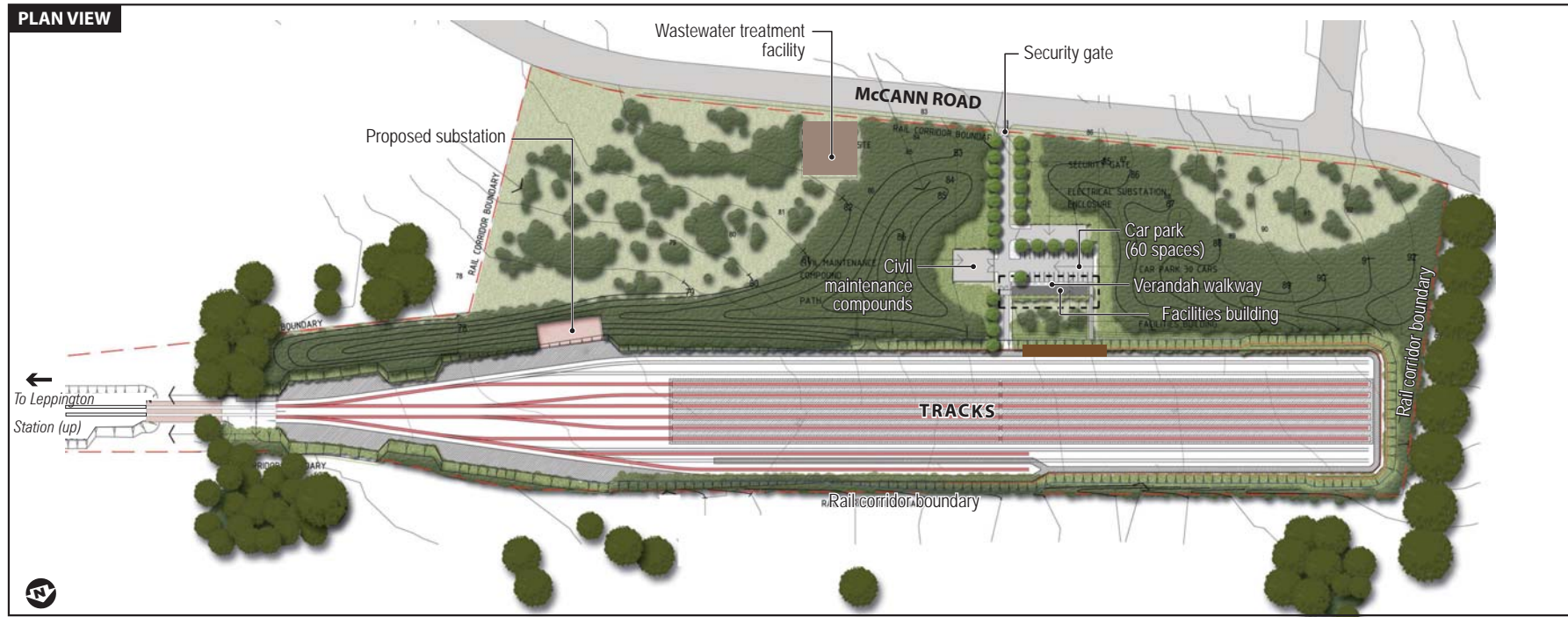


6.2.4 Leppington Train Stabling Facility

The project includes the construction of a new train stabling facility at Rossmore (referred to as the 'Leppington Train Stabling Facility'), approximately two kilometres west of the proposed Leppington Station. The key components of the new stabling facility are shown in Figure 6-10. The facility would comprise an open air train stabling (train parking) facility, incorporating the following:

- six rail tracks for train stabling, each accommodating two eight-carriage trains on commencement of operations, with provision to accommodate 10 rail tracks in the long-term (for which approval is sought in this EA) and two machine sidings (i.e. rows of tracks) to accommodate train maintenance vehicles
- a shared amenities building for use by train drivers, cleaning staff and security staff, containing a staff meal room, locker rooms, toilets, security facilities, presentation facilities and electrical and communication rooms. The location of the amenities building within the train stabling facility would allow for a potential future extension of the SWRL (as described in Section 5.4, the potential future extension of the SWRL is not part of the scope of works for the current SWRL project or this EA.)
- a staff car park for approximately 60 cars
- a civil maintenance store, compound and electrical substation
- an access road from McCann Road
- an access road from Bringelly Road (refer Figure 6-1t)
- appropriate noise mitigation measures which would be subject to the final noise mitigation strategy adopted for the train stabling facility (refer Section 9.7.2 for further discussion)
- a boundary fence and security gate to restrict access to the train stabling facility
- paths to provide staff access within the train stabling facility (i.e. to individual buildings and in-between rail tracks)
- a wastewater treatment facility to treat water from the train stabling facilities building.

PLAN VIEW



CROSS-SECTION

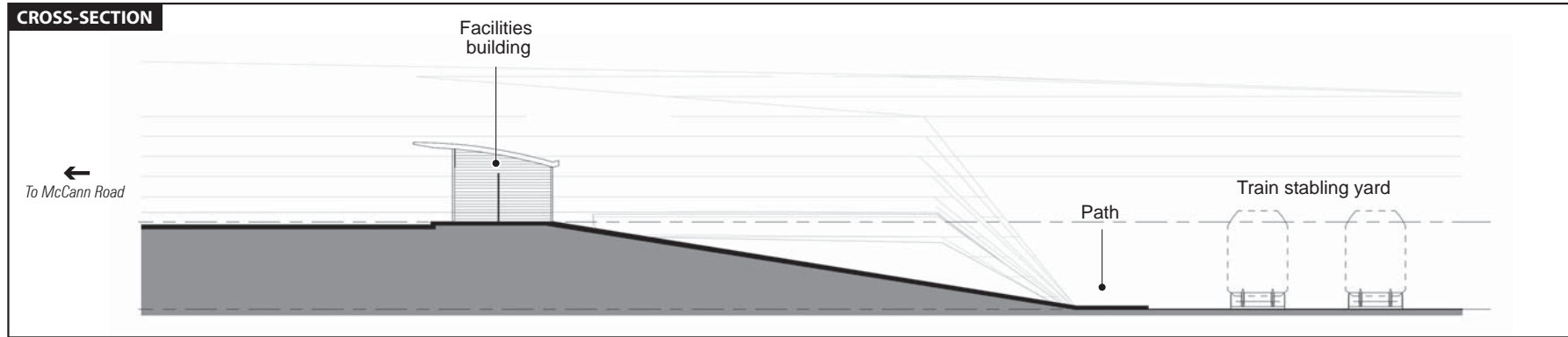


Figure 6-10 Leppington Train Stabling Facility (plan view and cross-section)

**Note: Indicative only, subject to detailed design*

6.2.5 Road and rail bridges, road underpass and Glenfield Southern Flyover

The project includes the construction of five overbridges, seven underbridges, one underpass and one Flyover to accommodate proposed rail line crossings at existing rail lines and roads. These structures comprise the:

- Glenfield Southern Flyover superstructure
- Macquarie Links Drive overbridge
- Hume Highway underpass (northbound and southbound carriageways)
- Ingleburn Gardens overbridge
- Campbelltown Road underbridge
- Camden Valley Way underbridge
- combined underbridge structure crossing over the Upper Canal and Cowpasture Road
- Rickard Road overbridge
- Dickson Road overbridge
- Eastwood Road overbridge.

The proposed location of these structures is shown in Figure 6-1 (a to t). A brief description is provided below.

It should be noted that a road crossing of the rail corridor would not be provided for Quarter Sessions Road. To maintain access to Macquarie Fields House during the construction and operation of the project, Quarter Sessions Road would be diverted to the west to connect with the Macquarie Links Drive overbridge. The alignment and design of the Quarter Sessions Road diversion would be further investigated and confirmed during detailed design.

The proposed bridges and road diversion would allow for all existing road accesses to be retained throughout the operation of the project. New bridges and road diversions would be designed in accordance with RailCorp and Australian standards, supplemented by recognised national and international standards where necessary. All large civil structures (such as the Glenfield Southern Flyover, bridges and tunnels) would be built to support 25 tonne axle loads.

Glenfield Southern Flyover superstructure

The project includes the construction of a superstructure for the crossing of the SWRL lines over the existing Main South Line. The superstructure would comprise an elevated bridge that suspends the northern and southern SWRL tracks over the existing rail lines. The structure is anticipated to be constructed to a maximum height of 5.9 metres and a maximum width of 35 metres; however, these dimensions are indicative only and may be exceeded as a result of detailed design. The substructure for the Glenfield Southern Flyover is already approved as part of Stage 1 of the project.

Macquarie Links Drive overbridge

The proposed overbridge would carry Macquarie Links Drive, a single-lane local road, over the rail lines. The bridge would be a single span with two 3.5 metre lanes, 1 metre shoulders and a shared use path (path for bicycles and pedestrians) on one side. Anti-throw screens would be located on either side of the bridge. The bridge would have a length of 35 metres and a total width of 13.7 metres. The railway below would have two tracks with maintenance access to one side and a safe walkway to the other. The minimum height of the bridge over the railway would be 6.5 metres.

Hume Highway underpass – northbound and southbound carriageways

The proposed underpass would allow the proposed rail lines to pass under the northbound and southbound carriageways of the Hume Highway. The underpass would comprise an approximate 77 metre long single dual-track tunnel (i.e. one tunnel containing both the up and down rail tracks) located near Macquarie Links Drive. An indicative elevation and plan view for the Hume Highway underpass is shown in Figure 6-11. The detailed design of the Hume Highway underpass would be further developed in consultation with the NSW Roads and Traffic Authority (RTA) to incorporate current road widening works. The construction methodology for the Hume Highway underpass is described in Section 6.4.2.

