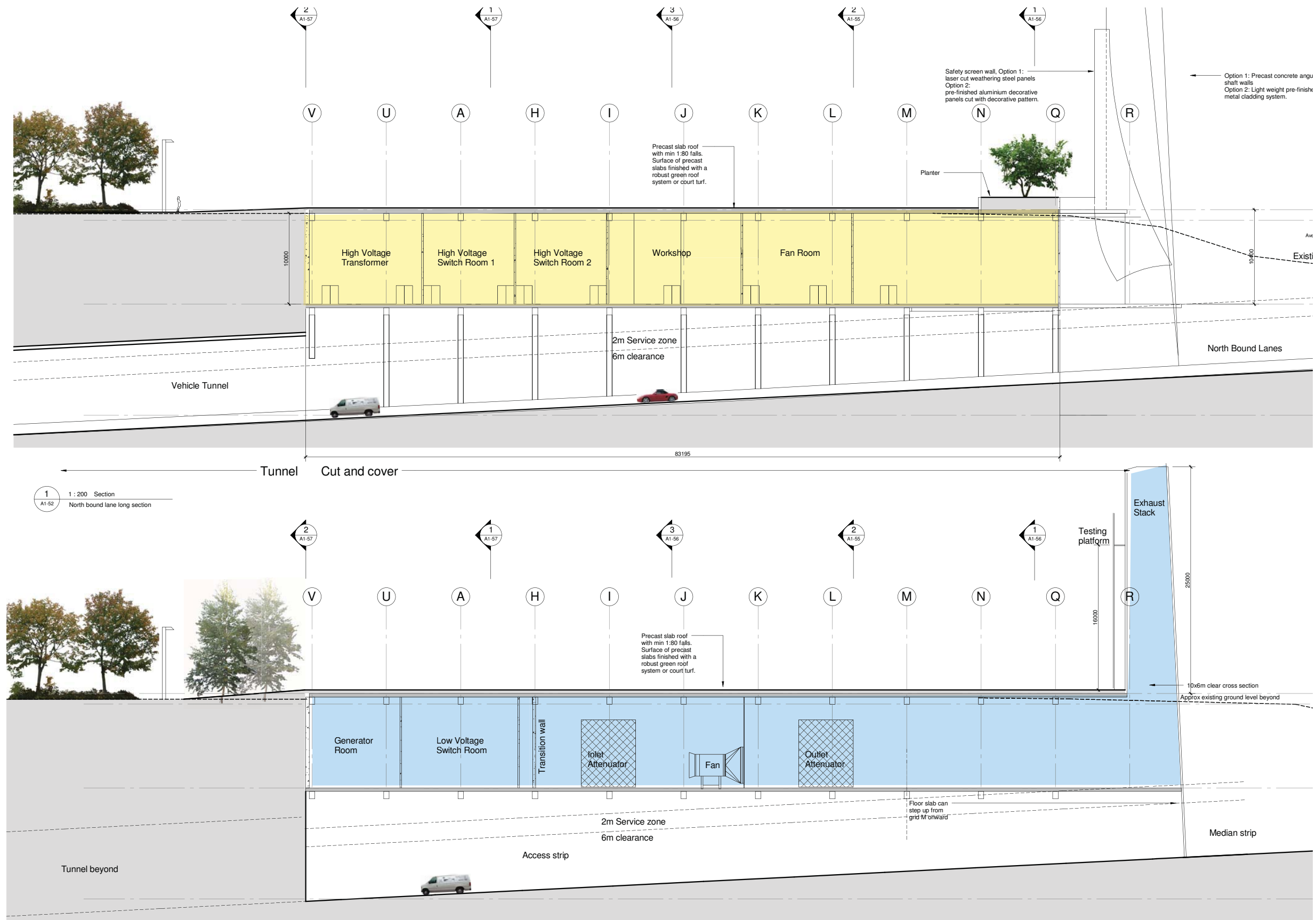


Figure C-9.28: Southern ventilation building Concept Option A – long sections

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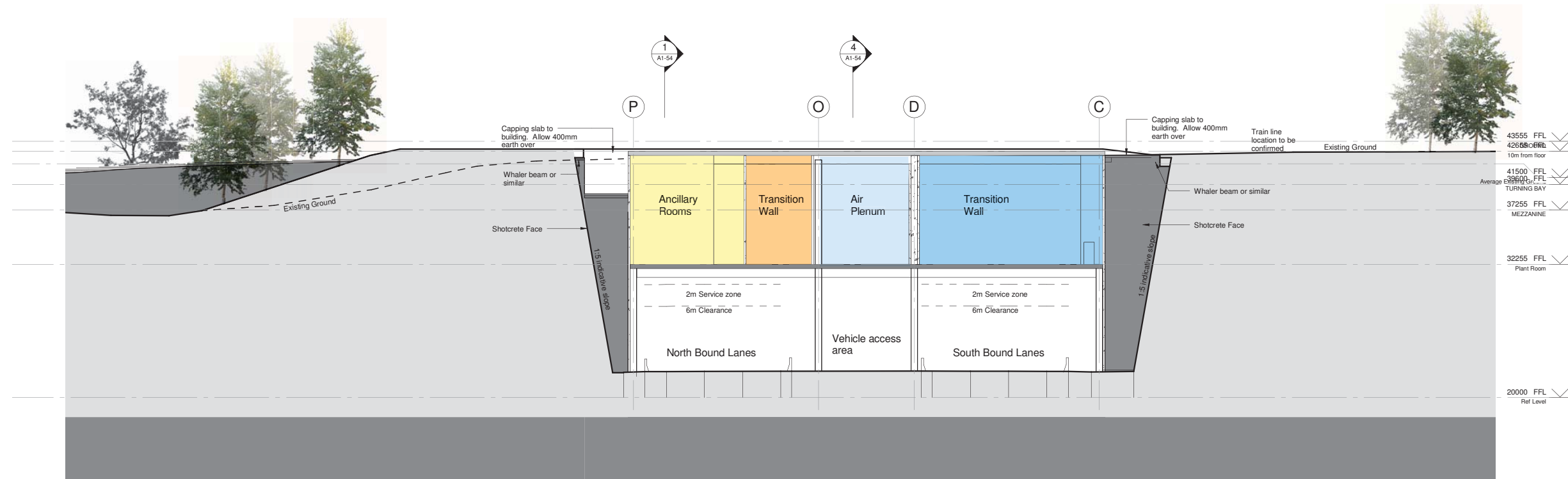


