

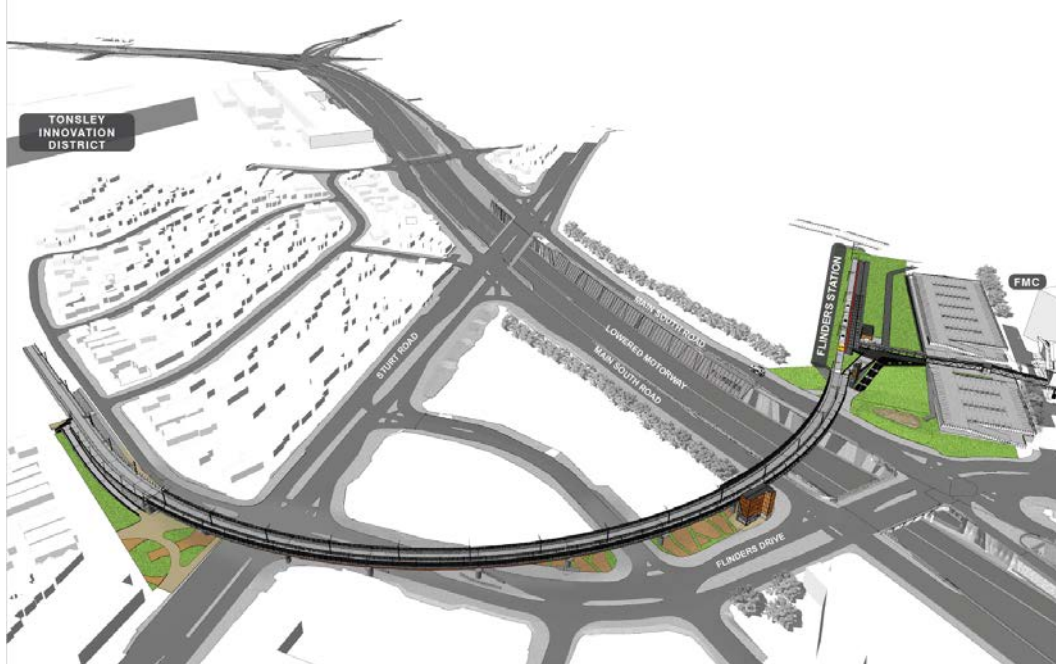
Department of Planning, Transport and Infrastructure

Flinders Link Project: extension of the Tonsley rail line and new train station

Rail corridor and adjacent land (Sturt Road, Mitchell Park and Tonsley); land parcels within Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and land parcels within Flinders University (Sturt Road and Main South Road, Bedford Park)

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SCAP AGENDA ITEM: 3.1.1

Application Summary	
Application No:	100/V075/18
KNET Reference:	2018/19512/01
Applicant:	Department of Planning, Transport and Infrastructure
Proposal:	Flinders Link Project: extension of the Tonsley rail line and new train station
Subject Land:	Rail corridor and adjacent land (Sturt Road, Mitchell Park and Tonsley); land parcels within Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and land parcels within Flinders University (Sturt Road and Main South Road, Bedford Park)
Relevant Authority:	Minister for Planning
Role of the Commission:	Section 49(7) & 7(c): the State Commission Assessment Panel must undertake an assessment of the proposal and report to the Minister for Planning.
Zone / Policy Area:	Regional Activity Zone and Residential Zone [PA12: Medium Density, PA16: Regeneration]
Categorisation:	Merit
Notification:	Yes - development cost exceeds \$4m
Representations:	Four (4)
Lodgement Date:	11 September 2018
Council:	Marion Council and Mitcham Council
Development Plan:	Mitcham (City) Development Plan Consolidated 20 February 2018 and Marion Council Development Plan Consolidated 20 February 2018.
Referral Agencies:	Commissioner of Highways, Government Architect, EPA

Executive Summary

The Development Application for the Flinders Link Project comprises those items which are considered to be 'development' and are assessable under the *Development Act 1993*.

The Flinders Link Project seeks to complement and integrate with the Darlington Upgrade Project and the Flinders Precinct Master Plan to provide a high level of urban design, improved public transport, and connection between the various modes of transport.

The application has been assessed in accordance with the provisions of Section 49 of the *Development Act 1993*. The application was publicly notified and four (4) valid submissions were received.

The City of Marion and City of Mitcham support the development, noting the need to continue negotiations with respect to ongoing maintenance arrangements. The Government Architect supports the ambition of the project and has recommended further design development in order to achieve a high quality urban design outcome.

Resolution of the noise attenuation measures to be installed as part of the project is outstanding. The design of any noise barrier and/or 'at source' treatments must be finalised prior to operation of the extended rail line.

Based on an assessment of the development application, a review of relevant planning policies, public submissions, council comments and the technical advice of referral bodies, the proposal demonstrates sufficient merit to be recommended for approval, subject to appropriate conditions.

Assessment Report

1. Strategic Context

The South Australian Government is supporting projects that provide for improved access (to transport services and providing better connectivity between modes of transport and localities), reduced travel times (to enhance economic productivity), minimise travel related carbon footprints; and improve safety with upgraded rail crossings for pedestrians and people in vehicles.

The *30-Year Plan for Greater Adelaide (2017)* seeks the revitalisation of existing neighbourhoods, concentrated new development around transit corridors, and proposed new mixed-use precincts to bring jobs, services and public transport closer to where people will live.

The *Transforming Health Plan* provides a \$170.5 million investment to improve and upgrade facilities at Flinders Medical Centre including a rehabilitation facility, multi-deck car park and Older Persons Mental Health Unit.

The *Flinders University Precinct Master Plan* leverages off the proposed Flinders Link project and new railway station to deliver a pedestrian focused urban village which incorporates a retail/commercial/community hub, an activated town square, extensive student accommodation and opportunities for health services expansion (associated with the adjacent hospital), as well as a range of education, research and commercialisation spaces.

The *Tonsley Innovation Precinct* continues to grow with an expected 6000 Flinders University students and staff expected to move to the site over the next 10 years. This will result in significantly increased movements between the Tonsley and Flinders precincts.

The *Southern Innovation Area Development Plan Amendment DPA* (Ministerial) was approved on 20 February 2018. The DPA enabled rezoning within Marion, Mitcham and Onkaparinga Development Plans to provide development opportunities around the Darlington Upgrade Project, Flinders Link project, the Flinders University Master Plan, and the Tonsley Precinct.

The policy changes encourage the development of an accessible, innovative, southern hub offering a range of international scale education, employment and health facilities, mixed with new urban places for people to live. The revised zoning allows for:

- a broader range of land uses reflective of a modern, global education and health precinct;
- buildings generally of up to 10 storeys; and
- suitable car parking that reflects the provision of a range of housing styles and proximity to improved public transport.

2. Description of Project

The Flinders Link project comprises:

- The decommissioning and closure of the existing Tonsley train station;

- A 650m extension of the Tonsley rail line including 520m of elevated track forming a bridge with shared pedestrian and cyclist path over Sturt Road, Laffers Triangle, South Road, landing on the Flinders University oval adjacent Flinders Medical Centre.
- Construction of the new Flinders train station adjacent Flinders Medical Centre comprising amenities, bike storage, landscaping, plaza, and links to South Road.
- An elevated covered pedestrian walkway over the existing car park and University Hall Access road, connecting into Flinders Medical Centre.

The project is located within the Darlington Precinct which includes the Flinders (Flinders University, Flinders Medical Centre and Flinders Private Hospital) and the Tonsley Precincts.

The Flinders Link project was first announced in 20 December 2015 when the contract for the Darlington Upgrade Project was awarded. The Australian and SA Governments have committed a total of \$85.5 million to the project.

The project objectives are to:

- To support economic activity and enhance connectivity between local centres and business precincts, including the Flinders Precinct and the Tonsley Precinct, by providing improved customer access through a more convenient public transport system.
- To improve accessibility for staff, students and visitors to key destinations within the Darlington Precinct, including Flinders University, Flinders Medical Centre, Flinders Private Hospital and the Tonsley Development, offering a choice of viable travel modes.
- To enhance local amenity and real estate values while improving access from the southern suburbs to the CBD.
- To improve safety and provide quality public transport options in the local area.
- To bring about a mode shift to public transport and allow for further increases in public transport mode share through more frequent future services on the Tonsley/Flinders rail line.
- To improve general public transport accessibility and amenity in the Darlington Precinct and increase patronage on the Tonsley rail corridor.
- To improve transport efficiency reduce congestion on the road network, thereby helping achieve bus reliability and road freight transport outcomes.
- To improve pedestrian and cycling access and safety, making sustainable and active transport options a more attractive mode choice.
- To provide environmental benefits associated with a reduction associated with a reduction in private vehicle travel.

The Darlington Upgrade Project involves the lowering of South Road under Flinders Drive, Sturt Road, Sutton Road/Mimosa Terrace and Tonsley Boulevard to provide a non-stop motorway between the Southern Expressway and Tonsley Boulevard. At grade surface roads will be provided along both sides of lowered motorway to provide connections to Flinders Drive and other local roads. The project is part of the Government's overall North-South Corridor project and is due to be completed in 2019. If approved, the Flinders Link project will be managed and coordinated by DPTI's Darlington Upgrade Project team.

3. Description of Development Application

The Development Application for the Flinders Link Project comprises those items which are considered to be 'development' and are assessable under the *Development Act 1993*, as follows:

- The portion of the rail line extension and viaduct (bridge) structure not located on existing railway land.

- Stairs and elevated access to Flinders Drive from the viaduct structure.
- All structures at the new Flinders train station including the station canopies, toilet block, bike enclosure, and driver amenities.
- The elevated pedestrian walkway to Flinders Medical Centre.
- The removal of regulated and significant trees not located on land owned by the Commissioner of Highways, or on land under the care and control of the Commissioner of Highways.
- Earthworks associated with the filling or modification of the land which are not essential to railway operations.
- Landscaping which forms public realm works for the new Flinders train station.
- Temporary site compounds during construction will be located south of Sturt Road within Laffers Triangle (A201 D40215 and A203 D40215).

The following project components do not require development authorisation pursuant to Schedule 1A, 3 and 14 of the *Development Act 1993*:

Item	Exemption
Decommissioning and demolition of the existing Tonsley Railway Station	Schedule 1A (16) Building Work on Railway Land Schedule 14 Part 1 (1)(b)(i)
Portion of railway line on existing railway land (ie replacement of portion of existing Tonsley Line) < 300m	Schedule 3 (13)(1) Railway Activities Schedule 1A (16) Building Work on Railway Land Section 9(3) Rail Commissioners Act
Substructure / Superstructure works associated with the South Road/Darlington road project	
Lighting (rail track, pedestrian and platform)	Schedule 1A (16) Building Work on Railway Land
New Stair and Lift Connection to rail platform from railways land	Schedule 1A (16) Building Work on Railway Land
Electrical, signalling, mechanical other service infrastructure	Schedule 3 (13)(1) Railway Activities
Signage – including wayfinding and advertising displays	Schedule 14 Part 1 (1)(p)
Retaining walls under 1metres high	Schedule 3 Part 4 (1)(i) Sundry Minor Operations
Fencing under 2.1 metres high	Schedule 3 Part 4 (1)(f) Sundry Minor Operations
Removal of regulated or significant trees	Schedule 14 Part 1 (1)(v)(ii)
Drainage + underground services + cabling	Schedule 14 Part 1 (1)(c)
Earthworks essential and ancillary to railway works	Schedule 3 (13)(1) Railway Activities

Table 1: Project elements not requiring development approval

4. Subject Land & Project Area

The land comprises several allotments within the rail corridor and adjacent land (Sturt Road, Mitchell Park, Tonsley and Bedford Park); Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and Flinders University (Flinders Drive and Main South Road, Bedford Park):

Section/Lot	Plan	Road	Locality	CT Reference
A1	DP113164	Sturt Road	Mitchell Park	CT 6180/973
A201	DP40215	Laffer Drive	Bedford Park	CT 5215/474
A202	DP40215	Sturt Road	Bedford Park	CT 5215/475
A203	DP40215	Laffer Drive	Bedford Park	CT 5215/476
A204	DP40215	Laffer Drive	Bedford Park	CT 5215/477
A1001	DP55884	Sturt Road	Bedford Park	CT 5835/144
A66	DP28859	Laffer Drive	Bedford Park	CT 5201/547

A4	DP71485	Flinders Drive	Bedford Park	CT 6148/67
A71	DP117100	Main South Road	Bedford Park	CR 6204/829

Table 2: Subject Land Parcels

The project area traverses three (3) suburbs; Mitchell Park and Tonsley to the north of Sturt Road, and Bedford Park to the south of Sturt Road. The project area covers two (2) Council areas, City of Marion and City of Mitcham, with South Road being the border between them.

The Tonsley rail line is a 3.1km spur line that extends off the Seaford line at Mitchell Park and currently ends at the Tonsley rail station which is located north of Sturt Road, and adjacent the intersection of Birch Crescent and Oak Avenue, Tonsley to the east of the line, and the intersection of Lynton Avenue and Brayden Court, Mitchell Park to the west of the line. The line was constructed in the 1960s to service the Mitsubishi factory. It was electrified and upgraded in 2014.

The Tonsley line services three (3) stations – Mitchell Park, Clovelly Park (Tonsley Development) and Tonsley (Sturt Road). The Tonsley line is single track with services operating Monday to Friday between 7am to 7pm with a maximum wait of 30 minutes. There are no weekend services.

The locality north of Sturt Road, within the suburbs of Mitchell Park and Tonsley, is zoned residential and comprises low to medium density, 1-2 storey dwellings either side of the rail line. The Tonsley rail line terminates at Sturt Road, with a small car park accessible from Lynton Ave and Birch Crescent. An SA Ambulance Service station is located adjacent to the west of the car park. Further to the north is the Tonsley Innovation Precinct which comprises a range of health, energy, IT, and mining companies as well as Flinders University, TAFE SA and Mitsubishi Motors.

South of Sturt Road and bordered by South Road to the east and Marion Road to the west is Laffers Triangle. This area of land comprises Sturt Police Station, car parking, commercial buildings, child care centre, transport depot and caravan park. The Sturt River and Warriparinga reserve are located within the triangle to the south / south-west of the project area.

East of South Road is the Flinders Medical Centre, Flinders Private Hospital and Flinders University. The proposed new Flinders Station is located north of the hospital car parks on an existing sports field.

The overall subject subject site is part of a larger destination that comprises a range of education, health, research and employment facilities of regional significance.

5. Pre-Lodgement and Design Review

Pre-lodgement meeting #1 was held on 13 December 2016 which involved representatives from DPTI (Proponent Team, and Planning Division), ODASA, Flinders University, Flinders Private, SA Health, City of Mitcham and City of Marion.

A desktop design review session was held on 18 May 2017 which included a site visit, panel briefing and discussion.

The State Commission Assessment Panel (SCAP) was provided with a briefing of the proposal on 13 July 2017.

Pre-lodgement meeting #2 was held on 18 July 2017 with attendance from all stakeholder per meeting #1. The meeting highlighted amendments made to the project following the design review session.

6. Procedural Matters

The application was lodged by a state agency and has been assessed in accordance with the provisions of Section 49 of the *Development Act 1993*. As the development cost exceeds \$4m, public notification of the proposal was required, along with referral of the application to the Marion and Mitcham Councils and relevant State Government agencies.

7. Council Comments

City of Marion

The project supports the Development Plan through the provision of an integrated transport network and safe, convenient connections.

Whilst supportive of the application, Council wishes to ensure the proposal does not cause unnecessary and/or additional detrimental impacts on the surrounding locality. Council therefore brings the following matters to SCAP's attention for consideration prior to a decision being made:

- Overall built form design
 - Council encourages innovative design themes to improve visual amenity and reduce the bulk of the structure.
 - CPTED best-practice principles including lighting should be incorporated.
 - The visual impact to land adjacent Lynton Ave and Birch Cres should be minimised through use of light-weight materials, articulated design elements, low to high level landscape plantings, and a mix of colours, materials and textures.
 - Sound attenuating devices should be installed with a view to minimising resultant visual impacts.
 - Features where the development can be designed to minimise energy use and water are encouraged by Council.
- Regulated trees and landscaping
 - It is acknowledge that the majority of trees for removal are exempt from requiring approval under Schedule 14.
 - Clarification is sought in relation to Tree 833 (Lemon Scented Gum) which may require removal.
 - To assist in minimising amenity impacts upon nearby residential properties, it is encouraged that semi-mature and mature trees be appropriately replaced following construction (within the next planting season).
 - Where opportunities are available, the retention of attractive semi mature or mature trees is encouraged.
 - The use of indigenous plant species and drought-hardy vegetation should be utilised wherever possible, in order to minimise the need for the watering of landscaped areas.

Council also provided a list of matters outside of Council's Development Plan assessment of the proposal. These comments were provided by Council's City Activation, Engineering and Field Services and Open Space and Recreation Planning departments.

City of Mitcham

Council has commenced its own Local Area Planning project for the Flinders and Bedford Park areas. The Flinders Link project is an important nexus for achieving the outcomes sought for these precincts.

Council has provided the following feedback:

- Confirmation of areas intended to be vested to Council for care and control – further negotiations needed.
- Further detail on the safety measures to be incorporated around the viaduct lifts (potential conflicts between pedestrians and cyclists at these locations).
- Further detail on lighting at the Flinders Link Station.
- Council supports the addenda provided on the 19 September 2018 in relation to the *Flinders Link Vegetation Removal*. An emphasis should be placed on retaining mature trees where possible

Council acknowledges that a significant amount of work, research and collaboration with Council has occurred up to this point, and as such the Flinders Link proposal is supported subject to consideration to the above. It is acknowledged that the proposal accords with the Desired Character and provisions of the Regional Activity Zone.

8. Agency Referrals

Government Architect

The Government Architect supports the intent of the project to promote the future development vision of the Flinders University campus. The success of the project relies on delivery of the project ambitions and connectivity to surrounding precincts.

The project underwent two pre-lodgement meetings and one desktop design review session prior to the development application being lodged. ODASA Officers provided feedback throughout the development assessment process, with final comments detailing the following key matters which would benefit from protection as part of any planning permission:

- Clarification of the proposed pattern and finish of pre-cast panels adjacent Birch Crescent, and confirmation that this finish extends the full length of the abutment to the north. Final selections should be supported by a materials and samples board.
- Clarification of the integration of viaduct vertical elements (in particular screen stanchions and light poles) with the substructure with a view to ensure alignment and consistency of spacing, as the vertical elements will be a significant visual component for the structural ribbon element.
- Consolidation of CCTV cameras and lighting on the same poles.
- Clarification of the Field LAN service boxes and their integration with the throw screens to minimise their visual impact on the external appearance.

Commissioner of Highways

Extensive consultation has occurred between the DPTI project team and representations of the Commissioner of Highways. There are no matters relating to the arterial road network that require addressing as part of the development application process.

The development is supported by the Commissioner of Highways as it will improve safe pedestrian and cyclist access to the subject locality, and will assist in increasing patronage on the Tonsley Rail Line.

Environment Protection Authority

A referral was made to the EPA in accordance with Schedule 8 (11) – Schedule 22 Railway Systems.

With regard to potential noise impacts, the EPA has reviewed the *Flinders Link 100% Design Noise Assessment Report A17715RP2 Revision E, 28 November 2018* (noise report) which was submitted by the Applicant in response to the EPA's request for further information (dated 25 September 2018).

The EPA notes that by implementing both noise attenuation measures (noise barriers as well as the vehicle mounted track lubrication system) rail operations are anticipated to adequately meet the noise levels as per the *Guidelines for the assessment noise from rail infrastructure* (GANRI) at all sensitive receivers.

The proposed noise barriers have been proposed in specific locations and would mitigate up to 5dB at the most affected sensitive receivers. The noise report identifies that the L_{Amax} levels may still exceed the noise criterion by 1dB at two locations – this minor exceedance is not considered fatal to the proposal, noting that GANRI requires the L_{Amax} to be met only 95% of the time.

It is recommended an approval condition requires the Applicant to undertake post construction noise monitoring at the receivers identified in the noise report to confirm that the noise criteria as per the GANRI have been met.

With regard to construction impacts, the project is deemed to be a public infrastructure project and is therefore exempt from the construction noise provisions of the *Environment Protection (Noise) Policy 2007*. Notwithstanding this, the Applicant intends to undertake construction in accordance with DPTI's Operational Instruction 21.7 *Management of Noise and Vibration: Construction and Maintenance Activities*. This includes preparation of a construction noise and vibration management plan, and a night works management plan.

With regard to air quality matters, the EPA recommends preparation of a CEMP which includes dust control measures.

With regard to site contamination, the EPA notes the proximity of the development site to the Clovelly Park – Mitchell Park TCE contamination area. EPA advises that the CEMP should be prepared by a site contamination consultant in accordance with the EPA publication *Environmental Management of On-site Remediation November 2008*.

All stormwater runoff from the development site should be contained and treated as necessary during construction in accordance with the *Environment Protection (Water Quality) Policy 2015*. An advisory note has been recommended by EPA in this regard.

Technical Regulator

A signed declaration form was provided by the applicant in accordance with Schedule 5, Clause 2A, of the *Development Regulations 2008*.

9. Public Notification

Pursuant to Section 49(7d) of the *Development Act 1993*, as a development with a project cost exceeding \$4m the application was publicly notified in the Adelaide Advertiser and City Coast Weekly messenger on 19 September 2019. Four (4) valid representations were received.

No	Position	Wish to be heard	Key Issues	Applicant Response
1	General Comment	Not specified	<ul style="list-style-type: none"> Project should include retention of existing Tonsley Station 	<ul style="list-style-type: none"> The existing Tonsley Rail Station cannot remain in its current location due to the elevation required for the train bridge to clear Sturt Road, Laffer's triangle and Main South Road. The existing station will be demolished and the new Flinders Station built within 600m of the current Tonsley Station. DPTI will undertake a study into increasing access to public transport for residents along the Tonsley line.
2	General Comment	Yes	<ul style="list-style-type: none"> Project should include construction of a new train station closer to the Sturt Police Station elevated over Sturt Road Include provision for duplication of the rail line Construct a new bus interchange at the location of the new Flinders Link train station Explore the option of extending the rail line south 	<ul style="list-style-type: none"> Pedestrian and cycle connections are provided at the corner of Sturt Rd and Birch Crescent, to allow pedestrians to cross Sturt Road. After an extensive options analysis and criteria assessment, a single track to support bidirectional train service was deemed the most suitable option.
3	General Comment	Yes	<ul style="list-style-type: none"> The proposed new Flinders Link train station is in the wrong location A plan and rationale for an alternate location is provided adjacent the main entrance of Flinders Medical Centre 	<ul style="list-style-type: none"> DPTI considered a number of options for the improvement of rail connectivity to the Flinders Precinct. DPTI considered options that were similar in nature to Mr Stanger's proposal but these were not considered as their demerits, particularly in relation to cost, construction and stakeholder impacts, outweighed other assessment criteria. The outcome presented in the DA is the preferred option, as it represents a cost-effective solution that best aligns with the overarching rail connectivity strategy, and the land use aspirations for the Flinders precinct.
4	General Comment	Yes	<ul style="list-style-type: none"> Concerns regarding closure of existing Tonsley Station without a viable alternative for existing users, local residents and people with a disability Inaccessibility of the proposed development for people with a disability including grade of the viaduct and footpath 	<ul style="list-style-type: none"> Anti-graffiti treatment to the viaduct ramp takes the form varied textured concrete cladding panels. The pedestrian underpass and footpath works on Lynton Ave will be exposed aggregate concrete, per the finish used on the Darlington Upgrade Project footpath works. A vertical connection at the intersection of Sturt Road and Birch Cres is not considered appropriate as new at-grade connections will be available from this location. An activated pedestrian crossing will be located at the Sturt Road / Birch Cres intersection. The switchback ramp has been designed

			finishes	<p>to facilitate pedestrian and cyclist movement in accordance with relevant standards. The design consists of 10 x 3m wide ramps, separated by 9 landings, with a grade of 4%. The path widens to 9m at the U-turn areas to provide manoeuvre room.</p> <ul style="list-style-type: none"> • The viaduct path is a constant grade of 2.65%, and the elevated walkway between Flinders Station and the Flinders Medical Centre a flat grade of 0.9-1.2%. • While it is recognised that the distance and travel time to a train station will be increased for a portion of existing users, the project will improve accessibility to key destinations within the Flinders Precinct.
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A copy of the representations and applicant responses is contained in the ATTACHMENTS.

10. Policy Summary

The Tonsley Station and rail corridor are located in the Residential Zone [PA12: Medium Density & PA16: Regeneration] under the Marion Council Development Plan.

Laffers Triangle is located within the Regional Activity Zone under the Marion Council Development Plan and Flinders University is located within the Regional Activity Zone under the Mitcham (City) Development Plan.

Residential Zone & Policy Areas

The Residential Zone seeks a range of dwelling types (including affordable housing) at increased densities in close proximity to centres, public and community transport routes and public open spaces. Within the Medium Density Policy Area, development should support the viability of community services and infrastructure.

Development should not result in the removal of mature street trees in a road reserve that contribute positively to the landscape character of the locality.

Regional Activity Zone

The Regional Activity Zone has a focus on providing land uses that attract state, national and international business and investment. Development should provide a safe, efficient and pleasant walking and cycling network, and promote public transport use. Mixed use development should include a combination of day-time and night-time activities close to key focal points such as an education facility, health facility, or fixed transit stop.

The proposed Tonsley rail line extension and new Flinders Link rail station will provide an important public transport link between the Flinders site, Tonsley and the Adelaide central business district. There will be a significant focus on safe and efficient movement for vehicles, pedestrians and cyclists throughout the Area as well as to adjacent areas and key sites. Building design will emphasise movement between the rail station and the Flinders Medical precinct, potentially via a pedestrian overpass, and the Flinders University.

Concept Plan Fig Mit/1 (Mitcham (City) Development Plan) identifies the Flinders Village Area as being focused around the proposed Flinders Link rail station. The Village will cater for medium to high density, inter-generational residential developments including multi-

storey dwellings, residential flats, student accommodation, aged care and affordable housing, as well as tourist accommodation.

A high quality public realm will be incorporated with a cohesive and safe pedestrian and cycle network through landscaping, surface treatments, furniture, wayfinding, public art and building design. Sharing of facilities, including communal open space, parking areas and access ways, is encouraged.

Development will also be designed and orientated to mitigate environmental impacts where possible. The zone encourages incorporated of water sensitive urban design (WSUD) principles. Development should occur on a precautionary basis where site contamination is located.

Non-residential development at the interface with sensitive development, including residential development, should seek to minimise impacts of (among other things) visual appearance, bulk and scale, overshadowing, noise, vibration and hours of operation.

General Policies

The Council-Wide policies of relevance to the assessment of the application include: design and appearance, crime and prevention, transportation and access, landscaping, fences and walls, siting and visibility, natural resources, orderly and sustainable development, infrastructure and hazards (site contamination).

Relevant planning policies are contained in the ATTACHMENTS.

11. Planning Assessment

The development application has been assessed against the relevant planning policies of the Marion Council Development Plan and Mitcham (City) Development Plan.

Transportation and Access

The Development Plans seek the provision of a comprehensive, integrated, affordable and efficient transport system including road, rail, cycle and pedestrian systems. Development should provide safe and efficient movement for all transport modes.

The ongoing investment in and growth of the Flinders and Tonsley precincts is expected to increase demand for efficient and accessible transport networks. The increase of student and employee populations at the Tonsley and Flinders precincts, as well as the rezoning of the area to facilitate mixed use and higher density development, will drive demand for services. An opportunity exists to provide a connected and efficient public transport network that encourages a shift towards more sustainable modes of transport. This would, in turn, reduce congestion on the surrounding arterial and local road networks.

Rail

The Tonsley line currently services three (3) stations – Mitchell Park, Clovelly Park (Tonsley Development) and Tonsley (Sturt Road). Services operate Monday to Friday between 7am to 7pm. The Tonsley rail line currently has low patronage levels and lacks a formal interchange. Bus services provide an alternative public transport mode into the CBD.

The development proposes a 650m, single track 1600 broad gauge extension to the Tonsley Line, 520m of which will be located on a raised viaduct structure that extends up and over Sturt Road, Laffer's Triangle, and South Road. The extended line will

terminate on the Flinders University playing field, west of the existing car park, where the Flinders Station will be located.

The extended rail line is proposed to operate with a new timetable, offering greater frequency of service and extended service times (both night and day services).

The Flinders Link Project involves the permanent closure of the existing Tonsley Rail Station, the renaming of Clovelly Park station to Tonsley Station, to reflect its location adjacent the Tonsley Development Site. The existing Clovelly Park station is located approx. 1km north of existing Tonsley Rail Station.

The removal of the Tonsley Station will have pros and cons for residents. The extension of the rail line means that trains will no longer be stopping and starting at this location, which may reduce some forms of noise, car movements and congregation of passengers. On the other hand, the closure of the station will inconvenience these passengers who will now be required to travel either north to Clovelly Park Station or south-east to Flinders Station.

Road

As part of the Darlington Upgrade Project, Flinders Drive is being connected to South Road and the new Flinders Drive Bridge. The bridge provides a direct vehicular link to the Flinders Medical Centre over the lowered motorway.

Vertical connection from the proposed viaduct / shared use path to Flinders Drive is provided west of South Road (lift and stairs). The upgrade of Flinders Drive includes creation of a signalized intersection with Sturt Road and Birch Crescent. Pedestrian activated crossings will be provided at this intersection.

Car Parking

The development will see the removal of the existing, informal car parking area located at the end of Lynton Avenue.

The Flinders Station is not intended to operate as a Park'n'Ride. The existing Health car park adjacent the station is not available for general public parking. The nearest Park'n'Ride facility is available at Clovelly Park station (Tonsley Development Site), which currently operates on a temporary basis. One of the goals of the project is to encourage a modal shift to bus and rail and provide improve connections between public transport services and key destinations in the locality.

Bus

The Flinders Link Project seeks to connect to the bus stops established through the Darlington Upgrade Project. Bus stops are located on South Road and Flinders Drive, as well as existing stops on Sturt Road. The vertical access points to the viaduct, located east and west of South Road, provide pedestrian access down to the bus stops.

Passengers wishing to transfer from the new Flinders Station to the existing bus stops at the front of Flinders Medical Centre will do so via the elevated walkway.

Comments received during the public notification queried the separation between the proposed new train Station and existing bus stops. The location of the Flinders Station reflects the broader vision of the DPA to facilitate the creation of an urban village on the university playing field. The approximate distance from the Flinders Station to existing bus stops at Flinders Medical Centre is 200-250 metres.

Pedestrian & Cycling

Current pedestrian access to rail and bus services and surrounding activity nodes within the locality are poor. Connections to the Tonsley Rail Station and existing bus stops involves crossing major road and accessing unlit paths.

The Applicant has prepared a Connectivity Map which demonstrates how pedestrians and cyclists will interact with the development and connect to public transport and key destinations.

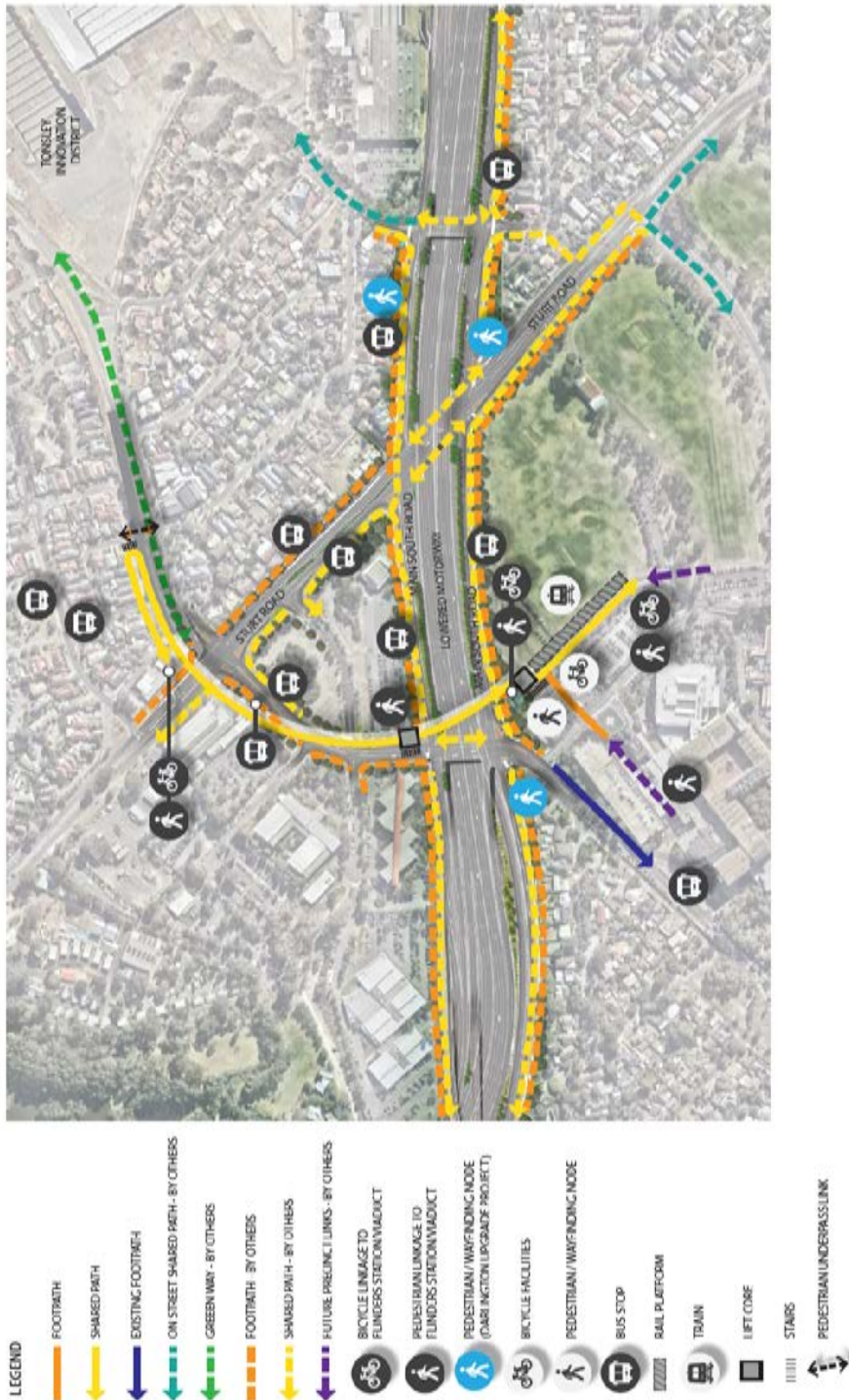


Figure 2: Connectivity Map

The proposed rail line extension incorporates a shared pedestrian / cyclist path adjacent the rail line on the elevated viaduct. This provides a protected and direct link into the Flinders precinct. The shared path has a constant grade of 2.65%.

Access to the shared pathway is via the following connection points:

1. Ramp and stairs at Lynton Avenue (north of Sturt Road) where the viaduct meets the existing Tonsley rail line
2. Lift and stairs on the western side of Main South Road
3. Lift and stairs on the eastern side of Main South Road
4. Via a plaza at the new Flinders Station

Access to bus stops on Main South Road from the viaduct is via the lift or stairs on the western and eastern sides of the road. The bus stops are located on the raised Main South Road feeder lanes, not within the lowered motorway. The connectivity map shows the key pedestrian / cyclist routes on the surrounding road network, and their interaction with the new viaduct and train station. The user experience travelling along Main South Road is managed through the Darlington Upgrade Project. The design of the stair / lift cores and surrounding landscaping appears to provide safe connections through the area.

At the commencement of the viaduct adjacent Lynton Ave, the switchback ramp and stairs have been designed to cater for pedestrians and cyclists. The ramp consists of 10 x 3m wide ramps, separated by 9 landings, with a grade of 4%. The path widens to 9m at the U-turn areas to provide room to manoeuvre.

An underpass at this location provides a pedestrian and cyclist access between Birch Ave and Lynton Ave, allowing residents located east and west of the rail line to access the viaduct. The underpass provides an off-road connection to the Birch Crescent footpath which is earmarked by Council for future upgrade as a Greenway.

Adjacent the new Flinders Station is a plaza which provides user amenities, secure bicycle parking (30 spaces within a building and 12 spaces outside). Via the plaza is a direct connection to Flinders Medical Centre via an elevated walkway. The elevated walkway is a flat grade of 0.9-1.2%.

Whilst the project will improve overall connectivity between the Tonsley and Flinders precincts, and improve access to public transport more generally in the locality, it is recognized that the removal of the existing Tonsley train station will result in an increase in distance and travel time to a train station for its existing users (particularly residents in the immediate locality). In this regard the shared path design seeks to provide a link to the new Flinders Station which meets the relevant standards in terms of grade and surface finishes. The future development of the greenway along Birch Crescent will improved connections to the Tonsley precinct and associated train station.

The Applicant has indicated an intention to undertake a consultative program and study into increasing access to public transport for residents along the Tonsley line. The study will investigate and consult on options to build a new Tonsley train station and the feasibility of a new 15 minute service to Flinders Station.

Design, appearance, siting and visibility

The Development Plans seeks development of a high design standard and appearance that responds to and reinforces positive aspects of the local environment.

The visual appearance of the key elements are summarized below in Figure 2. The orange colour scheme of the project, which features on various structural elements of the viaduct, lift cores, station and elevated walkway, has been selected for consistency with the Seaford / Tonsley line wayfinding colour code.



Figure 3: Key Project Elements

Viaduct

The elevated viaduct structure measures 10.20m wide and incorporates the extended (electrified) Tonsley rail line and a shared pedestrian and cyclist pathway. The rail track and shared path are separated by a 1.8m high safety fence, with the shared path located on the outside of the curved viaduct. A 3m high throw screen is provided along the length of the outside of the viaduct adjacent the shared path. CCTV, light poles, and field LAN switch service boxes are located along the viaduct.

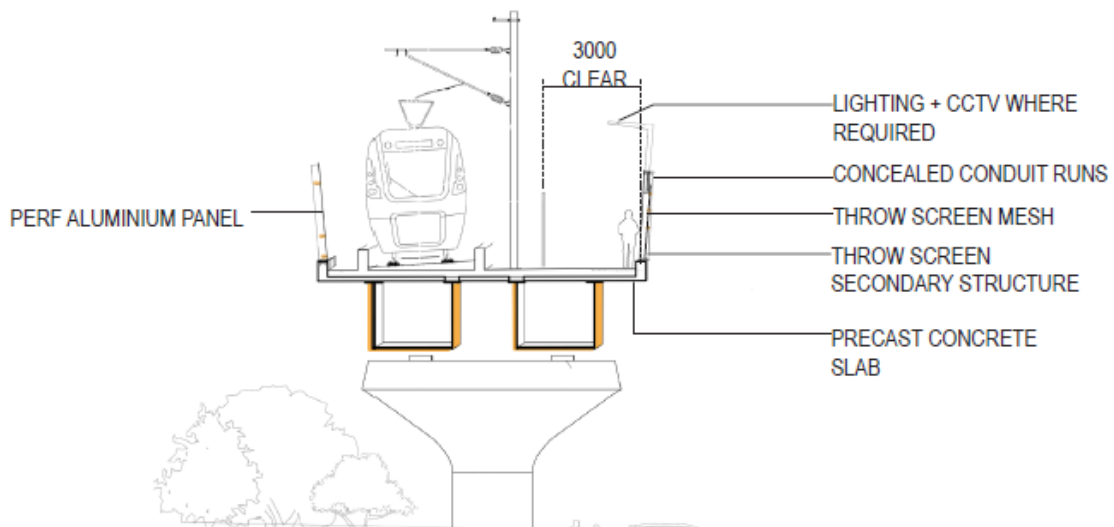


Figure 4: Viaduct cross-section

The viaduct is constructed of pre-cast concrete on curved steel box girders set on concrete piers and abutments. It seeks to present as a single elegant structural element that spans between abutments. A random pattern of orange structural beams located

between the stanchions seeks to represent 'digital information' which highlights the innovation focus of the Flinders and Tonsley precincts.



Figure 5: Viaduct and stair/lift core (Laffers Triangle)



Figure 6: Shared use path and throwscreen

In order to obtain the high design outcome sought for the viaduct, the Government Architect has identified the importance of the CCTV and light poles being (vertically) aligned with the stanchions, and consistency spaced along the viaduct. These vertical elements will be prominent structures when viewed as a whole, and their alignment will ensure a cohesive and visually pleasing outcome. The Applicant has indicated an intention for the final design to achieve this level of refinement and consistency.

In addition, the Government Architect has recommended that the proposed service boxes along the viaduct be positioned inside the rail corridor, instead of next to the throw screen, to minimise their negative visual impact on the overall viaduct structure.

The throw screen is a lightweight, transparent material to maximize views out of the shared pathway whilst providing security for adjacent land uses. The perforation percentage varies from 25-50% along the viaduct to maintain privacy for the adjacent

Sturt Police Station. The section of screen adjacent the Police Station less permeable (8mm aperture) than the remainder of the viaduct (13mm aperture).

With regard to the viaduct's supporting structures, Government Architect has recommended further design development around the following:

- Design of the pier protection barriers at the base of the structure, to allow for connectivity and landscape treatments.
- Review of the soffit structure between the top of the piers and the steel box girders, to minimise bird roosting in this space.

A condition of approval is recommended that requires further design development on the viaduct structure, as recommended by the Government Architect, prior to the commencement of construction so as to confirm and deliver the intended ambition.

Station

The new Flinders Station will accommodate two sets of three rail cars, or a six rail car set, which is expected to meet the number of patrons arriving / departing the station.

The station canopy is half the length of the platform and located at the western end of the station. The position of the canopy at the western end provides the greatest connectivity to the shared path on the viaduct; Main South Road; and the covered walkway into Flinders Medical Centre.

The station canopy is a fabricated steel structure. The train platform is an earth filled construction with concrete walls. Furniture within the station including seats, waste bins and signage, will be to DPTI standards.

The amenities building comprises a Common Equipment room (CER), bike parking for 30 bicycles, and a public toilet. An additional 12 bike spaces are available outside the amenities building.

Adjacent the station is a plaza area which provides connection between the station amenities, viaduct, stairs and lift core to Main South Road and the elevated walkway to Flinders Medical Centre. The plaza comprises seating plinths, CPTED design plantings and large granite paving to create a pleasant environment.

The weather protection screens within the station; stair/lift cores; and amenities building are externally clad in perforated aluminium throw screen panels in a material that matches the viaduct throw screens. This will provide a consistent design theme throughout the development.

Feedback from Government Architect regarding the station has sought to ensure clear pedestrian pathways and a unified design response. To that end, the Applicant has made design changes to ensure that service boxes and posts for the covered walkway do not conflict with pedestrian desire lines.

Further design development is recommended to either relocate or screen the air conditioning condenser of the amenities building to minimise its visual impact.



Figure 7: Flinders Station, plaza and walkway site plan



Figure 8: Flinders Station

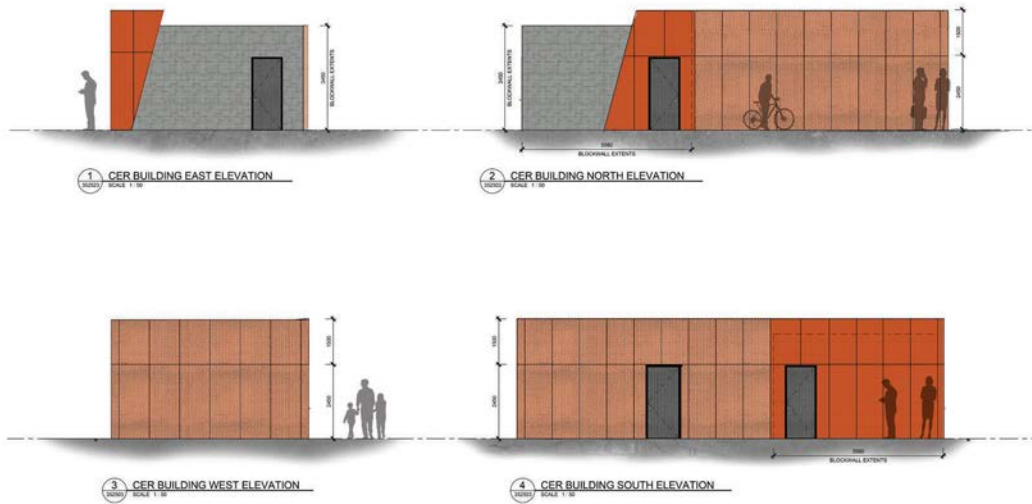


Figure 9: Amenities Building

Elevated Walkway

A covered walkway connects the station plaza, over the Flinders Medical Centre car park and University Access road, through to the Flinders Centre for Innovation in Cancer (FCIC) building.

The walkway comprises three (3) spans of steel framed trusses with a concrete slab measuring 3.6m width (providing an internal clearance of minimum 3m) and elevated on a series of piers / concrete abutments. The walkway is enclosed with a perforated steel mesh, with a total height of 3.9m, to provide weather protection and safety. A rest point with seating is located over the existing car park. Lighting, handrails and CCTV are provided throughout.

Roof run off from the walkway will be collected through a typical gutter to a downpipe drainage system. The downpipes will drain to either an open drainage, or into an existing grated inlet pit.

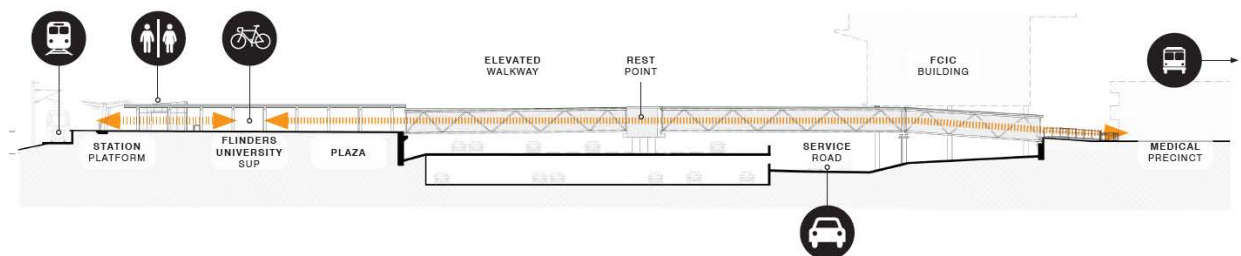


Figure 10: Elevated walkway



Figure 11: Elevated walkway

Landscaping, fences and walls

Landscaping

The Development Plans seek development that incorporates landscaping in order to complement built form, enhance and define outdoor spaces, maximize stormwater reuse, and generally increase the amenity of land and development.

The landscaping concept for the project seeks to enhance amenity, improve connectivity and provide community benefit. Landscaping, both hard and soft surfaces, is proposed at the commencement of the extended rail line (adjacent Lynton Avenue, north of Sturt Road), below the viaduct within Laffers Triangle and around the lift / stair cores, and at the new Flinders Station and associated plaza.

Existing vegetation adjacent Lynton Avenue will be removed, with replacement planting proposed adjacent the switchback ramp. The proposed landscaping scheme includes smooth barked apple trees, medium level screening plants, lower level planting beds, gravel fines and exposed aggregate footpaths.

Below the viaduct in Laffers Triangle the landscaping scheme incorporates shade tolerant trees, shrubs and exposed aggregates. The scheme is low maintenance and provides for sight lines across the site.

The station plaza comprises large granite pavers and low level planting, trees and seating. The embankment adjacent the stair and lift core (where the viaduct meets the new Flinders station), will be battered and landscaped with groundcovers and low lying plants. Adjacent the stairs and lift core will be 2-3m high bamboo plantings.

At the bottom of the embankment is a stormwater detention basin that holds water fed by a rock-lined swale running behind the new station. The basin will be planted with a mix of macrophytes, terrestrial planting (sedges and rushes) and rock mulch.

To the north of the station plantings will be drought tolerant ground covers. The remainder of the playing field beyond will be retained. South of the platform the area will be backfilled and grassed to create an even surface for future development.

The Applicant intends that all plantings be irrigated. Responsibility for landscape maintenance between DPTI and Council has not been finalized. City of Marion raised a number of technical matters relating to landscaping. These matters will be addressed through continued consultation with Councils.

jumpers, graffiti and vandalism. The following are considered areas with a high security risk:

- Rail infrastructure (i.e. tracks and associated equipment);
- Pedestrian underpass link between Lynton Avenue and Birch Crescent;
- Internal areas of shared use path over viaduct; and
- Stairwell to Main South Road.

The design seeks to minimise the potential for criminal / anti-social behavior through the inclusion of Crime Prevention through Environmental Design (CPTED) principles.

A CPTED report prepared for the project outlines the four (4) guiding principles of CPTED (surveillance, access control, territorial reinforcement and space management) and details how the project is considered to satisfy the intent of those principles. A summary of the design response is provided.

Principle	Design Response
Surveillance	<ul style="list-style-type: none"> ▪ Open plan urban environment with no large solid elements or obstacles ▪ Extensive lighting and CCTV along the viaduct, new station, elevated walkway and stairs to Main South Road including provisions for illuminated lighting. ▪ Gentle curve of the viaduct allows sightlines ▪ Passive surveillance from the elevated walkway and through the permeable throw screens ▪ Glazing to the front of the lifts ▪ Species selection to reduce opportunities for entrapment
Access control	<ul style="list-style-type: none"> ▪ Clear and defined paths to delineate the intended path of movement for pedestrians and cyclists ▪ Underpass access between Lynton Ave and Birch Cres designed to be short as possible (16.5m in length) with internal lighting and clear sight lines. ▪ Restricted access to high risk access (rail infrastructure) through 2.4m high securifor fence running adjacent the shared path ▪ Restricted access to train driver amenities and equipment room ▪ Placement of street furniture or other methods to block vehicles entering the platform
Territorial reinforcement	<ul style="list-style-type: none"> ▪ High architectural quality to encourage a sense of ownership and responsibility by users / community ▪ Clear delineation of public and restricted areas through fencing, signage, key lock doors and CCTV ▪ Use of environmental markers (including signage, landscaping, paving and linemarking) to define and guide how a space is meant to be used.
Space management	<ul style="list-style-type: none"> ▪ Ongoing maintenance of the station, public areas and landscaping by DPTI and/or Council (to be confirmed) ▪ Use of durable materials that are resistant to vandalism and generally low maintenance. ▪ Lighting (to station, walkway etc) to be LED type will vandal proof accessories.

Table 2: CPTED Design Responses

The CPTED report notes that due to recent incidents of rock throwing on the Southern Expressway, the rail corridor will comprise a concrete base. No rocks will be accessible on or below the viaduct and all sides of the viaduct incorporate 2.8m high throw screens.

Orderly and sustainable development

The Development Plans support the staging of projects to achieve the economical provision of public infrastructure and to maximize the use of existing infrastructure.

The project is an extension of existing infrastructure and seeks to increase use of public transport by providing improved services and facilities. The project traverses two (2) Council areas and both Development Plans specifically identify the rail line extension and new Flinders Station as key outcomes for the Regional Activity Zone.

The project will improve connectivity between existing land uses and provide a pedestrian orientated development. These outcomes will directly assist in facilitating the objectives of the Regional Activity Zone which envisages the creation of the 'Flinders Village Area' around the new Flinders station.

Energy Efficiency & Natural Resources

The Development Plans seeks that development be designed to maximize conservation, minimize consumption; and encourage the reuse of water resources.

A Sustainability Management Plan has been prepared for the project which seeks to minimise the environmental impacts of the project.

Energy Efficiency

High efficiency LED lighting with vandal proof covers will be used to minimise energy use and maintenance requirements. Solar collection is not proposed for the project.

Water Sensitive Urban Design & Stormwater

The project area is within the Sturt River catchment and an urbanised environment. Stormwater runoff from the various project elements will drain into either new bioretention basin / swales or into the existing street drainage systems and ultimately into the Sturt River.

A detention basin is proposed on the western side of the station plaza, adjacent South Road, and swales are proposed within the rail corridor near Lynton Avenue and Woodlands Road. A rock lined swale that drains to the basin is located at the rear (south) of the new station. The basin and swales seek to improve water quality and manage stormwater runoff.

Final details regarding stormwater management will need to be negotiated with the local Councils. These arrangements should be detailed in a Stormwater Management Plan (SMP).

Potential impacts to water quality as a result of construction should be mitigated through a Soil Erosion and Drainage Management Plan (SEDMP).

Biodiversity

The Development Plan policies seek the protection of natural resources including native vegetation.

The project proposes the removal of amenity vegetation, the majority of which is exotic species, as well as two (2) significant trees and one (1) regulated tree.

The Applicant has advised that effort will be made to retain as much existing vegetation as possible. Several of the trees earmarked for removal will be reassessed during construction to consider the possibility of retention. This includes vegetation adjacent the existing Tonsley Station along Lynton Avenue. This vegetation provides visual screening for residents in the locality and is therefore of benefit to retain.

Waste

A Sustainability Management Plan has been prepared for the project which seeks to (among other things) minimise waste production, operating costs and lifecycle costs. The design seeks to use durable materials to reduce maintenance and replacement requirements.

A CEMP will be prepared for the construction phase which will include environmental management requirements for (among other things), waste minimisation and recovery.

Regulated Trees

Development Plan policies seek the conservation of regulated trees that provide aesthetic and/or environmental benefit. A regulated tree should not be removed or damaged other than where development that is reasonable and expected would otherwise not be possible.

The project necessitates the removal of two (2) significant trees and one (1) regulated tree and pruning of several Regulated trees close to the existing Tonsley Station. These trees are located on land under the control of the Commissioner of Railways and therefore are exempt from requiring Development authorisation for their removal.

Following lodgment of the DA, the Applicant provided a further package of information identifying opportunities to retain mature trees (previously earmarked for removal) where possible adjacent the Birch Cres / Lynton Ave. This is supported by both Councils.

City of Marion sought clarification regarding Tree 833 (Lemon Scented Gum) which may require removal. The Applicant has advised that Tree 833 is located on private property and shared a boundary with the rail corridor. Indications at this stage suggest that it can be pruned rather than removed.

Interface between land uses

Development Plan policies are not supportive of works that detrimentally affect the amenity of the locality or cause unreasonable interference.

Construction

The construction period for the project will cause temporary disruption for motorists, pedestrians, cyclists and public transport commuters, and will necessitate the temporary closures of local and arterial roads, as would be expected for a development of this size.

The construction will also cause noise and vibration which may create a nuisance, particularly for residents north of Sturt Road and if night works are required.

A CEMP will be prepared for the construction phase which will include environmental management requirements for (among other things):

- Air quality controls: including for dust and the management of stockpiles
- Hours of operation - including night work protocols (if applicable)
- Establishment and maintenance of temporary fencing and hoardings

The CEMP will also include management of noise and vibration. Works will be in accordance with DPTI Operational Instructions and a Construction Noise and Vibration Management Plan and a Night Works Management Plan will be prepared.

The CEMP will be developed in accordance with the DPTI's Environmental Code of Practice for Construction - Road, Rail, and Marine Facilities.

Operation

The residents adjacent the rail line north of Sturt Road will be impacted by the project due to the change in rail movements; removal of the existing Tonsley Station; and the introduction of an extended, raised rail line.

Amenity

The extended rail line will result in an altered interface with residents. The line extension ramps up adjacent Lynton Avenue in order to achieve a 5.4m minimum clearance over Sturt Road. The raised rail line is supported by concrete wall abutments into which a switchback ramp and stairs are set to provide access to the shared path on the viaduct.



Figure 13: Switchback ramp

The ramp and associated structures introduce a new and more dominant feature within the locality. An existing row of trees on Lynton Avenue currently provides visual screening of the rail line. These trees will be removed and replaced with semi-mature plantings (1.5 – 2.5m tall). Noting the significant change to the local landscape, it is important that the structure incorporates high quality design and finishes so as not to negatively impact on the general amenity of the residential zone.

Noise

A 100% Design Noise Assessment Report has been prepared for the project. The report provides an assessment of expected noise emissions from the project, against the EPA's GANRI.

The primary sensitive noise receivers for the development are residences in the suburbs of Tonsley and Mitchell Park, north of Sturt Road. The Flinders Medical Centre and Sports Fields are located adjacent the new station. The Sturt Police Station and commercial buildings within Laffers Triangle are not considered to be sensitive receivers (according to GANRI).

The affected residences are already subject to ambient rail noise, road traffic and car parking; whilst land uses south of Sturt Road are not currently impacted by rail noise. Additional noise from the project will be caused by:

- Curve squeal noise (ie curvature of the rail line).
- Structure-borne noise (ie rail vibration regenerated as airborne noise by the steel viaduct).
- Increase in train frequency.
- Changes in track alignment.

The predicted future rail noise levels presented in the Noise Report are based on an expanded train timetable of 66 day movements (7am to 10pm) and 10 night movements (10pm to 7am).

Predicted future rail noise levels for the extended line indicate that, without mitigation, levels will exceed the relevant GANRI criteria at 2 sensitive receivers along Lynton Ave, and 5 sensitive receivers on Ash Ave and Birch Cres by an amount of 1-6 dB.

In order to bring the noise impact below the GANRI criteria the Noise Report recommends the installation of a friction modification system to mitigate curve squeal noise. If curve squeal noise could be eliminated, then noise levels are expected to comply with the relevant criteria. The effectiveness of the technology cannot be determined until the extended train line is operational however experience suggests that it will not completely eliminate the curve squeal noise.

Alternate / additional noise mitigation treatments are 'at source' methods (ie at the sensitive receiver) and mitigation along the transmission path (ie installation of a noise barrier).

In this regard the Noise Report recommends installation of a 1.6m high noise barrier on either side of the viaduct structure. The proposed barrier would extend from adjacent the Lynton Ave / Brayden Ct intersection and Birch Cr / Oak Ave intersection, to approximately the middle of Sturt Road. Depending on design, the inclusion of noise barriers could have a negative impact for users of the shared path in terms of safety, visual permeability, general amenity, as well as a diminished urban design outcome. Solid barriers can create a sense of enclosure and may have noise impacts for users of the shared path.

Alternatively, treating the noise impact at source (for the 7 affected sensitive receivers) would necessitate façade treatment. New fences would be inadequate due to the elevated nature of the rail line.

Further analysis and design development is required to determine the most appropriate noise attenuation solution with a view to minimising impacts on visual amenity, safety, design outcomes, and general user experience. A condition of approval is recommended regarding assessment and resolution of noise attenuation options, as well as post construction noise monitoring to determine compliance with the GANRI.

Vibration

The Noise report notes that at 25m to the nearest sensitive receiver, vibration or ground-borne noise is not expected. The design is expected to comfortably comply with the relevant criteria and no detailed assessment was considered necessary.

Overlooking

The potential for overlooking from the train and switchback ramp to dwellings along Lynton Avenue and Birch Crescent is not considered in the application documents.

Whilst it is unlikely the passengers sitting in the train would be afforded clear views into private properties, the view shed of pedestrians and cyclists on the ramp across to Lynton Ave is unknown. For safety reasons it would not be desirable to prevent views from the switchback ramp by barriers or vegetation. It is also noted that all dwellings fronting Lynton Avenue in the vicinity of the switchback ramp face the street and have their private open space to the rear.

On balance, the impacts of the development on privacy are not expected to be unreasonable, or warrant further investigation.

Hazards

Development Plan policies seek development on land where site contamination issues have been assessed and remediated to ensure the land is suitable for its intended purpose.

Contaminated material is expected to be encountered within the existing Tonsley rail corridor due to historic rail activities. In addition the 'Clovelly Park – Mitchell Park Trichloroethene (TCE)' is a known area of contaminated soil and groundwater which is located adjacent the Flinders Link project area.

Geotechnical and contamination investigations are ongoing and soil sampling will occur within the project area to determine whether fill material can be safely reused on site, of whether disposal to a licensed EPA facility is required. These procedures will be governed by a Contamination Management Plan (CMP) in order to minimise and manage risks to workers and the adjacent community.

A CEMP will be prepared for the construction phase which will include environmental management requirements for (among other things) the storage of chemicals and fuels.

Heritage

Non-Aboriginal Heritage

There are no local or state heritage places that will be directly impacted by the development. The nearest State Heritage Place (Fairford House) is located within Laffers triangle some 400m from the project area.

Aboriginal Heritage

The Applicant has undertaken a search of the Central Archive Register of Aboriginal Sites and Objects which identified a number of registered sites close to the project area. There is potential to uncover archaeological deposits during the construction period due to proximity of the project area to Sturt River and Warriparinga reserve.

The Applicant has undertaken consultation with the relevant Aboriginal groups as part of the Darlington Upgrade project and this will continue through the final design and construction phases of the Flinders Link project.

An Aboriginal Cultural Heritage Impact Assessment including a heritage survey and risk assessment will be undertaken for the Flinders Link Project site. As required for the Darlington Upgrade Project area, a Section 23 authorisation under the *Aboriginal Heritage Act 1988* may be sought to damage, disturb or interfere with Aboriginal sites, objects or remains.

The CEMP for the construction phase will outline the process for discovery / recovery of Aboriginal Heritage sites in accordance with statutory requirements. This is proposed to be carried over from the Darlington Project procedures which include cultural awareness training during staff induction.

12. Conclusion

The Development Application for the Flinders Link Project comprises those items which are considered to be 'development' and are assessable under the *Development Act 1993*.

The project directly contributes to the outcomes and envisaged development of the Regional Activity Zone within the Mitcham and Marion Council Development Plans. The extended rail line and new station will facilitate future development of the Flinders Village Area, and provides a direct connection between the Flinders and Tonsley innovation precincts, and further on to the Adelaide CBD. The project seeks to encourage a modal shift to public transport by providing improved services and connections.

The project seeks to deliver a new station precinct with high quality public realm that is engaging, interesting, connected and safe for all users. The urban design ambition for the project relies on the delivery of a high quality built form, enhanced connectivity, and public realm improvements.

In this regard final confirmation is required regarding the vertical elements on the viaduct structure including CCTV / lighting poles, as well as design development around the pier protection barriers and bird roosting prevention.

Further assessment is required to determine the most appropriate method of noise attenuation for impacted sensitive receivers adjacent Lynton Ave / Birch Crescent. These details must be finalised prior to operation of the extended railway.

The construction period is expected to cause temporary disruption to road users, residents, and other land uses in the locality, and potential environmental impacts. These impacts should be mitigated through development of a Construction Environmental Management Plan (CEMP) and associated suite of documents.

Overall, the proposal is consistent with current for the development of the land. A range of conditions have been recommended particularly in respect to matters of detailed design for the viaduct design, noise attenuation, and construction impacts.

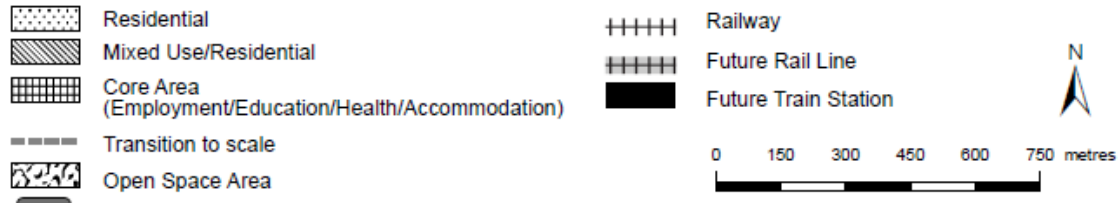
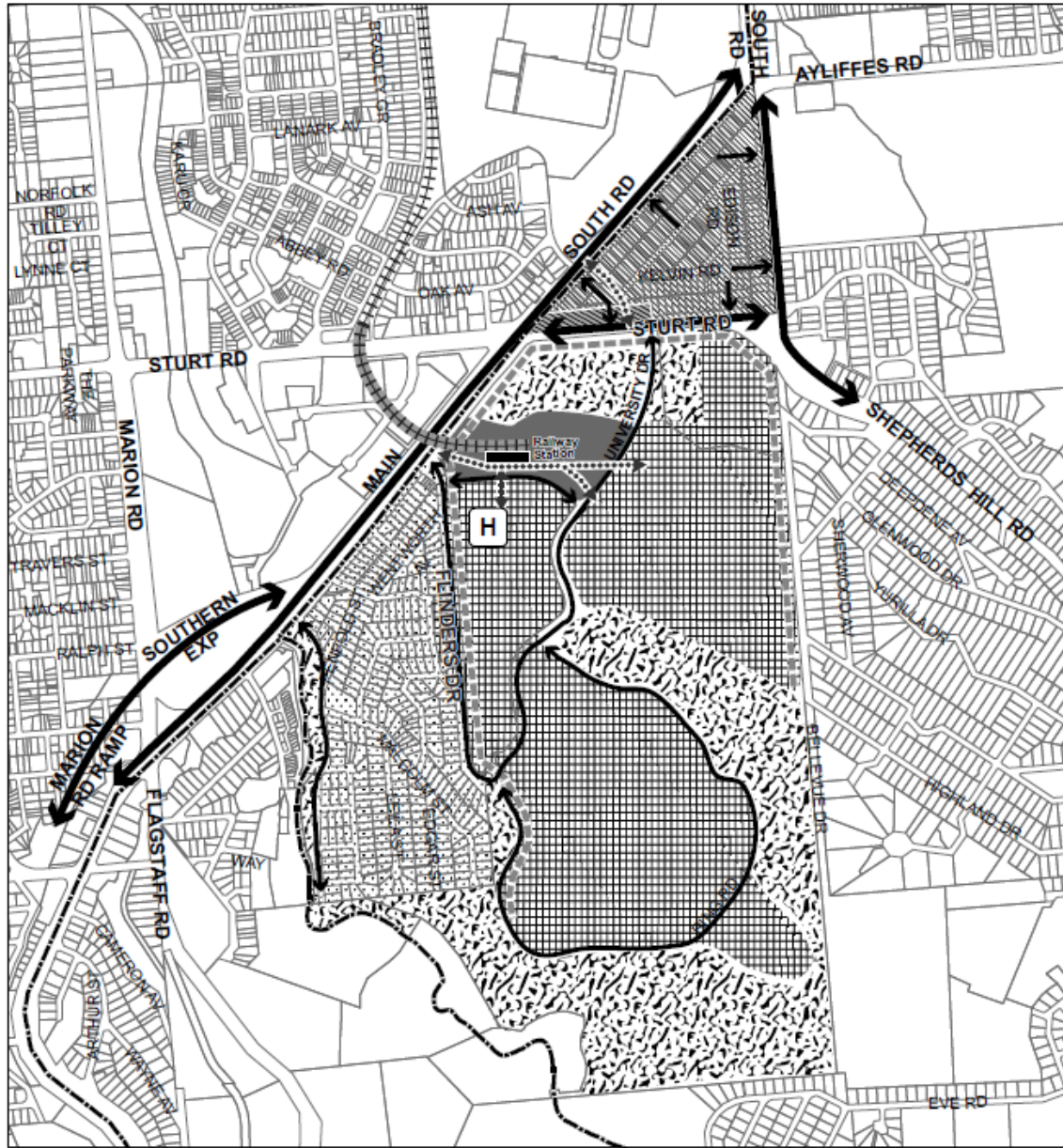
If no further information is required, and all relevant assessment matters have been considered, this planning report can be endorsed by the State Commission Assessment Panel pursuant to Section 49 (7e) of the *Development Act 1993*, and a formal recommendation with appropriate conditions provided to the Minister for Planning for his further review and decision.



LAURA KERBER
SENIOR PLANNING OFFICER
PLANNING AND DEVELOPMENT (DPTI)

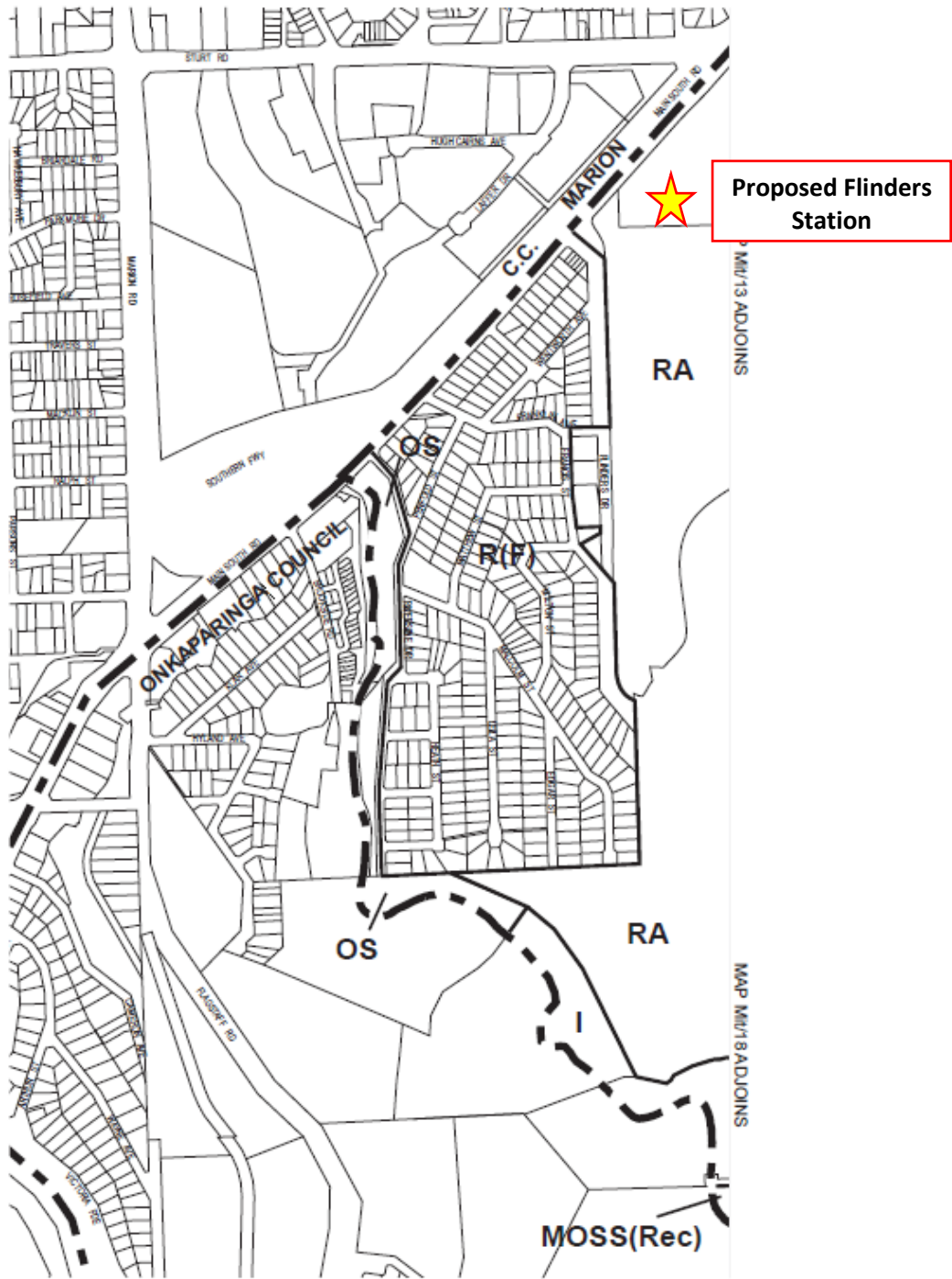
ATTACHMENT 1

PLANS AND MAPS – MITCHAM (CITY) DEVELOPMENT PLAN



**MITCHAM (CITY)
 BEDFORD PARK
 CONCEPT PLAN**
Fig Mit/1

Consolidated - 20 February 2018



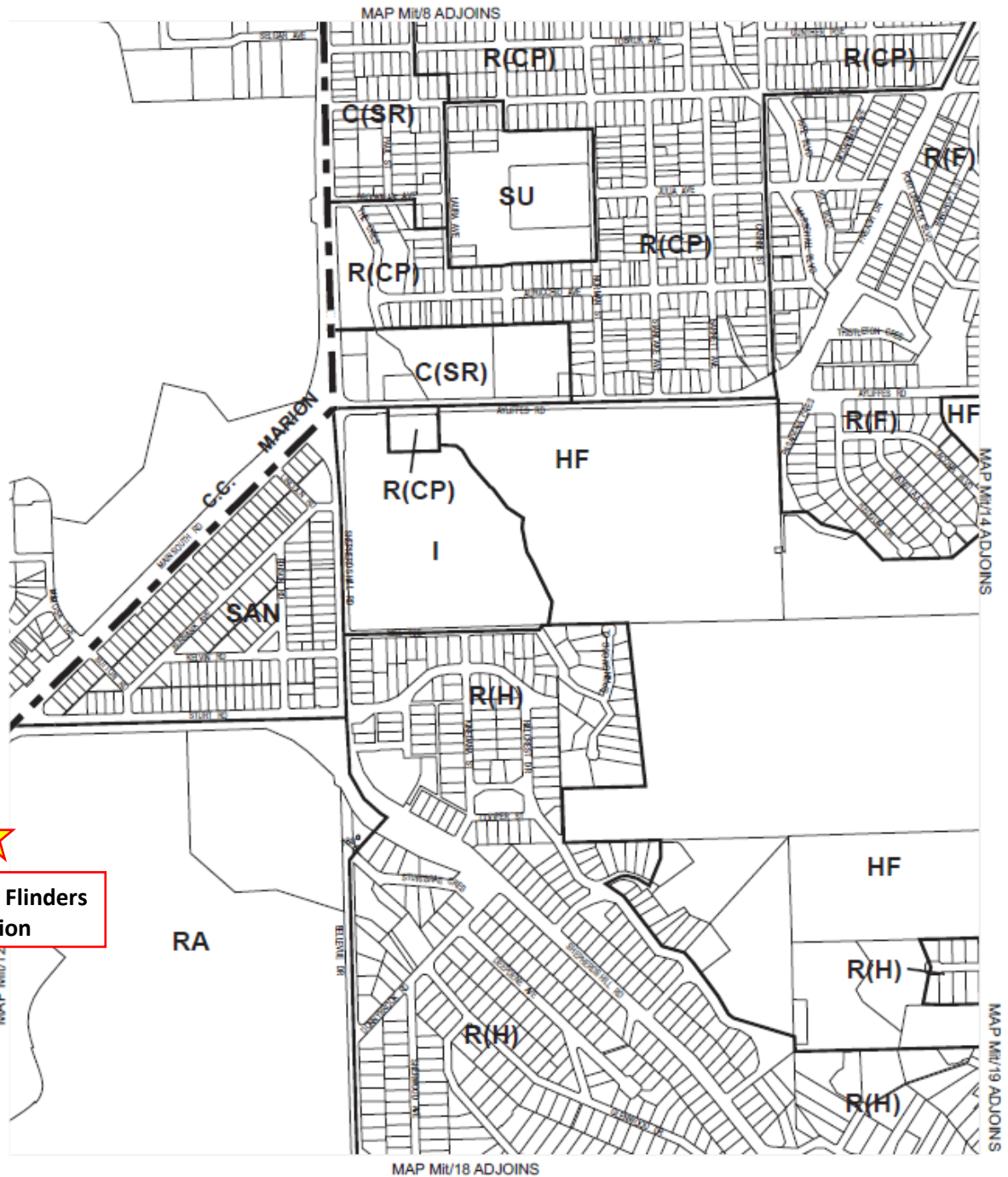
- OS Open Space
- R(F) Residential (Foothills)
- RA Regional Activity
- MOSS(Rec) Metropolitan Open Space System (Recreation)
- I Institutional

- Zone Boundary
- Development Plan Boundary



MITCHAM (CITY)
ZONES
MAP Mit/12

Consolidated - 20 February 2018



Proposed Flinders Station

NOTE : For Policy Areas see [MAP Mit/33](#)

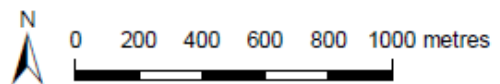
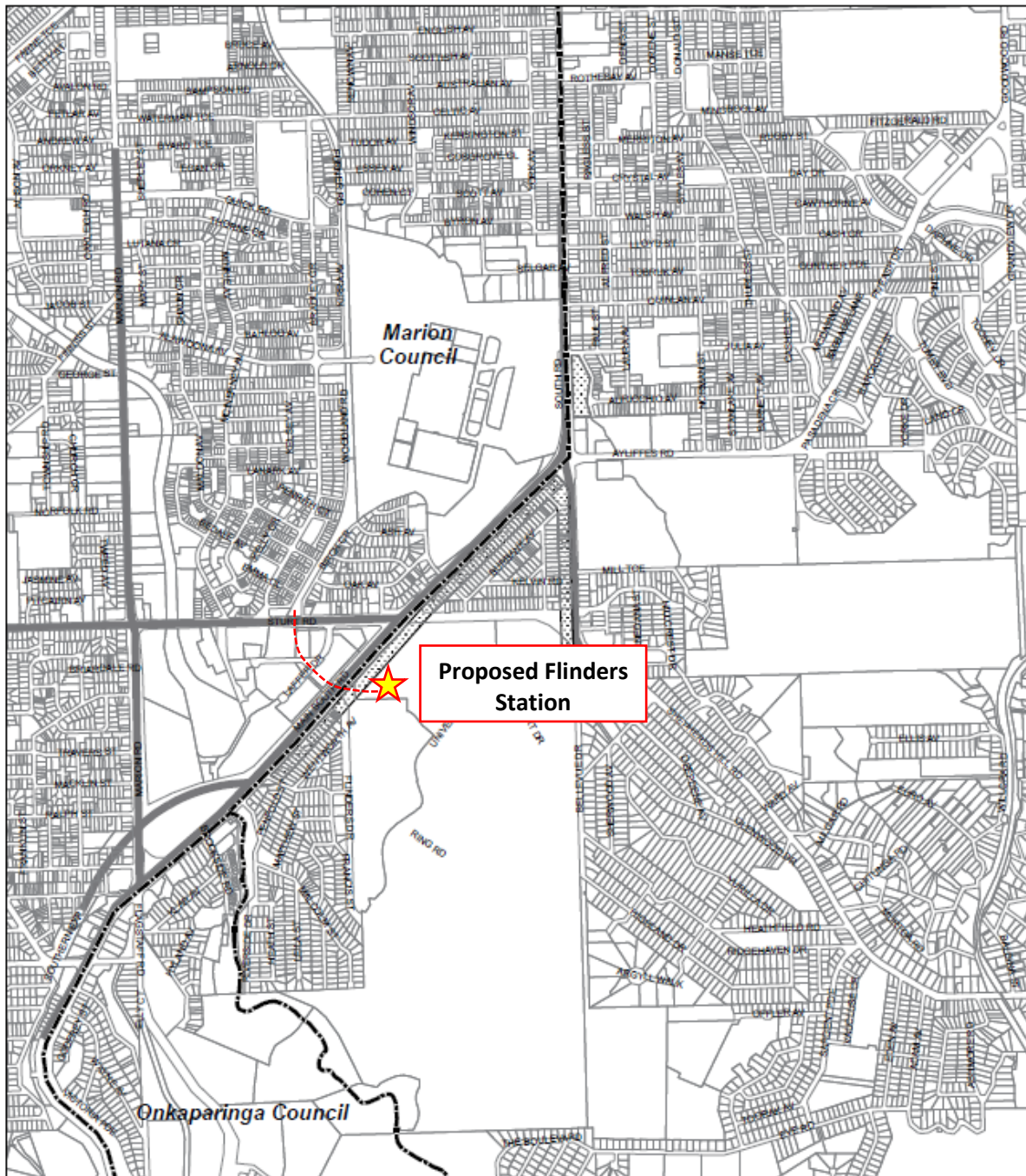
- C(SR) Commercial (South Road)
- HF Hills Face
- I Institutional
- R(CP) Residential (Central Plains)
- R(F) Residential (Foothills)
- R(H) Residential (Hills)
- RA Regional Activity
- SAN Suburban Activity Node
- SU Special Uses (Panther Park)