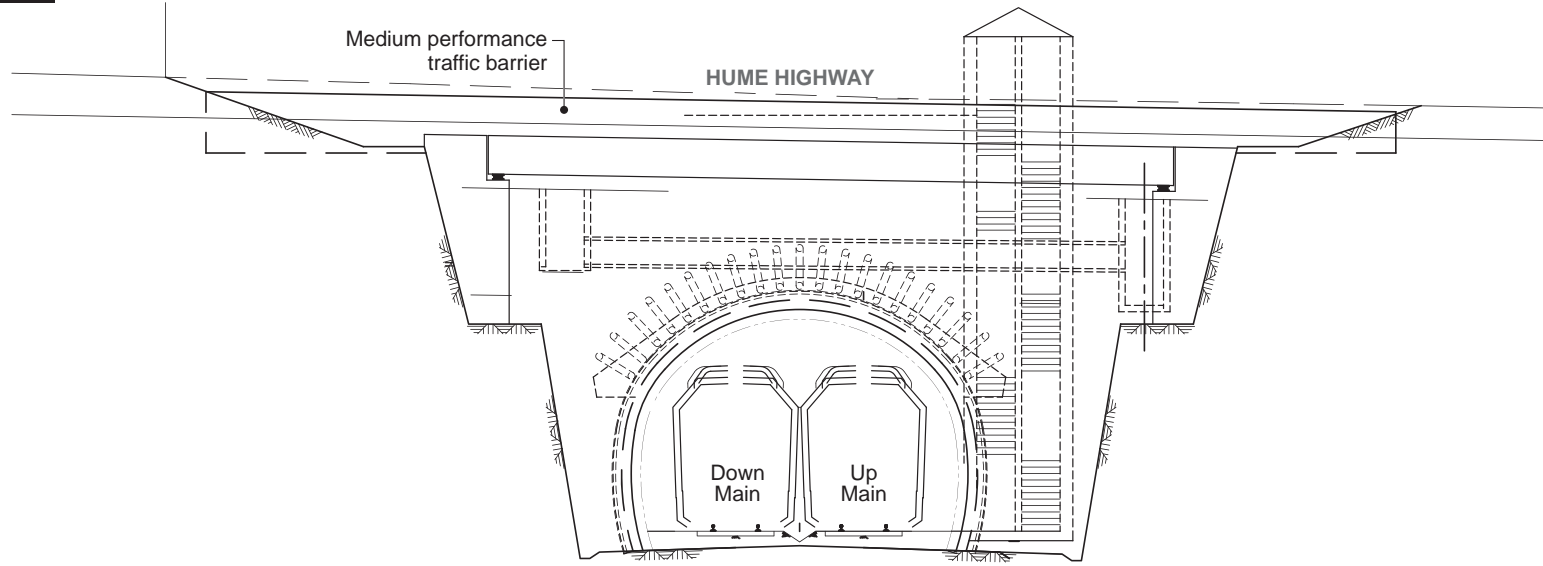
Ingleburn Gardens overbridge

The planned Ingleburn Gardens Estate, south of the proposed rail corridor, west of the Hume Highway, would be bisected by the railway line. To maintain connectivity, a new road overbridge would be provided, and the existing Ingleburn Gardens Road would be diverted to cross at this point, approximately 190 metres east of the existing road. Design of the road crossing would be developed during detailed design in consultation with Monarch developments (developers of the estate) and Council so not to preclude access to the Ingleburn Gardens Estate. The *Edmondson Park Smart Growth Development Control Plan Locality CB, Masterplan* (Don Fox Planning 2006) identifies the project and this road diversion within the Ingleburn Gardens Estate, and with the exception of the bridge over the rail line, the road is provided by others and does not form part of this EA.

Campbelltown Road underbridge

The proposed structure would carry the rail lines over Campbelltown Road. The proposed railway comprises two tracks with a safe walkway/refuge area on each side. The proposed bridge would have two spans sufficient to allow for road widening works at Campbelltown Road (including construction of a dual carriageway with shoulders, a median and path on each side). The bridge would have a length of 56 metres and a total width of 9.8 metres. An indicative elevation and plan view for the Campbelltown Road underbridge is shown in Figure 6-12.

ELEVATION



PLAN VIEW

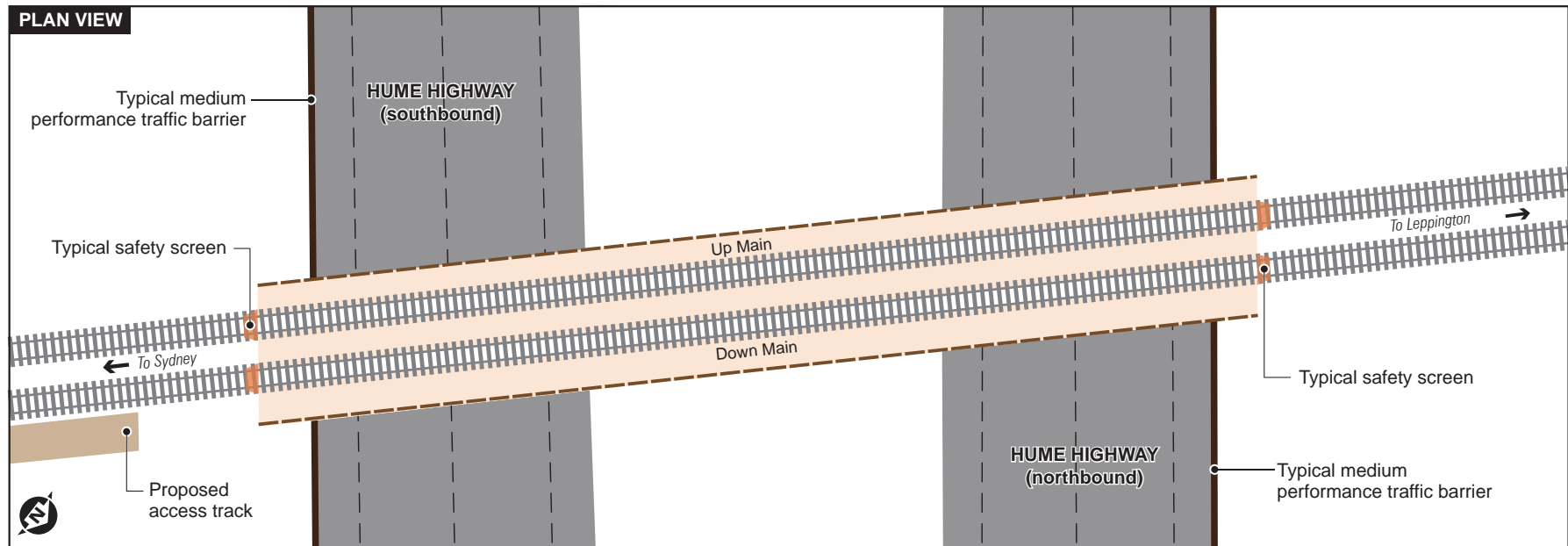


Figure 6-11 Hume Highway underpass

**Note: Indicative only, subject to detailed design*

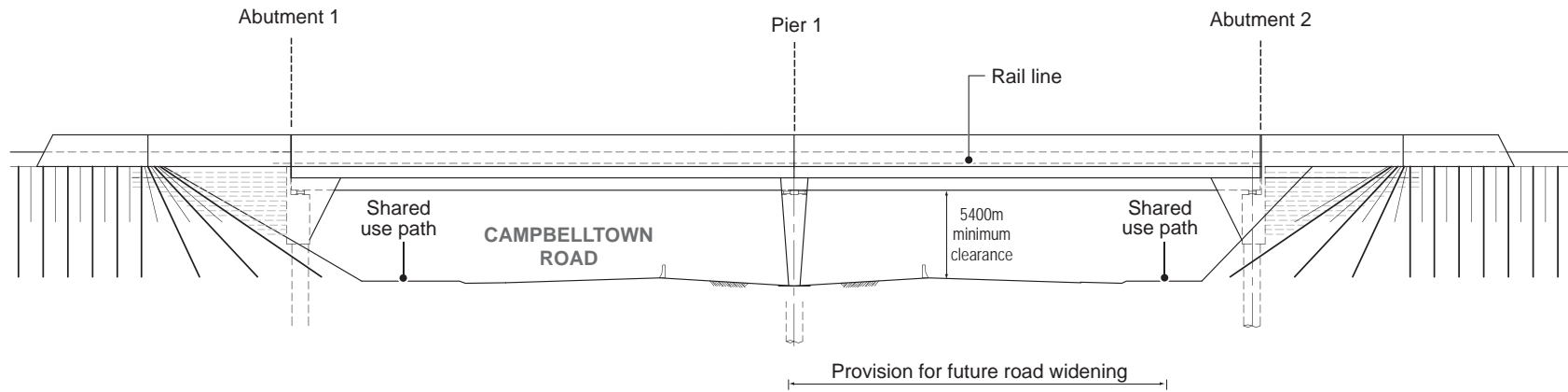
Camden Valley Way underbridge

The proposed structure would carry the rail lines over Camden Valley Way. The proposed railway comprises two tracks with a safe walkway/refuge area on each side. The bridge would have sufficient span to allow for proposed widening works at Camden Valley Way, which would extend the road to a three-lane carriageway in each direction, with shoulders, a median and shared use path on each side. The bridge would have a length of 58 metres and a total width of 9.8 metres. The construction of this structure would also involve the diversion of an existing drainage ditch into an underground culvert. An indicative elevation and plan view for the Camden Valley Way underbridge is shown in Figure 6-13.

Combined underbridge structure crossing Upper Canal and Cowpasture Road underbridge

The proposed bridge would carry the rail lines over the Upper Canal and Cowpasture Road as shown in Figure 6-14. The proposed railway comprises two tracks with a safe walkway/refuge area on each side. The bridge would have sufficient span to allow for potential widening works at Cowpasture Road. It is understood that these works include extending the road to a dual lane carriageway, with shoulders, a median, and a shared use path on each side. The bridge would have a length of 75.3 metres and a total width of 9.8 metres. An indicative elevation and plan view for the combined Upper Canal and Cowpasture Road underbridge is shown in Figure 6-14.