Figure C-9.29: Southern ventilation building Concept Option A – cross section

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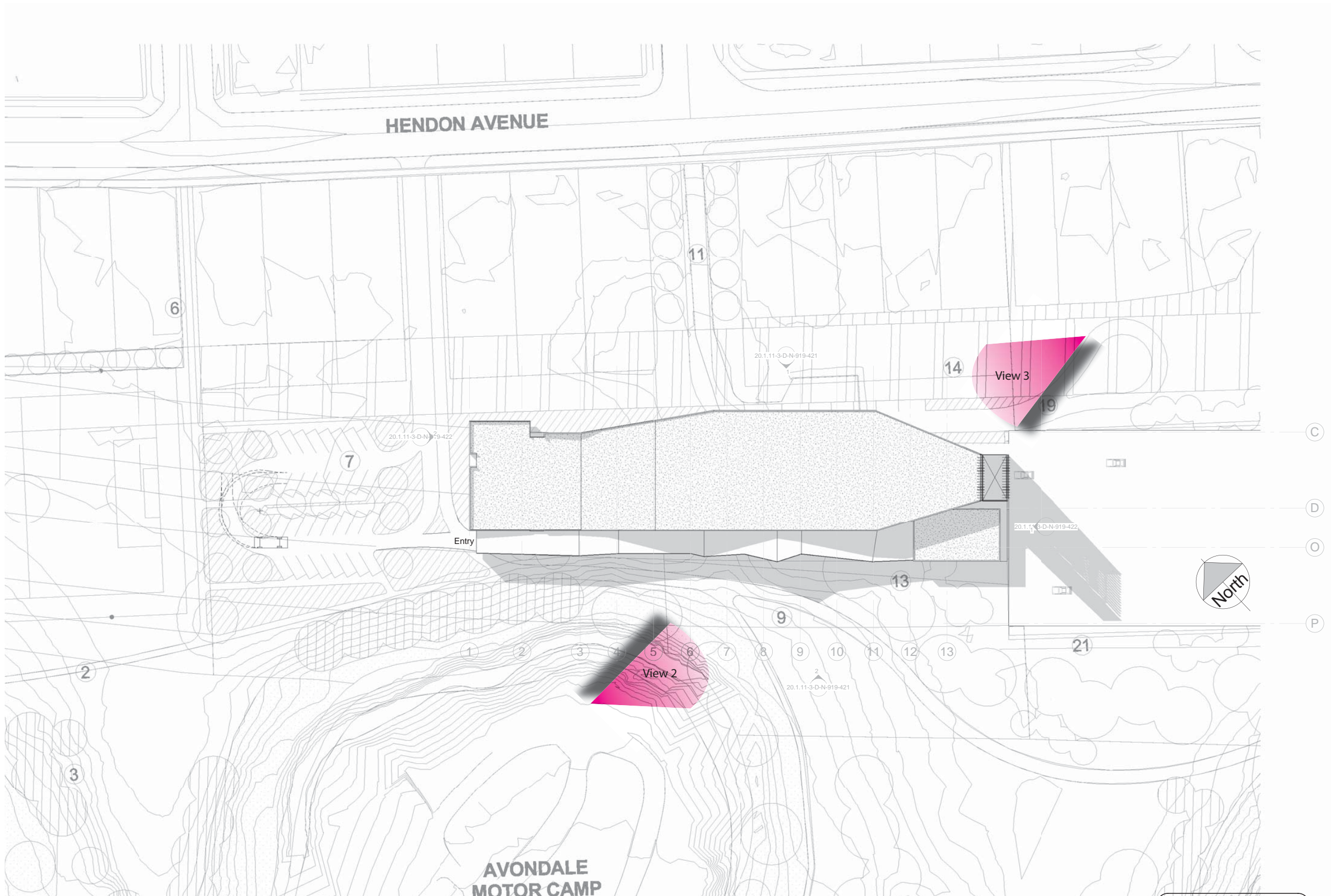
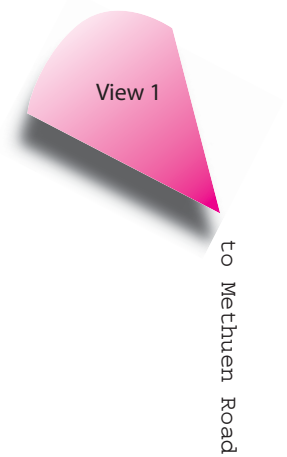


Figure C-9.30: Southern Ventilation Building Concept Option B – location plan



to Melhuen Road

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Figure C-9.31: Southern Ventilation Building Concept Option B – visual simulation view 1 from Alan Wood Reserve

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Figure C-9.32: Southern Ventilation Building Concept Option B – visual simulation view 2 from the Avondale Motorpark

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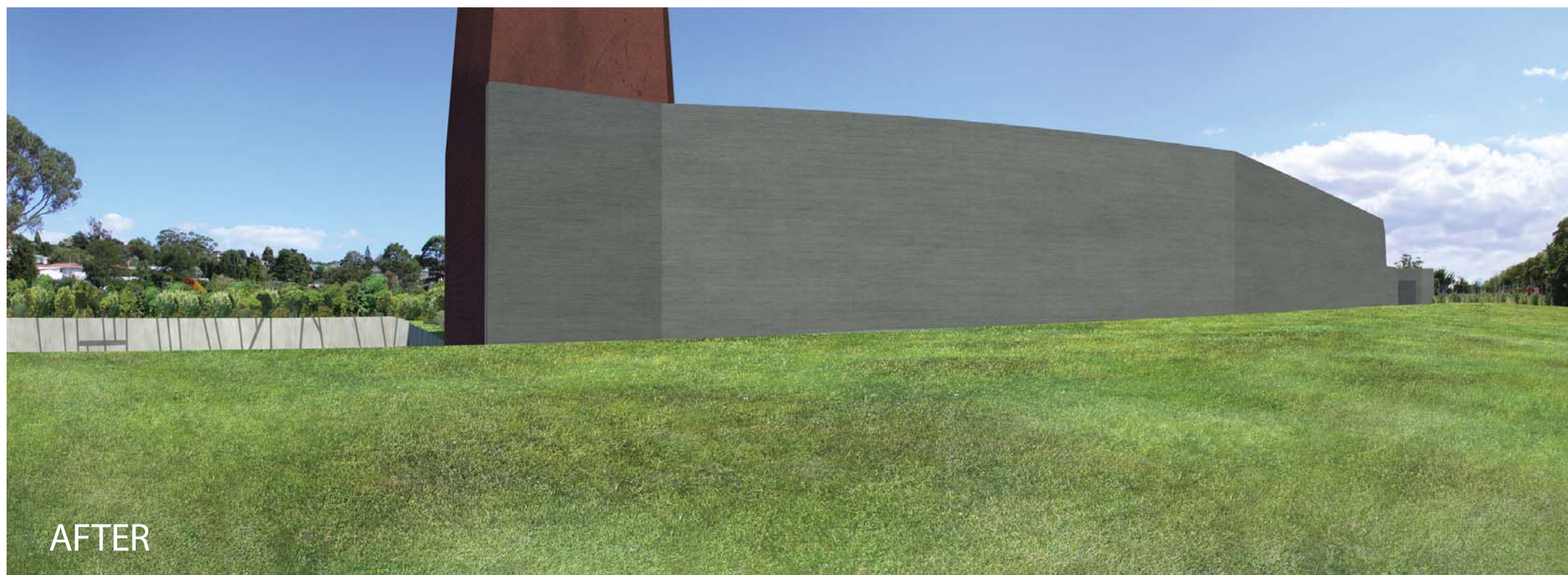