- Zone Boundary
- - - Development Plan Boundary



MITCHAM (CITY) ZONES
MAP Mit/13

Consolidated - 20 February 2018

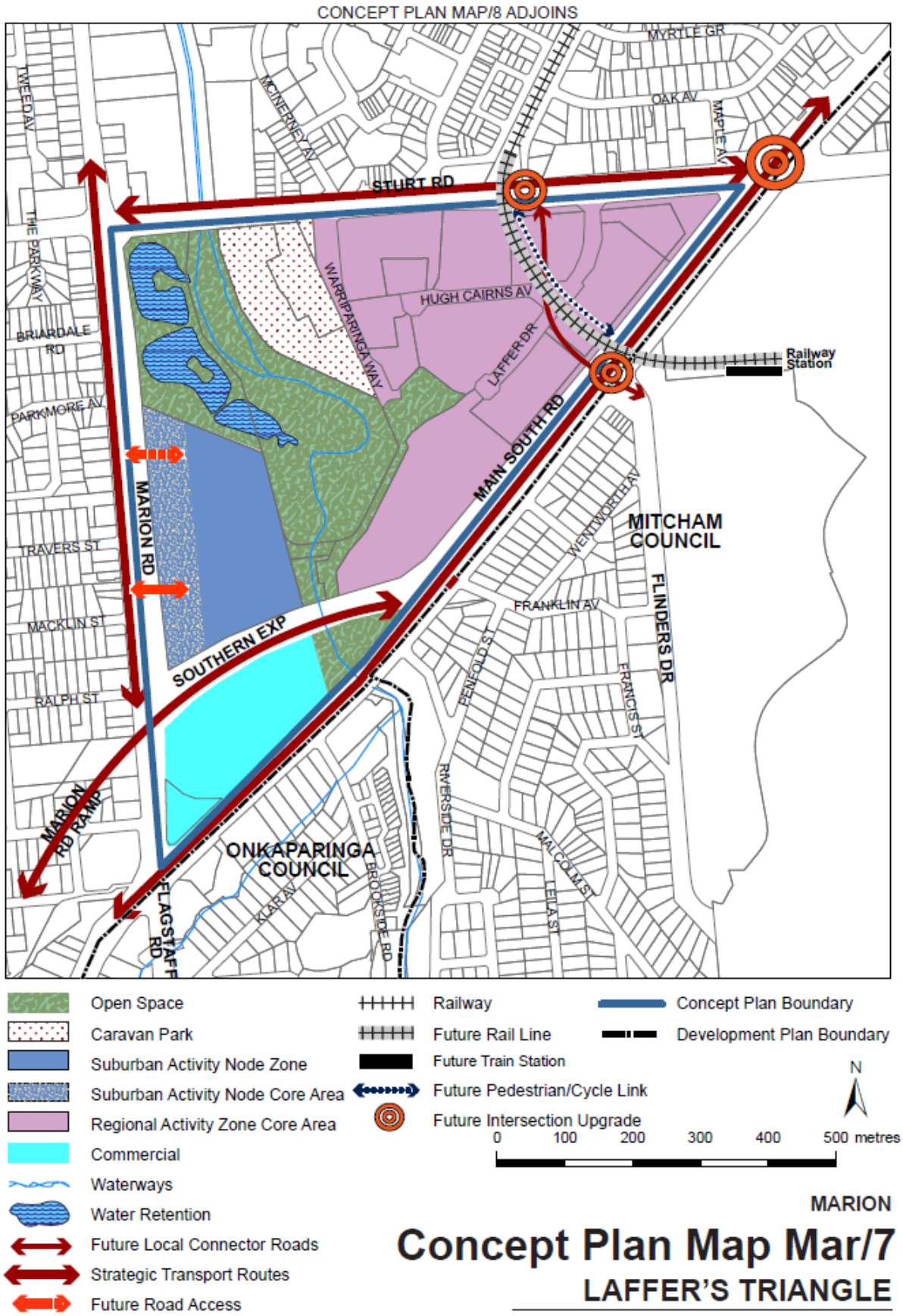


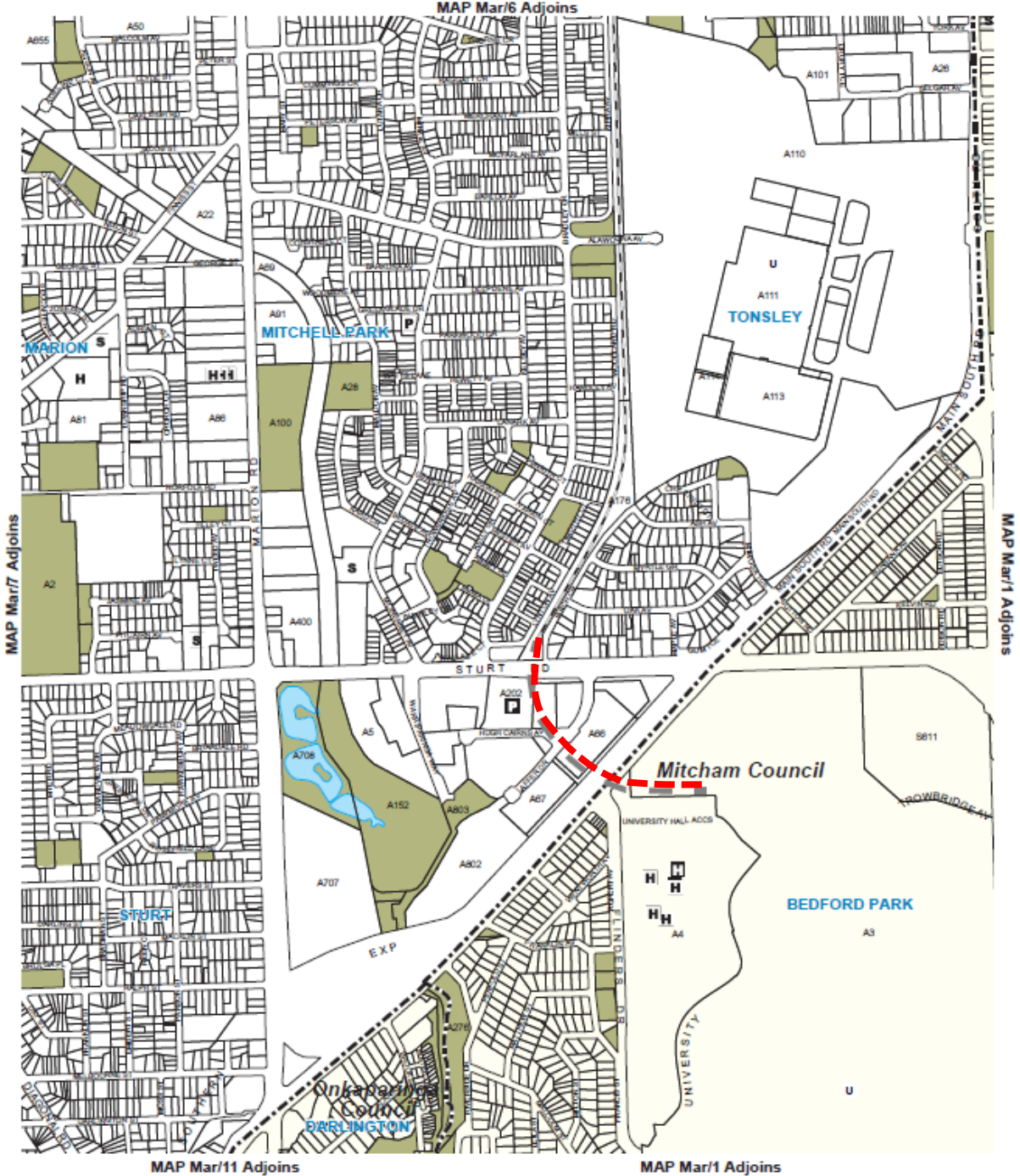
-  Designated Area
-  Strategic Roads Network
-  Development Plan Boundary

**MITCHAM (CITY)
STRATEGIC TRANSPORT ROUTES
MAP Mit/1 (Overlay 6)**

Consolidated - 20 February 2018

PLANS AND MAPS – MARION COUNCIL DEVELOPMENT PLAN



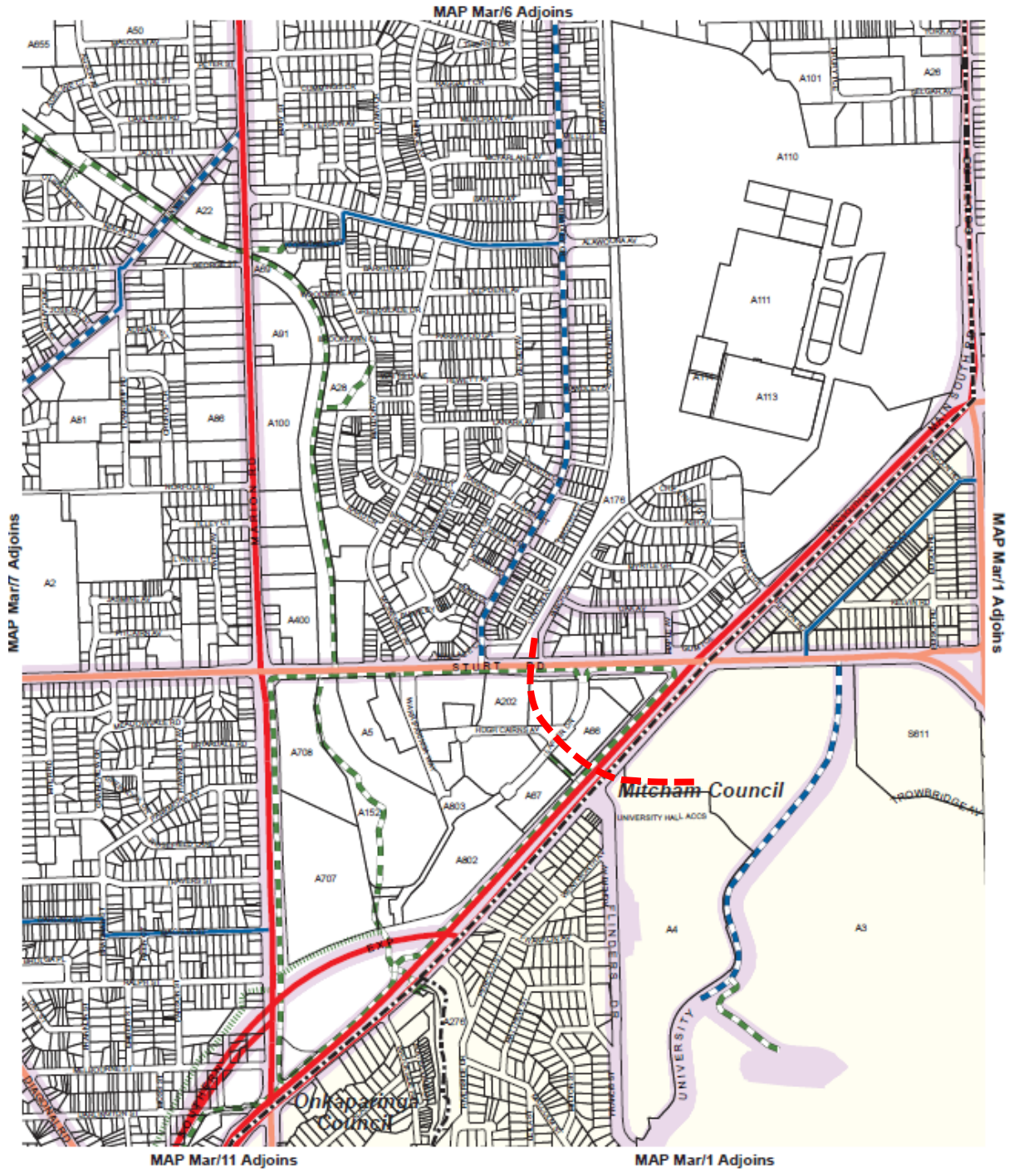


- U** University
- S** School
- P** Post Office
- H** Other Health Services
- H** Hospital
- Q** Police Station
- Planned Railway Extension
- Railways
- Local Reserves
- Waterbodies
- Development Plan Boundary



Location Map Mar/8

MARION COUNCIL
Consolidated - 20 February 2018

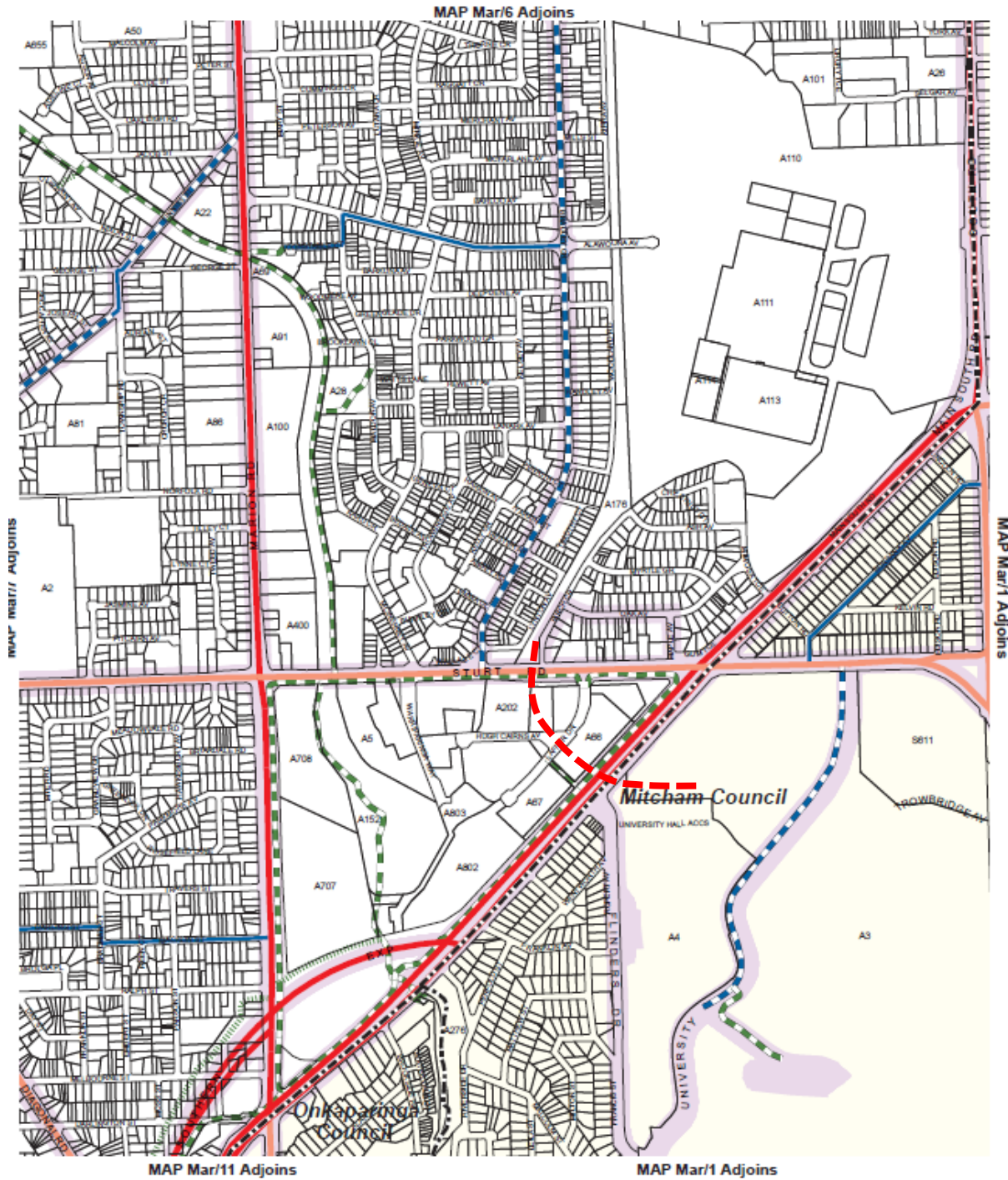


- Primary Arterial Roads
- Secondary Arterial Roads
- Bikedirect Network**
- - - Secondary Road - Bike Lane
- Secondary Road
- - - Off Road Sealed Path
- ||||| Off Road Track
- Public Transport
- Development Plan Boundary



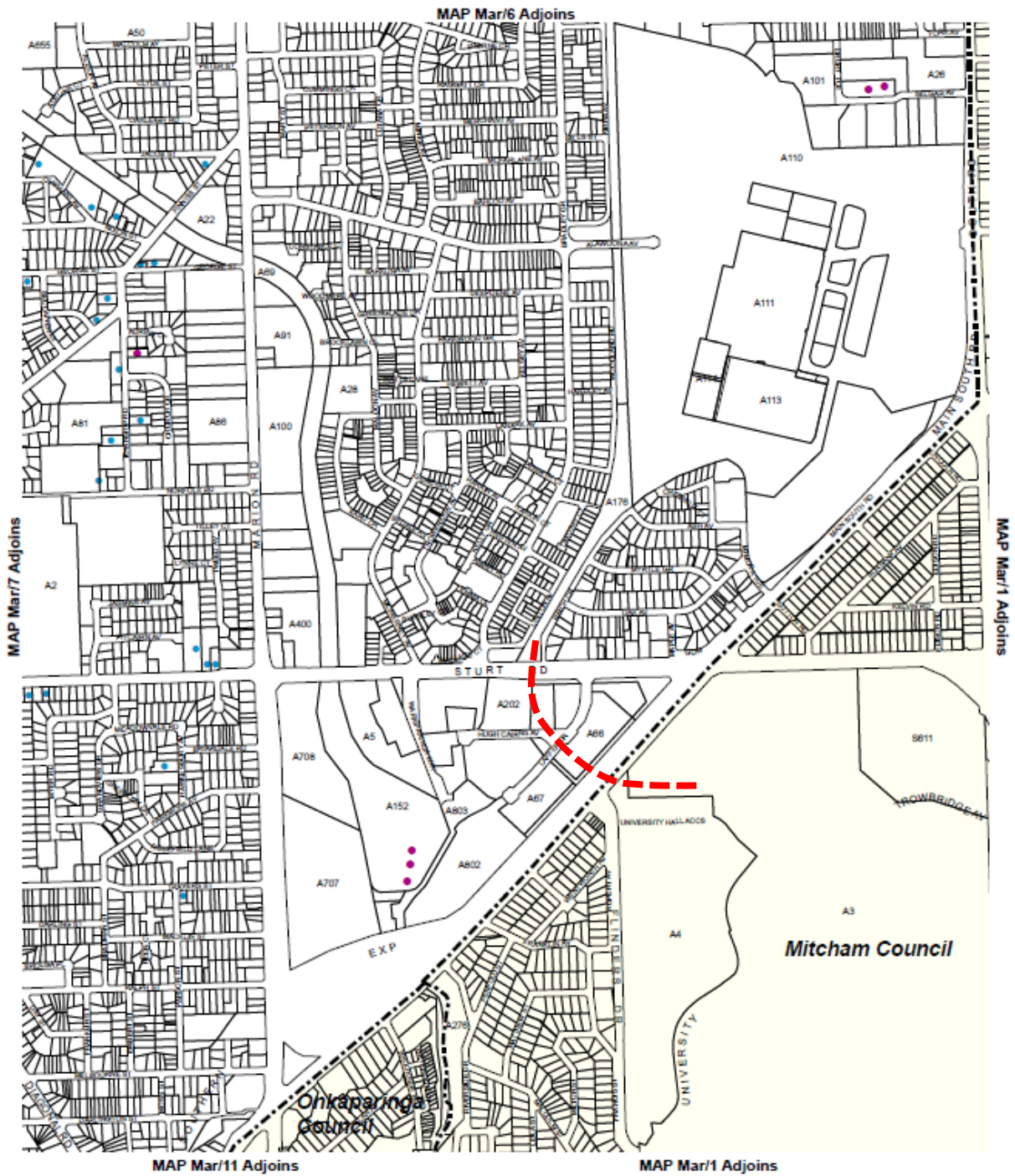
Overlay Map Mar/8 TRANSPORT

MARION COUNCIL
 Consolidated - 20 February 2018



Overlay Map Mar/8 TRANSPORT

MARION COUNCIL
 Consolidated - 20 February 2018



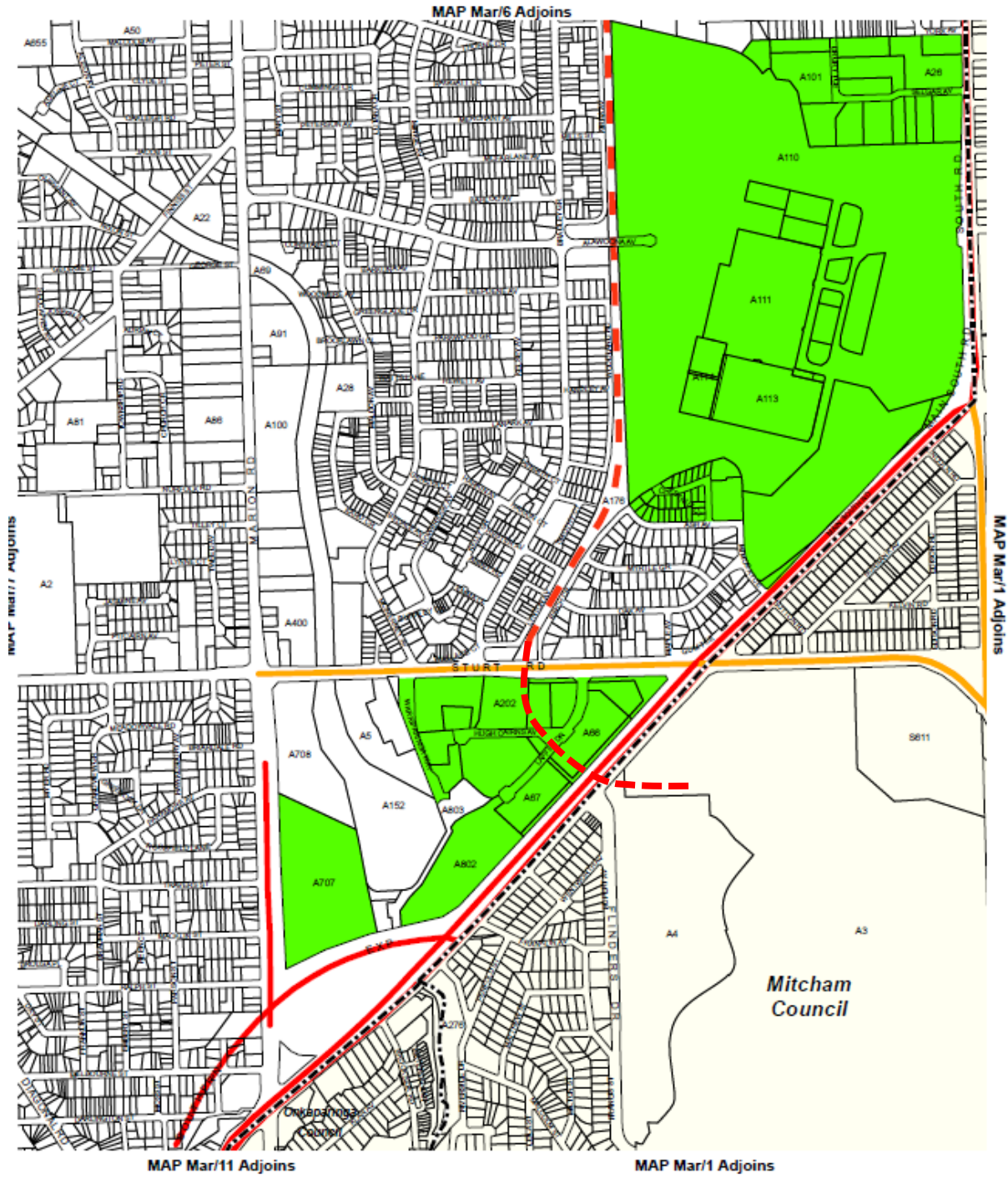
Heritage points are indicative only.
For further information on State and Local Heritage Places and Contributory Items please refer to the relevant tables within this document.



Overlay Map Mar/8 HERITAGE

- State heritage place
- Local heritage place
- Development Plan Boundary

MARION COUNCIL
Consolidated - 20 February 2018

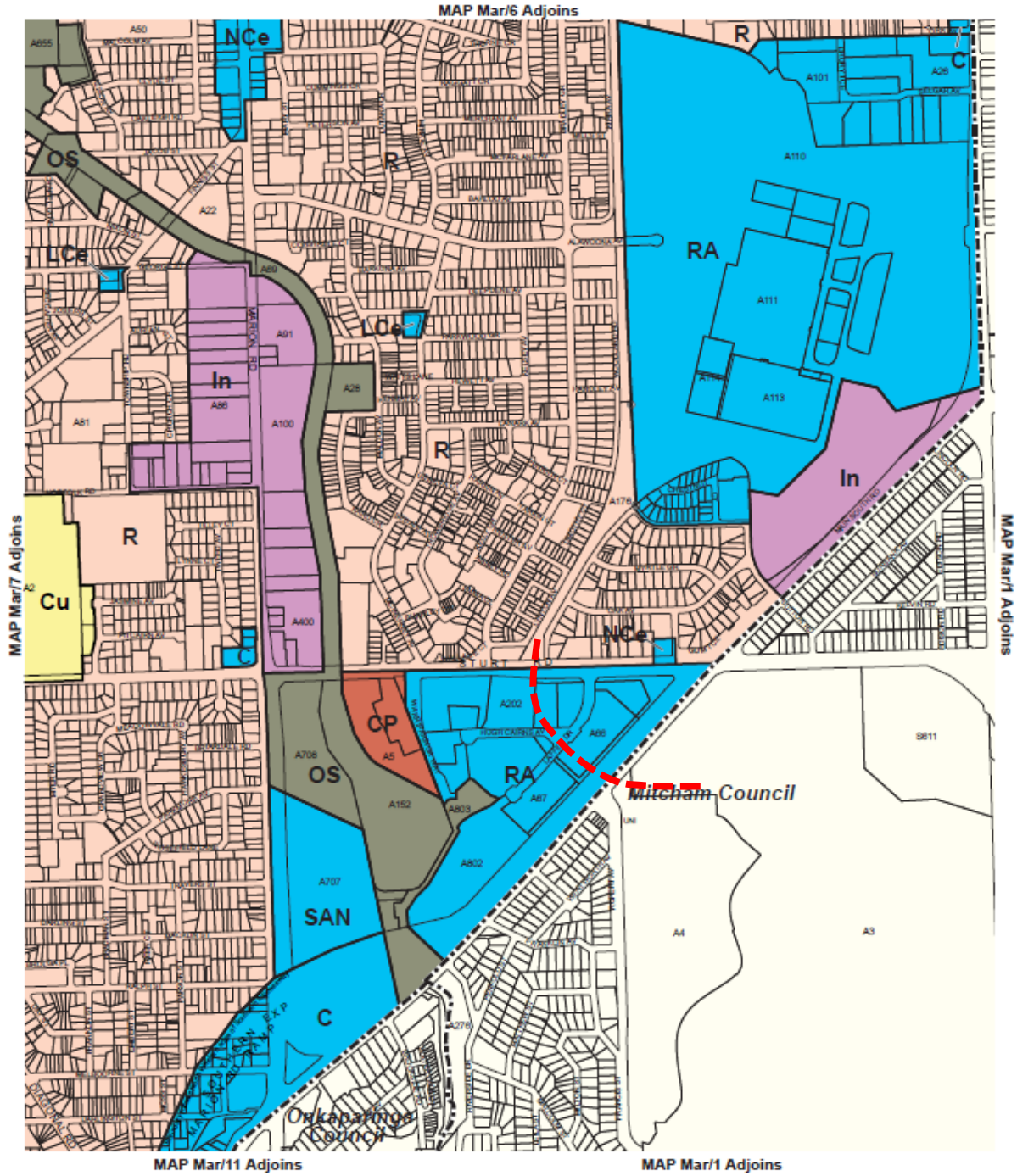


- Designated Road: type A road
- Designated Road: type B road
- - - Train Line
- Noise and Air Emissions Designated Area
- - - - - Development Plan Boundary

Overlay Map Mar/8

NOISE AND AIR EMISSIONS

MARION COUNCIL
 Consolidated - 20 February 2018

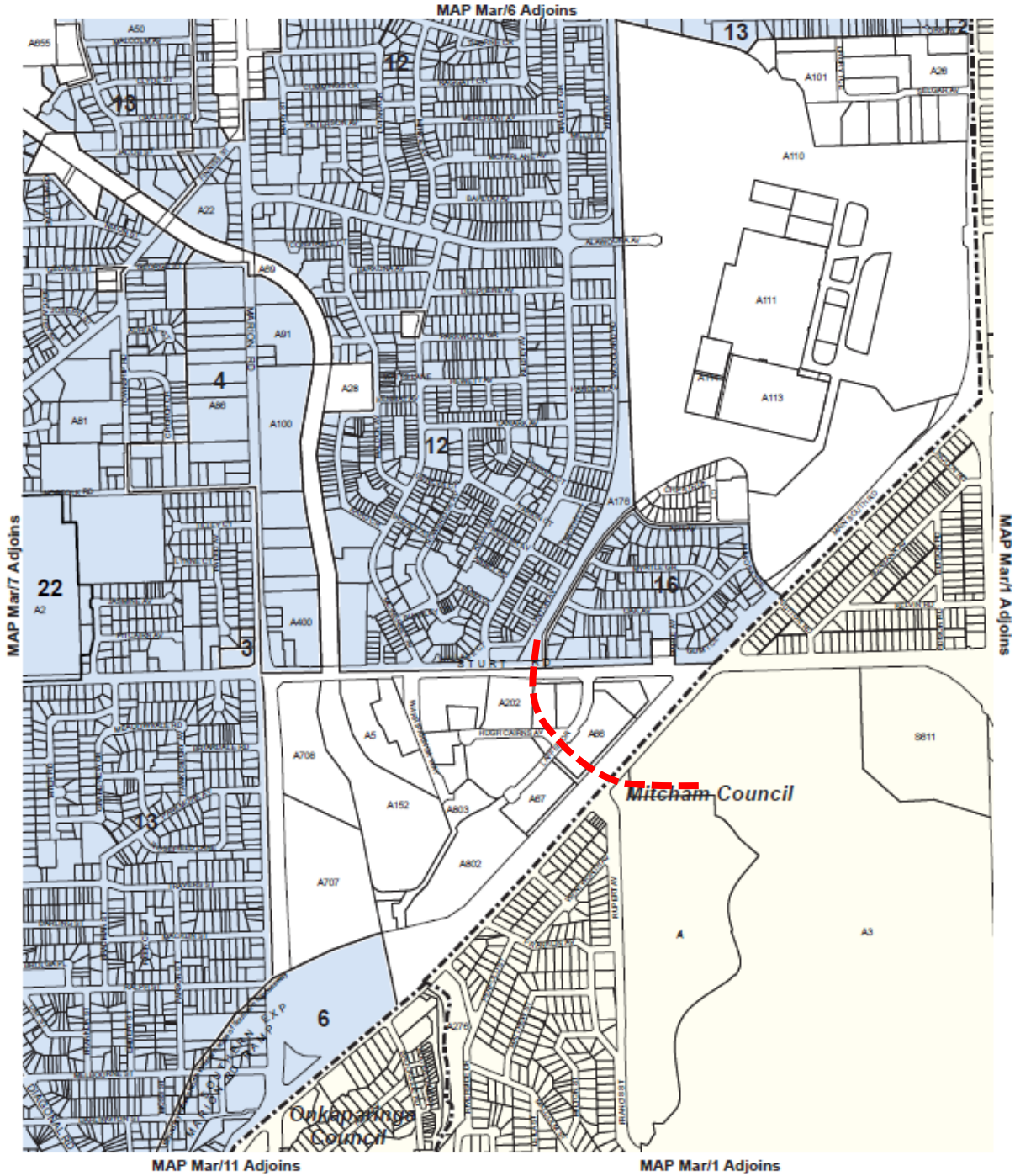


- Lamberts Conformal Conic Projection, QDA84
- Zones**
- CP Caravan and Tourist Park
 - C Commercial
 - Cu Community
 - In Industry
 - LCe Local Centre
 - NCe Neighbourhood Centre
 - OS Open Space
 - RA Regional Activity
 - R Residential
 - SAN Suburban Activity Node
 - Zone Boundary
 - Development Plan Boundary



Zone Map Mar/8

MARION COUNCIL
Consolidated - 20 February 2018



Lamberts Conformal Conic Projection, GD484

- Policy Area**
- 2 South Road
 - 3 Sturt/Marion Road Corner
 - 4 Industry/Commerce
 - 6 Darlington
 - 12 Medium Density
 - 13 Northern
 - 16 Regeneration
 - 22 Recreation



Policy Area Map Mar/8

- Policy Area Boundary
- Development Plan Boundary

MARION COUNCIL
Consolidated - 20 February 2018

Section 49 Crown Development and Public Infrastructure

DEVELOPMENT APPLICATION FLINDERS LINK PROJECT

Extension of the Tonsley Rail Line

September 2018



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1

PROPOSAL

1.0 PROJECT OBJECTIVES AND STRATEGIC CONTEXT

1.1 PURPOSE

The purpose of this report is to seek the approval of the Minister for Planning under Section 49 of the Development Act 1993 - Crown Development and Public Infrastructure, to extend the Tonsley rail line, linking the Flinders Medical Centre and Flinders University to the existing passenger network.

The applicant for this project is the Department of Planning, Transport and Infrastructure (DPTI).

1.2 BACKGROUND

The Flinders Link Project was first proposed publicly on 20 December 2015 at the same time as announcing the award of contract and the extension of scope by 1km of the Darlington Upgrade Project.

On the 13th May 2016 the Australian and South Australian Government announced funding commitments for \$85.5 million for the Flinders Link Project, which will be delivered by DPTI, and is expected to be completed by early 2020. The Flinders Link Project is a stand-alone project.

The Flinders Link Project will provide a much-needed rail extension, with an integrated shared pedestrian/cycle path, that will serve the Flinders precinct.

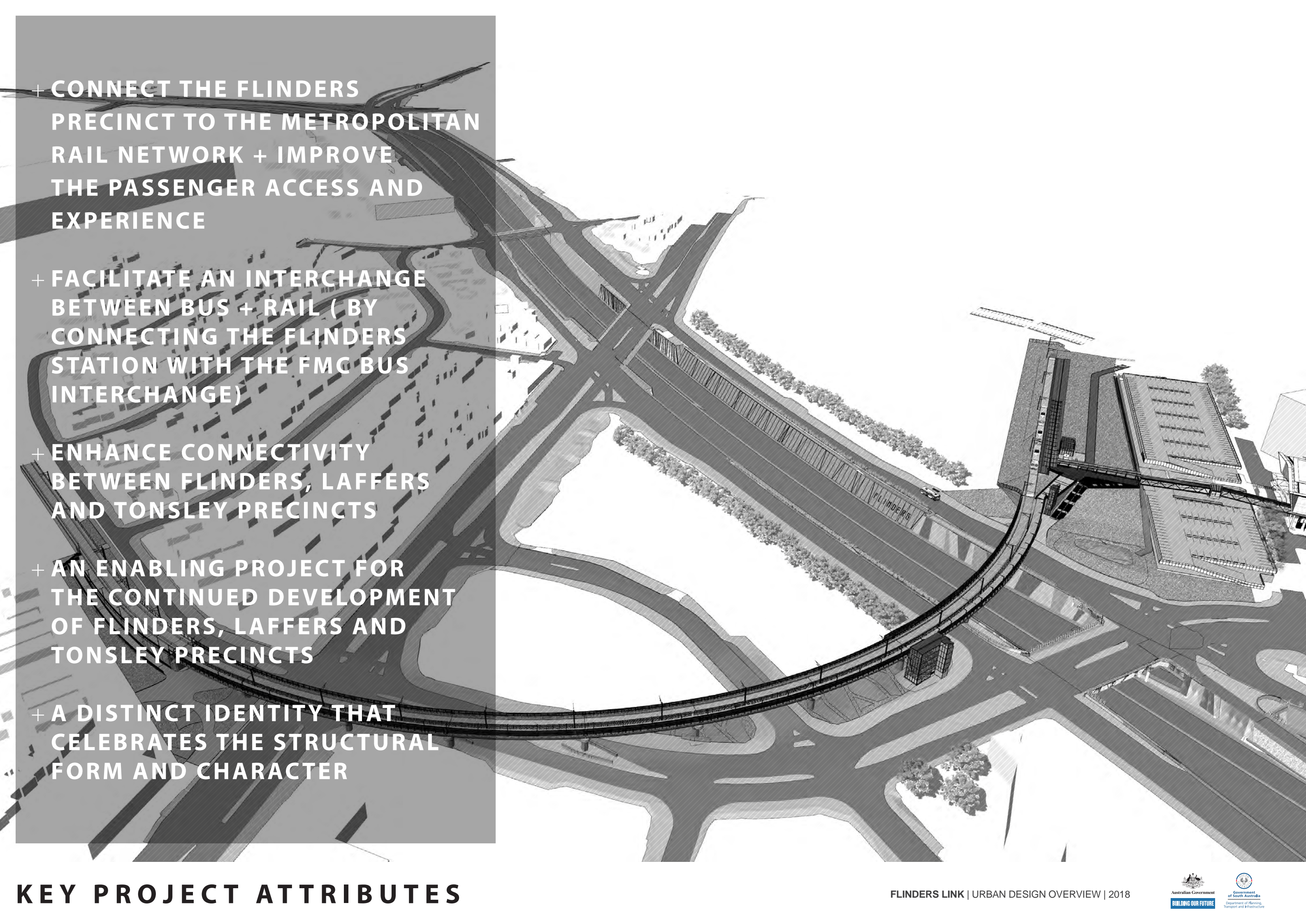
The Flinders Link Project aims to:

- enhance connectivity between the Flinders precinct and the Tonsley Innovation Precinct and improve public transport from the Flinders precinct to the intermediary suburbs and the city.
- The extension will complement the Transforming Health Redevelopment at Flinders Medical Centre by providing a direct connection to rail services;
- reduce travel time for public transport users from the Flinders precinct to the city;
- increase patronage on the currently underutilised Tonsley rail corridor (i.e. make better use of existing rail infrastructure);
- improve pedestrian and cycle access and safety;
- provide environmental benefits associated with a reduction in private vehicle travel;

- improve amenity, place making and improving access from the southern suburbs to the central business district (CBD);
- support economic activity and enhance connectivity between local centres and business precincts, including the Flinders precinct and the Tonsley Innovation Precinct, by providing improved customer access through a more convenient public transport system; and
- improve safety and provide quality public transport options in the local area.

The following key issues identified during the initial planning phase have influenced the preliminary design:

- **Design integration with Darlington Upgrade Project:** the Flinders Link Project will be managed and coordinated as part of the associated works by DPTI's Darlington Upgrade Project team. The design integration of the railway infrastructure with the Darlington Upgrade Project and the Flinders precinct Master Plan is an important outcome for both projects, particularly the complementary urban design of the new Flinders Railway Station, and the rail, bus and shared pedestrian/cycle linkages adjacent to the rail corridor.
- **Level crossing safety:** level crossings present safety risks due to the potential for collisions between trains, vehicles, pedestrians and cyclists. The overpass design negates the need for level crossings.



+ CONNECT THE FLINDERS
PRECINCT TO THE METROPOLITAN
RAIL NETWORK + IMPROVE
THE PASSENGER ACCESS AND
EXPERIENCE

+ FACILITATE AN INTERCHANGE
BETWEEN BUS + RAIL (BY
CONNECTING THE FLINDERS
STATION WITH THE FMC BUS
INTERCHANGE)

+ ENHANCE CONNECTIVITY
BETWEEN FLINDERS, LAFFERS
AND TONSLEY PRECINCTS

+ AN ENABLING PROJECT FOR
THE CONTINUED DEVELOPMENT
OF FLINDERS, LAFFERS AND
TONSLEY PRECINCTS

+ A DISTINCT IDENTITY THAT
CELEBRATES THE STRUCTURAL
FORM AND CHARACTER

KEY PROJECT ATTRIBUTES

1.3 PROJECT STATUS

A concept design has been developed, and approval under Section 49 of the Development Act 1993 - Crown Development and Public Infrastructure for the Flinders Link Project is being sought.

The Flinders Link Project has been progressing through a planning and design phase.

It is proposed that construction works for the Flinders Link Project be undertaken by a private contractor (or contractors). Construction of the rail extension is expected to commence in early 2019 and is estimated to be completed by early 2020.

1.4 DEFINING DEVELOPMENT

The Flinders Link Project is Crown Development as defined by Section 49 of the Development Act 1993. Under the Regulations to the Development Act, there are schedules that set out those elements of rail infrastructure and related acts and activities that are not development.

Further, the provisions of the Rail Commissioners Act in Section 9(3) states that The Development Act does not apply to land acquired under the Rail Commissioners Act.

Accordingly, the first consideration in determining that which requires approval, is to review the tenure of the land affected by the Flinders Link project. Following this analysis, the remaining elements of the works should be examined as to the application of the Development Regulations and the schedules thereto.

The plan titled **Subject Land** in **Section 1.6** depicts the land relevant to the proposal including Rail Commissioners Land, on which the Development Act does not apply.

The Development Regulations in its schedules provide guidance as to those aspects of rail infrastructure that is Not Development and which therefore does not need approval. An assessment has been made of the works and the application of the schedules to those works. A summary may be found in the table in **Volume 1 Attachment 1 Status of Works as Development**.

In summary, the following works require Development Approval:

- Rail Track extension greater than 300 metres and viaduct supports (except on railways land);
- Toilet block, bike enclosure, shelter, driver amenity structures
- Stair and elevated access to Flinders Drive from viaduct structure;

- Elevated pedestrian walkway to Flinders Medical Centre;
- Removal of regulated and significant trees (not on Commissioner of Highways land or road under Commissioner of Highways care and control);
- Earthworks associated with the filling or modification of the land (not essential to railway operations); and
- Landscaping (which form public realm works for Flinders Station).

The following works do not require Development Approval:

- Rail track and bridge supports (on railways land) – i.e. replacing Tonsley line to Sturt Road);
- Substructure/Superstructure works associated with the South Road/Darlington road project;
- Demolition of existing Tonsley Station;
- Earthworks essential and ancillary to railway works;
- Stairs/Lift connection to new Station from railways land;
- Electrical, signalling, mechanical other service infrastructure;
- Drainage, underground services and cabling;
- Signage and advertising displays;
- Fencing to 2.1 metres; and
- Retaining walls <1.0 metre.

For completeness, the whole of the Flinders Link Project has been incorporated into this report to provide a comprehensive overview and context for those aspects requiring Development Approval.

1.5 PLANNING APPLICATION OVERVIEW

The Flinders Link Project is Crown Development as defined by Section 49 of the Development Act 1993. The provisions of the Rail Commissioners Act also influences the works requiring approval under the Development Act.

The application report comprises two volumes:

- Volume 1 – This Planning Report and relevant attachments; and
- Volume 2 – Attachments including technical reports.

As identified, the components of the Flinders Link Project identified below require Planning Approval and are included in this development application for consideration by the State Commission Assessment Panel (SCAP):

- Rail Track extension greater than 300 metres (except on railways land);
- Stair and elevated access to Flinders Drive from viaduct structure;
- Elevated pedestrian walkway to Flinders Medical Centre;
- Removal of regulated and significant trees (not on Comm. Highways land or road under care & control);
- Earthworks associated with the filling or modification of the land (not essential to railway operations); and
- Landscaping (which form public realm works for Flinders Station).

A copy of the Flinders Link Project Urban Design Overview drawings is included in this **Volume 1** as **Attachment 2**. Those graphics have been used throughout this Planning report and include the following titled sheets:

1. Flinders Link Urban Design Overview.
2. Project Locality.
3. Key Project Attributes.
4. Concept Diagram.
5. Concept Diagram – Reference images.
6. Connectivity Map.
7. Adelaide Metro Map.
8. Viaduct 3D.
9. Viaduct.
10. Western Ramp.
11. Western Ramp 3D.
12. Stair and Lift West 3D.
13. Stair and Lift West.
14. Stair and Lift East 3D.
15. Stair and Lift East.
16. Batter Vegetation.
17. Planting Palette.
18. Flinders Station.
19. Flinders Station.
20. Flinders Station.
21. Elevated Walkway 3D.
22. Elevated Walkway.

1.6 SUBJECT LAND

The Flinders Link Project area extends into three suburbs within the City of Marion and the City of Mitcham, with Main South Road being the border between the two Councils. North of Sturt Road is Clovelly Park to the east of the rail line, and Mitchell Park to the west of the rail line. South of Sturt Road is Bedford Park

The subject land is depicted on **Land Tenure Plan** on page 7 this plan provides broad local context.

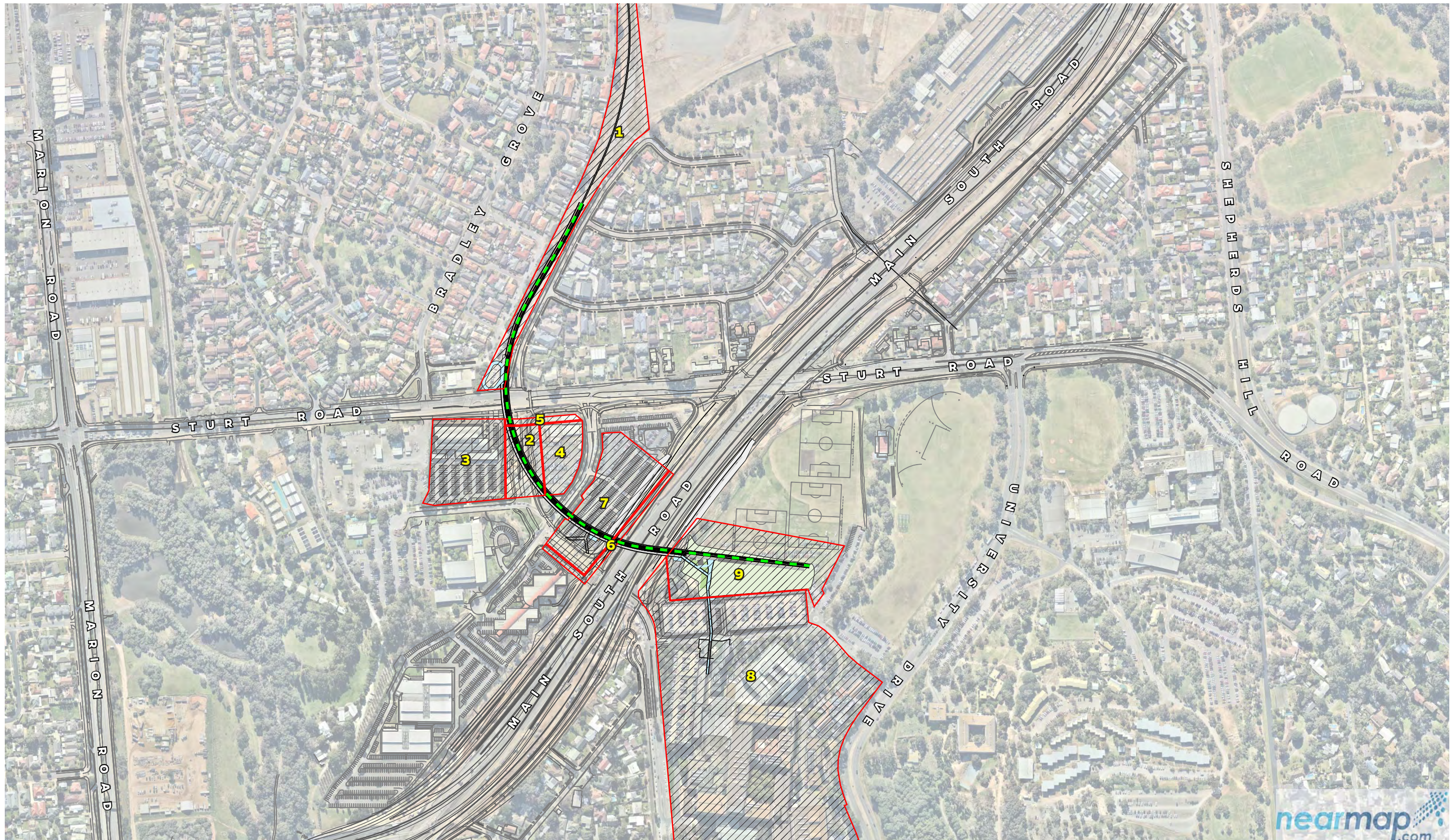
The total length of the rail extension is 650 metres. The site compound for the works will be located within the affected parcels D40215 A201 and D40215 A203. Allotment 71 has recently been created to receive the Flinders Station and associated works whilst only a small portion of parcel D71485 A4 is affected by an elevated walkway to create one of the links between the Flinders precinct and the new station. The **Land Tenure Plan** does not identify the road reserves as separate items or land parcels. The roads over which the viaduct traverses and any structures supporting the viaduct form part of the Flinders Link Project.


Copies of the Certificates of Titles for the subject land are included as part of this application in **Volume 2 Attachment 1**.

There are several easements over parts of the subject land for electrical supply purposes. Consultation will occur with SA Power Networks and the Flinders Link Project will be built in accordance with these easements.

The subject land is formally identified in the table below.

OWNER	COUNCIL	STREET ADDRESS	PLAN PARCEL	AREA NAMED	HUNDRED	TITLE REFERENCE
Minister for Transport & Infrastructure	Marion	Sturt Road, Mitchell Park	D113164 A1	Mitchell Park	Adelaide	CT6180/973
Commissioner of Highways	Marion	Laffer Drive, Bedford Park	D40215 A201	Bedford Park	Adelaide	CT5215/474
Minister for Emergency Services	Marion	Sturt Road, Bedford Park	D40215A202	Bedford Park	Adelaide	CT5215/475
Commissioner of Highways	Marion	Laffer Drive, Bedford Park	D40215 A203	Bedford Park	Adelaide	CT5215/476
Commissioner of Highways	Marion	Laffer Drive, Bedford Park	D40215 A204	Bedford Park	Adelaide	CT5215/477
Commissioner of Highways	Marion	Sturt Road, Bedford Park	D55884 A1001	Bedford Park	Adelaide	CT5835/144
Commissioner of Highways	Marion	3 Laffer Drive, Bedford Park	D28859 A66	Bedford Park	Adelaide	CT5201/547
Minister for Health	Mitcham	Flinders Drive, Bedford Park	D71485 A4	Bedford Park	Noarlunga	CT6148/67
The Crown	Mitcham	Sturt Road, Bedford Park	D117100 A71	Bedford Park	Noarlunga	CR6204/829

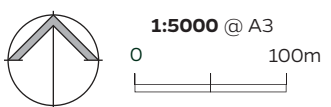


	Proposed Rail Link		
1	CT6180/973	D113164 A1	Minister for Transport & Infrastructure
2	CT5215/474	D40215 A201	Commissioner of Highways
3	CT5215/475	D40215 A202	Minister for Emergency Services
4	CT5215/476	D40215 A203	Commissioner of Highways

5	CT5215/477	D40215 A204	Commissioner of Highways
6	CT5835/144	D55884 A1001	Commissioner of Highways
7	CT5201/547	D28859 A66	Commissioner of Highways
8	CT6148/67	D71485 A4	Minister for Health
9	CR6204/829	D117100 A71	The Crown

Land Tenure
FLINDERS LINK

for The Department of Planning, Transport and Infrastructure



1.7 LAND USE AND LOCALITY

The primary existing land uses are separated by the Tonsley rail line, Sturt Road, Main South Road and Flinders Drive. The Tonsley rail line and corridor are a dominant feature in this locality. **Project Locality** on page 9 depicts the development in the locality of the rail extension.

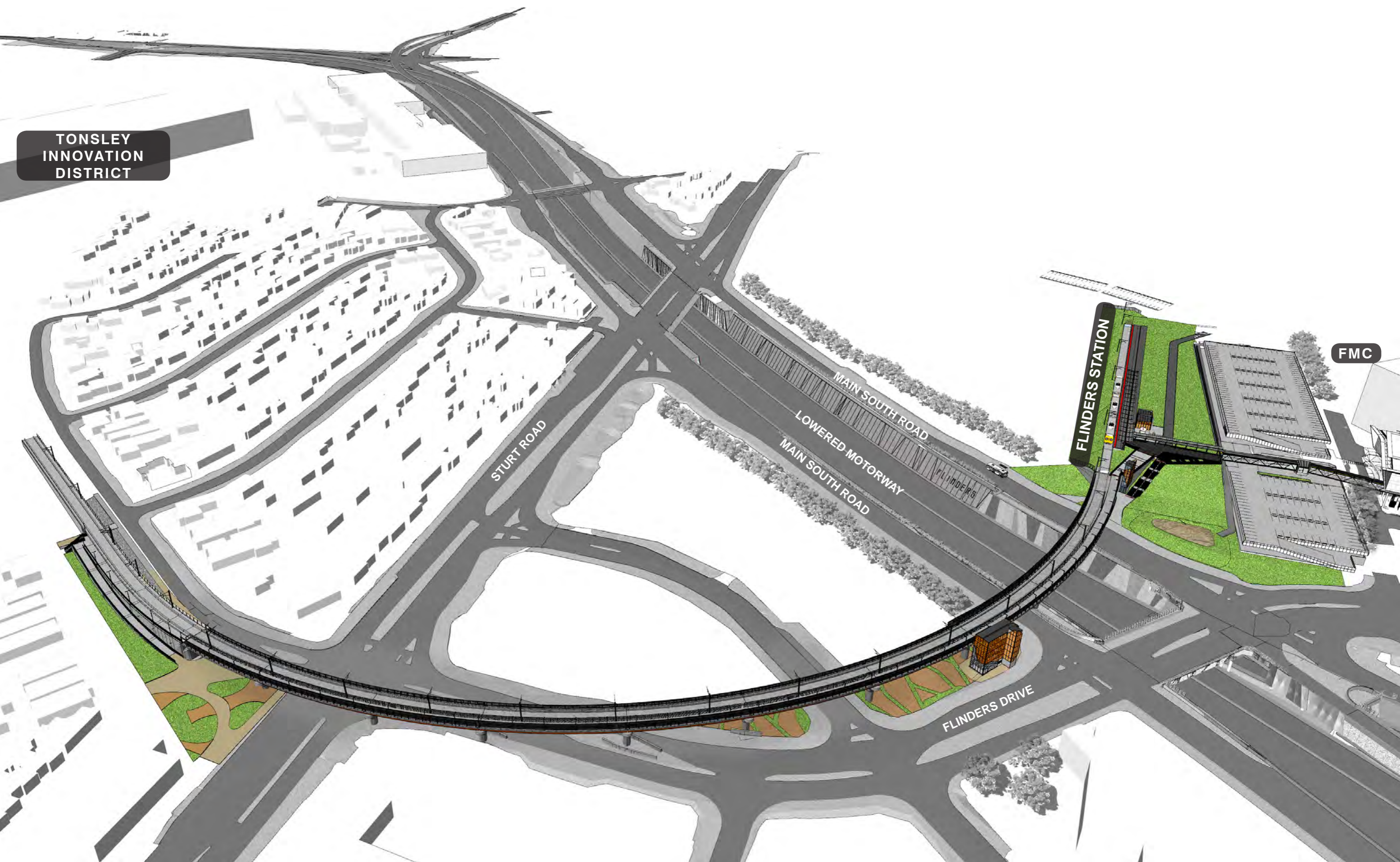
Land use either side of the rail line in its northern extremity is predominately low-medium density, detached dwellings. The area is within a Residential Zone and further north of the Flinders Link Project area is the Tonsley Redevelopment site zoned Regional Activity. There is a small car park at the end of the current rail line adjacent to Sturt Road near the existing station and on-street parking used informally as park and ride facilities. Existing trees vary in size along the rail line.

The residential community to the east of the rail line is a low to medium density mix of new and old housing. There is a much newer, medium density residential community to the west of the rail line. South of Sturt Road is commonly referred to as the Sturt Triangle or Laffers Triangle. It contains large areas of vacant land, as well as car parking, commercial buildings, a child care centre, police station, transport depot, caravan park and open space. South of Main South Road there is a small group of shops, a low-density residential community and the Flinders precinct, with Flinders Medical Centre, Flinders Private Hospital and Flinders University.

The area between Sturt Road and Main South Road has been recently re zoned Regional Activity and comprises a variety of uses. On the western side of the Flinders Link Project site is the Sturt Police Station and commercial buildings. The Flinders Link Project touches on the eastern most part of the Police facilities by virtue of the elevated viaduct above the Police site. In the Flinders Link Project area and to the east of the Flinders Link Project area, the land has been more recently used for car parking.

Zoning on the southern side of Main South Road is Regional Activity and Residential (Foothills). In the Flinders Link Project area and to the south of the Flinders Link Project area is Flinders Medical Centre, Flinders Private Hospital and Flinders University. The Flinders Link Project area will occupy land that is currently vacant or used for occasional car parking albeit that the area is an open grassed space.

TONSLEY
INNOVATION
DISTRICT



FMC

PROJECT LOCALITY

2

PROJECT OBJECTIVES & STRATEGIC CONTEXT

2.0 PROJECT OBJECTIVES AND STRATEGIC CONTEXT

This section discusses the importance of extending the Tonsley rail line in this location and the key issues affecting the current access limitations.

2.1 PROJECT OBJECTIVES

The Flinders Link Project is expected to contribute toward the following overarching objectives of the public transport strategy in Adelaide's south:

Strategic/Planning Objectives and Benefits

- To support economic activity and enhance connectivity between local centres and business precincts, including the Flinders precinct and the Tonsley Innovation Precinct, by providing improved customer access through a more convenient public transport system.
- To improve accessibility for staff, students and visitors to key destinations within the Darlington precinct, including Flinders University, Flinders Medical Centre, Flinders Private Hospital and the Tonsley development, offering a choice of viable travel modes.
- To deliver a transit-connected metropolitan region as envisaged by the 30 Year Plan for Greater Adelaide (2014) and subsequently respond to the plan's projections for significant population growth through infill in the southern public transport catchment area, with a focus of this growth in transit corridors and re-generated areas.
- To enhance local amenity and improving access from the southern suburbs to the CBD.
- To provide a cost-effective strategy.
- To provide environmental benefits associated with a reduction in private vehicle travel.

Transport Objectives and Benefits

- To bring about a mode shift to public transport and allow for further increases in public transport mode share through more frequent future services on the Tonsley/Flinders rail line.
- To increase patronage on the Tonsley rail corridor (i.e. make better use of existing rail infrastructure).
- To reduce congestion on the road network, thereby helping achieve bus reliability and road freight transport outcomes.
- To improve general public transport accessibility and amenity in the Darlington precinct.
- To improve safety and provide quality public transport options in the local area.
- To improve transport efficiency through the area.
- To improve pedestrian and cycling access and safety, making sustainable and active transport options a more attractive mode choice.

2.2 CURRENT ISSUES

The current rail line stops short of the Flinders precinct, where the Flinders University, Flinders Medical Centre and Flinders Private Hospital attract large numbers of staff, students, patients and members of the public each day. Currently, the Tonsley station has no formal interchange between bus and rail and no formal legible pedestrian connectivity to the Flinders precinct. Passengers who want to travel from the rail network to the Flinders Medical Centre are required to walk over 650 metres from Tonsley Station through Laffer's crossing, Sturt Road and Main South Road. Several areas of conflict with at grade crossings are a deterrent to the use of public transport.

2.3 NEED FOR THE FLINDERS LINK PROJECT

The Flinders Link project is located within the Darlington precinct, approximately 12 kilometres south of the City of Adelaide. The broader Darlington precinct includes the Flinders precinct (incorporating Flinders University, Flinders Medical Centre and Flinders Private Hospital) and the Tonsley Innovation Precinct (incorporating the Tonsley development site). As a key destination and origin transport node within Adelaide, the Darlington precinct is the site of significant future road and public transport upgrade projects; this includes the Darlington Upgrade Project and the Flinders Link Project. The **Adelaide Metro Map** on page 12 identifies the new Flinders Station in the context of the metropolitan rail network.

The Tonsley rail line is a 3.1 kilometre spur line from the Seaford rail line servicing three stations, Mitchell Park, Clovelly Park (Tonsley Development) and Tonsley (Sturt Road). The line was originally constructed in the 1960s to service Mitsubishi. The line was electrified and upgraded during the Rail Revitalisation Works in 2014 including track and station upgrades to enable improved services to the Tonsley Innovation Precinct.

Train services on the Tonsley rail line experience low patronage and are limited to approximately 30 minute frequencies. Bus services are the alternative public transport option in the area, with an express bus service to the city varying from 32-40 minutes travel time. There is no dominant node for commuters to readily access services, with a lack of a formal interchange and pedestrian connectivity into the precinct.

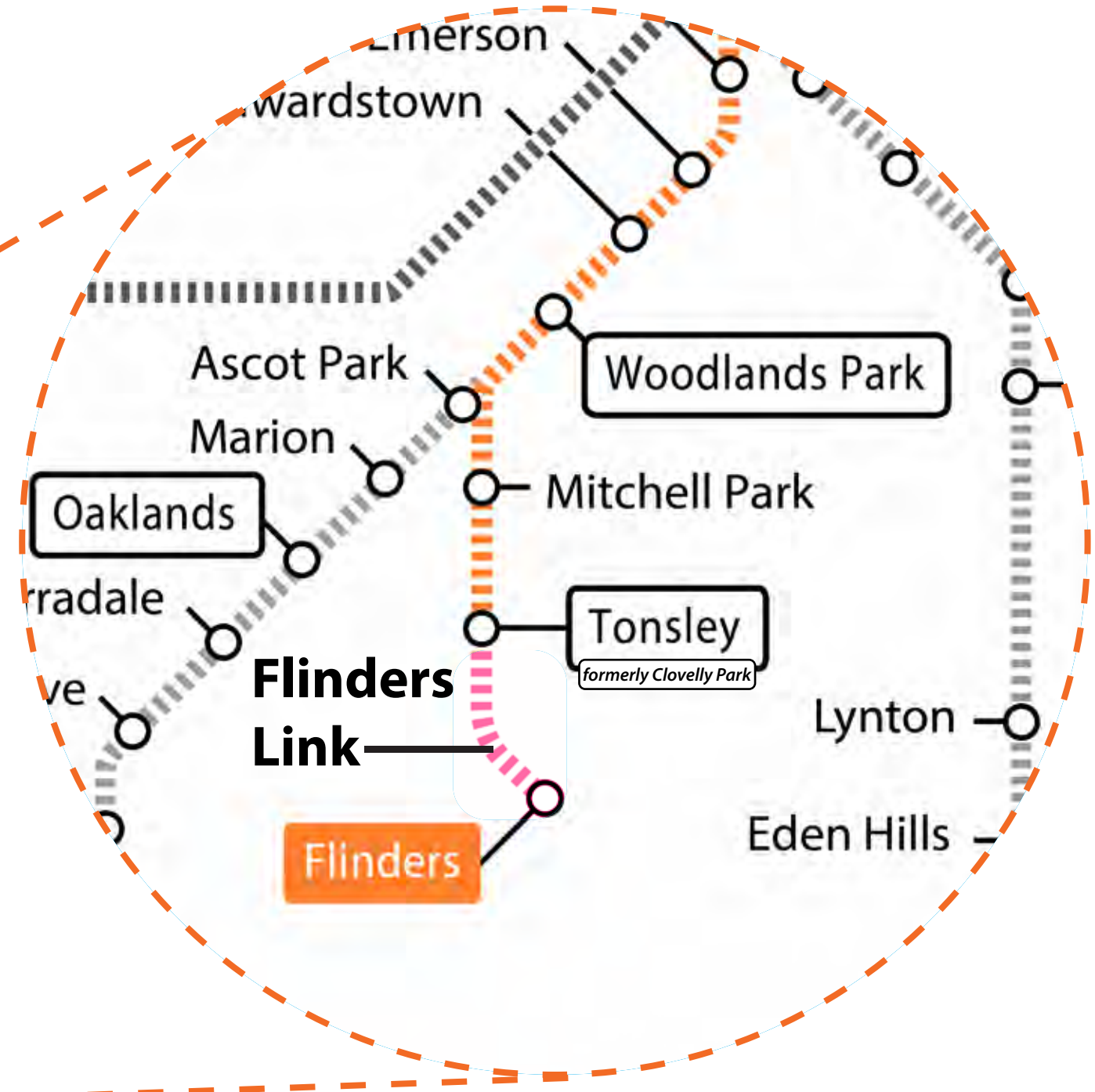
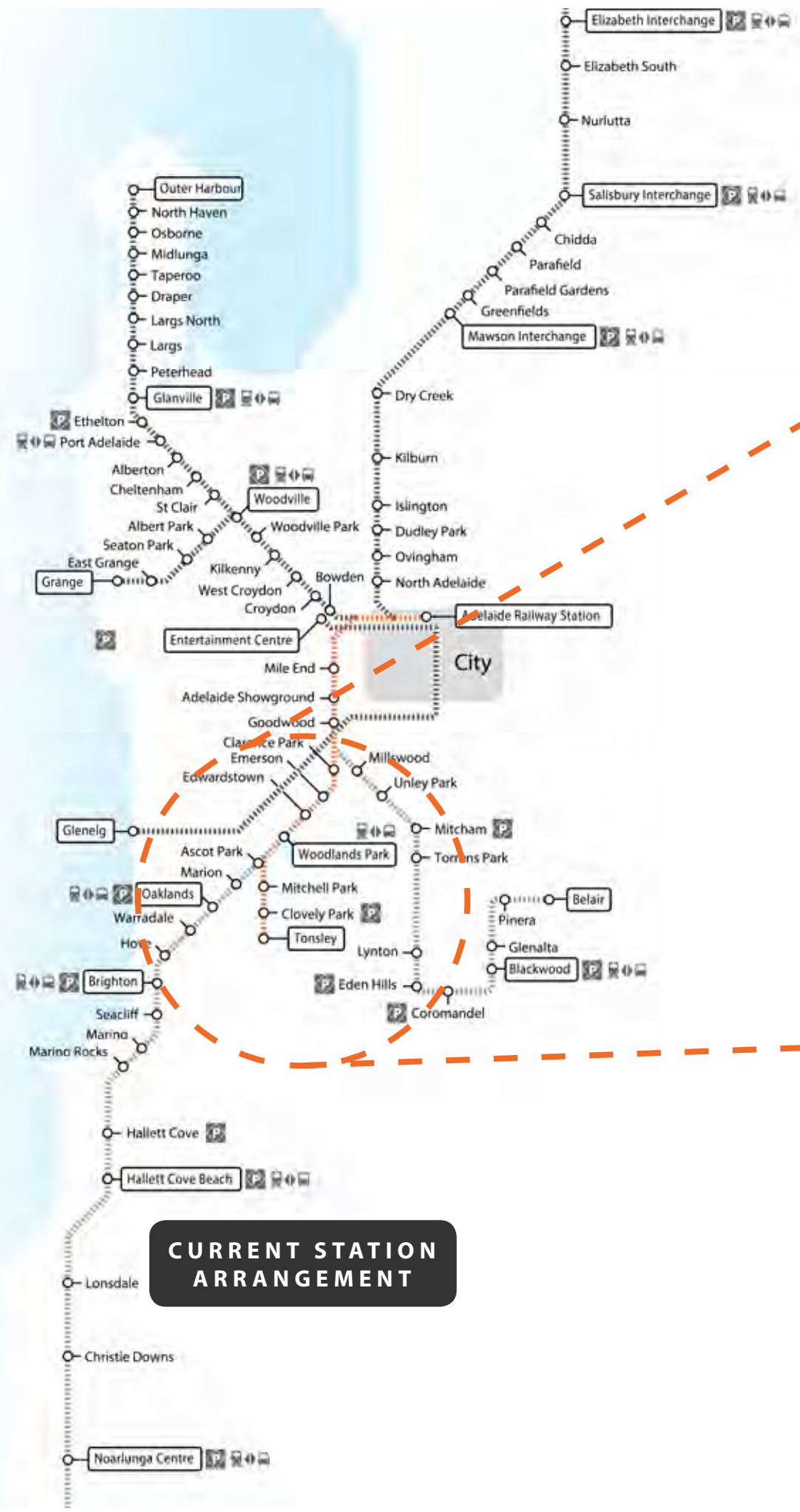
The graphic on page 13 titled **Connectivity Map** shows the links and connections made in this area that results from the Flinders Link project.

The current pedestrian and cycle access to public transport facilities in the Darlington precinct involves crossing major road corridors and using paths that are unlit. In addition, some crossings are uncontrolled, this does not encourage people to use public transport to access the residential, commercial, employment and education centres within the Flinders precinct.

The demand for efficient and accessible transport to the Flinders precinct and good connections between the Flinders precinct and Tonsley Innovation Precinct will continue to grow, and will become an increasingly important in the future, as development in these precincts is ongoing. The following initiatives are currently underway and highlight that the Darlington precinct is, and will continue to be, a key public transport origin and destination node within Greater Adelaide:




- The Transforming Health Plan - the State Government is investing \$170.5 million to improve and upgrade facilities at Flinders Medical Centre which will attract more people to the centre.
- Continued development at Tonsley Innovation Precinct - in 2014 approximately 10 000 TAFE students and staff were relocated here. Over the next 10+ years this precinct will experience approximately 6,000 Flinders University students and staff move to the site. This impacts the numbers of people accessing the area and also leads to significantly increased movements between the Tonsley and Flinders precincts.
- High density housing and an urban development zone in the Tonsley Innovation Precinct - where up to 6,300 people are projected to be employed and 1,000 dwellings constructed by 2026.
- The Main South Road/Darlington Area Development Plan Amendment (DPA) - Darlington precinct has recently been authorised to facilitate mixed-use development, higher density development and retail development.

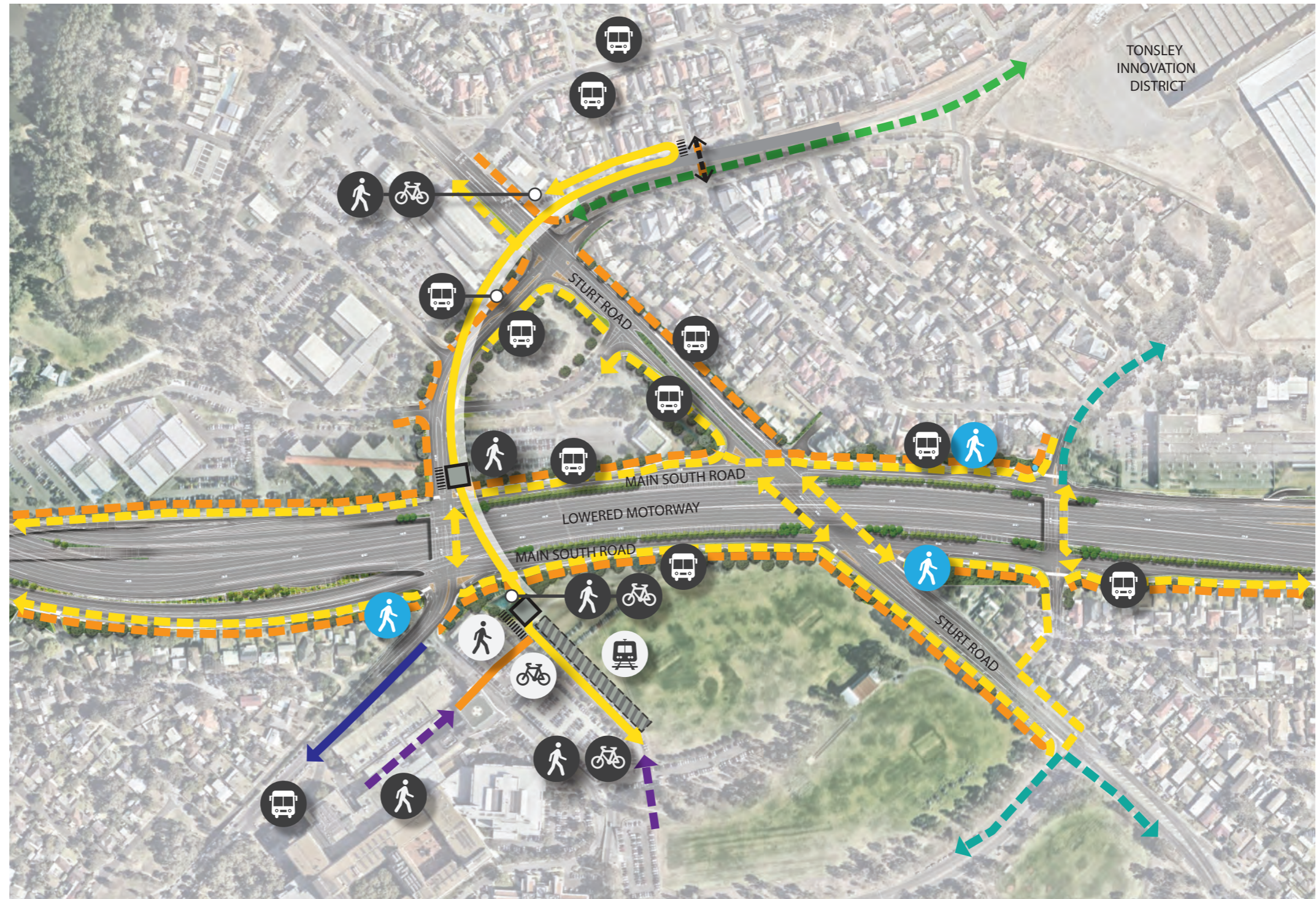
The Flinders Link Project will provide a much-needed rail extension, with an integrated shared pedestrian/cycling path, that will improve public transport, cycling and walking connectivity between the Flinders precinct and the Tonsley Innovation Precinct. This will allow students, employees and visitors to travel to the Flinders precinct by rail. The siting of the proposed rail station adjacent to the university sports field will complement the Transforming Health Redevelopment at the Flinders Medical Centre and Flinders University's vision for an urban village (residential and retail) development in the immediate locality of the station. Further it will enhance opportunities for integrated development of the Flinders University.



ADELAIDE METRO MAP

LEGEND

-  FOOTPATH
-  SHARED PATH
-  EXISTING FOOTPATH
-  ON STREET SHARED PATH - BY OTHERS
-  GREEN WAY - BY OTHERS
-  FOOTPATH - BY OTHERS
-  SHARED PATH - BY OTHERS
-  FUTURE PRECINCT LINKS - BY OTHERS
-  BICYCLE LINKAGE TO FLINDERS STATION/VIADUCT
-  PEDESTRIAN LINKAGE TO FLINDERS STATION/VIADUCT
-  PEDESTRIAN / WAYFINDING NODE (DARLINGTON UPGRADE PROJECT)
-  BICYCLE FACILITIES
-  PEDESTRIAN / WAYFINDING NODE
-  BUS STOP
-  RAIL PLATFORM
-  TRAIN
-  LIFT CORE
-  STAIRS
-  PEDESTRIAN UNDERPASS LINK



2.4 STRATEGIC CONTEXT

The strategic documents that guide decision making in South Australia sit under South Australia's Strategic Plan, the overarching plan which guides the development and implementation of other planning strategies and policy initiatives including those specifically for land use and transport:

- Planning Strategy for South Australia (incorporating The 30-year plan for greater Adelaide and the 2016 Update http://www.dpti.sa.gov.au/planning/30_year_plan and <https://livingadelaide.sa.gov.au/>).
- Integrated transport and land use plan (www.transportplan.sa.gov.au).
- Safety in Numbers, A Cycling Strategy for South Australia (https://www.sa.gov.au/__data/assets/pdf_file/0018/20709/cycling_strategy.pdf).

These documents, along with Tackling Climate Change: South Australia's greenhouse strategy, (http://www.sa.gov.au/__data/assets/pdf_file/0005/19382/SA_Greenhouse_Strategy_2007.pdf) support the Seven Strategic Priorities identified by the South Australian Government to guide all other government initiatives to improve the lives of South Australians and ensure the future prosperity of the state:

- creating a vibrant city;
- safe communities, healthy neighbourhoods;
- an affordable place to live;
- realising the benefits of the mining boom for all;
- every chance for every child;
- growing advanced manufacturing; and
- premium food and wine from our clean environment.

Government Initiatives

2.4.1 NORTH-SOUTH CORRIDOR

The South Australian and Australian Governments are working together to develop a non-stop North-South Corridor for Adelaide. On 13 May 2014 an investment of \$620 million to upgrade Main South Road between the Ayliffes Road and Southern Expressway, as part of a shared plan to deliver a fully upgraded North-South Corridor, was announced. This project is known as the Darlington Upgrade Project.

Although it will be a separate project, the Flinders Link project forms part of the associated works for the Darlington Upgrade Project and all works will be coordinated and integrated to maximise opportunities.

2.4.2 BIKEDIRECT NETWORK

Bike direct is a network of bicycle routes across the Adelaide metropolitan area that was developed to encourage cycling. The *Bike direct* maps provide options for people with different needs and abilities and show main roads, bicycle lanes, local streets and off-road paths.

Based upon the *Bike direct* network, DPTI provides a www.cycleinstead.com.au journey planner for people cycling. This interactive tool helps cyclists plan a cycling trip using a variety of options that take into consideration fitness and confidence levels, road conditions and speed of travel.

2.5 TIMING OF WORKS

The major works contract for the Darlington Upgrade Project was awarded on 20 December 2015 to Gateway South. Major construction works commenced early 2016, with the Darlington Upgrade Project scheduled for completion by the end of 2019.

Construction of the rail extension is expected to commence in early 2019 and is estimated for completion by early 2020. Timing is subject to the detailed construction program that is currently being developed during the procurement process.



3

**THE PROPOSED
DEVELOPMENT**

3.0 THE PROPOSED DEVELOPMENT

The proposed development is for the 650 metre extension of rail track, the creation of a rail bridge (approximately 520 metres long and 3.0 metres wide and an associated shared path) over Sturt Road and Main South Road and a new train station to allow public transport users to gain access to the Flinders precinct.

This section of the report describes the elements of the Flinders Link Project which are subject to approval pursuant to Section 49 of the Development Act 1993.

3.1 KEY ELEMENTS OF THE PROPOSAL FOR DEVELOPMENT APPROVAL

The elements requiring development approval identified in **Volume 1 Attachments 1 and 2** and incorporated in the diagrams in **Volume 2 Attachment 2** are:

- rail Track extension in excess of 300 metres (except on railways land);
- toilet block, bike enclosure, driver amenity structures;
- stair and vertical access to Flinders Drive from viaduct structure;
- elevated pedestrian walkway to Flinders Medical Centre;
- removal of regulated and significant trees (not on Comm. Highways land or road under care & control);
- earthworks associated with the filling or modification of the land (not essential to railway operations); and
- landscaping (which form public realm works for Flinders Station).

3.2 URBAN DESIGN

3.2.1 OVERVIEW

Flinders Link will provide an integrated and significantly improved transport outcome for the Flinders, and surrounding precincts. The urban design strategy provides articulation of structural form and legibility of connection of transport infrastructure for the public. This is provided in an integrated style and materiality.

Reference urban design techniques to be integrated into the proposed development are described on the following pages titled:

- Articulation of Form
- Ecologically Sustainable Development
- Crime Prevention Through Environmental Design (CPTED)
- Accessibility
- Landscaping
- Wayfinding and Signage
- Materials

3.2.2 ARTICULATION OF FORM

The elevated structure is defined as a single elegant structural ribbon form that spans between abutments. This form is depicted on page 18 **Concept Diagram**.

In response to the articulation of the viaduct as a structural ribbon, the fencing/throw screen along the pathway was further developed. The random pattern of horizontal orange structural members between the stanchions represents “digital information”, which serves as an analogy for the use of the structure for “plugging in” to the innovation precincts of Flinders and Tonsley and “plugging in” to the greater metropolitan area.

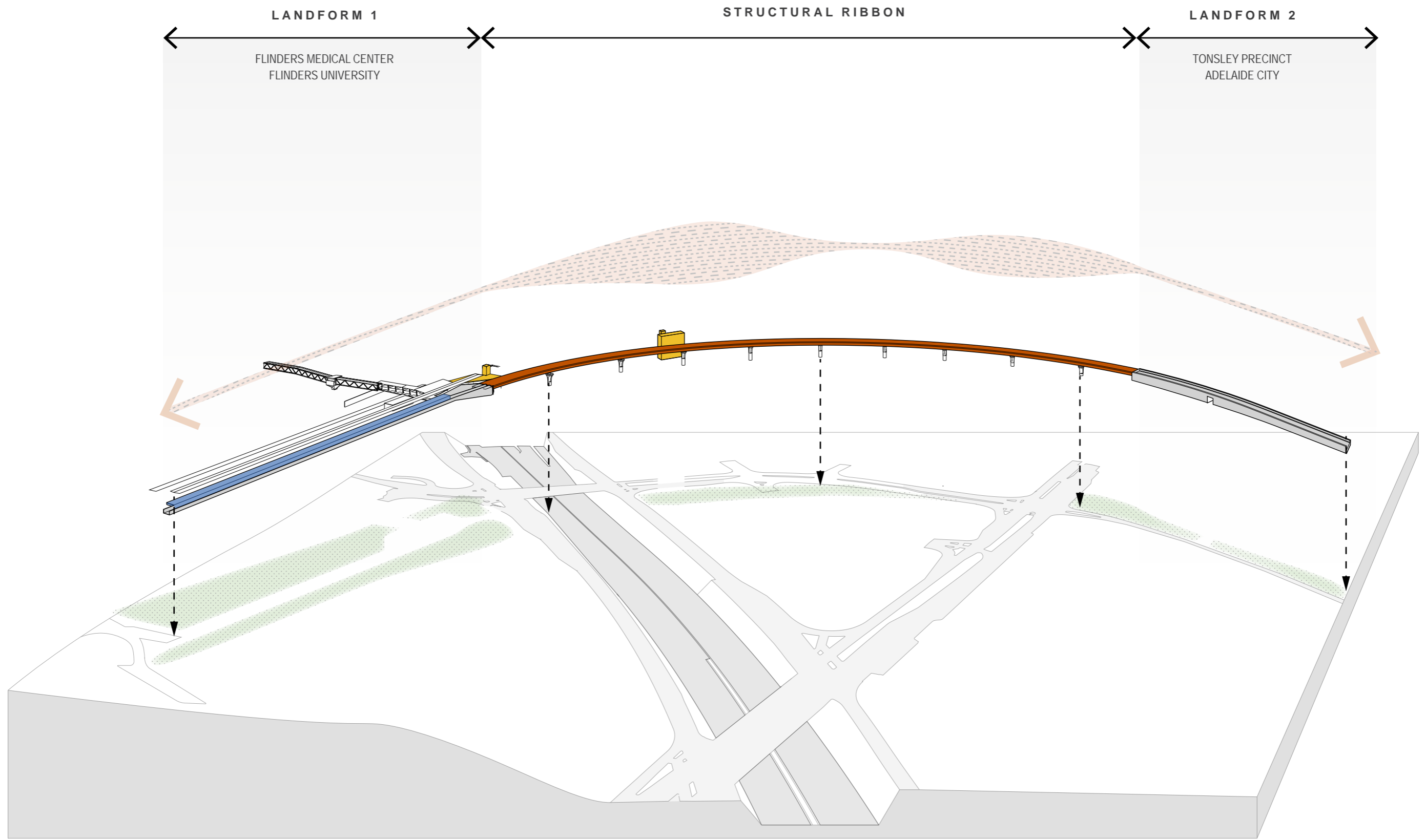
The proposed stanchion design integrates lighting and CCTV requirements. In order to maintain a consistent fixing point for each stanchion and provide a regular set out arrangement, stanchions are centred on bridge sections. At each bridge section there is a need to accommodate significant movement and as such, the throw screen panel has a different method of fixing. A double panel has been created to achieve this as well as housing and concealing essential services equipment. The accompanying diagram shows the extent of the throw screens and the stanchion layout.

The eastern stair core responds to the site and the “desire lines” formed between the bus stop on Main South Road and the station plaza. During development of the design concept for the lift and stair cladding, a more distinct and formal expression was required to tie in with the language of the Flinders Link Project. As a result, the lift and stair cladding features triangular shaped panels which wrap around the stair and lift core creating a “sculptural form”.

The viaduct as an urban marker has been resolved by the use of bold colour to tie the structure together visually thus creating a ribbon form over the major arterials and resting at each end. The colour is entirely consistent with the Seaford/Tonsley Line wayfinding colour code.

Barrier and screen elements are lightweight and transparent to maximise views out and increase legibility except adjacent the Sturt Police Station where for security reasons observation is limited.

Flinders Station will provide a new public transport identity to the Flinders precinct for health and university users, with a platform in a landscaped setting that can integrate with future mixed-use development to enhance placemaking opportunities.



3.2.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Flinders Link is an opportunity to provide an ecologically sustainable outcome including use of recycled and sustainable materials, water sensitive urban Design (WSUD), solar collection, passive design principles, low energy use services and construction management.

3.2.4 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)

The station precinct and shared path connections have been orientated to maximise lines of sight and achieve a high degree of passive surveillance. Pedestrian routes are clear, legible and all screen treatments to the bridge are open and transparent except adjacent the Sturt Police Station where for security reasons observation is limited.

Major structural elements are generally located away from ground level pedestrian paths and connections, and landscape will allow for clear lines of sight.

An appropriate level of lighting will be used to provide a safe and usable area at night, and CCTV coverage of the station precinct and the elevated shared path is to be provided.

A CPTED report is in **Volume 2 Attachment 3**.

3.2.5 ACCESSIBILITY

Flinders Link has been considered in relation to access for all users, with stair, lift and ramp connections provided at areas of level change.

Significant improvements are made as part of this project by reducing the need for conflict and potential conflict arising from “at grade” crossings, thus enhancing accessibility and safety.

Visual treatment of elements will be provided to ensure ease of access and use by mobility and visually impaired users.

The shared path connectivity across the Darlington corridor has enhanced access provisions with the inclusion of lifts servicing both sides of South Road and adjacent bus stops.

3.2.6 LANDSCAPING

Flinders Station and its forecourt is an opportunity to provide a landscaped response to reinforce the existing character, projecting a green identity back to Main South Road.