ELEVATION



PLAN VIEW

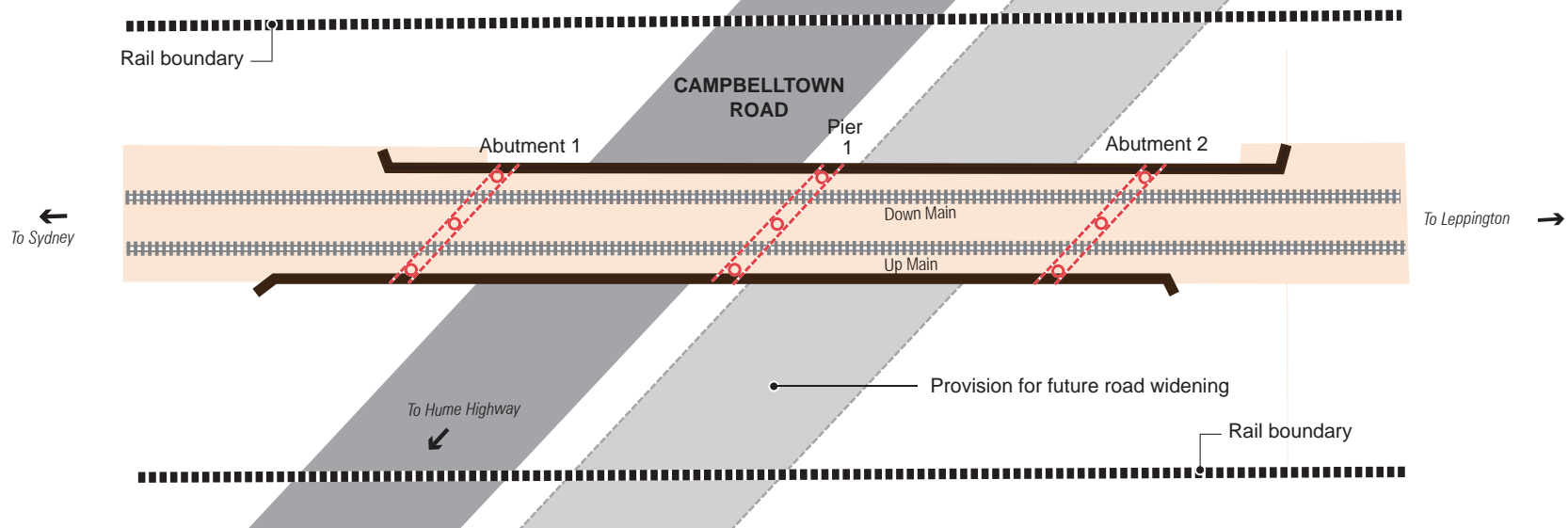
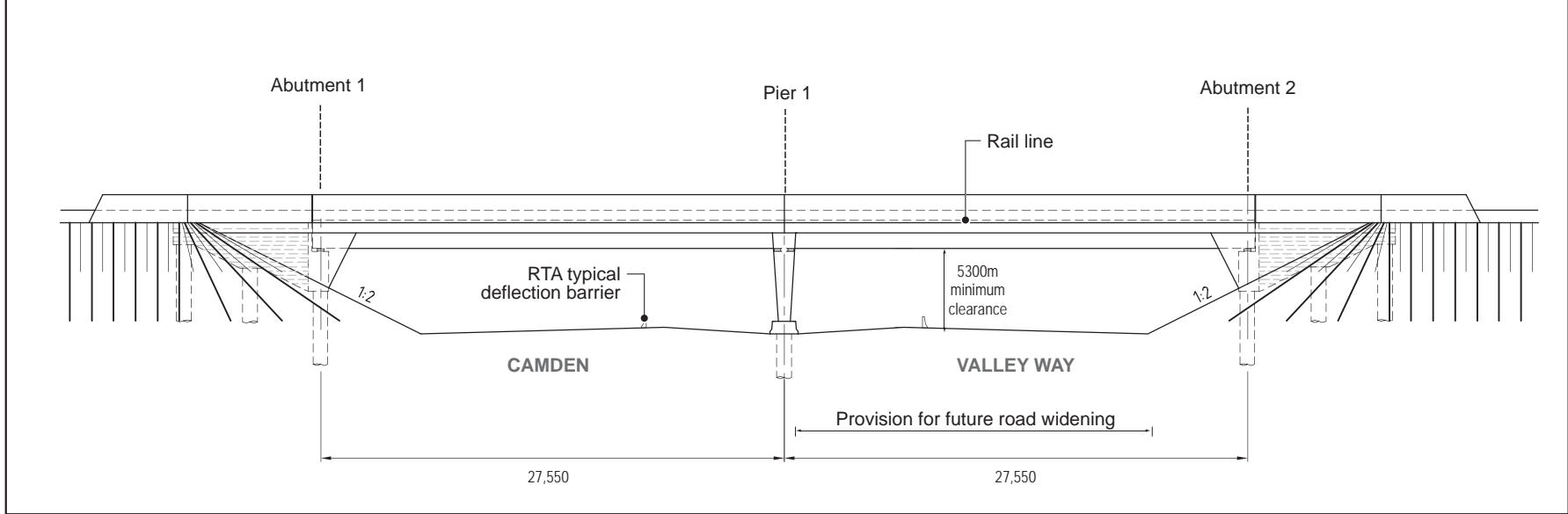


Figure 6-12 Campbelltown Road underbridge

**Note: Indicative only, subject to detailed design*

ELEVATION



PLAN VIEW

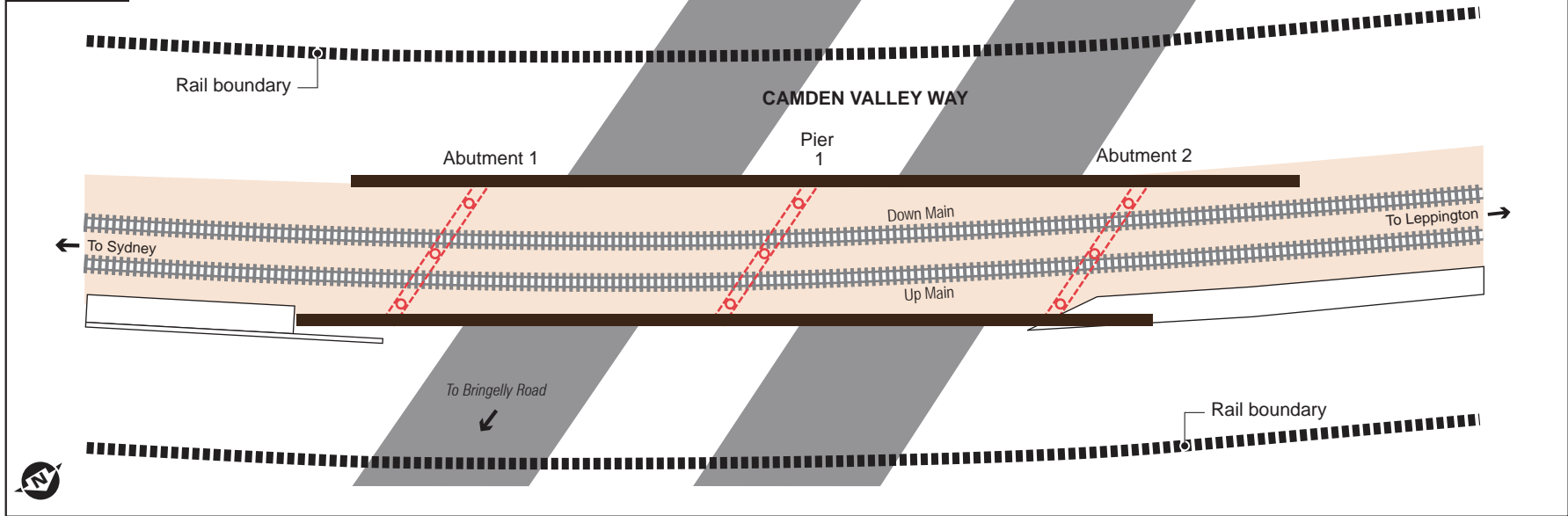
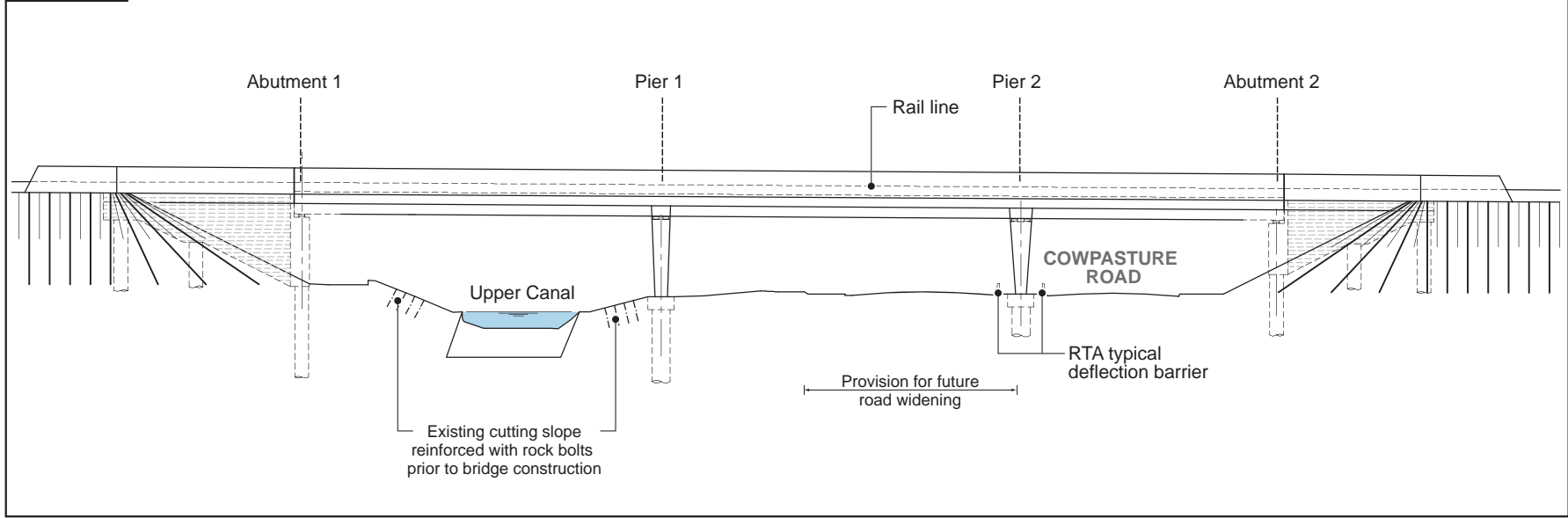