Figure C-9.33: Southern Ventilation Building Concept Option B – visual simulation view 3 from Hendon Park walkway

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C9.2.7 Olympus Pedestrian Bridge

- The Olympus bridge visually and physically links two communities currently severed by the spatial arrangement of Alan Wood Reserve and the poor connections across it. Where now there is no opportunity to access the higher slopes of New Windsor, this bridge provides a new high level link
- The bridge crosses perpendicular to the highway, on alignment with Owairaka (Mt Albert) to provide elevated and extensive views to Owairaka and the surrounding area for pedestrians and cyclists
- The bridge alignment acknowledges and provides an important connection beyond Alan Wood Reserve from Olympus Reserve (north-east) to Brydon Place Reserve (southwest), thus linking two public open spaces through what is currently a severed environment
- The Olympus bridge has been designed to accommodate the future rail line, thereby ensuring it will continue to provide an important connecting function into the future. It also provides a cycle and pedestrian connection between Methuen Road and Hendon Avenue to the north, allowing a future cycleway to be established across the motorway
- The distinctive structural form is inspired by a stream of lava shooting out over the volcanic landscape. It identifies this part of Alan Wood Reserve, creating a distinctive 'marker' that orients both pedestrians and motorists
- The bridge's scale is consistent with the scale of the motorway and rail as well as the undulating landscape. Consideration has also been given to its scale at park and road level: the single span over the motorway reduces the bridge's visual impact when viewed along the motorway corridor, as there is no need for an intermediate support. The bridge 'settles' into the treed landscape at the southern end, also reducing its apparent scale for adjacent land uses and for park users
- This bridge is not part of the core project, but is an aspirational element that in the future (once the rail line is built) would improve east-west connections across the motorway and rail corridor.
- The Olympus bridge was designed when the tunnel portal was further north. As the engineering design progressed and the tunnel extended southwards into Alan Wood Reserve, the portal came closer to the bridge location. Representations from Auckland City Council included that this bridge is not necessary so long as there is a good pedestrian connection at the portal, and in the 'pre-rail' condition.



Figure C-9.34: Olympus Pedestrian Bridge – concept plan

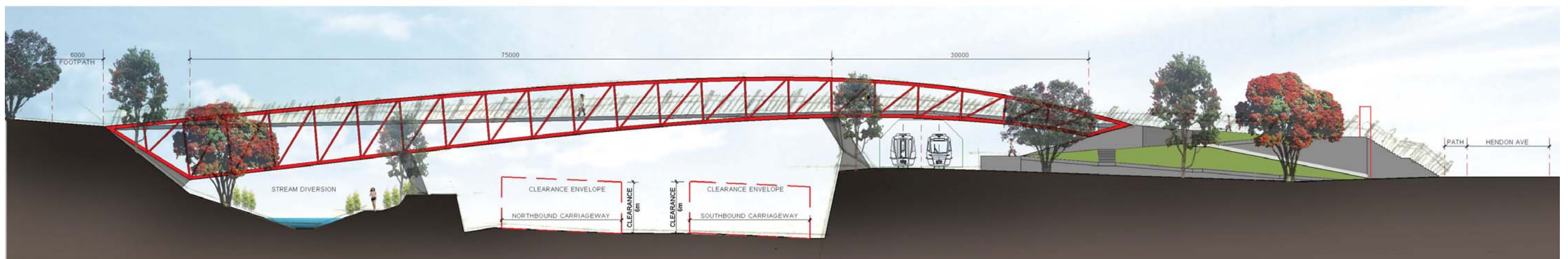


Figure C-9.35: Olympus Pedestrian Bridge – concept elevation

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Figure C-9.36: Olympus Pedestrian Bridge – artist's impressions

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C9.2.8 Pedestrian bridges over stream

- Several small bridges are required within Alan Wood Reserve where the stream has to be crossed by the cycleway. These should be simple in form, as an intentional counterpoint to the far more elaborate structural solutions required for the bridges which span the motorway
- Oversized steel I-beams double as the spanning structure and the barriers. These are topped with a more tactile rail, contrasting with the raw statement of the steel beams
- Steel beams are Cor-ten steel left in their natural state to weather
- A handrail is not needed on these generally level bridges, while a cycle rail mounted at 1400 above the deck will be tubular steel with a galvanised or painted finish
- Timber decking, while not suitable for an inclined bridge, provides a feeling of warmth and human scale to these little bridges
- Bridge abutments are simple in situ concrete structures. The concrete mix will include black oxide and basalt aggregate with an exposed aggregate or sandblasted finish to blend with the nearby lava flows.