A landscaped space is proposed on the southern side of the link at Laffers Triangle, adjacent Flinders Drive.

Landscaping at both abutments will soften the bridge landings and provide a local landscaped garden setting.

The landscape concept is provided in **Volume 2 Attachment 4**.

3.2.7 MINIMISING WHOLE OF LIFE COSTS

The selection of appropriate materials and fittings will assist in reducing whole of life costs for the Flinders Link Project.

Robust materials and finishes will reduce wear and tear and maintenance requirements, providing long term usability. Anti-graffiti measures will be employed to reduce vandalism including lighting and CCTV coverage.

All light fittings are to be long life, accessible and provide a high degree of output and value, including provision for feature lighting on key elements.

3.2.8 WAYFINDING AND SIGNAGE.

Appropriate signs and graphics will to be used on the Flinders Station platform and along all pedestrian and cycle routes.

Integration of precinct and statutory signs is to be considered, and signage will contribute to the overall precinct character and identity.

The scheme is presented graphically in the Concept Design Perspectives throughout this report.

3.2.9 MATERIALS

The design materials and language are described in part under the heading Articulation of Form 3.2.2 above and in **Volume 1 Attachment 2, Volume 2 Attachment 5** and **Concept Diagram – References** on page 20.

KEY ELEMENTS

STATION PLATFORM

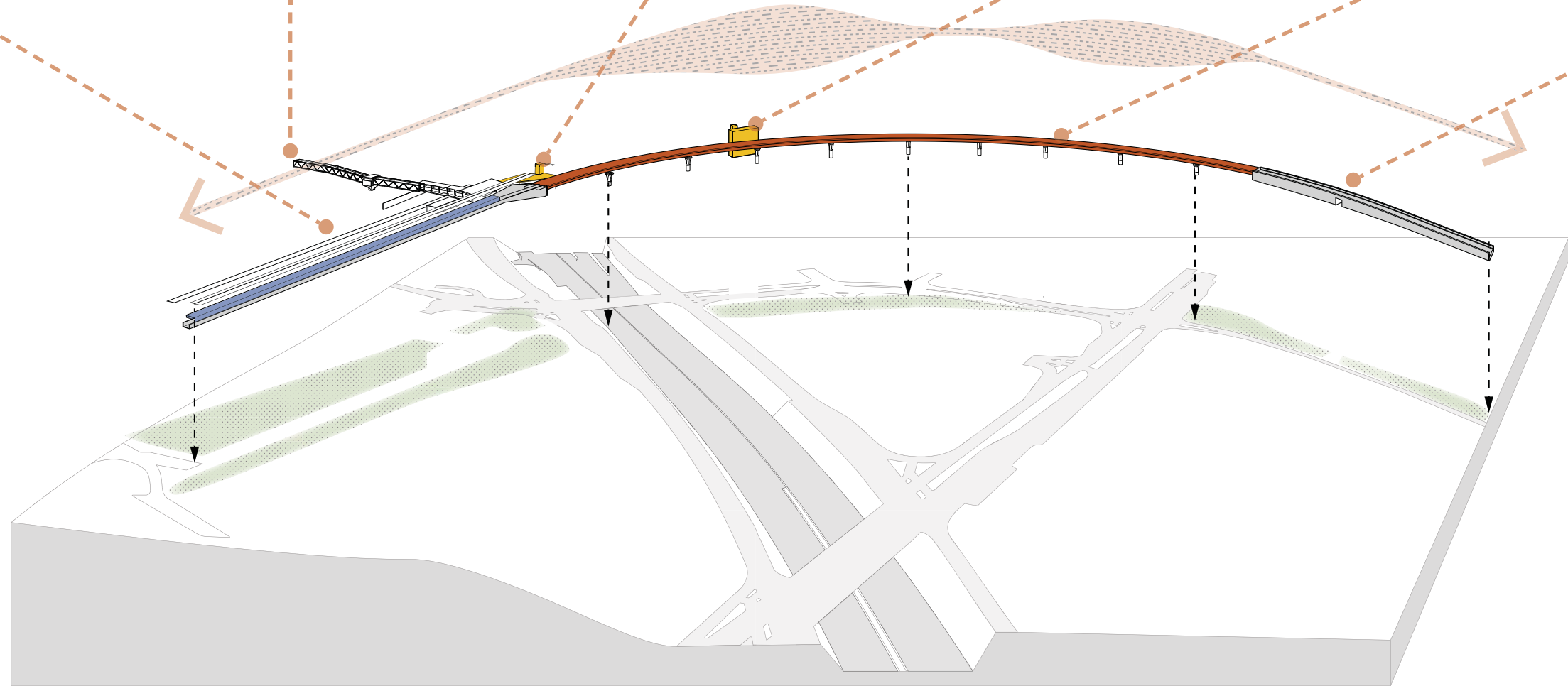
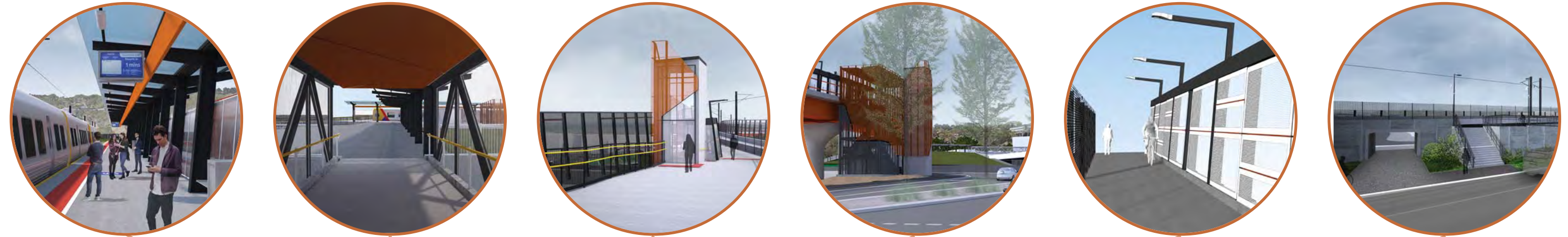
ELEVATED WALKWAY / PLAZA

EAST VIADUCT ACCESS

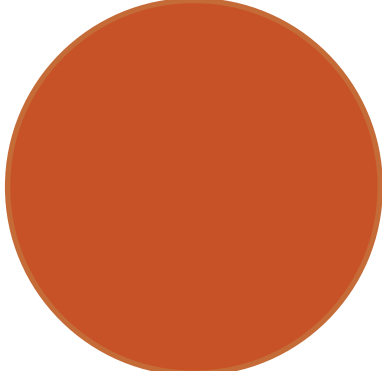
WEST VIADUCT ACCESS

VIADUCT

ON RAMP AND UNDERPASS



REFERENCE IMAGES



CONCEPT DIAGRAM-REFERENCES

3.3 PROJECT DESCRIPTION

3.3.1 650 METRE RAIL TRACK EXTENSION

The single track 1600 BG (broad gauge) is a continuously welded extension to the existing Tonsley line, 520 metres of which is set on a viaduct structure. The northern most end is set on a reinforced concrete panelled soil retaining wall that reduces in height from the Sturt Road extremity as the rail extends to the north. The eastern extremity arrives close to the existing level of the elevated land on the east side of Main South Road. The track finishes at the new Flinders Station which is designed to accommodate two sets of three rail cars or a 6 rail car set.

The 10.20 metre wide viaduct incorporates the extended Tonsley electrified rail line and a shared path for pedestrians and cyclists. The track is electrified and separated by a safety fence from the shared path.

The shared path is edged by a throw screen to provide safety and protection to the public.

Lifts and stairs connect to the viaduct on either side of the new Main South Road facilities to provide vertical connection from Main South Road and pathways in the locality.

The viaduct will be constructed using pre-cast concrete on steel box girders set on concrete piers and abutments. Refer pages 22 & 23.

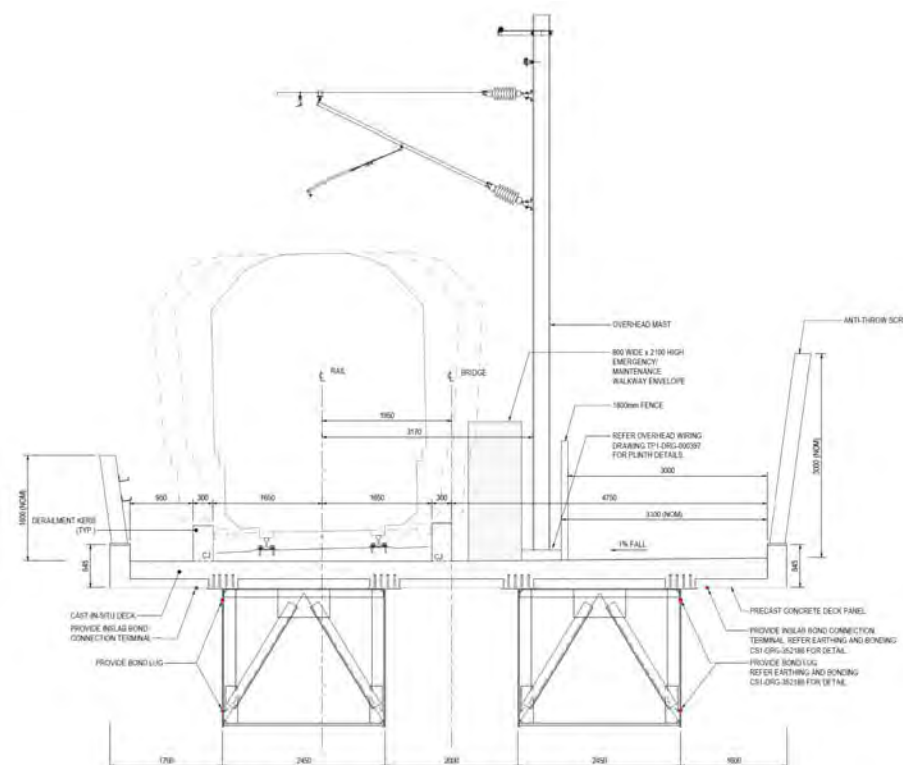
The primary structure to the viaduct screening is a consistent open flange form with non-climbable cladding typically 13 millimetre perforation, to achieve a light contemporary architectural expression. This has been applied on other similar DPTI projects.

The shared path is incorporated with the elevated rail structure providing a grade separated connection between the north of Sturt Road, Laffer's triangle and the Flinders precinct. The elevated structure or viaduct is supported by piers which are afforded protection at ground level to meet all necessary performance criteria. Where possible these piers are set in landscaped areas or separated from traffic by barriers.

The shared path separates the cycle and pedestrian traffic from Sturt Road and Main South Road whilst providing a clear connection to and from the Flinders precinct. This link also affords safe and convenient connection to and from Main South Road via stairways and lift to connect with enhanced bus stops as part of the Darlington upgrade.

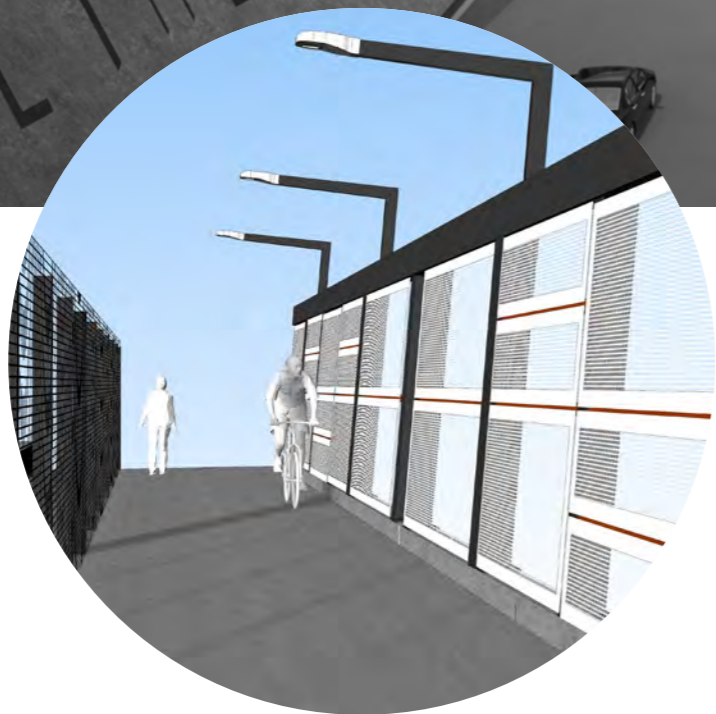
These features significantly enhance the connectivity to the Flinders precinct and transport services in the locality and in so doing improves safety and convenience.

The shared path in its elevated form will incorporate wayfinding signs, safety screens and infrastructure to separate pedestrians and cyclists from the rail infrastructure and to provide barriers on the edges.

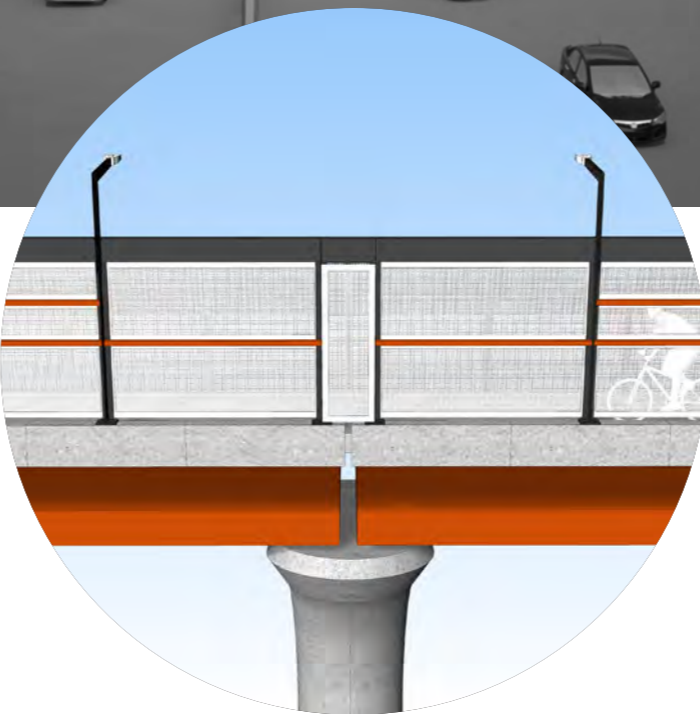




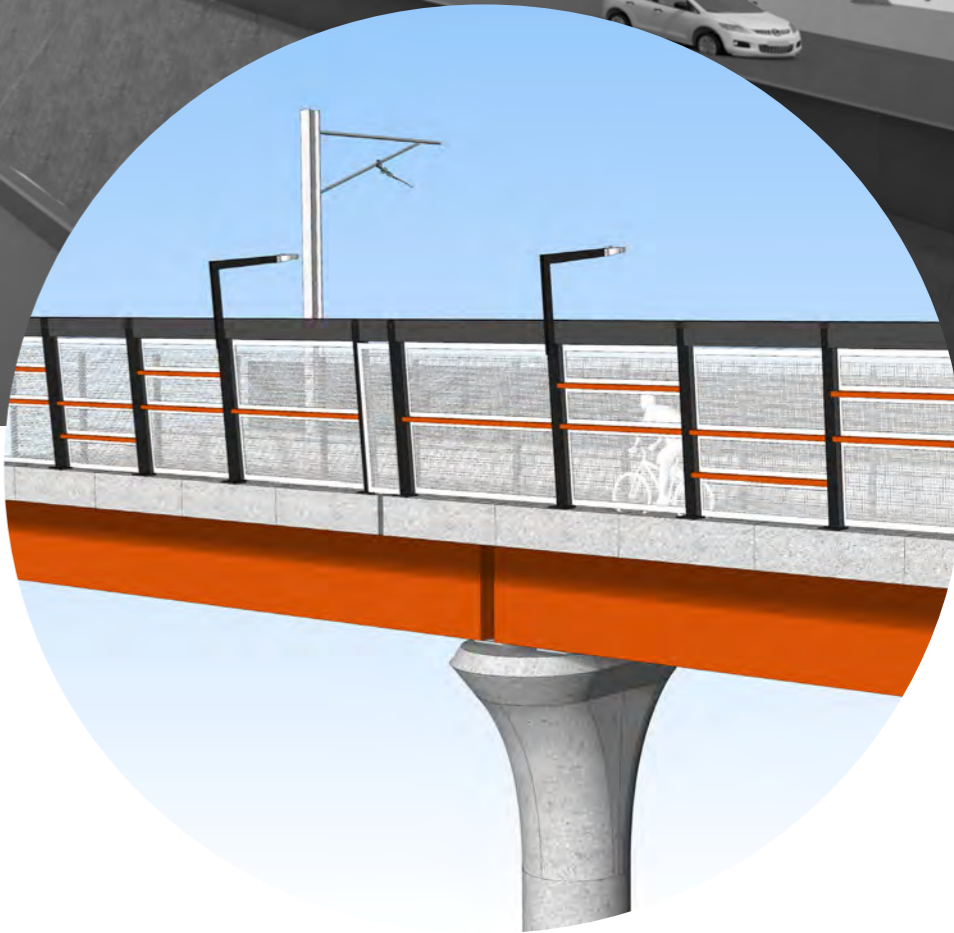
SOUTHBOUND PERSPECTIVE



VIADUCT PERSPECTIVE

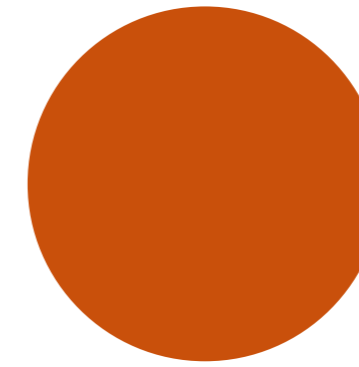
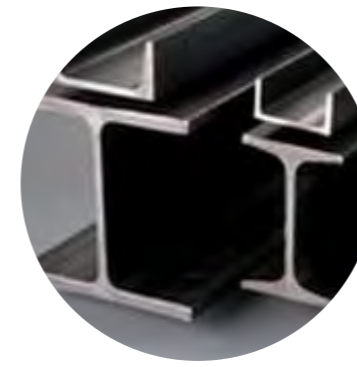
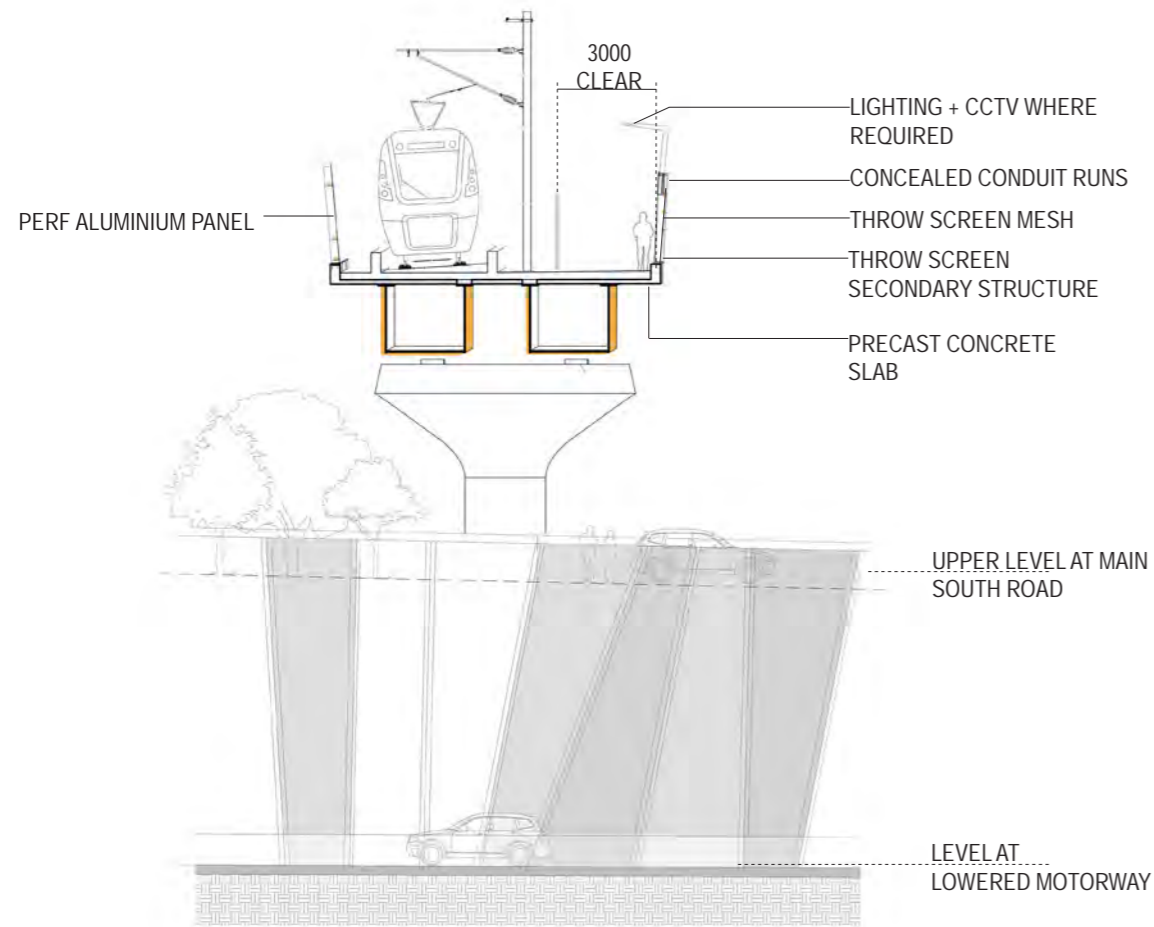


VIADUCT ELEVATION

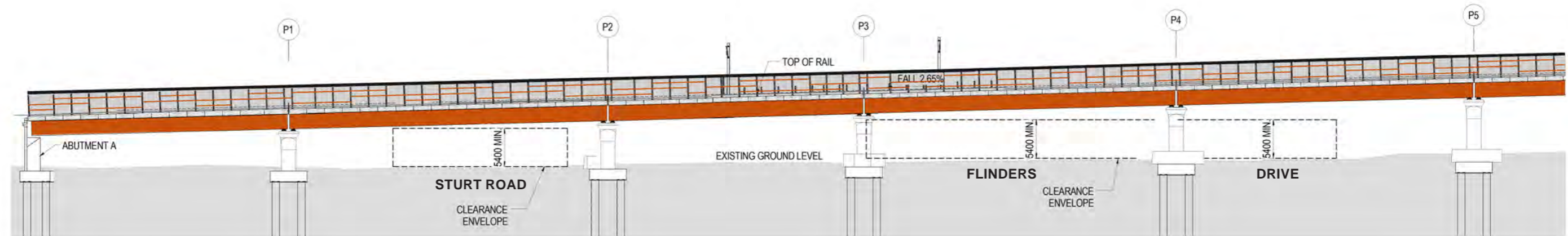


VIADUCT PERSPECTIVE

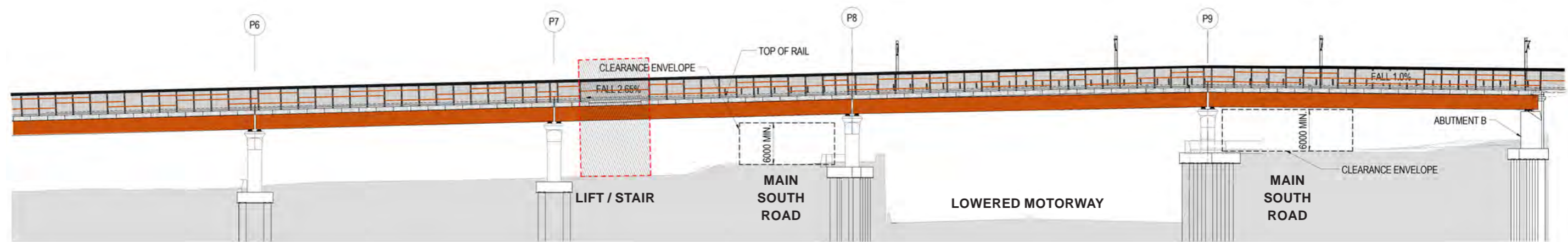
VIADUCT 3D



VIADUCT SECTION AT LOWERED MOTORWAY



VIADUCT ELEVATION 1



VIADUCT ELEVATION 2

3.3.2 SWITCHBACK RAMP AND STAIRS

At the northern end adjacent Lynton Avenue is a switchback ramp and stairs connecting this section of the rail corridor to street level.

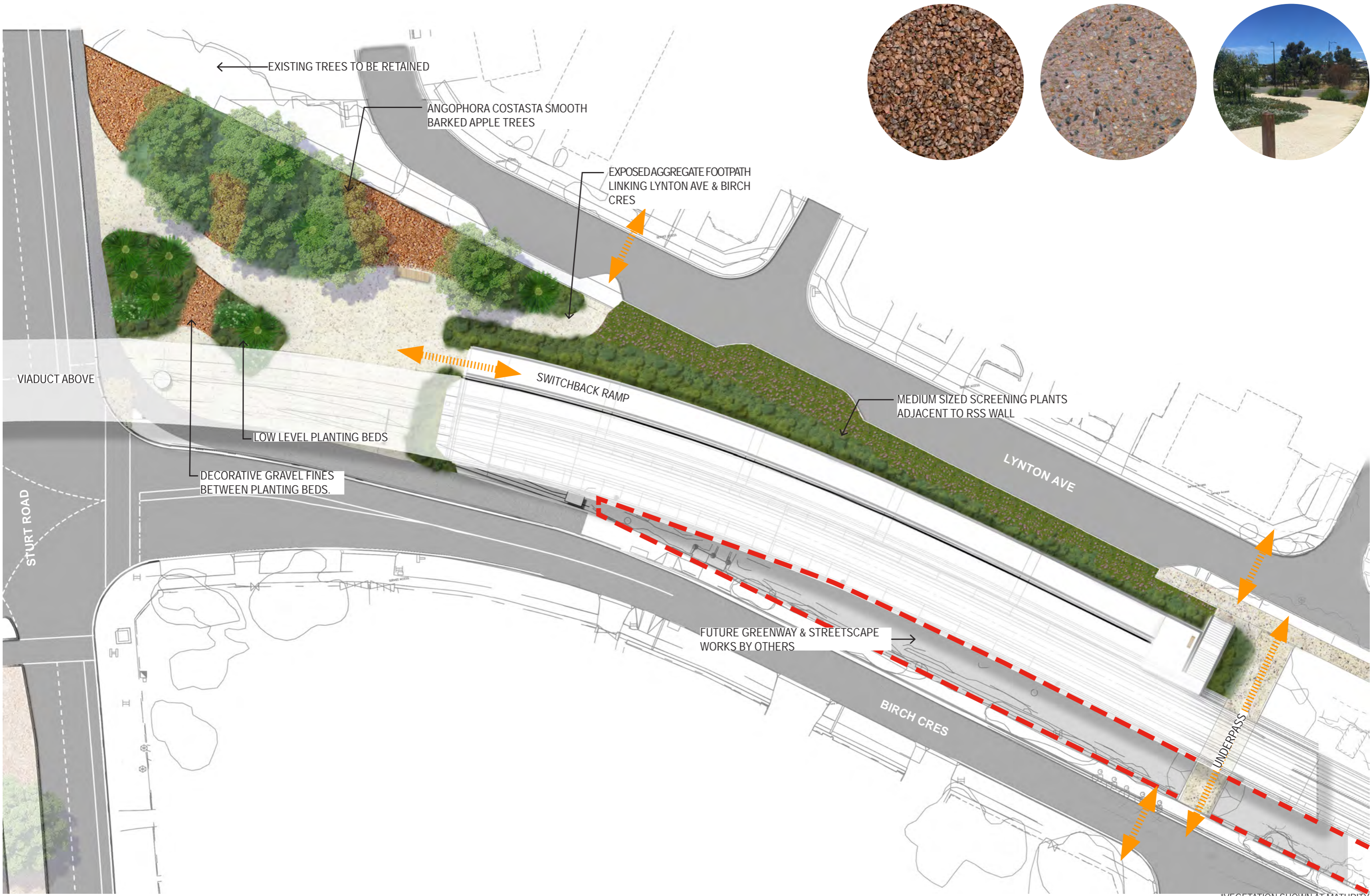
This section of the rail, switch back ramp and stairs are set on reinforced concrete wall abutments.

The switch back ramp and stairs have been incorporated on the western side of the rail corridor, the same side as the primary access arrangements to the existing Tonsley Station. The switchback better reflects the design theme and form of the viaduct being a sloping reinforced earth retaining structure in this section of the rail extension and better integrates and relates to the road grade and the shared path levels. This solution also provides a better and safer outcome for the public and more readily meets CPTED requirements. The earlier proposal for a spiral ramp created concealment opportunities and no stair access to the shared pathway. The switchback will have a balustrade to match the form of fencing elsewhere on the Flinders Link Project.

3.3.3 CROSS RAIL ACCESS - UNDERPASS

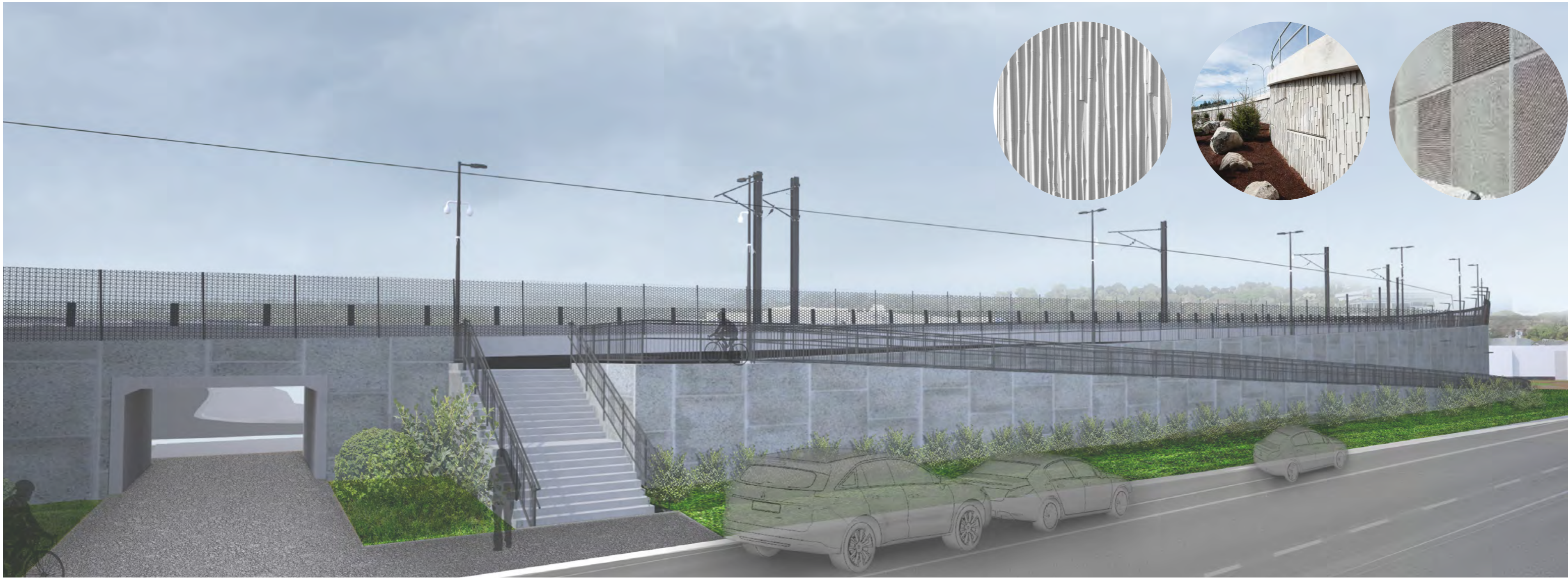
As a consequence of consultation with council an underpass has been incorporated to align with Oak Avenue and connecting to Lynton Avenue thus ensuring ready access to the switchback ramp and stairs and the new Flinders Station across the viaduct. A safety fence is located at each end of the underpass beyond the openings to provide safety for all users entering and leaving the underpass and to deny access to motor vehicles

The underpass will meet all standards in terms of lighting and has been designed with clear views at the entrances.

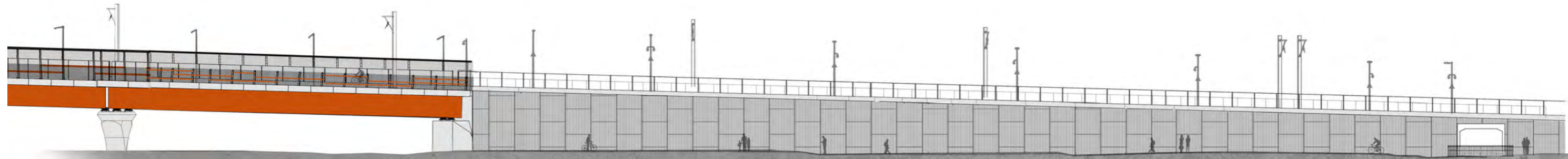


*VEGETATION SHOWN AT MATURITY

WESTERN RAMP



WESTERN ON RAMP / VIADUCT ELEVATION



EASTERN ON RAMP / VIADUCT ELEVATION

WESTERN RAMP 3D

3.3.4 FLINDERS STATION AND AMENITIES

The station is designed to accommodate 6 rail cars in two sets of three cars or 6 car set, thus allowing for two sets to reside at the station at the same time.

The station platform and shelters include:

- The station building, comprising the CER (common equipment room) for signalling and related equipment and drivers amenities), bike parking facilities, public toilet (Exeloo) located visible and accessible from the station platform and plaza to maximise passive surveillance;
- cycle parking for approximately 30 cycles is available in the building and an additional 12 spaces in the open;
- Elevated walkway connecting the new station, to Flinders Medical Centre over the existing Flinders Medical Centre Northern Carpark; and
- Station furniture (lean rails, bins, seats) to be located within the 1,500 millimetre structural zone and not interfere with the 3,000 millimetre clear zone within the station platform.

Perforated high transparency aluminium cladding for maximum safety is used for a unified urban design response with all other associated station and viaduct structures.

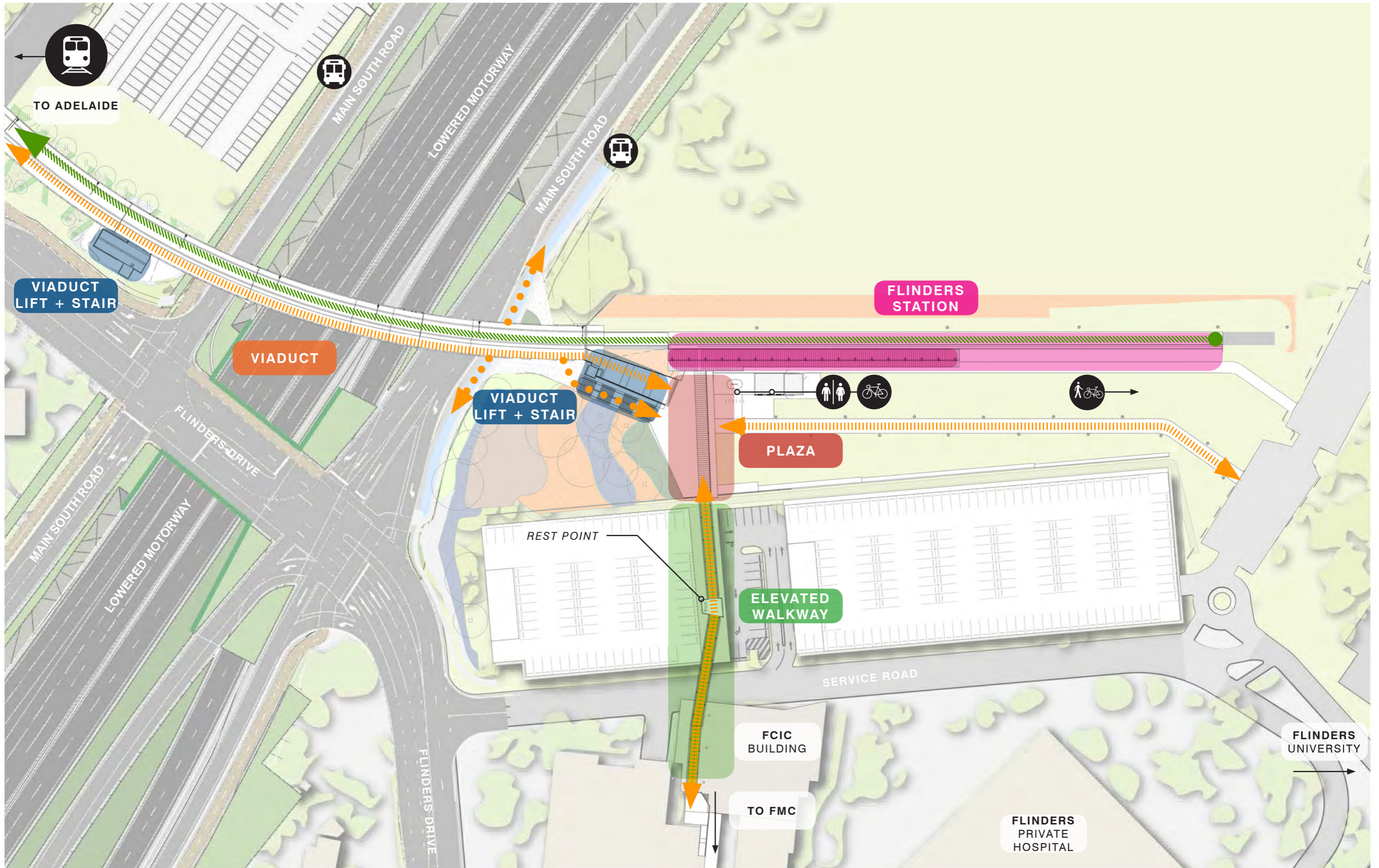
Other works and concept inclusions are:

- Stair & Lift core at the eastern end of the viaduct;
- Plaza works at the junction of the viaduct, station and elevated walkway to the Flinders Medical Centre;
- Cyclist dismount signs at the start and end of the Elevated Walkway for pedestrian and cyclist safety;
- No internal corners to provide hiding spots;
- Dedicated maintenance access path, separated from pedestrian/cyclist paths, provided to back of platform;
- Full height cladding to the entire extent of the Elevated Walkway to prevent anti-social behaviour and the safety of the public;
- CCTVs, PIDs, incorporating hearing induction loops, voice annunciator to ensure ready access to information. located at minimum 3.0 metres above surface level (apart from Elevated Walkway due to physical constraints) to reduce vandalism risk;
- Service pits located in dedicated zone behind station platform to maintain maximum clear zone for passengers; and
- Roof canopy to provide maximum coverage while complying with station standards for pantograph separation.

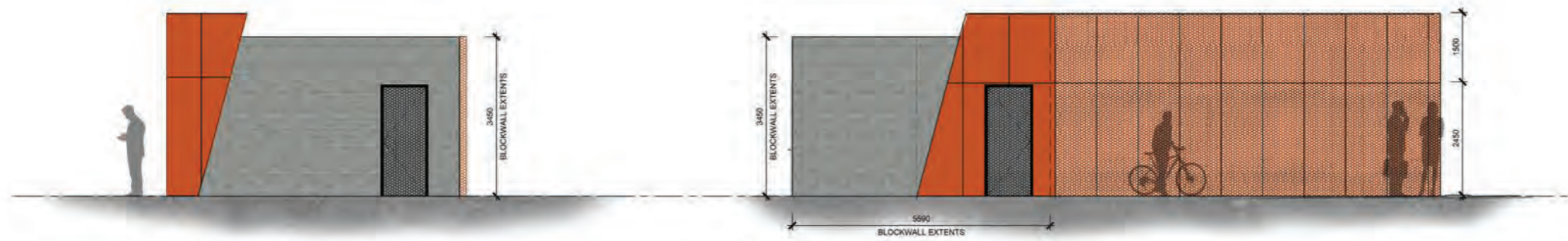
It is proposed that non-sacrificial anti-graffiti coatings be applied to vertical surfaces (including revetments).

The platform proper will be an earth filled construction with concrete walls. This is consistent with the form of the walls throughout the Flinders Link Project.

Power to serve the facility is to be distributed from a transformer located on the western side of the property at the lower part of the batter slope on the north eastern side of the alignment of the viaduct. Refer the accompanying plan on page 31.

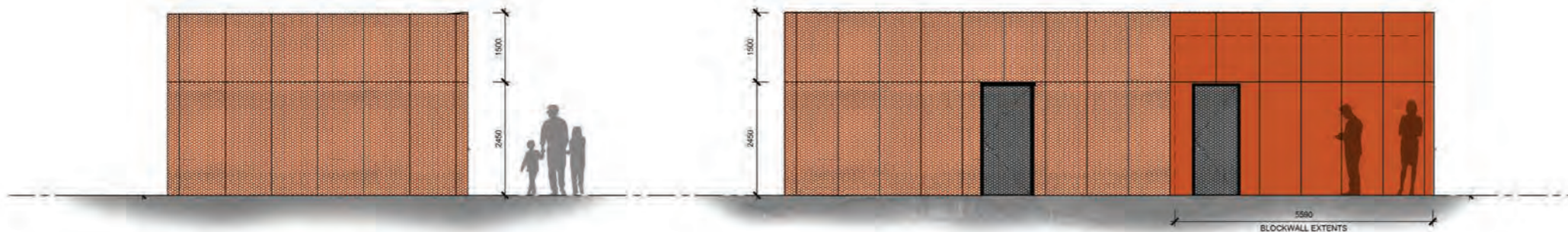


FLINDERS STATION



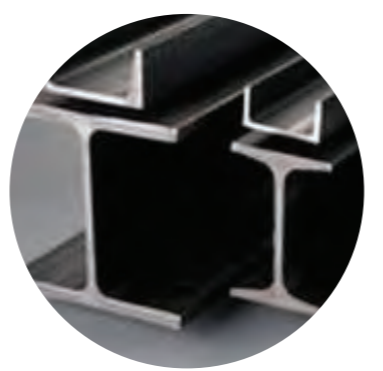
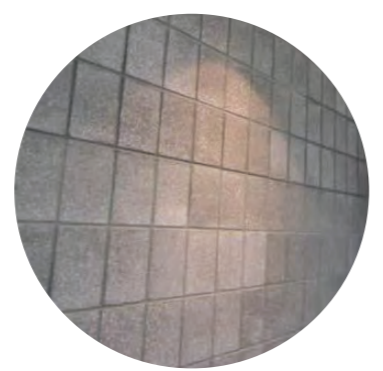
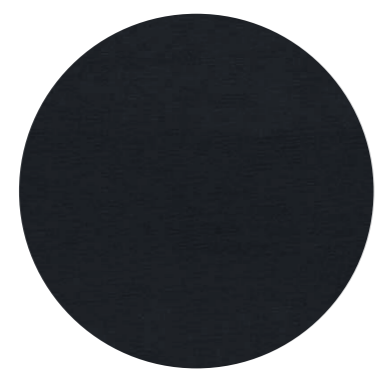
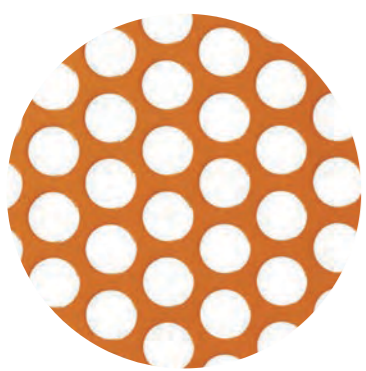
1 CER BUILDING EAST ELEVATION
SCALE 1:50

2 CER BUILDING NORTH ELEVATION
SCALE 1:50



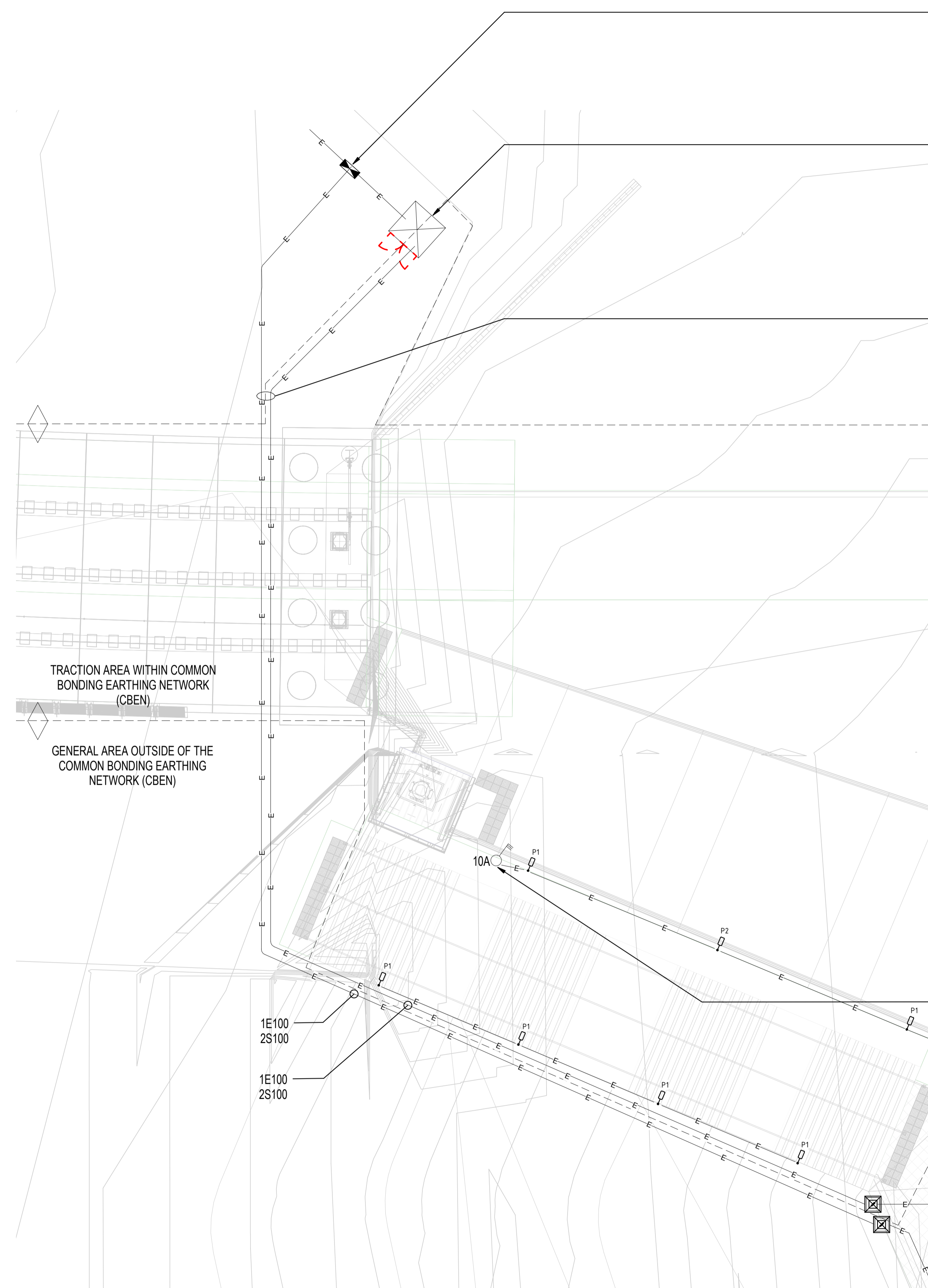
3 CER BUILDING WEST ELEVATION
SCALE 1:50

4 CER BUILDING SOUTH ELEVATION
SCALE 1:50



FLINDERS STATION-BUILDINGS





MAIN SWITCH BOARD (MSB.EAST)
(NEW)
MAXIMUM DIMENSIONS: 700mm (W) x 350mm (D) x 2000mm (H).
PROVIDE 600mm CLEARANCE FROM DOOR SWING.
REFER DRAWING CS1-DRG-352160 FOR SCHEMATIC DETAILS.

ISOLATION TRANSFORMER
(NEW)
MAXIMUM DIMENSIONS: 1300mm (W) x 650mm (D) x 1150mm (H).
PROVIDE 600mm CLEARANCE FROM DOOR SWING.
REFER DRAWING CS1-DRG-352160 FOR SCHEMATIC DETAILS.

MAINTAIN MINIMUM CLEARANCE OF 2.5m BETWEEN ISOLATED AND NON-ISOLATED SUPPLY.

FOR CONTINUATION REFER TO DRAWING CS1-DRG-352156

THREE PHASE, 10A ISOLATOR FOR EVAPORATIVE COOLER.

LEGEND OF SYMBOLS

- P1 NEW 50W, 5550lm (111lm/W), LED LUMINAIRE MOUNTED TO 6m INGAL EPS GALVANISED BOULEVARD "HINGE DOWN" POLE. (SELECTION: VERSALUX "STARLED 32-350" COMPLETE WITH DALI CONTROL GEAR)
- ISOLATION TRANSFORMER.
- MAIN DISTRIBUTION BOARD.
- THREE PHASE, WEATHERPROOF, ISOLATOR, RATING AS SHOWN.
- ELECTRICAL PIT
- E—E— INDICATIVE UNDERGROUND ELECTRICAL CONDUIT ROUTE.

STATION - PLAZA PRECINCT - ELECTRICAL LAYOUT - SHEET 1 OF 4
SCALE 1:100

				NOT FOR CONSTRUCTION				RDP21 - FLINDERS STATION				DESIGNED: FLD				FLINDERS LINE STATION FLINDERS STATION - ELECTRICAL LAYOUT SHEET 1 OF 4 PLAN AND DETAILS				Government of South Australia Department of Planning, Transport and Infrastructure CS1-DRG-352155 SCALE(S): 1:100 SIZE: A1 REVISION: B SHEET:			
				GATEWAY SOUTH 100 MILLIMETRES ON ORIGINAL DRAWING				DRAFTING CHECK: - ORIGINATED/DESIGN: - INDEPENDENT CHECK: - TECHNICAL APPROVAL: - PROJECT APPROVAL: - V.PAPAGEORGIOU D.BRITCHER DATE: 17.05.18				DRAFTED: FLD CHECKED: FLD APPROVED: TITLE: - DATE: -											
B ISSUED FOR 70% REVIEW A ISSUED FOR 30% REVIEW REV DESCRIPTION				DRN DSGN CHK APRV DATE				17.05.18 21.12.17															

PLOTTED: 24/04/2018 4:31:41 PM

3.3.5 STAIRS AND VERTICAL ACCESS

Two sets of stairs and lift vertical access are provided, one on each side of South Road. The Flinders Drive component requires Development Approval. The design incorporates an integrated stair and lift column as shown on the accompanying graphic.

This incorporates the same materials and finishes used throughout the Flinders Link Project.

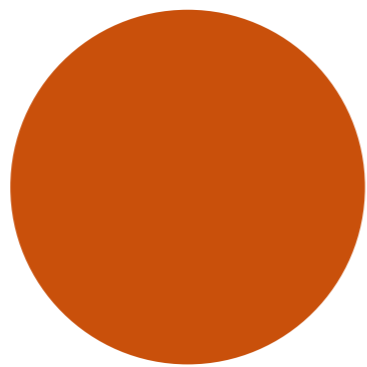
This provides direct connection to Flinders Drive and Main South Road.

3.3.6 ELEVATED WALKWAY

The connection between the station and the Flinders Medical Centre is via an elevated walkway traversing the existing car park and the northern service road. The walkways southern section passes under the existing Innovation Centre and arrives at the landing to the Flinders Medical Centre adjacent the service road.

Also Refer **Volume 2 Attachment 9**.

The structure comprises three spans of steel framed trusses with a concrete slab walkway of 3.6 metres width. The whole of the walkway is enclosed for safety and to minimise unacceptable behaviour. Incorporated within the walkway are CCTV cameras and lighting for public safety.



STAIR + LIFT WEST 3D



SHADE TOLERANT PLANTING BANDS BENEATH VIADUCT

ZELKOVA SERRATA TREES

DECORATIVE GRAVEL FINES BETWEEN PLANTING BEDS.

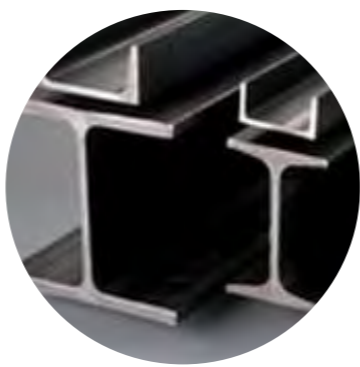
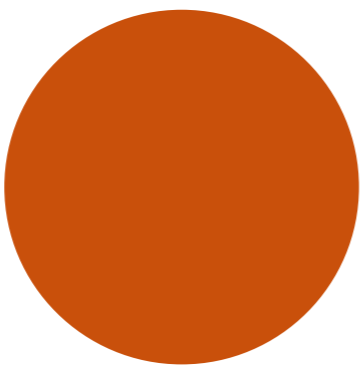
EXPOSED AGGREGATE WALKWAY LINKING ACCESS TO BUS STOPS

FLINDERS DRIVE

SOUTH ROAD

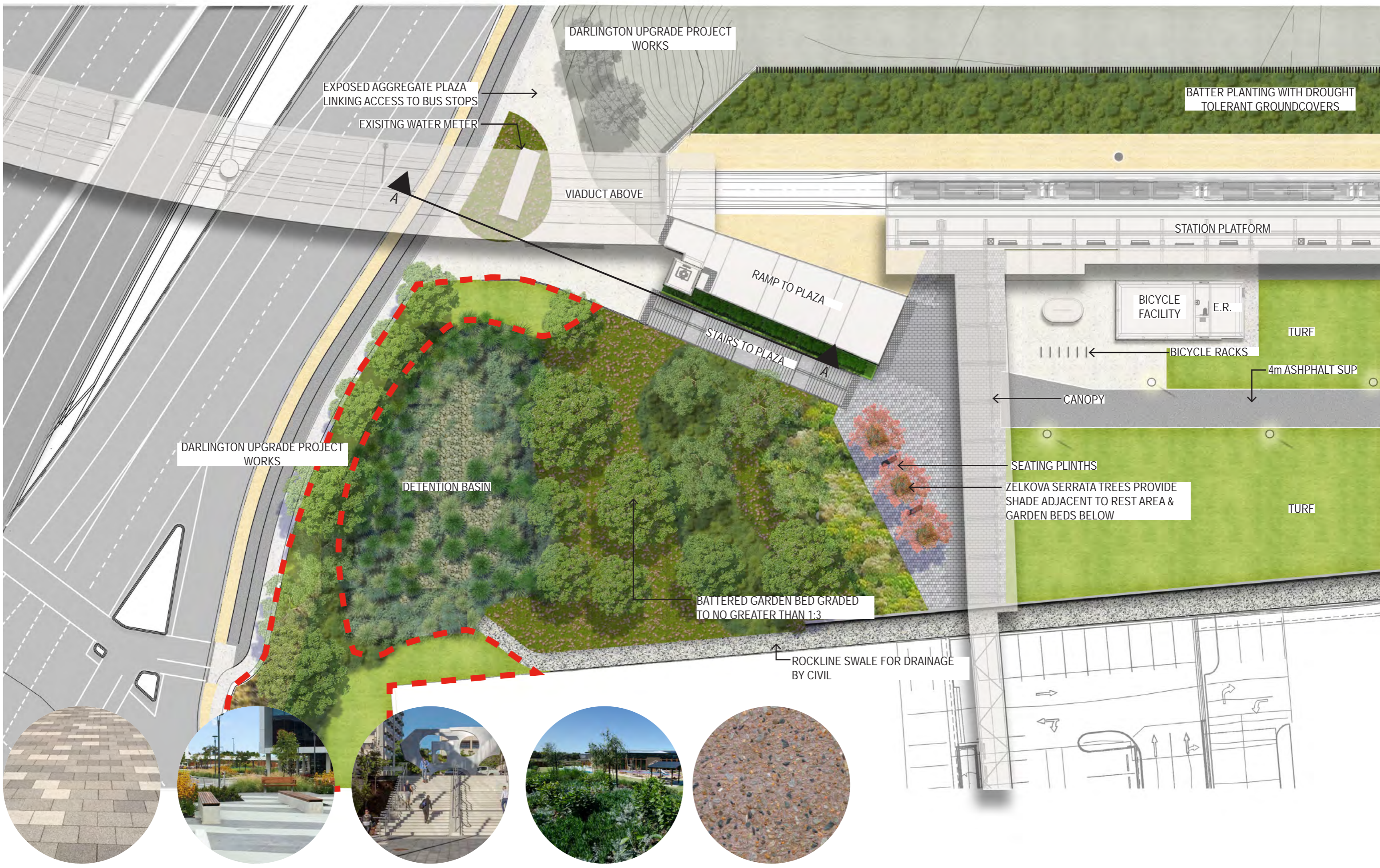
VIADUCT ABOVE



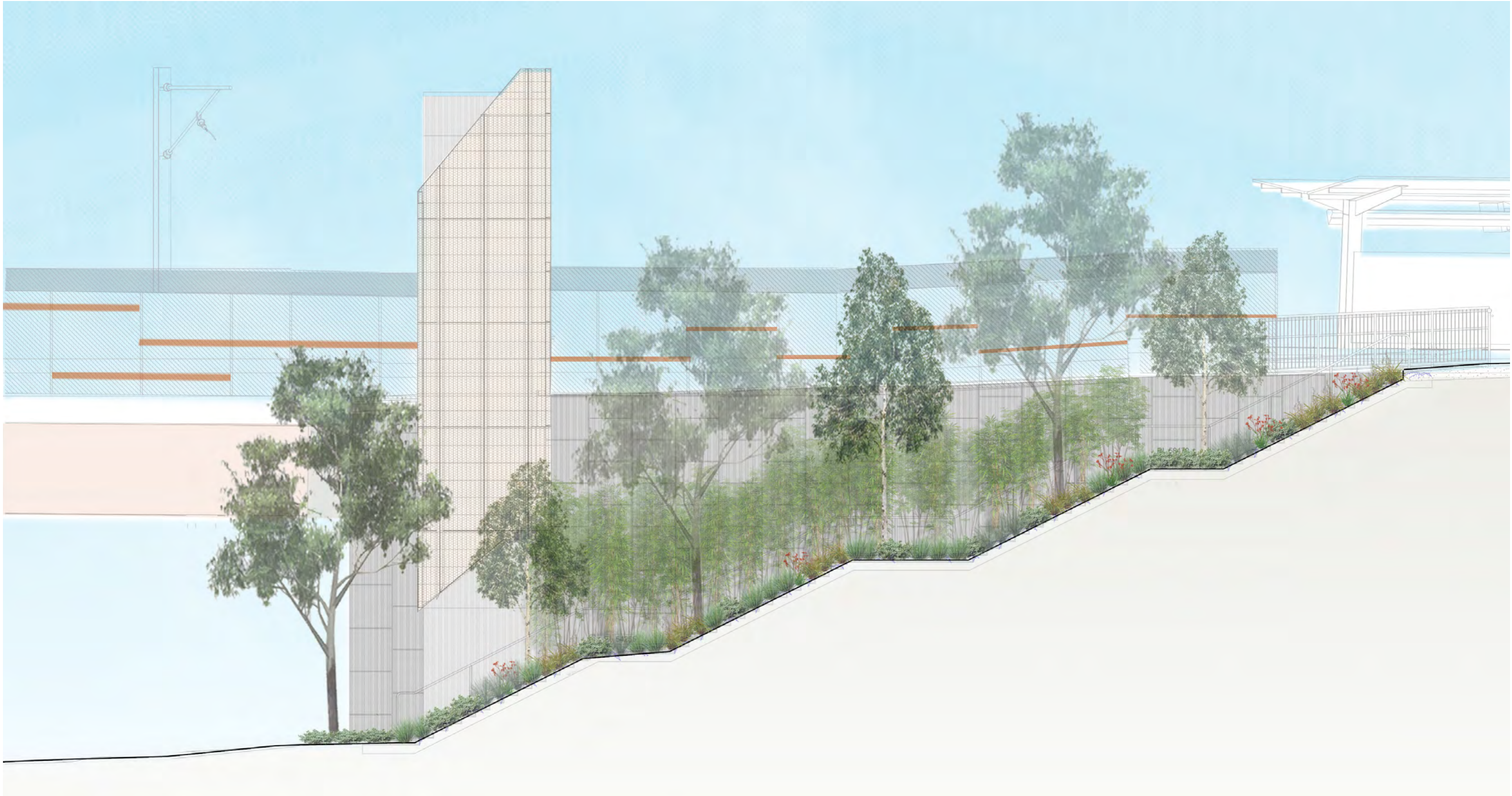
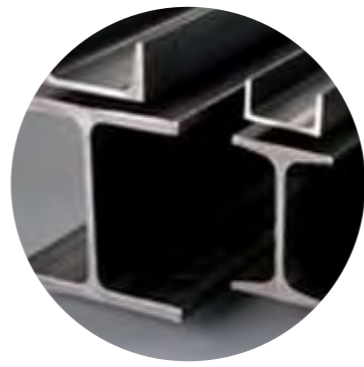
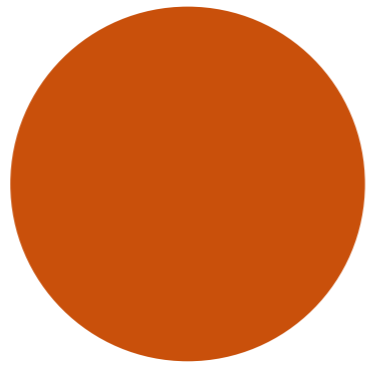
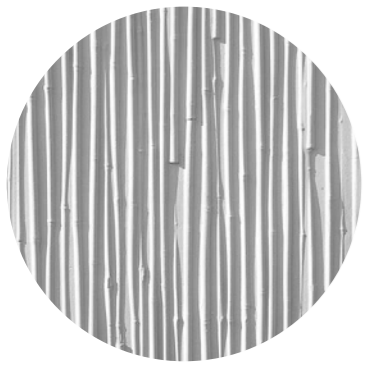


*VEGETATION SHOWN AT MATURITY
*FOREGROUND VEGETATION REMOVED FOR CLARITY

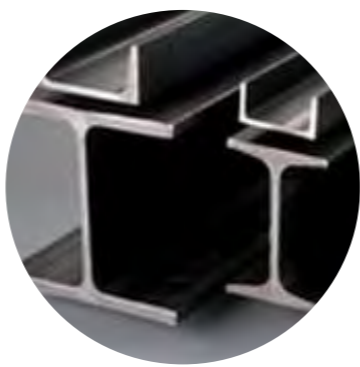
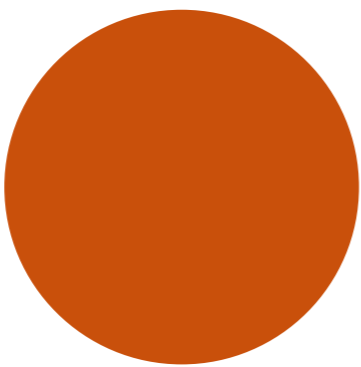
STAIR + LIFT EAST 3D



STAIR + LIFT EAST

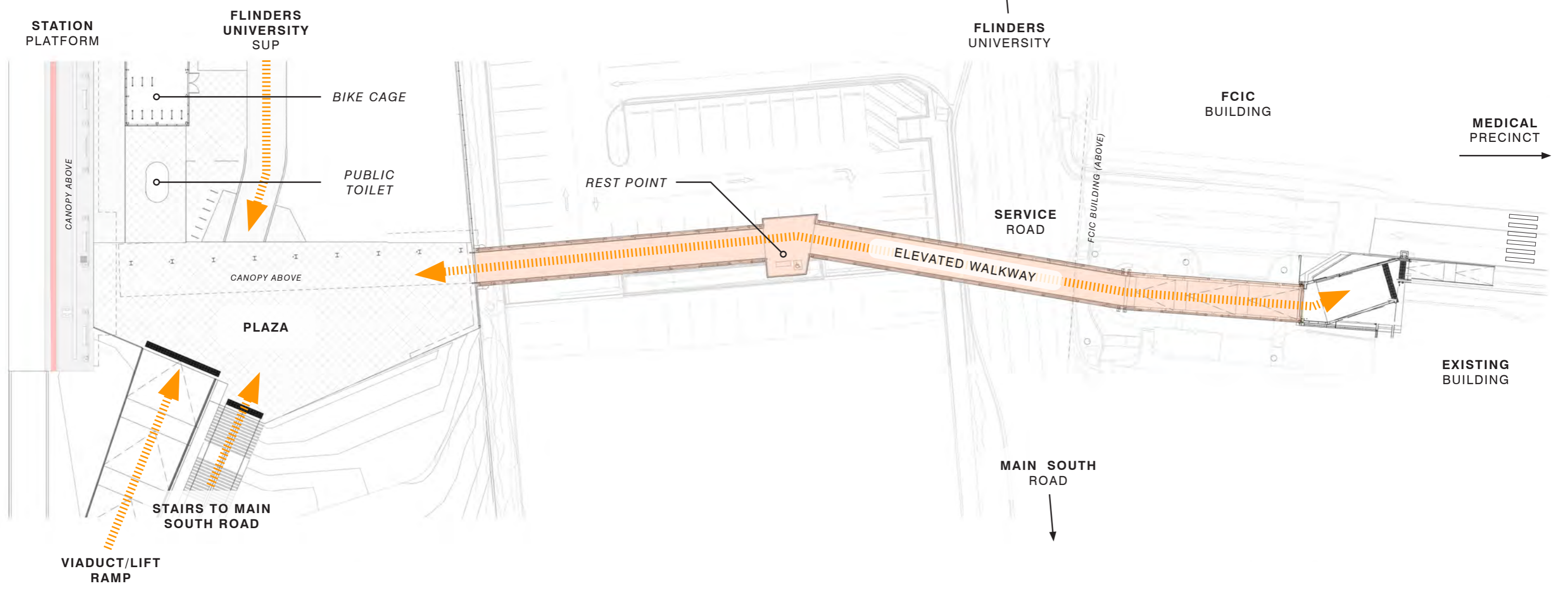
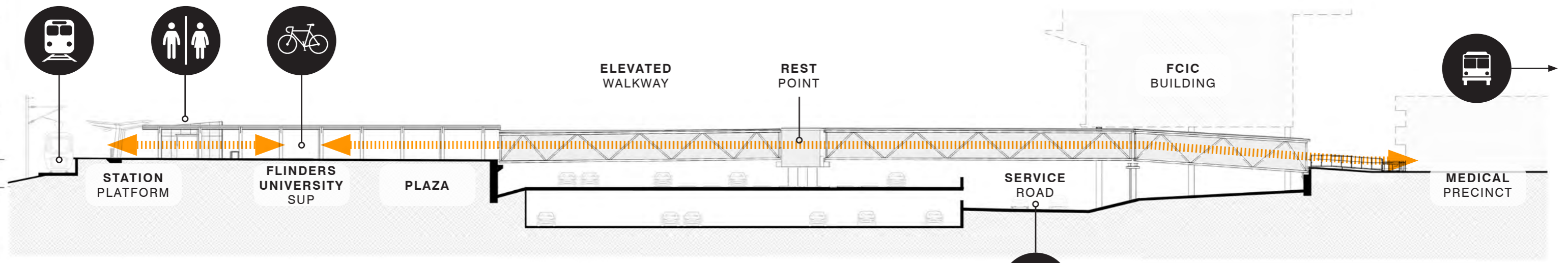


BATTER VEGETATION



*VEGETATION SHOWN AT MATURITY

ELEVATED WALKWAY 3D



ELEVATED WALKWAY

3.3.7 TREE DAMAGING ACTIVITY

An environmental report in **Volume 2 Attachment 6** provides details on the vegetation type, form and nature along an extended corridor including the Clovelly Park Railway Station. The relevant plans for consideration in this proposal are, Vegetation Removal - Sheets 7, 8, 9 and 10 of that Environmental Report. Sheets 7 and 9 are most relevant.

There are two significant trees numbered 269 and 815 and one regulated tree numbered 819 to be removed as a consequence of the works. These trees are depicted on Sheets 7 and 9. These are located within the area under the control of the Commissioner of Railways and accordingly do not require Development authorisation for their removal.

With reference to the tables on Vegetation Removal - Sheets 5, 6, 7 and 9, item numbered 796 as significant and items numbered 794, 797, 833 as regulated, are not part of this application.

The Flinders Link Project also requires the removal of some amenity (planted) vegetation. This is also identified on the Vegetation Removal - Sheets. Trees with high ecological and/or amenity value will be identified and impacts will be minimised where possible, within the Flinders Link Project constraints.

3.3.8 LANDSCAPING

The landscaping concept proposed to enhance the areas around the Flinders Link project are discussed in the Section 3.2.6. Also refer **Volume 2 Attachment 4**.

In particular, the batter slope rising from Main South Road to the plaza area is to accommodate a stairway and landscaped terraces thus providing a soft green entry to the Flinders precinct for pedestrians and cyclists using pathways at the lower level.

The species palette for the Flinders Link Project identifies the selections for the batter slope, shade tolerant species, bio-detention basin compatible and trees. This palette is reproduced on the following page.

BATTER



Carpobrotus rossii
Native Pig Face



Correa pulchella
Salmon Correa



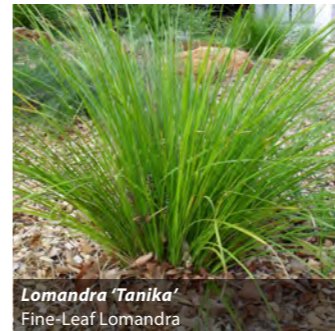
Senecio serpens
Blue Chalk Sticks



Eremophila glabra 'Kalbarri Carpet'
Compact Yellow Tar Bush



Dianella longifolia
Pale Flax Lily



Lomandra 'Tanika'
Fine-Leaf Lomandra



Atriplex semibaccata
Creeping Saltbush



Austrostipa flavescens
Spear-grass



Enchylaena tomentosa
Ruby Saltbush



Myoporum parvifolium
Creeping Boobialla



Dianella revoluta
Black Anther Flax Lily

SHADE TOLERANT (BELOW VIADUCT)



Arthropodium cirratum
New Zealand Rock Lily



Clivia miniata
Clivia



Liriope muscari
Lily Turf



Plectranthus argentatus
Silver Plectranthus



Raphiolepis indica
Dwarf Indian Hawthorn



Bambusa textilis var. gracilis
Slender Weavers Bamboo

BIO-DETENTION BASIN



Carex tereticaulis
Tall Sedge



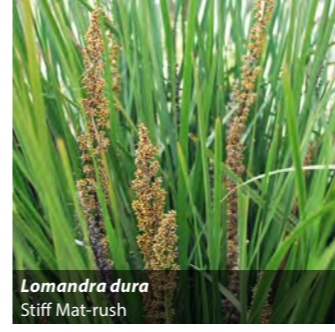
Cyperus vaginatus
Stiff Flat Sedge



Ficinia nodosa
Knobby Club Rus

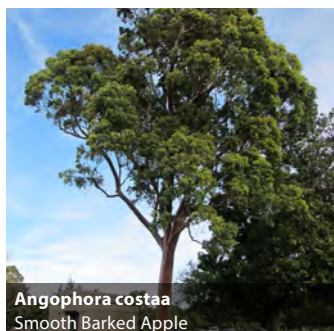


Juncus krassii
Sea Rush

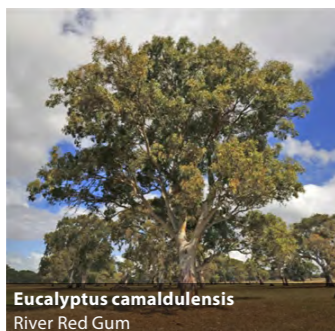


Lomandra dura
Stiff Mat-rush

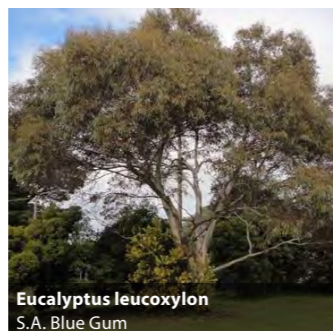
TREES



Angophora costata
Smooth Barked Apple



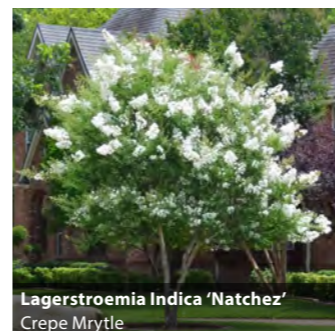
Eucalyptus camaldulensis
River Red Gum



Eucalyptus leucoxylon
S.A. Blue Gum



Eucalyptus microcarpa
Grey Box



Lagerstroemia Indica 'Natchez'
Crepe Myrtle



Zelkova serrata 'Green Vase'
Japanese Zelkova

PLANTING PALETTE

3.3.9 EARTHWORKS

Earthworks not directly associated with the development or operation of the rail or rail extension is to be undertaken to the south of the railway station and to the west batter slope leading down to Main South Road adjacent the access stairs. These areas are within Rail Commissioners land.

The area behind the New Flinders Station is to be filled to establish a level elevated surface immediately behind the station. This area incorporates a service access way for rail maintenance purposes. This filling will require a retaining wall greater than 1.0 metre in height to separate this elevated area from the abutting decked car park to the south.

The area west of the station and the plaza slopes down toward Main South Road. This area will accommodate steps adjacent to the lift tower and viaduct thus providing alternate access routes and modes between Main South Road, the plaza and the station. This batter slope is to be landscaped and sculpted to create an attractive landscaped entry to the Flinders precinct.

3.3.10 DE-COMMISSIONING AND REMOVAL OF THE EXISTING TONSLEY STATION

The existing station pictured on this page comprises a paved elevated platform with a pedestrian shelter and a public lavatory. Access is afforded to the station and across the tracks from two at grade pathways to the north and south of the station between Birch Crescent and Lynton Avenue and a stairway from Lynton Avenue.

All of the existing infrastructure including the car parking areas are to be removed and replaced with a slab track on a reinforced soil retaining wall structure until the point of transition to the viaduct slightly north of Sturt Road.

Access from Birch Crescent to Lynton Avenue will be afforded via a 4.0 metre wide and 3.0-metre-high pedestrian and cycle underpass as shown on the diagram titled Western Ramp 3D in **Volume 2 Attachment 2**.

On the Birch Crescent side this underpass will also connect to the Marion Council's future Greenway. Safety fencing is strategically located at the underpass entry areas to direct and slow traffic to avoid cycle and pedestrian conflict.



3.4 COMMUNITY ENGAGEMENT

3.4.1 CONSULTATION

Key stakeholders have been involved in the development of the Flinders Link Project. Stakeholders have included Flinders Medical Centre, Flinders University, Flinders Private Hospital, the City of Marion, the City of Mitcham, Renewal SA and the local community. Regular updates about the Flinders Link Project have been provided as part of the Darlington Upgrade Project's well established Community Liaison Group meetings which meet every four to six weeks. On the Flinders Link Project's website, an email and phone number for the community to contact the Flinders Link Project team has also been established.

3.4.2 KEY COMMUNITY INTERESTS

A summary of recent matters raised by the community which this proposal has addressed include:

- Approximate Project commencement and completion dates;
- Reason for removal of existing Tonsley Station;
- How accessibility is being factored into the design;
- Cross over points at Oak/Brayden;
- Connection of the Marion Council and Renewal SA's Greenway to that of the Flinders Link Project; and
- Construction impacts.
- The proposal also addresses safety and convenience, together with improved services, continuous connection and improved integration with bus services.



4

**ENVIRONMENTAL
EFFECTS OVERVIEW**

4.0 ENVIRONMENTAL EFFECTS OVERVIEW

4.1 VEGETATION

The Flinders Link Project area is located within a heavily modified suburban environment with limited biodiversity. The majority of remnant native vegetation has been removed and exotic, indigenous and non-local native vegetation has been planted in a landscaped environment. Only scattered individuals remain. A more detailed description of that environment is provided in the Design Report – Environmental in **Volume 2 Attachment 6**.

Non-indigenous native and exotic plantings are dominant on side streets and major arterials intersecting Main South Road, as well as local reserves and private residences. Some of these non-indigenous native and exotic trees are regulated or significant trees in accordance with the Development Act 1993.

Removal of vegetation has been minimised as much as possible and remaining areas of important vegetation will be protected during construction. Where removals are unavoidable, planting within and adjacent to the upgraded corridor will be undertaken to offset the removals.

The Flinders Link Project will impact some amenity (planted) vegetation and also impacts one Regulated tree item 833 and two Significant trees 815 and 269 identified on Sheets 7 and 9 of **Attachment 6**.

No approvals are required given the location of these trees within land where such works are exempt.

4.2 NOISE AND VIBRATION

4.2.1 CONSTRUCTION NOISE

Construction noise levels will be determined once the outcome of the detailed design, construction methodology, construction staging, and timing is finalised.

Noise generated during construction will be managed in accordance with DPTI's Operational Instruction 21.7: Management of Noise and Vibration: Construction and Maintenance Activities (OI 21.7).

OI 21.7 provides the framework to meet DPTI's general environmental duty of care for noise in accordance with the Environment Protection Act 1993 and requires preparation and commitment to a Construction Noise and Vibration Management Plan (CNVMP). A CNVMP (to be prepared by the successful Contractor) will include a Night Works Management Plan where night works are required.

The CNVMP identifies target noise levels generally in accordance with OI 21.7, and specifies a range of actions to be implemented. These may include community notification, monitoring and the implementation of reasonable and practicable mitigation measures.

4.2.2 CONSTRUCTION VIBRATION

As with noise levels, vibration will be fully known once the outcome of the detailed design, construction methodology and construction staging is finalised.

Vibration generated during construction will be managed in accordance with DPTI's OI 21.7.

The vibration criteria for structural damage have historically been derived from the German Standard DIN 4150-3 Effects on vibration on structures, a common reference in the absence of a specific Australian Standard for structural damage.

Reasonable and practical measures to manage and mitigate vibration will be implemented including community notification, property condition assessment where required and monitoring. As already indicated, the tender documentation stipulates CFA piling must be used to minimise vibration (unless a better alternative is presented).

4.3 CONTAMINATION

4.3.1 SOIL AND GROUNDWATER

Based on past and present land uses in the Flinders Link Project area, a number of potentially contaminating activities, leading to potential site contamination, have been identified.

In addition to contamination caused by both current and historic rail operations on the existing Tonsley rail line, a major industrial manufacturing facility, Tenneco/Monroe, is located approximately 350m east, on the north-western side of Main South Road, between Mimosa Terrace and the Ayliffes/Shepherds Hill Road intersection.

The Clovelly Park – Mitchell Park TCE (trichloroethene) soil and groundwater contaminated area is located adjacent to the Flinders Link Project. The Environment Protection Authority (EPA) has provided details of in situ investigations and the extent of known contamination. The department has commenced project specific contamination and geotechnical investigations and will continue to liaise with the EPA about the potential future interface between the contaminated area and the Flinders Link Project site as well as mitigation and management requirements.

Soil within the Flinders Link Project area will be sampled and analysed in accordance with relevant Australian standards and the EPA Standard for the production and use of Waste Derived Fill, to determine if it is suitable for reuse on site or requires disposal to an EPA licensed waste/recycling facility. The soil will also be classified against the National Environment Protection (Assessment of Site Contamination) Measure 2014 to inform ecological and human health risks.

A Contamination Management Plan (CMP) will be implemented during construction works to minimise and manage risks to workers and the adjacent community. The CMP will include requirements for management of contaminated materials on site, transportation and off-site disposal as well as controls for impacted soils/groundwater, not previously identified, that are encountered during excavation works.

4.4 WATER QUALITY

The Flinders Link Project area is within the Sturt River catchment and whilst the upstream catchment is generally rural to semi-urbanised, the water quality in Sturt River is more typical of an urbanised catchment. Its high nutrient concentration indicates a high organic content and sediment influx from surrounding catchments and salinity levels are higher than expected for fresh water.

A preliminary Water Quality Risk Assessment has been undertaken to determine the potential nature, scale and likelihood of any impacts on water quality during construction and operation of the rail and to establish potential management measures to minimise and mitigate the identified impacts. Adverse impacts to water quality will be minimised and water sensitive urban design will be incorporated where possible.

During construction a Soil Erosion and Drainage Management Plan (SEDMP) will be developed and implemented to manage water flows, prevent erosion and control sediment on site.

Water Affecting Activities as defined by the Natural Resources Management Act 2004 will be assessed in accordance with DPTI's approved Water Affecting Activities Standard Operating Procedure and permits obtained where required.

4.5 HERITAGE

4.5.1 NON-ABORIGINAL HERITAGE

No places within the Flinders Link Project area are entered in the Commonwealth Heritage List established under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). No heritage related EPBC Act referrals to the Commonwealth Minister are required.

One non-Aboriginal heritage site listed in the South Australian Heritage Places Database is located adjacent to the Flinders Link Project site and is detailed in Table 2 below. This site will not be directly affected by the Flinders Link Project.

Table 2: Non-Aboriginal Heritage-listed items adjacent to the Flinders Link Project area

STRUCTURE / BUILDINGS	ADDRESS	HERITAGE LISTING	DISTANCE FROM CLOSEST INFRASTRUCTURE COMPONENT
Fairford House, coach house (former winery) and grounds	Sturt Triangle, Sturt	State	Approximately 400 metres

There are no local heritage sites adjacent to the Flinders Link Project area.

4.5.2 ABORIGINAL HERITAGE AND NATIVE TITLE

The Flinders Link Project area is part of a highly modified and built-up urban environment dominated with commercial and residential buildings and recreational areas, with very few undisturbed areas remaining.

Before settlement the Flinders Link Project area was very different and home to the Kurna and Ramindjeri Aboriginal people. Their close connection to country and to the area continues today, in particular to the Warriparinga area, including Sturt River.

A search of the Central Archive Register of Aboriginal Sites and Objects administered by the Department of State Development - Aboriginal Affairs and Reconciliation identified a small number of reported Aboriginal sites located within close proximity to the Flinders Link Project area. In addition to registered sites, there is a risk of encountering subsurface Aboriginal archaeological deposits within the Flinders Link Project area, specifically in the vicinity of the Sturt River and Laffer Triangle area (which includes the Warriparinga reserve).

Consultation with the Kurna and Ramindjeri groups has been undertaken as part of the Darlington Upgrade Project and will continue throughout the planning, design and construction phases of the Flinders Link Project. An Aboriginal Cultural Heritage Impact Assessment including a heritage survey and risk assessment will be undertaken for the Flinders Link Project site.

An authorisation in accordance with Section 23 of the Aboriginal Heritage Act 1988 has been granted by the Minister for Aboriginal Affairs and Reconciliation to damage, disturb or interfere with Aboriginal sites, objects or remains that may exist within the Darlington Upgrade Project area.

Where the Darlington Upgrade Project Section 23 authorisation area does not cover the Flinders Link Project area (eg the Tonsley rail corridor or the area where the new Flinders station will be built) a risk assessment, including a field survey with the interested Aboriginal groups (if required), will be undertaken by an archaeologist to identify potential high risk zones. Additional Section 23 authorisation may be sought for high risk areas not covered by the Darlington Upgrade Project Section 23 authorisation area.