Figure 6-13 Camden Valley Way underbridge

**Note: Indicative only, subject to detailed design*

ELEVATION



PLAN VIEW

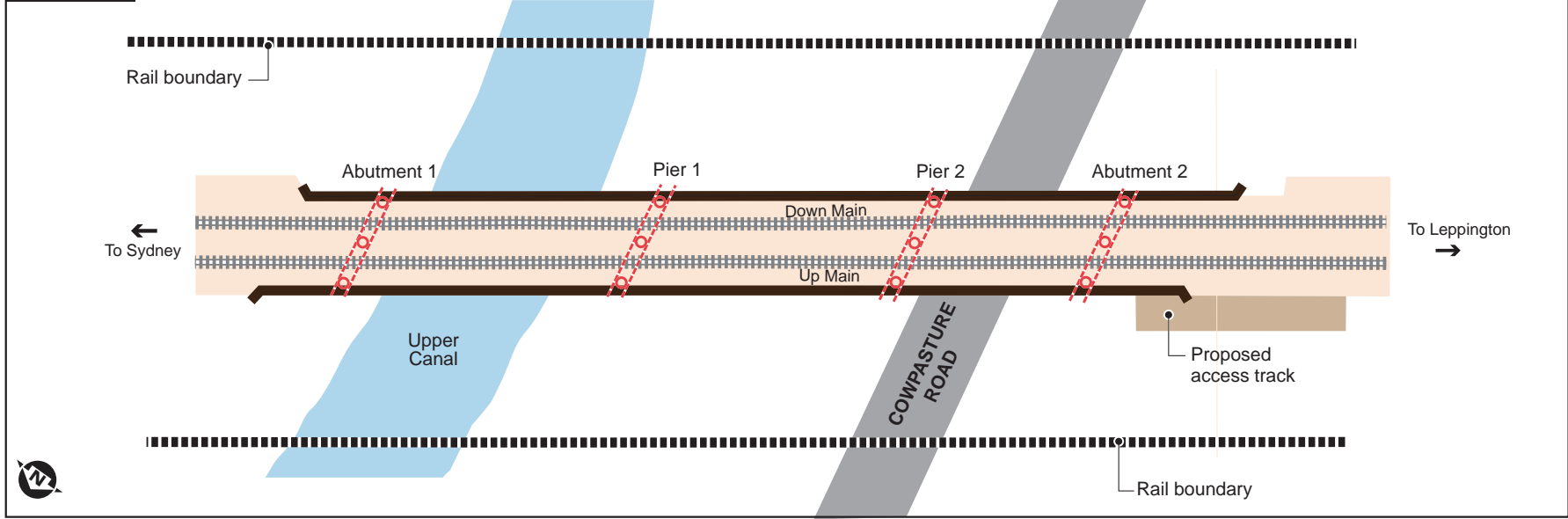


Figure 6-14 Upper Canal and Cowpasture Road underbridge
**Note: Indicative only, subject to detailed design*

Rickard Road overbridge

The proposed bridge would carry Rickard Road (a single lane local road) over the rail lines on the eastern side of the proposed Leppington Station. The bridge would comprise four 3.5 metre lanes to allow for future upgrade, 1 metre shoulders and a shared use path on each side. Rickard Road is proposed as a transit boulevard serving the South West Growth Centre (SWGC). Anti-throw screens would be located on either side of the bridge. The railway below would have four tracks with maintenance access to one side and a safe walkway to the other. The minimum height of the bridge over the railway would be 6.5 metres. The bridge would have a length of 58 metres and a total width of 26.6 metres.

Dickson Road overbridge

The proposed bridge would carry Dickson Road over the rail lines on the western side of the proposed Leppington Station. The bridge would comprise two 3.5 metre lanes, 1 metre shoulders and a 3 metre wide shared user path on one side. The railway below would have two tracks with maintenance access to one side and a safe walkway to the other. The bridge would have a length of 20.6 metres and a total width of 13.4 metres.

Eastwood Road overbridge

The proposed bridge would carry Eastwood Road over the rail lines. The bridge would comprise two 3.5 metre lanes, one shoulder and a 3 metre wide shared use path on one side. The railway below would have two tracks with maintenance access to one side and a safe walkway to the other. The bridge would have a length of 41.5 metres and a total width of 13.4 metres. An indicative elevation and plan view for the Eastwood Road overbridge is shown in Figure 6-15.

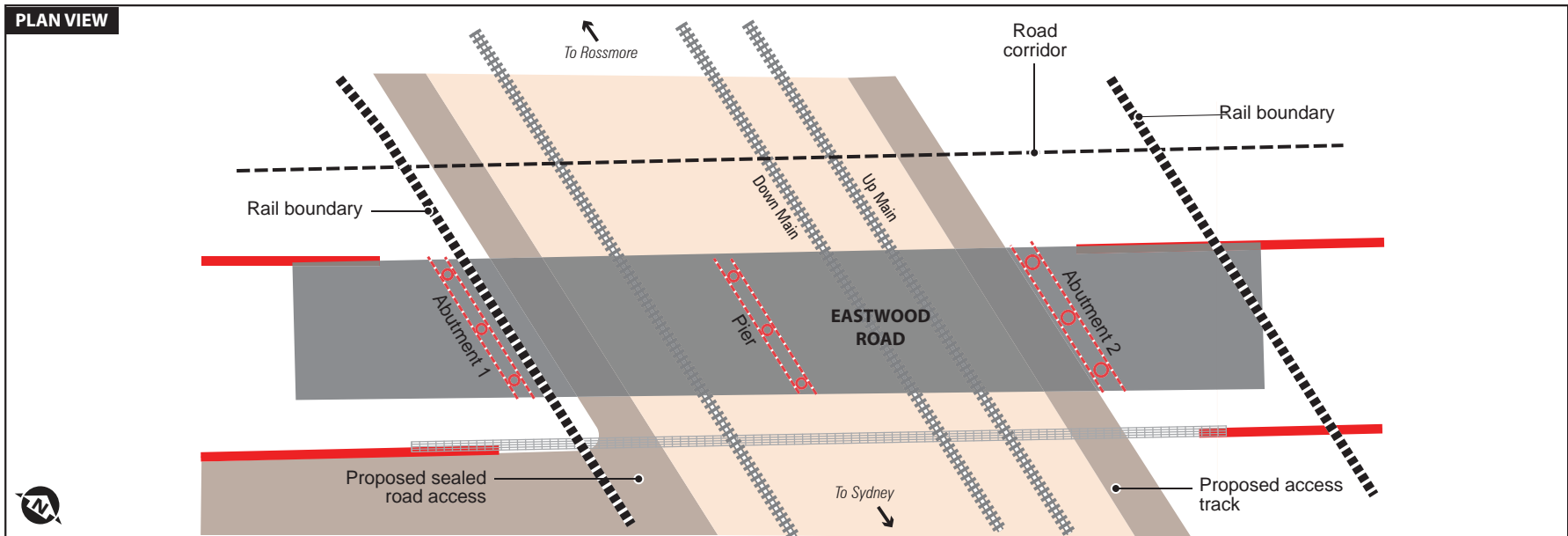
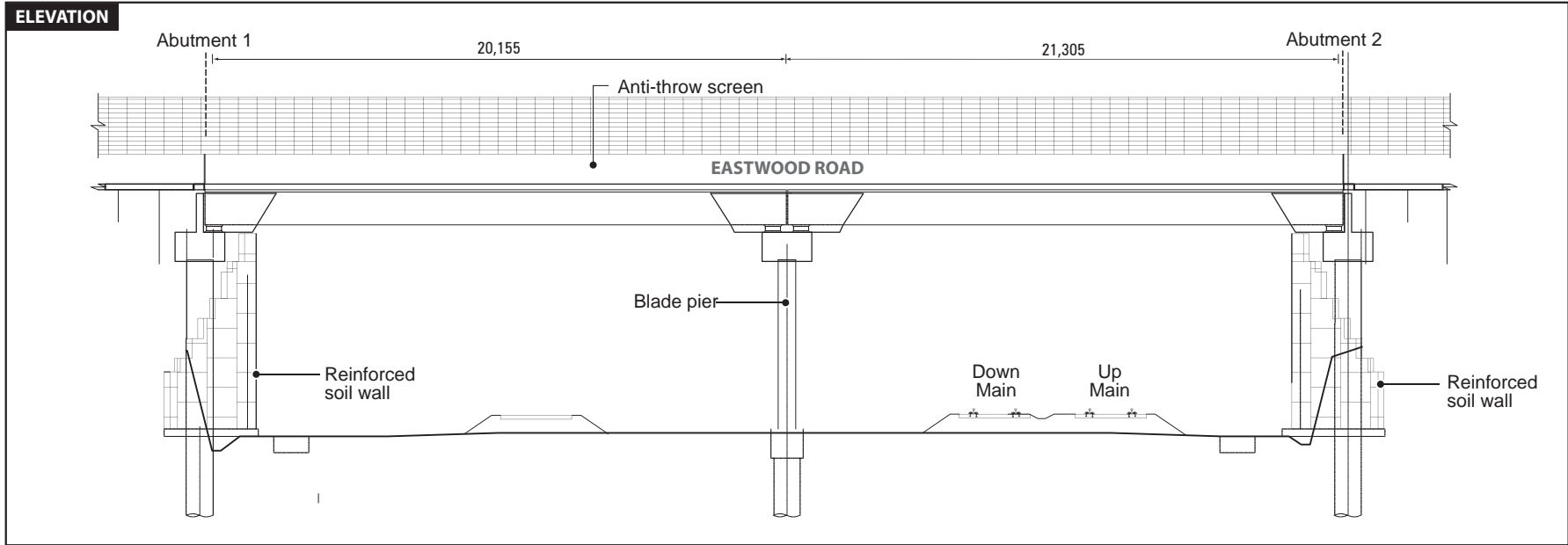


Figure 6-15 Eastwood Road crossing
**Note: Indicative only, subject to detailed design*

6.2.6 Waterway crossings and hydrology

The project includes the construction of bridges and culverts over watercourses. Bridges (rather than culverts) would be used in high risk flood areas to minimise the risk of blockage, and in areas with defined riparian habitat to maintain ecological values. The location of proposed waterway crossings, both bridges and culverts, is shown in Figure 6-1 (a to t) and described in Table 4-4. The following bridge crossings are included in the project:

- Glenfield Southern Flyover viaduct structure (Crossing 1)
- Cabramatta Creek underbridge (Crossing 7a)
- Kemps Creek underbridge (Crossing 14)
- Upper Canal and Cowpasture Road
- Bonds Creek underbridge (Crossing 11)
- Scalabrini Creek (waterway crossing 13).

The following culvert crossings are included in the project:

- Crossing 3 — Maxwells Creek, near Campbelltown Road
- Crossing 4 — tributary to Maxwells Creek, east of Edmondson Park Station Crossing 6 — unnamed creek (tributary to Maxwells Creek), west of Edmondson Park Station
- Crossing 8 — tributary to Cabramatta Creek, near Forest Lawn Garden Cemetery
- Crossing 9 — tributary to Cabramatta Creek, near Forest Lawn Garden Cemetery
- Crossing 10a — tributary to Cabramatta Creek. at Camden Valley Way
- Crossing 10b — unnamed drainage depression, east of Upper Canal.