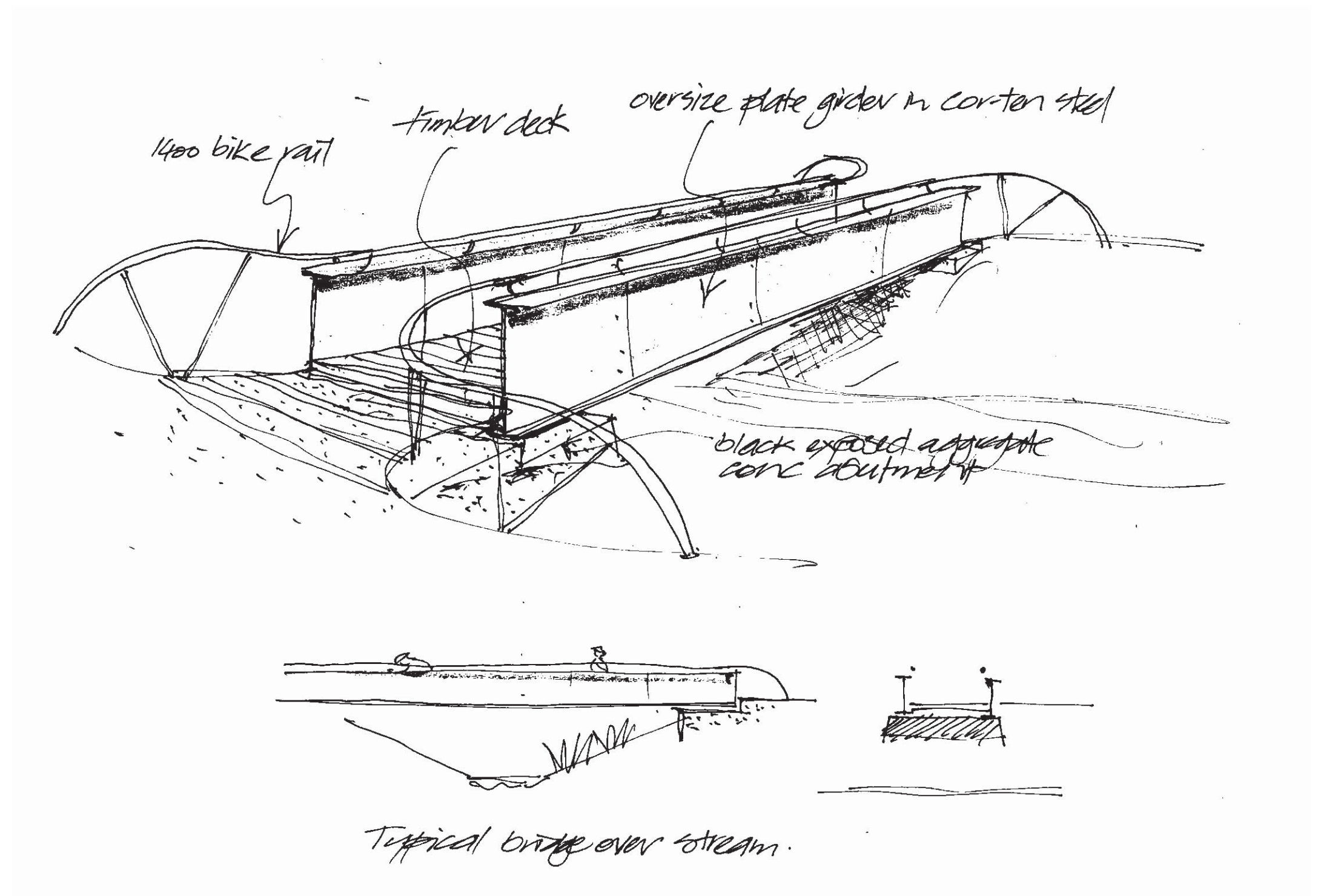


Figure C-9.37: Pedestrian bridges over stream – perspective sketches

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C9.2.9 Hendon Pedestrian Bridge

- The Hendon pedestrian bridge main span comprises a pair of 'bent' arches, giving a distinctive, lightweight structure
- The bridge is oblique to the motorway to follow a strong desire line that connects across the open space, continuing the cycleway from Alan Wood Reserve. It is located to optimize its relationship with the development of the Goldstar site
- The ramp at the north/eastern end of the bridge has been laid out in to permit active open space (junior field) between the ramp and the Hendon Avenue properties. This alignment also creates the potential for a senior field in the future
- The bridge's scale over the motorway corridor is consistent with the motorway and rail track it is crossing. Each end of the bridge has a lower profile helping reduce its scale as it re-engages with the park environment. The bridge's elevation over the adjoining terrain will also allow extensive views to the surrounding area for pedestrians and cyclists
- Raised mounds at each end act as spaces for seating and play areas, while also enabling a flatter gradient on the bridge approaches.



Figure C-9.38: Hendon Pedestrian Bridge – concept plan

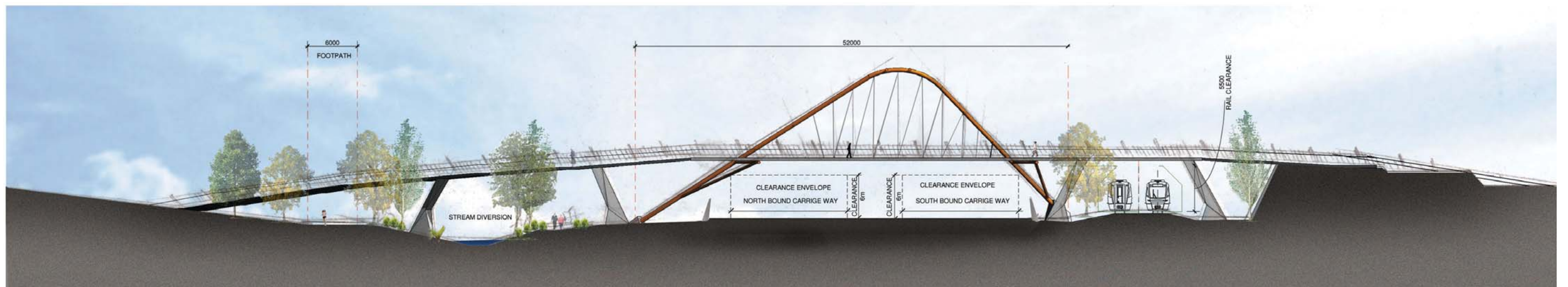


Figure C-9.39: Hendon Pedestrian Bridge concept – elevation

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Figure C-9.40: Hendon Pedestrian Bridge – artist's impression – view 1, looking east from footpath



Figure C-9.41: Hendon Pedestrian Bridge – artist's impression –view 2, looking west along bridge

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C9.2.10 Richardson Road Bridge

- The Richardson Road bridge is the second of a pair with the Maioro bridge, having a similar central pier design and parapet treatment.
- The themes of shifting plates, movement and instability have been acknowledged through the barrier and bridge structure design. There will be subtle shifts from the Maioro bridge, indicating that this is not a static experience and that the process of transformation is still in motion
- The concept design is for a 'local street character' to the bridge, supporting ACC aspirations for the future Stoddard growth node to be linked and accessible to the local surrounding neighbourhoods. This is achieved through the use of tree planting and cycleways on a carriageway that feels 'seamless' with the at grade portion of Richardson Road:
 - The design 'greens' the bridge to create an inviting approach to the centre, to add interest to the walk from the residential neighbourhood to the south, and to make an attractive setting for future development on adjacent private land.
 - The design does not preclude Auckland City Council from future widening or a second structure to accommodate an active commercial edge to support Council's growth aspirations.
 - The design does not preclude a future rail station near Richardson Road, as preferred by Council to support the future Stoddard Road growth node.
- A parking lane separates the footpath from moving vehicles and tree planting visually reduces the width of the carriageway
- Richardson Road follows the sloping topography. The incline into Richardson Road, the skew of the road over the motorway corridor and the presence of the rail line add further constraints to the bridge's clearance and structural requirements
- The structural system is precast concrete super tee

girders over three spans. This system, similar to the Maioro bridge, has minimal girder depth and maximises the bridge clearance over the motorway and railway line. This system also allows for tree planting along the bridge to support the 'local street' concept. Other design items integrated into the bridge are generous footpaths, cycle ways, bus stops, lighting and street furniture. Note that this design is only possible with a minimum width of 18 metres.