Awareness of potential Aboriginal heritage issues will be raised with all design and construction staff and measures in compliance with the Aboriginal Heritage Act 1988, implemented to minimise impacts to Aboriginal heritage should it be encountered during construction.

A Native Title search has been undertaken, as a part of the Darlington Upgrade Project, by the Crown Solicitor's Office to establish if Native Title has been extinguished over the Flinders Link Project area. Native title within the Darlington Upgrade Project area and the Tonsley rail line has been extinguished and the proposed works are able to proceed without further consideration of the Native Title (South Australia) Act 1994.

4.6 MANAGING CONSTRUCTION IMPACTS

Once selected and prior to construction, the Contractor for the Flinders Link Project will be responsible for developing a Construction Environmental Management Plan (CEMP) for the works.

The CEMP will be developed in accordance with the DPTI's Environmental Code of Practice for Construction - Road, Rail, and Marine Facilities; Contractor's Environmental Management Plan Guidelines and the Contract Specification Environmental Requirements.

The CEMP details how the environmental management requirements, as identified in the DPTI construction contract specification will be implemented and managed on-site. The CEMP will also detail how the Contractor will mitigate construction impacts and must document the contractor's response to inspecting, monitoring, verifying, internal auditing, and correcting or improving environmental performance based on their design and construction methodology.

The main elements of the CEMP will be:

- air quality controls: including for dust and the management of stockpiles (sand, gravel etc) to ensure that materials are appropriately stored, handled and transported;
- hours of operation - including night work protocols (if applicable) - to minimise amenity loss/level of disturbance to residents;
- establishment and maintenance of temporary fencing and hoardings;
- waste minimisation and recovery;
- site servicing and security arrangements;
- storage of chemicals and fuel;
- protection of existing trees; and
- discovery of Aboriginal Heritage sites.

4.7 AIR QUALITY

The Flinders Link Project will encourage sustainable methods of travel including walking and cycling, therefore encouraging improved air quality as a result of people using these modes of travel over vehicle usage.



5

**DEVELOPMENT PLAN
ASSESSMENT**

5.0 DEVELOPMENT PLAN ASSESSMENT

The site of the proposed development is within the City of Marion and the City of Mitcham. The Development Plans relevant to the assessment of this application are the Marion Council Development Plan Consolidated 20 February 2018 and the Mitcham (City) Development Plan Consolidated 20 February 2018. The Flinders Link Project will traverse and affect two Zones and two Policy Areas within the Councils as shown on the maps on pages 50 - 53.

The relevant Zones and Policy Areas affecting the elements of the Flinders Link Project requiring approval are outlined below.

The bridge will be in or adjacent to the following Zones and Policy Areas as shown on the maps below:

- Marion Residential Zone, Policy Areas 12 and 16;
- Marion Regional Activity Zone; and
- Mitcham Regional Activity Zone.

The Marion and Mitcham Regional Activity Zones objectives and principles of development control are generally aligned.

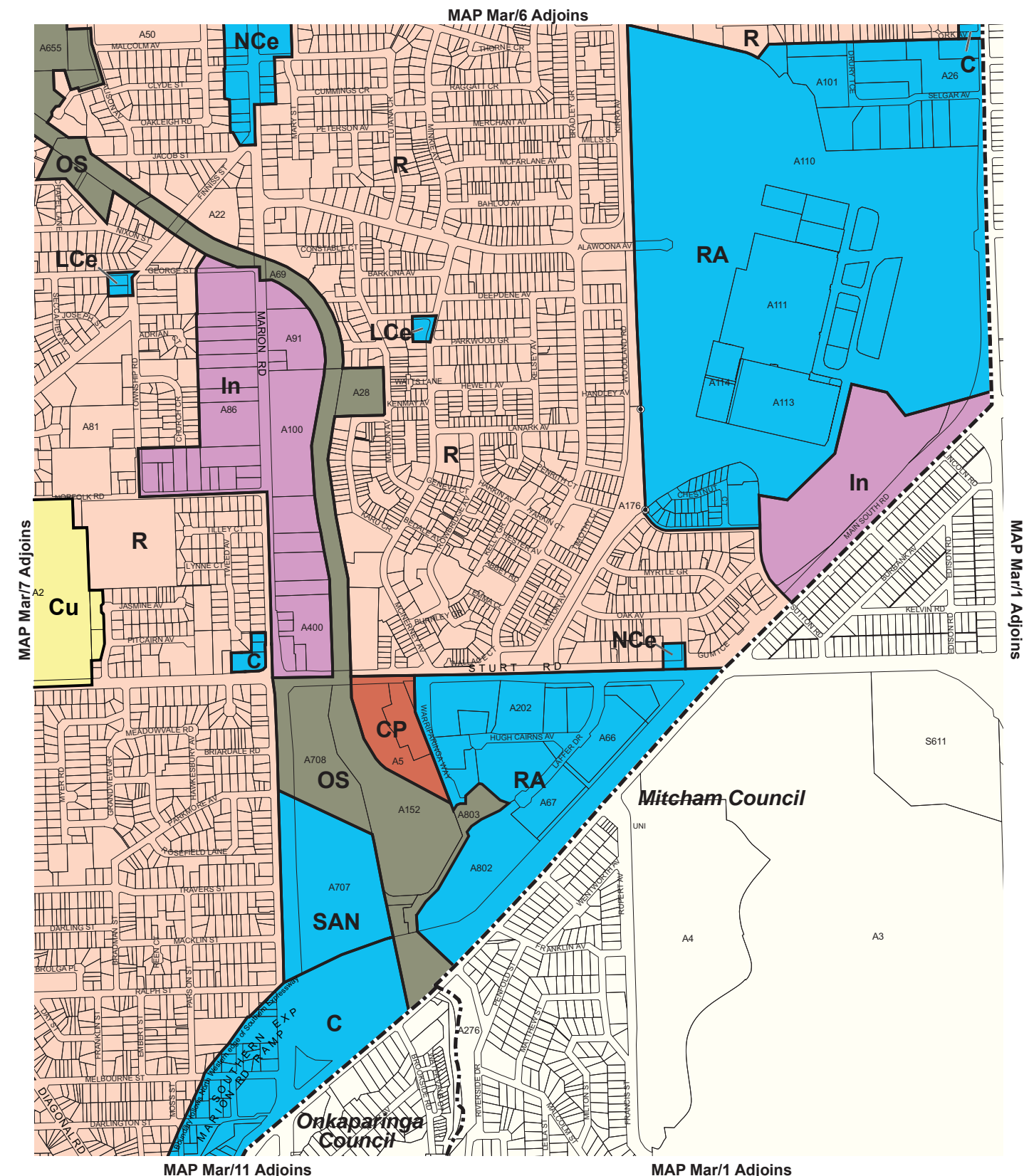
The Marion Council Development Plan on Overlay Map Mar/8 Noise and Air Emissions on page 54 identifies the area between Sturt Road and Main South Road over which the viaduct passes as a designated area, thus recognising likely impacts due to the transport network and infrastructure prevalent in the area.

The Tonsley train line is also identified together with Main South Road as a Type A road. The acoustic environment is therefore necessarily affected by the activities associated with these significant transport facilities. Similarly, Main South Road and the area bound by South Road, Sturt Road and Marion Road are identified as strategic transport routes which by their nature will have effects on the surrounding and interface activities.

The Mitcham (City) Development Plan provides a **Concept Plan Fig Mit/1** page 55 which specifically identifies the Flinders Link as a future rail line.

Both Development Plans have been amended recently to acknowledge the importance of Flinders precinct generally by its designation as a part of the wider Regional Activity area.

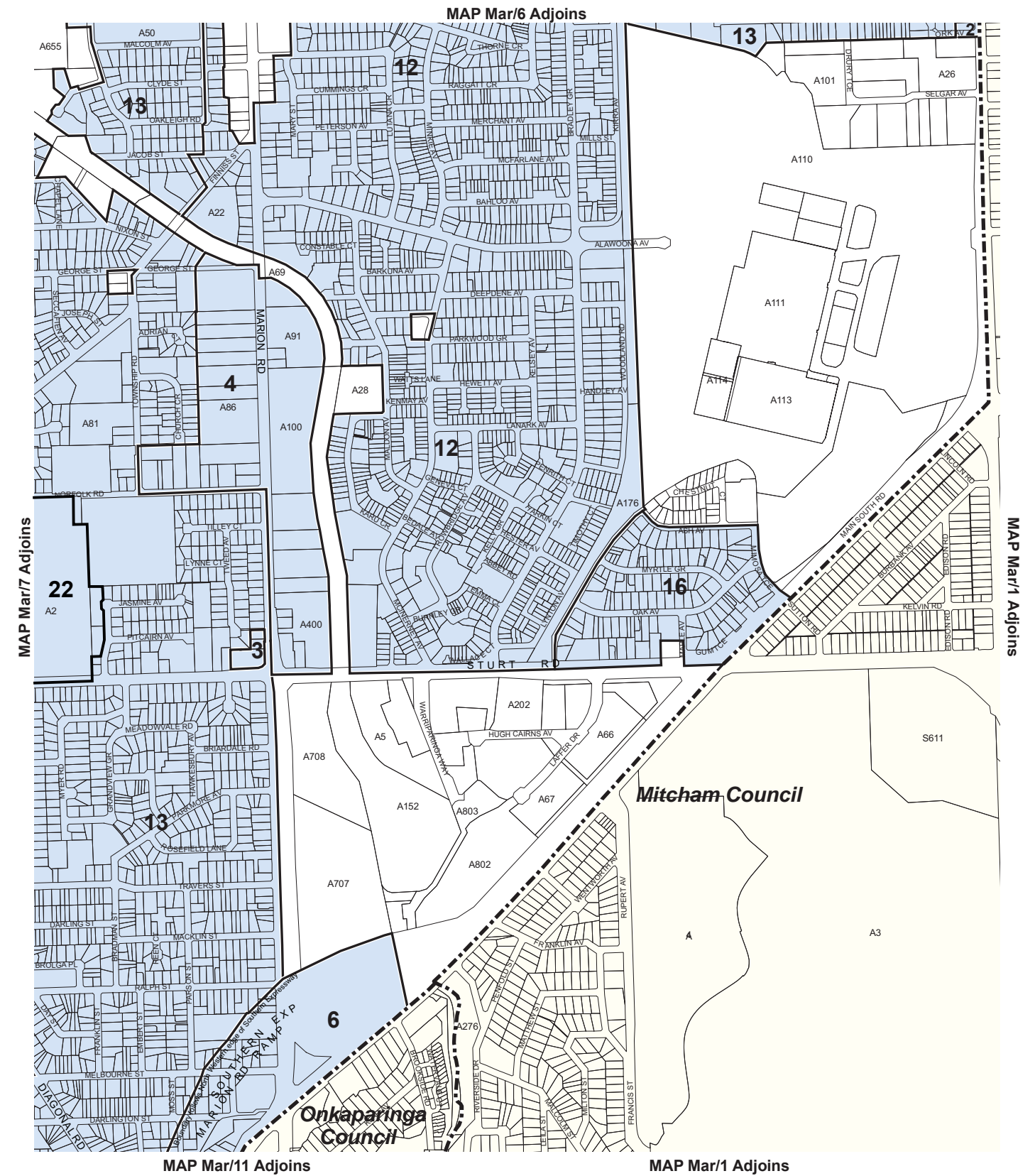
The provisions of the Development Plans do not provide detailed design parameters or guidance in relation to rail bridges, stations or similar infrastructure projects. Accordingly, the approach taken is to summarise the key intent of the Zone and Council Wide provisions and discussion on the most relevant elements with reference to the proposed development.



- Lamberts Conformal Conic Projection, GDA94
- Zones**
- CP Caravan and Tourist Park
 - C Commercial
 - Cu Community
 - In Industry
 - LCe Local Centre
 - NCe Neighbourhood Centre
 - OS Open Space
 - RA Regional Activity
 - R Residential
 - SAN Suburban Activity Node
 - Zone Boundary
 - Development Plan Boundary



Zone Map Mar/8



Lamberts Conformal Conic Projection, GDA94

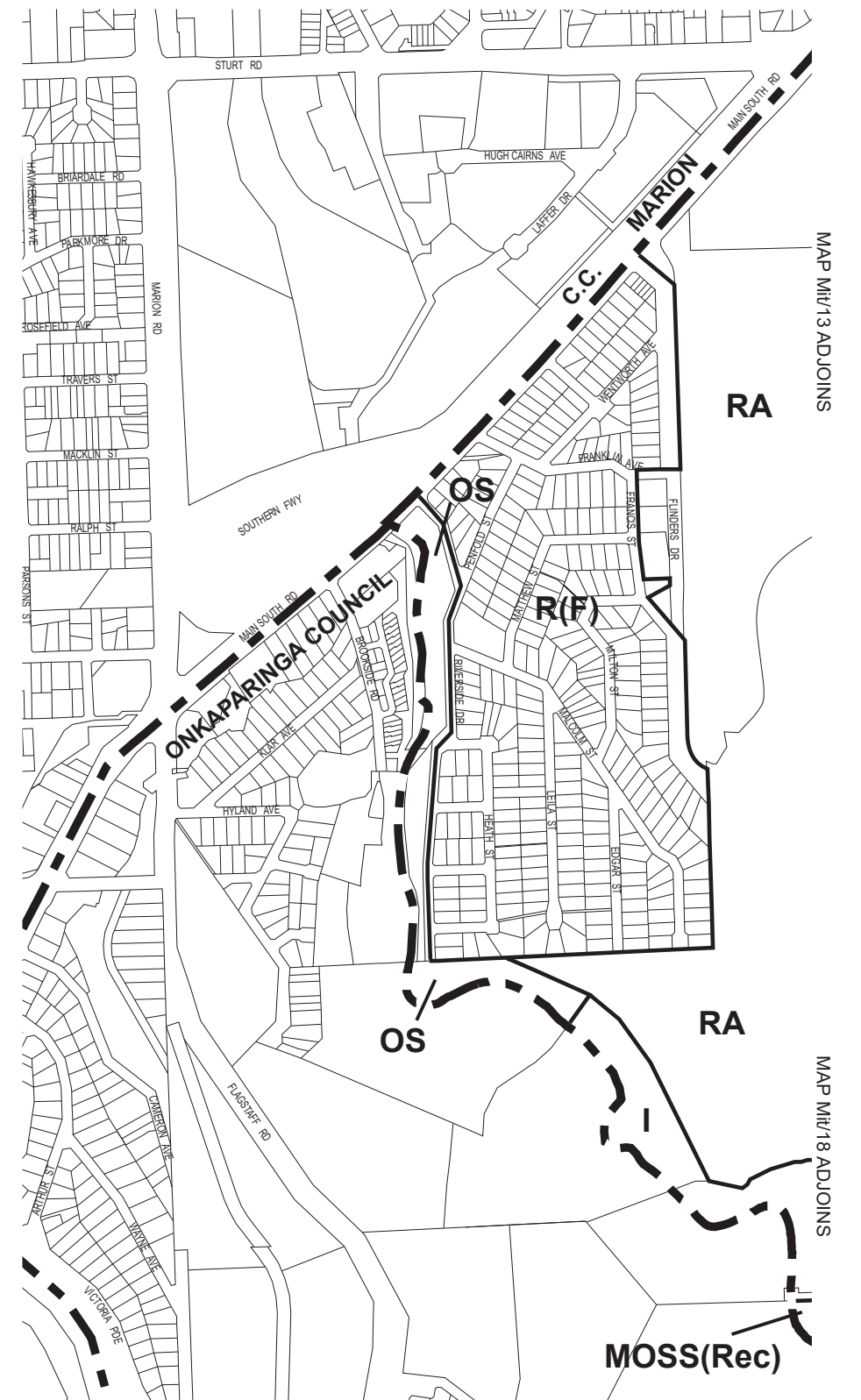
Policy Area

- 2 South Road
- 3 Sturt/Marion Road Corner
- 4 Industry/Commerce
- 6 Darlington
- 12 Medium Density
- 13 Northern
- 16 Regeneration
- 22 Recreation



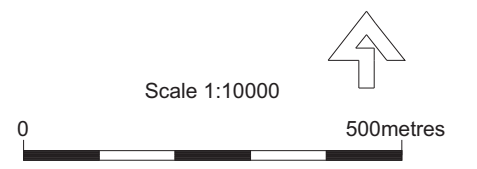
- Policy Area Boundary
- Development Plan Boundary

Policy Area Map Mar/8

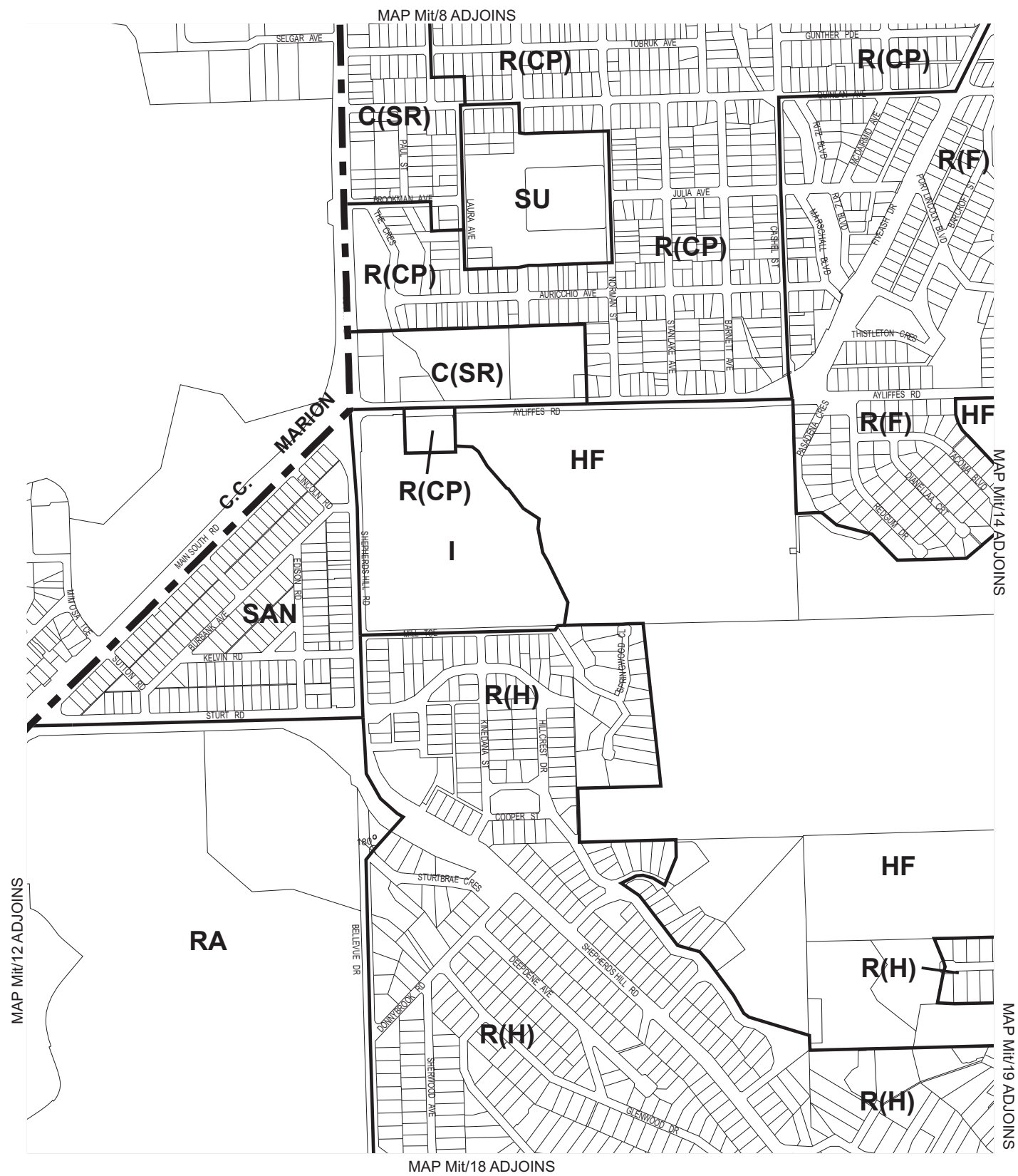


OS Open Space
R(F) Residential (Foothills)
RA Regional Activity
MOSS(Rec) Metropolitan Open Space System (Recreation)
I Institutional

————— Zone Boundary
 - - - - - Development Plan Boundary





MITCHAM (CITY) ZONES MAP Mit/12



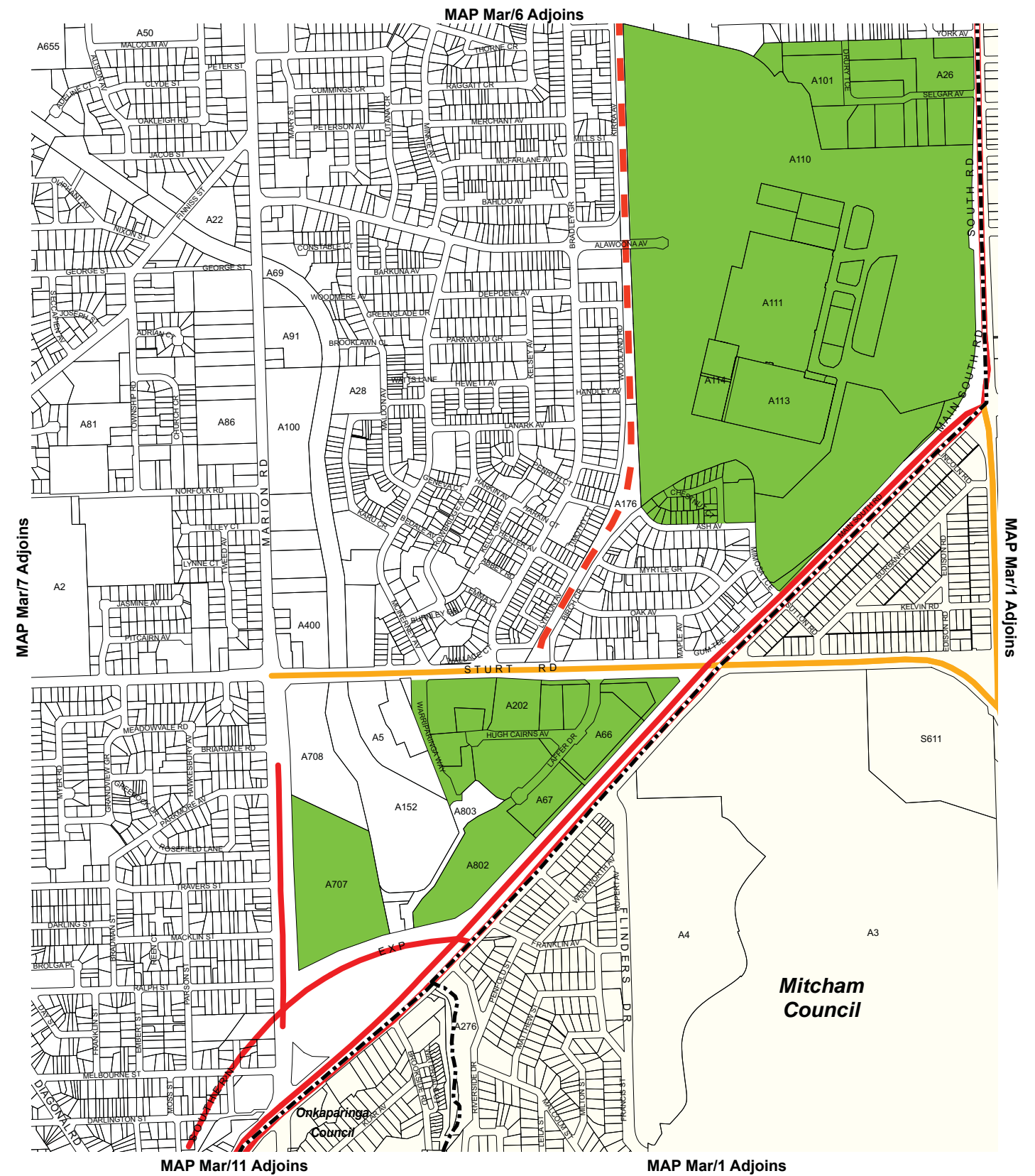
NOTE : For Policy Areas see MAP Mit/33

C(SR)	Commercial (South Road)
HF	Hills Face
I	Institutional
R(CP)	Residential (Central Plains)
R(F)	Residential (Foothills)
R(H)	Residential (Hills)
RA	Regional Activity
SAN	Suburban Activity Node
SU	Special Uses (Panther Park)

 Zone Boundary
 Development Plan Boundary



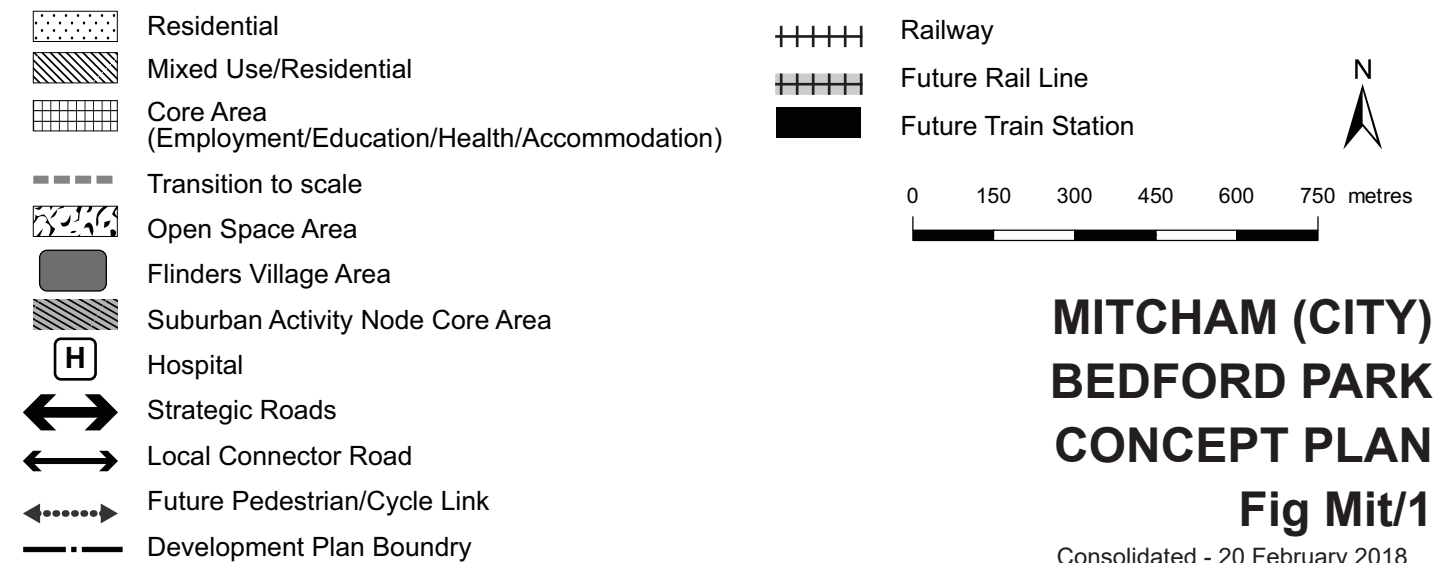
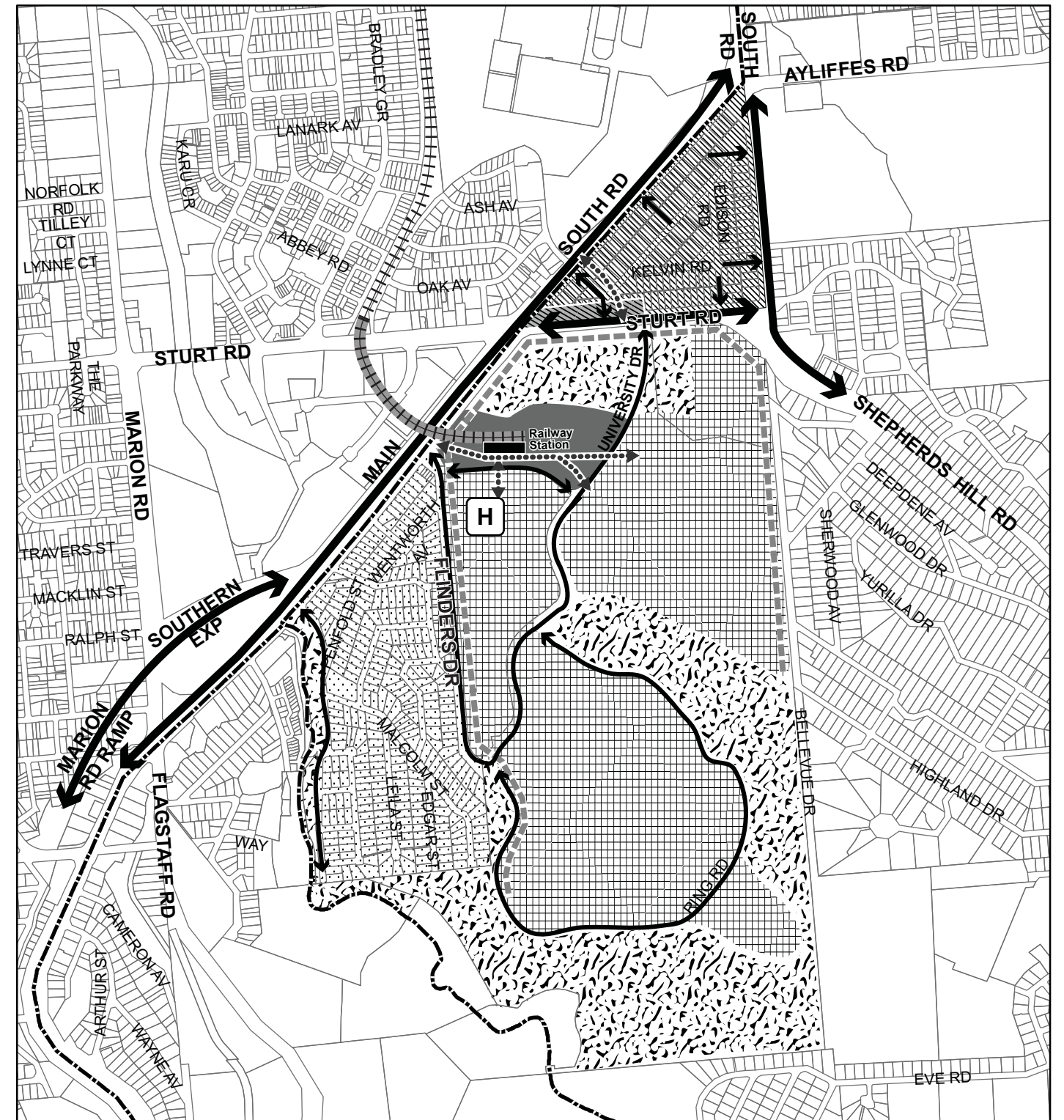
MITCHAM (CITY) ZONES MAP Mit/13



- Designated Road: type A road
- Designated Road: type B road
- - - Train Line
- Noise and Air Emissions Designated Area
- Development Plan Boundary

Overlay Map Mar/8

NOISE AND AIR EMISSIONS



**MITCHAM (CITY)
BEDFORD PARK
CONCEPT PLAN**
Fig Mit/1
 Consolidated - 20 February 2018

5.1 ZONE AND POLICY AREA PROVISIONS

The primary intent of the Zones within and adjacent to the application are focussed on:

- Residential Zone – North of Sturt Road - Development comprising medium density housing; and
- Regional Activity Zone – from Sturt Road to Flinders precinct - A mixed use zone accommodating education, health, research, and employment opportunities of regional significance.

The works will be undertaken within the existing rail corridor and on Government owned land. Property acquisition is not required to accommodate the Flinders Link Project.

The proposed works will have physical and visual effects on the locality through the removal of the Tonsley Station and the introduction of the extended track, access pathways, viaduct structure and two sets of stairs and lifts adjacent Main South Road.

At its northern end, the ramp commences in the location of the current station which is to be removed. The result of this work is a reduction in visual intrusion of the train and the cessation of traffic to and from the station together with the cessation of the arrival, standing and departure of trains. The trains will continue to pass through this point and proceed to the new Flinders Station and on return, continue past toward the north.

This northern area is the most sensitive area affected by the proposal as it comprises residential or sensitive receivers. The remainder of the route is either transport corridor, commercial or institutional activities. The landscape will be altered by the introduction of the access pathway leading to the shared path on the viaduct. Plantings are proposed along the foot of the rising wall.

The objectives for the Marion Council Residential Zone read:

- 1 An attractive residential zone comprising a range of dwelling types including a minimum of 15 per cent affordable housing.**
- 2 Increased dwelling densities in close proximity to centres, public and community transport routes and public open spaces.**

Objective 2 promotes higher density development proximate to transport routes. There are two policy areas 12 and 16 relevant to this proposal. The Regeneration Policy Area 16 on the eastern side of the rail corridor in Objective 8 seeks “improved community services and infrastructure.” The proposal will provide improved regional services albeit that the station facilities will be relocated to the Flinders precinct to better serve the greater user population.

The Mitcham (City) and Marion Council Development Plans have highly aligned policy for the Regional Activity Zone that extends from Sturt Road across Main South Road and including the Flinders University and the Flinders Health precinct.

The objectives for this zone read:

Mitcham Objective 1: A zone that has a focus of land uses that are state wide, national and international attractors supported by a mix of compatible land uses.

Marion 1 A zone that has a focus of land uses that are state wide, national and international attractors supported by a mix of compatible land uses including shops, entertainment, medium and high density residential.

Mitcham and Marion Objective 2: Well designed and functional mixed use areas with a walkable urban form, pedestrian and cyclist friendly streetscapes, and active street frontages that facilitate personal interaction and promote public transport use.

Mitcham and Marion Objective 3: The design and layout of development to encourage walking and cycling and promote public transport use and healthy neighbourhoods.

Objective 4: A mixed use zone with a variety and concentration of activity close to key focal points such as education or health facilities, fixed transit stops, or high quality open space areas.

Marion 4 A mixed use zone with a variety and concentration of day-time and night-time activity close to key focal points such as an education or health facility, a fixed transit stop, an activity centre or high quality open space areas.

Mitcham Objective 5: Development that ensures the long-term operational, safety, and aviation requirements of helicopter landing sites continue to be met.

Marion 5 Development that minimises environmental health impacts upon human health, local amenity and the environment.

Marion and Mitcham Objective 6: Development that contributes to the desired character of the zone.

The desired character reinforces and supports the development of complementary uses and the creation of a vibrant environment. A strong focus of the policy is the encouragement of a friendly pedestrian and cycle environment and the extension of the Tonsley line to serve the Flinders precinct

Concept Plan Fig Mit/1 on page 55 depicts this extension.

The Desired Character Statement incorporates the following commentary on the Flinders Station and the desired outcome for its immediate surrounds:

“The Flinders Village Area will be focused around the Flinders Link rail station. It will cater for medium to high density, inter-generational residential developments including multi-storey dwellings, residential flats, student accommodation, aged care and affordable housing, as well as tourist accommodation. The Area will also be the focus for a variety of mixed uses that support the daily needs of on-site residents such as retail, entertainment and community facilities; together with offices and consulting rooms that complement the health, education and research activities of the Core Area. Ground level land uses such as entertainment and retail, which provide night and day activation will be concentrated around the Flinders Link station to promote interest, safe movement and convenient access to goods and services.....”

and

“The Flinders Link rail station will provide an important public transport link between the Flinders site, Tonsley and the Adelaide central business district. There will be a significant focus on safe and efficient movement for vehicles (including emergency vehicles and helicopters), pedestrians and cyclists throughout the Area as well as to adjacent areas and key sites. Building design will emphasise movement between the rail station and the Flinders Medical precinct, potentially via a pedestrian overpass, and the Flinders University.”

This is a significant recognition of the desire for the extension of the rail line and the relocation of the station facilities to the area adjacent the Flinders Medical Centre.

Accordingly, the proposal accords with the Development intent for the further improvement, extension and provision of public transport, pedestrian and cycle infrastructure in the area.

Flinders Link reinforces and supports the strategic direction for public transport services to this regional activity centre.

5.2 CITY WIDE PROVISIONS - MARION COUNCIL

5.2.1 CRIME PREVENTION

Objective 1 reads:

- “1 A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.”**

The Flinders Link Project has been design taking account of the principles of crime prevention through environmental design. The detailed assessment is in **Volume 2 Attachment 3**. The conclusions of that report is that the proposal successfully integrates CPTED techniques and provides a highly transparent design.

5.2.2 DESIGN AND APPEARANCE

Objective 2 is most relevant as it seeks:

- “2 Roads, open spaces, paths, buildings and land uses laid out and linked so that they are easy to understand and navigate.”**

The pathways and links created in this proposal significantly enhance the accessibility and navigability for users.

In all other respects, the design of the infrastructure is integrated across all elements with a strong unifying theme of the connecting ribbon across the precinct. Materials and finishes are similarly consistent throughout and reflect the function of the infrastructure whilst providing suitable and desirable amenity for the users with protected spaces, covered walkways, amenities and wayfinding.

5.2.3 INFRASTRUCTURE

Objectives 4 and 5 are most relevant to this proposal.

- “4 The visual impact of infrastructure facilities minimised.”**
- “5 The efficient and cost-effective use of existing infrastructure.”**

The visibility of this rail link is unavoidable given its location and its need to traverse major road corridors. It is however a cost effective way to deliver to a significant regional node valuable and needed public transport facilities. Therefore notwithstanding its visibility, its function is of regional significance and its visibility an important part of informing the public as to its function and the role it plays for the community.

5.2.4 INTERFACE BETWEEN LAND USES

The objectives set out the need to minimise effects and conflicts between uses. These are reinforced in the principles. Of particular note are Principles of Development Control 1, 7 and 8 read:

- “1 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:**

- (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants**
- (b) noise**
- (c) vibration**
- (d) electrical interference**
- (e) light spill**
- (f) glare**
- (g) hours of operation**
- (h) traffic impacts.**

- 7 Development that emits noise (other than music noise) should include noise attenuation measures that achieve the relevant Environment Protection (Noise) Policy criteria when assessed at the nearest existing noise sensitive premises.**

- 8 Development with the potential to emit significant noise (e.g. industry) should incorporate noise attenuation measures that prevent noise from causing unreasonable interference with the amenity of noise sensitive premises.”**

As earlier referenced, the acoustic environment will require further assessment to determine whether additional mitigation works will be necessary to meet the goals set in the relevant guidelines.

The sensitive area is the residential environment to the north of Sturt Road. It is noteworthy that this community experience the existing rail operations including the stopping and starting of trains and the coming and going of patrons.

The proposal will not be likely to result in unreasonable affects or interference.

5.2.5 REGULATED AND SIGNIFICANT TREES

The provisions for vegetation protection under each of these headings seek to protect valuable vegetation in our environment.

In this circumstance, the wider interest of the community by the provision of public transport to a significant population and its valuable integration with regional facilities is balanced against the very limited need to remove trees to enable this development. The Design Report – Environmental in **Volume 2 Attachment 6** in **Section 6** sets out the vegetation to be removed and that which is to be retained and pruned. One regulated and two significant trees are to be removed.

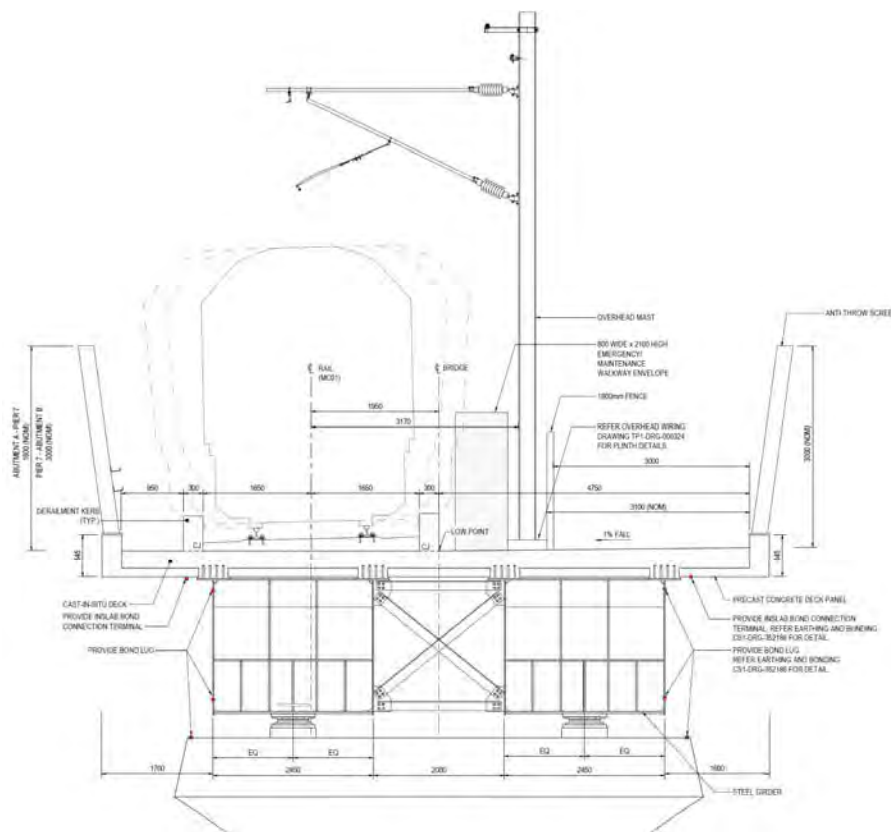
5.2.6 TRANSPORTATION (MOVEMENT OF PEOPLE AND GOODS)

Objectives 1, 2, 4 and 5 read:

- “1 A comprehensive, integrated, affordable and efficient air, rail, sea, road, cycle and pedestrian transport system that will:**
 - (a) provide equitable access to a range of public, community and private transport services for all people**
 - (b) ensure a high level of safety**
 - (c) effectively support the economic development of the State**
 - (d) have minimal negative environmental and social impacts**
 - (e) maintain options for the introduction of suitable new transport technologies.**
- 2 Development that:**
 - (a) provides safe and efficient movement for all transport modes**
 - (b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles**
 - (c) provides off-street parking**
 - (d) is appropriately located so that it supports and makes best use of existing transport facilities and networks**
 - (e) provides convenient and safe access to public transport stops.**
- 3 A road hierarchy that promotes safe and efficient transportation in an integrated manner throughout the State.**
- 4 Provision of safe, pleasant, accessible, integrated and permeable pedestrian and cycling networks that are connected to the public transport network.**
- 5 Safe and convenient freight and people movement throughout the State.”**

The overarching theme is for the provision of an integrated transport network and connections that are safe and convenient whilst supporting equitable access and the economic development of the state. This project seeks to enhance the public transport and offering to a greater number of users and provide these services in a safe and convenient manner. The links to bus, pedestrian and cycle networks enhances the functionality, accessibility and operation of the precinct. This is further reinforced in Principle of Development Control 2.

Principle of Development Control 3 encourages the design to not unreasonably interfere with the health and amenity of adjacent sensitive receivers. The residential environment north of Sturt Road includes the existing rail corridor and activities associated with the terminal station at Tonsley. The proposal will result in trains passing through this area and no longer stopping to wait to return to Adelaide.



An assessment of the acoustic environment has been undertaken. **Refer Volume 2 Attachment 7** with reference to a separate report on Curve Squeal in **Attachment 8**. The findings of that assessment is that without mitigation measures, noise levels could exceed the design criteria for the upgraded rail line primarily due to curve squeal noise considering the penalties applied in the modelling. It is also noted that curve squeal may not be eliminated by track/wheel mitigation measures in which case an at source barrier may be employed as shown on the accompanying diagram.

The report also acknowledges that such treatments may not be visually attractive in which circumstances, treatment at the receiver may be considered. Nevertheless, the application of noise barriers as identified in the diagram above will enable the acoustic environment to be within the defined guidelines. Similarly, at receiver treatment is able to meet the relevant guidelines.

The actual acoustic environment will not be able to be precisely determined until operation. In all circumstances however it is intended to meet the prescribed criteria for the acoustic environment at sensitive receivers as an operational condition. We invite the authority to incorporate the guidelines as the basis of a condition for this acoustic environment.

5.2.7 CYCLE AND WALKING

Cycling and walking Principles 15, 16, 19 and 20 encourage integration of paths and networks, accessibility and end of trip facilities. This project incorporates integrated and connected pathways, appropriate wayfinding and end of trip parking and public conveniences at the new Flinders Station.

5.2.8 ACCESS

Principles of Development Control 23 and 32 seek safe and convenient access for all users. There are various means and routes available to access the shared path, the railway station and nearby facilities and modes of transport. These include the stairs and lifts on either side of Main South Road, the covered pathway between the Flinders Station and the Flinders Medical Centre, the switchback ramp and stairs on Lynton Avenue and the underpass between Lynton Avenue and Birch Crescent.

5.3 CITY WIDE PROVISIONS – MITCHAM (CITY)

5.3.1 INTERFACE BETWEEN USES

The objectives for Mitcham match those for Marion in intent.

Objective 19: Development located and designed to minimise adverse impact and conflict between land uses.

Objective 20: Protect community health and amenity from adverse impacts of development.

The rail corridor and existing rail operations sit between two residential areas and therefore the amenity incorporates those rail operations. These will continue albeit that the train operations will not terminate at this location but continue through to the new Flinders Station. It is acknowledged that the acoustic environment will require testing and measuring to ensure the application of the relevant mitigation measures to meet the relevant guidelines.

5.3.2 SIGNIFICANT TREES

Objective 39: The conservation of significant trees in Metropolitan Adelaide which provide important aesthetic and environmental benefit.

The proposal results in only one regulated tree and two significant trees being removed as the area has been significantly modified over time. The need to create the extension outweighs the retention of these trees.

5.3.3 INFRASTRUCTURE

The Tonsley development will result in a much greater need to travel between Tonsley Park and the Flinders precinct. This infrastructure will be provided prior to the Tonsley development completion. The Tonsley Park land has been set aside for development in this area for several years.

The rail extension and bridge will be a critical piece of infrastructure for the area, improving access for pedestrians and cyclists.

5.3.4 INTERFACE BETWEEN LAND USES

The development will have a positive impact on the community by providing a shared path over two arterial roads and linking the Tonsley and Flinders precincts. Community health, amenity and safety will be improved by providing a safe, accessible environment. The removal of the station and its end of line relocation to the Flinders precinct will reduce conflict between the rail operations and the residential environment.

5.3.5 LANDSCAPING, FENCES AND WALLS

Where possible, the surrounding trees and vegetation that exist will be retained. Further planting, landscaping generally and pathways are proposed at the northern end of the works where the bridge commences. A stormwater basin is proposed to be encompassed by a ramped connection to the shared pedestrian and cycle path. This path will provide direct connection to the landscaped greenway proposed by the City of Marion leading northwards parallel to the rail corridor.

South of the bridge between Laffers Road and Main South Road, a landscaped park is proposed incorporating paths leading to the stairs and lifts that afford safe and convenient access to and from the at grade transport network and the elevated pathway leading to the Flinders precinct. Safety fencing is provided along the bridge edge and to separate users from the rail infrastructure.

5.3.6 CRIME PREVENTION

Cyclist and pedestrian safety is important in encouraging the use of the shared path, particularly outside of daylight hours. The design provides clear sightlines and opportunities for concealment or entrapment have been minimised.

Bridge and approach path lighting will be provided to meet appropriate categories for safety and visibility.

CCTV will be installed at the station to provide surveillance and activity records. Refer **Volume 2 Attachment 3** CPTED report.

5.3.7 TRANSPORTATION AND ACCESS

Both Council Development Plans encourage “a comprehensive, integrated, affordable and efficient air, rail, sea, road, cycle and pedestrian transport system”.

The development will contribute to achieving this objective by providing a dedicated pedestrian and cycle path over Sturt Road and Main South Road and by extending the rail to better serve the Flinders precinct activity node.

Both Councils also encourage safe, convenient and attractive walking and cycling routes that connect public facilities, to encourage sustainable methods of transport. There is a direct connection between this objective and the development, as the development will significantly enhance accessibility, legibility and safety of access thus encouraging the use of the pathway and the rail.

5.3.8 REGULATED AND SIGNIFICANT TREES

The proposed works requires the following tree-damaging activity to be undertaken in order to accommodate the development:

- removal of one Regulated Tree; and
- removal of two Significant Trees.

These trees are located on Commissioner of Railways land and accordingly are exempt from approval.

Both Council Development Plans provisions refer to the following in regard to regulated tree removal:

“A regulated tree should not be removed or damaged other than where it can be demonstrated that the following applies:

- **development that is reasonable and expected would not otherwise be possible.**

In regard to pruning, tree damaging activity other than removal should seek to maintain the health, aesthetic appearance and structural integrity of the tree.

In consideration of the proposed development, it is deemed that ‘reasonable and expected’ development cannot occur without their removal. This tree-damaging activity is deemed necessary to accommodate the construction of the rail extension. The removal of these trees is seen to be outweighed by the benefits the rail extension will provide to the user community. Semi-mature trees have already been sourced early to ensure an optimal offset planting outcome.

DPTI propose to make arrangements for the planting of two trees per tree that is removed as part of this application, to be planted in consultation with Marion and Mitcham Councils. Refer to the Landscape Plan in **Volume 2 Attachment 4**.



6

SUMMARY

6.0 CONCLUSION

The proposed extension of the Tonsley line and the creation of a new station and associated links and facilities is comprehensive however, as a consequence of the regulatory framework only certain of the works require authorisation pursuant to the Development Act. These works are:

- Rail Track extension and viaduct supports (except on railways land);
- Toilet block, bike enclosure, shelter, driver amenity structures;
- Stair and elevated access to Flinders Drive from viaduct structure;
- Elevated pedestrian walkway to Flinders Medical Centre;
- Removal of regulated and significant trees (not on Comm. Highways land or road under care & control);
- Earthworks associated with the filling or modification of the land (not essential to railway operations); and
- Landscaping (which form public realm works for Flinders Station).

In summary, the proposed development meets the overall vision and policies of the Marion Council and Mitcham Council Development Plans and is not seriously at variance with Development Plan provisions.

The Development Plan specifically acknowledges the extension to the Tonsley line and the relocation of the station facilities at its new terminus in the Flinders precinct where the development of a hub centred on the station is anticipated.

Assessment of other overarching strategic planning documents at the Federal, State and Local level reveal that the rail extension will contribute to meeting many of the strategic priorities for the State and reinforce the regional capacity and function of the Activity Zone.

The current proposal is for development under section 49 of the Development Act 1993. This report identifies this application as strategic infrastructure that is to be provided by the Department of Planning, Transport and Infrastructure to support efficiency of the rail and BikeDirect networks.

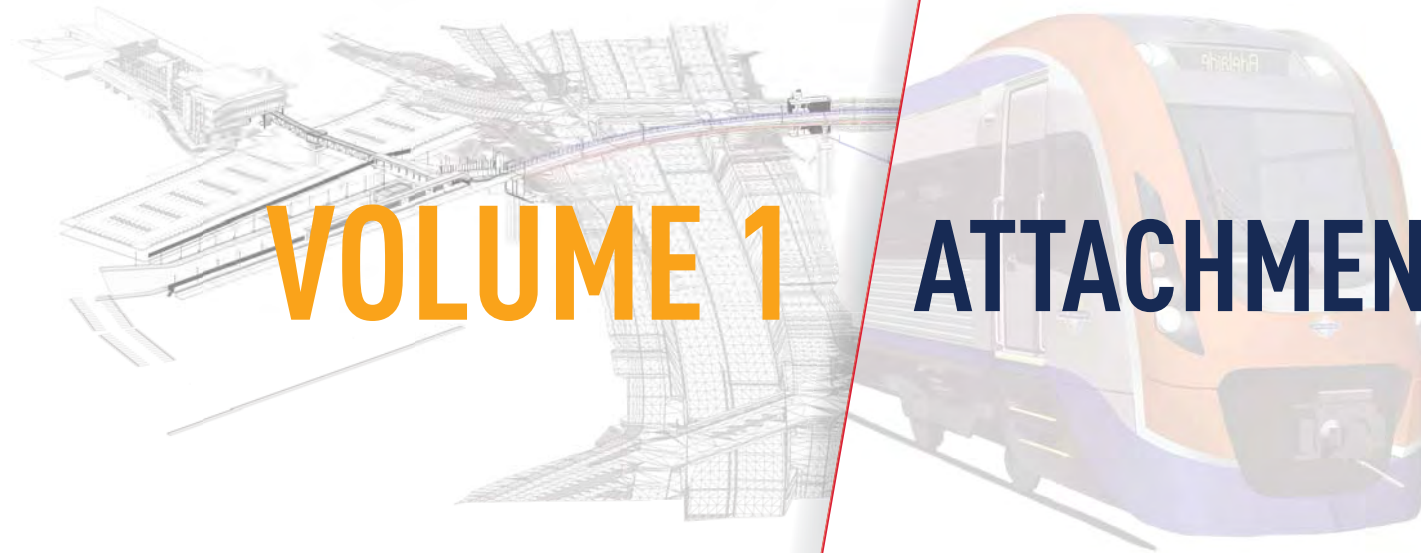
The proposal meets the strategic, design and functional expectations set out in the Development Plan and is consistent with the expectations for the Regional Activity Zone.

The design creates and completes an integrated transport outcome linking critical elements of the urban environment to serve the Flinders precinct and make more efficient and effective the provision of public transport whilst enabling safer and more convenient interconnectivity for pedestrians and cyclists.

For these reasons as detailed in the report and supporting documents, the proposed development warrants Development Approval.

ATTACHMENTS VOLUME 1

ATTACHMENTS VOLUME 2



VOLUME 1

ATTACHMENTS

1

DEFINING DEVELOPMENT

ITEM OF PROPOSAL	RELEVANT SECTION OF DEVELOPMENT REGULATIONS, 2008	DEVELOPMENT STATUS	COMMENT
Decommissioning of Tonsley Station and Platform	<i>Schedule 1A—Development that does not require development plan consent</i> <i>12 Demolition</i> <i>(1) The partial or total demolition of a building and associated structures...</i>	NOT DEVELOPMENT no approval required	
Earthworks and associated landscaping which are essential and ancillary to development of the line extension		NOT DEVELOPMENT no approval required	The area affected by the rail works on the sloping land facing South Road could be considered 'incidental and therefore not development'.
Portion of rail line that will be located on existing railway land (e.g. replacing portion of existing Tonsley Line) i.e less than 300 metres	<i>Schedule 3, 13(1)</i>	NOT DEVELOPMENT no approval required	
Rail bridge and foundations	<i>Schedule 1A—Development that does not require Development Plan Consent</i> <i>16 Building work on railway land</i> <i>Building work in relation to a building that is—</i> <i>(a) associated with a railway; and</i> <i>(b) situated (or to be situated) on railway land (within the meaning of Schedule 3 clause 13(5)); and</i> <i>(c) required for the conduct or maintenance of railway activities.</i>	NOT DEVELOPMENT no approval required	This part of track exempt Schedule 3, 13(1) (a) (ii).
Rail viaduct structure (both sub-structure and superstructure)			Schedule 1A 16 or Schedule 3,13 (1) (b).
Lighting (rail track, pedestrian and platform)			"
Flinders Link Station Platform			"
New Stair and Lift Connection to rail platform	<i>Schedule 3—Acts and Activities which are not development</i> <i>13 Railway activities</i> <i>(b) infrastructure associated with a railway;</i>		"
Stair and elevated access adjacent to Flinders Drive	<i>(5) In this clause— infrastructure means—</i>		"

ITEM OF PROPOSAL	RELEVANT SECTION OF DEVELOPMENT REGULATIONS, 2008	DEVELOPMENT STATUS	COMMENT
Signalling equipment	<p>(a) <i>track structures (including over or under track structures);</i></p> <p>(b) <i>track supports;</i></p> <p>(c) <i>any structure or equipment associated with any power, signalling, control or communications system (including signalling boxes, huts, gantries, masts, towers, poles and frames);</i></p> <p>(d) <i>installations or equipment for lighting platforms or other parts of any station, yards or sidings, other than within Area A or Area C described in a map entitled Airport Building Heights if that map is contained in the relevant Development Plan;</i></p> <p>(e) <i>warning, directional or other signs;</i></p> <p>(f) <i>shelters and furniture, including information boards and seating, associated with any railway, tramway or light railway;</i></p> <p>(g) <i>other infrastructure related to the operation or maintenance of railway, tramway or light railway activities;</i></p> <p>AND – for any building work undertaken on ‘railway land’:</p>	NOT DEVELOPMENT no approval required	Schedule 3, 13 1(b). Infrastructure Associated with a railway.
	<p><i>Schedule 4—Complying development</i></p> <p><i>Part 2—Building rules</i></p> <p><i>The following forms of building work are declared to comply with the Building Rules (other than building work which affects a State heritage place, or as otherwise indicated below).</i></p> <p><i>17 (1) Other than in respect of a local heritage place, building work undertaken for the purposes of the construction, alteration, extension, repair or maintenance of railway track (including track for a siding or a crossing or passing loop), other than building work associated with a new bridge or tunnel.</i></p>		This applies to DEVELOPMENT requiring approval eg. Rail Track greater than 300 metres in length.

ITEM OF PROPOSAL	RELEVANT SECTION OF DEVELOPMENT REGULATIONS, 2008	DEVELOPMENT STATUS	COMMENT
Signage – including wayfinding and advertising signs	<p><i>Schedule 14—State agency development exempt from approval</i></p> <p><i>1 (1) The following forms of development, other than in relation to a State heritage place or within the Adelaide Park Lands, are excluded from the provisions of section 49 of the Act:</i></p> <p>...</p> <p><i>(p) the construction of any of the following, if carried out by a State agency within the meaning of section 49 of the Act:</i></p> <p><i>(i) tourist information or interpretative signs;</i></p> <p><i>(ii) structures (including billboards) at roadside information bays;</i></p> <p>...</p> <p><i>(v) advertising displays or signs; or</i></p>	NOT DEVELOPMENT no approval required	This also applies to third party billboards. Schedule 14 1 (1)(v).
Rail track extension in excess of 300 metres in length	<p><i>Schedule 3—Acts and Activities which are not development</i></p> <p><i>13—Railway activities</i></p> <p><i>(1) Other than in respect of a local heritage place, the construction, alteration, extension, repair or maintenance (including any incidental excavation or filling) of any of the following:</i></p> <p><i>(a) railway track, other than—</i></p> <p><i>(i) track for a new railway line, but not including a siding or passing or crossing loop outside Metropolitan Adelaide that is to be less than 1 kilometre in length; or</i></p> <p><i>(ii) track for an extension to an existing railway line where the length of new track is to be at least—</i></p> <p><i>(A) within Metropolitan Adelaide—300 metres;</i></p>	DEVELOPMENT requiring approval	Schedule 3, 13 (1)(a)(A). To be treated as Complying Development in accordance with Schedule 4 17(1).

ITEM OF PROPOSAL	RELEVANT SECTION OF DEVELOPMENT REGULATIONS, 2008	DEVELOPMENT STATUS	COMMENT
	<p>(B) outside Metropolitan Adelaide—1 kilometre;</p> <p>(b) infrastructure associated with a railway;</p>		
<p>Earthworks associated with the filling of land to level area to the south of the station platform (between proposed platform and existing car park).</p>	<p>See above – the filling of this land does not fall within the ambit of ‘incidental’ because it is not directly related not required for the operation of the rail platform, nor is the fill sourced because of this project (it is from the Darlington Project).</p>	<p>DEVELOPMENT requiring approval</p>	
<p>Retaining walls in excess of 1.0 metre to create ‘tiered landscape and development areas’ those which are not directly associated or required for the railway operations.</p>	<p>Retaining walls in excess of 1.0 metre do not fall within the ambit of the schedules listed:</p> <p><i>Schedule 1A Development that does not require development consent</i></p> <p><i>Schedule 3 Acts and Activities which are not development</i></p> <p><i>Schedule 4 Complying development</i></p> <p><i>Schedule 14 State agency development exempt from approval</i></p>	<p>NOT DEVELOPMENT requiring approval</p>	
<p>Pedestrian walkway overpass to Flinders Medical Centre</p>	<p>Pedestrian overpass does not fall within the ambit of the schedules listed:</p> <p><i>Schedule 1A Development that does not require development consent</i></p> <p><i>Schedule 3 Acts and Activities which are not development</i></p> <p><i>Schedule 4 Complying development</i></p> <p><i>Schedule 14 State agency development exempt from approval</i></p>	<p>DEVELOPMENT requiring approval</p>	
<p>Removal of regulated or significant trees</p>	<p><i>Schedule 14 State agency development exempt from approval</i></p> <p><i>1 (1) The following forms of development, other than in relation to a State heritage place or within the Adelaide Park Lands, are excluded from the provisions of section 49 of the Act:</i></p>	<p>NOT DEVELOPMENT no approval required</p>	<p>DEVELOPMENT if not on a road proposed to be built under care and control of Commissioner of Highways or Rail Commissioner land.</p>

ITEM OF PROPOSAL	RELEVANT SECTION OF DEVELOPMENT REGULATIONS, 2008	DEVELOPMENT STATUS	COMMENT
	<p><i>...(v)(ii) tree-damaging activity in relation to a regulated tree</i></p> <p><i>(3) Except as otherwise specified, Subclause (1) does not apply to any development which comprises a tree-damaging activity in relation to a regulated tree.</i></p>		

Note: Rail Commissioners Act also provides exemptions and exclusions.

2



ARTIST'S IMPRESSION
*VEGETATION SHOWN AT MATURITY

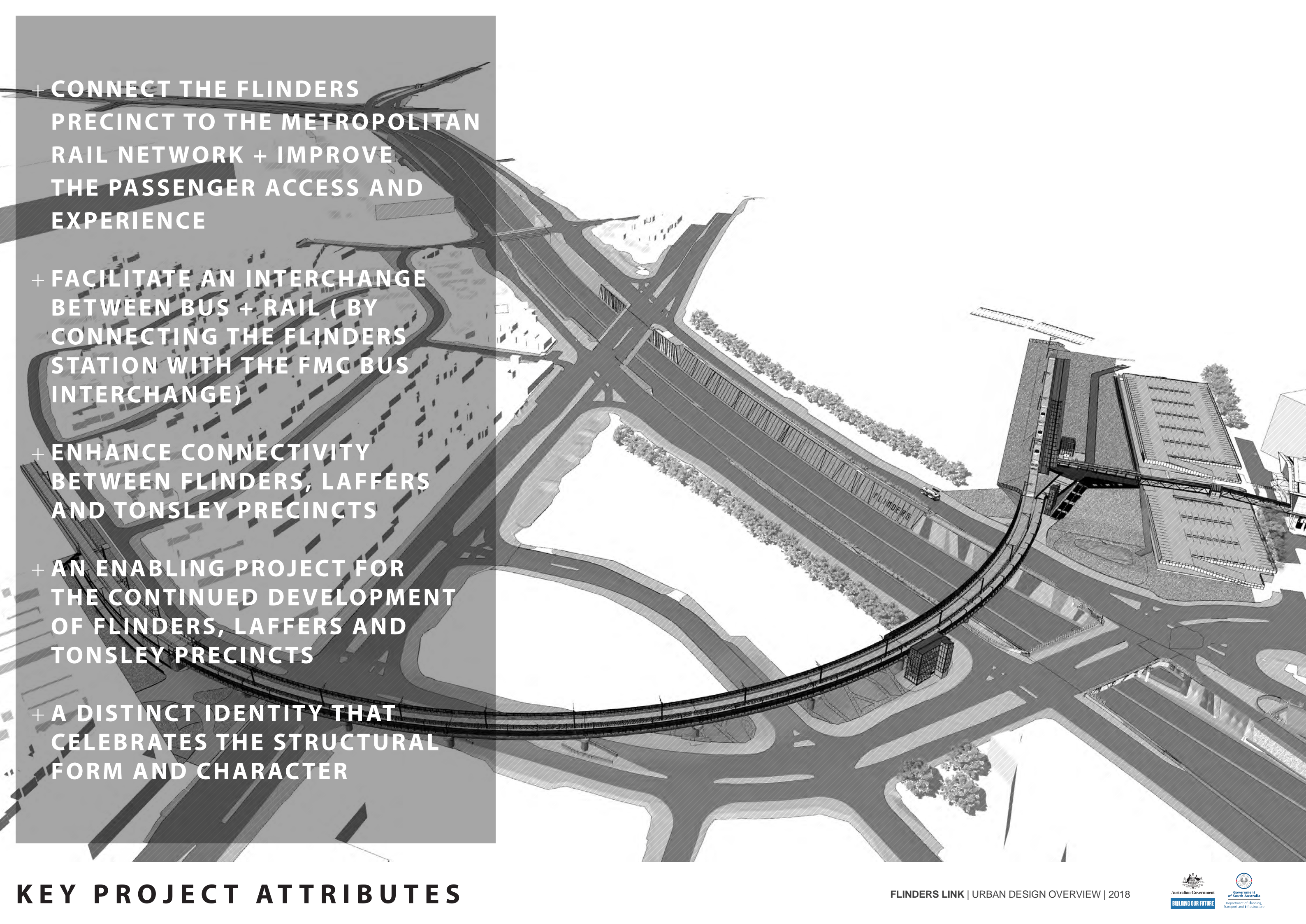
FLINDERS LINK URBAN DESIGN OVERVIEW

**TONSLEY
INNOVATION
DISTRICT**



FMC

PROJECT LOCALITY



+ CONNECT THE FLINDERS
PRECINCT TO THE METROPOLITAN
RAIL NETWORK + IMPROVE
THE PASSENGER ACCESS AND
EXPERIENCE

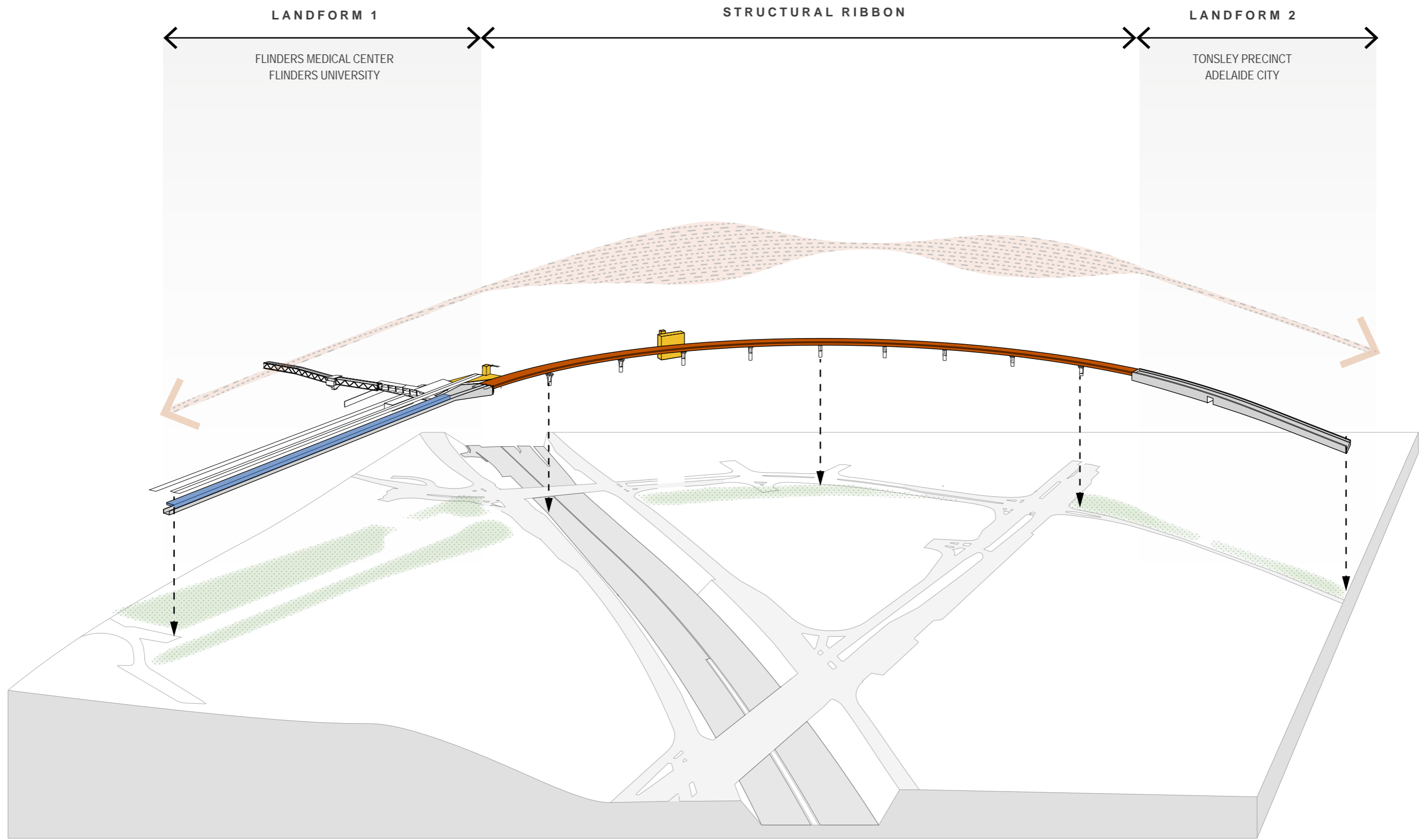
+ FACILITATE AN INTERCHANGE
BETWEEN BUS + RAIL (BY
CONNECTING THE FLINDERS
STATION WITH THE FMC BUS
INTERCHANGE)

+ ENHANCE CONNECTIVITY
BETWEEN FLINDERS, LAFFERS
AND TONSLEY PRECINCTS

+ AN ENABLING PROJECT FOR
THE CONTINUED DEVELOPMENT
OF FLINDERS, LAFFERS AND
TONSLEY PRECINCTS

+ A DISTINCT IDENTITY THAT
CELEBRATES THE STRUCTURAL
FORM AND CHARACTER

KEY PROJECT ATTRIBUTES



KEY ELEMENTS

STATION PLATFORM

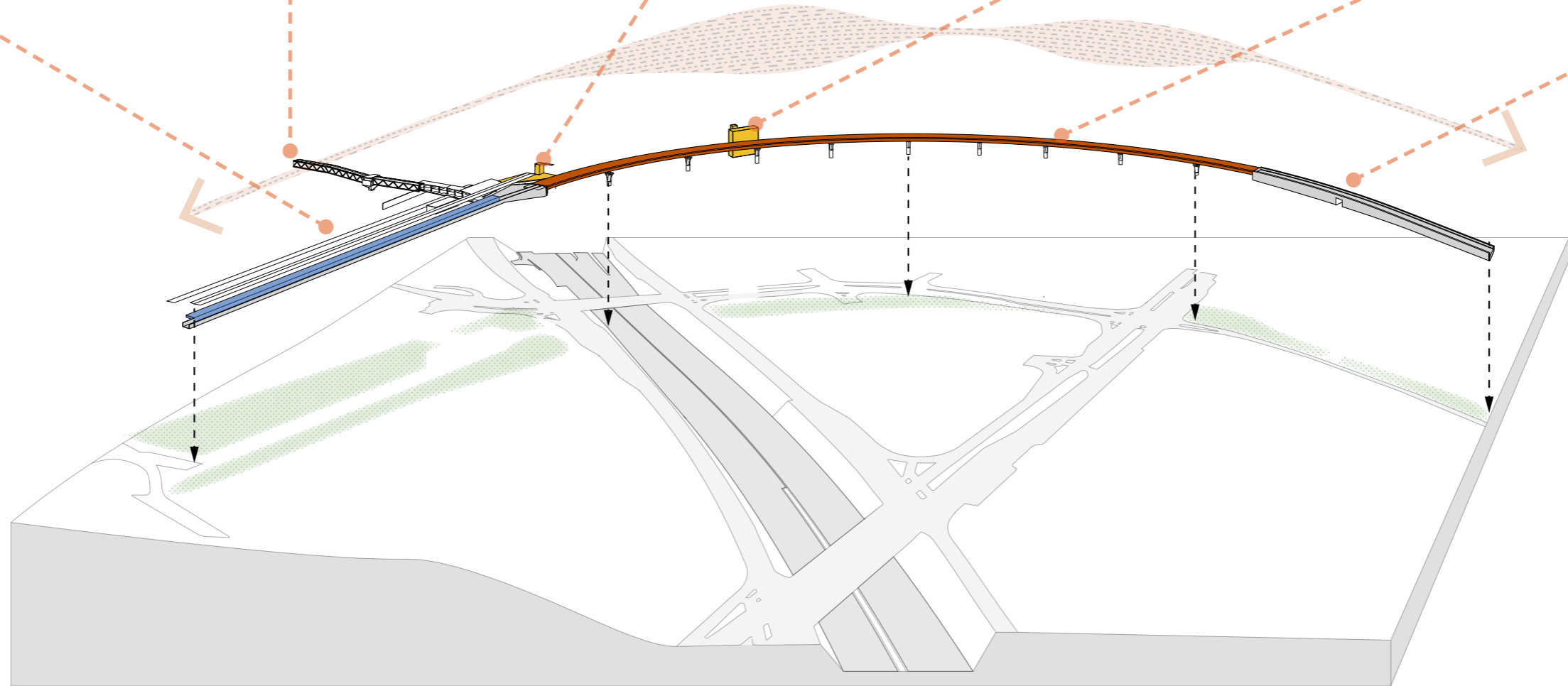
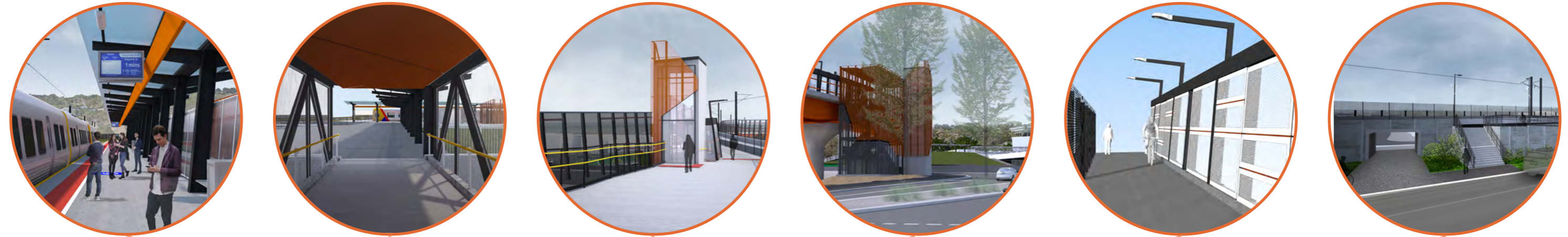
ELEVATED WALKWAY / PLAZA

EAST VIADUCT ACCESS

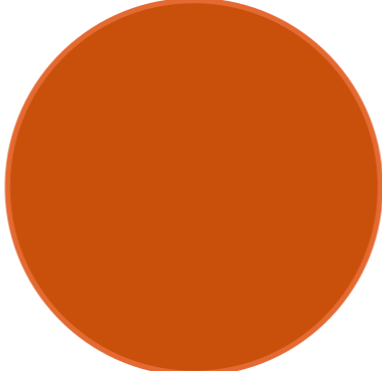
WEST VIADUCT ACCESS

VIADUCT

ON RAMP AND UNDERPASS



REFERENCE IMAGES



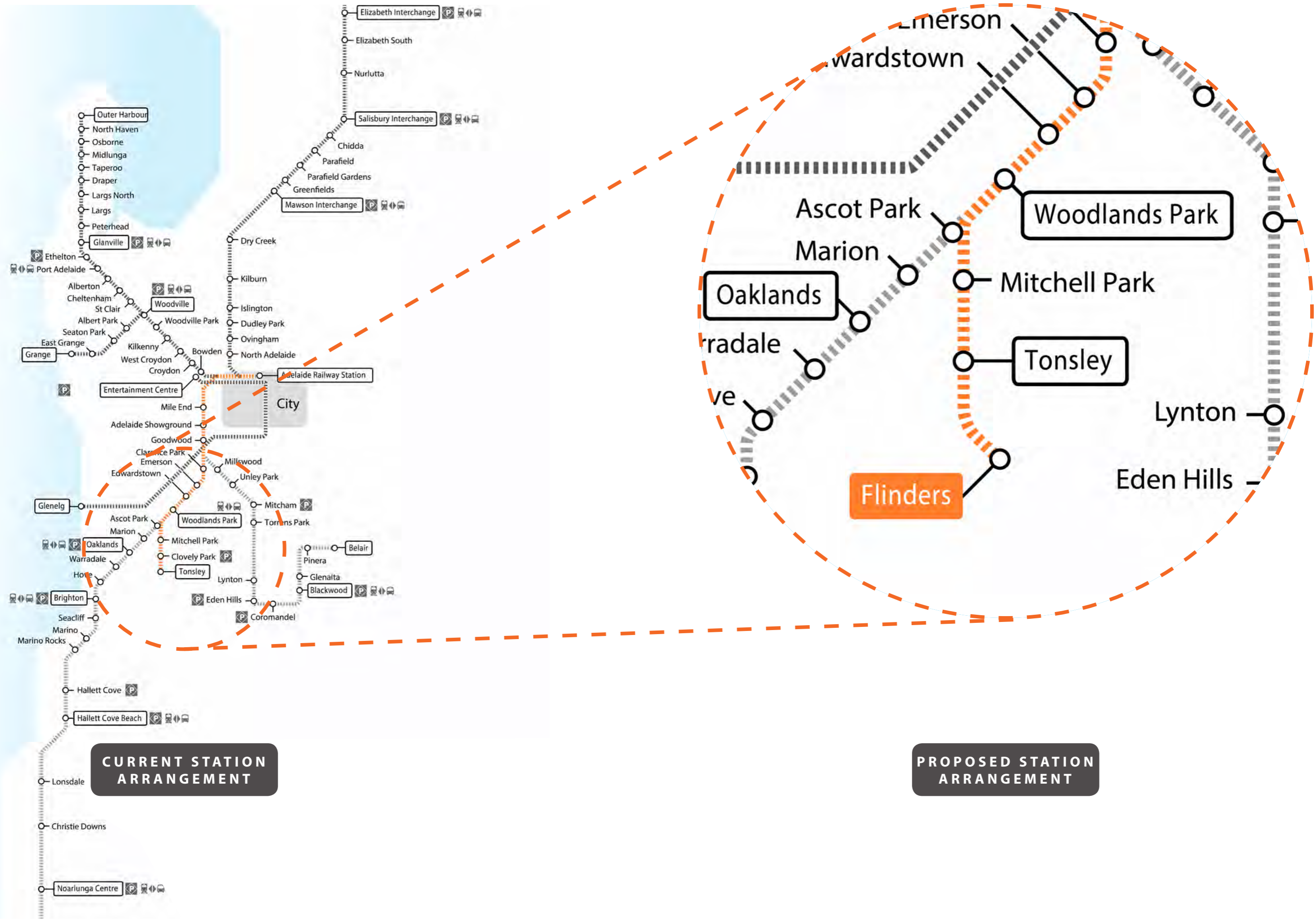
CONCEPT DIAGRAM

*VEGETATION SHOWN AT MATURITY

LEGEND

-  FOOTPATH
-  SHARED PATH
-  EXISTING FOOTPATH
-  ON STREET SHARED PATH - BY OTHERS
-  GREEN WAY - BY OTHERS
-  FOOTPATH - BY OTHERS
-  SHARED PATH - BY OTHERS
-  FUTURE PRECINCT LINKS - BY OTHERS
-  BICYCLE LINKAGE TO FLINDERS STATION/VIADUCT
-  PEDESTRIAN LINKAGE TO FLINDERS STATION/VIADUCT
-  PEDESTRIAN / WAYFINDING NODE (DARLINGTON UPGRADE PROJECT)
-  BICYCLE FACILITIES
-  PEDESTRIAN / WAYFINDING NODE
-  BUS STOP
-  RAIL PLATFORM
-  TRAIN
-  LIFT CORE
-  STAIRS
-  PEDESTRIAN UNDERPASS LINK