The project also includes the diversion or realignment of watercourses at the following locations:

- Crossing 2 — tributary to Maxwells Creek, east of Hume Highway
- Crossing 5 — tributary to Maxwells Creek, at Edmondson Park Station
- Crossing 7b — tributary to Cabramatta Creek, west of Edmondson Park Station
- Crossing 12 — tributary to Scalabrini Creek, west of Leppington Station
- Minor depression at Chainage 47.500 kilometres.

With the exception of the Upper Canal and Cowpasture Road crossing which is discussed above, bridge crossings are discussed in greater detail below. Details on culvert crossings are provided in Table 6-4, with the exception of Crossings 5 and 12 which are discussed below. Waterway diversions are also discussed below.

Glenfield Southern Flyover viaduct structure (Crossing 1)

The Glenfield Southern Flyover would comprise embankments and viaduct structures. The viaduct structure would elevate the northern and southern SWRL tracks over existing vegetation and the Bunbury Curran Creek. It is anticipated that the bridge would have a total width of 8.5 metres; however, this width is indicative only and may be exceeded as a result of detailed design.

Cabramatta Creek underbridge (Crossing 7a/b)

The preferred option includes a three span underbridge with an overall deck width of 10.8 metres and a maximum length of 70 metres.

Kemps Creek underbridge (Crossing 14)

The proposed bridge over Kemps Creek, reduces the likelihood of flood impacts on the railway. Three options considered for this crossing. The preferred option includes a four span underbridge with an overall deck width of 10.8 metres and a length of 40 metres.

Crossing 11 — Bonds Creek

The bridge would allow the proposed rail lines to cross Bonds Creek at Chainage 50.12 kilometres. The bridge would comprise a single span, approximately 20 metres long with a 1.8 metre clear waterway height.

Crossing 13 — Scalabrini Creek

The bridge would be constructed to cross Scalabrini Creek at Chainage 51.58 kilometres. The bridge would comprise a four span with a maximum length of 40 metres.

Crossing— Edmondson Park

The proposed Edmondson Park Station would be located over an existing watercourse (known as Crossing 5). The existing watercourse would be diverted upstream into Crossings 4 and 6 (discussed above) to minimise potential for flooding of the Edmondson Park Station.

Crossing— west of Leppington Station

The project includes the diversion of part of Scalabrini Creek at Crossing 12 to Crossing 13. The purpose of this diversion is to minimise the potential for flooding of Leppington Station.

Table 6-4 Proposed culvert crossings

Crossing number	Location	At Chainage (kilometres)	Number of culvert cells	Height (metres)	Width (metres)	Length (metres)
3	Near Campbelltown Road (Maxwells Creek)	44.53	7	1.2	3.3	52
4	East of Edmondson Park (Maxwells Creek)	45.13	3	0.9	3.6	12
6	West of Edmondson Park Station (Maxwells Creek)	45.7	6	0.9	3.3	25
8	In the vicinity of Forest Lawn Garden Cemetery (Cabramatta Creek)	47.90	4	0.9	3.3	30
9	In the vicinity of Forest Lawn Garden Cemetery (Cabramatta Creek)	48.17	7	0.9	3.3	25
10a	Camden Valley Way (Cabramatta Creek)	48.4	2	0.9	2.7	65
10b	East of Upper Canal (Bonds Creek)	49.43	#	0.9	2.4	30

Note: To be confirmed during detailed design

The project also includes a number of drainage works so that stormwater from the rail corridor and structures are appropriately drained.

6.2.7 Associated rail infrastructure and services

Power supply

A number of key electrical works are necessary to supply the project with sufficient operating power. A summary of these key power supply works is provided below.

Bulk power supply

Bulk power supply works would include:

- construction of an Integral Energy substation adjacent to the 132 kilovolt route (south of the rail corridor off Cassidy Street, Denham Court)
- construction of a new substation to the north of the rail corridor (west of Camden Valley Way) with access to Bringelly Road
- construction of a new substation at the Leppington Train Stabling Facility
- construction of four new underground feeder cables (comprising three 1 phase 33kV cable and one 3 phase 11kV cable) from the contract interface with the Glenfield Southern Flyover to Edmondson Park Station, Edmondson Park Station to Leppington Station, Leppington Station to the Leppington substation, and the Leppington substation to the Rossmore substation (there would also be two spare conduits)
- installation of two new chamber station supply substations (padmount substations which includes an isolation transformer), together with Integral Energy backup supply and isolation substation, at the two stations
- earthing and bonding and electrolysis protection
- a lightning protection system as required for the new works
- pits and ducts associated with cable routes, subject to power flow, fault levels and a voltage drop study.

The proposed substation sites are indicated on Figure 6-1 (a to t).

Traction power supply

This would comprise:

- installation of new feeders and associated feeder cabling at the proposed Glenfield South Substation to connect it to the project (bulk power would be supplied from the new substation located to the north of the rail corridor and west of Camden Valley Way)
- construction and installation of a new sectioning hut at Edmondson Park.

Overhead wiring

This would comprise:

- installation of a new overhead wiring (OHW) system, including OHW structures and foundations; and a complete overhead catenary system including conductors, droppers, jumpers, cut in insulation and bridge attachments to RailCorp's preferred systems
- new power feed cables and feeder structures at Edmondson Park, Camden Valley Way and Leppington
- connection and return of power feed cables from the traction substation at Edmondson Park and Leppington

- earthing and bonding of relevant OHW structures.

Communications and train control systems

The project includes the installation of communication systems comprising: closed circuit television (CCTV), intruder alarm systems, public address, precise clocks, a train control system, and other RailCorp communication services.

Signalling

The project includes a number of signalling works to enable the efficient and safe operation of the project. The specific details of the signalling would be confirmed at the detailed design stage, with the main elements described below.

Glenfield Junction

Signalling works would include:

- modification of the existing junction and associated signalling equipment to provide for the connection of the project to the Main South Line
- provision of a new Computer Based Interlocking System to replace the existing Glenfield Junction Solid State Interlocking signalling system
- modification of the Advanced Train Running Information Control System (ATRICS) to depict the new layout.

Glenfield to Leppington Rail Line and Leppington Train Stabling Facility

Signalling works would include:

- provision of a new Computer Based Interlocking System and associated circuitry at Leppington for the signalling of the project to the track configuration
- provision of new signalling equipment and housings
- modification of the ATRICS control and indication system at Sydenham to depict the new layout
- provision of signal post telephones where required
- provision of guards indicators on platforms where required.

Signage

Signage would be provided to reinforce the intuitive 'way finding' created by the station designs in accordance with TIDC's (2009) Sustainable Design Guidelines and RailCorp user requirements. Signage would include tactile and Braille signage as required by the Building Code of Australia. It would also promote the sustainability initiatives/features of the new stations based on TIDC's (2009) Sustainable Design Guidelines (such as the use of key performance indicators to communicate greenhouse gas emission reductions, water usage and waste generation associated with rail patronage at the station) Signage would include the following signage elements based on the RailCorp signage manual:

- station identification signs in the streets to the north and south of the station (internally illuminated)
- public domain directional signs indicating bus stops, kiss-and-ride set down and pickup, taxi ranks, and cycle storage facilities
- station facilities signage (tickets, information, station manager, toilets, telephone, etc, (internally illuminated)
- directional signage to platforms (internally illuminated)

- platform identification signage (internally illuminated)
- station identification on platforms (internally illuminated)
- directional signage on platforms (internally illuminated)
- door signage
- statutory signage
- emergency exit signage (internally illuminated)
- station passenger information screens.

6.2.8 Landscaping and urban design

The project includes a number of key landscape works that would integrate the project into the surrounding environment, as shown in Figure 6-16 (a to f), and Figures 6-2 to 6-5. The design aims to protect and enhance the existing flora and fauna, whilst creating a unique and interesting character to the project and enhancing rail passenger experiences. The proposed approach seeks to screen the rail corridor through the creation of thick vegetated screens in some sensitive areas, but to also appreciate the value of glimpsed views of a rail line within the landscape setting. Views would be opened up to the corridor at key locations and within proposed high density town centres.

The following landscape and urban design works are proposed to integrate the project into the surrounding future environment:

- tree planting with understorey shrub planting on all proposed streets surrounding Edmondson Park and Leppington Stations
- installation of low maintenance and suitably designed street furniture within and around Edmondson Park and Leppington Stations
- new paving along pathways and concourses at Edmondson Park and Leppington Stations
- landscape plantings at the proposed Glenfield Southern Flyover and key rail bridges (Campbelltown Road) (plantings would comprise endemic species)
- potential public art and interpretation informed by the surrounding area's history and cultural elements at Edmondson Park and Leppington Stations
- a mix of feature trees, scattered trees and sub canopy trees planted on either side of the railway corridor (all trees used would be endemic species).

All plantings, street furniture and paving would be in accordance with RailCorp's *Station Design Guide Standards* and Australian Standards, where relevant.