Preferred bridge layout

Various layouts were developed and assessed:

- The base engineering option was 11m wide.
- For consenting purposes a 14.5m wide bridge is being put forward
- The urban design option of 18m has shared footpaths / cycleways on both sides, buffered from the carriageway by street trees.

The widest option is preferred by the urban and landscape design team and is the one illustrated in the CAD and artist's 3D drawings.



Figure C-9.42: Richardson Road bridge context plan



Figure C-9.43: Richardson Road bridge concept – view looking east towards Stoddard Road along the preferred 18m wide bridge

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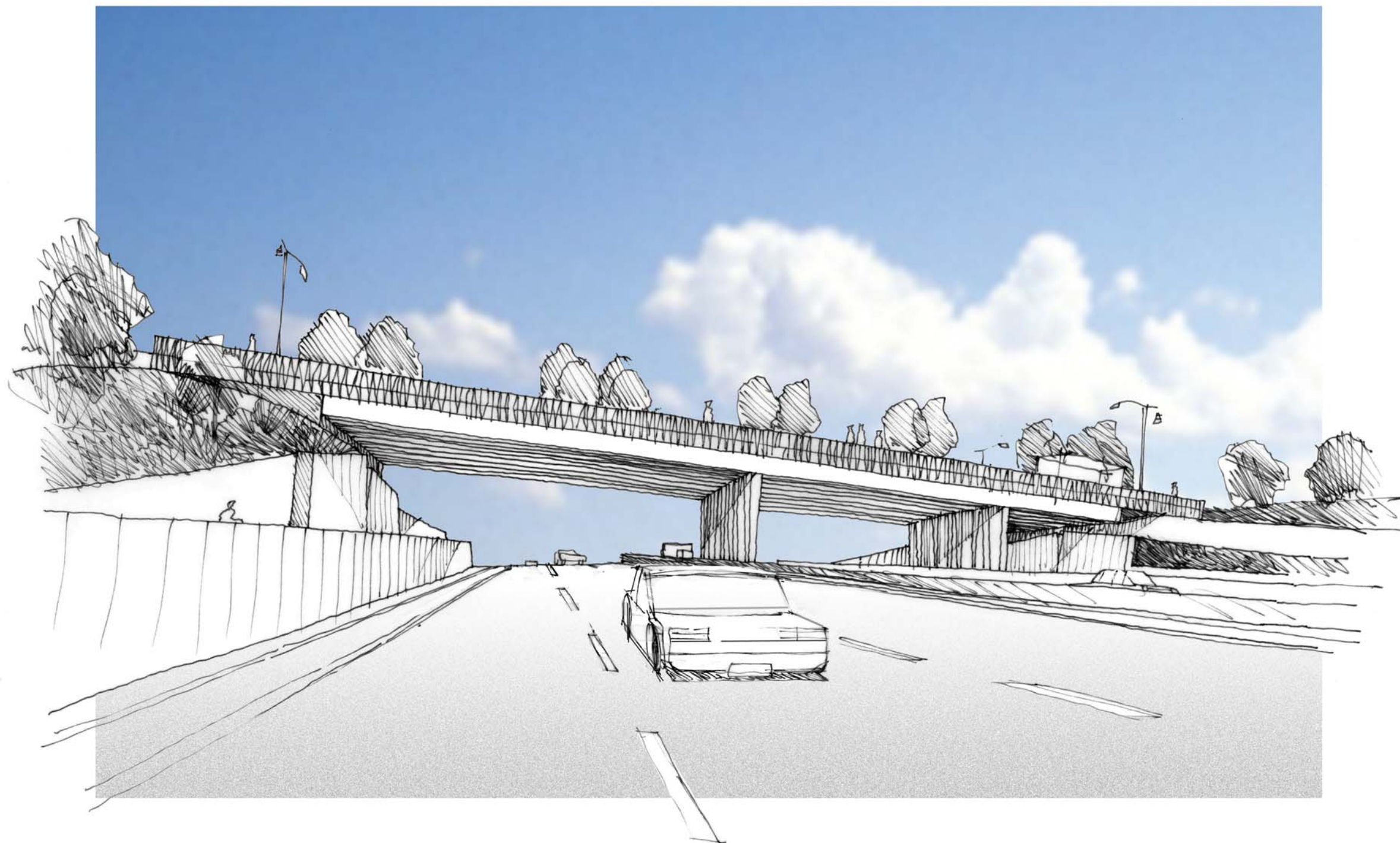


Figure C-9.44: Richardson Road bridge concept– view looking north with cycleway running underneath

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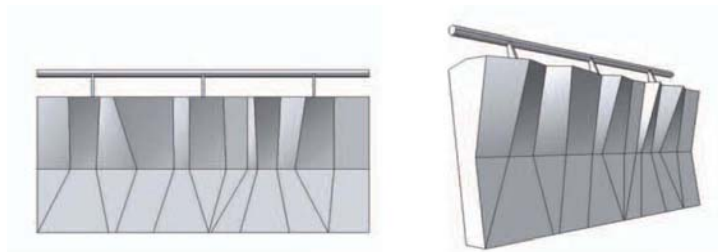
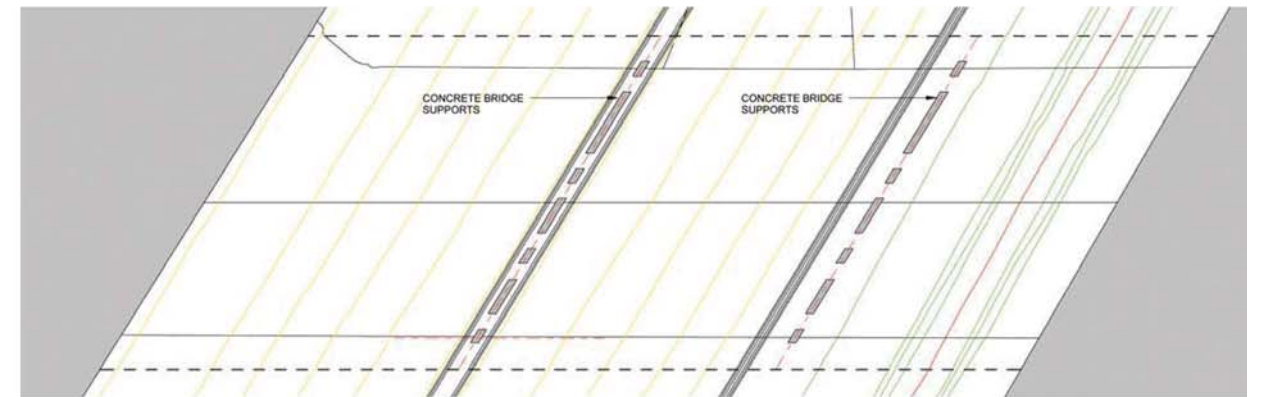