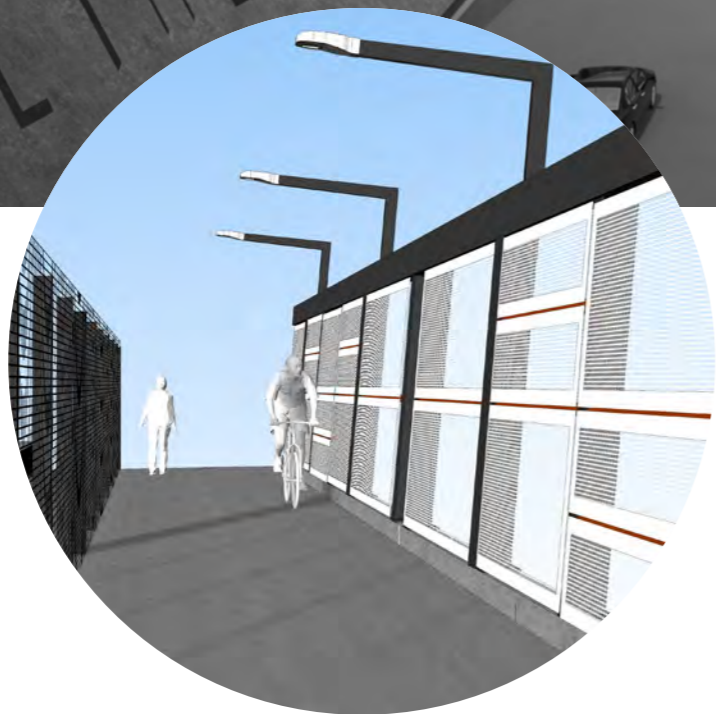
CURRENT STATION ARRANGEMENT

PROPOSED STATION ARRANGEMENT

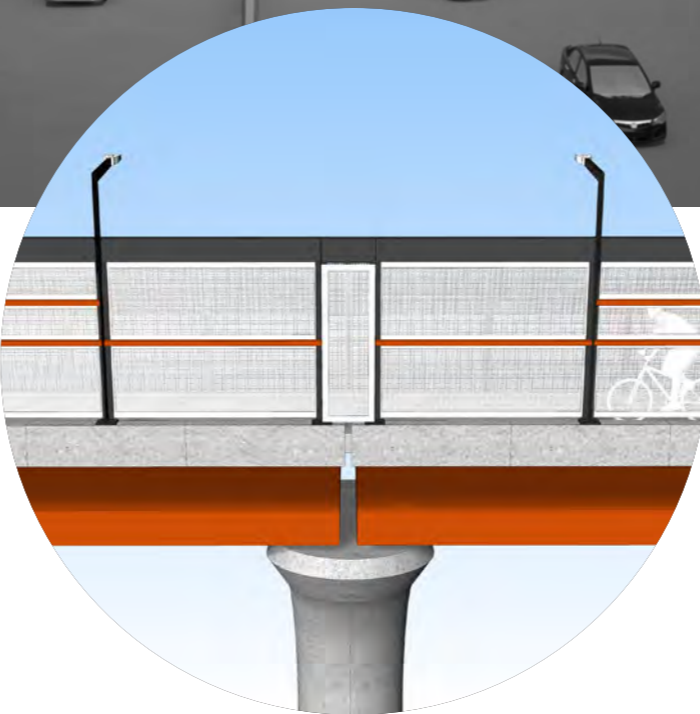
ADELAIDE METRO MAP



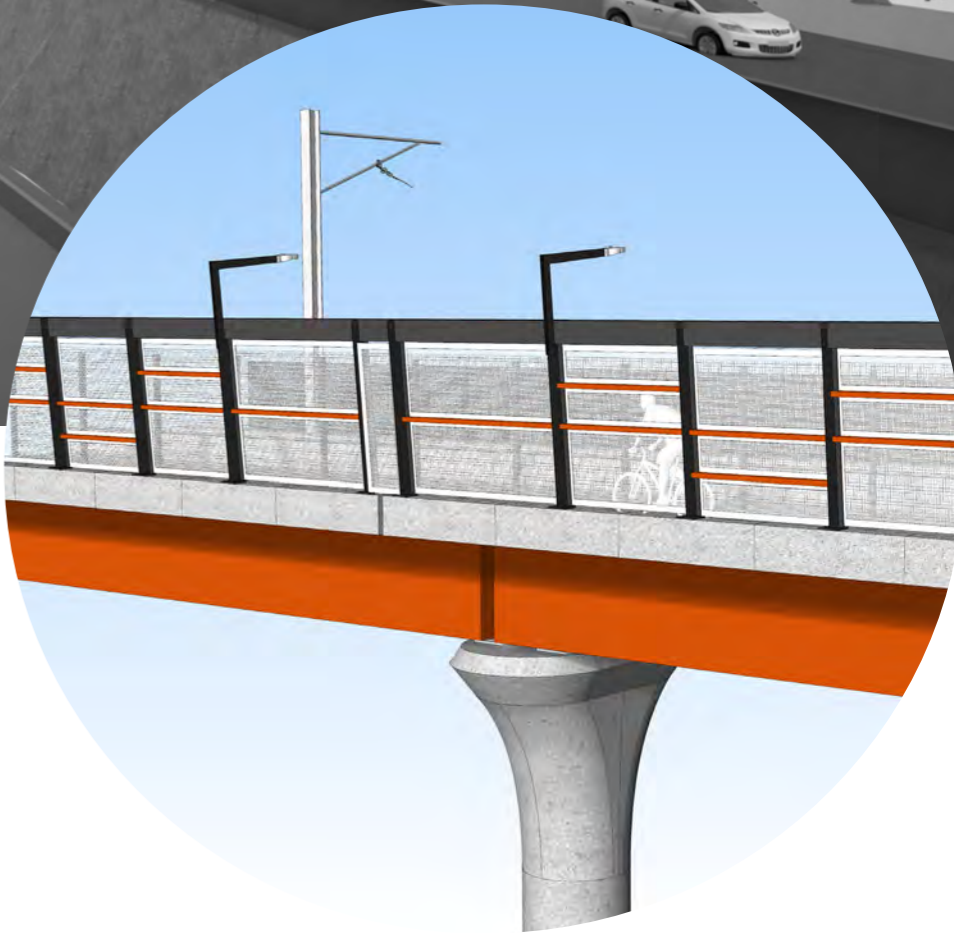
SOUTHBOUND PERSPECTIVE



VIADUCT PERSPECTIVE

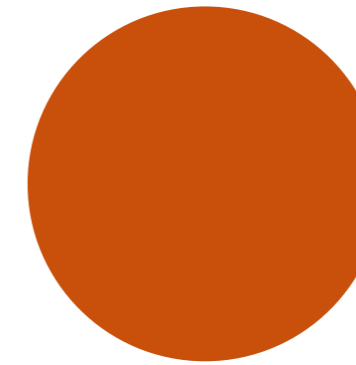
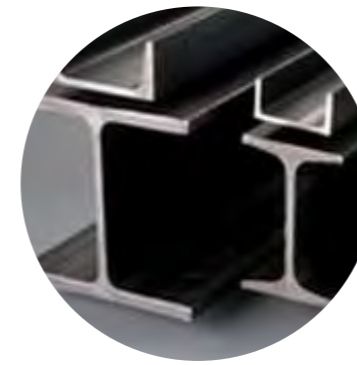
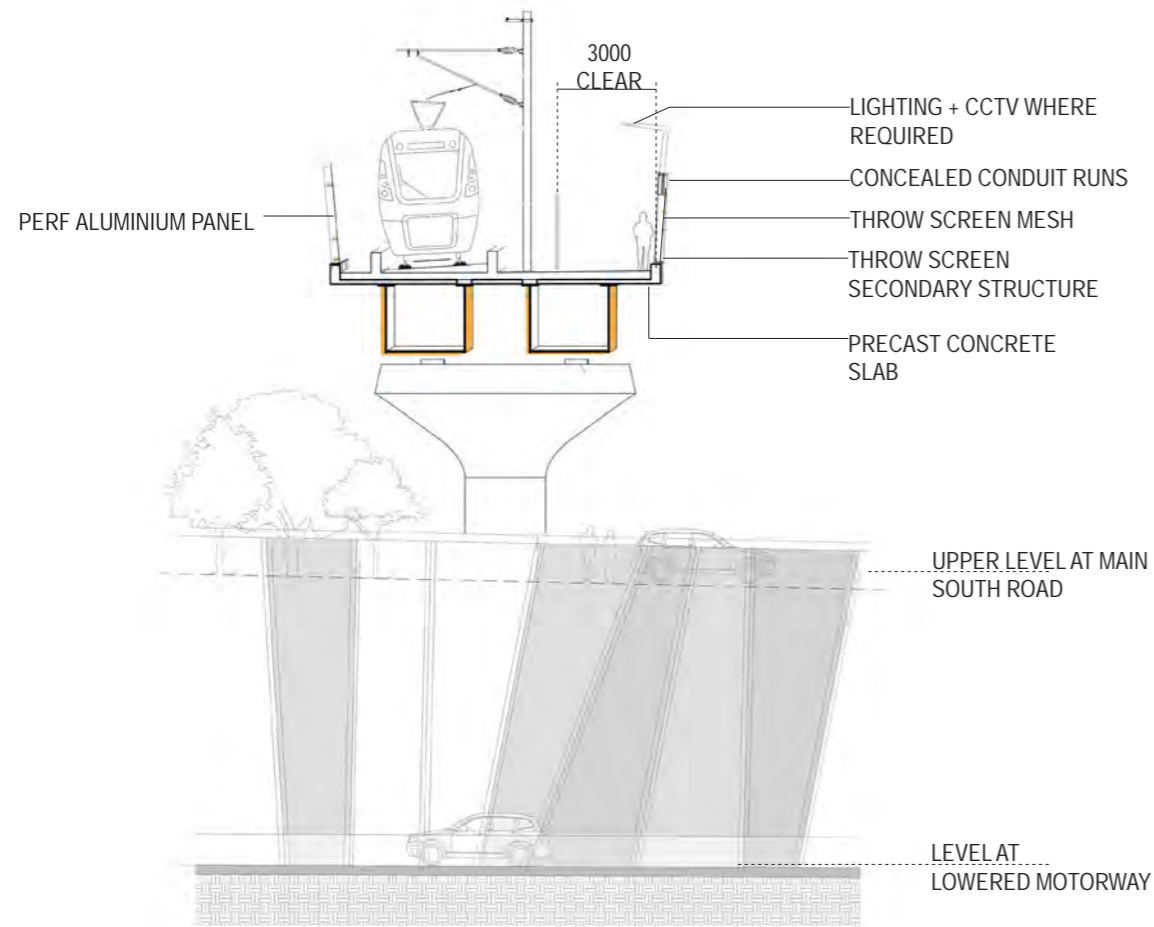


VIADUCT ELEVATION

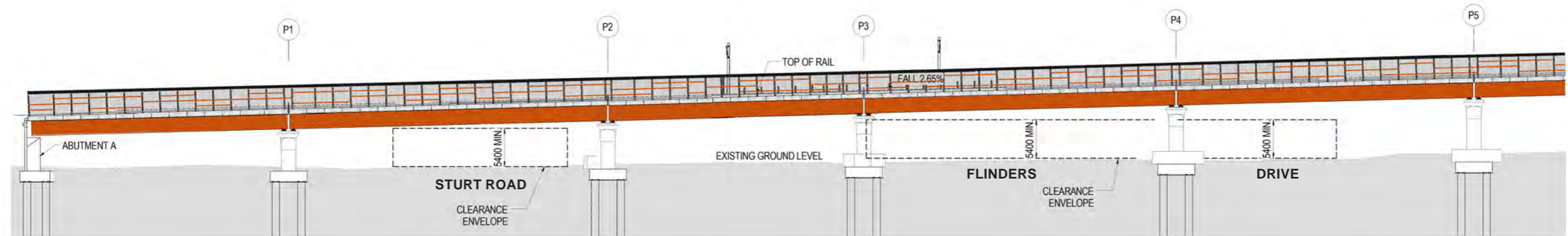


VIADUCT PERSPECTIVE

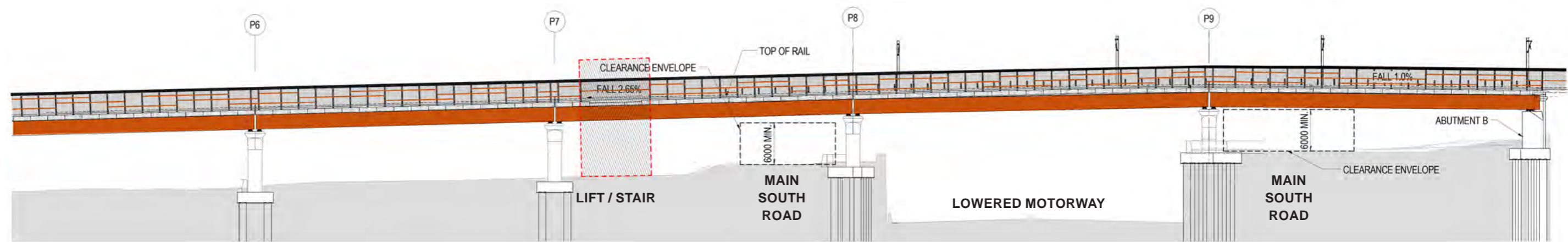
VIADUCT 3D



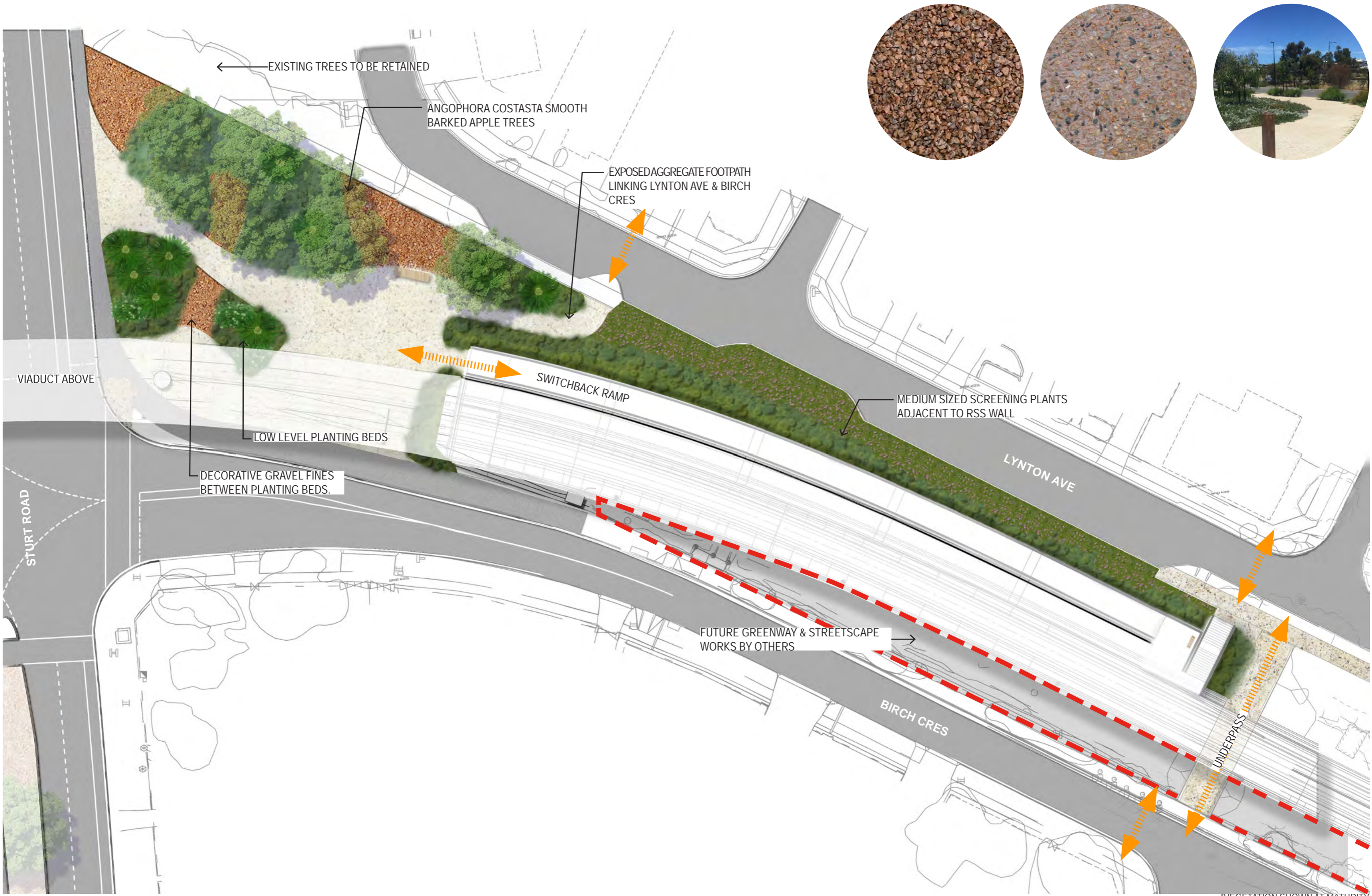
VIADUCT SECTION AT LOWERED MOTORWAY



VIADUCT ELEVATION 1



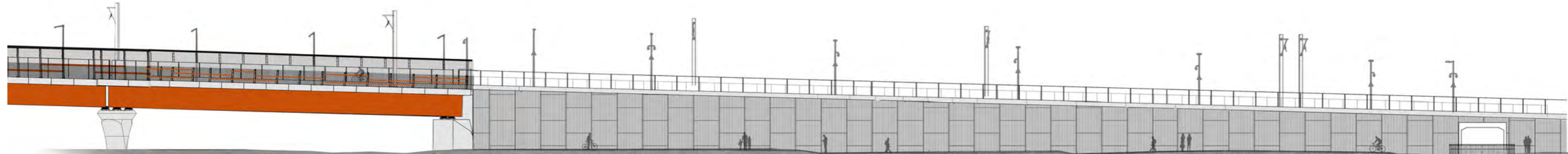
VIADUCT ELEVATION 2



WESTERN RAMP

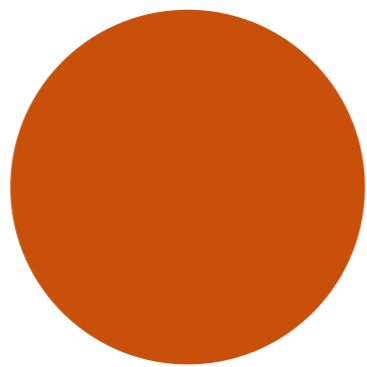


WESTERN ON RAMP / VIADUCT ELEVATION



EASTERN ON RAMP / VIADUCT ELEVATION

WESTERN RAMP 3D



STAIR + LIFT WEST 3D



SHADE TOLERANT PLANTING BANDS BENEATH VIADUCT

VIADUCT ABOVE

ZELKOVA SERRATA TREES

DECORATIVE GRAVEL FINES BETWEEN PLANTING BEDS.

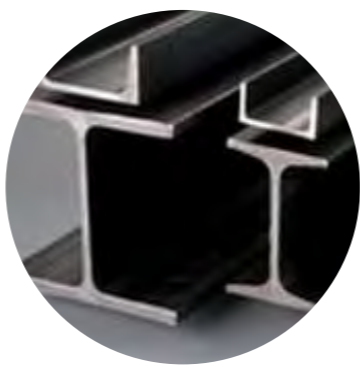
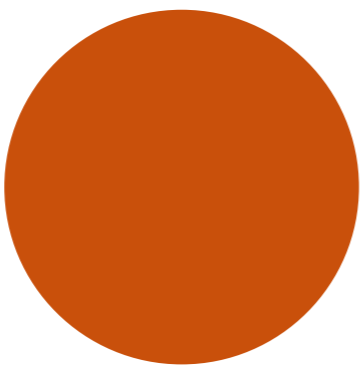
FLINDERS DRIVE

EXPOSED AGGREGATE WALKWAY LINKING ACCESS TO BUS STOPS

SOUTH ROAD

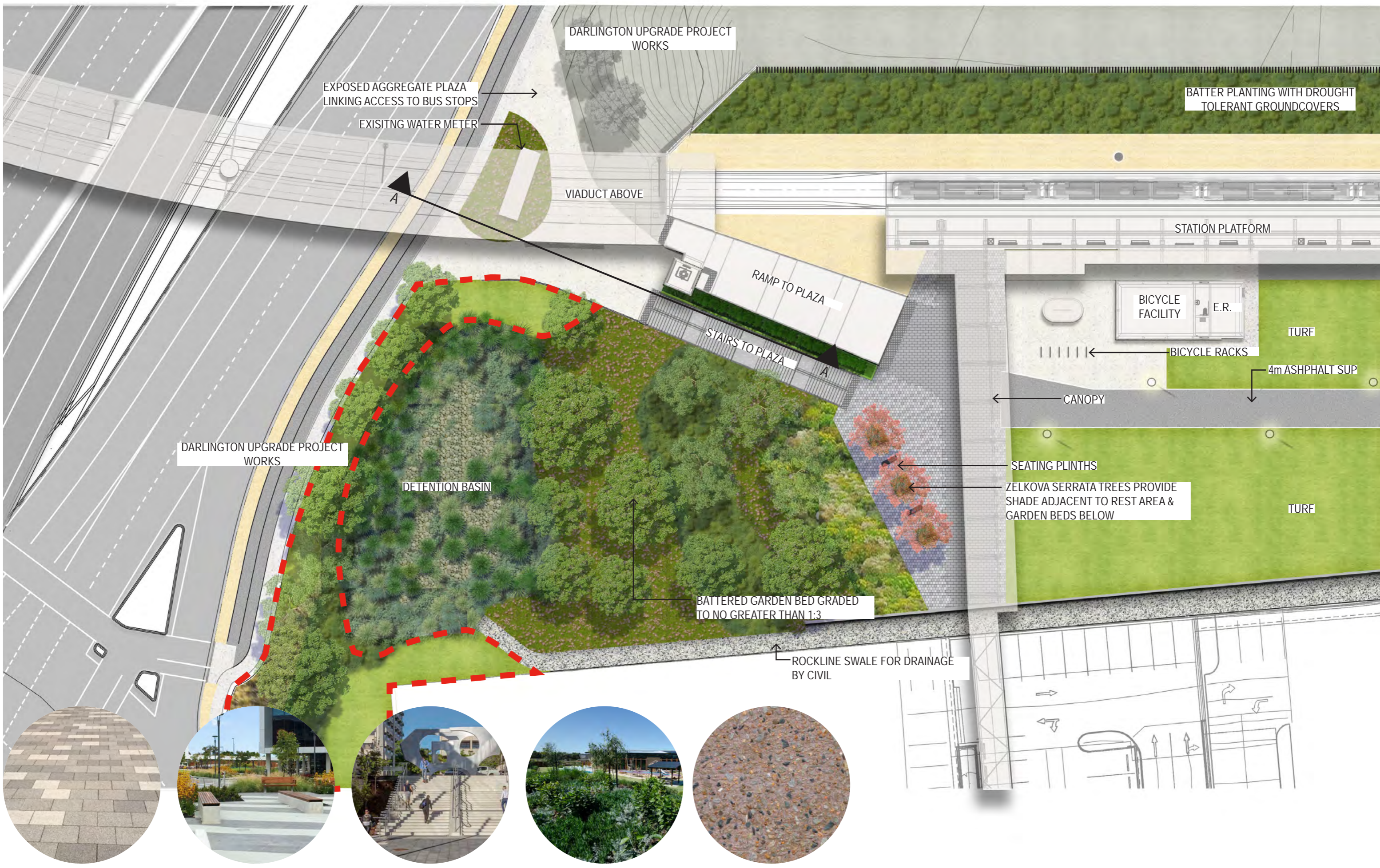
VIADUCT ABOVE



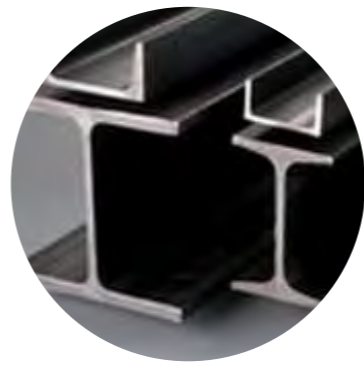
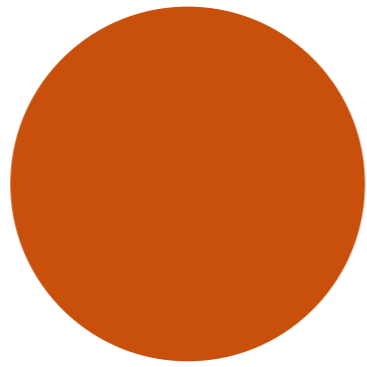
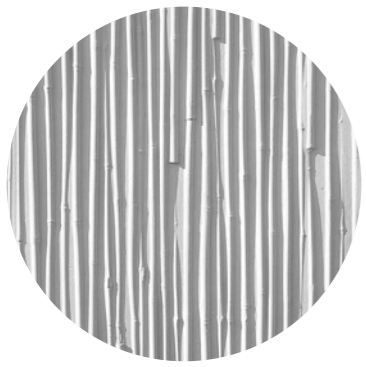


*VEGETATION SHOWN AT MATURITY
*FOREGROUND VEGETATION REMOVED FOR CLARITY

STAIR + LIFT EAST 3D



STAIR + LIFT EAST



BATTER VEGETATION

BATTER



Carpobrotus rossii
Native Pig Face



Correa pulchella
Salmon Correa



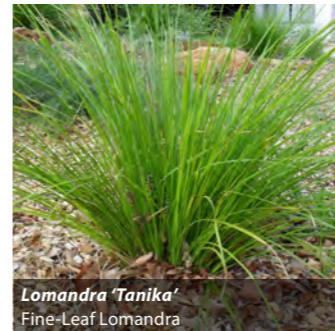
Senecio serpens
Blue Chalk Sticks



Eremophila glabra 'Kalbarri Carpet'
Compact Yellow Tar Bush



Dianella longifolia
Pale Flax Lily



Lomandra 'Tanika'
Fine-Leaf Lomandra



Atriplex semibaccata
Creeping Saltbush



Austrostipa flavescens
Spear-grass



Enchylaena tomentosa
Ruby Saltbush



Myoporum parvifolium
Creeping Boobialla



Dianella revoluta
Black Anther Flax Lily

SHADE TOLERANT (BELOW VIADUCT)



Arthropodium cirratum
New Zealand Rock Lily



Clivia miniata
Clivia



Liriope muscari
Lily Turf



Plectranthus argentatus
Silver Plectranthus



Raphiolepis indica
Dwarf Indian Hawthorn



Bambusa textilis var. gracilis
Slender Weavers Bamboo

BIO-DETENTION BASIN



Carex tereticaulis
Tall Sedge



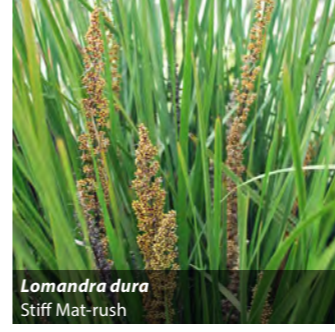
Cyperus vaginatus
Stiff Flat Sedge



Ficinia nodosa
Knobby Club Rus



Juncus krassii
Sea Rush

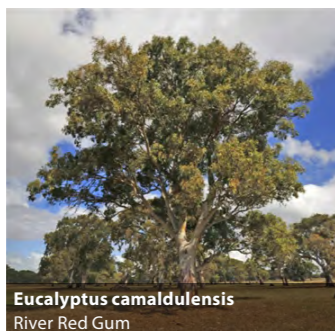


Lomandra dura
Stiff Mat-rush

TREES



Angophora costata
Smooth Barked Apple



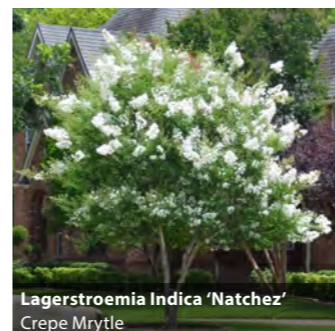
Eucalyptus camaldulensis
River Red Gum



Eucalyptus leucoxylon
S.A. Blue Gum



Eucalyptus microcarpa
Grey Box



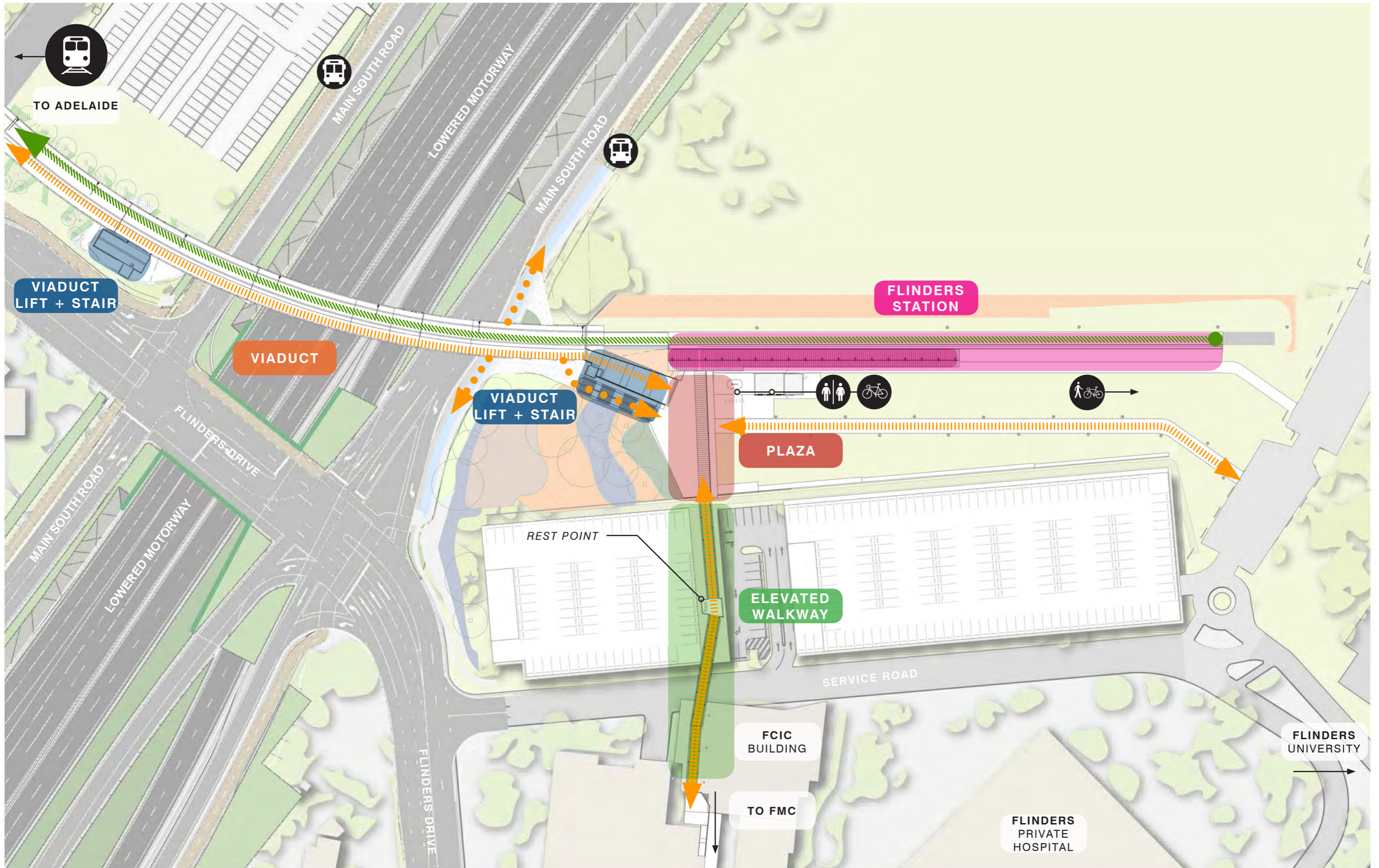
Lagerstroemia Indica 'Natchez'
Crepe Myrtle



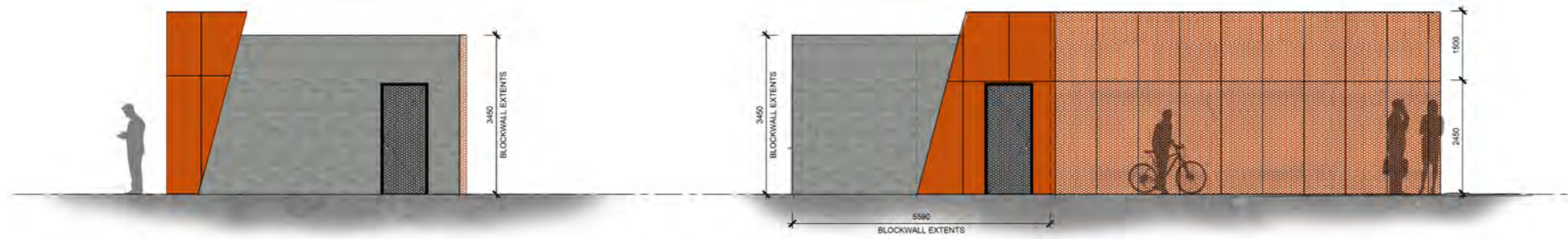
Zelkova serrata 'Green Vase'
Japanese Zelkova

PLANTING PALETTE



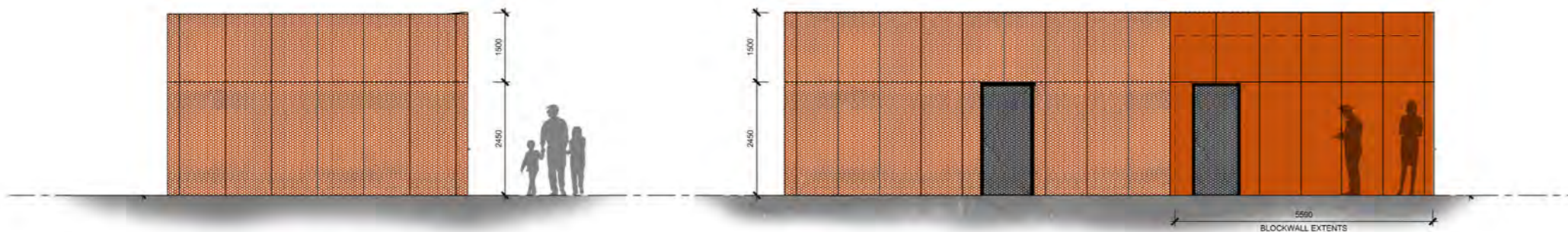


FLINDERS STATION



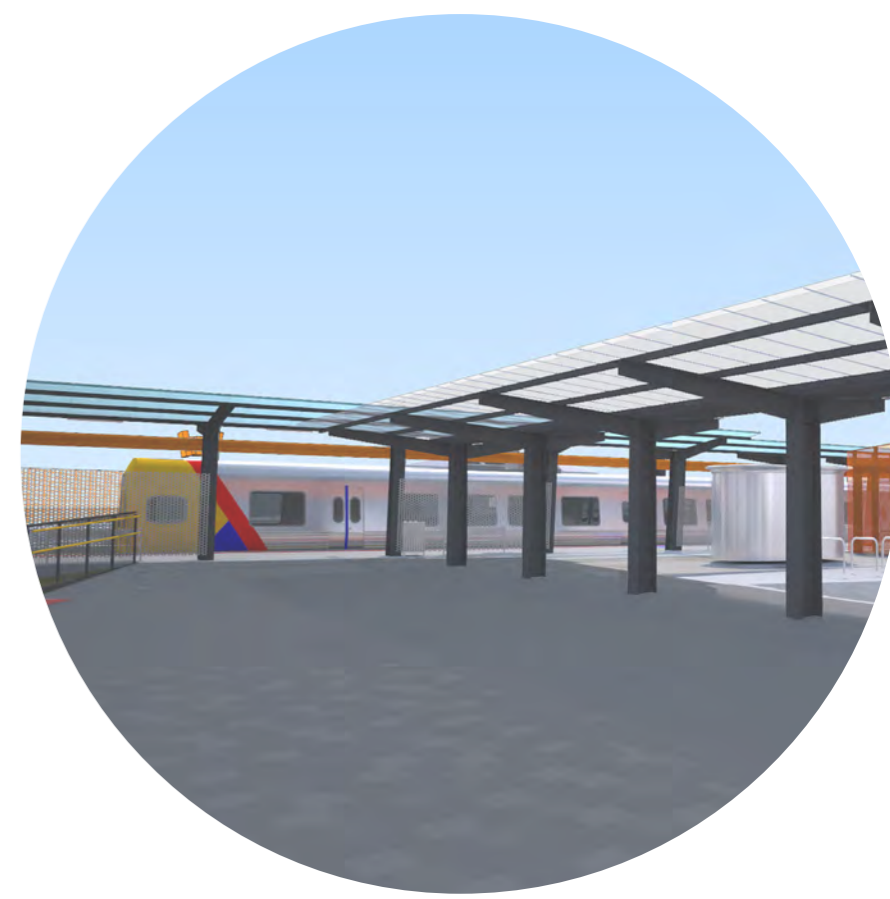
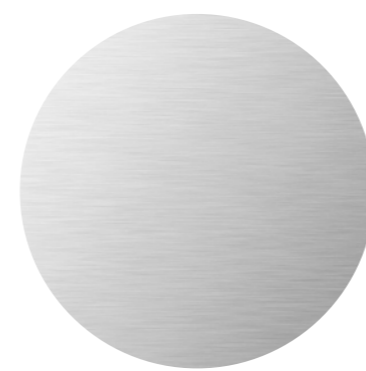
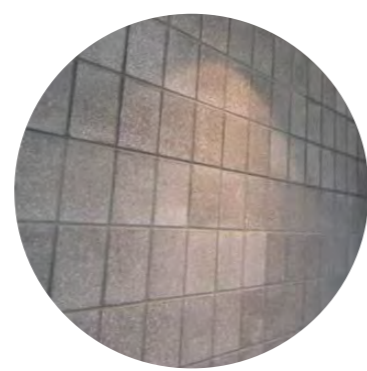
1 CER BUILDING EAST ELEVATION
SCALE 1:50

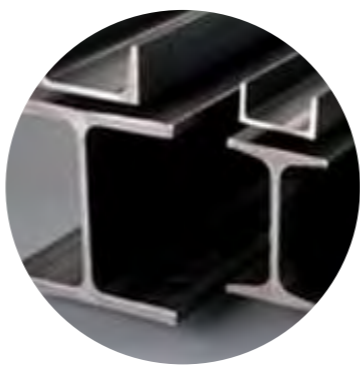
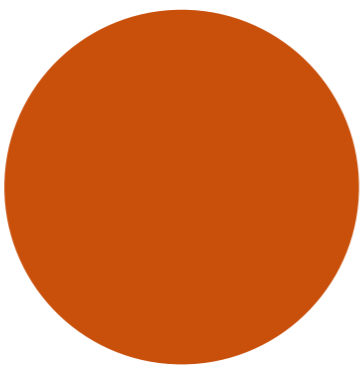
2 CER BUILDING NORTH ELEVATION
SCALE 1:50



3 CER BUILDING WEST ELEVATION
SCALE 1:50

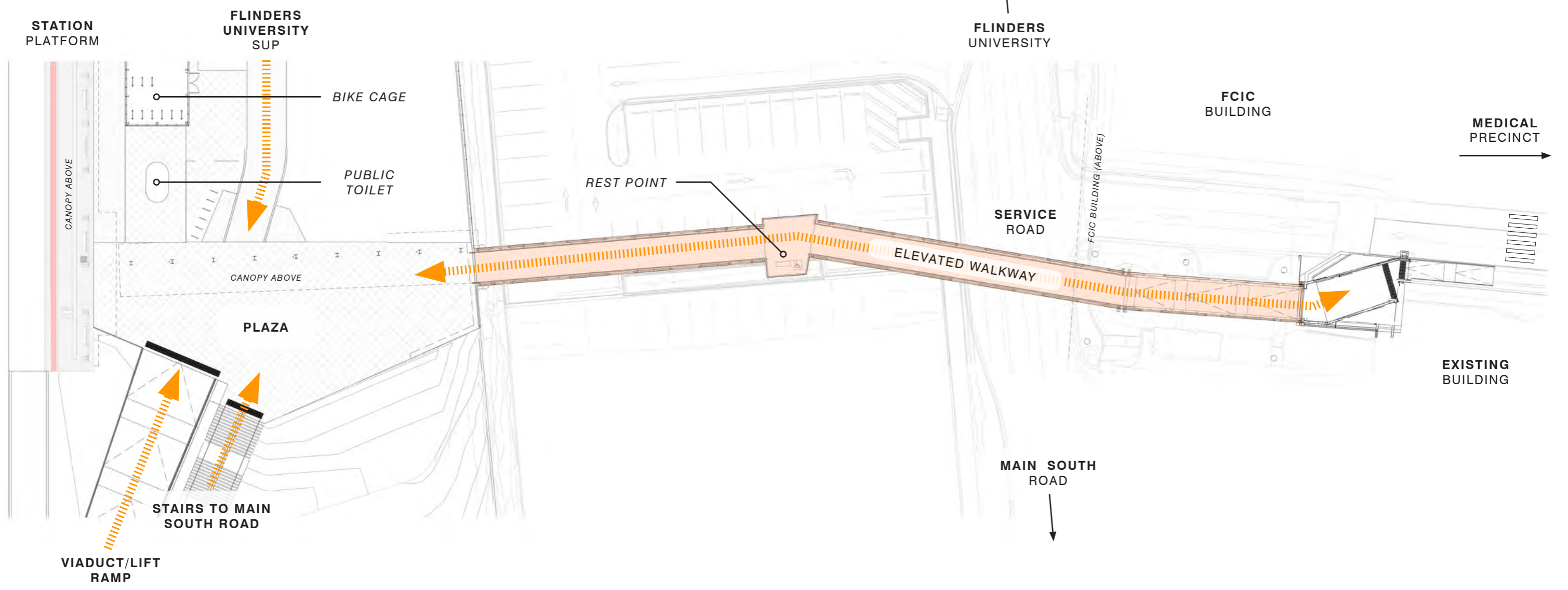
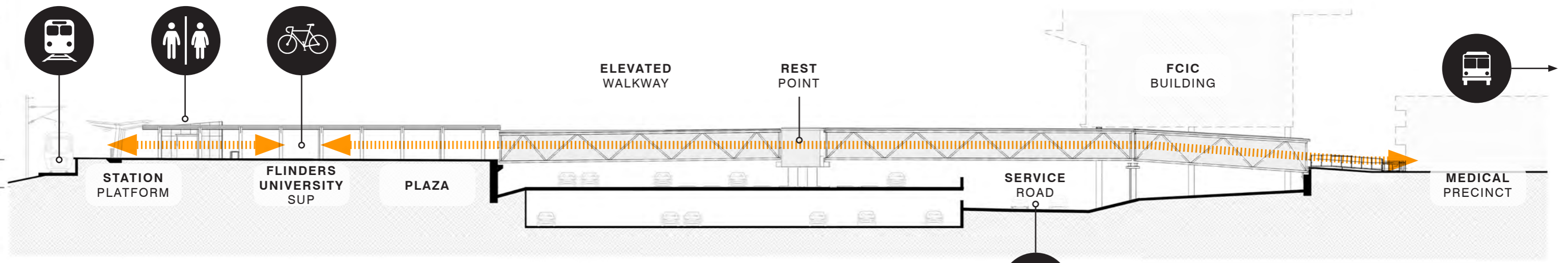
4 CER BUILDING SOUTH ELEVATION
SCALE 1:50





*VEGETATION SHOWN AT MATURITY

ELEVATED WALKWAY 3D



ELEVATED WALKWAY



In reply please quote #13127941
Enquiries to Neil Welsh
Telephone 0418 866 649

**PEOPLE AND BUSINESS
DIVISION**

77 Grenfell Street
Adelaide SA 5000

GPO Box 1533
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Telephone: 08 8343 2222
Facsimile: 08 8343 2768

ABN 92 366 288 135

State Commission Assessment Panel
Level 5, 50 Flinders Street
ADELAIDE SA 5000

Attn: Laura Kerber

Dear Laura,

FLINDERS LINK DEVELOPMENT APPLICATION (DA 100/V075/18) - ADDENDA

I refer to the recently lodged Flinders Link Project Development Application pursuant to Section 49 Crown Development and public infrastructure of the *Development Act 1993*.

In the application, reference is made to an Environmental Report (Volume 2 Attachment 6), which incorporates a schedule of vegetation in Table 6.1. Also included were plans titled *Flinders Link Environmental Vegetation Removal* – Sheets 01 to 09 inclusive. These sheets can be found on pages 170 to 178 of the electronic PDF application document in Volume 2. The outcome of the environmental assessment of Volume 2 Attachment 6 on vegetation removal is also reflected on page 40, Section 3.3.7 of the accompanying Development Application report.

There is also Significant and Regulated vegetation outside of the primary area affected by the line extension and the viaduct. In particular, Tree Marker ID's 799 and 801 relate to Significant Trees and Tree Marker ID 833, a Regulated Tree, may be impacted and may have to be removed as a consequence of the works proposed. Removal or other treatment will be assessed during the construction phase.

As a result of further review and detailed design and assessment, it has been determined that some of the vegetation that was identified for removal may be able to be retained, whilst others to be retained are to be removed or subject to further assessment during the construction phase.

The Development Application documents as lodged, identified Tree Marker ID 801 for pruning however, due to the extent of service infrastructure trenching, there is the need to assess the status of this tree at the time of construction.

There is no other change to the status of any Regulated or Significant Trees. Tree Marker ID references 815 (Significant Tree) and 819 (Regulated Tree), both are to be removed.

The schedule below summarises the amended vegetation recommendations as part of the Flinders Link Project.

The Tree Marker ID is set out in the first column and the reference sheet in the second column. The vegetation type and recommendation in the Development Application as lodged, in the third and fourth columns respectively. The fifth and sixth columns identify the relevant sheet reference and the recommendation from the addenda respectively.

It should be noted that the naming format of the plans has changed from sheet numbers in the original Development Application to chainage or distances in the addenda.

Tree Marker ID	DA Plan - Sheet Reference	Vegetation Type	Original Recommendation	Addenda Plan - Sheet Reference	Revised Recommendation
801	Sheet - 04	Significant tree – Local Native – Eucalytus camaldulensis	Prune	12.550km – 12.750km	Assess during construction
803A	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
803B	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
803C	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
803D	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
804A	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
804B	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
804C	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
805A	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
805B	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
805C	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction

Tree Marker ID	DA Plan - Sheet Reference	Vegetation Type	Recommendation	Addenda Plan - Sheet Reference	Recommendation
805D	Sheet - 06	Not identified See note below	Not identified See note below	12.950km – 13.150km	Assess during construction
806A	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
806B	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
806C	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
806D	Sheet - 06	Amenity – Exotic – Chinese Elm	Removal	12.950km – 13.150km	Assess during construction
820	Sheet - 06	Ground level stump of Eucalyptus sp.	Assess during construction		Removal
850A	Sheet 09	Amenity – Local Native – Grey Box	To be retained	13.550km – 13.770km	Removal
850B	Sheet 09	Amenity – Local Native – Grey Box	To be retained	13.550km – 13.770km	Removal
850C	Sheet 09	Amenity – Local Native – Grey Box	Retain	13.550km – 13.770km	Removal
853A	Sheet 09	Amenity – Local Native – Grey Box	Retain	13.550km – 13.770km	Assess during construction
853B	Sheet 09	Amenity – Local Native – Grey Box	Assess during construction	13.550km – 13.770km	Assess during construction
854A	Sheet 09	Amenity – Local Native – Grey Box	Retain	13.550km – 13.770km	Assess during construction
854B	Sheet 09	Amenity – Local Native – Grey Box	Retain	13.550km – 13.770km	Assess during construction

Although depicted on Vegetation Removal – 12.950km – 13.150km PLAN, Tree Marker 805D was not identified in the Environmental Report, the vegetation type and status for this vegetation is identical to that of 805A, 805B and 805C (Amenity – Exotic – Chinese Elm). It will be assessed at the same time as the vegetation in its local association and determined accordingly.

Items with Tree Marker ID references 803 to 820 in the table above are all located within the area the subject of this application of the existing Tonsley Railway Station being the area north of Sturt Road.

The vegetation previously proposed to be removed provides a degree of amenity planting for the immediate locality. It is intended that further assessment will be undertaken during construction to determine whether this vegetation can be retained. This area is on the western side of the line, and north of the location of the proposed underpass. The retention, if possible, will soften the visual effects of the proposal to the users and occupiers of Lynton Avenue.

Item with Tree Marker ID 320 was earlier identified to be assessed during construction however, the design development has determined this tree will impinge on construction works along the edge of kerb areas. It is therefore to be removed.

Items with Tree Marker ID references 850A, 850B and 850C are all located on the west facing batter slope down to Main South Road, the slope of which is proposed to be shaped and landscaped as depicted in Volume 1 Attachment 2 to the Development Application report. The reshaping of that slope to accommodate the landscaping and the stairs necessitates the removal of the existing vegetation. The overall outcome in this area will be a significant visual and amenity enhancement.

Items with Tree Marker ID references 853A, 854A and 854B were to be retained. Item with Tree Marker ID 853B was to be pruned. Given the extent of works associated with the filling and retaining of land in this area, the vegetation is now to be assessed during construction. This vegetation abuts a decked car parking area and will be between that car park and an elevated area of land, filled to create a consistent plateau behind the new Flinders Railway Station. The loss of this vegetation will not prejudice the reasonable development of the land in the area or its visual amenity given the changes proposed to the land form and proposed landscape around the station.

This Addenda comprises and replaces:

- An updated report titled: *Design Report – Environmental*, dated 30 August 2018 to replace Volume 2 Attachment 6 of the Development Application as originally lodged;
- A separate set of 11 plans titled *Flinders Link Project Environmental*. The 11 plans are titled:
 - 1 Flinders Line Environmental Vegetation Removal – 11.960km – 13.770km
TITLE AND INDEX
 - 2 Flinders Line Environmental Vegetation Removal – 11.960km – 12.160km
PLAN
 - 3 Flinders Line Environmental Vegetation Removal – 12.160km – 12.350km
PLAN
 - 4 Flinders Line Environmental Vegetation Removal – 12.350km – 12.550km
PLAN
 - 5 Flinders Line Environmental Vegetation Removal – 12.550km – 12.750km
PLAN
 - 6 Flinders Line Environmental Vegetation Removal – 12.750km – 12.950km
PLAN
 - 7 Flinders Line Environmental Vegetation Removal – 12.950km – 13.150km
PLAN
 - 8 Flinders Line Environmental Vegetation Removal – 13.150km – 13.350km
PLAN
 - 9 Flinders Line Environmental Vegetation Removal – 13.350km – 13.550km
TITLE AND INDEX
 - 10 Flinders Line Environmental Vegetation Removal – 13.550km – 13.770km
TITLE AND INDEX
 - 11 Flinders Line Environmental Vegetation Removal – FLINDERS MEDICAL
CENTRE

These plans replace the plans embedded in the Development Application Volume 2 Attachment 6, are now separate to the *Design Report – Environmental* dated 30 August 2018.

The updated Environmental Report and plans accompany this correspondence and is titled ADDENDA September 2018.

I trust the above information and the accompanying addenda documentation provides the necessary detail for your assessment.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Neil Welsh', with a large loop at the end.

Neil Welsh
Project Lead
Flinders Link Project

18 September 2018

Section 49 Crown Development and Public Infrastructure

ADDENDA DEVELOPMENT APPLICATION FLINDERS LINK PROJECT

Extension of the Tonsley Rail Line

Addenda September 2018



A large, dark blue, stylized number '6' is positioned on the left. To its right, the word 'ADDENDA' is written in a bold, red, sans-serif font. A thin, red diagonal line runs from the top right towards the bottom left, passing behind the '6' and the word 'ADDENDA'.

6 **ADDENDA**



Flinders Link Detailed Design

Gateway South JV

Design Report - Environmental

FLD-RDP25-REP-9999-30-0001 | B

30 August 2018

Flinders Link Detailed Design

Project No: IW162000
 Document Title: Design Report - Environmental
 Document No.: FLD-RDP25-REP-9999-30-0001
 Revision: B
 Date: 30 August 2018
 Project Director: Hugh Weir
 Design Manager: Wayne King
 Author: Zeta Bull
 File Name: FLD-RDP25-REP-9999-30-0001



Document history and status

Revision	Date	Description	By	Review	Approved
A	17/05/2018	Issued for 70% Review	Z. Bull	L Daddow	D. Richter
B	30/08/2018	Issued for 100% Review	Z. Bull	L.Daddow	W. King



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Appendix A. Asset Management Register

Appendix B. Interdisciplinary Review

Appendix C. Internal Verification

Appendix D. Independent Design Certifier Comments

Appendix E. DPTI Comment Register

Appendix F. Requirements Analysis, Allocation and Traceability Matrix (RAATM)

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs Group (Australia) Pty Ltd is to document the design in accordance with the scope of services set out in the contract between Jacobs Group (Australia) Pty Ltd and the joint venture of Fulton Hogan Construction Pty Ltd and Laing O'Rourke Australia Construction Pty Ltd trading as Gateway South ('the Client').

Jacobs derived the data in this report primarily from information provided by the Client, inspection of the Site by Jacobs, and with reference to relevant technical standards and guidelines available in the public domain. The passage of time, manifestation of latent conditions or impacts of future events may require further exploration at the site and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Jacobs has relied upon and presumed accurate certain information, (or absence thereof), relative to the Site provided by the Client and others identified herein. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information.

The findings, observations and conclusions expressed by Jacobs in this report are not, and should not be considered, an opinion concerning the technical standards. Further, such data, findings, observations and conclusions are based solely upon site conditions and information supplied by the Client in existence at the time of the investigation.

The report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between Jacobs and the Client, which permits the use of the document by the Principal for the purposes set out in the Contract Scope and Technical Requirements. Jacobs accepts no liability or responsibility whatsoever for or in respect of any use of the reliance upon this report by any third party.

1. Introduction

1.1 Project

The Australian and South Australian Governments announced funding for the \$85 million Flinders Link Project last 13 May 2016. This project builds on the previous Tonsley Public Transport Project (2014) which was undertaken to improve public transport patronage on the Tonsley Line.

The primary purpose of the Flinders Link Project is to:

- Connect the Flinders Precinct to the rail network;
- Improve public transport passenger access to the Flinders Precinct;
- Facilitate an interchange between bus and train services for the passengers;
- Improve pedestrian & cycling connectivity between Flinders Precinct, Laffers Triangle and Tonsley development;
- Enable and integrate with the future development of Flinders Precinct

The project will include approximately 650m of single track rail extension via a rail Viaduct starting at the existing Tonsley Station which will go over Sturt Road, Laffer Road, Southern Expressway, and Main South Road, and will finish on the proposed Flinders Station. It will also include the track reconstruction from south of Alawoona Avenue through to the start of the Viaduct structure, removal of the existing Tonsley Station and vertical transport from the proposed bus interchanges along Main South Road as part of the Darlington Project.

A pedestrian and cyclist connection is also provided from Sturt Road to the Flinders Precinct through the Viaducts and a ramp at the vicinity of Birch Crescent and Sturt Road intersection.

1.2 Scope

This report addresses the 100% Environmental specification (including Vegetation Removal) for the Flinders Station and forms part of the Design Documentation for the package RDP25.

The drawings covered under this package are listed in Table 1-1

Table 1-1: List of drawings under this package

Drawing No.	Revision	Description
CS1-DRG-352323	B	TITLE AND INDEX
CS1-DRG-352324	B	VEGETATION REMOVAL PLAN – 11.960km – 12.160km
CS1-DRG-352325	B	VEGETATION REMOVAL PLAN – 12.160km – 12.350km
CS1-DRG-352326	B	VEGETATION REMOVAL PLAN – 12.350km – 12.550km
CS1-DRG-352327	B	VEGETATION REMOVAL PLAN – 12.550km – 12.750km
CS1-DRG-352328	B	VEGETATION REMOVAL PLAN – 12.750km – 12.950km
CS1-DRG-352329	B	VEGETATION REMOVAL PLAN – 12.950km – 13.150km
CS1-DRG-352330	B	VEGETATION REMOVAL PLAN – 13.150km – 13.350km
CS1-DRG-352331	B	VEGETATION REMOVAL PLAN – 13.350km – 13.550km
CS1-DRG-352332	B	VEGETATION REMOVAL PLAN – 13.550km – 13.770km
CS1-DRG-352333	A	VEGETATION REMOVAL PLAN – FLINDERS MEDICAL CENTRE

2. Status

2.1 Hold Points

The Hold Points relevant to this package are summarised in Table 2-1

Table 2-1: Hold Points

Hold Point	CSTR Reference	Status
Part D37 CI10.2	Landscaping assessment and vegetation management shall constitute a HOLD POINT	

2.2 Changes from previous revision

Changes are primarily related to responses to DPTI comments and IDR comments, as well as updated information, particularly related to tree removal status and or document naming.

Changes include:

- Updates and clarifications to Table 6-1.
- Inclusion of 6.1.3 regarding approval process status
- Updates to 6.1.4 regarding offset calculations
- Updates to 7.2, including inclusion of 7.2.7 and inclusion of reference reports relating to water quality and noise.
- Minor updates to 7.3 relating to document naming and status.

3. Design Basis

The relevant design basis documents for this package are listed in Table 3-1.

Table 3-1: Design Basis Reports

Discipline	Document Number
Not Applicable	

3.1 Site Assessment Report

Refer Site Assessment Report FLD-RDP01-REP-9999-PMG-0001.

4. Compliance with CSTR

This design package complies with the requirements of CSTR with the exception of the noted departures. Table 4-1 shows the proposed departures for this package.

Table 4-1: CSTR Departures

Element	CSTR Reference	Departure
Nil		

A CSTR compliance register Requirements Analysis, Allocation and Traceability Matrix (RAATM) is attached in Appendix F.

4.1 Waivers

Table 4-2: Waivers

Element	CSTR Reference	Status
Nil		

4.2 Type Approval for Safety Critical Rail Assets

Table 4-3: Type Approval

Element	CSTR Reference	Status
Nil		

5. Safety Assurance Statement

Refer Safety Assurance Statement FLD-RDP01-REP-9999-PMG-0002.

6. Technical

6.1 Design Details

The design details for this package are contained on the Package RDP25 drawings.

Background / supporting information is provided below.

6.1.1 Specifications

Project design and implementation adheres to the following principles:

- Every effort will be made to minimise the overall disturbance to vegetation outside the extent of works.
- Trees, not being removed as part of works, will be protected as much as possible during construction
 - refer AS4970/2009 Protection of Trees on Development Sites.
- Management of pest species, both flora and fauna (e.g. bees) will be undertaken, as required during construction.
- Any pruning work (including root pruning) will be carried out according to the Australian Standard for Pruning of Amenity Trees AS4373/2007.
- Revegetation will incorporate local provenance species, where suitable (refer RDP 12 Landscaping).
- New landscape elements that may “foul” train operations must be approved by the Manager Rail Infrastructure Management
- Refer Gateway South Vegetation and Fauna Management Plan (Including Weed Management Plan) (GS-PLN-Z00-ENV-5012-01)
- Refer DPTI Vegetation Removal Policy (2017), particularly 4.3.2 (Clearance Envelopes – rail and tram).

6.1.2 Summary of Vegetation and Removal Status

The DPTI Vegetation Removal Policy (Table 3-1 DPTI 2017) outlines the responsibilities in relation to activities affecting vegetation, including:

- Native vegetation in accordance with the *Native Vegetation Act 1991* including terrestrial and marine plant species indigenous to South Australia and dead trees with trunk diameter >600mm, measured at 300mm above natural ground level in all areas of the state except defined areas of the Adelaide metropolitan area. Also includes native vegetation planted to comply with a condition of clearance approval under the Native Vegetation Act. (refer page 8 DPTI 2017).
- Native vegetation that is outside the Native Vegetation Act boundary (section 2.2 DPTI 2017)
- Native vegetation which provides habitat for threatened flora and fauna species listed under *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth) (section 2.2b DPTI 2017).
- Amenity vegetation including planted exotic and non-local native species, planted roadside vegetation, residential gardens, orchards (olives, citrus etc) (Glossary DPTI 2017).
- Regulated trees which are any trees that occur in areas defined in the *Development Regulations 2008* and have a trunk circumference of 2 m (or 625 mm for multi-stem) measured at a point 1 m from natural ground level. And trees declared to be a significant tree by the relevant Development Plan. Some trees may be exempt from regulated and significant tree controls because of their location or their species as defined in the Development Regulations (refer Glossary DPTI 2017).
- Significant trees which are trees that have a trunk circumference of 3 m or more (or 625 mm for multi-stem) measured at a point 1 m from natural ground level and are either a regulated tree (as per Development Regulations) or a significant tree (as per Development Plan) (refer Glossary DPTI 2017). The Development

Plans relevant to the project are Marion Council Development Plan (areas west of South Road) and Mitcham Council Development Plan (areas east of South Road – i.e. the proposed Flinders Station).

Refer to the policy for full criteria and additional definitions.

Vegetation within the project corridor comprises amenity vegetation outside the Native Vegetation Act boundary, significant trees, regulated trees and exotic vegetation. Two surveys have been undertaken throughout the project site to inform the design process and ensure the design minimises the impact on significant vegetation. The surveys and associated reports are as follows:

Survey for Darlington Project:

- EBS Ecology (2014) Flora and Fauna Assessment Darlington Upgrade Project (Revised). Prepared by EBS Ecology for AECOM (updated for DPTI 2014). Version 4.0, 22 December 2014. DPTI template data in "FLINKP1-DPTI-REP-0000-TEN0022.A.IFT; RFI-R-FLINKP1-DPTI-RFI-R-000052-DUP Environment - Vegetation Services - vs 2014_022 - all stages – Datasheet" (teambinder reference includes, species type, location, dimensions, GIS, approval request form).
- Vegetation Survey Summary 2014/022 – for South Road Upgrade Darlington (DPTI Transport Services Division). FLINKP1-DPTI-REP-0000-TEN0014.A.IFT

Additional Survey for Flinders Link Project:

- Phil Wild (2016) Vegetation Survey Main Report 2016/072 for South Road Darlington Flinders Link Project Extension of Tonsley Rail Line (DPTI Transport Services) TSD 2016/1449/01 and associated data in RFI-R-FLINKP1-DPTI-RFI-R-000052-FLNK Environment_-_Veg_Services_-_VS_2016_072_-_Flinders_Link_-_report; RFI-R-FLINKP1-DPTI-RFI-R-000052-FLNK Environment_-_Veg_Services_-_VS_2016_072_-_Flinders_Link_-_data
- The majority of vegetation (not subject to the Native Vegetation Act) identified to date within the project corridor is described in the Vegetation Survey Main Report 2016/072 – Vegetation Survey Main Report (TSD 2016/1449/01).

Land use

The land surrounding the survey area generally consists of residential properties, but also contains the redeveloped Mitsubishi site and the Flinders Medical Centre and Flinders University.

Vegetation

The vegetation is modified non-remnant vegetation and consists of amenity planted trees and shrubs that provide a buffer between the rail line and the adjacent residential area; and amenity planting around car parks. Significant and Regulated trees (as defined by the *Development Act*) are present within the project corridor.

A number of Weeds Declared under the *Natural Resources Management Act 2004*, as well as environmental weeds are present within the corridor. In addition, a large proportion of the amenity vegetation present consists of planted exotic species or planted non-local natives, particularly in the vicinity of the existing Tonsley Railway Station. A number of local natives have been planted near the FMC carpark where the new station will be constructed.

Table 6-1 provides a summary of all the amenity vegetation present within the project corridor, including the significant and regulate trees. Removal status per tree and additional information is provided, where necessary.

Threatened species

No threatened species were identified within the project corridor or considered reliant on the amenity vegetation that is present.

Table 6-1 Flinders Link Vegetation Removal Status

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352326	CS1-DRG-352326, approximate chainage 12460	Amenity patch	Unsurveyed vegetation to be removed through swale	Not part of Vegetation survey (VS016/072), north of Handley Avenue, low vegetation between existing railway track and fence	unknown	23.5m ²
CS1-DRG-352326	CS1-DRG-352326 approximate chainage 12580	Amenity patch	Unsurveyed vegetation to be removed through swale	Not part of Vegetation survey (VS016/072), north of Handley Avenue, low vegetation between existing railway track and fence	unknown	94.1m ²
CS1-DRG-352326; CS1-DRG-352327	838	Amenity / declared weed patch	Unsurveyed vegetation to be removed through swale	Regenerating: <i>Acacia iteaphylla</i> (Flinders Ranges Wattle), <i>Eucalyptus sp.</i> , <i>Acacia saligna</i> (WA Golden Wattle), <i>Olea europea</i> (declared weed); environmental weeds include: <i>Cynodon dactylon</i> (Couch), <i>Ehrharta longiflora</i> (Annual Veldt Grass), <i>Galenia pubescens</i> (Coastal Galenia) and <i>Vicia sativa</i> (Vetch).	Exotic / SA natives	42.8m ²
CS1-DRG-352326; CS1-DRG-352327	792/793	Amenity / declared weed patch	Remain. Depends on CSR alignment. CSR not current on drawings, as being updated as part of different package.	Screen planting between residential street and rail corridor. Includes <i>Eucalyptus sp.</i> , <i>Melaleuca decussata</i> (Totem Poles), <i>Melaleuca nesophila</i> (Western Honey-myrtle), <i>Melia azedarach</i> (White Cedar), <i>Portulacaria afra</i> (Jade Plant),	Exotic / non-local natives	186.2m ²

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				<i>Pittosporum undulatum</i> (Sweet Pittosporum) and weeds (<i>Olea europaea</i> , <i>Asparagus asparagoides</i> - several bridal creeper plants).		
CS1-DRG-352327	794	Regulated Tree	Remain	<i>Melaleuca armillaris</i> , multi-stem; weed <i>Asparagus asparagoides</i> (Bridal Creeper) climbing over lower branches.	Exotic / non-local natives	5.2
CS1-DRG-352327	796	Significant Tree	Remain	<i>Melaleuca armillaris</i> , previously pruned for roadside clearance. Bee hive in main branch. Several <i>Asparagus asparagoides</i> (Bridal Creeper) plants adjacent tree.	Exotic / non-local natives	7.6
CS1-DRG-352327	797	Regulated Tree	Remain	<i>Melaleuca nesophila</i> (Bracelet Honey-myrtle), multi stem, <i>Asparagus asparagoides</i> (Bridal Creeper) (declared) plants adjacent to tree, along fence line and spreading into rail corridor.	Exotic / non-local natives	5.8
CS1-DRG-352327	799	Significant Tree	To be assessed on site. Common Service Route (CSR) being moved to save tree, however minor prune at root level may be required, depending on depth of CSR. To be assessed at time of construction by arborist. CSR not current on drawings as being updated as part of different package.	<i>Eucalyptus camaldulensis var camaldulensis</i> (River Red Gum), multi stem	Local Native	15

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352327	801	Significant Tree	To be assessed on site, but likely no removal required.	<i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i> (River Red Gum), multi stem	Local Native	11.6
CS1-DRG-352327	830	Amenity Tree	Remain	Located on private property. <i>Acacia iteaphylla</i> (Flinders Ranges Wattle).	SA Native	<1.2
CS1-DRG-352327	795/798	Amenity / declared weed patch	Remain Note precise area of patch not available, some of patch may be cleared, however unlikely given CSR will be realigned to save tree 799.	Screen planting between residential street and the rail corridor. Weeds as previous with additional environmental weed: <i>Arundo donax</i> (Giant Reed). <i>Amenity trees present include</i> Eucalyptus leucoxyton (SA Blue Gum), <i>Melaleuca armillaris</i> (Bracelet Honey-myrtle), <i>Melaleuca halmaturorum</i> (Swamp Paperbark), <i>Melaleuca nesophila</i> (Western Honey-myrtle), <i>Casuarina glauca</i> (Grey Bul oak), <i>Olea europea</i> (declared weed).	Exotic / non-local / local natives	308.2
CS1-DRG-352327	800/802	Amenity / declared weed patch	Remain	Screen planting between residential street and the rail corridor. <i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i> (River Red Gum), <i>Eucalyptus conferruminata</i> (Bushy Yate), <i>Eucalyptus</i> sp., <i>Melaleuca armillaris</i> (Bracelet Honey-myrtle), <i>Melaleuca</i>	Exotic / non-local / local natives	459.5

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				<i>decussata</i> (Totem-poles), <i>Melaleuca halmaturorum</i> (Swamp Paperbark), <i>Melaleuca nesophila</i> (Western Honey-myrtle), resident garden plants (<i>Aeonium haworthii</i> , <i>Agave americana</i> , <i>Agave attenuata</i> , <i>Fucraea</i> sp, <i>Rosmarinus officinalis</i>). Weeds as previous with additional species: <i>Bromus</i> sp., <i>Fumaria capreolata</i> and <i>Oxalis pes-caprae</i> . Additional environmental weed: <i>Galenia pubescens</i> , <i>Gallium</i> sp. and <i>Plantago lanceolata</i> . Declared plants here: <i>Anredera cordifolia</i> (Madiera Vine).		
CS1-DRG-352327	829	Amenity Tree / Shrub	Remain	Planting along fence of disuses car park. Includes <i>Cupressus sempervirens</i> var. <i>stricta</i> (Italian Cypress), <i>Cupressus macrocarpa</i> (Monterey Cypress), <i>Ipomoea indica</i> (Purple Morning Glory).	Exotic	43.8
CS1-DRG-352327	CS1-DRG-352327, approximate chainage 12550-12600	Amenity	Unsurveyed vegetation to be removed through swale	<u>Not part of Vegetation survey (VS016/072)</u> , east of rail, low vegetation between fence and industry opposite tree	unknown	35.8

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				797,796		
CS1-DRG-352328	833	Regulated Tree	Retain / prune roots and or canopy to be discussed on site with arborist / alter drain width and shape to avoid impacts to tree. Canopy extends 5m into rail corridor. Approximated TPZ extends into rail corridor.	Private property. <i>Corymbia citriodora</i> (Lemon Scented Gum) behind fence; <i>Pandorea jasminoides</i> (Bower of Beauty) growing on fence adjacent tree. Limited TPZ accuracy in this location. Note drawing shows this tree is between retaining wall and fence.	Exotic / non-local natives	7.8
CS1-DRG-352328	834	Amenity Tree	Remain	Private property. <i>Casuarina cunninghamiana</i> (River Oak) behind fence. Limited TPZ accuracy in this location. Note drawing shows this tree is between retaining wall and fence.	Non-local native	6
CS1-DRG-352328	835	Amenity Tree	Remain, canopy extends 2 m into rail corridor	Private property. <i>Syagrus romanzoffiana</i> (Cocos Palm) behind fence. Limited TPZ accuracy. Note drawing shows this tree is between retaining wall and fence.	Exotic	3.6
CS1-DRG-352328	831A	Amenity Tree	Remain	Private property. <i>Eucalyptus torquata</i> (Coral Gum) behind fence. Limited TPZ accuracy in this location.	Non-local native	4.8
CS1-DRG-352328	831B	Amenity Tree	Remain	Private property. <i>Ficus benjamina</i> (Weeping Fig) behind fence. Limited TPZ	Exotic	1.2

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				accuracy in this location.		
CS1-DRG-352328	832A	Amenity Tree	Remain	Private property. <i>Callistemon sp.</i> (Bottlebrushes) behind fence Limited TPZ accuracy in this location.	Non-local native	<1.2
CS1-DRG-352328	832B	Amenity Tree	Remain	Private property. Citrus sp. behind fence. Limited TPZ accuracy in this location. Note drawing shows this tree is between retaining wall and fence.	Exotic	<1.2
CS1-DRG-352328	836A	Amenity Tree	Retain, canopy extends 0.6 m into rail corridor	Private property. <i>Citrus sinensis</i> (Orange) behind fence. Limited TPZ accuracy in this location. Note drawing shows this tree is between retaining wall and fence.	Exotic	<1.2
CS1-DRG-352328	836B	Amenity Tree	Retain, canopy extends 1 m into rail corridor.	Private property. <i>Citrus reticulata</i> (Mandarin) behind fence. Limited TPZ accuracy in this location. Note drawing shows this tree is between retaining wall and fence.	Exotic	<1.2
CS1-DRG-352328 / 352329	839	Amenity / Weed Patch	Remain (but likely removed in future as part of 'Tonsley Greenway')	Regenerating <i>Acacia saligna</i> (Golden Wreath Wattle)	Non-local native	56.6m ²
CS1-DRG-352329	840	Amenity / Weed Patch	Removal for shared user path and sight lines	Regenerating <i>Acacia saligna</i> (Golden Wreath Wattle)	Non-local native	108.9m ²
CS1-DRG-352329	809	Amenity Tree	Removal	<i>Prunus dulcis</i> (Almond)	Exotic	1.2

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352329	810	Amenity Tree	Stump removal / grub to below ground level	Ground level stump of <i>Fraxinus angustifolia</i> (Desert Ash)	Exotic	3
CS1-DRG-352329	811	Amenity Tree	Stump removal / grub to below ground level	Ground level stump of <i>Agonis flexuosa</i> (Willow-myrtle)	Exotic	6
CS1-DRG-352329	815	Significant Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria	<i>Phoenix canariensis</i> (Canary Date Palm)	Exotic	4.5
CS1-DRG-352329	819	Regulated Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12.	<i>Acacia salicina</i> (Broughton Willow)	Non-local native	5.8
CS1-DRG-352329	820	Amenity Tree	Stump removal / grub to below ground level	Ground level stump of Eucalyptus sp.	Non-local native	<1.2
CS1-DRG-352329	821	Amenity Tree	Remain	Eucalyptus sp. in poor health.		3.6
CS1-DRG-352329	803A	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	4.2
CS1-DRG-352329	803B	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	4.2
CS1-DRG-352329	803C	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	3.6
CS1-DRG-352329	803D	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council /	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be	Exotic	3

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
			Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	retained, any removals will require a client HOLD POINT to be released.		
CS1-DRG-352329	804A	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	<1.8
CS1-DRG-352329	804B	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	4.2
CS1-DRG-352329	804C	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	1.8
CS1-DRG-352329	805A	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	3.6
CS1-DRG-352329	805B	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	<1.8
CS1-DRG-352329	805C	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council /	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any	Exotic	4.2

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
			Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	removals will require a client HOLD POINT to be released.		
CS1-DRG-352329	806A	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	3
CS1-DRG-352329	806B	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	<1.8
CS1-DRG-352329	806C	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	3.6
CS1-DRG-352329	806D	Amenity Tree	High potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team re: impact to RSS. TPZ not shown on drawings.	<i>Ulmus parvifolia</i> (Chinese Elm). Likely to be retained, any removals will require a client HOLD POINT to be released.	Exotic	3.6
CS1-DRG-352329	807A	Amenity Tree	Removal for earthworks	<i>Ulmus parvifolia</i> (Chinese Elm). Tree is on embankment, requires removal as area requires flattening.	Exotic	1.8
CS1-DRG-352329	807B	Amenity Tree	Removal for earthworks	<i>Ulmus parvifolia</i> (Chinese Elm). Tree is on embankment, requires removal as area requires flattening.	Exotic	<1.8

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352329	808A	Amenity Tree	Removal for earthworks	<i>Ulmus parvifolia</i> (Chinese Elm). Tree is on embankment, requires removal as area requires flattening.	Exotic	4.8
CS1-DRG-352329	808B	Amenity Tree	Removal for earthworks	<i>Ulmus parvifolia</i> (Chinese Elm). Tree is on embankment, requires removal as area requires flattening.	Exotic	3
CS1-DRG-352329	812A	Amenity Tree	Potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team. Depends on footpath design.	<i>Ulmus parvifolia</i> (Chinese Elm). Tree does not require removal, but will not be centred within the new walkway.	Exotic	3
CS1-DRG-352329	812B	Amenity Tree	Potential to retain. To be discussed on site with DPTI / Council / Arborist / Construction team. Depends on footpath design	<i>Ulmus parvifolia</i> (Chinese Elm). Tree does not require removal, but will not be centred within the new walkway	Exotic	3
CS1-DRG-352329	814	Amenity / declared weed patch	Removal for stairs	<i>Ulmus parvifolia</i> (Chinese Elm), <i>Osteospermum fruticosum</i> (Shrubby Daisy Bush), <i>Gazania rigens</i> (Gazania), <i>Olea europaea</i> (Declared Weed)	Exotic	688.7m ² ; <1.8 TPZ
CS1-DRG-352329	816A	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	3.6
CS1-DRG-352329	816B	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	1.8
CS1-DRG-352329	816C	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	3.6

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
			RDP12 DWG 351774.			
CS1-DRG-352329	816D	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	3.6
CS1-DRG-352329	817A	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	2.4
CS1-DRG-352329	817B	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	1.8
CS1-DRG-352329	817C	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	1.8
CS1-DRG-352329	817D	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	3
CS1-DRG-352329	818A	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	2.4
CS1-DRG-352329	818B	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	3
CS1-DRG-352329	818C	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	<1.8
CS1-DRG-352329	818D	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	<1.2

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352329	818E	Amenity Tree	Removal; Row of trees to be planted south of this location as offset if meets geo-tech criteria. Refer RDP12 DWG 351774.	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	4.8
CS1-DRG-352329	825A	Amenity Tree	Darlington Upgrade Project (DUP) (works by others) - Darlington already removed	<i>Corymbia citriodora</i> (Lemon Scented Gum)	Non-local native	6
CS1-DRG-352329	825B	Amenity Tree	DUP (works by others) - Darlington already removed	<i>Corymbia citriodora</i> (Lemon Scented Gum)	Non-local native	5.4
CS1-DRG-352329	825C	Amenity Tree	DUP (works by others) - Darlington already removed	<i>Corymbia citriodora</i> (Lemon Scented Gum)	Non-local native	4.2
CS1-DRG-352329	CS1-DRG-352329, approximate chainage 13550	Amenity	Vegetation to be removed through swale	<u>Not part of Vegetation survey (VS016/072)</u> , amenity trees between fence and footpath	unknown	NA
CS1-DRG-352329	CS1-DRG-352329, approximate chainage 13500	Amenity	Vegetation to be removed through footpath	<u>Not part of Vegetation survey (VS016/072)</u> , amenity trees between fence and footpath	unknown	NA
CS1-DRG-352329	CS1-DRG-352329, approximate chainage 13100	Amenity	Vegetation to be removed through switchback ramp	Overlaps with amenity tree data at this location for 808A, 810, 811, 812A, 812B	unknown	NA
CS1-DRG-352329	CS1-DRG-352329, approximate chainage 13050-13100	Amenity	Vegetation to be removed Through switchback ramp / footpath	Not a separate patch - overlaps with amenity trees in this location, i.e. 815, 816A, 816B, 816C, 816D, 817A, 817B, 817C, 817D, 818A, 818B, 818C, 818D, 818E, 819	unknown	33.6m ²
CS1-DRG-352330	824	Amenity Tree / Shrub	Remain	Garden bed between Tonsley Station car park and SA Ambulance station; <i>Agapanthus praecox</i> , <i>Iris</i>	Exotic	10m ²

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				<i>germanica, Rosa sp.</i>		
CS1-DRG-352330	822/823	Amenity / declared weed patch	Remain	Screen planting between Lynton Avenue and Sturt Road: <i>Eucalyptus sp.</i> , <i>Melaleuca armillaris</i> , <i>Prunus dulcis</i> , <i>Ulmus parvifolia</i> , <i>Rhamnus alaternus</i> , <i>Olea europaea</i> (declared weed). Environmental weed here include: <i>Arctotheca calendula</i> , <i>Avena sp.</i> , <i>Fumaria capreolata</i> , <i>Gallium sp.</i> , <i>Malva parviflora</i> , <i>Medicago polymorpha</i> , <i>Rapistrum rugosum</i> and <i>Sonchus oleraceus</i>	Exotic / non-local natives	309m ²
CS1-DRG-352330	844A	Amenity Tree	Remain	<i>Pyrus sp.</i> (Ornamental Pear)	Exotic	1.8
CS1-DRG-352330	844B	Amenity Tree	Remain	<i>Pyrus sp.</i> (Ornamental Pear)	Exotic	1.8
CS1-DRG-352330	845/846	Amenity Tree / Shrub	Remain	<i>Ulmus parvifolia</i> (Chinese Elm)	Exotic	1.8 TPZ 26.6m ²
CS1-DRG-352331	267	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus camaldulensis var camaldulensis</i> (River Red Gum)	Local Native	NA
CS1-DRG-352331	269	Significant Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus camaldulensis var camaldulensis</i> (River Red Gum)	Local Native	NA
CS1-DRG-352331	254A	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	254B	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	254C	Regulated Tree	DUP (works by others) - Darlington already	<i>Eucalyptus cladocalyx</i> (Sugar	Non-local native	NA

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
			removed	Gum)		
CS1-DRG-352331	254D	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	254E	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	255A	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	255B	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	255C	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	255D	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	255E	Regulated Tree	DUP (works by others) - Darlington already removed	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	NA
CS1-DRG-352331	270B	Amenity Tree	Remain	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	4.8
CS1-DRG-352331	270C	Amenity Tree	Remain	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	4.8
CS1-DRG-352331	270D	Amenity Tree	Remain	<i>Eucalyptus cladocalyx</i> (Sugar Gum)	Non-local native	4.8
CS1-DRG-352331, CS1-DRG-352332	253	Amenity Tree / Shrub	Removal (DUP)	<i>Eucalyptus camaldulensis var camaldulensis</i> ; <i>Melia sp.</i> (Cedar), <i>Melaleuca sp.</i> (Teatree), <i>Callistemon spp.</i> (Bottlebrushes), <i>Leptospermum laevigatum</i> (Coastal Teatree), <i>Phoenix dactylifera</i> (Date Palm), <i>Acacia sp.</i> (wattle)	Exotic / non-local natives	NA

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352331, CS1-DRG-352332	268	Amenity Tree / Shrub	DUP (works by others) - Darlington already removed	<i>Corymbia maculata</i> (Spotted Gum), <i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i> (River Red Gum), planted over weedy grasses and herbs on embankment	Non-local / local native	NA
CS1-DRG-352332	265	Amenity Tree / Shrub	DUP (works by others) - Darlington already removed	<i>Eucalyptus</i> spp. (Gum), planted over weedy grasses and herbs on embankment	Non-local Native	NA
CS1-DRG-352332	849	Amenity Tree / Shrub	Removal	Overlaps with amenity trees here 850a,b,c, 851a; <i>Dodonaea viscosa</i> (Sticky Hopbush), <i>Eucalyptus</i> sp.	Local Native	104.4m ²
CS1-DRG-352332	855	Amenity Tree / Shrub, approximate chainage 13750	Unsurveyed vegetation to be removed through swale	<i>Dianella revoluta</i> (Flax Lily)	Local Native	143m ²
CS1-DRG-352332	857	Amenity Tree / Shrub	Remain	Overlaps with amenity tree 858a; <i>Allocasuarina verticillata</i> (Drooping Sheoak), <i>Lomandra longifolia</i> (Spiny Mat-rush)	Local / non-local native	3.6
CS1-DRG-352332	861	Amenity Tree / Shrub	Remain	Overlaps with amenity tree 862a, <i>Allocasuarina verticillata</i> , <i>Lomandra longifolia</i>	Local / non-local native	1.8
CS1-DRG-352332	847/848	Amenity Tree / Shrub	Unsurveyed vegetation to be removed through swale	Planting either side of drainage swale. <i>Calothamnus quadrifidus</i> (Common Net Bush), <i>Callistemon</i> spp. (Bottlebrush), <i>Leptospermum laevigatum</i> (Coast Tea-tree), <i>Melaleuca decussata</i> (Totem	Non-local native	70m ²

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
				Poles), <i>Westringia fruticosa</i> (Native Rosemary)		
CS1-DRG-352332	850A	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3
CS1-DRG-352332	850B	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3
CS1-DRG-352332	850C	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	4.2
CS1-DRG-352332	851A	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3.6
CS1-DRG-352332	851B	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3
CS1-DRG-352332	852A	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3.6
CS1-DRG-352332	852B	Amenity Tree	Remove	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3
CS1-DRG-352332	853A	Amenity Tree	To be assessed on site by arborist may be impacts to roots as a result of extra fill (400mm for new surface level). Use loose fill. Tree may die in future.	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	2.4
CS1-DRG-352332	853B	Amenity Tree	To be assessed on site by arborist may be impacts to roots as a result of extra fill (300mm) for new surface level and drainage trench proximity to roots.	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3
CS1-DRG-352332	854A	Amenity Tree	To be assessed on site by arborist may be impacts to roots as a result of extra fill for new surface level.	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	2.4
CS1-DRG-352332	854B	Amenity Tree	To be assessed on site by arborist may be impacts to roots as a	<i>Eucalyptus microcarpa</i> (Grey Box)	Local Native	3.6

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
			result of extra fill for new surface level.			
CS1-DRG-352332	856A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3
CS1-DRG-352332	856B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	2.4
CS1-DRG-352332	858A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3.6
CS1-DRG-352332	858B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	1.8
CS1-DRG-352332	858C	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3
CS1-DRG-352332	859A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	1.2
CS1-DRG-352332	859B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	1.9
CS1-DRG-352332	859C	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3
CS1-DRG-352332	860A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	2.4
CS1-DRG-352332	860B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3
CS1-DRG-352332	862A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	<1.2
CS1-DRG-352332	862B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	2.4
CS1-DRG-352332	862C	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	2.4
CS1-DRG-352332	863A	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3.6

Drawing	Tree identifier	Vegetation type	Removal status	Description	Native / exotic	TPZ (m) / patch area (m ²)
CS1-DRG-352332	863B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	1.2
CS1-DRG-352332	863C	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	3
CS1-DRG-352332	864B	Amenity Tree	Remain	<i>Allocasuarina verticillata</i> (Drooping Sheoak)	Local Native	2.4
CS1-DRG-352332	864A	Amenity Tree	Remain	<i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i> (River Red Gum)	Local Native	<1.8
CS1-DRG-352333	CS1-DRG-352333	Amenity Shrubs	Removal	Native amenity plantings and Cultural Art Sculpture. <u>Not part of Vegetation survey (VS016/072)</u> ,	Planted local / non-local natives	115m ²
CS1-DRG-352333	CS1-DRG-352333	Amenity shrubs	Removal	Vegetation to be removed under Flinders Elevated Walkway	Planted	17m ²

Refer Drawings 352333; TPZ = Tree Protection Zone (i.e. radius in m) as provided in VS 2016/072 and VS 2014/022 excel data files. Note: tree numbers are based on survey data, survey areas (m²) were not provided in data, therefore data has limited accuracy to provide accurate offsets if m² offset calculation is required. Additional areas that have not been surveyed (i.e. weeds / amenity within rail corridor, small areas of planted vegetation near FMC) are highlighted on drawings (m² estimates for areas are provided in Table 6-1 above), based on approximation from aerial imagery.