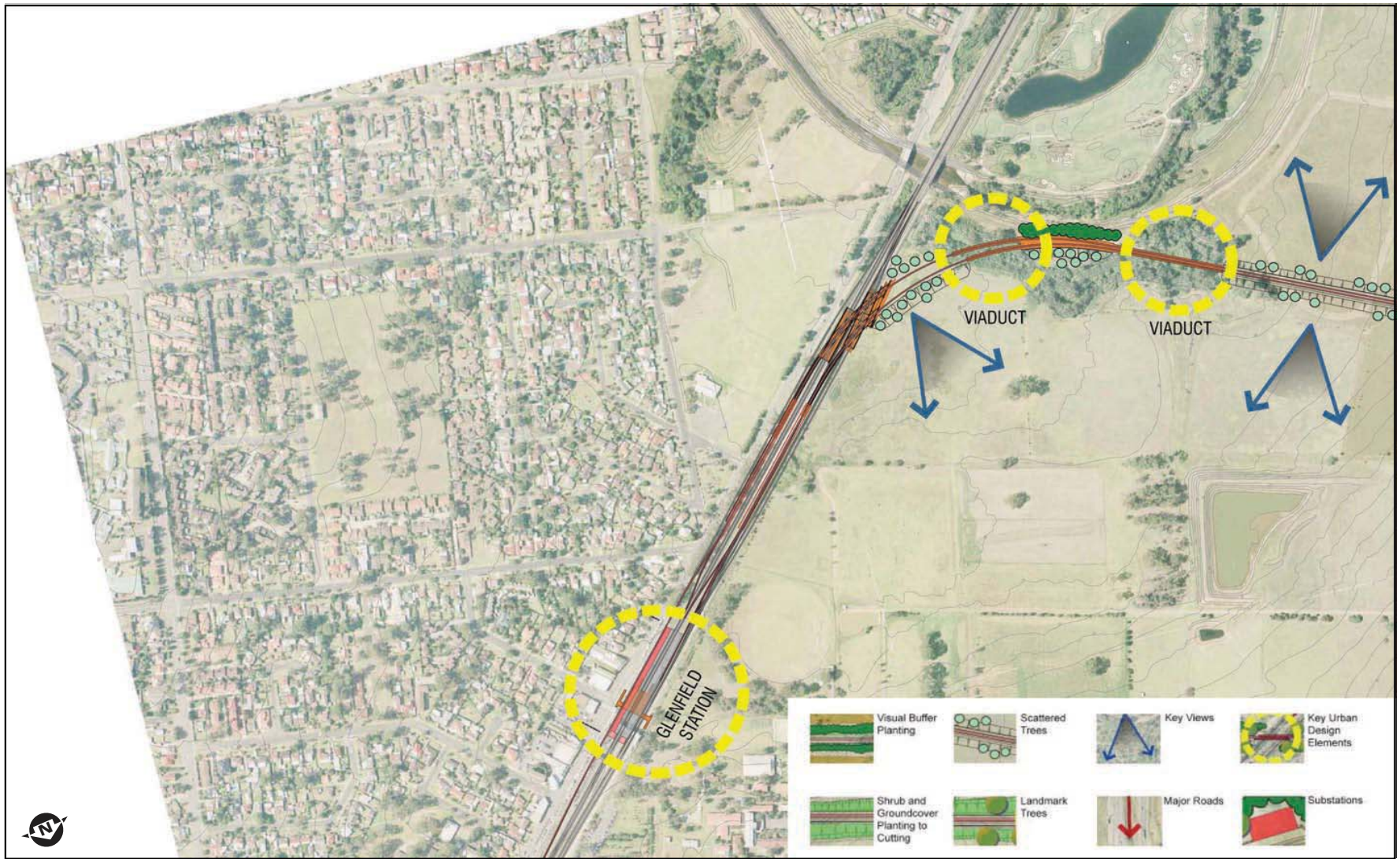


Figure 6-16a Landscape plan for the proposed SWRL

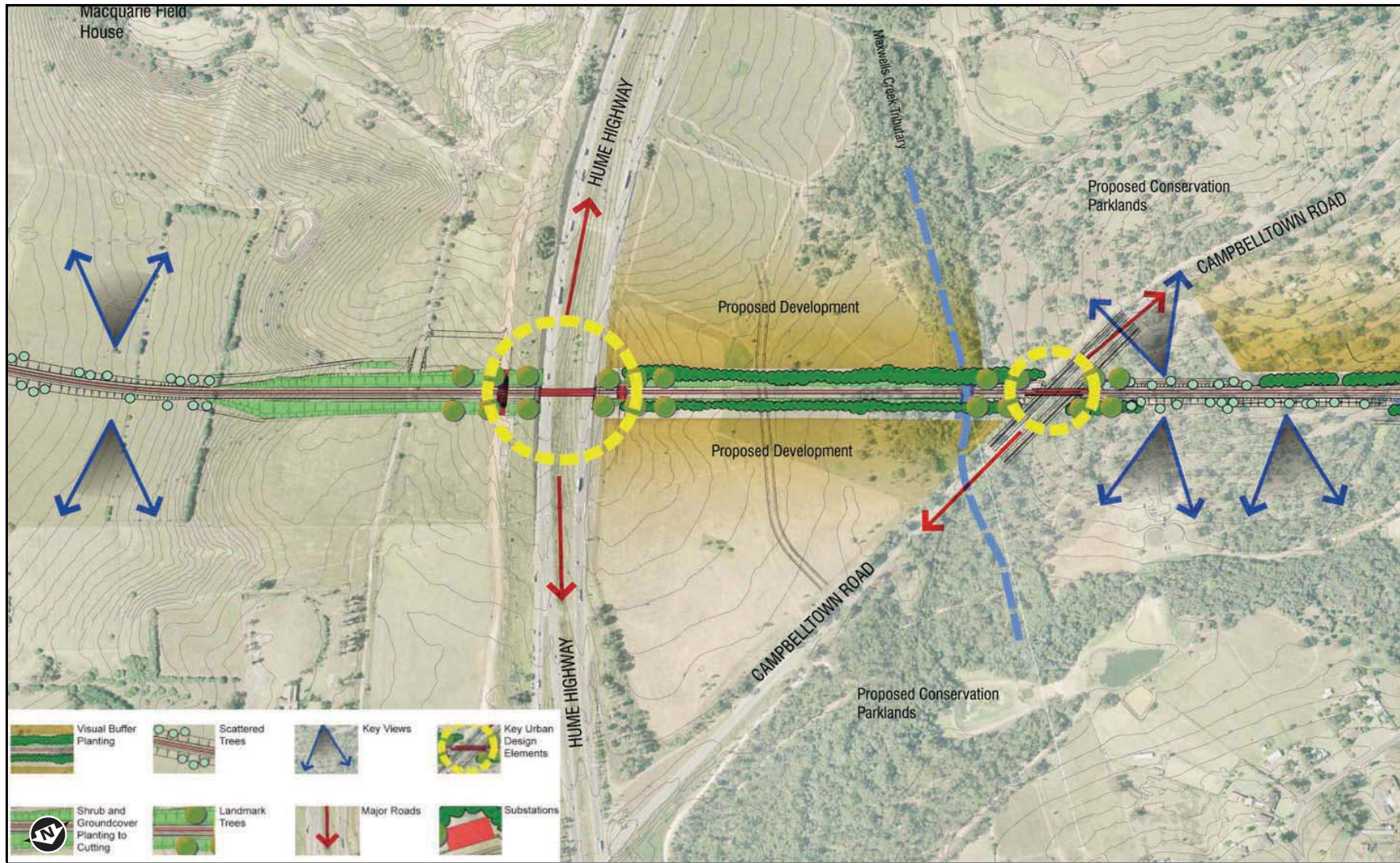


Figure 6-16b Landscape plan for the proposed SWRL

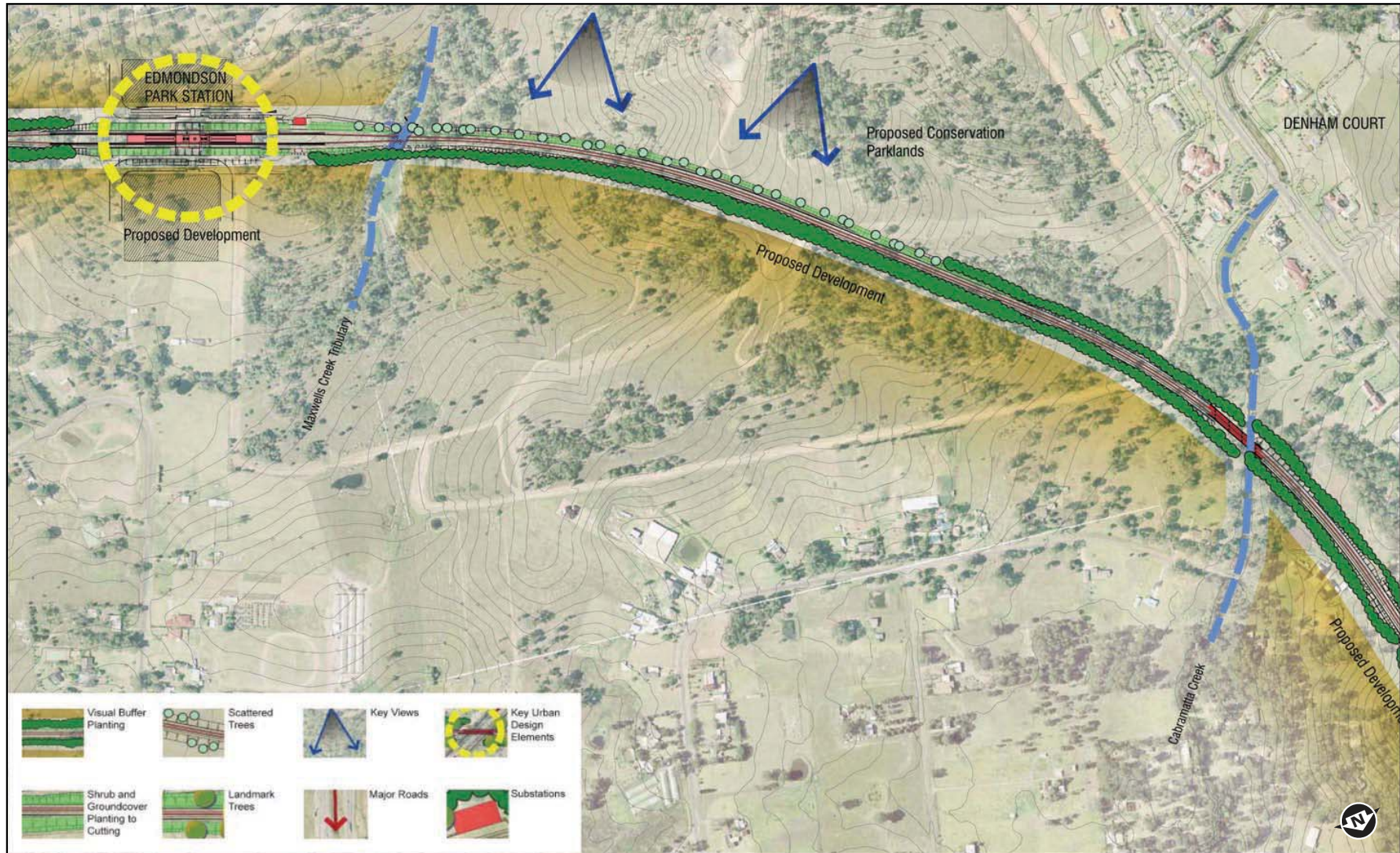


Figure 6-16c Landscape plan for the proposed SWRL

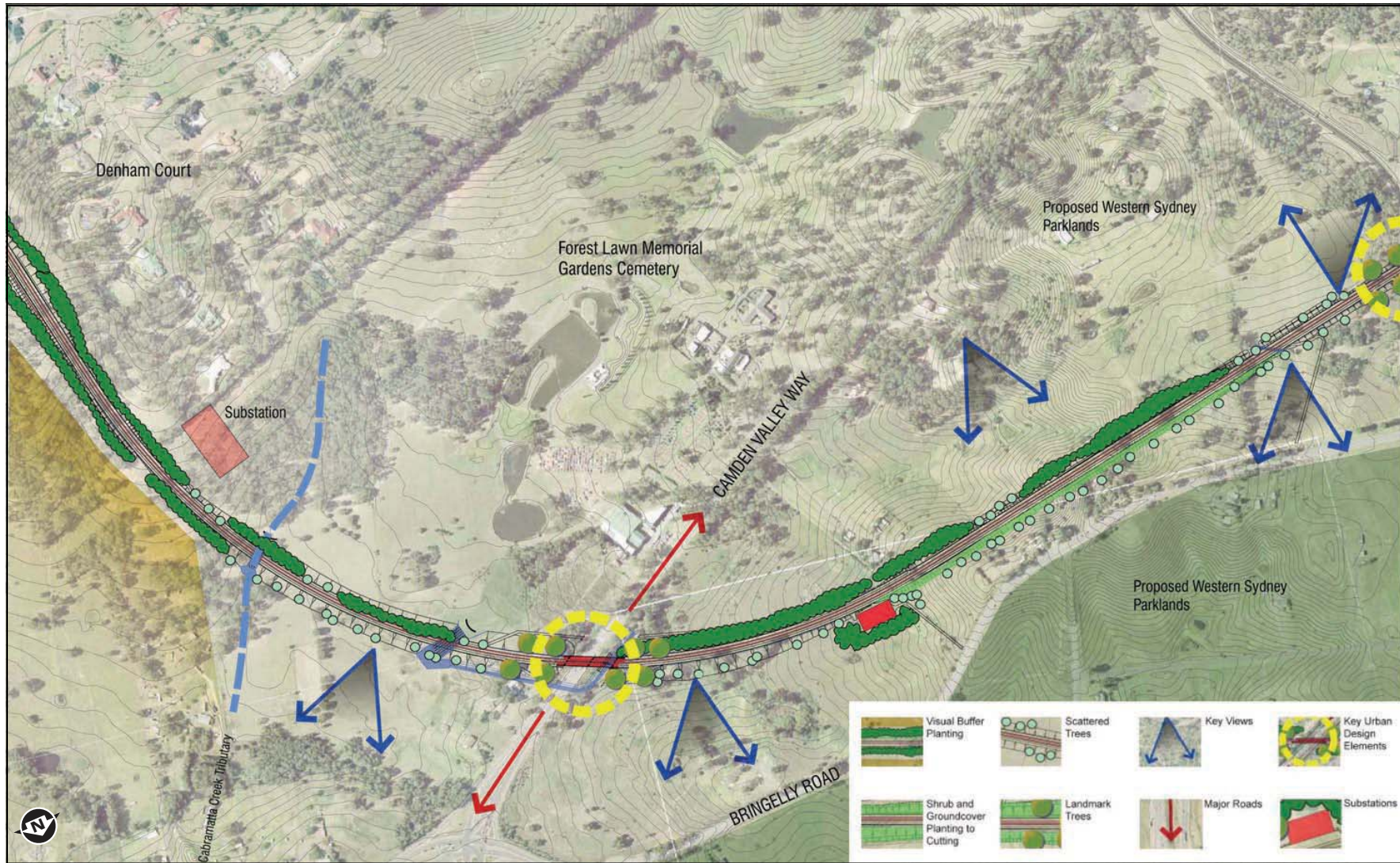


Figure 6-16d Landscape plan for the proposed SWRL