Figure C-9.45: Richardson Road bridge – design for barrier

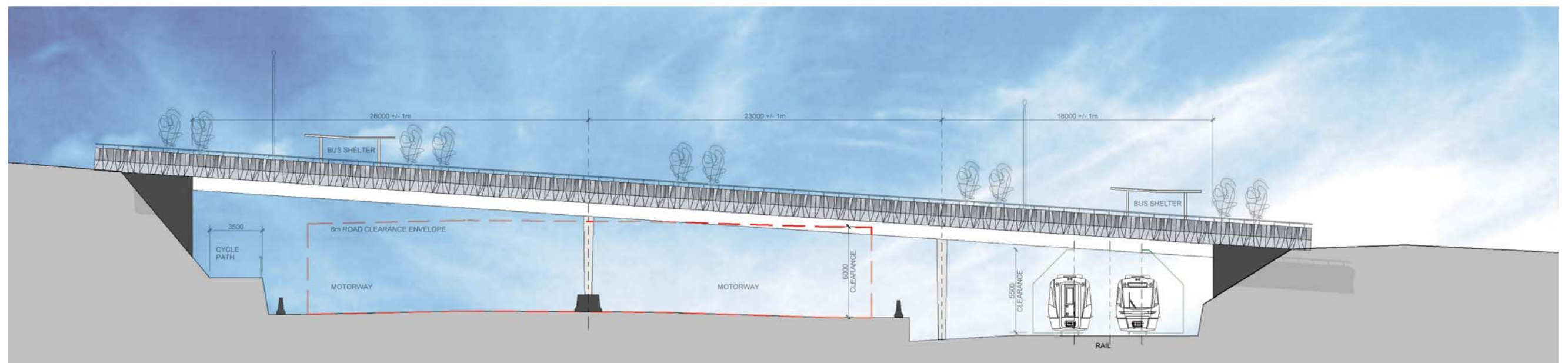
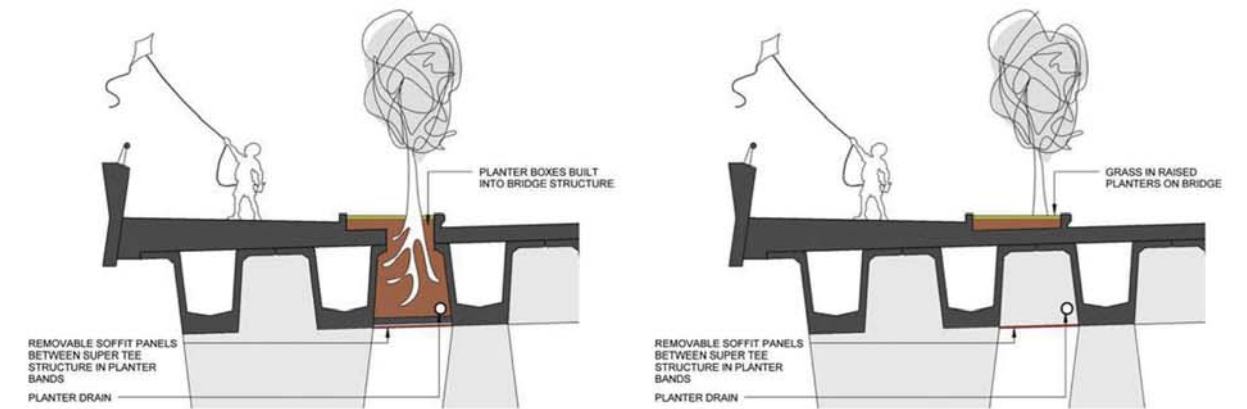


Figure C-9.46: Richardson Road bridge – design for barrier

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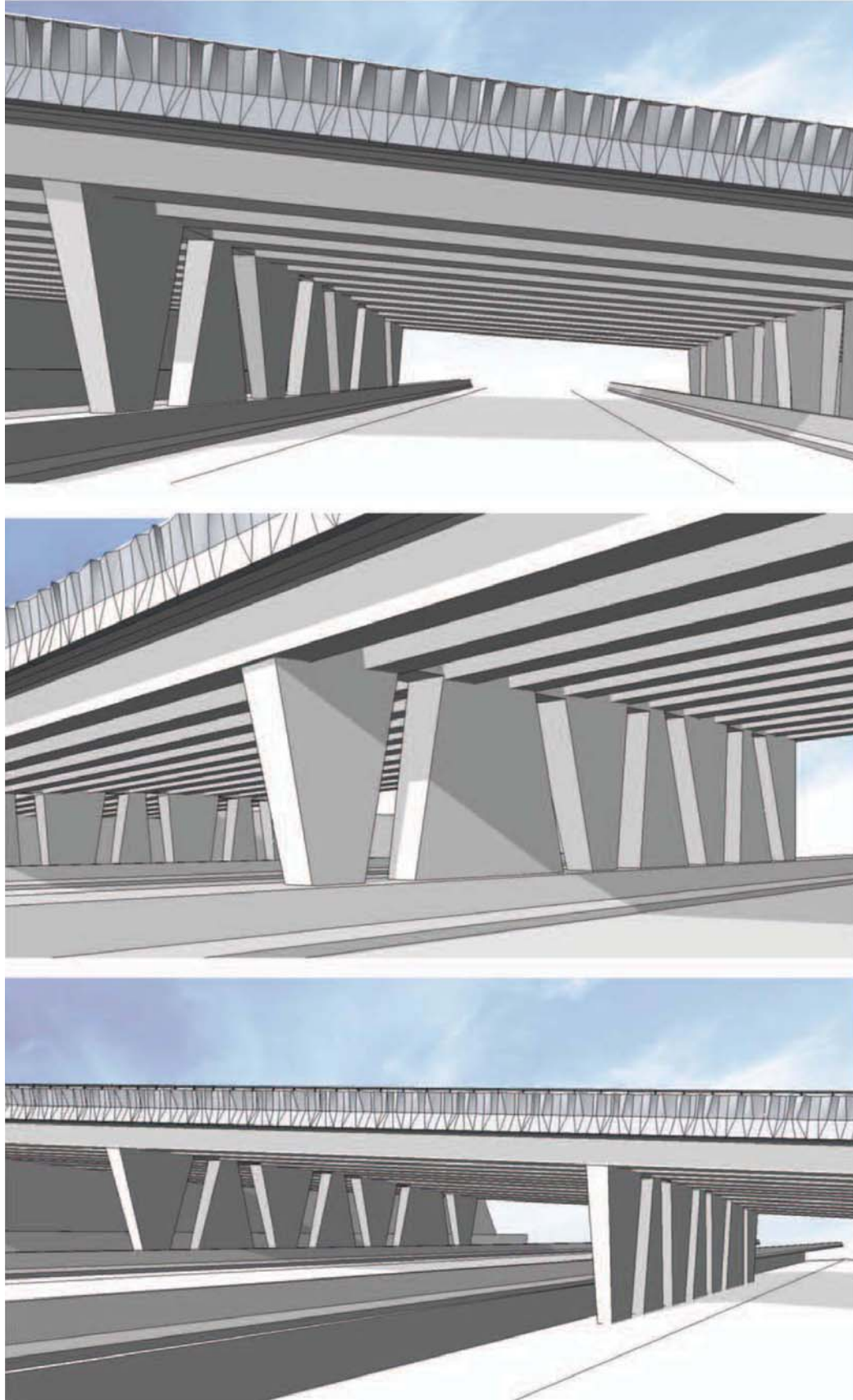