6.1.3 Approval for Clearance

Approval to clear or prune amenity vegetation with the project corridor is required by DPTI Senior Environmental Advisor (SEA) (currently Andrew Larwood), as per the DPTI Vegetation Removal Policy (2017), following submission of a Vegetation Removal Request (knet#8558923). Note this is an automated form within DPTI datasheet, that will require input of vegetation approval status for submission prior to construction.

Information regarding vegetation removal requirements associated with this package, in association with vegetation surveys and IFC design will inform vegetation approvals.

Approval to clear or prune the Regulated and Significant Trees as per the *Development Act* is required from the DPTI General Manager of the Infrastructure Delivery and the Development Assessment Commission. A DAC submission is in draft. Information from this package and RDP12 will inform the submission.

Approval to remove Declared Plants or environmental weeds that meet TSD (Transport Services Division) size criteria is required by the Environmental Officer. No approval required for weed species that do not meet TSD size requirements.

Table 3.1 of the DPTI Vegetation Removal Policy (2017) outlines approval requirements and exemptions:

Amenity Vegetation

- New works, approval by SEA (following submission of VRR (knet#8558923), offset 1:1 by area or plants, no offset for pruning
- Maintenance or removal in clearance envelope (regrowth / trees less than 150mm trunk diameter, including *Acacia longifolia*), no approval by SEA (use low impact method), no offset.
- Maintenance or removal in clearance envelope (trees greater than 150mm trunk diameter), approval by SEA, no offset required unless impact is significant)
- Dead amenity vegetation or self seeding plants originating from amenity vegetation, no approval or offsets

The majority of the amenity vegetation within the Flinders Link project that requires removal falls under the 'new works' category, thus requiring approval by the SEA and offset of 1:1. Vegetation marked as 'unsurveyed', primarily occurs within the maintenance /or clearance envelope and requires approval by the SEA, but does not require offset (therefore precise areas of vegetation are not required).

Approval to clear Significant and Regulated trees within the project footprint will be granted as per final DAC submission. It is likely only two of these trees will require removal and three will be pruned / assessed on site (refer drawings associated with this package). Pruning can include canopy or roots depending on the works required at the location, but mostly relate to roots for this project.

Approvals for tree removal will be based on trees that are known require removal (marked as 'X') on the vegetation removal drawings, as well as trees that require further assessment / onsite discussion (marked as '?') on vegetation removal drawings.

6.1.4 Offset

Minimum offset requirements are summarised in the Landscaping package (RDP12). It is noted that additional vegetation within or adjacent the footprint was removed as part of the Darlington Package and this is reflected on the drawings as well as Table 6-1 above, including one Significant Tree, 11 Regulated Trees and six Amenity Trees. Offsets for those trees are outlined in the Darlington Package and not summarised below.

As mentioned above engineering survey has indicated swale vegetation within the existing rail corridor that requires removal, this vegetation is exempt from clearance approval as the rail corridor (Clearance envelope) should be cleared for maintenance / operational purposes (DPTI Vegetation Removal Policy 2017). This only applies for vegetation with trunk diameter less than 150mm, including *Acacia longifolia*, that are removed via low impact method as per the Vegetation Removal Policy (2017).

DPTI Vegetation Removal Policy (2017) outlines offsets for amenity trees (e.g. 87.50 per tree or \$5000 per hectare). The data that was provided by DPTI included point data per tree, m² areas for shrub areas have been approximated using aerial imagery, noting that DPTI assume that landscaping areas for this project far outweigh the areas that will be removed (Refer RDP12).

Table 6-2 Flinders Link Vegetation Removal Summary

Type of Vegetation	# to be removed	# to be retained	Offset
Amenity Trees	26 (includes 18 Elm Trees, 6 planted Grey Box) and 3 tree stumps	37 plus 21 with that require assessment marked as '?' and have good potential to retain including 15 Elm trees highly likely to be retained	As per DPTI spreadsheet VS 2016/072 and VS 2014/021, removal status provided in drawings and table 6-1 above, prior to construction. Max 47 (26 removal / 21 '?') (\$4,112.5)

Type of Vegetation	# to be removed	# to be retained	Offset
			Min 26 (\$2,275)
Significant Trees	1	3 (including 2 to be pruned / assessed on site)	See landscaping package (RDP12)
Regulated Trees	1	3 (including 1 to be pruned / assessed on site)	See landscaping package (RDP12)
Patches	13 ~1478.3m ² (includes 231.3m ² of vegetation in swale / maintenance areas exempt from approval / offset)	6 (~1411.2m ²)	Some as per DPTI spreadsheet VS 2016/072, some exempt not surveyed as within rail clearance envelope (DPTI 2017). Limited data accuracy, area (m ²) calculated for patches. Area estimates provided in table 6.1 above, and will need to be input into VS 2016/072 for approval submission.

7. Design Integration

7.1 Digital

Throughout the design development process the design team has utilised a BIM workflow to integrate the 3D design modelling across each of the design disciplines. A project Digital Engineering Execution plan has been developed and is being used through the detailed design phase ([FLD-RDP01-STD-9999-ENG-0002](#)) to detail the processes to incrementally develop a fully integrated 3D model. This model is updated weekly, used for our weekly coordination meetings and issued as a federated Navisworks model for all parties to undertake an ongoing review.

7.2 Environmental

This section addresses the environmental requirements of the CSTR as it relates to this package.

Section 4 of Part D20 of the CSTR requires the design and construction methodology to maximise achievement of a range of environmental and sustainability objectives where possible subject to the broader requirements of the CSTR. Sustainability is addressed under Section 6.4. Environmental objectives specifically relevant to this package include heritage sites and vegetation and enhancement of the amenity in the project area with urban design and landscaping. These objectives are addressed as follows:

- Heritage and vegetation is addressed below under Environmentally Sensitive Areas.
- Landscaping is addressed in more detail in a separate Design Package – RDP12.
- Vegetation removal is summarised in 6.1.2 above and on the drawings related this package

7.2.1 Environmentally Sensitive Areas

As per the CSTR (D20, Section 6) the “design of the Works and Temporary Works must minimise the impact on any environmentally sensitive areas” and environmentally sensitive areas (ESAs) should be clearly shown on design drawings and translated onto Site Environmental Plans / Environmental Control Plans.

ESAs for the Flinders Link Project include Significant and Regulated Trees, amenity vegetation, and low risk Heritage areas (e.g. areas that have been previously disturbed) and low risk heritage sites (e.g. a modern sculpture near the FMC carpark where the pedestrian bridge will be built). Ecological and Heritage Gaps Analysis TANS (050 and 048, knet# 12584590 and 12584234 respectively) highlight areas of the Flinders Link Project area that are outside the wider Darlington Project area.

The design process will minimise impacts to native flora, significant trees, Aboriginal Heritage and non-Aboriginal Heritage sites. Spatial data of Environmentally Sensitive Areas is incorporated into the vegetation removal drawings where appropriate, e.g. the High Cultural Heritage Risk area are incorporated into the drawings relevant to this package and locations of Significant and Regulated Trees, and amenity vegetation are provided. Locations of non-Aboriginal Heritage sites (referred to in Heritage TAN (048, KNET# 12584234) are not shown on the drawings (see 7.2.3 below). Detailed vegetation removal information is documented on vegetation removal drawings in this package.

7.2.2 Flora and Fauna

Vegetation surveys have been undertaken as part of the Darlington Project (EBS 2014 VS014/022, Phil Wild 2016 VS016/072). A gaps analysis indicated minor areas of the Flinders Link project area that were not included in the surveys and are summarised in TAN 050 (knet# 12584590). A survey of the areas not done previously will be undertaken, if necessary (these areas are highlighted in Table 6-1 above, under ‘description’). Minimal amenity vegetation is present within the footprint, eight Significant and Regulated trees are present and two of these will be removed, whilst six will be assessed on site or pruned closer to Tonsley Station (refer Table 6-1). Vegetation removal is documented in this package.

7.2.3 Heritage

Several non-Aboriginal Heritage items also occur within the vicinity of the project area (e.g. Fairford House, Coach House, Pumping Shed and Ford). The Heritage TAN (048, knet# 12584234) outlines the low risk for the project in terms of non-Aboriginal Heritage. Vibration impacts are also discussed in TAN 048 and are considered to be negligible, based on vibration studies for Darlington. TAN 048 (knet# 12584234) also summarises Aboriginal Heritage for the Flinders Link project, following review of EBS Heritage 2017. The majority of the Flinders Link footprint is considered to be low-moderate risk and there are two small high risk areas (based on location and lack of previous disturbance).

Heritage risks will be managed during construction in accordance with recommendations in EBS Heritage 2017. Recommendations for high risk, as per TAN 048 (knet# 12584234) include:

- Excavation monitoring in undisturbed soils until heavy compact clay / and / or rock (where archaeology will not be present) – though noted that the existing Gateway South JV procedure on the Darlington Upgrade Project includes exemptions which extend to Flinders Link. These include no monitoring during piling / auguring, and no monitoring where disturbance is less than 200 mm BGL.
- Continue to implement the existing Gateway South JV site discovery / recovery procedure. Noting that DPTI guidelines for Aboriginal Objects, Sites and Remains: Discovery Guideline, DPTI 2013, (FLINKP1-DPTI-REP-0000-TEN0011) are also available. This guideline provides decision tools for areas within and outside section 23 authorization areas, communication protocols etc.
- These areas are marked on the Vegetation Removal drawings, refer CS1-DRG-352329, CS1-DRG-352330.
- It is noted that through drainage design (removal of spiral ramp and water detention basin) potential impacts to high risk areas have been minimised.

Recommendations for low – moderate risk areas include:

- Continue Cultural awareness training during induction as per existing Gateway South JV procedure
- Continue to implement the site discovery / recovery procedure as per Gateway South JV existing documentation.
- These areas are not marked on the Vegetation Removal Drawings, as they relate to all areas that are not high risk. They can be added to the drawings if required.

In addition, EBS Heritage (2017) identified a modern sculpture that is present within the footprint of the elevated walkway that will be impacted. This sculpture is not protected under heritage legislation. It was created by Aboriginal artist Karl Telfer and cultural geographer Gavin Malone on commission from the Flinders Foundation. Refer Vegetation Removal Drawing CS1-DRG-352333. DPTI is currently working with FMC and the artist to relocate the sculpture to a new location.

7.2.4 Contamination

The contamination report (TAN 049, knet#12719750) summarises the understanding of soil and groundwater contamination in the area of the proposed Flinders Link project based on a desktop review of documentation provided and publically available information sources. No major risks were identified, refer Contamination and Remediation Management Plan (GS-PLN-Z00-ENV-5009-03) for management actions.

7.2.5 Water Quality

Refer to Landscaping package (RDP12), key objectives of the CSTR are:

- Landscaping assessment and vegetation management shall constitute a HOLD POINT (Part D37 10.2)
- Swales should improve water quality and use natural rainfall
- Landscaping to be self-sustaining, with little ongoing maintenance.

The CSTR requires a Water Quality Management Plan that will be developed by GWS to minimise impacts of construction. Currently, the adoption of the DUP WQMP for the Flinders Link Project is to be approved by DPTI, also refer:

- Gateway South Soil Erosion and Drainage Management Plan (SEDMP) including WQMP (GS-PLN-Z00-ENV-5004-06)
- Gateway South Vegetation and Fauna Management Plan (Including Weed Management Plan (GS-PLN-Z00-ENV-5012—01).

7.2.6 Noise and Vibration

A number of noise assessments have been undertaken for the Flinders Link project (e.g. FLD-RDP04-REP-9999-33-0002 (30% Design Noise Assessment Report); Flinders Link Station Helicopter Noise Impact Assessment (Resonate Acoustics 2017), refer RDP04 for further detail.

Sensitive receivers include the Flinders Medical Centre, Sports Fields, Sturt Police Station, Ambulance and local residences.

Existing noise includes road traffic noise from Sturt Road and South Road, and existing rail noise (e.g. for residences near Tonsley Station, Ambulance and Police).

Noise impacts associated with this package relate to clearance of vegetation (e.g. chainsaw / mulcher / stump removal). Impacts will be mitigated as per the Gateway South Construction Noise and Vibration Management Sub-Plan (GS-PLN-Z00-ENV-5006-03).

7.2.7 Air Quality

The CSTR requires an Air Quality Management Plan that will be developed by GWS to minimise impacts of construction.

Refer GS-PLN-Z00-ENV-5008-03- Gateway South Air Quality Monitoring and Management Plan.

In addition, due to the proximity of the FMC to the station earthworks, real time dust monitoring is to be implemented during construction of station earthworks.

7.3 Sustainability

A Sustainability Management Plan (SMP) (FLINKP1-DPTI-REP-0000-TEN0014, knet#10020937 v7) has been prepared as part of the project. Outcomes of the Ecological Sustainable Development (ESD) acquittal were provided as part of RFI 040. DEWNR's Climate Change Unit approved the SMP (knet#10020937 v7) and notes the inclusion of commitments on Ecologically Sustainable Development Strategies. It is also noted that a CEMP has been submitted which will be used to minimise impacts to the environment. (GS-PLN-Z00-ENV-5000 03).

Key principles that promote sustainable outcomes include:

- minimisation of operating costs
- durability
- minimisation of maintenance and asset replacement (to consequently minimise lifecycle cost and disruption to operations)
- minimisation of equipment replacement costs
- minimisation of cleaning costs
- minimisation of energy and water usage
- minimisation of waste

The design for this package incorporates the following initiatives:

Various measures to reduce clearance of vegetation and minimise impacts to significant and regulated trees, for example:

- Relocation of CSR to retain Significant tree 799 (a River Red Gum)
- Options to discuss on-site minimisation of impacts with arborists / construction team to reduce impacts to Regulated tree 833 (a Lemon-scented Gum). Option to alter design of drain to minimise pruning of roots or loss of tree.
- Options to reduce loss of amenity trees 812A and 812B adjacent existing stairwell, by altering path design.
- Reinstating a row of Elm trees that will be removed, depending on geo-technical criteria and criteria for vegetation species in the vicinity of electrified train lines (e.g. to reduce impacts associated with fouling of line). Similar trees will be reinstated south of current location, see Landscaping Package RDP12 (DWG 351774).
- Opportunity to minimise impacts to amenity trees 803A to 806D (Elm Trees), removal status is '?' on Drawing 352329, and note is provided regarding discussion required on site to minimise impacts to these trees. Relates to need for retaining wall if trees are retained and whether there is enough space for retaining wall. GWS have suggested it is likely these trees can be retained and that any removal will constitute a HOLD POINT to be released.

Additional measures to reduce impacts of vegetation clearance relate to offsets and replacement of significant and regulated trees at the required ratios, are discussed further in the Landscaping Package RDP12.

Refer to the landscaping package for detail of other sustainability objectives (As per the CSTR (4) (m), enhance the amenity of the road and rail corridor and surrounding areas with urban design and landscaping) related to offsetting the vegetation removal.

Briefly, removal of significant and regulated trees (1 regulated tree and 1 significant tree in total, which requires a compensation planting of 5 trees) will be offset with approximately 20 1.5 m high established trees (refer RDP12) such as:

- 15 *Angophora costata* (Smooth-barked Apple / Sydney Red Gum) – a taller species, grows well on rocky ground with limited root space, good shade tree (Nicolle 2016);
- 2 *E. leucoxylon ssp. leucoxylon* (SA Blue Gum) – a taller species, tolerant of most soil conditions, good shade tree (Nicolle, 2016);
- 3 *E. microcarpa* (Grey Box) – tolerates range of soil types, local species, good shade tree (Nicolle, 2016);
- It is noted that these species will complement the multiple *Eucalyptus calmaldulensis* (River Red Gum) – a taller species, excellent habitat tree, tolerant of flooding (Nicolle 2016), that were already incorporated in landscaping used in the wider Darlington Project;

The SMP (knet#10020937) prepared by DPTI for the Public Works Committee submission identified a range of sustainability benefits of the Flinders Link project and additional opportunities to enhance sustainability. Many of these opportunities have been considered and incorporated into the design including improving connectivity for walking and cycling, minimisation of vegetation clearance (particularly significant and regulated trees) and providing revegetation offsets (exceeding the requirement) with local provenance species where applicable to the function of the vegetation, via a landscape plan, enhancing the amenity of road and rail corridor with urban design and landscaping. In addition, it is noted that FMC will manage the relocation of the cultural sculpture prior to the construction of the Elevated Walkway, which may also involve reuse of planted native vegetation in the vicinity of the sculpture (e.g. Flax Lilly, Yacca).

A Sustainability in Design Workshop was held on 30th November 2017 as per the CSTR (part D20, Section 5). Discussion at the workshop highlighted the importance of addressing connectivity with existing and future greenways and walking/cycling routes, integration with existing and planned future land use to enable sustainable development and opportunities to reduce material use and minimise waste. Vegetation removal design for this package aligns with these principles in terms of minimising clearance and retention of community

amenity attributes. The outcomes of the workshop including initiatives and actions were documented in a report and have been provided to DPTI (FLD-RDP25-REP-9999-34-0001).

7.4 Interdisciplinary Review

Prior to issue this package has undergone an interdisciplinary review. The evidence of this review is provided in Appendix B.

7.5 Safety in Design

Safety in Design is integral to all stages of design development and has been considered throughout this package. The Safety in Design register (GSFL-PRJ-PLN-9999-PRJ-0010) is contained within the project Safety in Design Report. No safety in design issues were identified relevant to this package.

7.6 Future Expansion

Not Applicable

7.7 Constructability

Tree removal has been coordinated with Gateway South to determine vegetation removal required for construction.

Vegetation identified on drawings as “subject to construction assessment on site” will be reviewed on site by Gateway South and DPTI. For Significant or Regulated trees, assessment by Arborist is to be completed to determine impact of work on trees. If tree can't be saved, then removed.

Refer GS-PLN-Z00-ENV-5012-01 - Gateway South Vegetation and Fauna Management Plan (Including Weed Management Plan) for procedures about marking vegetation to be removed and vegetation to be retained.

8. Stakeholder Consultation

- Flinders Link - MOM - 30% Design Presentation - Friday Morning (12/01/18)
- Flinders Link - MOM - 30% Design Presentation - Monday Morning (15/01/18)
- Flinders Link - MOM - 30% Design Presentation - Monday Afternoon (15/01/18)
- Flinders Link - MOM - DPTI Workshop - Tuesday 1 (13/02/18)
- Flinders Link - MOM - Weekly Design Meeting (19/02/18)
- Flinders Link - MOM - Weekly Design Meeting (27/02/18)
- Flinders Link - MOM - Weekly Design Meeting (05/03/18)
- Flinders Link - MOM - Weekly Design Meeting – (20/03/18)
- Flinders Link - MOM - Weekly Design Meeting (09/04/18)
- Flinders Link - MOM - 70% Design Presentation - Rail Align, Civils (03/04/18)
- Flinders Link - MOM - 70% Design Presentation - CSR & CCTV + Lighting (03/04/18)

Minutes of these meetings and consultations will be made available to DPTI on teambinder for reference.

A 30% HAZOP workshop was held on 21 November 2017, attended by DPTI, Gateway South representatives and relevant stakeholders and authorities. A subsequent 70% HAZOP workshop was held on 9 March 2018.

Given the status of packages following the viaduct redesign, a 100% HAZOP solely for the Station precinct was conducted on 10 July 2018. The 30% HAZOP focussing on the viaduct redesign was conducted on 20 August 2018.

9. Operations and Maintenance in design

There are no specific comments within the operations, maintenance and commissioning for this package 25. Further information of the ongoing maintenance of vegetation within the project site can be found within the landscape design packages.

9.1 Asset Management Register

Not applicable to this package.

10. Internal Verification

A list of the internal verification reviewers is presented in Table 10-1 with the signed verification records provided in Appendix C.

Table 10-1: Internal Verification

Discipline	Reviewer
Vegetation Removal / Environment	Nicholas Bull (early versions), Lara Daddow (minor edit updates)

11. External Verification

11.1 Independent Design Certifier (IDC)

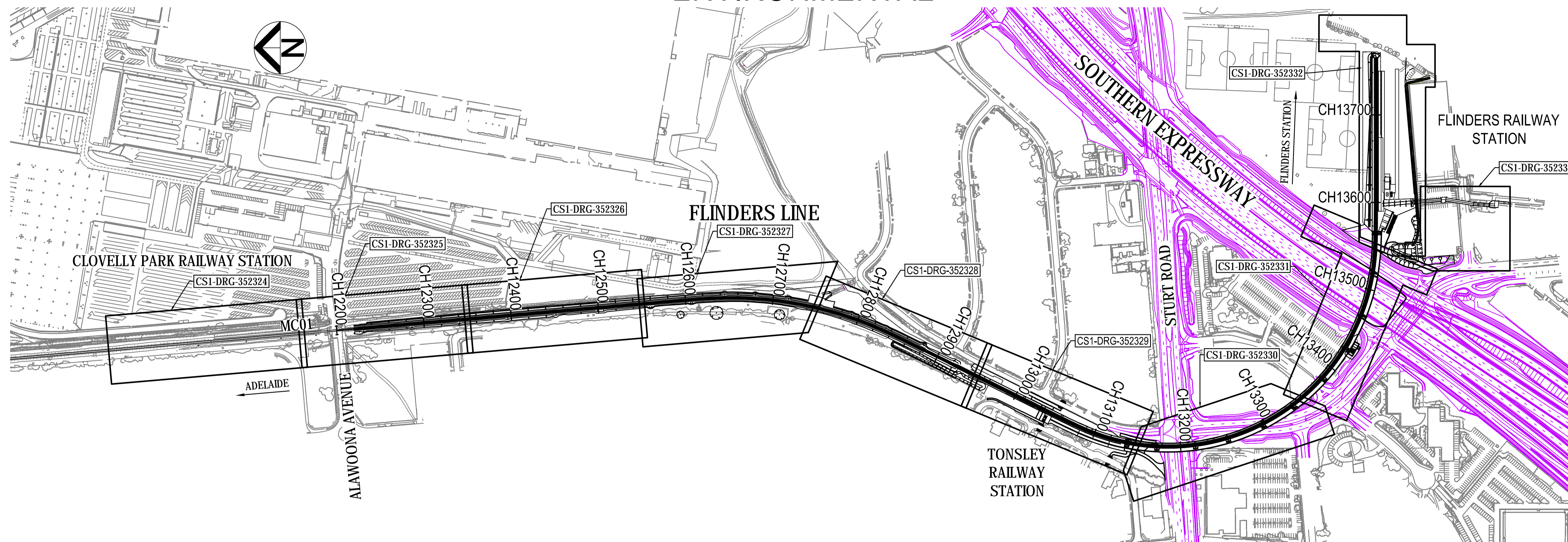
Not applicable to this package.

11.2 DPTI

70% IDC comments can be found in Appendix E

FLINDERS LINK PROJECT

ENVIRONMENTAL



DRAWING INDEX

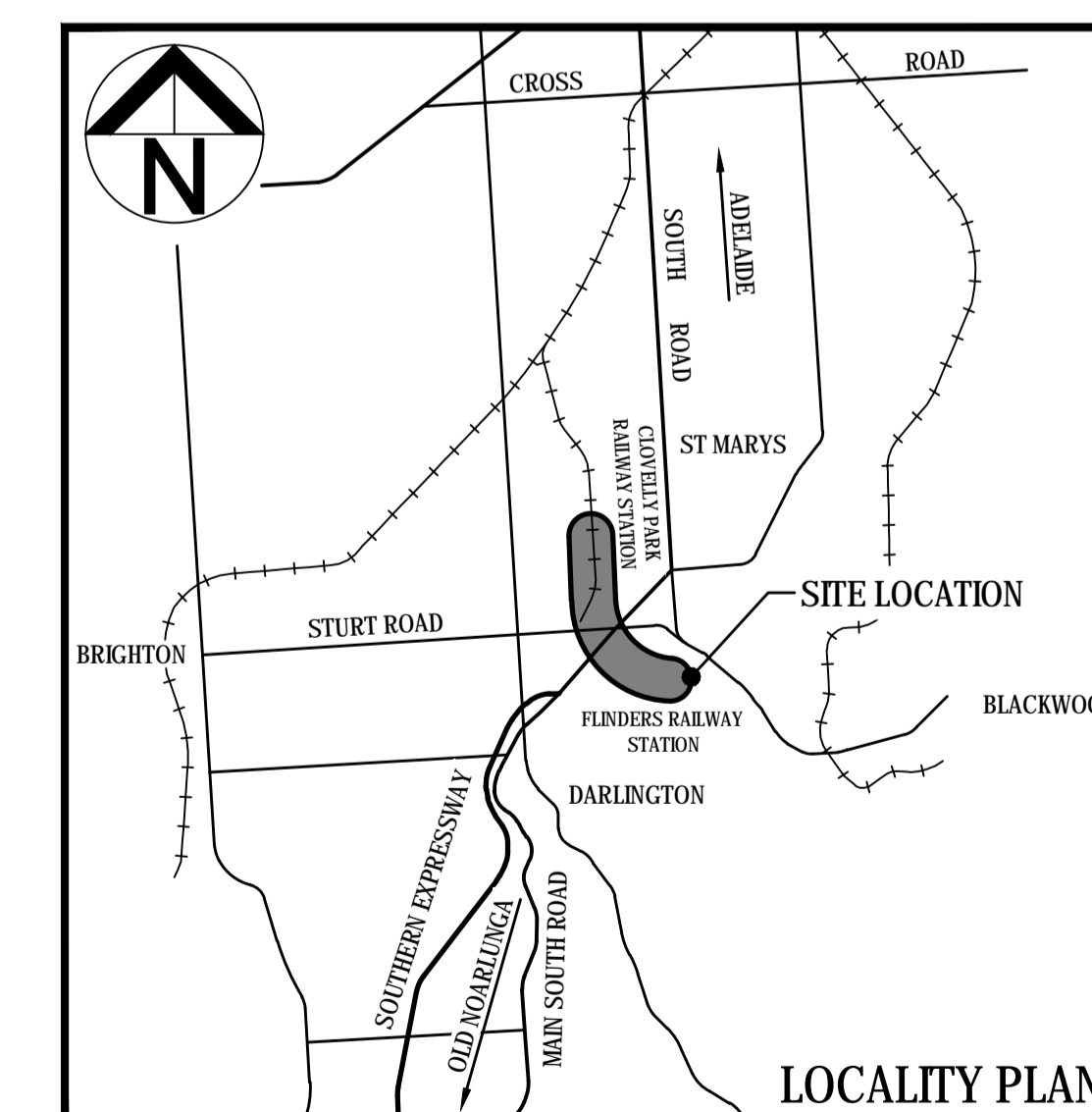
TITLE AND INDEX

SHEET	TITLE
CS1-DRG-352323	VEGETATION REMOVAL - 11.960km - 13.770km

PLAN

SHEET	TITLE
CS1-DRG-352324	VEGETATION REMOVAL - 11.960km - 12.160km
CS1-DRG-352325	VEGETATION REMOVAL - 12.160km - 12.350km
CS1-DRG-352326	VEGETATION REMOVAL - 12.350km - 12.550km
CS1-DRG-352327	VEGETATION REMOVAL - 12.550km - 12.750km
CS1-DRG-352328	VEGETATION REMOVAL - 12.750km - 12.950km
CS1-DRG-352329	VEGETATION REMOVAL - 12.950km - 13.150km
CS1-DRG-352330	VEGETATION REMOVAL - 13.150km - 13.350km
CS1-DRG-352331	VEGETATION REMOVAL - 13.350km - 13.550km
CS1-DRG-352332	VEGETATION REMOVAL - 13.550km - 13.770km
CS1-DRG-352333	VEGETATION REMOVAL - FLINDERS MEDICAL CENTRE

KEY PLAN



NOT FOR CONSTRUCTION

RDP25 - ENVIRONMENTAL



DESIGNED: FLD
 DRAFTED: FLD
 CHECKED: FLD
 APPROVED:

FLINDERS LINE
 ENVIRONMENTAL
 VEGETATION REMOVAL - 11.960km - 13.770km
 TITLE AND INDEX



Department of Planning,
 Transport and Infrastructure

CS1-DRG-352323

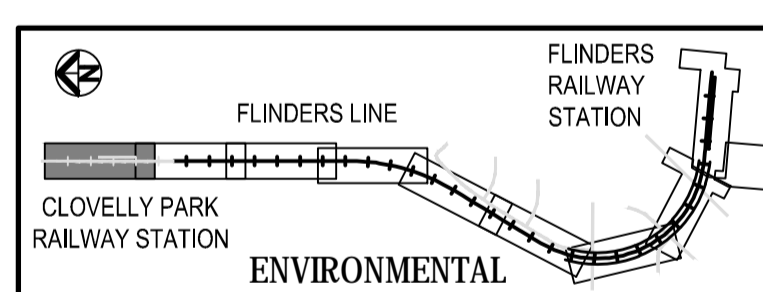
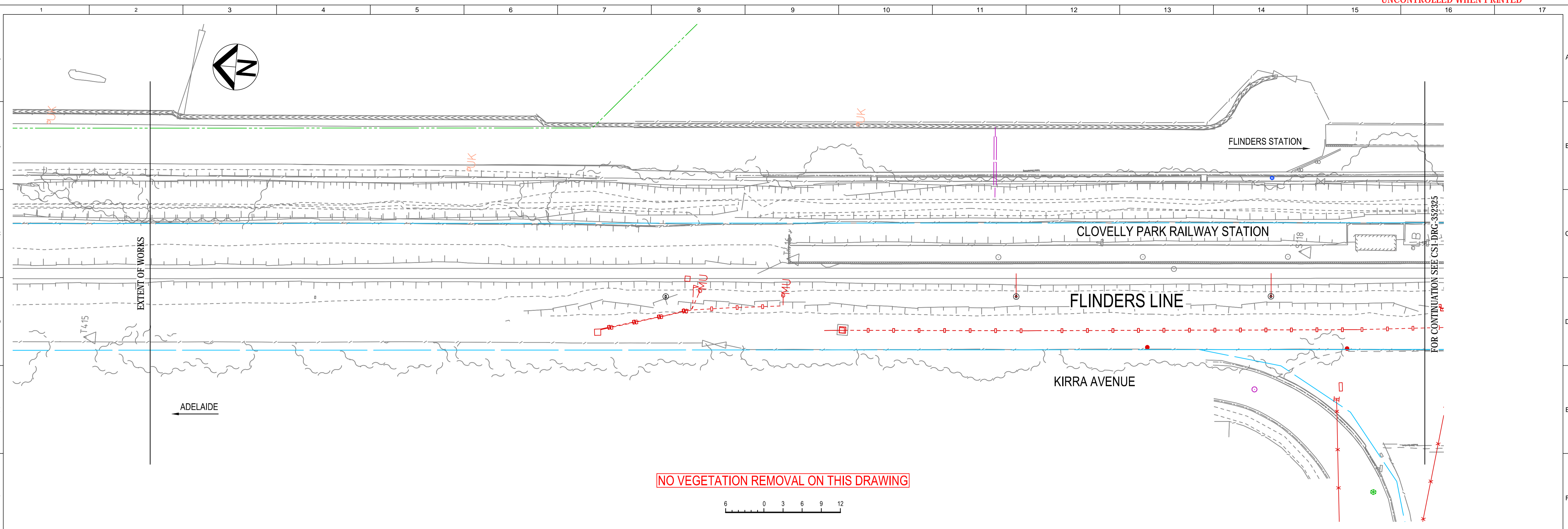
SCALE(S): NTS SIZE: A1
 REVISION: B SHEET: 1 OF 11

REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV
B	ISSUED FOR 100% REVIEW	30.08.18				
A	ISSUED FOR 70% REVIEW	17.05.18				

INDEX SHEET REF.	DATE	DESIGNED	CHECKED	APPROVED
CS1-DRG-352323	30.08.18	Z.BULL	W.KING	

100 MILLIMETRES ON ORIGINAL DRAWING

DATE: 30.08.18



NOTES (ENVIRONMENTAL):

1. TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
2. REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
3. REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
4. SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

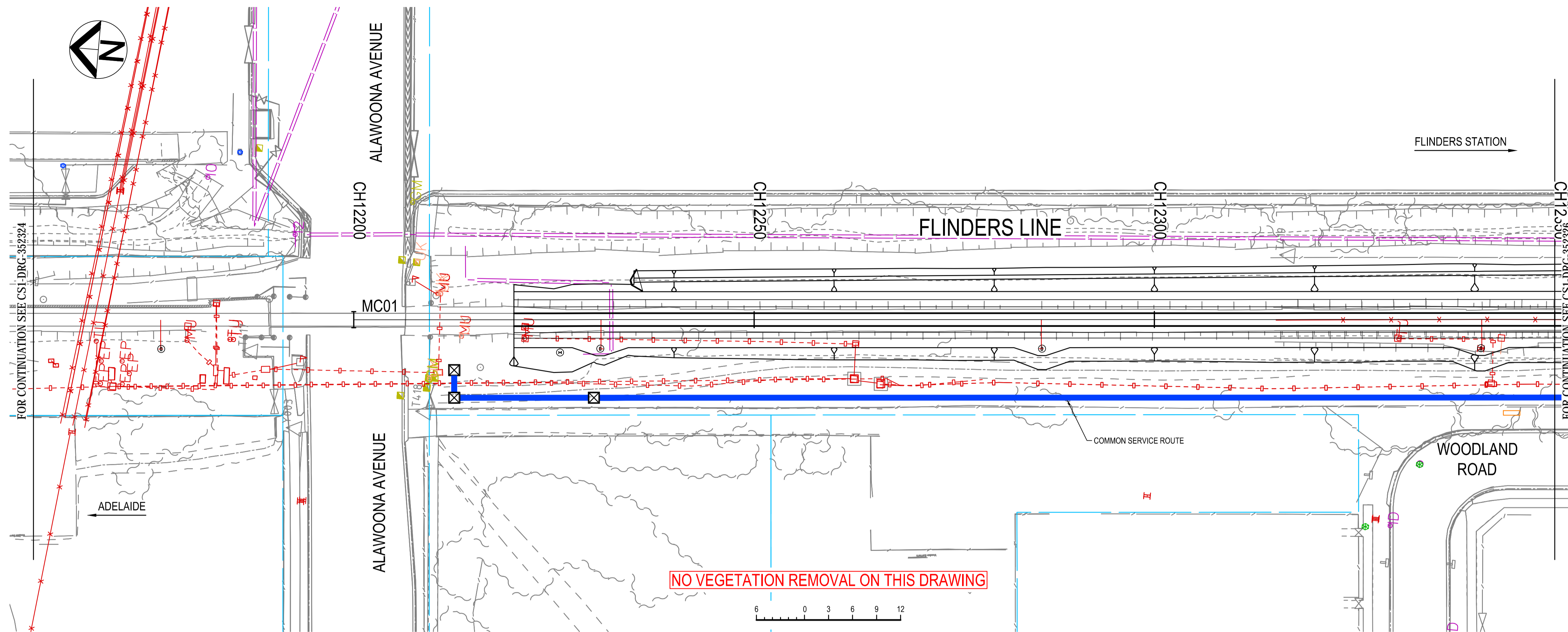
LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

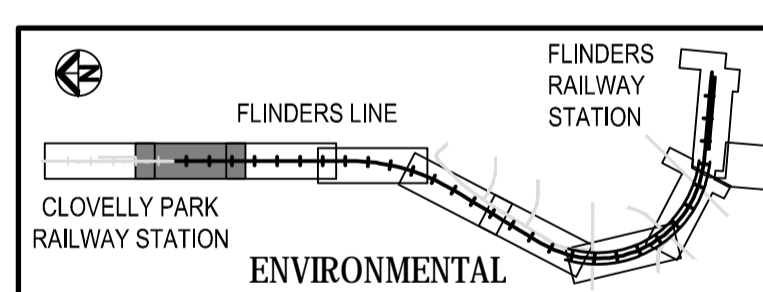
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<p>INDEX SHEET REF: CS1-DRG-352323</p> <p>DATE: 30.08.18</p>				<p>DATE: 30.08.18</p>				<p>DATE: 30.08.18</p>				<p>DATE: 30.08.18</p>			
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>				<p>DATE: 30.08.18</p>				<p>DATE: 30.08.18</p>			



FOR CONTINUATION SEE CS1-DRG-352324

FOR CONTINUATION SEE CS1-DRG-352326

NO VEGETATION REMOVAL ON THIS DRAWING



NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* * CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

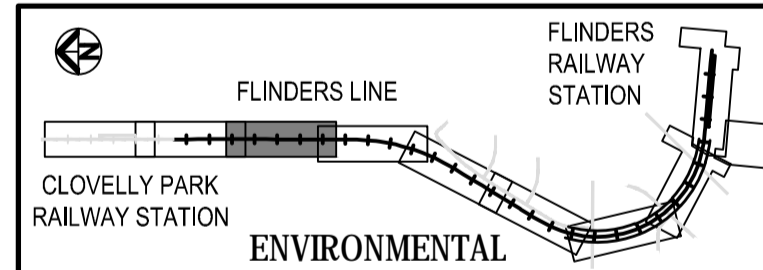
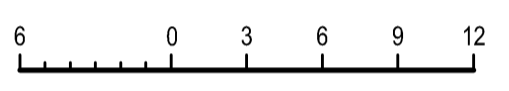
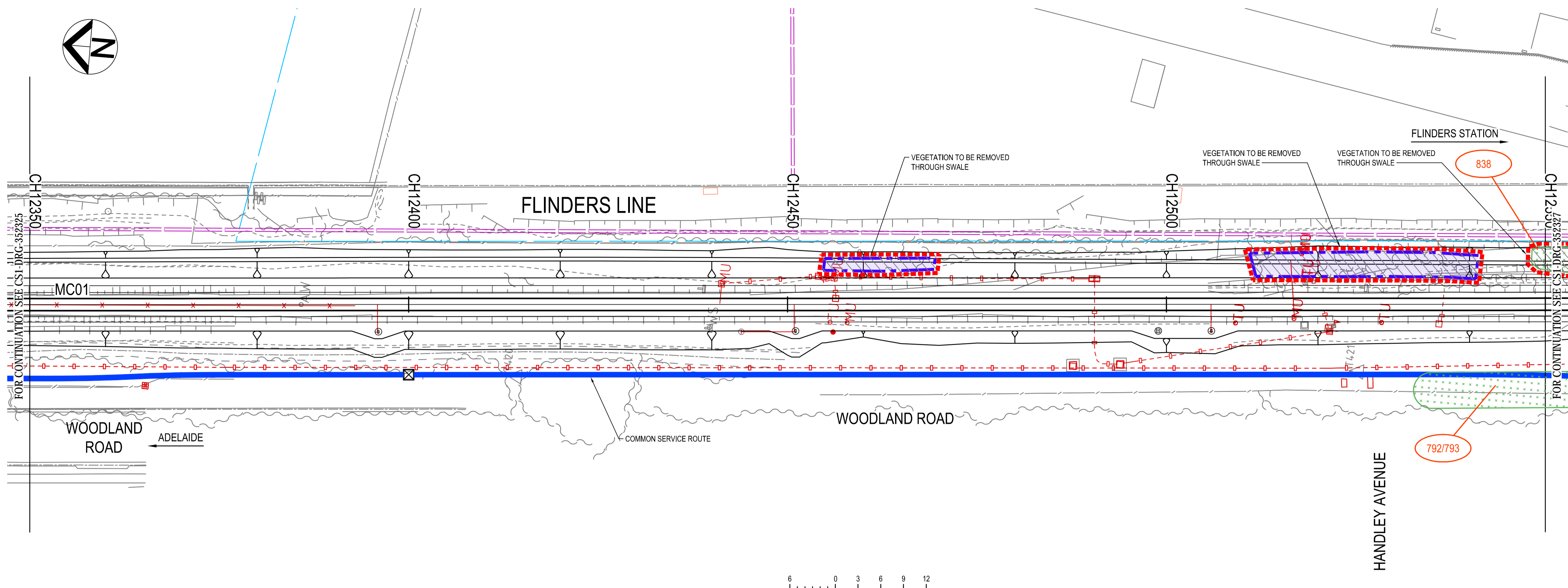
SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

<p>ISSUED FOR 100% REVIEW</p> <p>ISSUED FOR 70% REVIEW</p>				<p>30.08.18</p> <p>17.05.18</p>				<p>NOT FOR CONSTRUCTION</p>				<p>RD P25 - ENVIRONMENTAL</p> <p>GATEWAY SOUTH</p>				<p>DESIGNED: FLD</p> <p>DRAFTED: FLD</p> <p>CHECKED: FLD</p> <p>APPROVED:</p>				<p>FLINDERS LINE ENVIRONMENTAL</p> <p>VEGETATION REMOVAL - 12.160km - 12.350km</p> <p>PLAN</p>				<p>Government of South Australia</p> <p>Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-352325</p>			
<p>INDEX SHEET REF: CS1-DRG-352323</p> <p>THESEAL APPROVAL: Z.BULL</p> <p>PROJECT APPROVAL: W.KING</p> <p>DATE: 30.08.18</p>				<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>				<p>SCALE(S): 1:300</p> <p>REVISION: B</p>				<p>SIZE: A1</p> <p>SHEET: 3 OF 11</p>											

CAD FILE NAME: CS1-DRG-352325.DWG PLOTTED: Thursday, 30 August 2018 1:37:22 PM



NOTES (ENVIRONMENTAL):

1. TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
2. REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
3. REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
4. SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* * CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

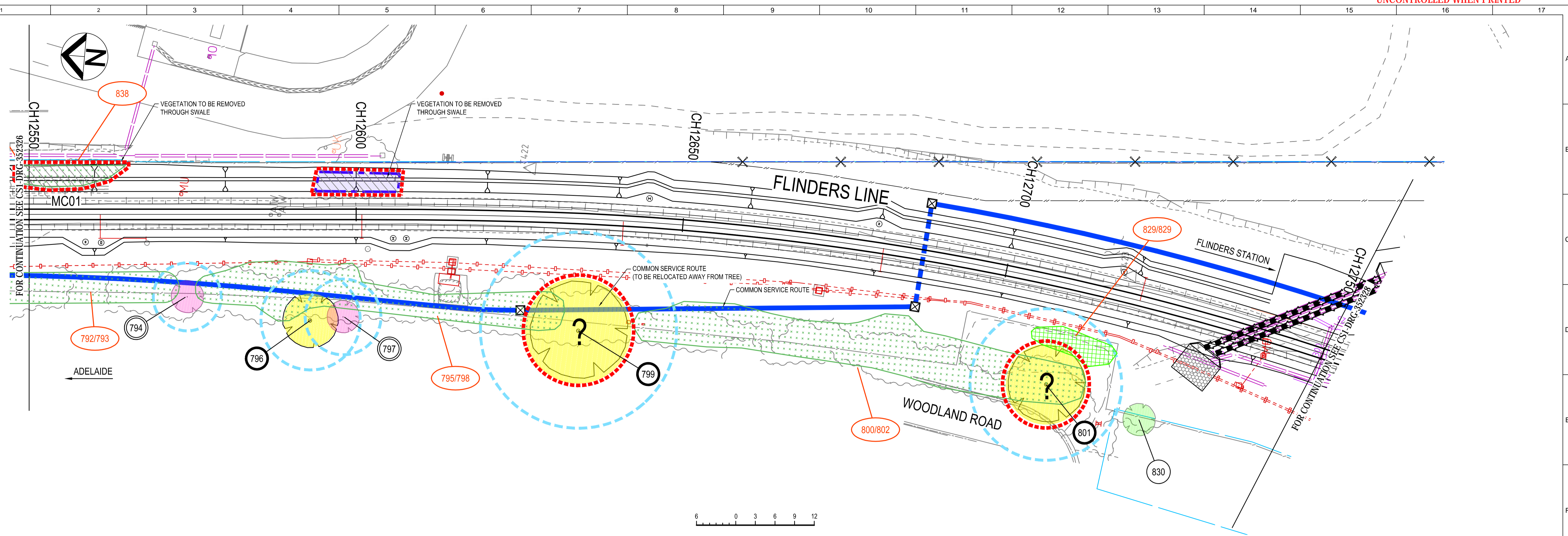
SYMBOL	DESCRIPTION
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	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

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				<p>THESEAL APPROVAL: Z.BULL PROJECT APPROVAL: W.KING DATE: 30.08.18</p>		<p>TITLE: - DATE: -</p>	
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>			
<p>RD25 - ENVIRONMENTAL</p>		<p>FLINDERS LINE ENVIRONMENTAL</p>		<p>VEGETATION REMOVAL - 12.350km - 12.550km</p>		<p>PLAN</p>	
<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>		<p>CS1-DRG-352326</p>		<p>SCALE(S): 1:300 SIZE: A1</p>		<p>REVISION: B SHEET: 4 OF 11</p>	

REV	DESCRIPTION	DATE
B	ISSUED FOR 100% REVIEW	30.08.18
A	ISSUED FOR 70% REVIEW	17.05.18

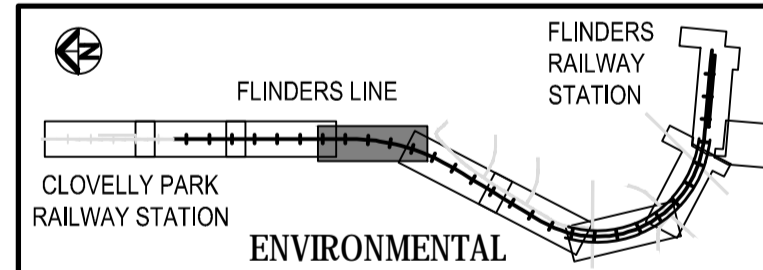
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-	-	-	-	30.08.18
-	-	-	-	17.05.18

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VEGETATION SURVEY	TREE MARKER ID	PHOTO REFERENCE	STATUS	SPECIES	EASTING	NORTHING	DA SUBMISSION REMOVAL APPROVED	REMOVAL REQUIRED	TPZ RADIUS(m) BUTT DIAM@1m X 12
VS 2016/072	794	794	Regulated	<i>Melaleuca amillaris</i>	278023	6122968	TBC	No	5.2
VS 2016/072	797	797	Regulated	<i>Melaleuca nesophila</i>	278022	6122944	TBC	No	5.8
VS 2016/072	796	796	Significant	<i>Melaleuca amillaris</i>	278021	6122949	TBC	No	7.6
VS 2016/072	799	799	Significant	<i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i>	278023	6122908	TBC	Minor Prune / ?	15.0
VS 2016/072	801	801	Significant	<i>Eucalyptus camaldulensis</i> var <i>camaldulensis</i>	278021	6122836	TBC	?	11.6

NOTE:
 S1 FOR PHOTO REFERENCE, SEE DPTI VS 2016/072 & DPTI VS 2014/022
 S2 "PRUNE" ALSO RELATED TO IMPACT TO ROOTS WITHIN TPZ.
 S3 "TPZ" DENOTES TREE PROTECTION ZONE (ONLY SIGNIFICANT & REGULATED TPZ ARE SHOWN)
 S4 FOR FURTHER DETAILS SEE TABLE 6-1 OF FLD-RDP25-REP-9999-30-0001



NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

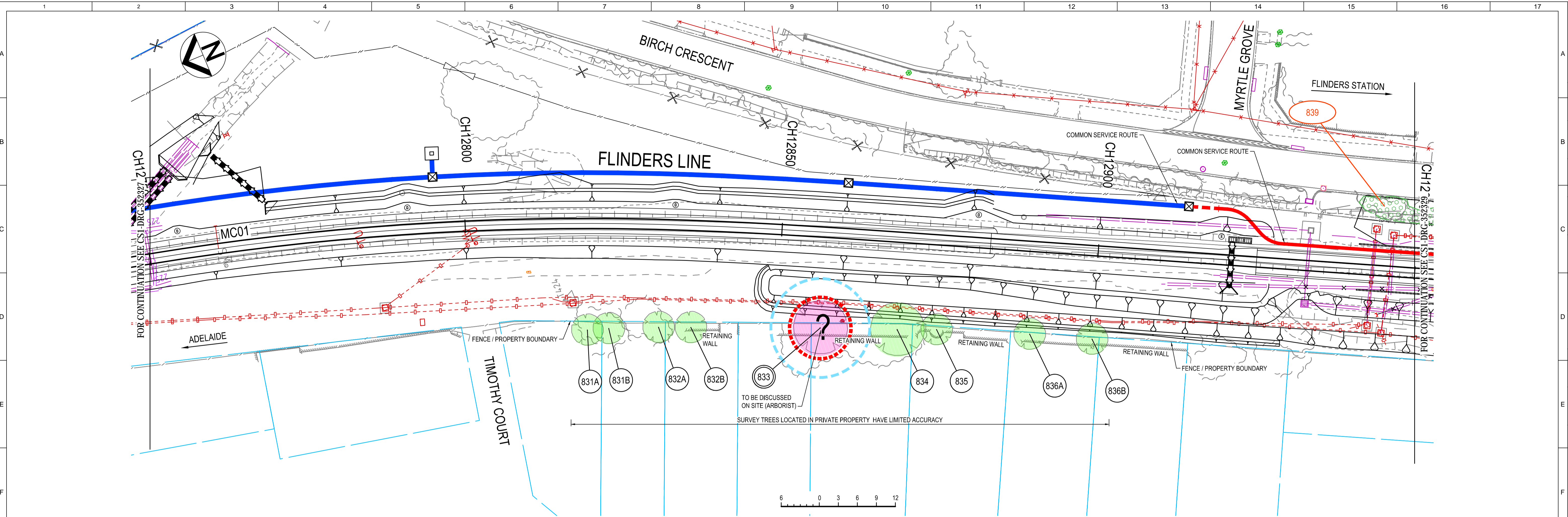
SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

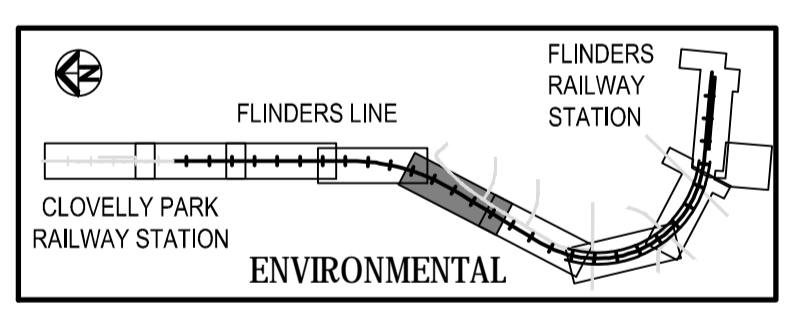
<p>ISSUED FOR 100% REVIEW</p> <p>ISSUED FOR 70% REVIEW</p>				<p>30.08.18</p> <p>17.05.18</p>				<p>NOT FOR CONSTRUCTION</p>				<p>RDP25 - ENVIRONMENTAL</p> <p>GATEWAY SOUTH</p>				<p>DESIGNED: FLD</p> <p>DRAFTED: FLD</p> <p>CHECKED: FLD</p> <p>APPROVED:</p>				<p>FLINDERS LINE ENVIRONMENTAL</p> <p>VEGETATION REMOVAL - 12.550km - 12.750km</p> <p>PLAN</p>				<p>Government of South Australia</p> <p>Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-352327</p>			
<p>DRN DSGN CHK APRV DATE</p>				<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>INDEX SHEET REF: CS1-DRG-352323</p> <p>THESE APPROVALS ARE VALID FOR THE DATE SHOWN</p> <p>Z.BULL W.KING 30.08.18</p>				<p>TITLE: -</p> <p>DATE: -</p>				<p>SCALE(S): 1:300</p> <p>REVISION: B</p> <p>SIZE: A1</p> <p>SHEET: 5 OF 11</p>											

CAD FILE NAME: CS1-DRG-352327.DWG PLOTTED: Thursday, 30 August 2018 1:37:59 PM



VEGETATION SURVEY	TREE MARKER ID	PHOTO REFERENCE	STATUS	SPECIES	EASTING	NORTHING	DA SUBMISSION REMOVAL APPROVED	REMOVAL REQUIRED	TPZ RADIUS(m) BUTT DIAM@1m X 12
VS 2016/072	833	833	Regulated	<i>Corymbia citriodora</i>	277977	6122694	TBC	Minor Prune / ?	7.8

NOTE:
 S1 FOR PHOTO REFERENCE, SEE DPTI VS 2016/072 & DPTI VS 2014/022
 S2 "PRUNE" ALSO RELATED TO IMPACT TO ROOTS WITHIN TPZ.
 S3 "TPZ" DENOTES TREE PROTECTION ZONE (ONLY SIGNIFICANT & REGULATED TPZ ARE SHOWN)
 S4 FOR FURTHER DETAILS SEE TABLE 6-1 OF FLD-RDP25-REP-9999-30-0001



NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

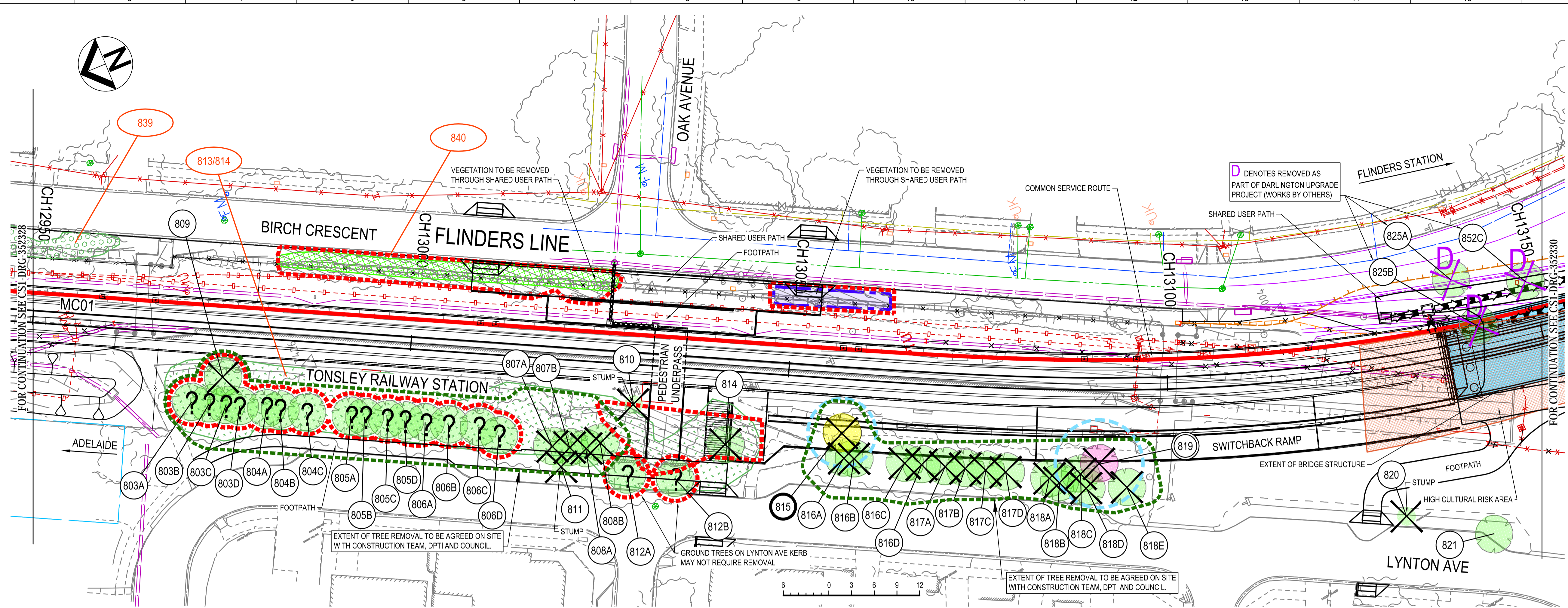
SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

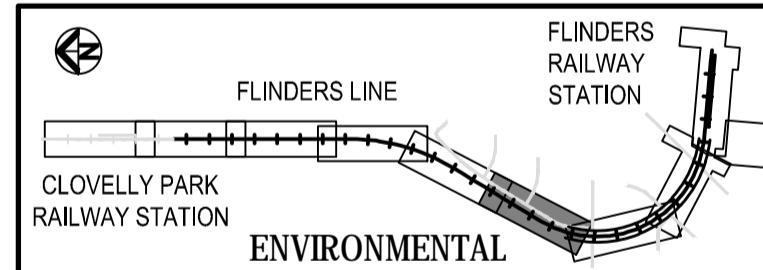
<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>INDEX SHEET REF: CS1-DRG-352328</p> <p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>					<p>FLINDERS LINE ENVIRONMENTAL</p> <p>VEGETATION REMOVAL - 12.750km - 12.950km</p> <p>PLAN</p> <p>Government of South Australia Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-352328</p> <p>SCALE(S): 1:300 SIZE: A1 REVISION: B SHEET: 6 OF 11</p>									
REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV	DATE	HEADING CHECK	ORIGINATOR DESIGN	INDEPENDENT CHECK	PROJECT APPROVAL	DATE	TITLE	DATE
B	ISSUED FOR 100% REVIEW	30.08.18									W.KING	30.08.18		
A	ISSUED FOR 70% REVIEW	17.05.18									Z.BULL			

ALL DIMENSIONS ARE IN METRES UNO



VEGETATION SURVEY	TREE MARKER ID	PHOTO REFERENCE	STATUS	SPECIES	EASTING	NORTHING	DA SUBMISSION REMOVAL APPROVED	REMOVAL REQUIRED	TPZ RADIUS(m) BUTT DIAM@1m X 12
VS 2016/072	819	819	Regulated	<i>Acacia salicina</i>	277877	6122483	TBC	Removal	5.8
VS 2016/072	815	815	Significant	<i>Phoenix canariensis</i>	277896	6122518	TBC	Removal	4.5

NOTE:
 S1 FOR PHOTO REFERENCE, SEE DPTI VS 2016/072 & DPTI VS 2014/022
 S2 "PRUNE" ALSO RELATED TO IMPACT TO ROOTS WITHIN TPZ.
 S3 "TPZ" DENOTES TREE PROTECTION ZONE (ONLY SIGNIFICANT & REGULATED TPZ ARE SHOWN)
 S4 FOR FURTHER DETAILS SEE TABLE 6-1 OF FLD-RDP25-REP-9999-30-0001



NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS(m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

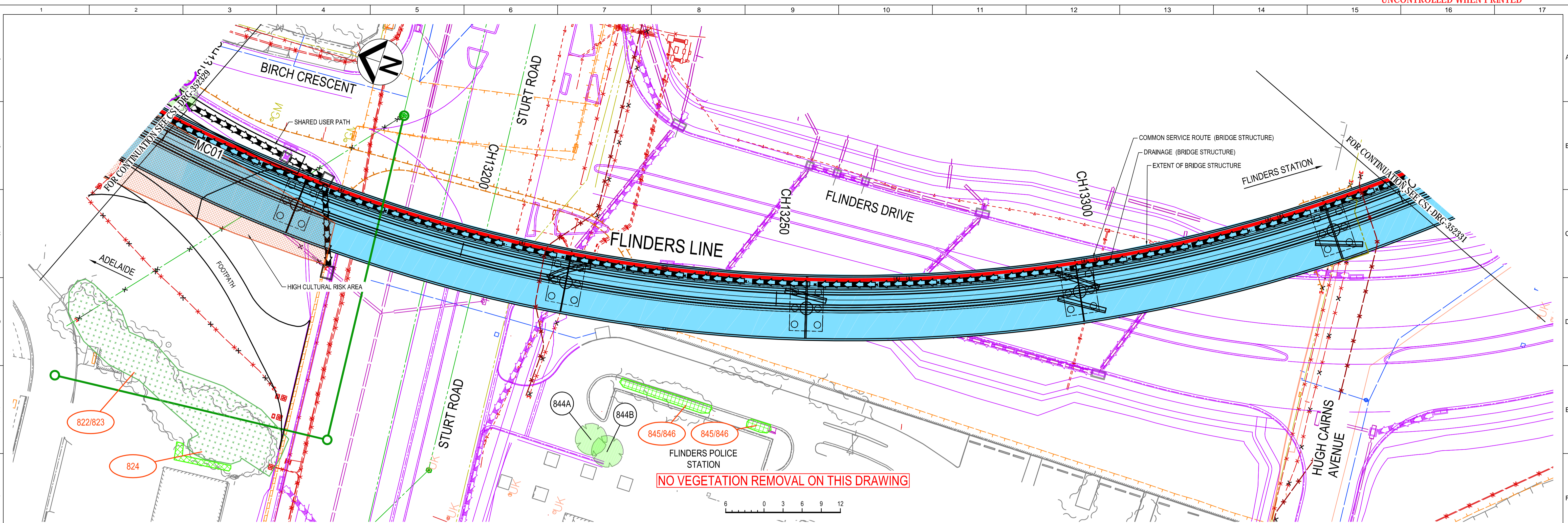
SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

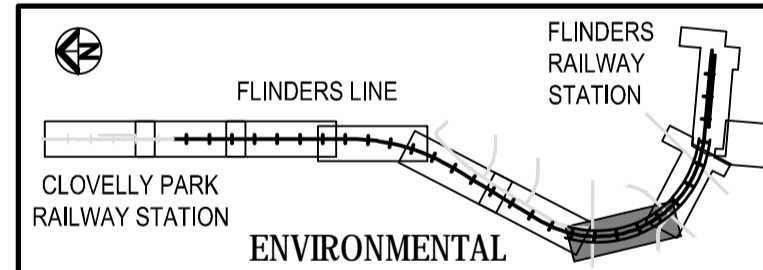
SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

<p>NOT FOR CONSTRUCTION</p>				<p>RDP25 - ENVIRONMENTAL</p>		<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>		<p>FLINDERS LINE ENVIRONMENTAL</p>		<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>						
<p>INDEX SHEET REF: CS1-DRG-352323</p>				<p>PROJECT APPROVAL: W.KING DATE: 30.08.18</p>		<p>TITLE: - DATE: -</p>		<p>VEGETATION REMOVAL - 12.950km - 13.150km</p>		<p>CS1-DRG-352329</p>						
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>		<p>PLAN</p>		<p>SCALE(S): 1:300 SIZE: A1</p>		<p>REVISION: B SHEET: 7 OF 11</p>						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

CAD FILE NAME: CS1-DRG-352329.DWG PLOTTED: Thursday, 30 August 2018 1:38:41 PM



NO VEGETATION REMOVAL ON THIS DRAWING



NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

<p>NOT FOR CONSTRUCTION</p>				<p>RD25 - ENVIRONMENTAL</p> <p>GATEWAY SOUTH</p>				<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>				<p>FLINDERS LINE ENVIRONMENTAL</p> <p>VEGETATION REMOVAL - 13.150km - 13.350km</p> <p>PLAN</p>				<p>Government of South Australia Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-352330</p> <p>SCALE(S): 1:300 SIZE: A1 REVISION: B SHEET: 8 OF 11</p>			
<p>ISSUED FOR 100% REVIEW</p> <p>ISSUED FOR 70% REVIEW</p>				<p>INDEX SHEET REF: CS1-DRG-352323</p> <p>THESEAL APPROVAL: Z.BULL PROJECT APPROVAL: W.KING DATE: 30.08.18</p>				<p>TITLE: - DATE: -</p>				<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>							
<p>DRN DSGN CHK APRV DATE</p>				<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>				<p>30.08.18 17.05.18</p>							

NOTES (ENVIRONMENTAL):

- TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
- REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
- REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
- SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS(m²) TO BE CONFIRMED.

LEGEND (OTHER)

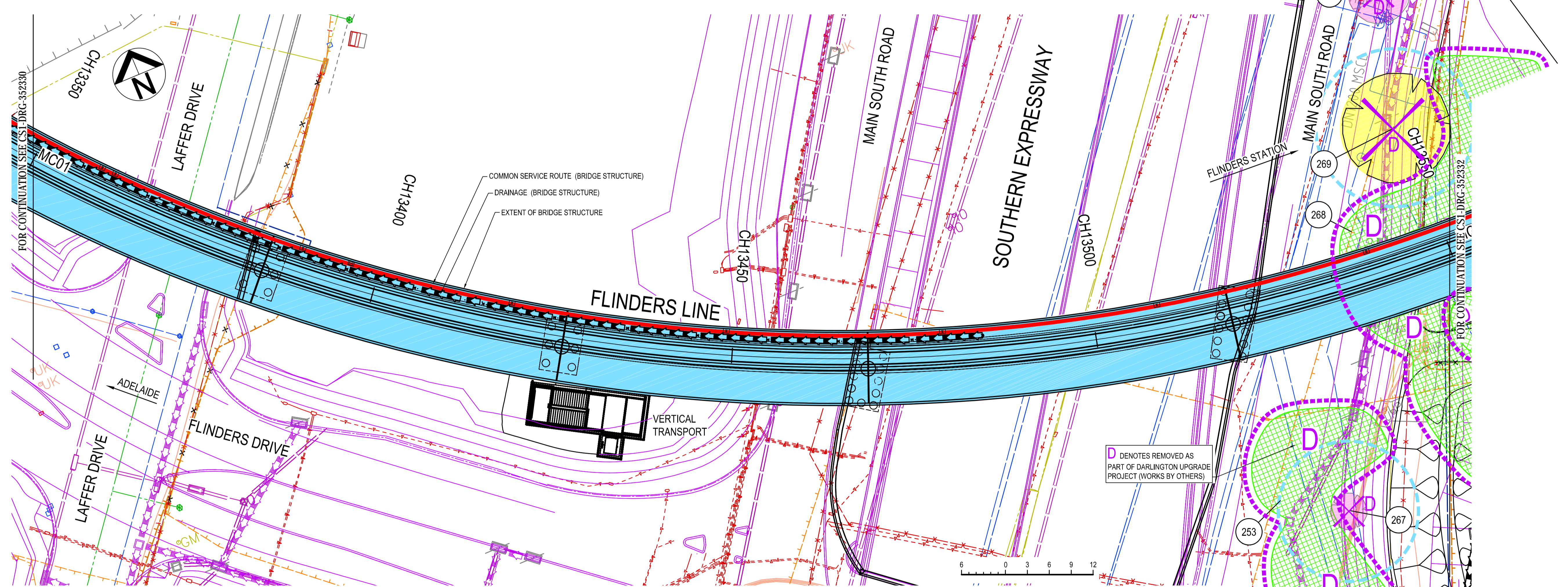
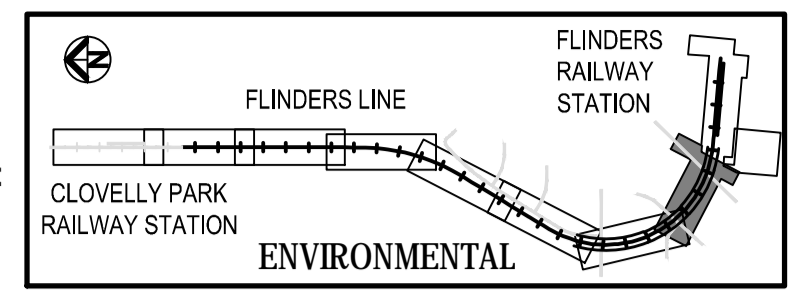
SYMBOL	DESCRIPTION
	EXISTING SURVEY*
	CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.



VEGETATION SURVEY	TREE MARKER ID	PHOTO REFERENCE	STATUS	SPECIES	EASTING	NORTHING	DA SUBMISSION REMOVAL APPROVED	REMOVAL REQUIRED	TPZ RADIUS(m) BUTT DIAM@1m X 12
VS 2014/022	267	267	Regulated	Eucalyptus camaldulensis var camaldulensis	278073	6122127	REMOVED AS PART OF DARLINGTON UPGRADE PROJECT (WORKS BY OTHERS)		9.6
VS 2014/022	269	269	Significant	Eucalyptus camaldulensis var camaldulensis	278099	6122173	REMOVED AS PART OF DARLINGTON UPGRADE PROJECT (WORKS BY OTHERS)		10.8

NOTE:
 S1 FOR PHOTO REFERENCE, SEE DPTI VS 2016/072 & DPTI VS 2014/022
 S2 "PRUNE" ALSO RELATED TO IMPACT TO ROOTS WITHIN TPZ.
 S3 "TPZ" DENOTES TREE PROTECTION ZONE (ONLY SIGNIFICANT & REGULATED TPZ ARE SHOWN)
 S4 FOR FURTHER DETAILS SEE TABLE 6-1 OF FLD-RDP25-REP-9999-30-0001

<p>NOT FOR CONSTRUCTION</p>				<p>INDEX SHEET REF: CS1-DRG-352323</p>				<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>				<p>FLINDERS LINE ENVIRONMENTAL VEGETATION REMOVAL - 13.350km - 13.550km PLAN</p>				<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>							
<p>ISSUED FOR 100% REVIEW</p>				<p>ISSUED FOR 70% REVIEW</p>				<p>DATE: 30.08.18</p>				<p>DATE: 30.08.18</p>				<p>SCALE(S): 1:300 REVISION: B</p>				<p>SIZE: A1 SHEET: 9 OF 11</p>			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17							

NOTES (ENVIRONMENTAL):

1. TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
2. REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
3. REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
4. SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS(m²) TO BE CONFIRMED.

LEGEND (OTHER)

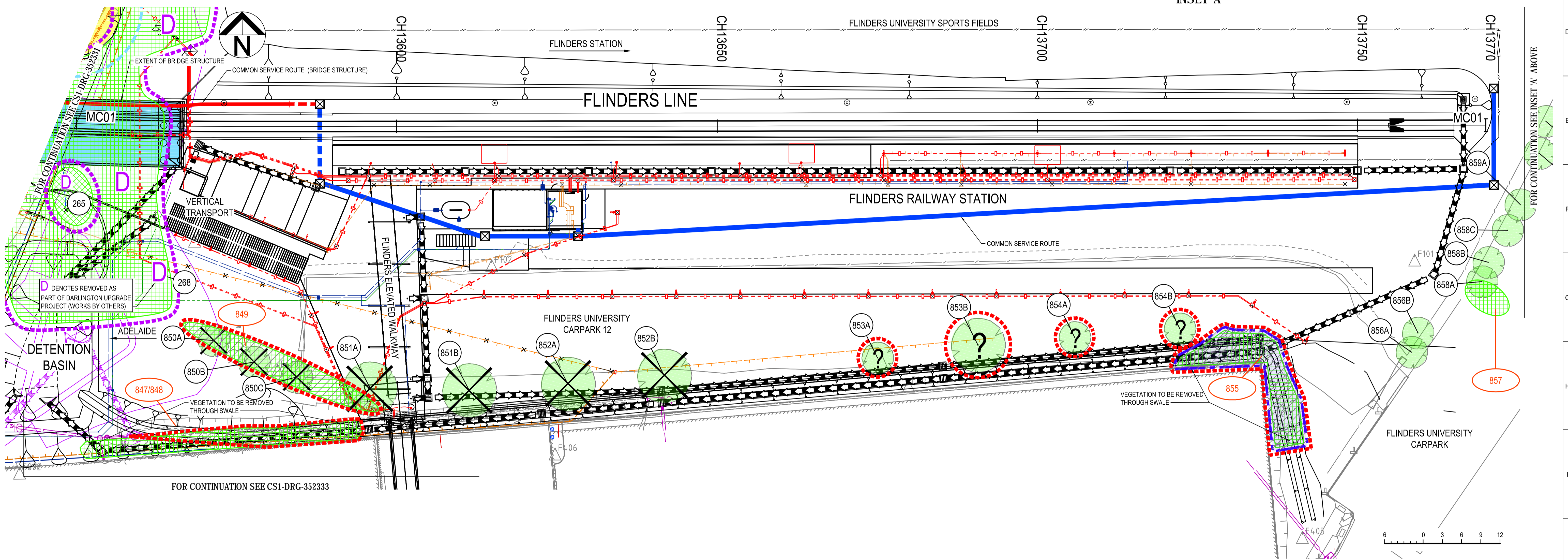
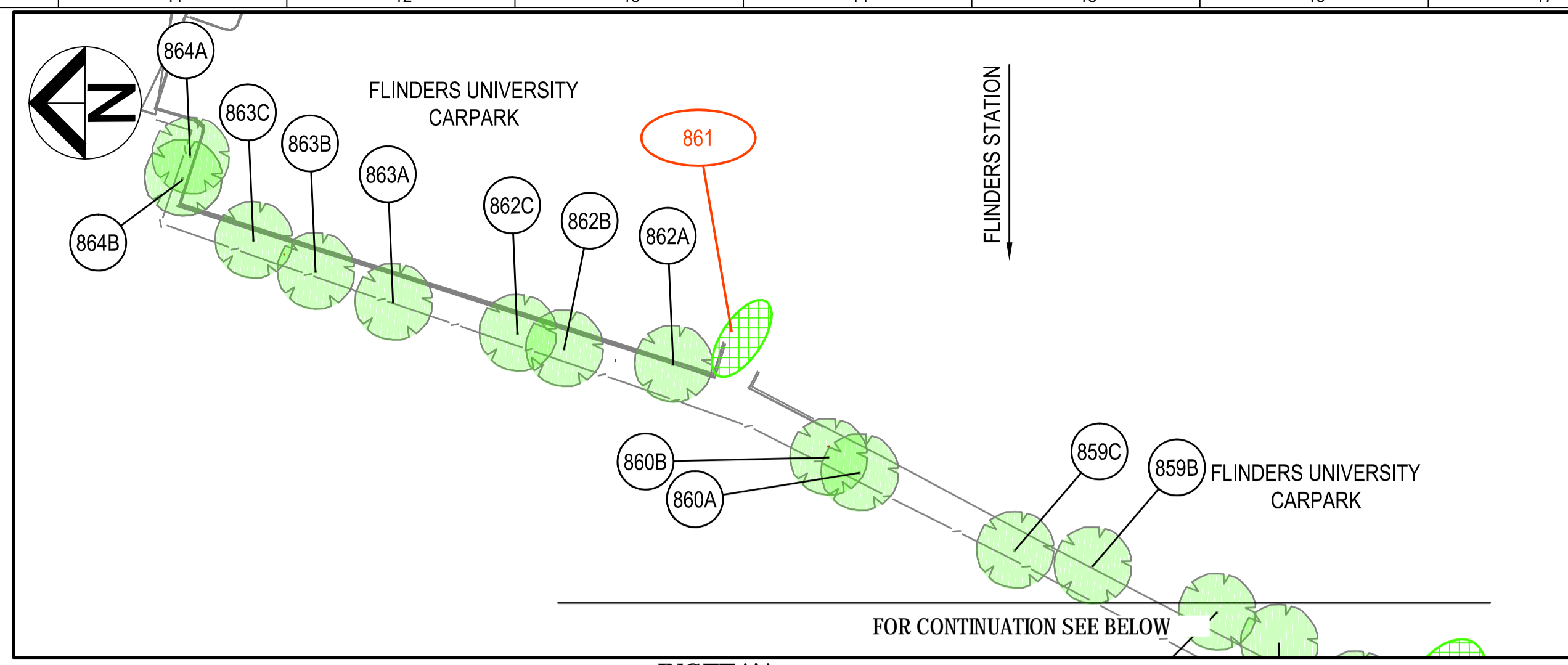
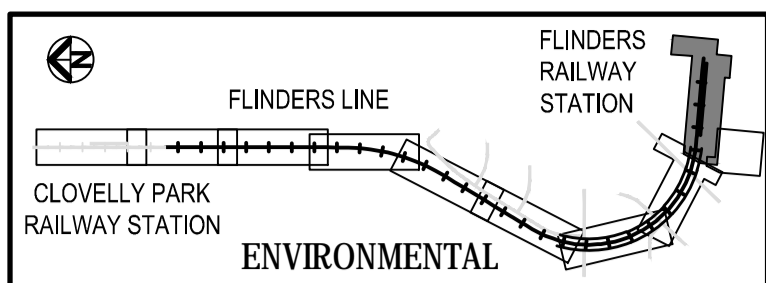
SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

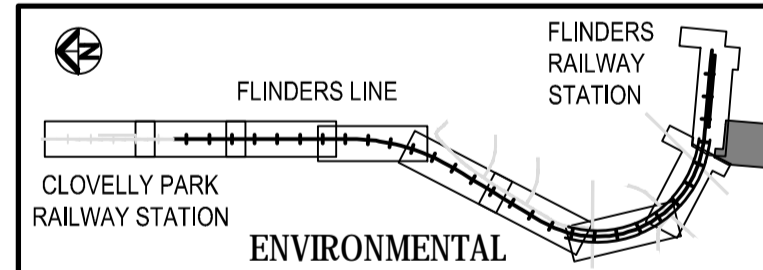
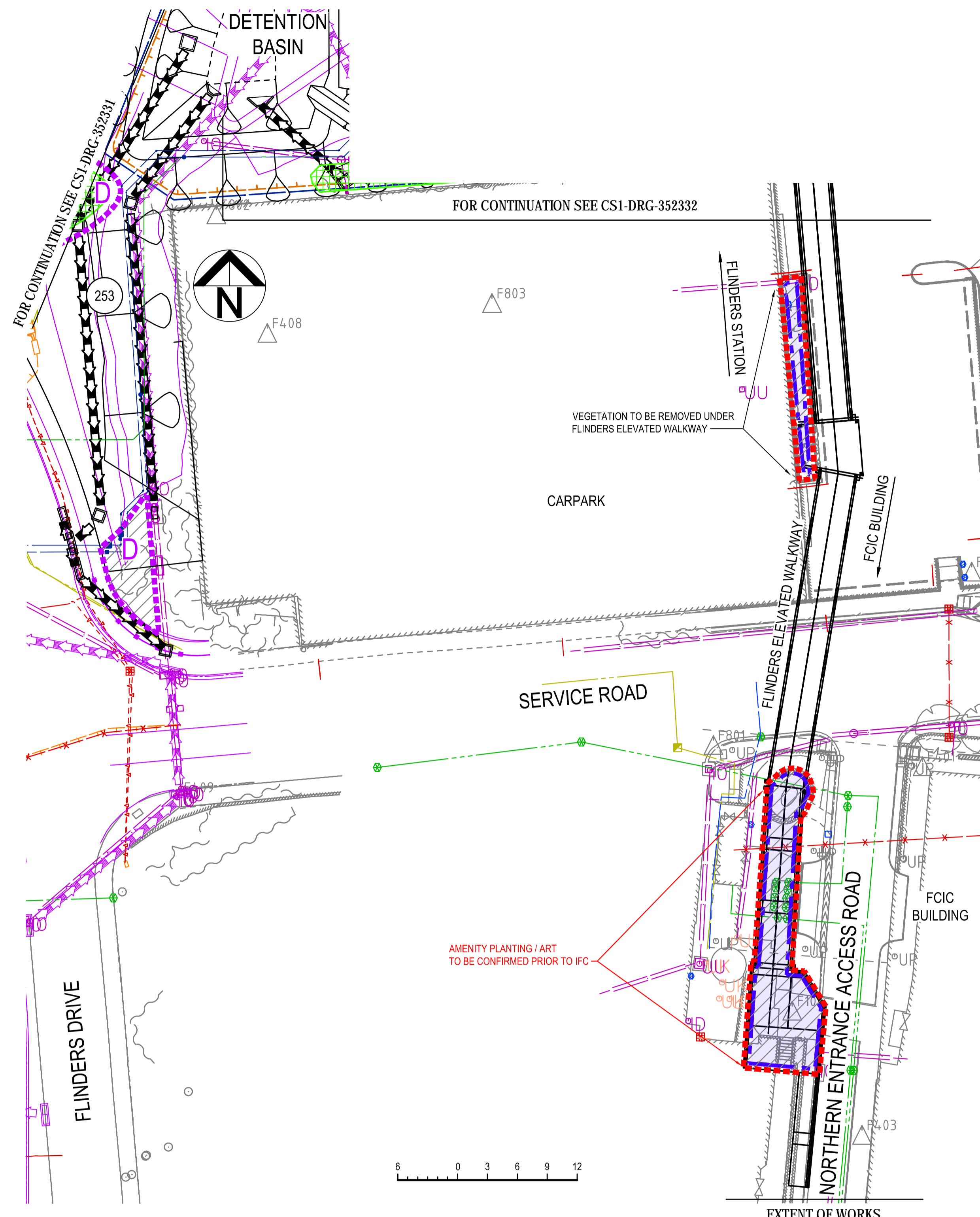
LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.



<p>NOT FOR CONSTRUCTION</p>		<p>RDP25 - ENVIRONMENTAL</p>		<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>	
<p>GATEWAY SOUTH</p>		<p>FLINDERS LINE ENVIRONMENTAL</p>		<p>FLINDERS LINE ENVIRONMENTAL</p>	
<p>INDEX SHEET REF: CS1-DRG-352333</p>		<p>VEGETATION REMOVAL - 13.550km - 13.770km</p>		<p>CS1-DRG-352332</p>	
<p>DRN DSGN CHK APRV DATE</p>		<p>30.08.18 17.05.18</p>		<p>SCALE(S): 1:300 SIZE: A1 REVISION: B SHEET: 10 OF 11</p>	
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>		<p>ALL DIMENSIONS ARE IN METRES UNO</p>		<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>	

CAD FILE NAME: CS1-DRG-352332.DWG PLOTTED: Thursday, 30 August 2018 1:39:40 PM



NOTES (ENVIRONMENTAL):

1. TREE PROTECTION REQUIREMENTS TO BE ASSESSED AT TIME OF CONSTRUCTION BY SUPERINTENDENTS REPRESENTATIVE.
2. REFER TO VEGETATION SURVEY No. VS 2016/072 & VS 2014/022 FOR INFORMATION ON EXISTING TREES.
3. REFER DPTI MASTER SPECIFICATION PART CH50 FOR THE ENVIRONMENTAL REQUIREMENTS.
4. SURVEYED AREAS (m²) HAVE LIMITED ACCURACY. FINAL AREAS (m²) TO BE CONFIRMED.