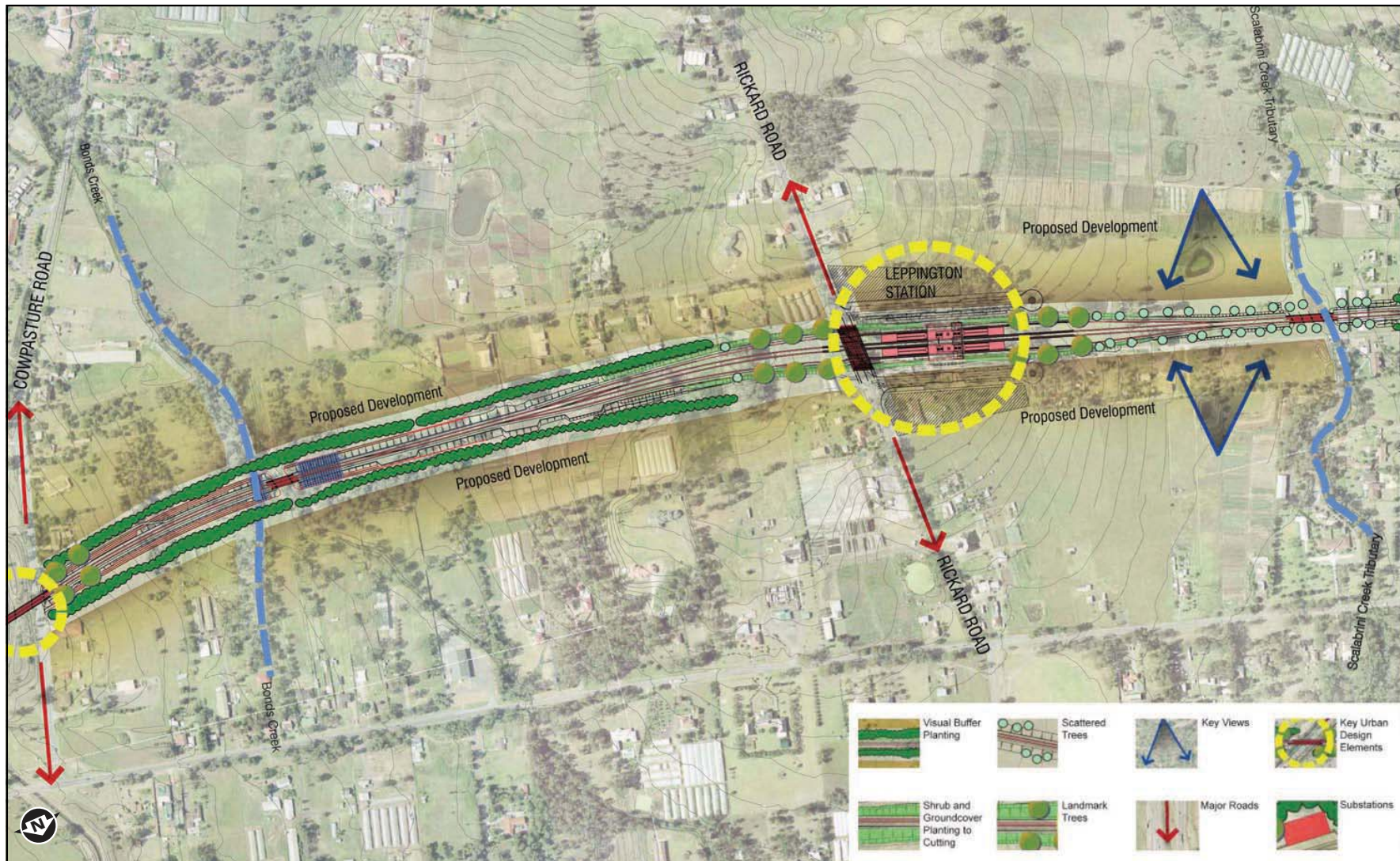


Figure 6-16e Landscape plan for the proposed SWRL

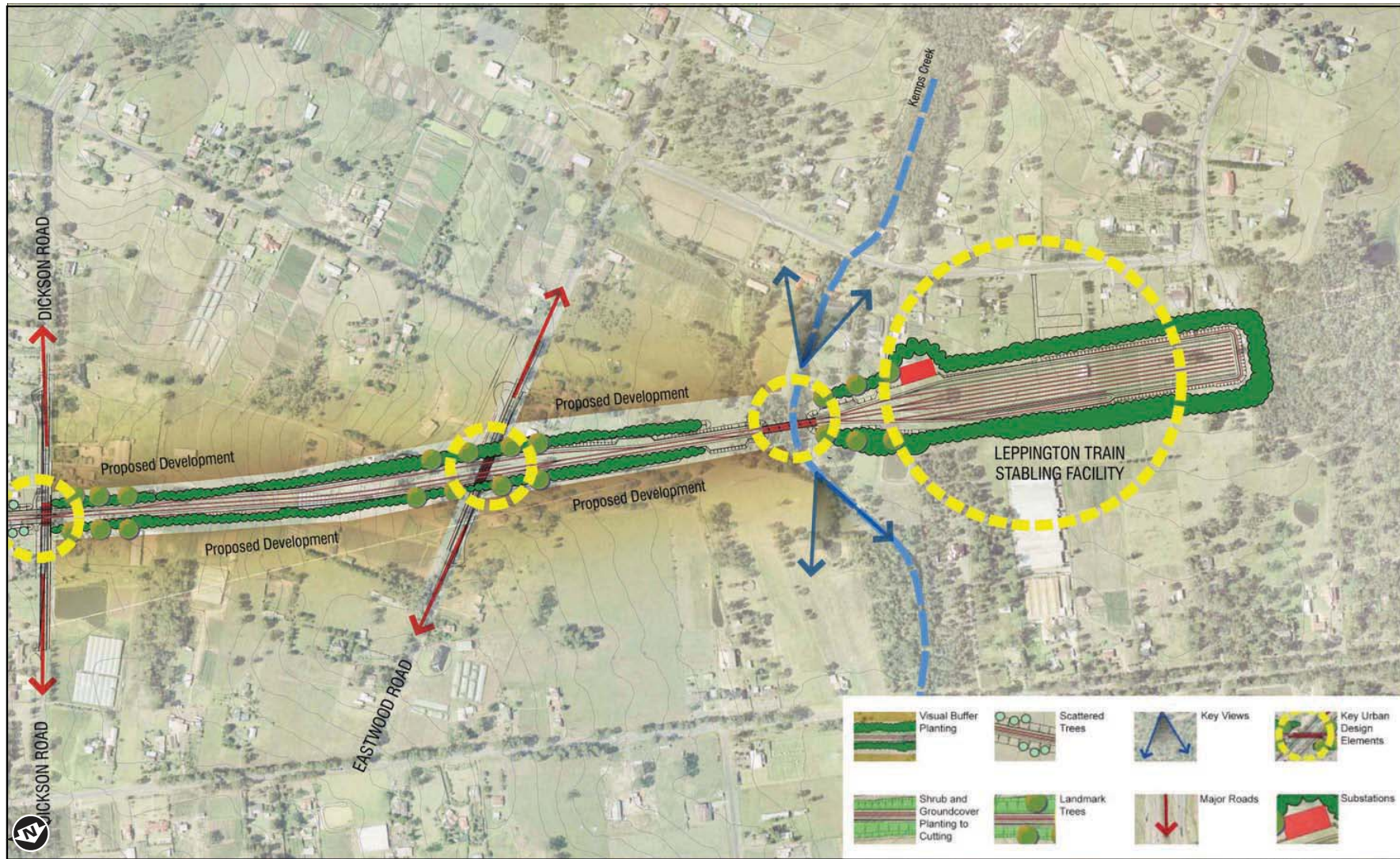


Figure 6-16f Landscape plan for the proposed SWRL

6.3 Operation of the project

Table 6-5 provides a general description of the overall objectives for the project operation. The following sections provide an outline of the operating details of the project.