Figure C-9.47: Richardson Road bridge structure

C9.2.11 Richardson Road to Maioro Street

- A short and long term option are shown in Figures C-9.48– C-9.49 following. The long term option is an illustration of Auckland City Council's aspirations for a future rail station and developed Stoddard town centre
- Planting of trees on the south side will buffer the corridor from surrounding residential uses
- In the short term dense planting of harvestable flax within the rail designation on the north side provides an opportunity for Unitec to supply weavers
- In the longer term, land is available for construction of the rail line
- The off road cycleway is at grade over the Maioro intersection. Unlike at the Richardson Road bridge there is insufficient room under the Maioro Bridge for cyclists to have a continuous path alongside the motorway; however, signalised crossings support pedestrian / cycle north-south movement across Maioro Street.

Section C ▶ Sector Design Concepts



Figure C-9.48: Richardson Road to Maioro Street – short term design proposal

Western Ring Route ▶ Waterview Connection



Figure C-9.49: Richardson Road to Maioro Street – long term indicative concept

Section C ▶ Sector Design Concepts

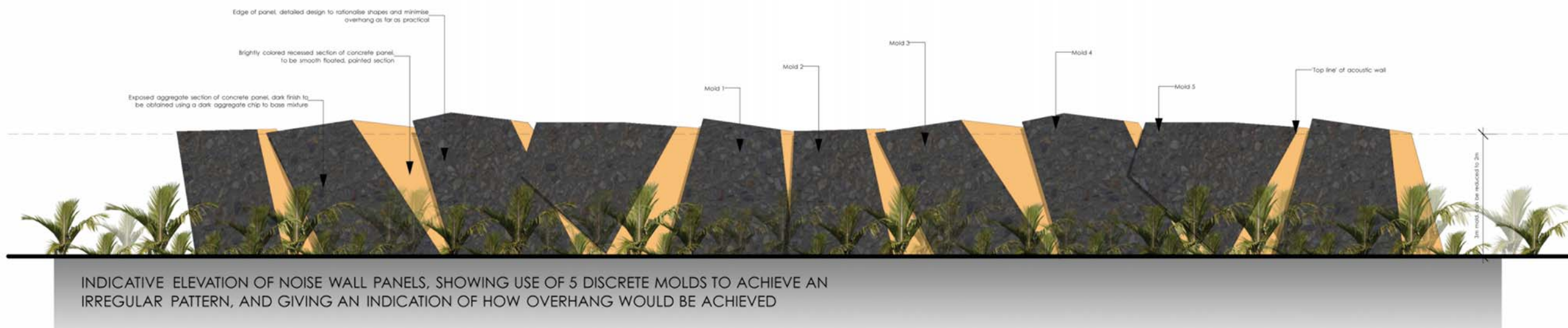
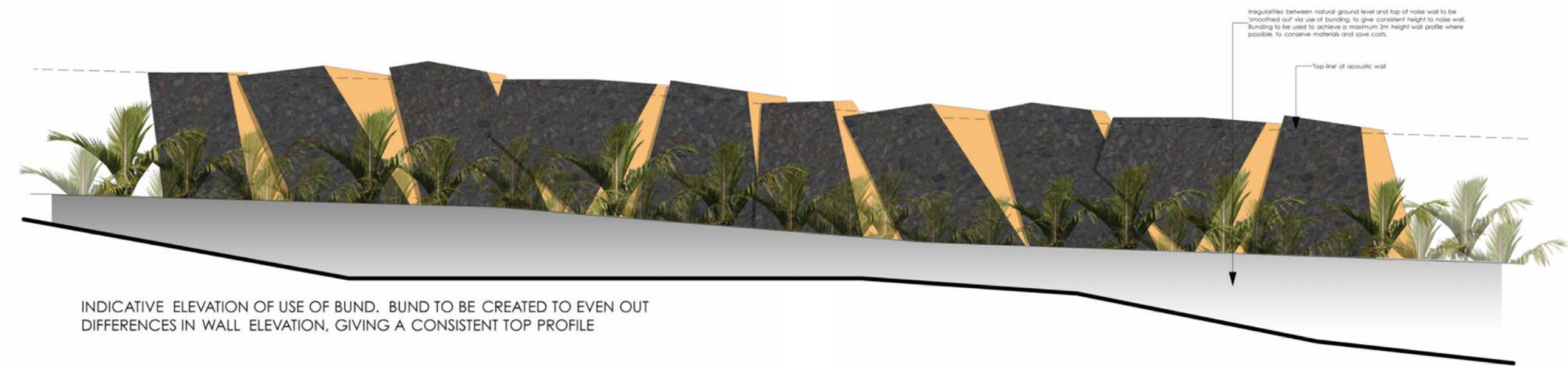
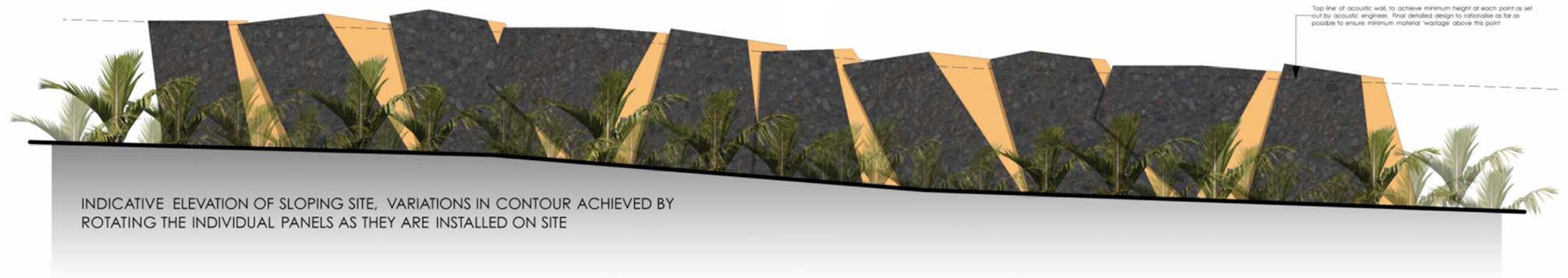
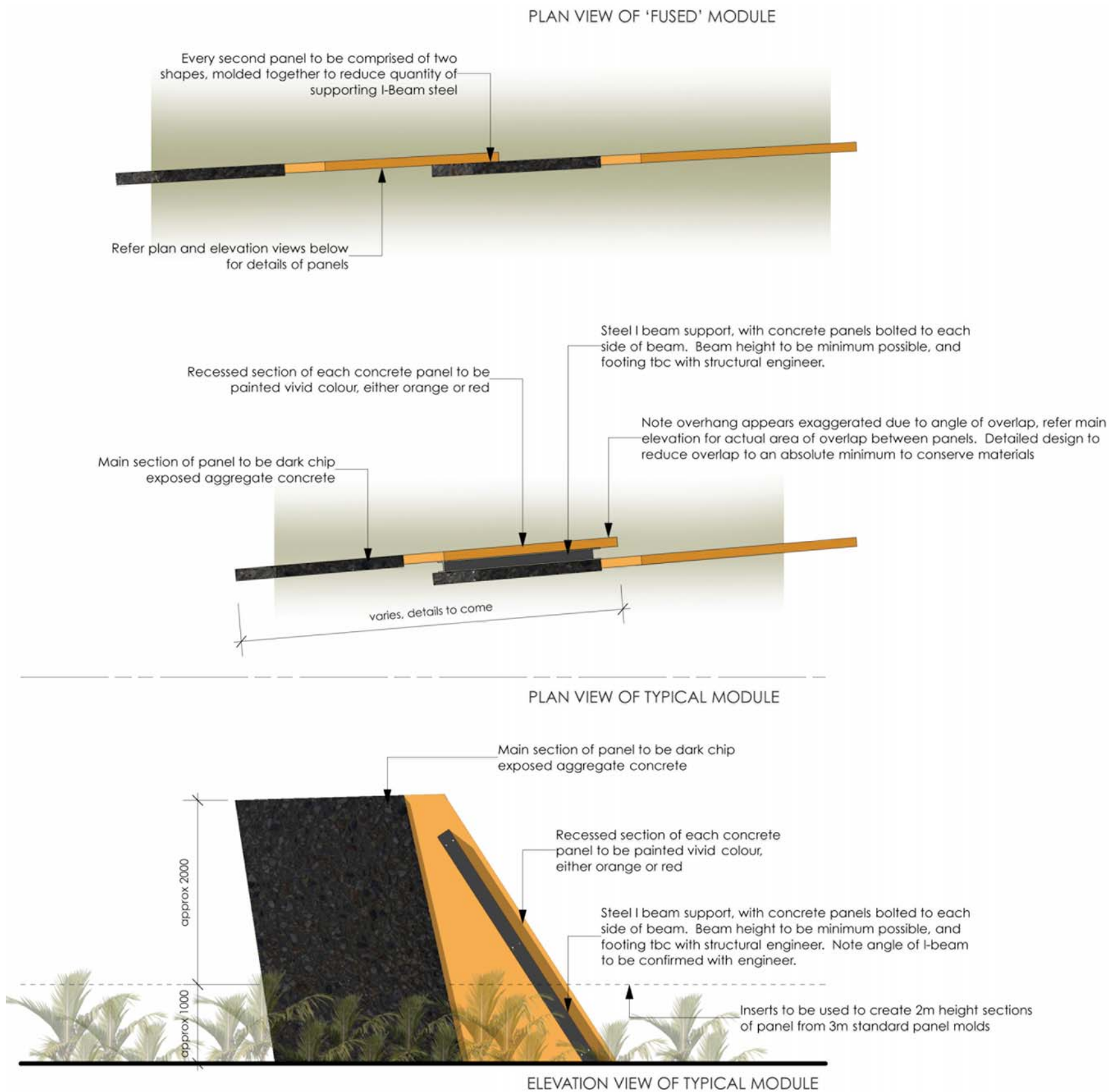
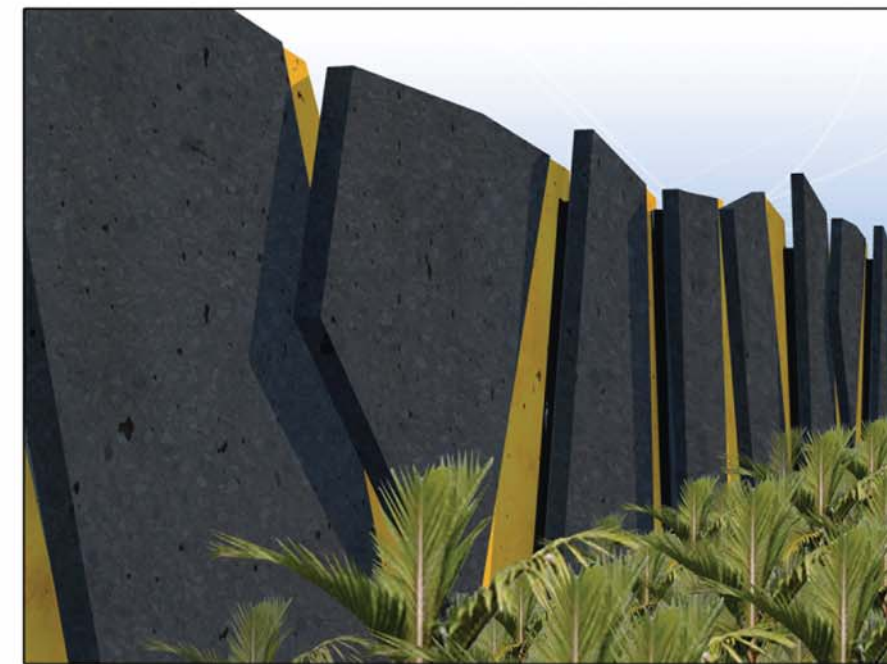


Figure C-9.50: Alan Wood Reserve – noise wall concept : elevations

Western Ring Route ▶ Waterview Connection



PERSPECTIVE TWO



PERSPECTIVE ONE

Figure C-9.51: Alan Wood Reserve – noise wall concept : details