LEGEND (OTHER)

SYMBOL	DESCRIPTION
	EXISTING SURVEY
	EXISTING SURVEY* * CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)
	VEGETATION AND TREE REMOVAL CURRENTLY IN PROGRESS (BY OTHERS)

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	VEGETATION SURVEY VS 2016/072 & VS 2014/022 TREE IDENTIFIER (e.g. TREE NUMBER 1a)
	TREES TO BE REMOVED
	SIGNIFICANT TREE
	REGULATED TREE
	AMENITY TREE
	TREE PROTECTION ZONE (TPZ)
	HIGH CULTURAL RISK AREA

LEGEND (ENVIRONMENTAL)

SYMBOL	DESCRIPTION
	TREE REMOVAL TO BE ASSESSED AT TIME OF CONSTRUCTION BY OFFICERS FROM DPTI LANDSCAPE UNIT / ARBORIST
	PRUNE
	AMENITY VEGETATION IDENTIFIER (e.g. AMENITY NUMBER 1A)
	VEGETATION TO BE REMOVED SEE NOTE 4.
	VEGETATION UNSURVEYED SEE NOTE 4.
	AMENITY TREE / SHRUBS SEE NOTE 4.
	AMENITY / DECLARED WEED PATCH SEE NOTE 4.
	AMENITY / WEED PATCH SEE NOTE 4.

A		ISSUED FOR 100% REVIEW																			
REV	DESCRIPTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

NOT FOR CONSTRUCTION

RDP25 - ENVIRONMENTAL

INDEX SHEET REF: CS1-DRG-352333

THEORICAL APPROVAL: Z.BULL DATE: 30.08.18

PROJECT APPROVAL: W.KING DATE: 30.08.18

DESIGNED: FLD

DRAFTED: FLD

CHECKED: FLD

APPROVED:

FLINDERS LINE ENVIRONMENTAL

VEGETATION REMOVAL - FLINDERS MEDICAL CENTRE

PLAN

Government of South Australia
Department of Planning, Transport and Infrastructure

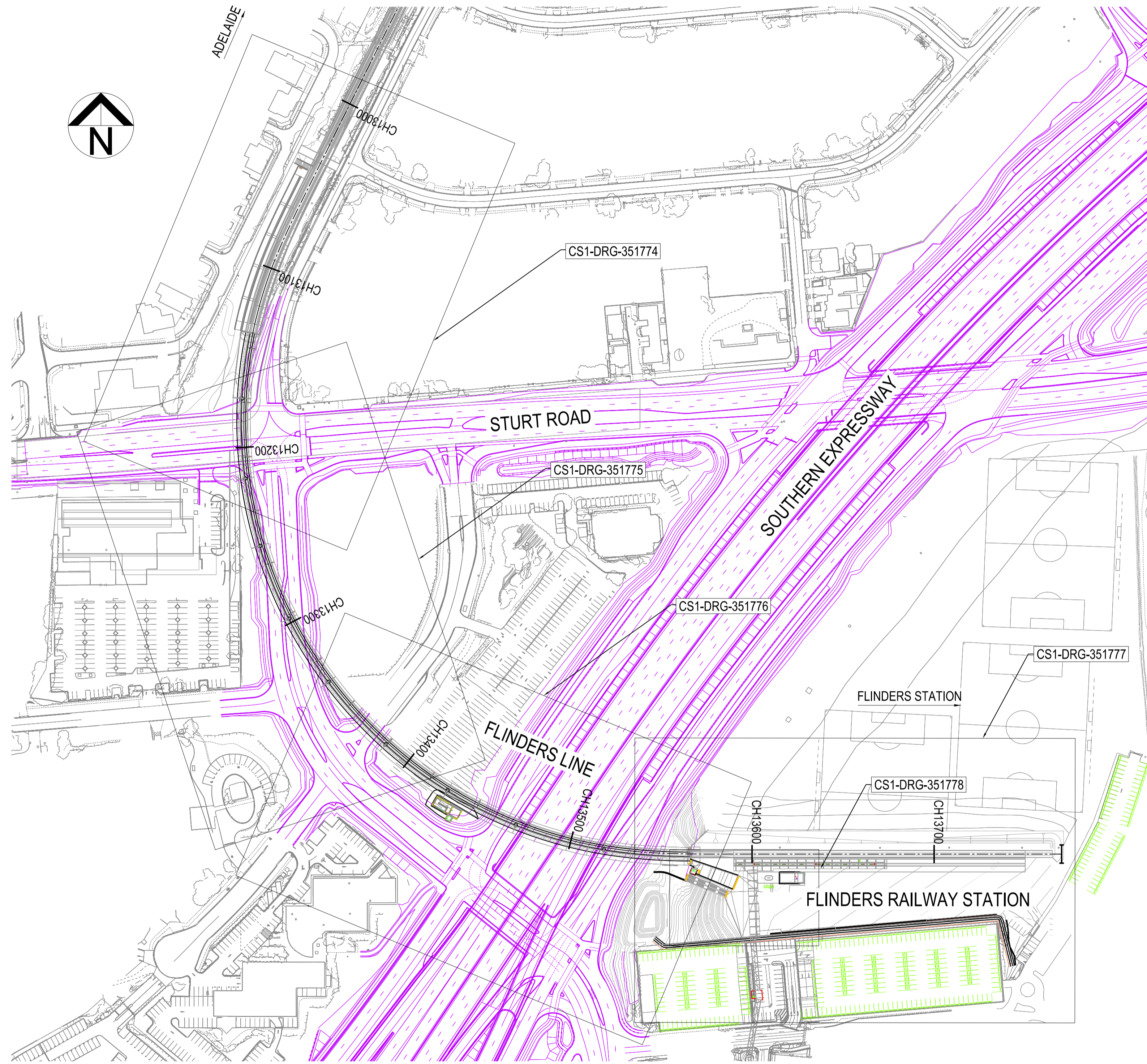
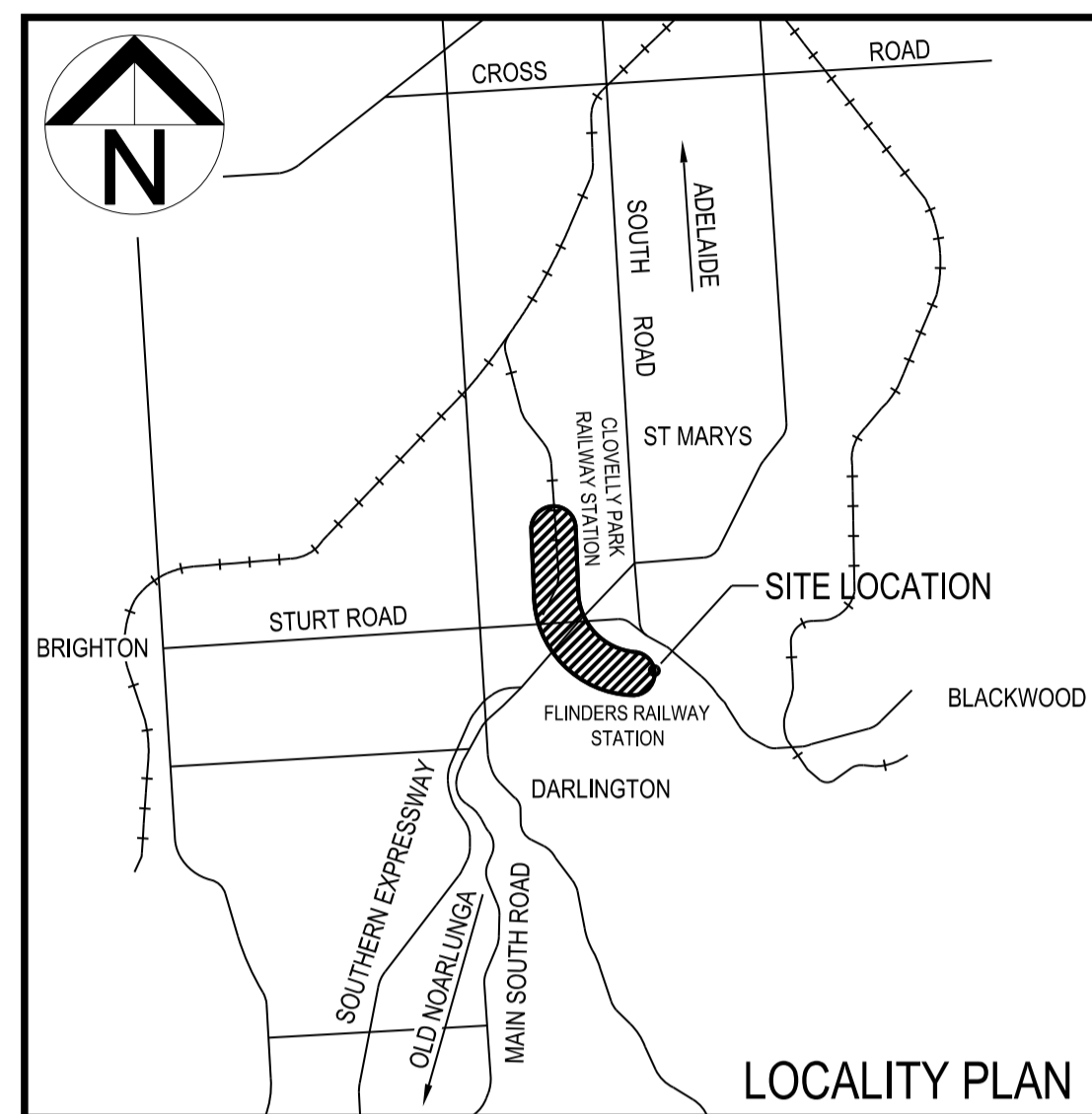
CS1-DRG-352333

SCALE(S): 1:300 SIZE: A1

REVISION: A SHEET: 11 OF 11

FLINDERS LINK PROJECT

LANDSCAPE DESIGN



DRAWING INDEX

TITLE & INDEX

SHEET	TITLE
CS1-DRG-351741	COMMON SERVICE ROUTE

TITLE & INDEX

SHEET	TITLE
CS1-DRG-351772	LANDSCAPE

PLAN

SHEET	TITLE
CS1-DRG-351774	SHEET 01
CS1-DRG-351775	SHEET 02
CS1-DRG-351776	SHEET 03
CS1-DRG-351777	SHEET 04
CS1-DRG-351778	STATION PLAZA

SECTIONS

SHEET	TITLE
CS1-DRG-351781	SHEET 01
CS1-DRG-351782	SHEET 02
CS1-DRG-351783	SHEET 03

DETAILS

SHEET	TITLE
CS1-DRG-351786	SHEET 01
CS1-DRG-351787	SHEET 02

REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV
B	ISSUED FOR 70% DESIGN	26.03.18				
A	ISSUED FOR 30% REVIEW	20.12.17				

NOT FOR CONSTRUCTION

RDP12 - LANDSCAPING

DESIGNED: FLD
 DRAFTED: FLD
 CHECKED: FLD
 APPROVED:

GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351772

TECHNICAL APPROVAL: G.GENTNER
 PROJECT APPROVAL: D.RICHTER
 DATE: 26.03.18

TITLE: -
 DATE:

FLINDERS LINE
 LANDSCAPE
 LANDSCAPE
 TITLE AND INDEX

Government of South Australia
 Department of Planning,
 Transport and Infrastructure

CS1-DRG-351772

SCALE(S): N.T.S
 REVISION: B
 SIZE: A1
 SHEET: 1 OF 12

CAD FILE NAME: I:\62000_DPT_RAL_A1_ATT\DWG_PLOTTED Tuesday, 26 September 2017 1:09:59 PM

PAVEMENT LEGEND

SYMBOL DESCRIPTION

- LIGHT WASHED EXPOSED AGGREGATE CONCRETE FINISH: HANSONS COUNTRY TAN OR APPROVED EQUIVALENT SEE CS1-DRG-351786, DETAIL 3
- DECORATIVE GRAVEL MULCH SUNSET GOLD 15-30mm AGGREGATE OR APPROVED EQUIVALENT (TO MATCH PRODUCT USED IN DARLINGTON UPGRADE)
- DECORATIVE GRAVEL MULCH FITZGERALD 15-30mm AGGREGATE OR APPROVED EQUIVALENT (TO MATCH PRODUCT USED IN DARLINGTON UPGRADE)
- 600 X 300 x 40mm BEYOND STONE BLUESTONE X OR APPROVED EQUIVALENT UNIT PAVERS HONED FINISH
- 300 x 300 X 40mm GRANITE PAVER OR APPROVED EQUIVALENT TYPE 2 - BEYOND STONE BLUESTONE PAVER HONED FINISH TYPE 3 - BEYOND STONE BLUESTONE PAVER BUSH HAMMERED FINISH TYPE 4 - BEYOND STONE MOONLIGHT LIGHT GREY GRANITE EXFOLIATED FINISH

SEE CS1-DRG-351786 DETAIL 3

SEE CS1-DRG-351786 DETAIL 2

SEE CS1-DRG-351787 DETAIL 1

- ASPHALT SHARED USE PATH 4m WIDE
- INSITU CONCRETE SEATING PLINTH SEE CS1-DRG-351787, DETAIL 3
- MILD STEEL EDGE SEE CS1-DRG-351786, DETAIL 5
- MULCHED GARDEN BED

PLANTING LEGEND

SYMBOL DESCRIPTION

- TURF GRASS AREA TO MATCH EXISTING SPORTSFIELDS IMPORTED 200mm TOP SOIL
- HYDROSEEDED GRASS MIX IMPORTED 200mm TOP SOIL
- BASIN PLANTING MIX
- SHADE TOLERANT PLANTING MIX
- GROUND COVER PLANTING MIX 01
- GROUND COVER PLANTING MIX 02
- LOW LYING PLANTING MIX 04
- BAMBUSA TEXTILIS VAR. GRACILIS SLENDERS WAEVERS BAMBOO

TREE LEGEND

SYMBOL DESCRIPTION

- SMALL URBAN**
 - ZELKOVA SARRATA 'GREEN VASE' (2.5M HIGH x 50mm CALLIPER, 60L POT)
 - LAGERSTROEMIA INDICA x L. FAURIEI 'NATCHEZ' (2.5M HIGH x 50mm CALLIPER, 60L POT)
- RESERVE AND LARGE OFFSET**
 - ANGOPHORA COSTATA (1.5M HIGH x 30mm CALLIPER, 45L POT)
 - EUCALYPTUS CAMALDULENSIS (1.5M HIGH x 30mm CALLIPER, 45L POT)
 - EUCALYPTUS LEUCOXYLON SSP. LEUCOXYLON (1.5M HIGH x 30mm CALLIPER, 45L POT)
 - EUCALYPTUS MICROCARPA (1.5M HIGH x 30mm CALLIPER, 45L POT)

MASTER PLANTING SCHEDULE

FLINDERS LINK						
FOR INFORMATION ONLY						
CODE	BOTANIC NAME	COMMON NAME	DENSITY	SPACING (Offset to path)	SIZE	Totals
TREES						
Small Urban	<i>Zelkova serrata</i> 'Green Vase'	Japanese Elm	As Shown	As Shown	2.5m, 50mm cal	6
	<i>Lagerstroemia indica</i> 'Natchez'	Crepe Myrtle	As Shown	As Shown	2.5m, 50mm cal	6
Reserve & Large Offset Trees	<i>Angophora costata</i>	Smooth Barked Apple	As Shown	As Shown	1.5m, 30mm cal	11
	<i>Eucalyptus Camaldulensis</i>	River Red Gum	As Shown	As Shown	1.5m, 30mm cal	0
	<i>Eucalyptus leucoxydon ssp. Leucoxydon</i>	S.A. Blue Gum	As Shown	As Shown	1.5m, 30mm cal	2
	<i>Eucalyptus microcarpa</i>	Grey Box	As Shown	As Shown	1.5m, 30mm cal	3
Total Trees						28
SHRUBS						
Mix 2	Groundcover flowering Mix @ 4m²		100%		Total	1920
	<i>Carpobrotus rossii</i>	Pigface	25%	1000mm	Tubestock	480
	<i>Correa pulchella</i>	Salmon correa	25%	1000mm	Tubestock	480
	<i>Eremophila glabra</i> 'Kalbarri carpet'	Compact Yellow Tar Bush	25%	1000mm	Tubestock	480
	<i>Senecio mandraliscae</i>	Blue Chalk Sticks	25%	1000mm	Tubestock	480
Mix 3	Groundcover Mix @ 4m²		100%		Total	7400
	<i>Atriplex semibaccata</i>	Berry saltbush	25.0%	1000mm	Tubestock	1850
	<i>Austrostipa flavescens</i>	Spear-grass	25.0%	500mm	Tubestock	1850
	<i>Enchylaena tomentosa</i>	Ruby Saltbush	25.0%	750mm	Tubestock	1850
Mix 4	Batter Grass Mix @ 4m²		100%		Total	3740
	<i>Dianella longifolia</i>	Smooth Flax-lily	33.0%	1000mm	Tubestock	1234
	<i>Lomandra tanika</i>	Mat Rush	33.0%	500mm	Tubestock	1234
Mix 6	Medium Silver Mix @ 4m²		100%		Total	800
	<i>Enchylaena tomentosa</i>	Ruby Saltbush	25%	1000mm	Tubestock	200
	<i>Eremophila glabra</i> 'Kalbarri carpet'	Compact Yellow Tarbush	25%	1000mm	Tubestock	200
	<i>Juncus krassii</i>	Sea rush	25%	1000mm	Tubestock	200
	<i>Leucophyta brownii</i>	Cushion Bush	25%	1000mm	Tubestock	200
Mix 9	Basin Mix @ 4m²		100%		Total	2320
	<i>Carex tereticaulis</i>	Tall Sedge	20%	1000mm	Tubestock	464
	<i>Cyperus vaginatus</i>	Stiff Flat Sedge	20%	1000mm	Tubestock	464
	<i>Ficinia Nodosa</i>	Knobby club-rush	20%	1000mm	Tubestock	464
	<i>Juncus krassii</i>	Sea rush	20%	500mm	Tubestock	464
	<i>Lomandra dura</i>	Stiff mat rush	20%	1000mm	Tubestock	464
Mix 10	Below Viaduct Mix @ 5m²		100%		Total	3025
	<i>Arthropodium cirratum</i>	Rock Lily	20%	1000mm	140mm Pots	605
	<i>Clivia miniata</i>	Kaffir Lily	20%	1000mm	140mm Pots	605
	<i>Liriope muscari</i>	Lily Turf	20%	1000mm	140mm Pots	605
	<i>Plectranthus argentatus</i>	Silver Spur Flower	20%	1000mm	140mm Pots	605
	<i>Rhaphiolepis x indica</i>	Dwarf Indian Hawthorn	20%	500mm	140mm Pots	605
	<i>Bambusa textilis var. gracilis</i>	Slender weavers bamboo	100%	1000mm	140mm Pots	15
Total Shrubs						19205

GARDEN BED LAYOUTS

- PLANTING IS TO BE OF A RANDOM LAYOUT AS SO TO REDUCE BANDING OF SINGULAR SPECIES WITHIN INDIVIDUAL GARDEN BEDS.

PLANTING LOCATION REQUIREMENTS:

- RETAINING WALLS: TREES TO BE LOCATED A MINIMUM OF 5m FROM EDGE OF RETAINING WALLS.
- HEADWALLS: TREES TO BE LOCATED A MINIMUM OF 5m FROM EDGE OF HEADWALL.
- NOISE WALLS: TREES TO BE LOCATED A MINIMUM OF 1.5m FROM EDGE OF NOISE WALLS.
- LUMINAIRE POLES: TREES TO BE LOCATED A MINIMUM OF 7.5m FROM LUMINAIRES.
- U.G. SERVICES: TREES TO BE LOCATED A MINIMUM OF 1m EITHER SIDE OF CONDUIT.
- INSPECTION PITS: TREES TO BE LOCATED A MINIMUM OF 2m FROM INSPECTION PITS.
- CONCRETE BARRIER: TREES TO BE LOCATED A MINIMUM OF 1.5m FROM ROAD EDGE CONCRETE BARRIER.
- SHARED USE PATHS: TREES TO BE LOCATED A MINIMUM OF 2m FROM INSPECTION PITS.

NOTES:

- REFER TO ENGINEERS DRAWINGS FOR ANY LIGHTING / SIGNAGE / ROAD BARRIERS/OPEN CHANNEL/DETENTION BASIN
- ALL PLANTING TO BE INSTALLED 500mm FROM EDGE OF BARRIER/EDGE OF ROAD/EDGE OF SHARED PATH.
- WHERE GARDEN BEDS CONTAINING MIXED SPECIES ARE LOCATED ADJACENT TO SUP &/OR ROADS, GROUNDCOVERS AND LOW SHRUBS SHOULD BE PLANTED TO FRONT OF GARDEN BED AND ROAD/PATH EDGE WHILST LARGER SHRUBS SHOULD BE SET FURTHER BACK TO REAR OF GARDEN BED.
- STEEL EDGE OR APPROVED EQUIVALENT TO ALL GRAVEL-GRAVEL AND GRAVEL-GARDEN BED INTERFACE
- KERB EDGE & PRAM RAMPS TO ENGINEERS DETAILS

B ISSUED FOR 70% DESIGN
A ISSUED FOR 30% REVIEW

DRN DSGN CHK APRV DATE

26.03.18
20.12.17

NOT FOR CONSTRUCTION



DESIGNED: FLD
DRAFTED: FLD
CHECKED: FLD
APPROVED:

INDEX SHEET REF: CS1-DRG-351772

TECHNICAL APPROVAL: G.GENTNER
PROJECT APPROVAL: D.RICHTER
DATE: 26.03.18

TITLE: -
DATE:

FLINDERS LINE
LANDSCAPE
LANDSCAPE
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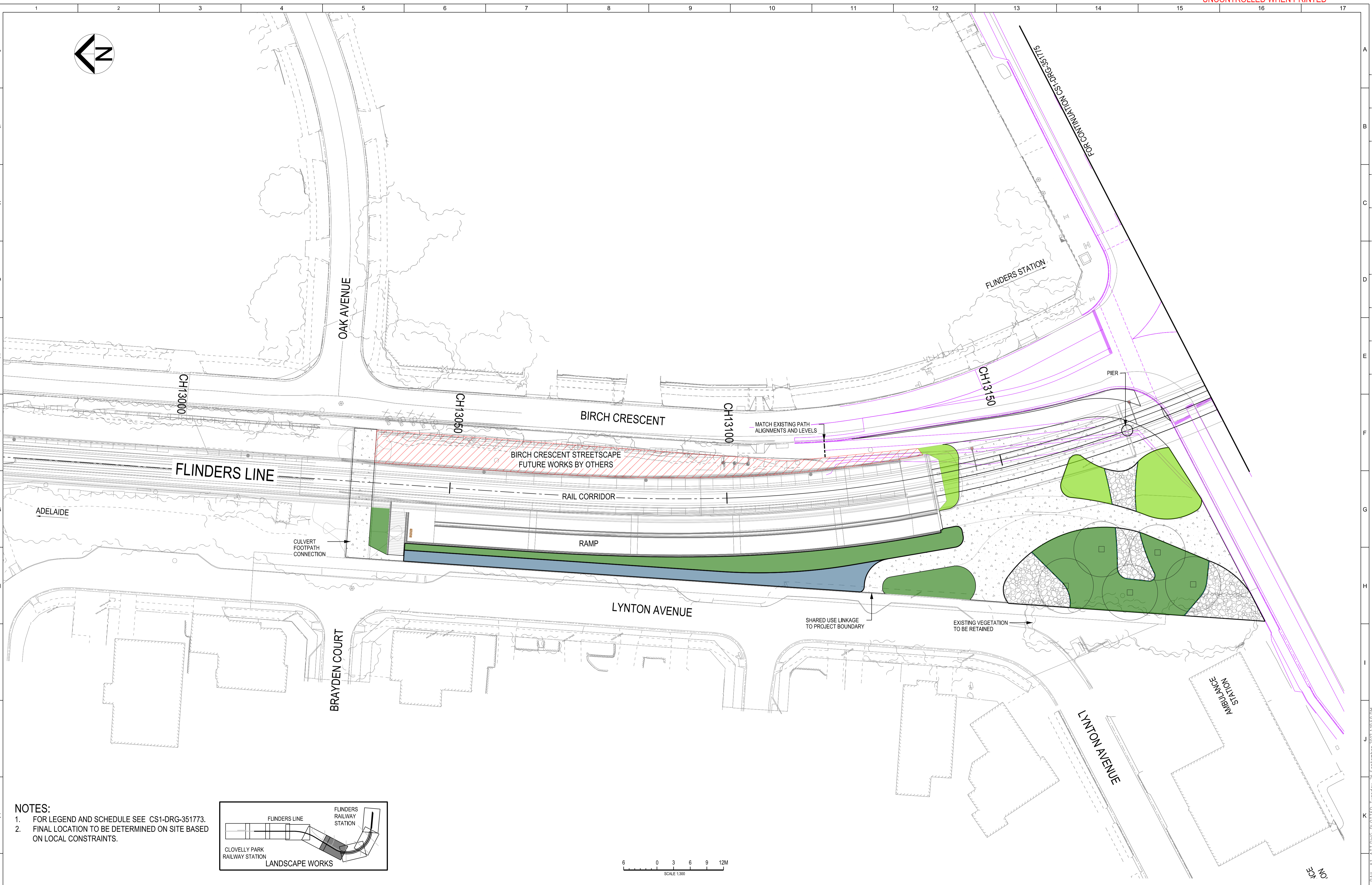
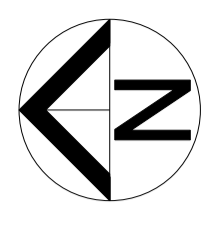
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Transport and Infrastructure

CS1-DRG-351773

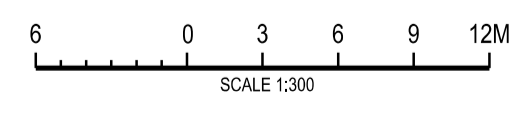
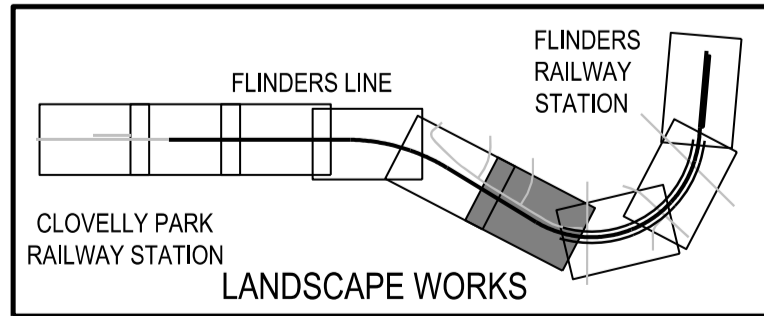
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- NOTES:**
- FOR LEGEND AND SCHEDULE SEE CS1-DRG-351773.
 - FINAL LOCATION TO BE DETERMINED ON SITE BASED ON LOCAL CONSTRAINTS.



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A	ISSUED FOR 30% REVIEW	-	-	-	-	20.12.17

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RDP12 - LANDSCAPING

GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351772

DESIGNED: FLD
DRAFTED: FLD
CHECKED: FLD
APPROVED:

TECHNICAL APPROVAL: G.GENTNER
PROJECT APPROVAL: D.RICHTER
DATE: 26.03.18

TITLE: -
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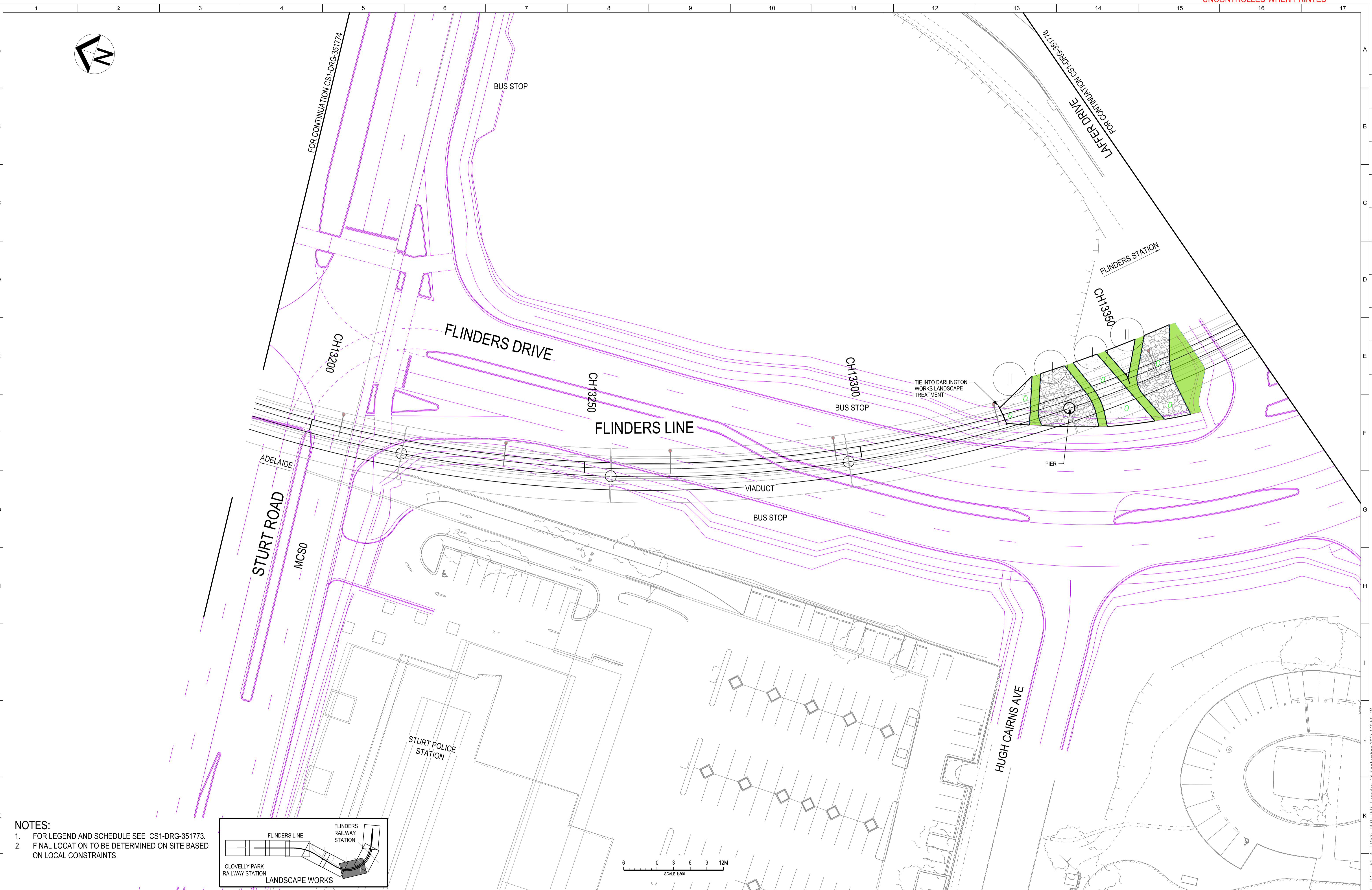
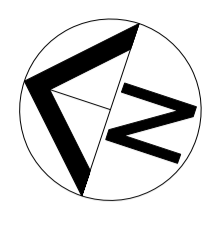
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LANDSCAPE
SHEET 01
PLAN

Government of South Australia
Department of Planning,
Transport and Infrastructure

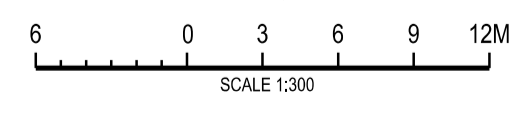
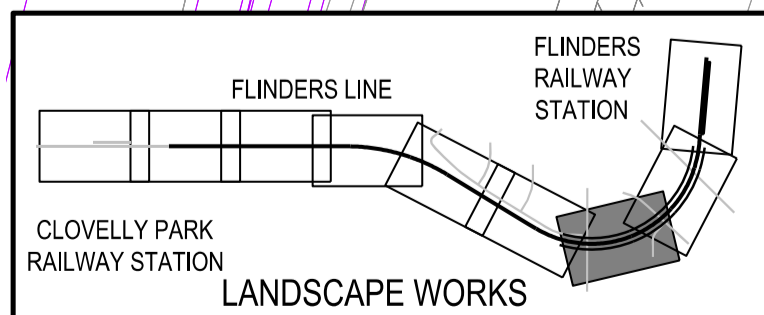
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- NOTES:**
- FOR LEGEND AND SCHEDULE SEE CS1-DRG-351773.
 - FINAL LOCATION TO BE DETERMINED ON SITE BASED ON LOCAL CONSTRAINTS.



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A	ISSUED FOR 30% REVIEW	-	-	-	-	20.12.17

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GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351772

DESIGNED: FLD
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 CHECKED: FLD
 APPROVED:

FLINDERS LINE
 LANDSCAPE
 SHEET 02
 PLAN

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CS1-DRG-351775

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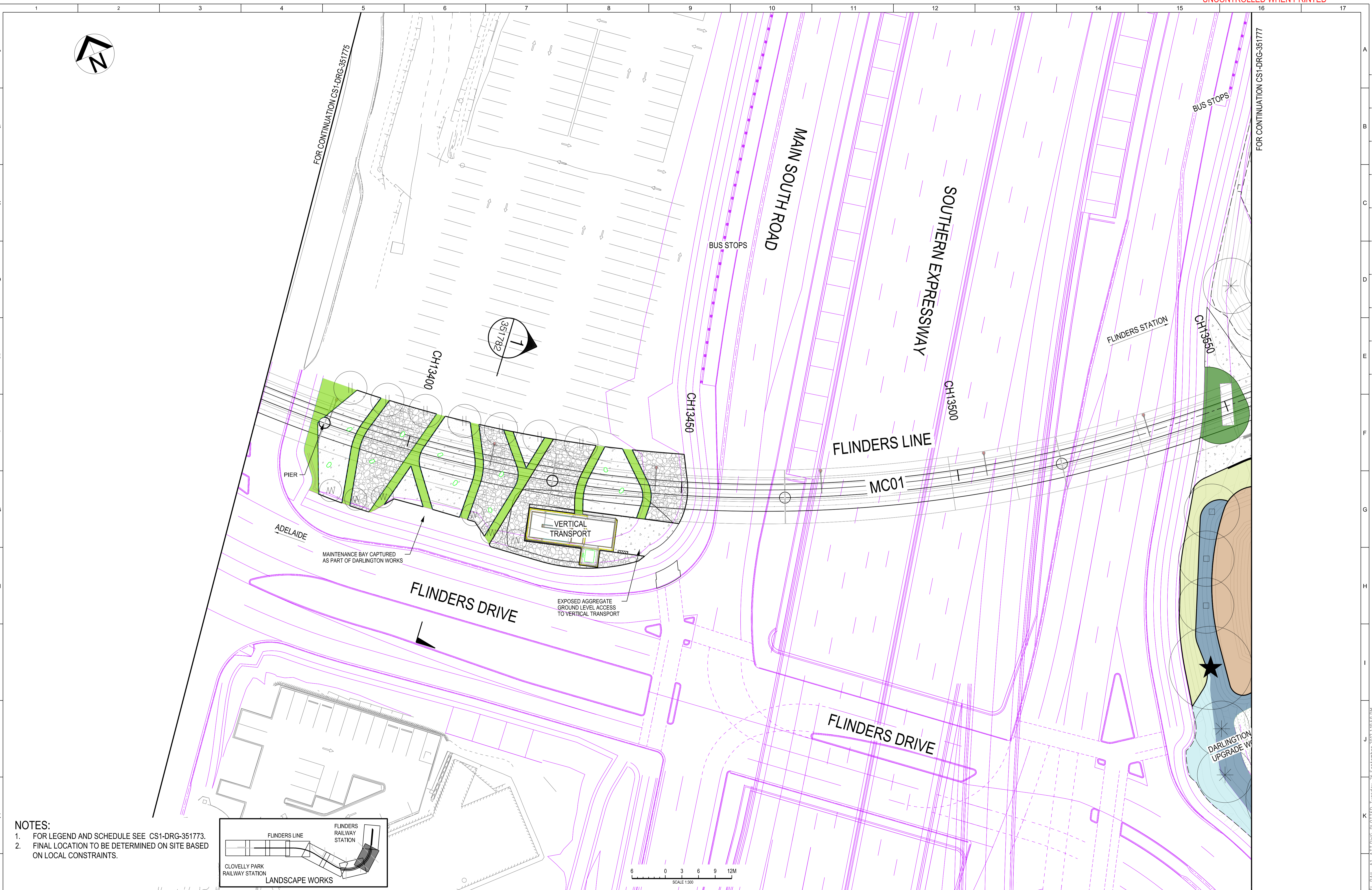
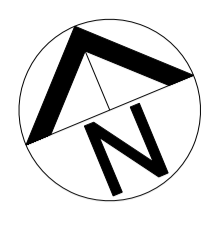
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DATE: 26.03.18

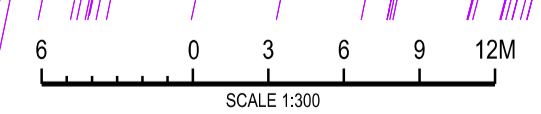
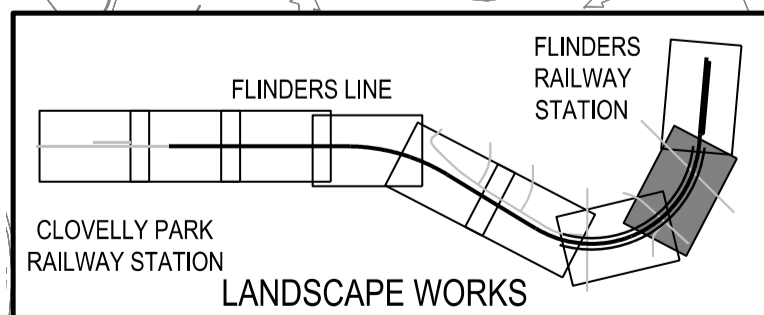
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 PROJECT APPROVAL: D.RICHTER

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- NOTES:**
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 - FINAL LOCATION TO BE DETERMINED ON SITE BASED ON LOCAL CONSTRAINTS.



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A	ISSUED FOR 30% REVIEW	-	-	-	-	20.12.17

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GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351772

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 DRAFTED: FLD
 CHECKED: FLD
 APPROVED:

TECHNICAL APPROVAL: G.GENTNER
 PROJECT APPROVAL: D.RICHTER
 DATE: 26.03.18

TITLE: -
 DATE:

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ALL DIMENSIONS ARE IN METRES UNO

FLINDERS LINE
 LANDSCAPE
 SHEET 03
 PLAN

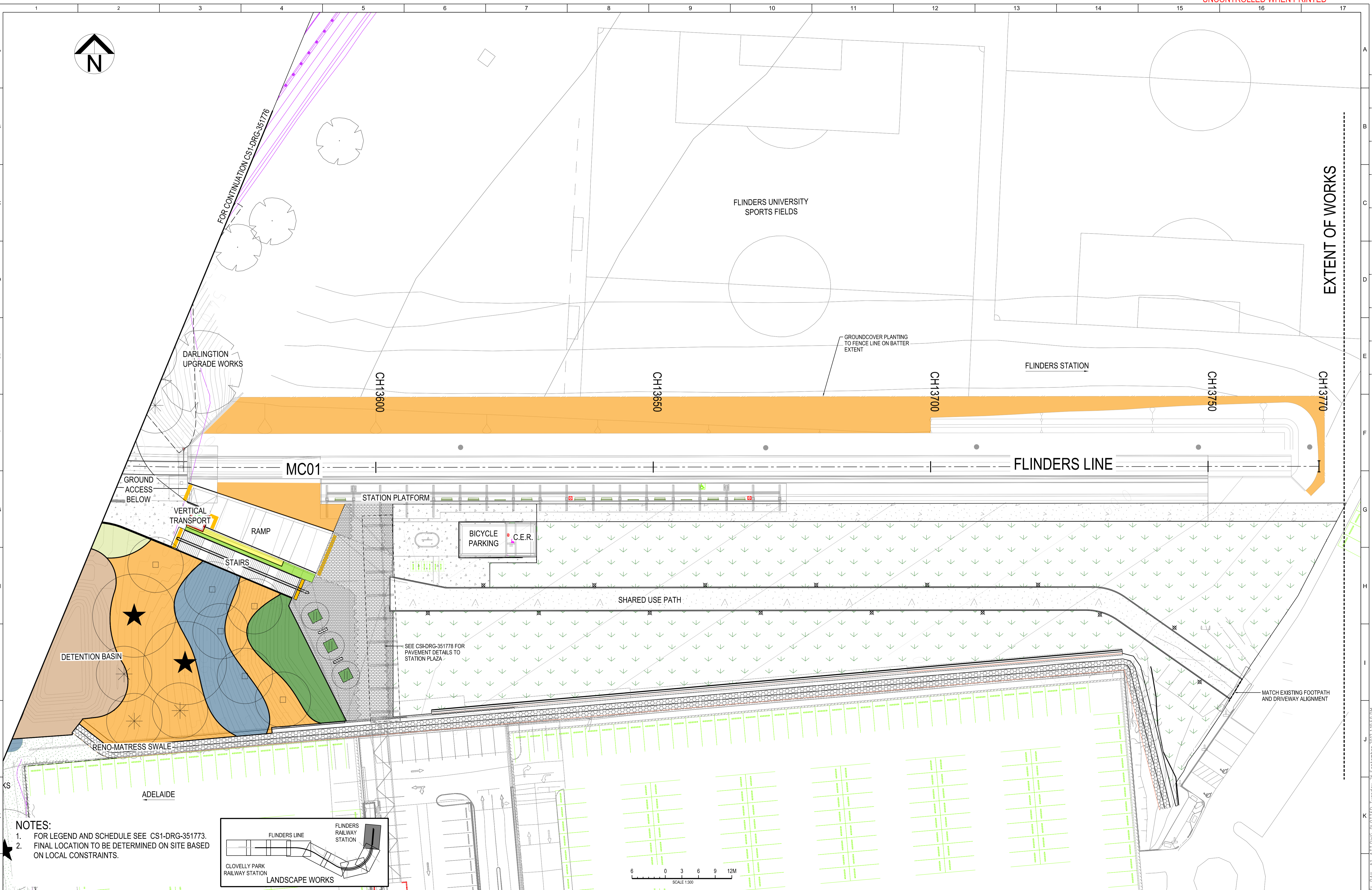
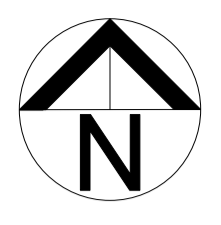
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CS1-DRG-351776

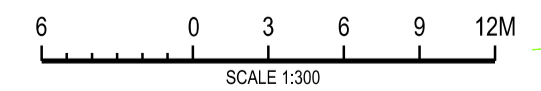
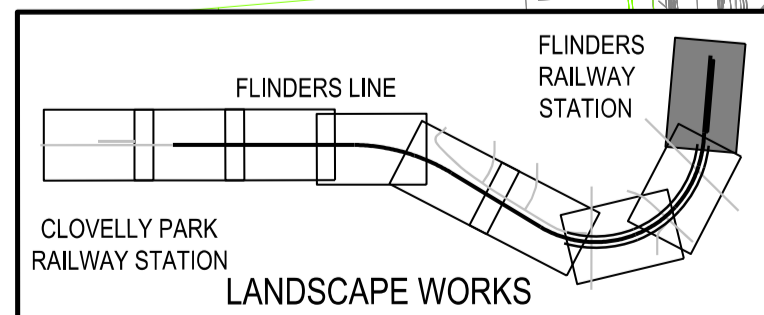
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NOTES:
1. FOR LEGEND AND SCHEDULE SEE CS1-DRG-351773.
2. FINAL LOCATION TO BE DETERMINED ON SITE BASED ON LOCAL CONSTRAINTS.



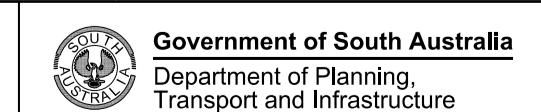
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INDEX SHEET REF: CS1-DRG-351772
TECHNICAL APPROVAL: G.GENTNER
PROJECT APPROVAL: D.RICHTER
DATE: 26.03.18

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APPROVED:

FLINDERS LINE
LANDSCAPE
SHEET 04
PLAN

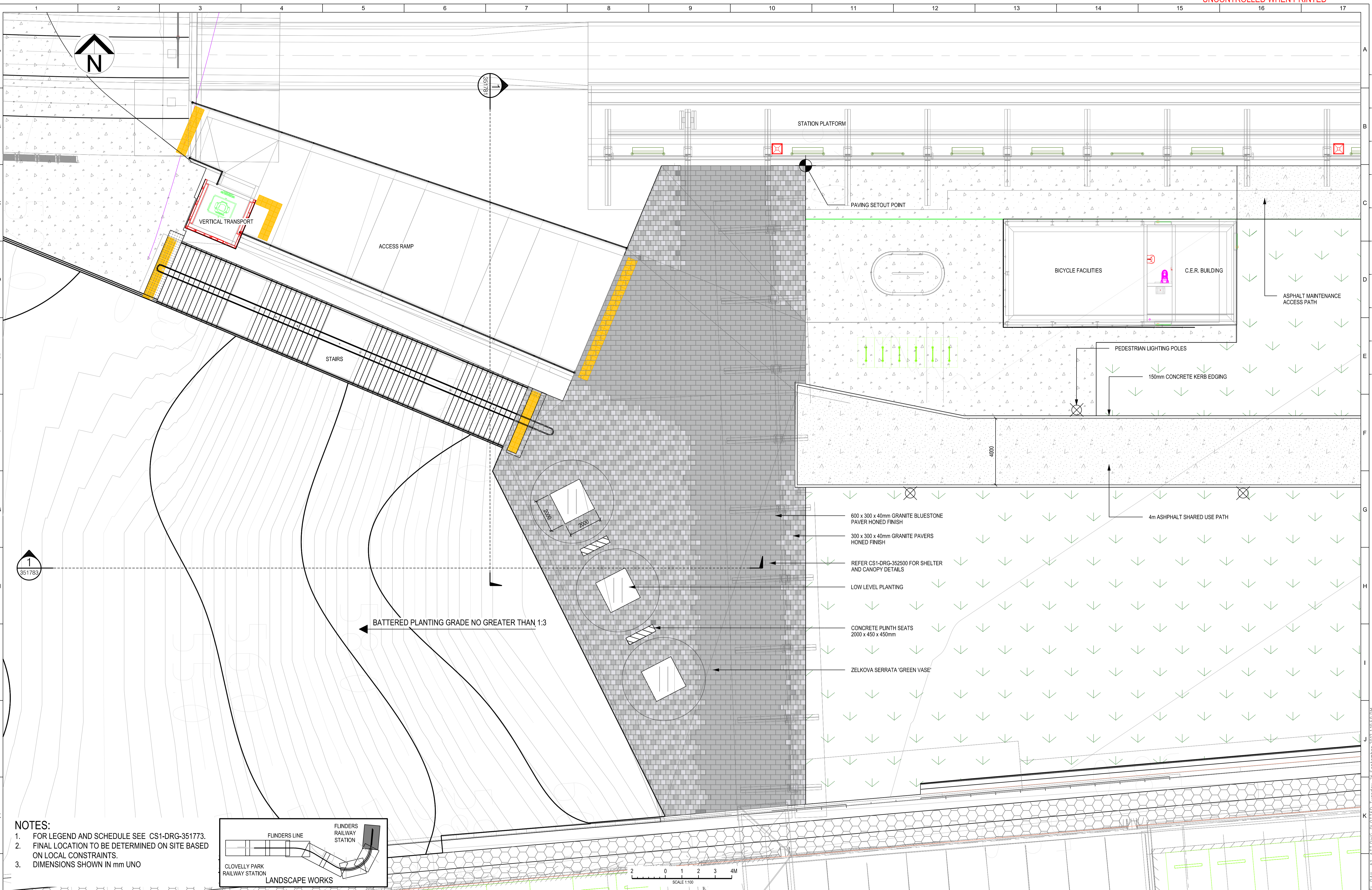


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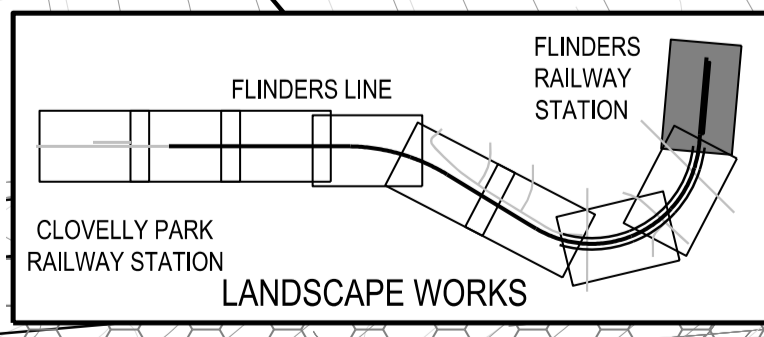
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A	ISSUED FOR 30% REVIEW	-	-	-	-	20.12.17

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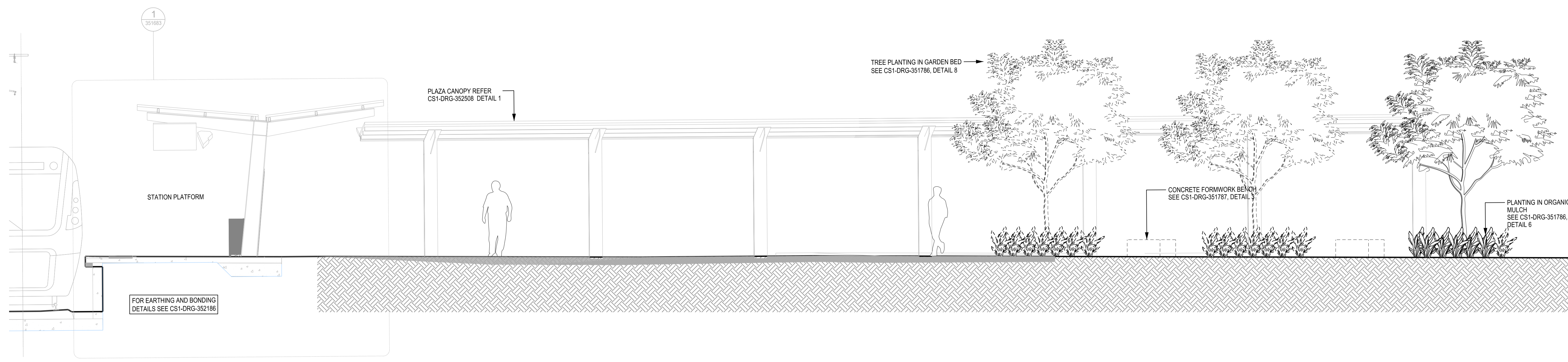


- NOTES:**
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 2. FINAL LOCATION TO BE DETERMINED ON SITE BASED ON LOCAL CONSTRAINTS.
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1 STATION PLAZA SECTION AA
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B	ISSUED FOR 70% DESIGN	-	-	-	-	26.03.18
A	ISSUED FOR 30% REVIEW	-	-	-	-	20.12.17

NOT FOR CONSTRUCTION

RDP12 - LANDSCAPING

GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351772

DESIGNED: FLD
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APPROVED:

TECHNICAL APPROVAL: G.GENTNER
PROJECT APPROVAL: D.RICHTER
DATE: 26.03.18

100 MILLIMETRES ON ORIGINAL DRAWING

ALL DIMENSIONS ARE IN METRES UNO

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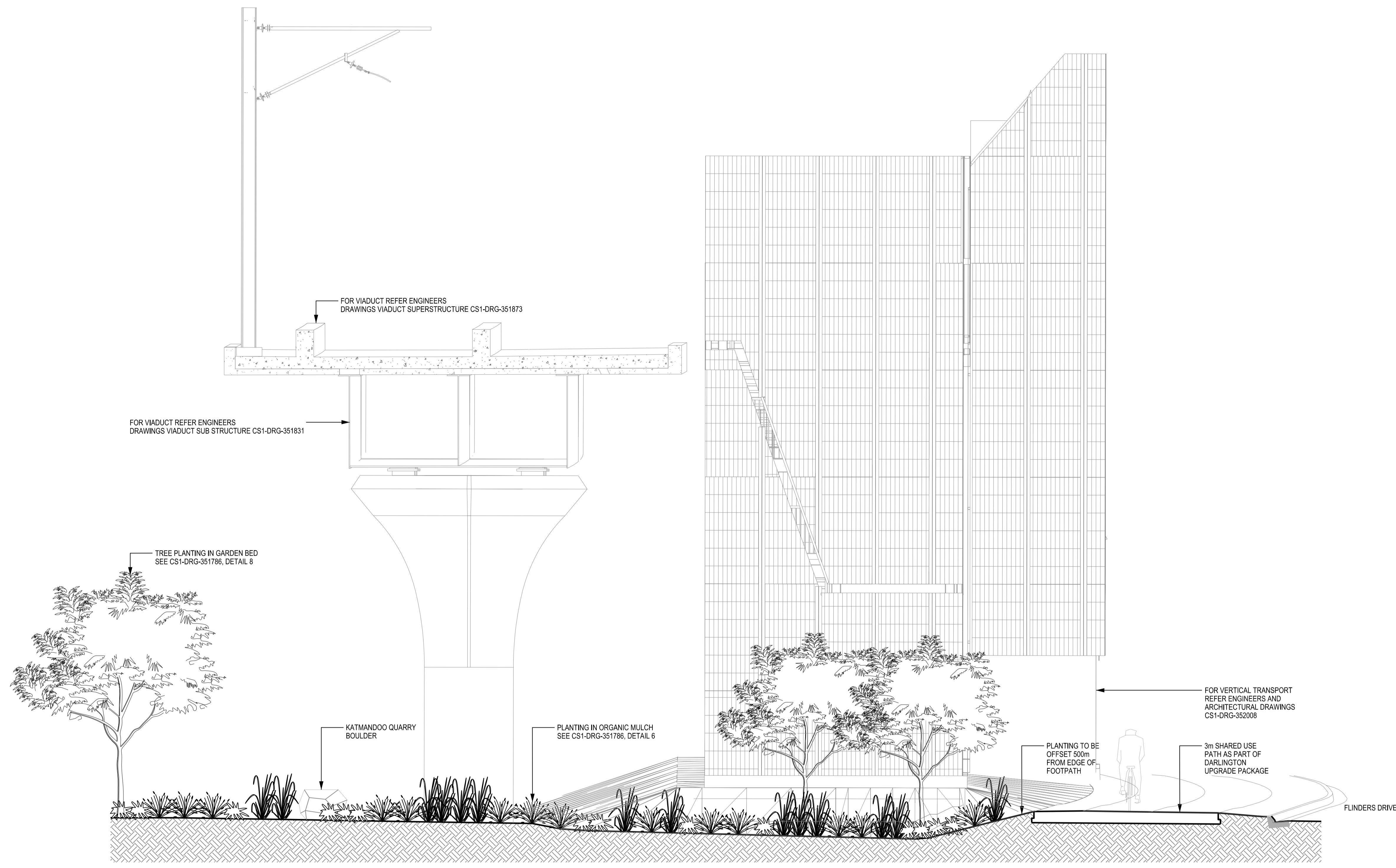
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SECTIONS

Government of South Australia
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Transport and Infrastructure

CS1-DRG-351781

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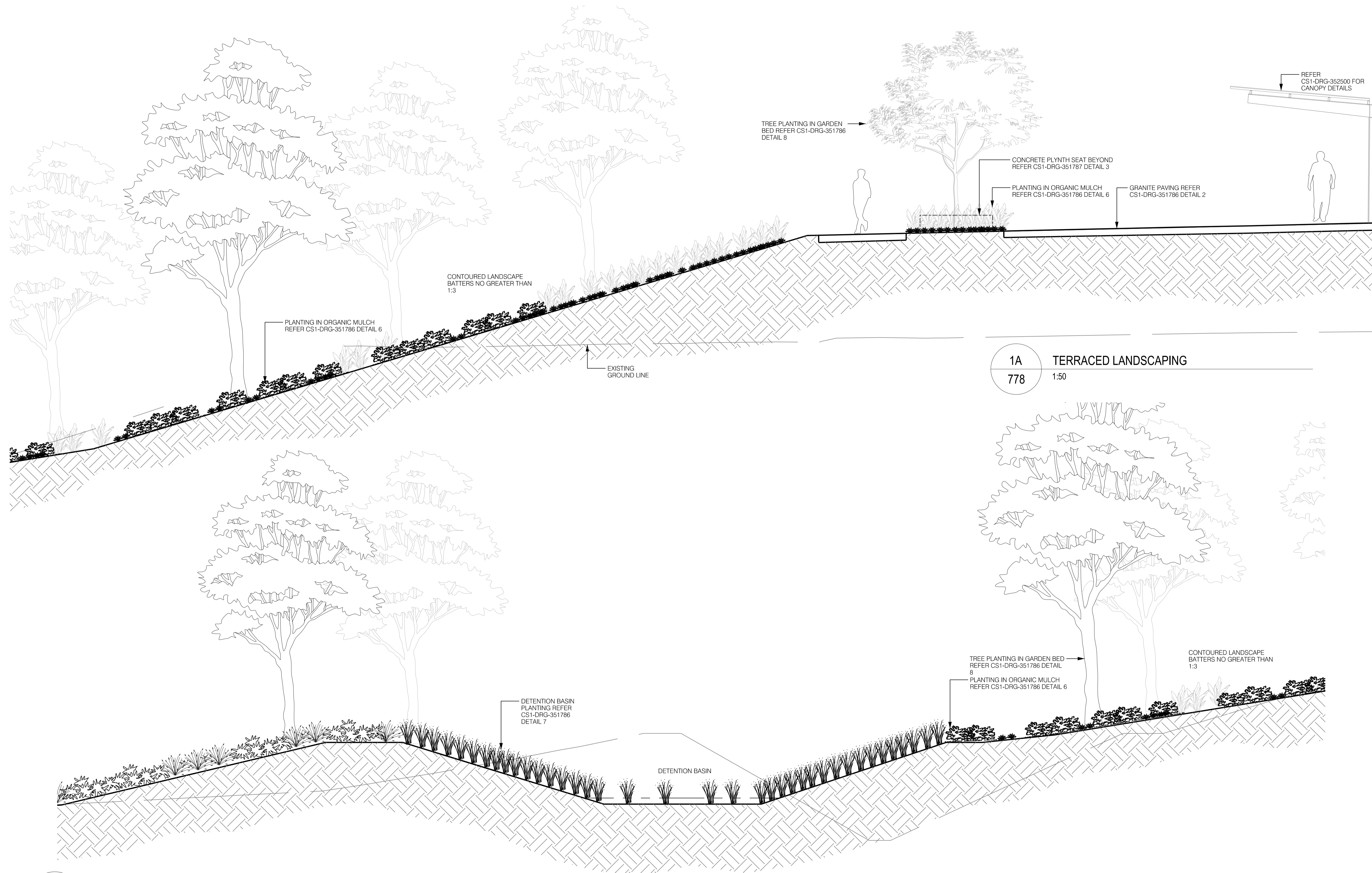
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SHEET: 8 OF 12



1 PLANTING BENEATH VIADUCT
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1B TERRACED LANDSCAPING
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<p>26.03.18</p>				<p>20.12.17</p>				<p>G.GENTNER D.RICHTER 26.03.18</p>				<p>TITLE: -</p>							
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31/10/2018



State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

PO Box 21, Oaklands Park
South Australia 5046

245 Sturt Road, Sturt
South Australia 5047

T (08) 8375 6600

F (08) 8375 6699

E council@marion.sa.gov.au

Sent via email: laura.kerber@sa.gov.au

SCAP ref: 100/V075/18
Council ref: 100/2018/1675
Applicant: Department of Planning, Transport and Infrastructure
Location: Several allotments within the rail corridor and adjacent land (Sturt Road, Mitchell Park, Tonsley and Bedford Park); Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and Flinders University (Flinders Drive and Main South Road, Bedford Park).
Nature of Development: Flinders Link Project: extension of the Tonsley Rail line and new train station.

Thank you for referring the above application to the City of Marion pursuant to Section 49(4a) of the *Development Act 1993* ("the Act"), regarding the Flinders Link Project, which involves the proposed new railway station and associated infrastructure. Accordingly, please accept this letter as Council's report to the State Commission Assessment Panel ("SCAP"), pursuant to Section 49(5) of the Act.

Having reviewed the particulars of the application together with supporting documentation, Council advises that, in principle, the Development Plan supports the proposed development.

The application demonstrates its support with the Development Plan by providing an integrated transport network and connections that are safe and convenient. The dedicated pedestrian and cycle paths and separation between the road and rail networks assist in minimising congestion on the arterial roads, thereby improving travel times and improving safety by reducing potential conflicts between trains, vehicles, cyclists and pedestrians.

Whilst supportive of the application, Council wishes to ensure the proposal does not cause unnecessary and/or additional detrimental impacts on the surrounding locality.

Council therefore would like to bring the following matters to the attention of the SCAP and request that appropriate consideration be given to these matters prior to a decision being made:

The City of Marion acknowledges it is part of Kaurna land and recognises the Kaurna people as the traditional and continuing custodians of the land.

Overall built form design

Council encourages the proponents to utilise innovative design themes throughout the development proposal to improve visual amenity, reduce the bulk of the structure and to present as a relatively pleasant structure when viewed from private properties, the street and from the adjacent arterial roads.

It is noted in the development documents that the proponents mention the use of CPTED design features. Council encourages the design of the proposal to utilise CPTED best-practice principles, including appropriate lighting within pedestrian and cycle paths. The installation of any lighting should not result in unreasonable light spill upon residential properties.

The visual impact of the structure upon relevant properties on adjacent land along Lynton Avenue and Birch Crescent should be minimised through the use of light-weight materials, articulated design elements, low to high level landscape plantings, and a mix of colours, materials and textures.

In order to assist in minimising amenity impacts upon the locality, it is acknowledged the documentation references the recommendation to install sound attenuating devices. Council concurs with this recommendation of the 30% Design Noise Assessment Report and should be designed in a way which minimises visual impacts upon nearby properties, the street and arterial road network.

Features where the development can be designed to minimise energy use and water are encouraged by Council.

Regulated Trees and Landscaping

It is acknowledged the majority of trees identified for removal are exempt from requiring approval under Schedule 14 (v)(ii) of the Development Regulations 2008; however, clarification is sought in relation to Tree 833, which has been identified as a Regulated *Corymbia citriodora* (Lemon Scented Gum) which may require removal. This information is contrary to Section 3.3.7 (pg. 40) of the report which states the removal of this tree does not form part of this application. It is further noted this tree may be situated on private land and as such, the accuracy of the survey detail should be confirmed in order to determine whether the removal or pruning of Tree 833 is exempt from requiring approval.

In order to assist in minimising amenity impacts upon nearby residential properties, it is encouraged that semi-mature and mature trees be appropriately replaced following construction (within the next planting season), in order to assist in softening the overall built form and improve the external outlook from the relevant properties. Where opportunities are available, the retention of attractive semi mature or mature trees are encouraged.

In Council's opinion, the use of indigenous plant species and drought-hardy vegetation should be utilised wherever possible, in order to minimise the need for the watering of landscaped areas.

Other

Various other matters have been raised outside of the Council's Development Plan assessment of the proposal and are attached in Appendix 1 for the SCAP's consideration.

Conclusion

Subject to the above matters being resolved and/or included as reserved matters, the City of Marion is satisfied that the proposed development is not seriously at variance with the Marion Council Development Plan, and therefore advises the State Commission Assessment Panel that development plan consent should be **GRANTED**.

If you require further information or clarification, please do not hesitate to contact the assessing officer, Nicholas Timotheou, Development Officer Planning on 8375 6872 or nicholas.timotheou@marion.sa.gov.au

Yours sincerely



Alex Wright
Acting Team Leader – Planning
As delegate of the
City of Marion

Phone: 8375 6600

Email: alex.wright@marion.sa.gov.au

APPENDIX 1

The following additional comments are provided as an Appendix for the State Commission Assessment Panel's review and consideration. These comments have been prepared by Council's City Activation, Engineering and Field Services and Open Space and Recreation Planning departments.

General	
1.1	<p>The current design and documentation is silent on a potential new Tonsley Station. A new Tonsley station adjacent Alawoona Avenue to the south has been discussed with relevant stakeholders and residents of Mitchell Park and Tonsley to activate the precinct and support walkability to public transport for the community adjacent the existing station. The community connections are vital to broader Flinders Village/ Tonsley Innovation District integration. It is suggested that a Pedestrian Activated Crossing (PAC) will need to be considered at both ends of a new station connecting to Woodlands Road.</p> <p>Council administration has been informed of a feasibility study to investigate a new Tonsley Station and network scheduling effects. Council seek confirmation that the current Flinders Link proposal (subject of this development application) does not preclude future station locations and pedestrian activated crossings.</p> <p>The City of Marion requests the station design and commitment to works are included in the current scope for construction to limit impacts on the community and potential rail closure during the construction period</p>
1.2	<p>Subject to the feasibility study of a new Tonsley Station and rail corridor, pedestrian activated crossing locations are to be considered. To ensure community connections are being appropriately located, City of Marion request pedestrian activated crossings south and north of Alawoona Avenue be future proofed. In addition, City of Marion seeks the inclusion of a pedestrian activated crossing at the north- western extent of the Tonsley Village, connecting to Kirra Avenue and Mitchell Park Sports and Community Centre. City of Marion seeks clarity that the current scope does not preclude these opportunities and the brief for the feasibility study includes these investigations.</p>
1.3	<p>Support the walking and cycling connections and integration of shared use path on the viaduct, providing a safe equitable passage connecting Flinders Precinct with Tonsley Innovation District.</p>
1.4	<p>Support the proposed pedestrian movement and enhanced public realm at the Sturt Road, Birch Crescent and Lynton Avenue intersections. Support the provision of the pedestrian underpass, which replicates the existing permeability across the corridor however improves the safety by grade separating the rail.</p>
1.5	<p>It is obligatory that the broader contextual connectivity map extend north, illustrating the Tonsley precinct connections inclusive of pedestrian and cycling access linkages. This needs to consider the upgrade of the existing Clovelly Park station location to illustrate the rail corridor scope of works and pedestrian/ cyclist movements across the corridor and distances between crossing locations.</p>
1.6	<p>Council request confirmation on the station name and design locations as illustrated in the document with reference to renaming Clovelly Park to Tonsley (page 12). Appropriate name changing application process pursuant to Geographical Name Act to be administered with community engagement.</p>
1.7	<p>Request a disability access independent assessment be conducted and findings provided to inform the design. Design to permit ease of accessibility and connectivity for those with walking and wheelchair restrictions.</p>

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1.8	A Soil Erosion and Drainage Management Plan (SEDMP) prepared in accordance with the "Stormwater Pollution Prevention Code of Practice for local, State and Federal Government" issued by the EPA, shall be prepared and put in place prior to the commencement of any site works. It shall include but not be restricted to temporary construction exits and silt fences. The measures are to prevent material from being washed or otherwise transported from the site. Silt control measures shall be maintained in good working order during construction and be maintained until all disturbed surfaces are sealed, stabilised or suitably revegetated in a manner to prevent erosion. At practical completion, a decision will be made by Council with regard to the sections of the silt control measures, which need to be retained during the maintenance period to deal with on-going silt generated from the works. At final completion, an agreement may be made between Council and DPTI to retain some sections of the measures but these will then become the responsibility of Council.
1.9	If the project is to be staged, temporary traffic management and appropriate drainage shall be provided to the satisfaction of Council. Temporary barriers shall conform to Australian Standards.
1.10	Council's standard details for road and drainage infrastructure shall be incorporated within the works wherever appropriate.
1.11	Provide scour protection to downstream properties and ensure works will not inundate downstream allotments.
1.12	Open drains, modified watercourses, detention basins and retention basins shall be designed and constructed so that bed erosion and scour is prevented. They shall have a maximum longitudinal grade of 0.5 percent and be topsoiled and grassed and vegetated with species of local provenance. Erosion management shall be integrated into the design to cover both the permanent and establishment period. Gradients perpendicular to the flow alignment should have a maximum gradient of 20% where banks are to be grassed and planted with appropriate ephemeral and terrestrial species. Safety standards are to be applied to the embankment of permanent water bodies with maximum grades of 12.5% and safety barriers applied where necessary.
1.13	A safety in design report is to be provided by the designers identifying any risks to public safety and design mitigation.
1.14	At practical completion the contractor shall arrange for a DVD video survey of all stormwater pipes and make a copy of the DVD video plus associated written report to Council. A further DVD video survey shall be undertaken by the contractor if considered necessary by Council to demonstrate that identified defects in the pipe system have been satisfactorily repaired.
1.15	'As constructed' drawings in both paper and Bentley Microstation compatible digital forms, as well as pdf format, shall be provided to Council upon practical completion of works. Data to be provided as per Council's current standards and guidelines. The As-Constructed data standard is a list of the City of Marion's infrastructure asset types combined with the specifications for the supply of digital information of these assets including plans, drawings, schedules, spatial data format, geographic datum, and positional accuracy.
1.16	Easements for electricity, drainage and sewerage purposes shall be granted where required by the Electricity Trust of SA, the City of Marion, Minister of Infrastructure or the Minister of Water Resources respectively. Modification shall be made to the plan of division as is required for such easements or for the installation of any transformers, pumping equipment or other equipment, which may be necessary for the provision of services.
1.17	Demolish and remove any existing unrequired structures, services, and utilities to the satisfaction of City of Marion.

APPENDIX 1

1.18	The applicant of the consent shall ensure that approval is sought from relevant authorities for works associated with the provision, relocation, or removal of services, utilities, and facilities, including any alteration or impact to existing and adjacent services, utilities, and facilities.
1.19	Shared use path to be lit to Austroads shared use path standards using LED luminaires.
1.20	Construction impacts to be assessed and appropriate control measures put in place with particular reference to residents located on Woodlands Road, Lynton Avenue and Birch Crescent and adjacent local streets. Traffic and Site Management plans to be developed and consulted with Council staff.
1.21	City of Marion would like confirmation that the proposed toilet at Flinders Station will be publicly accessible and operation times. Is the proposed toilet an automated exeloo?
1.22	Information to be provided on the construction impacts on the Tonsley rail line operation. Will the rail be operational and terminate at Clovelly Park during construction? Alternatively, will bus services substitute the line during construction?
1.23	Communications strategy to be developed by DPTI and contracted team. Communications to be appropriately resourced providing clear proactive information. Project times frames to be communicated with key dates of rail station closures.
1.24	DPTI and the City of Marion shall enter into a Management Interface agreement, which establishes responsibilities for ongoing maintenance of infrastructure developed on the site. The Agreement shall include, "inter alia", in-service maintenance standards, reinstatement obligations. Rail corridor and viaduct structure inclusive of vertical transportation, RSS walls, underpass and switch back, Sturt Rd Plaza to be owned and maintained by DPTI (rail commissioner).
1.25	Subject to the requirements of the Management Interface Agreement, DPTI shall be responsible for the maintenance of the public realm including footpaths, walkways, streetscapes, plazas and drainage, for a period of up to 36 months to be agreed on a case-by-case basis commencing upon approval of Practical Completion.
1.26	Provide Inspection hold points for Council staff to attend for works relating to Council interface agreements and agreed maintenance/ ownership responsibilities.
Environmental	
2.1	City of Marion request further clarity on the rail corridor boundary ensuring the provision of space to accommodate the Tonsley Greenway off road (shared use path) aligned to Birch Crescent. Intent is to maximise the verge between back of kerb and rail corridor to a minimum of 4 metres to accommodate off road shared use path and landscaping.
2.2	Council requests further clarity on potential tree removals on Lynton Avenue due to construction. Survey documentation does not provide rigour to locations and proximity of trees to the proposed Reinforced Soil Structure (RSS) wall and or corridor. Construction Management plans including specifications and management of trees are to be provided. Specification to include onsite inspection hold points for assessment of impact and tree health by DPTI landscape team and Council arborist.
2.3	Trees numbered 801 and 799 to be retained in accordance to protection measures AS4970.
2.4	The City of Marion request all practical endeavours are made within construction management to retain Elm trees identified numbers 803A, 803B, 803C, 803D, 804D, 804A, 804B, 804C, 805A, 805B, 805C, 805D, 806A, 806B, 806C, 806D, 8012A and 812B. Crown lift pruning to support CPTED to be in accordance to best practice arboriculture. Tree protection zones to be clearly documented and Australian Standards for Protection of Trees on Development Sites.

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2.5	Offset planting numbers to be confirmed with reference to the landscape planting design documentation coordination noting the number of trees required to be offset within City of Marion.
2.6	95% detailed design packages to be consulted with Council administration responding to design issues, prior to issuer of construction issue.
Civil	
3.1	Discharge from the proposed 2 BC at ch 12740 needs to incorporate erosion control measure along the eroded cess drain, which has been poorly constructed along the rear of residential properties between Woodland Rd outfall and Lynton Ave detention basin. Drain discharges from the culverts to the enlarged detention basin.
3.2	Discharges from the railway corridor into the downstream Council drainage system should be directed to the Lynton Ave detention basin rather than overland to Woodland Road.
3.3	Evidence is required showing calculations and HGL demonstrating that the proposed flow regime moving through culvert P-C2 will not exceed existing downstream discharges; will not result in the wetting of existing private properties and will not result in erosion
3.4	Overflows from the combined Lynton Detention basin and Timothy Crt interceptor drain should be formalised (rock lined and planted) to direct towards the downstream road system and avoid property flooding of properties backing onto this drainage pathway
3.5	Access and on-street parking on the eastern side of Lynton Avenue is to be maintained.
3.6	A Road Safety Design Audit Report is to be provided
3.7	Vehicle traffic management movements to be provided with design audits providing clarification on proposed integration of works with Darlington upgrade project, specifically Sturt Rd, Birch Crescent, Laffers Drive, Flinders Drive extension and Hugh Cairns
3.8	Pathways and pram ramps to be provided to eastern side Lynton Avenue back of kerb connecting the plaza space under the viaduct to the steps and underpass. Current 70% landscape plans do not illustrate the pathways treatments adjacent the back of kerb and indented parking bays.
3.9	Footpath treatment finishes to be specified with consideration of effect on wheel chair and mobility users Smooth finishes preferred. Hold points to be specified for Council's engineer to assess and approve samples, prior to construction of pathways.
Viaduct Architecture	
4.1	Council is supportive of the integration of the shared use path alignment and switchback. This supports City of Marion Walking and Cycling objectives of a connected Flinders and Tonsley precinct
4.2	The articulation texture proposed on the RSS wall is to be confirmed i.e. Medium, fine or rough as per the FFE schedule. Anti-graffiti treatments are to be confirmed.
4.3	DPTI to provide reference to the switch back landing width with a discussion on cyclist turning swept paths without having to disembark and or conflict with passing pedestrians or cyclists.
4.4	Confirmation is required for the drainage block outs with the grades and surface flow to mitigate the depth of water pooling on the shared use path.
4.5	Handrail and balustrade colours to be confirmed with consideration of the amenity and design of the throw screen integration.

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RSS Switch back	
5.1	Coordination of design packages is required to ensure the trees being retained on Lynton Avenue are represented as per the environmental package.
5.2	Internal treatments of the pedestrian culvert are to be resolved with potential for public art integration. This needs to be considered integral to the design and deliverable output. The public art procurement process is to be facilitated by DPTI and include consultation with the City of Marion City Activation team.
5.3	Investigation of the RSS walls on Birch Crescent and Lynton Avenue to support vertical galvanised mesh panels for narrow garden bed climbing plants to soften the visual mass and provide additional colour. Vertical panels could be freestanding if structurally not supported on the wall.
5.4	Council's design for the Greenway SUP on Birch Crescent adjacent the RSS wall is likely to be 3.0m in width with 500mm shoulder on each side. DPTI are to confirm there will be no fence line installed between RSS wall and back of kerb along Birch. DPTI are to confirm the offset from back of kerb along Birch will provide a consistent minimum of 4 metres without obstruction to support coordination with City of Marion shared use path.
Noise and Vibration	
6.1	Detailed assessment and design mitigation strategies to be integrated as per report recommendations 'Resonate A17715RP2'.
CPTED	
7.1	CCTV integration and lighting within the pedestrian underpass is imperative.
7.2	Underpass to consider public art integration as part of scope to deter graffiti. Art works to be consulted with City of Marion City Activation team
7.3	LED lighting is to be provided within the plaza space on Sturt Rd and connections to Lynton and Birch Crescent. Lighting assessment and design lux levels are to be confirmed with reference to shared use path connections.
7.4	Council insists the proposed gravels are compacted fines that cannot be used as projectiles. In addition, confirmation to be provided on any rock boulders which are to be fixed. Rock boulders are to be illustrated on the landscape plans and details provided
Landscaping and Urban Design	
8.1	Council supports the planting species palette adopted by the Darlington upgrade project.
8.2	Pram ramps must align to existing or proposed on opposite side of street. If a new pram ramp is proposed on the western side of Lynton Avenue (at the conclusion of the pedestrian plaza), this should be located 1.2 metres from existing driveways and assessed for street tree locations.
8.3	Landscape works associated to Darlington Upgrade project to be coordinated with any trees removed or not planted due to the Flinders Link viaduct conflicts and construction activities to be offset. New trees to be located in consultation with Council arborist.
8.4	More clarity on levels and contours within landscape areas is to be provided to ensure erosion controls are in place. Maximum 1:4 grades for landscaping.
8.5	Lighting within the plaza space adjacent to the switchback to be confirmed for CPTED and shared use path connectivity on Birch Crescent.

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8.6	Landscape tree retention to the north of the underpass to be documented in the landscape plans with mulch and or mix 2 and 4 understory. If trees are removed due to the construction activity impact then replacement trees to be planted. Landscape drawings to illustrate this with a note.
8.7	Landscape treatments to the swales north of Lynton within the corridor are to be illustrated as currently not part of the landscape package. Reference to the basin planting details for erosion control.
8.8	Additional tree planting to be provided within garden beds adjacent switch back on Lynton Avenue. Suggest new Elm trees (or sub small trees Lagerstroemia) planted to the west of the switch back within groundcover mix 2 to continue the theme of the retention of existing trees to the north of pedestrian underpass. The intent to reduce the visual mass of the structure and improve the amenity for adjacent residents.
8.9	The scope of pavement being retained or replaced on the corner of Birch Crescent and Sturt Road is to be confirmed with existing exposed aggregated concrete pavement recently completed as part of the Darlington project. There is a need to ensure the associated Flinders Link plaza interface is seamless. Ensure the pathways are finished to match and have dowelled construction joints. Ensure saw cuts are appropriately considered onsite for integrity of the pathways and aesthetic integration.
8.10	Landscape plan drawings to confirm the Darlington upgrade works scope and interfaces. Extent of works lines to be drawn on landscape plans with notes on the retention of existing paths and or other treatments.
8.11	Tree root barriers are to be installed along road edges where tree planting is proposed to Council's arboriculture coordinators approval.
8.12	WSUD treatments for watering trees i.e. stormwater diversion to tree wells and rain gardens is encouraged. Design should provide for minimum maintenance demands.
8.13	Soils are to be certified clean compliant with NEPM environmental guidelines fit for purpose and best practice for horticulture growing medium in garden beds.
8.14	All areas of open space and road reserve shall be developed and maintained to a minimum landscape standard and implemented to the satisfaction of the City of Marion (subject to approval of Council's manager Open Space and Recreation). All landscaping plans, details and specifications shall be submitted for approval prior to works commencing onsite.
8.15	Potable source water meters shall be provided for drinking and irrigation to the satisfaction of the Council with required backflow devices installed. Council approval must be gained on locations. DPTI to provide irrigation and water supply drawings and specifications to Council's Water Resource Coordinator for approval. All meters to be installed to meet SA Water technical regulatory requirements. Irrigation is for establishment purposes only with battery controllers.
8.16	Adequate landscape planting shall be established to the reasonable satisfaction of the Council in accordance with accepted details and best practice horticulture. Plans to be submitted to Council's Manager Open Space and Recreation for approval.
8.17	Construction and demolition waste materials should be disposed off-site in accordance with the requirements of waste or recycling depots authorised by the EPA. Surplus soils should be managed in accordance with relevant EPA guidelines and/or requirements of waste or recycling depots authorised by the EPA.
8.18	Any soil imported to the site should be sourced from a commercial supplier where possible. Should waste soils generated from another site be imported to the site, then the soils should be classified and imported in accordance with EPA requirements. Soils for garden planting are to be appropriate for best horticultural practice growing conditions.

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8.19	Design development and construction administration of service infrastructure, roads (inclusive of footpaths and verge landscaping), public open space and stormwater infrastructure is to be undertaken in consultation with Council (as a referral authority) to ensure that there is a shared understanding of assumptions, standards and desired outcomes.
8.20	DPTI to provide confirmation that the Sturt Road, Birch Crescent and Lynton Avenue plaza design prohibits vehicle access to the switch back ramp by spatially arranging garden beds and street furniture.
8.21	The landscape planting beds within Sturt Rd plaza to be planted out with no gravel treatments. Concerns on the requirement for gravel blowing over the concrete paths and creating an increased maintenance requirement adjacent pathways.
8.22	The landscape planting beds under the viaduct structure adjacent the vertical transportation to comprise of wider planting beds and proportionately less gravel mulch bands to enhance the vegetation structure and amenity. Edging to the gravel to be concrete edge rather than steel to ensure long-term definition and maintenance of the garden bed and gravel areas. Recommend concrete edge 120mm wide between gravel and planting.
8.23	The tree planting proposed adjacent the vertical transportation to be within the gardens beds.
8.24	The finishes schedules must include reference to materials in the Sturt Road plaza. Exposed aggregate to be consistent with Sturt Rd Darlington Upgrade works package. Lightly exposed so that the finish is not too abrasive for wheel chairs and mobility impaired.
8.25	The finishes schedule are required to confirm street furniture within the Sturt Rd plaza adjacent the switch back. Propose a drink fountain, seats and bike repair kit located without affecting cycling and walking paths.
8.26	Bamboo planting is not supported in the City of Marion public realm. Confirmation required Bamboo is not planted to the west of the Darlington motorway.
8.27	Planting densities are to be reviewed with each individual species noted. Groundcovers 1-2 per m ² , grasses 3-4 per m ² and shrubs 1 per m ² . Trees as documented minimum 45L in size.
8.28	Master planting schedule to review the labelling mix 10 as per legend and confirm if this is this shade tolerant mix.
8.29	Master planting schedule review the spacing to confirm that this is planting density and not path offset. Some planting would not be possible if 1000mm from pathways. Provide planting densities per species instead.
8.30	Landscape plans and legend to illustrate boulders as per noted cross section.