Table 6-5 Operational objectives of the project

Aspect of the project	Objectives
Train operations	<p>All suburban trains to be operated on the new infrastructure, and achieve the performance and timetable requirements, without being subjected to loads, wear and tear, and heat rise beyond that experienced in the existing network.</p> <p>Provide capacity to handle anticipated patronage demand, with consideration of longer-term patronage growth as a result of the continual development of the SWGC to the year 2041.</p> <p>Uphold objectives of reducing capacity constraints in the rail network.</p>
Station operations	<p>Meet all operational requirements and patronage forecasts, with consideration of patronage implications as a result of the continual development of the SWGC to the year 2041.</p> <p>Provide for the safety of all users, including passengers and staff.</p> <p>Facilitate a high level of passenger information.</p> <p>Facilitate a safe and convenient passenger interchange, particularly inter-modal interchange (interchange between different modes such as buses and trains).</p> <p>Facilitate simple passenger movements and prevent conflicting flows.</p> <p>Minimise pedestrian crowding points and provide for acceptable levels of service are maintained during normal operating conditions.</p>
Train stabling facility operations	<p>Enable trains to exit and enter the train stabling facility at required times of the day without restriction on current RailCorp operational protocols.</p> <p>Turnback operations during the AM and PM peaks are not to impede trains entering and exiting the stabling facility.</p>

6.3.1 Train operations

The rolling stock that would operate on the project consists of double-deck, suburban, electric, multiple-unit vehicles. All existing suburban rolling stock would be allowed to operate on the line. Diesel rail maintenance vehicles, however, would only operate under special operating conditions.

The new rail line would have a maximum design speed of 125 kilometres per hour. The actual train operating speeds would be less than this speed and would be determined in accordance with RailCorp's requirements in consideration with the following:

- restrictive turnout speeds – expected to be located at the following locations:
 - SWRL Junction at Glenfield
 - when crossing track to terminate at Leppington
- restrictive curvature – expected at the following locations
 - over the Glenfield Southern Flyover
 - around Cemetery Curve (between Chainage 47.51 and 48.93 kilometres)
 - between Leppington Station and the Leppington Train Stabling Facility.

Weekly AM peak train plan

The proposed Leppington Train Stabling Facility would stable 12 trains upon its opening in 2016. This could increase to 20 trains in the future, to meet increasing network patronage.

The SWRL AM peak train plan details the number of trains that would depart from the stabling facility and begin service per hour, and the route they would take.

An indicative description of the plan during the busiest hour in the morning, the AM peak one hour, is outlined in Table 6-6. This description is for indicative purposes only and may be subject to change as a result of detailed design and/or to meet future operating standards.

Table 6-6 Indicative SWRL AM peak train plan

Number of trains during AM Peak (1 hour), Peak Direction	Origin	Destination	Route
4	Leppington	City Circle	via East Hills Line
4	Leppington	City Circle	via Liverpool and Granville on the Main South Line
4	Leppington	Blacktown	via Liverpool and Parramatta on the Cumberland Line

6.3.2 Station operations

The standard train dwell times at Edmondson Park Station would be 30 seconds. As Leppington would be a terminus station (i.e. train services would terminate at the station), it would accommodate the following dwell times:

- ten minutes for a layover and turnback trains remaining in service
- two minutes for trains entering service from the stabling facility
- three minutes for trains being taken out of service to the stabling facility.

Edmondson Park Station

It is envisaged that the operational configuration of Edmondson Park Station would involve use of Platform 1 by trains travelling towards Sydney Central Station, and use of Platform 2 by trains travelling away from Sydney Central Station. This may be subject to change as a result of detailed design and to meet future operating standards.

Leppington Station

This station would accommodate simultaneous arrival and departure of trains at adjacent platforms. This would enable the station to provide sufficient capacity and maintain reliability for future passengers.

Turnouts and crossovers would be provided at Leppington Station. These would allow trains to continue service in the opposite direction and allow movements to and from the stabling facility. Trains would generally travel at 60 kilometres per hour on the proposed turnouts and crossovers on the main SWRL rail lines.

6.3.3 Leppington Train Stabling Facility operations

The Leppington Train Stabling Facility would operate on a 24-hour, 7 day per week basis and have the capacity to stable 12 eight-car train sets upon commissioning in 2016. Ultimately, the yard would be able to stable 20 eight-car train sets (each track accommodates two trains). All trains would generally exit from 4:30 am to 7:30 am; however, trains may exit outside of these times on occasion.

The facility would provide for the following functions:

- overnight and between-peak stabling of train sets
- internal train cleaning performed by train presentation staff (includes internal graffiti removal)
- spot cleaning on train exteriors by train presentation staff within the stabling yard (includes driver's windscreens)
- external graffiti removal from train sets
- major cleaning of train sets
- shunting of train sets in preparation for departure or to accommodate arriving train sets
- train preparation performed by train crew
- test procedures (brake/horn tests)
- division/amalgamation of trains performed by train crew
- minor rolling stock repairs performed by train technicians
- bulk removal of rubbish by contractor.

In case of incident, the Stabling Yard must accommodate the needs of emergency services.

Wastewater from internal cleaning operations would be disposed of via sinks connected to a piped wastewater system. At the time of opening, the Leppington Train Stabling Facility area would not be sewerred and, therefore, would need a wastewater treatment facility or facilities/procedures to tanker wastewater away from the Stabling Facility for treatment off-site (e.g. wastewater generated during graffiti removal). Once the area has been sewerred, it is anticipated that there would be options for connecting the Leppington Train Stabling Facility to the Sydney Water sewer under a trade waste licence. The details of wastewater treatment facilities and processes would be developed during detailed design.

Other rubbish from inside the trains would be collected in bins and disposed of off-site.

6.3.4 Access

Edmondson Park and Leppington stations

The proposed Edmondson Park and Leppington stations have been designed to be accessible by all typical modes of transport — private vehicles, taxis, buses, pedestrians and cyclists — and to integrate into the future town centres at Edmondson Park and Leppington, respectively. Access to the stations has been designed based on stations and town centres that have been fully developed.

Private vehicle parking, taxi ranks, kiss-and-ride car parks and bus ranks would be located on the streets directly adjacent to the proposed stations (refer Figures 6-7 and 6-9). Vehicle parking, taxi ranks and bus ranks would be clearly separated to minimise traffic confusion and hence congestion on the roads adjacent to the proposed station.

Bicycle parking racks would be at the station entrances providing further transportation options and reducing traffic congestion on surrounding roads.

Signalised pedestrian crossings would be located on adjoining streets to providing direct access from car parking, taxi ranks and bus stops (refer Figures 6-7 and 6-9). At-grade pedestrian access to the stations would be provided from these surrounding streets via northern and southern entrances which would lead to the main concourse level. The concourse level would provide all vital services including ticketing and information.

Pedestrian access at Edmondson Park Station from the concourse to the platform level would be provided via a centrally located lift and two sets of stairs that would provide access to the eastern and western parts of the proposed platform level. Pedestrian access at Leppington Station from the concourse to the platforms would be provided via two centrally located lifts and four sets of stairs to the eastern and western parts of the two proposed platforms. Barrier gates would restrict access from the concourse level to the lifts/stairs to the platform.

Fencing and guard rails would allow pedestrians to only access the station via the main entrances. Bollards at the station entrances would prevent vehicle and cycle entrance to the pedestrian concourse area.

The proposed stations would be constructed to comply with *Disability Discrimination Act 1992* and relevant Australian Standards for access.

Leppington Train Stabling Facility

Access to the Leppington Train Stabling Facility would be restricted to authorised staff and access vehicles.

An access road would be provided to the facility car park from McCann Road, which would have a capacity of 60 parking spaces with a minimum width of 3.2 metres. An access road would also be provided to the facility car park from Bringelly Road (refer Figure 6-1t).

Pedestrian access from these parking spaces to the facilities building and stabling facility would be via pathways.

The staff facilities would be constructed to comply with *Disability Discrimination Act 1992* and relevant Australian Standards for access.

6.3.5 Maintenance

The provision of adequate maintenance access is an important aspect of the project. The project includes a network of vehicular access roads to allow for maintenance, as shown in Figure 6-1 (a to t). Details of connections between maintenance access roads and existing roads will be determined during detailed design in consultation with the relevant road authorities. The project also includes a maintenance walkway on either side of the bridges and extended culverts, where required, to allow for safe access and visual inspection of the track. Additional maintenance access easements, as necessary, would be identified and included during detailed design.

Maintenance activities during the operation of the project would include the use of petrol and diesel powered vehicles. The project would be designed and constructed so that effective maintenance can be achieved safely and with minimum 'whole of life cycle' costs. All planned maintenance would be conducted as per approved operations and maintenance policies and practices.

Where feasible, infrastructure would be maintained (planned and unplanned) without affecting timetabled train services. Further opportunities for improved maintenance access could be investigated as the SWGC develops and enhanced local road access is provided.