9 November 2018
Reference number: 100/V075/18

State Commission Assessment Panel
Level 5, 50 Flinders Street
Adelaide SA 5000
scapadmin@sa.gov.au

ATTENTION: LAURA KERBER

Dear Ms. Kerber,

DEVELOPMENT NO: 080/1218/18 (100/V075/18)
APPLICANT: Minister for Transport & Infrastructure
PROPOSAL: Flinders Link- Extension of the Tonsley Rail Line
SUBJECT LAND: South Road BEDFORD PARK SA 5042

Thank you for the opportunity to comment on the Flinders Link Development Application, details in DA: 100/V075/18. I would like to preface this letter by acknowledging the significance of this project to the Mitcham Community and to the State in a broader sense.

Council has commenced its own Local Area Planning project which has identified the Flinders and Bedford Park areas as being an area to investigate opportunities for significant change and economic growth.

The draft outcomes for the Area as envisaged by Council are as follows:

- A driver for the State's economy with health and education facilities that are competitive in a global market;
- A renewed vibrancy in and around a world renowned innovative precinct with strong regional links and a large daily influx of visitors;
- A variety of housing, services and leisure offering for a diverse demographic;
- A distinctive leafy and green environment for our community, students and visitors to live, recreate, stay, study and work; and
- A regional hub that benefits from and supports diverse modes of transport.

It is recognised that the Flinders Link project is an important nexus in achieving these outcomes. It is also acknowledged that the Flinders Link project has been effectively foreshadowed by the State Government initiated Development Plan

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Phone: (08) 8372 8888
Fax: (08) 8372 8101

Amendment to the City of Mitcham Development Plan by rezoning the land as a Regional Activity Node Zone.

In reference to the Flinders Link Development Application, the City of Mitcham provides the following comments for consideration:

1. Request confirmation in writing as to any areas that are intended to be vested to Council for care and control. If areas are to be vested this should be in consultation and subject to further negotiations with Council staff.
2. It is noted that an elevated shared path for pedestrians and cyclist will be incorporated within the structure required for the train extension. The information provided notes that signs, safety screen and infrastructure will be used to separate pedestrians from cyclists.

It is unclear what safety measures will be incorporated around the nominated viaduct lifts. There are potential conflicts between pedestrians and cyclists at these locations.

3. The railway station will be central to the Flinders Village area nominated in the Mitcham (City) Bedford Park Concept Plan Fig Mit/1. Limited details have been provided in relation to proposed lighting associated with the project. Whilst lighting is an important factor in crime prevention, consideration should be given to impacts of lighting and light spill on future residential development within the Flinders Village area.
4. Council supports the addenda provided on the 19 September 2018 in relation to the *Flinders Link Vegetation Removal*. An emphasis should be placed on retaining mature trees where possible – particularly in relation to native and indigenous species. It is recommended that trees be assessed during the works to determine if retention is possible. It is noted that a comprehensive landscaping concept has been provided that will contribute the amenity of the area upon completion of the works.

It is acknowledged that a significant amount of work, research and collaboration with Council has occurred up to this point, and as such the Flinders Link proposal is supported subject to consideration to the above. It is acknowledged that the proposal accords with the Desired Character and provisions of the Regional Activity Zone.

Please do not hesitate to contact me via telephone on 8372 8888 or via email at mduncan@mitchamcouncil.sa.gov.au to discuss the matter further.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'MDuncan', written in a cursive style.

Marc Duncan
Manager of Development Services
DEVELOPMENT SERVICES & COMMUNITY SAFETY

In reply please quote 2018/01898/01, Process ID: 537321
Enquiries to Marc Hryciuk
Telephone (08) 8226 8395
E-mail dpti.luc@sa.gov.au



Government of South Australia

Department of Planning,
Transport and Infrastructure

12 October 2018

DEVELOPMENT DIVISION
Transport Assessment
and Policy Reform

GPO Box 1533
Adelaide SA 5001

ABN 92 366 288 135

State Commission Assessment Panel
C/- Laura Kerber
Department of Planning, Transport and Infrastructure
GPO Box 1815
ADELAIDE SA 5001

Dear Ms Kerber

SECTION 49 REFERRAL RESPONSE

Development No.	100/V075/18
Applicant	Department of Planning, Transport and Infrastructure
Location	Main South Road, Bedford Park
Proposal	Rail extension including new station and raised viaduct

The above development proposal was referred to the Commissioner of Highways (CoH) by the State Commission Assessment Panel (SCAP) for advice to assist in its report to the Minister for Planning in accordance with the requirements of Section 49(7a) of the *Development Act 1993*.

The following response is provided in accordance with Section 49(7a) of the *Development Act 1993*, and Schedule 8 of the *Development Regulations 2008*.

CONSIDERATION

The subject application is for the construction of an extension of the Tonsley Rail Line to Flinders Medical Centre/Flinders Precinct. The works include the construction of a viaduct spanning over Sturt Road, Flinders Drive and Main South Road. The viaduct will include both a rail line and shared use path and a new station will be located at the terminus.

As the proposal is a Department of Planning, Transport and Infrastructure initiated project and has been subject to extensive consultation between the project team and the representatives of the CoH, it is considered that there are no matters relating to the arterial road network that require addressing as part of the development application process.

CONCLUSION

The development is supported by the Commissioner of Highways as it will improve safe pedestrian and cyclist access to the subject locality and will assist in increasing patronage on the Tonsley Rail Line.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'R. B. ...'.

MANAGER, TRANSPORT ASSESSMENT AND POLICY REFORM
for **COMMISSIONER OF HIGHWAYS**

A copy of the decision notification form should be forwarded to dpti.developmentapplications@sa.gov.au

#13168549

File No:
2014/10746/01

23 November 2018

Ref No:
13368638

Ms Laura Kerber
Senior Planning Officer
Major Development and Crown
Department of Planning, Transport and Infrastructure
77 Grenfell Street
Adelaide SA 5000

laura.kerber@sa.gov.au

Dear Ms Kerber,

For the attention of the State Commission Assessment Panel

Flinders Link Project

Further to the referral DA 100/V075/18 received 11 September 2018 and additional information provided on 12 November 2018 pertaining to the development application at the above address and in my capacity as a statutory referral in the State Commission Assessment Panel, I would like to offer the following comments for your consideration.

The Reference Design for the project was presented at one Desktop review session in March 2017.

The Flinders Link Project seeks to create new connections between the Tonsley Innovation Precinct and the health and education precinct including Flinders Medical Centre, Flinders Private Hospital and Flinders University through improved rail, cycling and pedestrian connectivity. It will extend the existing Seaford and Tonsley rail line by 650 metres, via a new elevated rail line and shared path overpass over Sturt and Main South Roads, terminating at a new train station north of the existing Flinders Medical Centre car park. I support the project ambition that includes improved public transport access and pedestrian and cycling connectivity between Flinders Precinct, Laffer's Triangle and the Tonsley Innovation Precinct. I also support the intent of the project to promote the future development vision of the Flinders University campus. The success of the project relies on delivery of the project ambitions and a considered design outcome that responds to the site context, public amenity and connectivity to surrounding precincts. Collaboration and consultation with the key stakeholders including Flinders University, Flinders Medical Centre and Flinders Private Hospital is critical to the success of the project and delivery of the project and precinct ambitions.

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The Flinders Link Project affects two distinct precincts; the Tonsley Innovation Precinct, and the health and education precinct located south of the existing Main South Road. The development aims to integrate these precincts and provide multimodal transport connectivity, which I support. I recommend ongoing



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engagement and collaboration with Flinders Medical Centre, Flinders Private Hospital and Flinders University to ensure the project integrates with and contributes to the overarching ambitions for each of the project partners with the view to providing a mutually appropriate urban design outcome that capitalises on this unique opportunity to create a new vibrant precinct hub.

Currently the Seaford and Tonsley rail line terminates at the Tonsley Railway Station. An existing level crossing for pedestrians connects Lynton Avenue to Birch Crescent. The Flinders Link Project includes the removal of the existing Tonsley Railway Station and extension of the existing rail line further south. The rail line extension commences from an at-grade connection adjacent Ash Avenue and rises in elevation as it travels south toward Sturt Road. The new rail alignment is predominantly parallel with Birch Crescent. I strongly support the inclusion of a pedestrian link under the rail line to provide connectivity and reinforce community relationships that is informed by the existing street and movement patterns and CPTED principles. I also support the approach to provide textured precast concrete panels to the new walls of the north portion of the rail extension. However I recommend clarification of the proposed pattern and finish, and confirmation that this finish extends the full length of the abutment to the north.

The proposed elevated structure includes a new shared path for pedestrian and cycle connectivity and will form part of the Tonsley Greenway. Connections from the elevated shared path to ground level occur at three key locations. Located north of Sturt Road, a switchback ramp from the elevated structure provides an opportunity for pedestrian and cycle connections down to the ground level which I support. I also support the provision of a stair connection in addition to the ramp at this location. New stair and lift connections to ground level are also proposed north and south of Main South Road. I support the provision of these connections including lifts to provide equitable access, and maximise use and connectivity with the surrounding context. I support the approach to provide ground plane treatments under the viaduct and integrate the vertical transport elements with each immediate site context, including Laffer's Triangle. I recommend ongoing development of these areas including coordination of required pier protection barriers to ensure delivery of the design intent for connectivity and landscape treatments.

The new shared path is proposed to be separated from the rail line through a 1.8 metre tall Securifor fence which I support. 2.8 metre tall anti-throw screens are proposed, capturing the east and west ends of the main viaduct structure. I acknowledge the percentage of perforations vary from 25-50% along the length of the viaduct structure to meet privacy requirements of the adjacent Sturt Police Station, and to maximise visibility along other lengths of the pathway and address CPTED and wayfinding principles through the arc. There are a number of lighting and CCTV posts along the length of the elevated rail structure. In my view, an integrated design solution and delivery of a unified vocabulary is critical to a successful design outcome for this significant infrastructure project. I recommend confirmation of the services and their integration with the stanchions with the view to ensure consistency of spacing, as the vertical elements will be a significant visual component for the structural ribbon element.

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2014/10746/01

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13368638

A number of Field LAN switch services boxes are also proposed along the viaduct. I recommend confirmation of the service boxes and their integration with the throw screens to minimise their visual impact on the external appearance. In my view, an opportunity exists for the services boxes to be positioned inside the rail corridor adjacent the Securifor fence, with access maintained from the shared use path. I also recommend review of the location of FLS-7 at the upper level of the viaduct, as an opportunity exists to lower the service box and provide an integrated solution within the retaining wall with access from the switchback ramp.

The main viaduct structure is proposed as a precast concrete deck panel supported by a pair of painted steel box girders and concrete piers with a modelled sculptural headstock which I support. I understand the steel box girders will be manufactured as curved elements which I support. In my view, the gesture of a sweeping sculptural ribbon will be significant urban marker. As the design progresses I recommend review of the soffit of the structure including connections to piers and any elements required to minimise bird roosting with a view to deliver the design intent for a single, elegant structural ribbon when viewed from the Southern Expressway and Main South Road.

A new station is proposed north of the existing two storey open car park on the existing sports fields utilised by Flinders University. I acknowledge the alignment of the rail has been provided to support the future development of the Flinders University campus on this site. I recommend ongoing collaboration with all project partners to ensure a mutually beneficial outcome that supports future development opportunities and the provision of a significant new and vibrant hub for the precinct. I support the provision of the new station that exceeds the standard DPTI station design and seeks to reflect the innovative precinct that includes major civic institutions and deliver a high quality design outcome that also fulfils practical requirements such as potential vandalism. I also support the consolidation of services to be provided at the new station, including bicycle storage and infrastructure requirements to provide an integrated urban and architectural design solution. However, I recommend further review of opportunities to conceal the air conditioning condenser of the station equipment room by relocation to the roof or extension of the perforated screen to conceal the unit while maintaining access requirements.

A new pedestrian bridge is proposed to link the new shared pathway and plaza precinct to Flinders Medical Centre. I acknowledge the physical and technical challenges to provide this link and support the ambition to deliver this important connection to maintain direct emergency vehicle access to the hospital and address pedestrian safety issues.

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In my view, some additional drawings would assist with communication of the proposal, including consolidated sections and elevations of the viaduct structure with elements including lighting, CCTV, services boxes to demonstrate the whole site strategy to an integrated design outcome, and ensure delivery of the design intent for a single elegant structural element.



File No:
2014/10746/01

Ref No:
13368638

To ensure the most successful design outcome is achieved the State Commission Assessment Panel may like to consider particular aspects of the project, which would benefit from protection as part of the planning permission, such as:

- A high quality of external materials for the new rail extension supported by final selections of materials and samples board.
- Clarification of the integration of viaduct vertical elements (in particular, screen stanchions and light poles) with the substructure with the view to ensure alignment and consistency of spacing, as the vertical elements will be a significant visual component for the structural ribbon element.
- Consolidation of CCTV cameras and lighting on the same poles.
- Clarification of the Field LAN service boxes and their integration with the throw screens to minimise their visual impact on the external appearance.

Yours sincerely



Kirsteen Mackay
South Australian Government Architect

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EPA Reference: 34453

21 December 2018

Mrs Laura Kerber
Senior Planning Officer
State Commission Assessment Panel
L5
50 FLINDERS Street
ADELAIDE SA 5000

Dear Mrs Kerber

Referral Response - Section 49 Development Act (Crown Development by State Agencies)

Development Application No.	100/V075/18
Applicant	Department of Planning, Transport and Infrastructure (MasterPlan SA Pty Ltd)
Location	A1 DP113164, Hundred Adelaide, Sturt Road, Mitchell Park SA 5043. A201, A203 DP40215, A204 DP40215, Hundred Adelaide, Laffer Drive, Bedford Park SA 5042. A202 DP40215, Hundred Adelaide, 333 Sturt Road, Bedford Park SA 5042. A4 DP71485, Hundred Adelaide, 1 Flinders Drive SA 5042. A1001 DP55884, Hundred Adelaide, Sturt Road, Bedford Park SA 5042. A66 DP28859, Hundred Adelaide, 3 Laffer Drive, Bedford Park SA 5042. A71 DP117100, Hundred Adelaide, Main South Road, Bedford Park SA 5042.
Activity of Environmental Significance	Schedule 8 Item 11 - Schedule 22, Railway Systems; Section 49 - Crown Development
Proposal	Extension of the Tonsley Rail Line to Flinders Precinct (650 metres), including elevated single track (420 metres), the construction of a new railway station next to the Flinders Medical Centre, an integrated shared pedestrian/cycle path adjacent to the rail line and associated infrastructure and landscaping
Decision Notification	A copy of the decision notification must be

	forwarded to: Client Services Officer Environment Protection Authority GPO Box 2607 ADELAIDE SA 5001
--	--

The above development proposal was referred to the Environment Protection Authority (EPA) by the State Commission Assessment Panel (SCAP) for environmental advice to assist the SCAP in its report to the Minister for Planning in accordance with the requirements of Section 49(7a) of the *Development Act 1993*.

The following response is provided in accordance with Section 49(7a) of the *Development Act 1993*, and Schedule 8 of the *Development Regulations 2008*.

In determining this response the EPA had regard to and sought to further the objects of the *Environment Protection Act 1993*, and also had regard to:

- the General Environmental Duty, as defined in Part 4, Section 25 (1) of the Act; and
- relevant Environment Protection Policies made under Part 5 of the Act.

Please direct all queries relating to the contents of this correspondence to Robert De Zeeuw on telephone (08) 8204 1112 or facsimile (08) 8124 4673 or email Robert.DeZeeuw@sa.gov.au.

THE PROPOSAL

The proposal is for the extension of the existing Tonsley Rail Line to Flinders Precinct (650 metres in length), including:

- elevated single track (420 metres in length)
- the construction of a new railway station to the north of the Flinders Medical Centre
- an integrated shared pedestrian/cycle path adjacent to the rail line; and
- associated infrastructure and landscaping.

The proposed extension of the railway line would facilitate a proposed timetable likely to include additional train services operating beyond the current times including earlier during the morning and later at night.

SITE DESCRIPTION

The site of the proposed development is located across two suburbs and two council areas - Mitchell Park and Bedford Park and the City of Marion and the City of Mitcham; extending south of the current Tonsley railway station (to be decommissioned) via an elevated track over Sturt Road, to the east of the Sturt Police Station, across South Road to the north of the Flinders Private Hospital and multi-storey car park with a new railway station and terminus area.

The subject land relating to this application is located within the Residential Zone Medium

Density Policy Area 12 of the *Marion Council Development Plan* and within the Regional Activity Centre Zone of the *Mitcham Council Development Plan*.

The closest sensitive receivers are located approximately 20 metres to the east and west of the edge of the rail corridor adjacent to the existing Tonsley Railway Station.

The site has been viewed by EPA staff and using geographic information systems and aerial photography available to the EPA.

CONSIDERATION

Advice in this letter includes consideration of the location with respect to existing land uses and is aimed at protecting the environment and avoiding potential adverse impacts upon the locality.

In assessing the proposed development, the EPA considered the following plans, specifications and reports submitted with the application:

- *Section 49 Crown Development and Public Infrastructure Development Application Flinders Link Project Extension of the Tonsley Rail Line September 2018*
- *Resonate Flinders Link 100% Design Noise Assessment Report A17715RP2 Revision E, 28 November 2018.*

It should be noted that the referral trigger to the EPA for assessment was for the activity of railway systems, as per Schedule 22 7(2) of the Development Regulations. The EPA has therefore only provided an assessment of the potential environmental impacts associated with the railway operations activity only.

The 'Other Comments' section of this response is to assist the relevant to authority undertake an environmental assessment of those parts of the application outside the scope of the activity of environmental significance that triggered the referral to the EPA.

The EPA *Guidelines for the assessment of noise from rail infrastructure April 2013* (GANRI) specifies the assessment methodology and noise and vibration criteria for rail infrastructure projects, and is therefore relevant to the Flinders Link Project.

ENVIRONMENTAL ISSUES

DISCUSSION RELATING TO DIRECTION

Noise

GANRI states that the impact of noise and vibration should be predicted and considered in the design if noise sensitive developments are proposed within 180 metres from a train line. The closest sensitive receivers are located approximately 20 metres to the east and west of the edge of the rail corridor adjacent to the current Tonsley railway station. Airborne noise from rail pass-bys can have a significant effect on noise sensitive receivers adjacent to a railway line. In order to assess potential rail noise effects, the EPA considers both the overall rail noise exposure across a 24-hour day and the noise from individual rail pass-bys.

Rail operations noise

A revised acoustic report prepared by Resonate titled '*Flinders Link 100% Design Noise Assessment Report A17715RP2 Revision E, 28 November 2018*' (noise report) was provided to the EPA on 6 December 2018 after the EPA requested that the '*Flinders Link 30% Design Noise Assessment Report*' originally supplied, be updated and address a number of queries raised by the EPA in its further information request dated 25 September 2018.

The updated noise report advises that the rail extension would result in up to 10 night time rail movements and 66 day time movements (compared to the 36 day time movements originally suggested). As there are currently approximately 28 movements during the day time, the proposal seeks to more than double the rail movements. The noise report details that without any mitigation measures implemented, noise levels from rail line would breach the required L_{Aeq} criterion at one sensitive receiver location and the required L_{Amax} criterion at seven sensitive receiver locations. The predicted L_{Amax} breaches are between 1 - 6dB(A).

Curve squeal (sometimes referred to as wheel squeal) occurs where there is a relatively tight radius to negotiate such as on the viaduct section of this Flinders Link proposal. The EPA acknowledges that the noise levels identified in Table 6 of the noise report include a penalty at certain locations of the track due to curve squeal (in accordance with Section 4.5 of the noise report) assumed as a worst case scenario.

Noise mitigation measures

The noise report suggests that a friction modification system be implemented to mitigate curve squeal noise (which if applied with success, would achieve compliance with the noise levels at all sensitive receivers). However the EPA notes that wheel squeal mitigation measures cannot guarantee a 100% success rate in eliminating wheel squeal and that the degree of noise level reduction cannot be quantified with certainty.

The EPA advises that GANRI recommends source treatment as the preference, followed by mitigation along the transmission path, such as the installation of noise barriers. Noise barriers are suggested as an alternative source of noise mitigation, if wheel squeal is not adequately reduced via mitigation measures. Noise barriers have been proposed at specific locations and would mitigate up to 5dB at the most affected sensitive receivers. The report identifies that the L_{Amax} levels may still exceed the noise criterion by 1dB at two locations. The acoustic report notes that taller barriers up to 2.4 metres in height were considered but provided negligible additional acoustic benefit. This minor exceedance at two locations is not considered fatal to the proposal.

The EPA notes that implementing both noise attenuation measures (noise barriers as well as the vehicle mounted track lubrication system) would mean that the noise impact is anticipated to be lower than those predicted in Table 6 of the noise report. If the wheel squeal mitigation measures do not adequately reduce noise levels, the noise barriers would provide sufficient noise mitigation (albeit with the possibility of criteria exceedance at two locations). However, as L_{Amax} is required to be met only 95% of the time, the EPA notes that by implementing both noise L_{Amax} attenuation measures (noise barriers as well as the vehicle mounted track lubrication system) the rail noise is anticipated to adequately meet the noise levels as per the GANRI at all sensitive receivers.

A condition is recommended to require the applicant to undertake post construction noise monitoring at the receivers identified in the noise report to confirm that the noise criteria as per the GANRI have been met. If the GANRI criteria have not been met, the condition also requires the applicant to implement appropriate noise mitigation such that the GANRI are met within six months of the post-construction noise measurements being undertaken. Provided this monitoring is undertaken and noise mitigation strategies (if required) are implemented, the EPA is satisfied with regard to operational noise.

OTHER COMMENTNS

Construction Management

The EPA guideline *Construction environmental management plans (CEMP)*, dated July 2018, provides guidance on the preparation of CEMPs. The guideline can be found at:

www.epa.sa.gov.au/files/12330_guide_cemp.pdf .

The planning authority should ensure that the CEMP is prepared prior to any construction or demolition commencing and is prepared in accordance with the EPA *Guidelines for Environmental Management of On-site Remediation* and other relevant guidelines issued by the EPA. The management plan should incorporate, without being limited to, the following matters:

- air quality, including odour and dust
- surface water including erosion and sediment control (Soil Erosion Drainage Management Plan), including (but not limited to):
 - i. appropriate location of stockpiles to prevent runoff entering the stormwater system
 - ii. removal of stockpiles in a timely manner and erosion prevention measures for the stockpiles while they remain on site, and
 - iii. appropriate management of sediment related to vehicle drag out;
- soils (including management of any contaminated soil transportation and off-site disposal) and stockpile management, fill importation and prevention of soil contamination
- groundwater, including prevention of groundwater contamination;
- noise
- waste management, including the transportation and disposal of wastes to EPA licenced waste facilities; and
- occupational health and safety.

Construction noise

Section 4.2.1 of the development application states that noise generated during both road and rail construction would be managed in accordance with DPTI's Operational Instruction 21.7 *Management of Noise and Vibration: Construction and Maintenance Activities* which includes the development and implementation of a Construction Noise and Vibration Management Plan (CNVMP), including a Night Works Management Plan (NWMP). The CNVMP and NWMP may include public notification, modelling, monitoring and implementation of reasonable and practicable mitigation measures.

The rail overpass project is deemed to be a public infrastructure project and therefore is exempt from the construction noise provisions of the *Environment Protection (Noise) Policy 2007* (Clause 22(b)). The development application documentation identifies the potential for construction activities to have some noise impacts on nearby residents. However, the construction would be undertaken according to standard DPTI procedures and instructions that are intended to minimise noise and vibration impact. The applicant understands the need to undertake (where practicable) the noisier activities during daylight hours when background noise levels are higher due to road traffic etc.

Prior to construction commencing, a Construction Noise and Vibration Management Plan (CNVMP) should be prepared for the project which demonstrates how noise and vibration impacts would be managed in accordance with the general environmental duty, DPTI's Environmental Instruction 21.7 and the recommendations provided by the CNVMP Framework.

Air Quality

Construction activities have the potential to generate significant dust pollution. In particular, the potential for environmental nuisance could be caused by dust generation from earthworks, stockpiling and vehicle movements, particularly during dry and windy conditions.

Implementation of dust control measures minimises the amount of dust likely to be generated during the construction phase of the proposal.

The provided information does not show sufficient detail as to how dust management would be addressed, but advises that it will be considered as part of a Construction Environment Management Plan (CEMP), which is detailed above.

Site Contamination

The EPA does not hold records of known contamination relating to the affected area (i.e the current rail corridor extending north of the existing Tonsley station approximately 200 metres and the land south of Sturt Road extending east to the proposed Flinders station). However, potentially contaminating activities, leading to potential site contamination, have been identified in section 4.3 of the report. The Clovelly Park - Mitchell Park TCE (trichloroethene) soil and groundwater contaminated area is located with close proximity to the Flinders Link Project. The EPA therefore considers there is the potential for site contamination to exist within the affected area.

The EPA advises that construction activities should not commence on the railway line until a CEMP has been prepared by a site contamination consultant in accordance with the EPA publication '*Environmental Management of On - Site Remediation November 2008*' (which can be found here at http://www.epa.sa.gov.au/files/4771274_guide_remediation.pdf).

Water Quality

The application states that that detailed design of the project would consider opportunities to manage stormwater appropriately and where possible, water sensitive urban design features would also be considered.

Stormwater runoff from the site should be contained and treated as necessary to comply with

the *Environment Protection (Water Quality) Policy 2015* before entering the receiving environment. An advisory note to this effect has been included below.

CONCLUSION

The EPA was referred the Flinders Link rail project development in order to assess the rail extension of approximately 650 metres. The EPA considers that provided the advised conditions are adhered to and the planning authority has addressed construction management aspects (including site contamination), the proposed development would have appropriate measures in place to address potential environmental harm.

ADVICE

The following advice is provided for the purposes of section 49 of the *Development Act 1993*:

Recommended condition:

1. Within three (3) months of the commencement of the passenger rail operations, post monitoring noise measurements must be carried out to verify the noise model used in the *Resonate 'Flinders Link 100% Design Noise Assessment Report A17715RP2 Revision E, 28 November 2018'* at the most noise-affected sensitive receivers identified in the noise report, with the relevant noise mitigation measures identified in place. If the noise at any of the locations exceeded the noise criteria contained in the Environment Protection Authority *Guidelines for the assessment of noise from rail infrastructure* (GANRI), the applicant must implement additional noise mitigation measures, to the reasonable satisfaction of the State Commission Assessment Panel, having consulted with the Environment Protection Authority, and these must be implemented within six (6) months of the post monitoring noise measurements occurring. Further noise measurements must be carried out after implementation to verify that the relevant GANRI noise criteria have been adequately met at the locations of non-compliance.

The following notes provide important information for the benefit of the applicant and are requested to be included in any approval:

- The applicant is reminded that construction activities should be undertaken in accordance with the Night Works Management Plan (NWMP). Night time construction noise criteria specified in the *Environment Protection (Noise) Policy 2007* should be taken as environmental goals to prepare and execute the NWMP. Construction activities evoking the highest noise emission should be scheduled during the day time only. Alternative accommodation for residents exposed to the higher noise levels during the night time can be considered as an option.
- An environmental authorisation in the form of a licence is required for the construction of this development. The applicant should contact the Environment Protection Authority before acting on this approval to ascertain licensing requirements.

- The applicant is reminded that stormwater runoff from the site should be contained and treated, if necessary, to comply with the *Environment Protection (Water Quality) Policy 2015*.
- EPA information sheets, guidelines documents, codes of practice, technical bulletins etc can be accessed on the following web site: <http://www.epa.sa.gov.au>

Yours faithfully

Hayley Riggs

Delegate

ENVIRONMENT PROTECTION AUTHORITY

From: Eugene Boisvert [mailto:eboisvert@gmail.com]
Sent: Friday, 12 October 2018 9:00 AM
To: DPTI:State Commission Assessment Panel <scapadmin@sa.gov.au>
Subject: Representation on development number 100/V075/18

Please see below my representation on development number 100/V075/18 (Flinders Link Project: extension of the Tonsley Rail line and new train station) as proposed by the Department of Planning, Transport and Infrastructure.

I believe the project should include keeping a train station at Tonsley near Sturt Road rather than removing the station for no good reason. Keeping the station will allow more local people to use it and make the Tonsley line more convenient for commuters.

I am a private citizen affected because I live near the Tonsley railway line.

Eugene Boisvert
61a East Ave, Clarence Park SA 5034
Phone 0419 817 366
Email eboisvert@gmail.com
Please do not publish my address, phone number or email online.

**DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION**

Applicant: Department of Planning, Transport and Infrastructure
Development Number: 100/V075/18
Nature of Development: Flinders Link Project: extension of the Tonsley Rail line and new train station
Zone / Policy Area: Mitcham (City) Development Plan: Regional Activity Zone
 Marion Council Development Plan: Regional Activity Zone and Residential Zone (PA12: Medium Density and PA16: Regeneration)
Subject Land: Several allotments within the rail corridor and adjacent land (Sturt Road, Mitchell Park, Tonsley and Bedford Park); Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and Flinders University (Flinders Drive and Main South Road, Bedford Park).
Contact Officer: Laura Kerber
Phone Number: 7109 7073
Close Date: 5:00 PM Friday 19 October 2018

RECEIVED 26 SEP 2018

My Name: ROBIN LEWIS My phone number: 0404743714

Primary method(s) of contact: _____ Email: _____
 Postal Address: PO Box 871 Postcode: 5168
NOARLUNGA CENTER

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

- My interests are:
- owner of local property
 - occupier of local property
 - a representative of a company/other organisation affected by the proposal
 - a private citizen

The address of the property affected is: 2/16 GODFREY COURT, MORPHETT VALE
Postcode 5162

The specific aspects of the application to which I make comment on are: I HAVE ADDED MY THOUGHTS ON THE BACK OF THIS PAGE.

- I: wish to be heard in support of my submission
 do not wish to be heard in support of my submission

- By: appearing personally
 being represented by the following person

Signature: Robin Lewis
 Date: 24/09/2018

I, Robin Lewis, after looking at what is being reported about with the extension of the Tonsley rail line to Flindies Hospital. I like to provide the following note.

With the current location of the Tonsley station, build a new one closer to the Sturt Police station sitting over Sturt Road. In doing so having a new Tonsley station there can also be use for predestines to cross Sturt Road without holding up traffic.

With the elevated track, proved provision that at a latter stage that a government wish to duplicate the line to Flindies without having to build a second elevated segment.

Down grade the bus interchange in front of Flindies Hospital to a standard bus stop, and build a bus interchange the location of the Flindies train station.

Explore the option of extending the line even further south to take in the suburb's of Flagstaff Hill, Aberfoyle Park, Happy Valley, Woodcroft, and Onkaparinga Hills, or Hackham, and see how viable it would be as a vehicle reducer on roads covering the southern suburbs south of Flindies Hospital and east of South Road. If this is deemed to have merit, a fund can be set up to buy the land required over a space of 10 to 15. In doing so current owners of the land can take there time and sell at there convenience. If there are some area's that still need to be purchases, then negotiations can happen then. If there are still funds available. Then the set funds can be use to help of set the cost of the extension.

**DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION**

Applicant: Department of Planning, Transport and Infrastructure
Development Number: 100/V075/18
Nature of Development: Flinders Link Project: extension of the Tonsley Rail line and new train station
Zone / Policy Area: Mitcham (City) Development Plan: Regional Activity Zone
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Contact Officer: Laura Kerber
Phone Number: 7109 7073
Close Date: 5:00 PM Friday 19 October 2018

My Name: Aidan Stanger My phone number: 0432 803 530

Primary method(s) of contact: Email: aidan@track11.com.au
 Postal Address: 32 Dutchman Drive Postcode: 5158
Hallett Cove, SA

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

- My interests are:
- owner of local property
 - occupier of local property
 - a representative of a company/other organisation affected by the proposal
 - a private citizen


The address of the property affected is: _____
 _____ Postcode _____

The specific aspects of the application to which I make comment on are: _____

The location of the station,
the flaws in the route selection process, and the fact
that there is a better alternative available

- I: wish to be heard in support of my submission
 do not wish to be heard in support of my submission
- By: appearing personally
 being represented by the following person

I wish to be heard in support of my submission by appearing personally if the panel considers the content of my submission to be flawed in any way. If they consider it satisfactory then I do not wish to be heard in support of my submission.

Signature: 
 Date: 19/10/2018

About Aidan Stanger

Aidan Stanger is a transport engineer. He is currently working on a Public Private Partnership plan for Adelaide's transport infrastructure.

Summary of Content

DPTI's plan for the Flinders Link has the Flinders station in the wrong place. It dismally fails to meet the objectives that would justify the cost of extending the line, and would greatly disadvantage users of the existing station. A better alternative exists, but DPTI rejected it due to a flawed selection process.

This submission outlines the shortcomings of DPTI's plan and explains what should be done instead. It also includes a cheap contingency plan in case the alternative plan is deemed too expensive.

For reasons of clarity, a map depicting the alternative plan will be provided. However in order to ensure the submission itself meets the 5pm deadline, it will be sent separately.

Problems with the DPTI's proposed Flinders station site

Too far from Flinders Medical Centre

Rather than putting the new station at Flinders Medical Centre, DPTI are proposing to put the station out on what's currently sports fields, to the north of a car park to the north of FMC.

Too far from the existing bus interchange

Flinders Medical Centre currently has a well served (and well used) bus interchange. The new station would be three hundred metres away from that – far too far to be practical for interchanging passengers

Too inaccessible from Flinders University

The new station would be right at the bottom of the hill, and not close enough to the university for it to be easily accessible on foot. It would appear to not even have good bus links to the university, whereas the existing Tonsley station at least has the 101, 300, 681 and G10 bus routes.

Lack of extendability

An east facing terminus would make the line extremely difficult to extend southwards, whereas a south facing terminus could be extended to Flagstaff Hill, O'Halloran Hill and Old Reynella (interchanging with buses and also enabling further extension via the old Willunga Line to Hackham). Paul Aslin previously submitted such a plan to the 2008/2009 Parliamentary Inquiry into SA public transport/railway network. Although some of the details of his proposed alignment may not be environmentally acceptable (instead requiring more tunnelling to limit the impact) the basic idea is a good one as there are no overwhelming technical obstacles and it would make rail a practical option for nearly all southern suburbs commuters.

Future development at Flinders

When asked about their remote choice of station location, DPTI pointed out that it would not remain remote; Flinders University would build around it. While there is no reason to doubt this, the extra loss of playing fields (after previous losses to car parks and South Road widening) is an undesirable outcome, and there are plenty of other alternatives both for Flinders University and related businesses: Flinders University has recently opened a campus at the former Mitsubishi site (where there's still plenty more available space for innovative industries) and also has space for more buildings on its main campus. Meanwhile the Science Park in Laffers Triangle remains underutilized. Though it is true the DPTI's Flinders Link plan would help attract businesses to the Science Park, that could instead be achieved by making the existing Tonsley station more prominent. And if the Tonsley Line were straightened (as this submission advocates) and Tonsley station extended over Sturt Road, that would probably be far more effective in attracting businesses to the Science Park.

The main flaw in DPTI's selection process

In contrast to DPTI's willingness to demolish dozens of houses for the South Road upgrades, the Flinders Link team have been very careful to avoid the need to demolish any. While that may appear to be considerate to residents, the reverse is the case. The people whose houses the government acquires are properly compensated, whereas closing the existing Tonsley station would greatly inconvenience residents and wipe tens of thousands of dollars off the value of their homes.

The area is currently undergoing densification, with many houses being replaced by ones with smaller footprints (and often a single storey replaced by two). Over the next few years if nothing is done, it is likely some of the houses would be demolished anyway.

A better alternative

A much better alternative would be to straighten out the Tonsley Line, build a new elevated Tonsley station, and put a Flinders station by the main entrance of Flinders Medical Centre.

To straighten the line and construct a new elevated Tonsley station, the following ten houses would need to be demolished:

7 Birch Crescent

6 Birch Crescent

3 Myrtle Grove

6A and 6B Myrtle Grove (being semi detached, saving just one is presumed to be impractical)

7 Oak Avenue

9A Oak Avenue

9B Oak Avenue

10 Oak Avenue

360 Sturt Road

If the station were to subsequently be extended northwards to accept longer trains, another two houses (6 and 8A Myrtle Grove) would also require demolition. But for the basic station they would not, though they would lose parts of their gardens.

Additionally, 8 Birch Crescent, possibly 6A Birch Crescent, 5 Myrtle Grove and one of the subdivisions of 8 Oak Avenue would lose parts of their gardens. Except in the last of those cases, it may be possible to compensate the owners with land from adjacent demolished houses.

At least thirty new houses could be built where the Tonsley Line currently is. The existing station site (between Birch Crescent and Lynton Avenue) is ideal for terraced housing (as front and rear access roads already exist) while between Birch Crescent and Timothy Court it appears to be well suited to two storey conventional or semidetached housing.

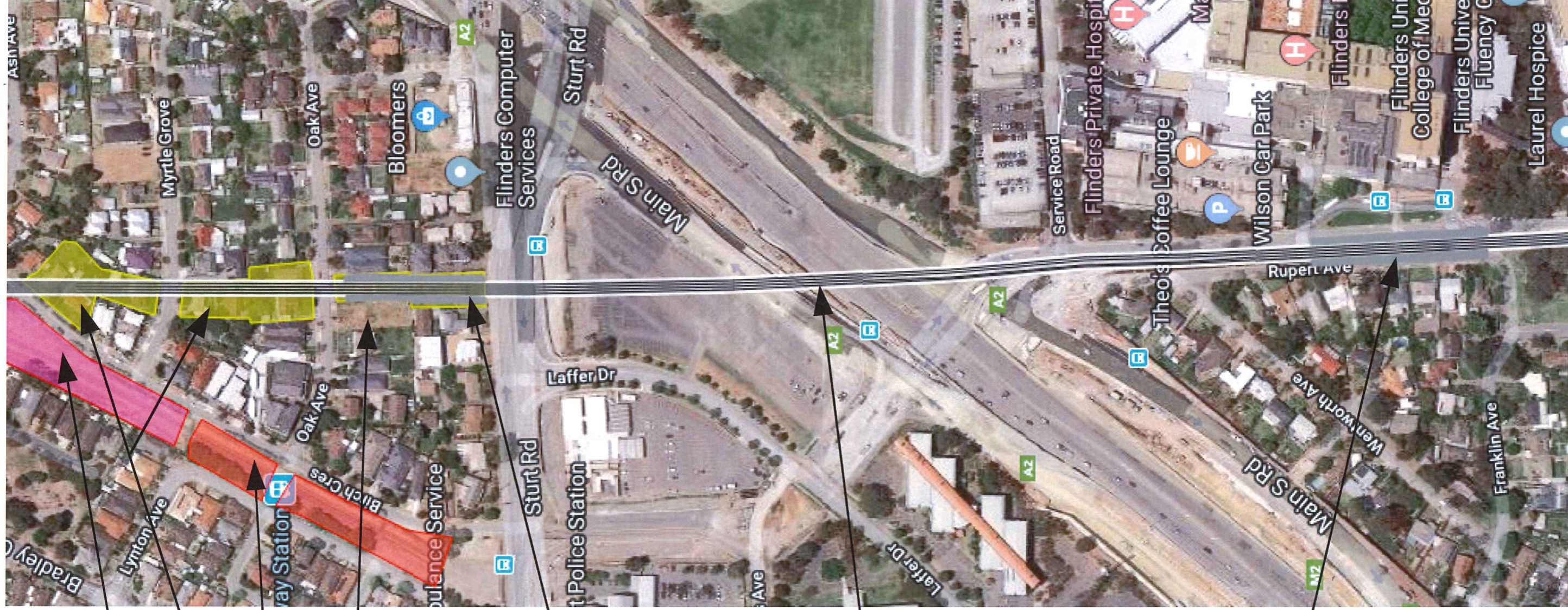
The new elevated Tonsley station would be situated between Oak Avenue and Sturt Road. A clear path beneath the railway would give direct pedestrian access to Birch Crescent (for Ash Avenue) and Myrtle Grove. The bridge over Sturt Road should be designed to also accommodate a pedestrian walkway, and also be compatible with a southward extension of the platform. A footpath would be provided from Brayden Court to Oak Avenue to ensure the station remains easily accessible for Mitchell Park residents.

Several options exist for a station by the main entrance of Flinders Medical Centre. DPTI have evaluated at least some of those but have not published the results. They agreed to send me a summary of their findings, but as of 2pm on Friday 19th October they have not done so. Therefore I have not included details of such a station in this submission. The option depicted on the map sent in support of this submission is an elevated station above the northbound carriageway of Flinders Drive. The exact alignment of the (almost straight) section south of Sturt Road will also depend on which option is chosen.

A cheaper option

If the better option is considered too expensive, there is also a Do Minimum option to consider: Firstly, put up a big TONSLEY STATION sign on Sturt Road opposite Flinders Drive extension. Secondly, include a Tonsley Station stop on the route of the Flinders Loop bus. These measures would go some way to improve the links between FMC/Flinders Uni and the Tonsley Line, while also keeping open the option of a more comprehensive solution in future.

Aidan Stanger,
Straight Tonsley Line
Extension plan



Housing

Existing houses
demolished

Terraced housing

Housing has been
constructed here
since satellite photo
was taken

New elevated Tonsley
station between
Sturt Road and
Oak Avenue

Both stations
extendable at
both ends

Tonsley line
extension entirely
elevated

Station by
main entrance
of Flinders
Medical Centre
and bus
interchange

Note: elevated
Flinders station
option depicted,
but other
alternatives exist

DEVELOPMENT ACT, 1993
S49/S49A – CROWN DEVELOPMENT
REPRESENTATION ON APPLICATION

RECEIVED 22 OCT 2018

SUBMISSION 4

Applicant: Department of Planning, Transport and Infrastructure
Development Number: 100/V075/18
Nature of Development: Flinders Link Project: extension of the Tonsley Rail line and new train station
Zone / Policy Area: Mitcham (City) Development Plan: Regional Activity Zone
Marion Council Development Plan: Regional Activity Zone and Residential Zone (PA12: Medium Density and PA16: Regeneration)
Subject Land: Several allotments within the rail corridor and adjacent land (Sturt Road, Mitchell Park, Tonsley and Bedford Park); Laffers Triangle (Laffer Drive and Sturt Road, Bedford Park); and Flinders University (Flinders Drive and Main South Road, Bedford Park).
Contact Officer: Laura Kerber
Phone Number: 7109 7073
Close Date: 5:00 PM Friday 19 October 2018

My Name: JODIE PEARCE My phone number: 08 8357 5550

Primary method(s) of contact:

Email:

Postal Address: 7 HESTER AVE
MITCHELL PARK SA Postcode: 5043

You may be contacted via your nominated PRIMARY METHOD(s) OF CONTACT if you indicate below that you wish to be heard by the State Commission Assessment Panel in support of your submission.

My interests are:

- owner of local property
 occupier of local property
 a representative of a company/other organisation affected by the proposal
 a private citizen

The address of the property affected is: 7 HESTER AVE & LYNTON AVE
MITCHELL PARK Postcode 5043

The specific aspects of the application to which I make comment on are:

- Removal of Tonsley Station without adequate replacement } design
strenuous neighbourhood access to the rail service where access
currently exists, is needed, used and valued.
 - People with disabilities adversely affected / disability access & equity
 - Inadequate scope of Flinders Link Project
 - Lack of appropriate community consultation
- PLEASE REFER TO ATTACHED DOCUMENTS (107 pp)

I: wish to be heard in support of my submission
 do not wish to be heard in support of my submission

By: appearing personally
 being represented by the following person

Signature: Pearce

Date: 19 October 2018

Representation to the State Commission Assessment Panel (SCAP) regarding Flinders Link Development Application

Development no: 100/V075/18

This letter contains responses to the Department of Planning, Transport and Infrastructure's (DPTI's) Flinders Link Development Application submitted to the State Planning Commission SCAP on 10 September 2018.

Please find attached multiple documents outlining concerns about the Flinders Link Project. The main areas of concern are:

- The scope of the Flinders Link project is too limited to provide an integrated transport solution in the local neighbourhood because it **does not provide scope to build a replacement station to serve the southern residential areas of Mitchell Park and Tonsley** (formerly Clovelly Park) nor does it allow review of station locations along the Tonsley line. Please refer to attached (3) maps for illustrations
- **Removal of Tonsley Railway Station without a viable alternative** for the existing users and local residents. See attached **Map 01** (Tonsley Rail Line Station Catchments-current and proposed) to see the 'public transport black hole' that will be left when Flinders Link is complete (bordered by a dotted line).
- **Indirect discrimination of people with disabilities** by removing access to affordable independent public transport where rail is safe and accessible and buses are not
- It is **not economical** to have a railway line running through a neighbourhood where the people of that neighbourhood are unable to access it. A **lost opportunity** for patronage in an area which is increasing in population density.
- The **process** through which the Flinders Link design was finalised by the Department of Planning, Transport and Infrastructure (DPTI) **without sufficient or appropriate consultation** with the local residents and Tonsley line users. It seems to be at odds with aims of the State Government *Community Engagement Charter*. Community Members have been given myriad reasons for not having their needs accommodated (see Attachment D).
- The **scope of the Flinders Link needs to include supporting infrastructure** such as the Greenways and improvements to existing **pedestrian routes** to make it truly accessible to the community and include that in its budget.
- **Social stakeholders** (e.g. residents, community organisations) were **not taken into account** in the planning and were not consulted before the Flinders Link design was submitted for funding. The Flinders Link project serves financial stakeholders like Flinders University, businesses, retail and property developers at the Tonsley Innovation Precinct but denies access to the existing local neighbourhood by removing Tonsley Station.
- Flinders Link's focus on linking the University precincts at Bedford Park and Tonsley **does not integrate the neighbouring existing suburbs**. This creates an 'us and them' scenario which divides the community and **contradicts elements of State Government planning guidelines** for healthy, active neighbourhoods and safe, affordable places to live, such as *Seven Strategic Priorities* (see attachment E) *State Planning Policies for South Australia*, the Office for Design and Architecture's *Good Design for Great Neighbourhoods and Places*, national urban planning guidelines such as *Creating Places for People – an Urban Design Protocol for Australian Cities* and National Heart Foundation guidelines on 'walkability' such as *Healthy by Design SA* and *Streets for People- Compendium for South Australian Practice*.
- These **guidelines fail** to remind planners that **people with mobility impairments and disabilities have less capacity to walk or wheel** these 'walkable' distances and it can take them twice as long.

- Flinders Link planners seemed to be unaware of the significant number of people with disabilities, elderly and low income households in the catchment area of Tonsley Station, many of whom are housed in public and community housing in the area due to the proximity of the rail line. What is the point if we cannot reach the rail service now? **Leaving a vulnerable population without access to transport further marginalises and isolates them.**
- Not all people with disability engage with peak disability groups and thus have **no representation** on those groups that may have been consulted during the planning stages.
- There seems to be a lack of awareness by Flinders Link planners of the people who live with varying levels of disability in the existing neighbourhood but are managing with informal and mainstream community supports such as access to rail transport. Removing that access will **increase their need for disability or aged care services or other social support services**. Why add an **extra cost burden** to the taxpayer when inclusion of a railway station to service the existing Tonsley station catchment could offset those costs for the life of the infrastructure (at least 50 years)?
- **Flinders Link is not improving connections for the local existing neighbourhood** as the plan claims but *disconnecting* us from the wider community, disconnecting us from opportunities for employment, education, cultural events, social connections and participation in the economy.

INTRODUCTION – PERSONAL STATEMENT

I am a private citizen, representing me and my family's specific situation as frequent users of the Tonsley rail line but also the needs of others in my neighbourhood who are in the same or similar situations.

I am a disability pensioner, a manual wheelchair user and a single parent. I rely on Tonsley Railway Station to access my community and support my children's activities. Rail is safe, reliable, affordable public transport with smooth, predictable motion unlike buses which are not safe or viable for me due to their motion and the length of the journey. Access taxis are unreliable, expensive and unaffordable for regular travel and impractical for spontaneous travel with limited control over my destination arrival time. Taxis have left me waiting in dangerous and vulnerable situations when they have not shown up at the booked time (or not shown up at all). When travelling with a child, this is not acceptable.

The Tonsley Railway Station is 250 m from my home at 7 Hester Avenue Mitchell Park. It allows me to travel independently during the day when friends and family are not available. It means I can access important services (such as medical appointments), participate in my community and maintain social connections. My home is 250 metres downhill from the existing Tonsley Railway Station at Lynton Avenue Mitchell Park. After spending a good part of a decade housebound and isolated, I've worked hard to gain enough strength to propel my wheelchair to the Tonsley Railway Station and am only just beginning to enjoy some independence and quality of life again only to have it snatched away by the permanent removal of Tonsley Station by Flinders Link. The loss of the Tonsley Railway Station and my subsequent access to public transport will be devastating emotionally and leave me socially isolated and depressed.

It takes me twice as long as an able-bodied pedestrian to wheel up the hill to the existing Tonsley Railway Station. I don't have the physical capacity to wheel any further uphill. I tried wheeling home from the existing Clovelly Park station at Alawoona Avenue to see how I would cope when Flinders Link was complete and it is not a safe or viable option. It took me 30 minutes to travel approximately 850 m and I was exhausted after negotiating obstacles on dangerous footpaths which are in disrepair with poor kerb alignments. For able-bodied pedestrians a walk of 800 metres is considered a 10 minute walk. For people with disabilities and inaccessible neighbourhoods it is double or threefold.

Ironically, I need to travel to Flinders Medical Centre twice weekly to manage my disability. It is an insult to know that a new rail extension that travels there will be inaccessible to me. Lack of rail access will force me to continue to rely on car travel, adding to the congestion, pollution and greenhouse gases in the neighbourhood. This is not environmentally friendly or sustainable or particularly productive, idling in traffic, taking longer to travel due to slow traffic light sequences designed to discourage car travel. It also adds to the parking congestion in the Flinders precinct.

Bus travel is dangerous for me because there is no method of securing my wheelchair and the bus motion is unpredictable and rough – I had my chair tip and I almost fell out. I have anecdotal evidence that other wheelchair users have been thrown out of their chairs on buses. People with disabilities should have the right to safe, accessible public transport without injury on their journeys, just like everybody else.

RESPONSES TO FLINDERS LINK DEVELOPMENT APPLICATION

Section/Page	Document text	Response
SECTION 1	PROPOSAL	
PART 1	Project Objectives and Strategic Context	
1.2 p 2 Background	First proposed publicly 20 Dec 2015 13 May 2016 Australian and SA Governments announced funding commitment \$85.5 million to be completed early 2020. ...will serve the Flinders precinct	In 2015 there was no detail. Certainly no inkling in the community of removal of Tonsley Station. Serves Flinders precinct and not through suburbs. Excludes suburbs of southern Mitchell Park & Tonsley What happened to social inclusion and integrated neighbourhoods? Previous Transport Studies in the area acknowledged the need for a station to service southern Mitchell Park, Tonsley, Sturt Rd buses and businesses.
1.2 p 2	...to enhance connectivity between Flinders precinct and Tonsley Innovation precinct.	Serves the university to connect campuses – they already have a bus shuttle which is not wheelchair accessible Ignores needs of locals along rail line who depend on the existing rail
1.2 p 2	...to complement TransformingHealth	Residents of Mitchell Park are ageing and have moved to the area to access rail in retirement. Some bought in to be close to the station thinking they could use it to get to the medical centre and soon they will not be able to Transforming Health has not been successful. If same attitude towards Flinders Link (ie do not consult those who are already using the services like Drs in the RAH) then it will be misinformed. Ignore experts at the coalface at your peril.
1.2 p 2	reduce travel time for public transport users from the Flinders precinct to the city;	Existing rail users and local residents not included.
1.2 p 2	increase patronage on the currently underutilised Tonsley rail corridor (i.e. make better use of existing rail infrastructure);	Taking away an access point, reducing the suburb from 3 stations to 2 will prevent existing users from access. Not making better use. Will force locals into cars and increase congestion in the suburb around the Flinders Uni Tonsley campus
1.2 p 2	improve pedestrian and cycle access and safety;	Lengthening the pedestrian journey is not safe for people walking alone at night. Alawoona Avenue is a hotspot for crime in the suburb. 1 km away The uphill route to the proposed Flinders station will be on an

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		elevated path (viaduct) and isolated from the community at large. It is not near shops, occupied homes or other sources of assistance if help is needed between Sturt Rd and Flinders which is perceived as being less safe.
1.2 p 2	provide environmental benefits associated with a reduction in private vehicle travel;	On the contrary – it will force Tonsley and Mitchell Park residents into their cars and taxis adding to the already congested streets at peak times. The proposal to add feeder buses to the local neighbourhood area will add to the traffic and impede traffic with multiple stops.
1.2 p 2	improve amenity, place making and improving access from the southern suburbs to the central business district (CBD);	Will not improve amenity for local residents and existing dependants on the rail service which is affordable, safe and reliable. It will reduce access especially for people with disabilities isolating them in their homes . The expanse of wall along the viaduct ramp will be a graffiti magnet. The current Tonsley service allows me to travel from the southern suburbs to the CBD. Without Tonsley Railway Station or an accessible replacement I will not be able to get to the CBD easily or affordably. Removing access to public transport does not improve amenity.
1.2 p 2	support economic activity and enhance connectivity between local centres and business precincts, including the Flinders precinct and the Tonsley Innovation Precinct, by providing improved customer access through a more convenient public transport system; and	Taking Tonsley station away hinders my ability to contribute to the economy. It takes away my connectivity. It will be more than inconvenient for me – it will totally prevent me from accessing the rail service independently Adding an extra last mile step of having to rely on multiple modes of transport e.g. buses (which get caught up in traffic) lengthens the journey and is not as convenient as being able to walk to the station without the delay of waiting for buses and taxis. Extra transfers are arduous for people with disabilities. Buses are not safe for wheelchair users. Buses do not have room for mobility tricycles or cyclists (trains do). Adding taxi fare to train fare makes the journey less affordable and discourages travel, makes it more expensive to access services and wider community etc.
1.2 p 2	improve safety and provide quality public transport options in the local area.	Taking away our walking access to our local railway station is extremely poor quality of public transport for our local area. Walking a greater distance between station and home (especially in Winter when it is dark early) is less safe than being out on the streets for a shorter time when the existing station is closer
1.2 p 3	enhance connectivity between flinders, laffers and tonsley precincts	Flinders Station will be uphill from Laffers Triangle. Wheelchair users will be forced to cross Sturt Rd and go up the hill to get to the lift to Flinders.
1.3 p 4	The Flinders Link Project has been progressing through a planning and design phase	And yet DPTI Engagement said nothing is happening – misleading public , withholding information. 10 Nov 2017 Tonsley is going and there is nothing we can do about it. – Tyla Clayson DPTI Engagement - sounds like a plan is 'locked in' to me even though our local MP is saying in 2018 that nothing has been locked in. What's the correct story?

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		<p>22 Mar 2018 DUCLG Minutes “Flinders Link Design is progressing well (they told me that nothing was happening!)” What progress was made in March?</p> <p>10 Apr 2018 Re. <u>status of the project</u>: same as last time we met. Nothing new to share publicly except what is on the website currently. – Jo Knolder DPTI Engagement</p> <p>26 Jul 2018 Nicolle Flint Flinders Link project was still "in the planning stages". "nothing has been 'locked in' as the official status of the project is still 'in planning'."</p>
1.6 p. 6 Subject Land	<p>The Flinders Link Project area extends into three suburbs within the City of Marion and the City of Mitcham, with Main South Road being the border between the two Councils. North of Sturt Road is Clovelly Park to the east of the rail line, and Mitchell Park to the west of the rail line. South of Sturt Road is Bedford Park</p>	<p>No mention of the new suburb name of Tonsley for residents of southern Clovelly Park.</p> <p>How much do the writers of this document actually know about this area? Their research and knowledge about the local area must be limited.</p> <p>When the Minister visited, he did not know the distances between stations etc. Was he not briefed properly?</p> <p>Is this the government proving that there is no such residential area as Tonsley south of the Tonsley Innovation precinct which fits in with the inability of emergency services and other delivery systems being unable to recognise those addresses? Is the Government making southern Clovelly Park a no-man’s land with no identity on purpose?</p>
1.7 p. 8 Land Use & Locality	<p>Land use either side of the rail line in its northern extremity is predominately low-medium density, detached dwellings. The area is within a Residential Zone and further north of the Flinders Link Project area is the Tonsley Redevelopment site zoned Regional Activity.</p>	<p>Can we not have a merged station further south because the land is zoned Residential and not Regional Activity like Tonsley Redevelopment site? Other railway stations like Mitchell Park, existing Tonsley, Cumberland Park etc are in residential zones.</p>
1.7 p. 8	<p>Sturt Triangle or Laffers Triangle contains large areas of vacant land, as well as car parking, commercial buildings, a child care centre, police station, transport depot, caravan park and open space.</p> <p>The area between Sturt Road and Main South Road has been recently re zoned Regional Activity</p>	<p>Important civic amenities like police station, tourists and employers. Failed to mention the Living Kurna Cultural Centre & historical site from former farmland.</p>
PART 2	Project Objectives and Strategic Context	
2 .1 p. 10 Project Objectives	<ul style="list-style-type: none"> • To support economic activity and enhance connectivity between local centres and business precincts (Strategic/Planning) • To improve accessibility for staff, students and visitors to key destinations within the Darlington precinct...offering a 	<p>Not for residents at all. People who have this rail line running through their neighbourhood don’t count. Not only do we not count, we aren’t given access to participate in economic activity! People with disabilities aren’t being given a choice of viable travel modes. Buses and taxis are not viable for me.</p> <p>Everything is at a strategic planning level – what about the neighbourhood planning level and the effects this project will have on that?</p>

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	choice of viable travel modes. (Strategic/Planning)	
2.1 p.10	<ul style="list-style-type: none"> To deliver a transit-connected metropolitan region as envisaged by the 30 Year Plan for Greater Adelaide (2014) and subsequently respond to the plan's projections for significant population growth through infill in the southern public transport catchment area, (Strategic/Planning) 	Admits that this is a growing area – so why remove stations? Why reduce the stations in our suburb from 3 to 2? Three stations have served us well, especially for getting from one end of the suburb to the other.
2.1 p.10	<ul style="list-style-type: none"> To enhance local amenity and improving access from the southern suburbs to the CBD. (Strategic/Planning) 	Local neighbourhood losing amenity! Including equitable access to transport.
2.1 p.10	<ul style="list-style-type: none"> To provide environmental benefits associated with a reduction in private vehicle travel. (Strategic/Planning) 	How cost-effective is it in the long term to isolate people and restrict their mobility? How cost-effective is it to have a rail line running through a neighbourhood which is a black spot for access? Missing out on a potential passenger share.
2.1 p.10	<ul style="list-style-type: none"> To provide environmental benefits associated with a reduction in private vehicle travel. (Strategic/Planning) 	It will force me into more frequent private vehicle travel. Roads in Mitchell Park are already busy – at peak times it is hard to get out of my own street. Unless the Flinders station stops right in the university itself, students who can will choose to use bus transport and students with disabilities will be forced to continue to use access taxis or private vehicles. Recent removals of bus stops in the area is further isolating vulnerable people.
2.1 p.10	<ul style="list-style-type: none"> To bring about a mode shift to public transport (Transport) 	Our mode shift will be forced into private vehicles. Using public transport will become too hard and lengthen the journey if we have to use too many transfers of transport mode. E.g. home, bus, train, bus, etc. buses unreliable. Incidences where my children have frequently missed the bus or it just hasn't turned up. Buses and access cabs are not reliable for connections to rail.
2.1 p.10	<ul style="list-style-type: none"> To increase patronage on the Tonsley rail corridor (i.e. make better use of existing rail infrastructure). 	How is excluding an entire neighbourhood going to increase patronage?
2.1 p.10	<ul style="list-style-type: none"> To reduce congestion on the road network, 	It will add to congestion. Students will still drive and bus to the university because the train doesn't go all the way. Local residents and people with disabilities who currently use the train will be forced to use private vehicles.
2.1 p.10	<ul style="list-style-type: none"> To improve general public transport accessibility and amenity in the Darlington precinct. 	It will remove accessibility from our neighbourhood especially for people with disabilities. But of course Mitchell Park is not in the Darlington precinct. Actually, Darlington precinct isn't included in the land tenure map. What does Darlington have to do with it? What are the boundaries of the Darlington precinct.
2.1 p.10	<ul style="list-style-type: none"> To improve safety and provide quality public transport options in the local area. 	The local area will have less safety in accessing rail – 1 km walk in the dark in one direction or walking 600 m in an uninhabited area the other way. Women have been assaulted walking through parklands. Walking through Laffers Triangle to reach

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		FMC station is not a safe option. Existing Clovelly Park station at Alawoona Ave Mitchell Park is not a safe location . Alawoona Avenue has been a crime hotspot in the area for years. There have been attempted abductions on Bradley Grove. The local areas of Mitchell Park and Tonsley/Clovelly Park (South of Woodland Rd, Mitchell Park) needs a station to service the southern part of the suburb
2.1 p.10	<ul style="list-style-type: none"> To improve transport efficiency through the area. 	Which area? Knoll's idea to add buses to Mitchell Park will not be efficient use of time or streets...adding to congestion and parking difficulties. Parking is already at a premium in Mitchell Park due to infill development. Plus cost of employing extra bus drivers.
2.1 p.10	<ul style="list-style-type: none"> To improve pedestrian and cycling access and safety, making sustainable and active transport options a more attractive mode choice. 	Wheelchair users are also pedestrians. They seem to have been left out of the equation. I won't get a choice about my transport mode as trains will not be a choice. I cannot choose a bus. I cannot afford a taxi except for trips that are absolutely necessary. I will have to rely on private transport. People who can now actively walk to their station and rely on the time that it takes them, will not be able to walk any more. They will choose the car and add to congestion and be less healthy, losing a walking mode from their transport journeys. Goes against the heart health guidelines for healthy neighbourhoods.
2.2 p. 10 Current Issues	Passengers who want to travel from the rail network to the Flinders Medical Centre are required to walk over 650 metres from Tonsley Station through Laffer's crossing, Sturt Road and Main South Road. Several areas of conflict with at grade crossings are a deterrent to the use of public transport.	DPTI has identified this as an issue. Where is the acknowledgment for local residents and users of existing Tonsley station? This is also an issue for residents at southern Mitchell Park who will be forced to walk more than that from their homes to access the rail. If is undesirable for Tonsley station commuters to walk that way, why does DPTI think it is acceptable for others who live around Tonsley station who have to walk even further than that to access the proposed new, nearest rail station?
2.3 p. 11 Need for the Flinders Link Project	The Tonsley rail line is a 3.1 kilometre spur line from the Seaford rail line servicing three stations, Mitchell Park, Clovelly Park (Tonsley evelopment) and Tonsley (Sturt Road). The line was originally constructed in the 1960s to service Mitsubishi. The line was electrified and upgraded during the Rail Revitalisation Works in 2014 including track and station upgrades to enable improved services to the Tonsley Innovation Precinct.	The only upgrade that Tonsley and Mitchell Park stations got was a lick of paint. The ramp to Clovelly Park platform was renovated but the platforms on all three stations are very low compared to the floors/decks of the railcars and very dangerous for people with wheelchairs to board and alight because of the steep gradient of portable ramps used. This puts both passengers and drivers/rail attendants at risk of injury.
2.3 p.11	Train services on the Tonsley rail line experience low patronage and are limited to approximately 30 minute frequencies.	This is because the service starts late in the morning and finishes early (after 7 a.m. and before 7 p.m. on weekdays) which make it an impractical option for many locals – why catch a train mid-late morning or afternoon if there won't be a train to bring one home later in the day? Plus there are NO weekend services which is a time many locals would like to use the Tonsley rail

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		line. Residents have been demanding extra services for decades. It only went to 30 minute services in the past 12 months. Before that, the train was so infrequent, long-time residents don't even consider the Tonsley train as an option! Some people didn't even know there was a rail service because the DPTI did not promote or publicise it. It seemed to be discouraging use. Lack of patronage is a symptom of DPTI's neglect.
2.3 p.11	Bus services are the alternative public transport option in the area,	Bus services are not an alternative for people with disabilities such as wheelchair users. People have been tipped out of their wheelchairs and injured because of the jerky and sudden motion of buses. Also wheelchairs cannot be secured in buses as they can in private vehicles. Trams and Trains have a smoother, more predictable ride, fit a wider variety of mobility equipment because there is plenty of space and are safer because there are more people around – it is more public unlike a taxi where the passenger is 1:1 with a driver. People with disabilities have been assaulted in taxis and in private bus services where they are vulnerable to the powerful position of the driver. To get an access taxi from Flinders Medical Centre to Mitchell Park took over a 40 minute wait for a 1 km journey. Taxis don't want short trips.
2.3 p.11	<p>The demand for efficient and accessible transport to the Flinders precinct and good connections between the Flinders precinct and Tonsley Innovation Precinct will continue to grow</p> <p>The Transforming Health Plan - the State Government is investing \$170.5 million to improve and upgrade facilities at Flinders Medical Centre which will attract more people to the centre.</p> <p>Continued development at Tonsley Innovation Precinct - leads to significantly increased movements between the Tonsley and Flinders precincts.</p>	The Transforming Health plan closed services and proposed moving services currently offered at FMC into the community. Already increased congestion and traffic in local streets. There will be more when people need cars and buses to get to a railway station or FMC due to loss of rail access.
2.3 p.11	The siting of the proposed rail station adjacent to the university sports field	The university sports field site is at the bottom of a steep hill, more than 1 km away from the central hub of the university at Registry Road by road or more than 800 m on foot over hilly, undulating terrain that is not wheelchair or disability friendly. Students and staff will choose to continue using private transport to get to work and study. Many students and staff come from suburbs further south, beyond the reach of the rail line such as Happy Valley, Flagstaff Hill, Aberfoyle Park, Morphett Vale and Woodcroft. Using rail will not be an option for them anyway. A significant proportion of students and staff will not be in the market to use Tonsley rail line. It is important to continue to service the people who already use

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2.3 p. 12	Adelaide Metro Map of Current Station Arrangement vs Proposed Station Arrangement	<p>the Tonsley rail line at the existing Tonsley Railway Station.</p> <p>Does not clarify that the proposed Tonsley station is actually the Clovelly Park station renamed as Tonsley. The existing Tonsley station in the Current Arrangement will be demolished without replacement in the Flinders Link Plan. The Clovelly Park station was meant to be upgraded and rebuilt as part of the electrification of the line in 2014 but was never done by the State Government.</p> <p>This is the kind of ambiguity in documents presented by DPTI along with the interchangeable use of the name Tonsley for both existing Clovelly Park and Tonsley stations. It seems as if they are either purposefully trying to mislead or don't know the existing area.</p>
2.3 p. 13	Connectivity Map	<ul style="list-style-type: none"> • Does not show any 'at grade' footpaths between Birch Crescent and the Flinders Precinct. The proposed viaduct walkway is a long gradient uphill. I cannot see how frail people or manual wheelchair users or parents with prams and young children will have the stamina or capacity to manage a sustained uphill walk. People do not walk to the Flinders Precinct at the moment because it is uphill. This is the reason for problems with parking availability at both Flinders Health and University precincts. We need more level stretches along the Flinders Link shared path on the viaduct AND an at-grade footpath through Laffers Triangle so that people who cannot manage the uphill ramp to the viaduct shared path can still walk to the Flinders Precinct. A lift at the corner of Birch Crescent and Sturt Rd would aid access to the viaduct shared path, especially for active older people with walkers, manual wheelchair users, people with crutches or other mobility aids (temporary or permanent) and prams, people with cerebral palsy and other conditions that affect balance. • Neighbours are alarmed that Greenway is on polluted land. Why has the State Government banned development on the land due to pollution yet thinks it is acceptable for local government to build a greenway on it? • The bus stop at FMC is at least a 10-15 minute walk from the Flinders railway station. Why are there no bus stops integrated with the station. The nearest bus stop will be on South Rd. All the buses currently interchange at the Main Entrance to FMC. Were there other designs that had the rail service following Flinders Drive?
2.4 p.14	support the Seven Strategic Priorities identified by the South Australian Government to guide all other government initiatives to improve the lives of South Australians and ensure the future prosperity of the state:	Removal of Tonsley Railway Station without adequate replacement contradicts Seven Strategic Priorities. See Attachment E.

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PART 3	The Proposed Development	
3.2.1 p 6 Urban Design Overview	Western Ramp Decorative gravel fines between planting beds exposed/aggregate footpath linking Lynton Ave and Birch Crescent Future Greenway and streetscape works by others – on eastern side of railway line along Birch crescent Smooth barked apple trees	Decorative vs practical Textured aggregate footpaths are dreadful for wheeling on – adding friction and vibration for people with walkers, wheelchairs and prams etc. Give us smooth pavers or concrete. Rundle Mall and City streets are a good example. Another perfect footpath is north of Woodville Park railway station along Park St North from Belmore Terrace to Harvey St East, Woodville Park. Gravel gets into the wheels and machinery of electric wheelchairs and damages them! It is very expensive to fix together with inability to use mobility equipment while it is in the workshop. Gravel increases the heat map of the neighbourhood. I thought the Greenway was on polluted land? Is there even room on Birch Cr for a greenway? It is already narrow and a 'hoon's paradise' Instead of exotic trees, plant native shrubs and trees of local provenance that enhance the ecology of native wildlife. Our birds are losing lots of nesting places.. Will the apple trees produce eating apples? Food for a poor neighbourhood or will it increase risk of insect and rodent pests and mess with dropped fruit?
3.2. p 6	Western Ramp 3D	The ramp looks very long and dangerous – like Marion station. Easy to get out of control and speeding bikes downhill. Where are the resting platforms? Give us a shorter switch back – without time to pick up such speed. Where are the resting platforms on the elevated walkway? One long incline to the Flinders station is not safe for manual wheeling. For those of us who cannot wheel up the ramp, how do we get across Laffers Triangle to Flinders drive? Will there be footpaths along Flinders drive extension?
3.2.5	Accessibility reducing the need for conflict and potential conflict arising from “at grade” crossings, thus enhancing accessibility and safety. Visual treatment of elements will be provided to ensure ease of access and use by mobility and visually impaired users. The shared path connectivity across the Darlington corridor has enhanced access provisions with the inclusion of lifts servicing both sides of South Road and adjacent bus stops.	If we can't get up the ramp at Birch Crescent and there is no lift at Birch Crescent, we will still be needing to use the “at grade” crossing. People who are slower moving with mobility issues or who are harder to see by motorists such as low wheelchair users, are more at risk crossing major roads like Sturt Rd. Glad to see visually impaired needs considered and included. If lifts are safe enough for South Rd, why aren't they safe enough for Birch Cr/Sturt Rd?
3.3.2	The switchback will have a balustrade to match the form of fencing elsewhere on the Flinders Link	I hope it will have a double railing like the northern entrance to Flinders Medical Centre and the ramp at Marion railway station.

Section/Page	Document text	Response
	Project.	
Volume 2 Attachment 3	Crime Preventions Through Environmental Design (CPTED) Report	
Vol 2 Att 3 Ch 1.2 Scope	identification of crime risk and crime statistics for the Bedford Park area, South Australian Police (SAPOL) and the Neighbourhood Watch were consulted	Mitchell Park not mentioned in the scope of this document. Where are the crime statistics for neighbouring suburb of Mitchell Park which is supposed to be in the scope of the Flinders Link Project? Does the Flinders Link Project not want to acknowledge the crime rate in Mitchell Park? Local residents don't want to walk 1 km or more to get to Clovelly Park station because of crime fears.
Vol 2 Att 3 Ch 3	The Warradale Neighbourhood Watch has been provided with a copy of the proposed plans for comment, however no response has yet been provided.	What does Warradale have to do with Bedford Park or Mitchell Park or Tonsley or Flinders Link? Do we not have a neighbourhood watch for the local areas around Flinders Link?
Vol 2 Att 3 Ch 4.2	it is not possible to determine the exact location nor is it possible to determine if any of these crimes occurred at similar facilities such as the existing Tonsley Rail Station.	Why raise existing Tonsley Rail Station which is not in Bedford Park but Mitchell Park? Are they trying to imply crime around Tonsley Rail Station? I have never known about criminal behaviour at Tonsley Rail Station because the train drivers alight and check. Passive surveillance by neighbours etc.
Vol 2 Att 3 Ch 4.3	Table 4.3.1: Risk Assessment Matrix High level of risk = Pedestrian culvert link between Lynton Avenue and Birch Crescent Low level risk = Switchback ramp; Access and egress points of shared use path and elevated walkway	Culvert has been placed opposite the laneway between Brayden Ct and Bradley Gr but that laneway is short and not wheelchair accessible – it has a giant drain and step at the end. The current crossover on the northern end of the existing Tonsley platform has a long line of sight down Lynton & Hester Avenues and across to Birch Crescent. Will there be a mirror on Switchback ramp to see who is coming from the other way before you turn the corner? Why is Switchback ramp facing Sturt Rd instead of main pedestrian approach with stairs?
Vol 2 Att 3 Ch 5.1.2	The eastern lift core was also relocated to ensure it was visible from Main South Road, whilst being setback far enough to avoid differential movement between structures.	A lift at Birch Cr/ Sturt Rd would be highly visible both from the Main Road and Sturt Police Station.
Vol 2 Att 3 Ch 5.2 Access Control	Image 6: Clear and defined access points for proposed Plaza and Station platforms. Viaduct / Lift Ramp	The diagram looks like it is a combination of lift and ramp. Does one need to use a lift AND a ramp if not using the stairs?
Vol 2 Att 3 Ch 5.3.1	Design of Space to encourage ownership and responsibility "Tonsley Station is not an inviting public space" ...doesnot encourage its users, and other members of the public, to take ownership of the space	Define "inviting" In our neighbourhood it is a quiet place with greenery and shade where one can rest (as the terrain is hilly) before continuing. It is also a meeting point. Lots of through pedestrian traffic also. Station always tidy. A sign indicates that it has been adopted by Marion Rotary Club.
Vol 2 Att 3	Maintenance of Public Spaces	What sorts of discussions are being had about council

Section/Page	Document text	Response
Ch 5.4.1	will be managed and maintained by contractors engaged by DPTI with the ongoing maintenance of the landscaped areas likely to be managed by the City of Mitcham, however it should be noted that this is still being determined.	responsibilities and maintenance? Disappointing that the plans shown by DPTI creates new responsibilities and costs for local councils. Perhaps the scope of the Flinders Link Project should be extended to include such things; e.g. lighting included on shared path but what about lighting on supporting neighbourhood access infrastructure like proposed Greenway?
Volume 2 Attachment 4	FLINDERS LINK DETAILED DESIGN DESIGN REPORT – Landscaping	
Vol 2 Att 4 Ch 1.1 Project	Sole purpose of project: Improve public transport passenger access to the Flinders Precinct; etc.	Residents who currently use the rail service will not have improved public transport access Current users will have a reduction of access and some will have NO access. Current rail users and local residents NOT in the picture. Not even marginalised any more but pushed off the page!
Vol 2 Att 4 Ch 6	bespoke seating plinths	Wouldn't it be cheaper to use standard seating? Why does it need to be bespoke?
Vol 2 Att 4 Ch 7.3 Sustainability	... importance of addressing connectivity with existing and future greenways and walking/cycling routes, integration with existing and planned future land use... The outcomes of the workshop including initiatives and actions will be documented in a separate report to inform future stages	But these greenways are not part of the Flinders Link scope? They are to be built "by others"? Will the public be privy to the outcomes of the workshop considering it will inform future design stages?
Vol 2 Att 4 Ch 7.7	Preliminary discussions with structural team as well as the contractor have taken place	Why do Flinders Link keep telling the community that they have not awarded any contracts to begin work on the project? According to this report there already is a contractor.
Vol 2 Att 4 Ch 7.8	Stakeholder Consultation City of Marion Council Flinders University Flinders Medical Centre ODASA Weekly design meetings with DPTI representatives and frequent workshops with stakeholders has also taken place. The following stakeholders require additional consultation to be undertaken in future: City councils – Marion, Mitcham Environmental groups Cyclist groups Resident Groups – Clovelly Park, Mitchell Park ODASA	DPTI were telling residents and members of the public that there was nothing happening in relation to the project and yet here it is reported that weekly meetings and workshops were going on. The public don't appreciate being lied to. This is another example of DPTI / Flinders Link Project misleading the public and withholding of information. Which environmental groups? Which cyclist groups? Resident groups? Which resident groups in Mitchell Park and Clovelly Park? What about the omission of Tonsley residents – is their suburb invisible? As a Mitchell Park resident, I have not been informed about any resident's groups for the purpose of Flinders Link. Which groups will these be? When was Flinders Link planning this consultation and for what purpose – after the horse has bolted? Was the Community Information Session on 3 Oct 2018 intended to be part of this?
Volume 2	Urban Design Finishes + FF + E Schedule	

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Attachment 5		
Vol 2 Att 5	PT-06 Fitzgerald Quarry Surface treatment between garden beds. Fitzgerald 15-30mm Aggregate or approved equivalent. PT-07 Barossa Quarry Surface treatments between garden beds. Calca Red 15-30mm Aggregate or approved equivalent Mainly beneath viaduct adjacent to Flinders Drive. Also within plaza connecting to switchback ramp.	Concern about friction makes it harder to wheel a manual wheelchair, creating more work and effort to propel. Textured finishes create vibration and joint pain for wheeled walking frames, people pushing strollers, prams, wheelchairs etc. especially those with small wheels or wheels made of harder tyre compounds or with castors. Vibration can cause pain, irritation, inflammation and fatigue through the wrists, arms, elbows and shoulders. Please refer to previous notes regarding smoother pathways in response to Chapter 3.2.1 p 6 Urban Design Overview.
Volume 2 Attachment 6	Design Report –Environmental Gateway South	
Vol 2 Att 6 Ch 8	Stakeholder Consultation Minutes of these meetings and consultations are distributed and are kept within the project's ProjectWise server for record.	Lists meetings held from January 2018-10-08 Are these minutes publicly available? Which stakeholders were included here?
Volume 2 Attachment 7	Resonate Flinders Link 30% Design Noise Assessment Report	
Vol 2 Att 7	Revisions A 19 December 2017 DRAFT B 20 December 2017 Final Issue C 1 February 2018 Revised in Response to DPTI Comments D 10 May 2018 Revised in Response to DPTI Comments	Revised in response to DPTI comments – normally these listings would only say 'revised'. Interesting that a reason is included. What were the changes between revisions?
Vo 2 Att 7 page 6	We understand that train frequencies on the line may increase from 30 minutes to 20 minutes in the future. It is assumed that this is the case for the project opening (2019) scenario. It has been assumed that service will remain within the daytime hours of 7am to 10pm only.	Train frequency 20 mins from 7 am to 10 pm This will be the capacity. How much of that capacity is limited due to single track instead of a double track? Why has the public been told that the new Flinders Link service will have the capacity to run every 15 minutes? So the branch line will remain just that – a branch and not go anywhere further. Short-sighted. How is the Flinders Link service going to serve shift workers at the Flinders precinct if the trains will not run before 7am and finish as 'early' as 10pm? Other Adelaide Metro lines run as early as 5:30 am and continue until midnight. Unless the DPTI extend the timetable of the Tonsley rail service, patronage will remain limited and it will be another example of not placing a priority service standard on the Tonsley line, serving the Flinders University and not focussing on the transport needs of the wider community of FMC workers, visitors, families or general public..

ATTACHMENTS & LINKS

A) Map 01: Mitchell Park & Tonsley Rail Catchments – Current and Proposed

This map shows the current passenger catchments of existing and proposed railway stations along the Tonsley / Flinders Link line based on walkability guidelines of 800m for an able bodied person to walk 20 minutes to their nearest station. The current walkability guidelines recommend that a railway station is ideally a 10 minute walk (400m) in a healthy, active, 'walkable' neighbourhood. Please bear in mind that people with mobility impairments take longer to walk or wheel the same distances.

- B) Map 02: Mud Map for Transport Minister Stephan Knoll** as presented by me to the Minister at a Tonsley Railway Station Community Meeting hosted by Elder MP Carolyn Power on 9 August 2018. The request is to relocate a merged Tonsley and Clovelly Park station as far south as possible before the Flinders Link extension begins its incline. At the very least, station access needs to be from both sides of the rail line and south of Handley Avenue Mitchell Park.
- C) Map 03: Aerial Photographic Map for Transport Minister Stephan Knoll** presented by Lynton Avenue Resident Sharon Wylie to the Minister at the Tonsley Railway Station Community Meeting hosted by Elder MP Carolyn Power on 9 August 2018. This is the option most requested by residents, particularly Tonsley residents (east of existing Tonsley station).
- D) Flinders Link Discussion Points 8 August 2018**
This document arose due to the Flinders Link Project team not being forthcoming with answers to reasonable community questions. People in the community have expressed concern that the DPTI is reluctant to modify the Flinders Link design to accommodate a railway station to serve the southern area of Mitchell Park, Tonsley and Sturt Road businesses and reluctant to move the Clovelly Park Railway Station away from Alawoona Avenue, Mitchell Park.
The DPTI / Flinders Link Project seems to have a culture of withholding information and delaying responses to public queries. The disrespect shown by DPTI officers and dismissive attitude towards community concerns gave the impression that they are making excuses to the public rather than valid reasons for not accommodating the needs of Mitchell Park and Tonsley residents, giving myriad 'reasons' for being unable to change the Flinders Link design.
For every 'excuse' given by DPTI, residents have found contradictory evidence or had logical reasoning against them. These are listed in this document. (10 double-sided pages)
- E) Removal of Tonsley Station (near Sturt Rd) Undermines Four of SA Government's Seven Strategic Priorities**
Prepared in January 2018. The themes of the Seven Strategic Priorities echo notions of healthy liveable cities, good neighbourhood design, placemaking etc. as published by national urban design protocols and State Government planning policies. Why allow Flinders Link to be the 'weak link' in best practice neighbourhood design in Mitchell Park, Tonsley and the City of Marion?
- F) Save Tonsley Station Petition – Change.org petition online comments 18 Oct 2018**
On 22 November 2018 I initiated a petition to highlight the need and desire to maintain railway station access in southern Mitchell Par and Tonsley. The petition combines two formats: paper (hard copy) and electronic (online at <https://www.change.org/p/sa-minister-for-transport-save-tonsley-station-save-our-access-to-public-transport>).
Due to my disability, my ability to actively campaign is limited and yet members of the community sought out the petition to sign it. It reached over 1100 signatures in 30 days and continued to climb without active promotion. The current combined tally is 2165 signatures.
The paper petition is attached (Part A 23 pp)
The electronic petition gives signatories opportunities for comment and discussion (Part B attached 48 pp).
The course of the petition and issues arising can be followed on Change.org through regular updates.
- G) Tonsley Station Friends Facebook Group**
<https://www.facebook.com/groups/438999896555463/>
This group was initiated by Tonsley resident Siyi Ong for community discussion about Flinder's Link's impending removal of Tonsley Railway Station. Please take time to read the comments in this group. There were too many for me to compile into this document.

Tonsley Rail Line Station Catchments - current and proposed

Note: a large area of current Tonsley station catchment (blue) will not be served by Flinders Link (dotted purple line boundary) when Tonsley station is permanently removed.

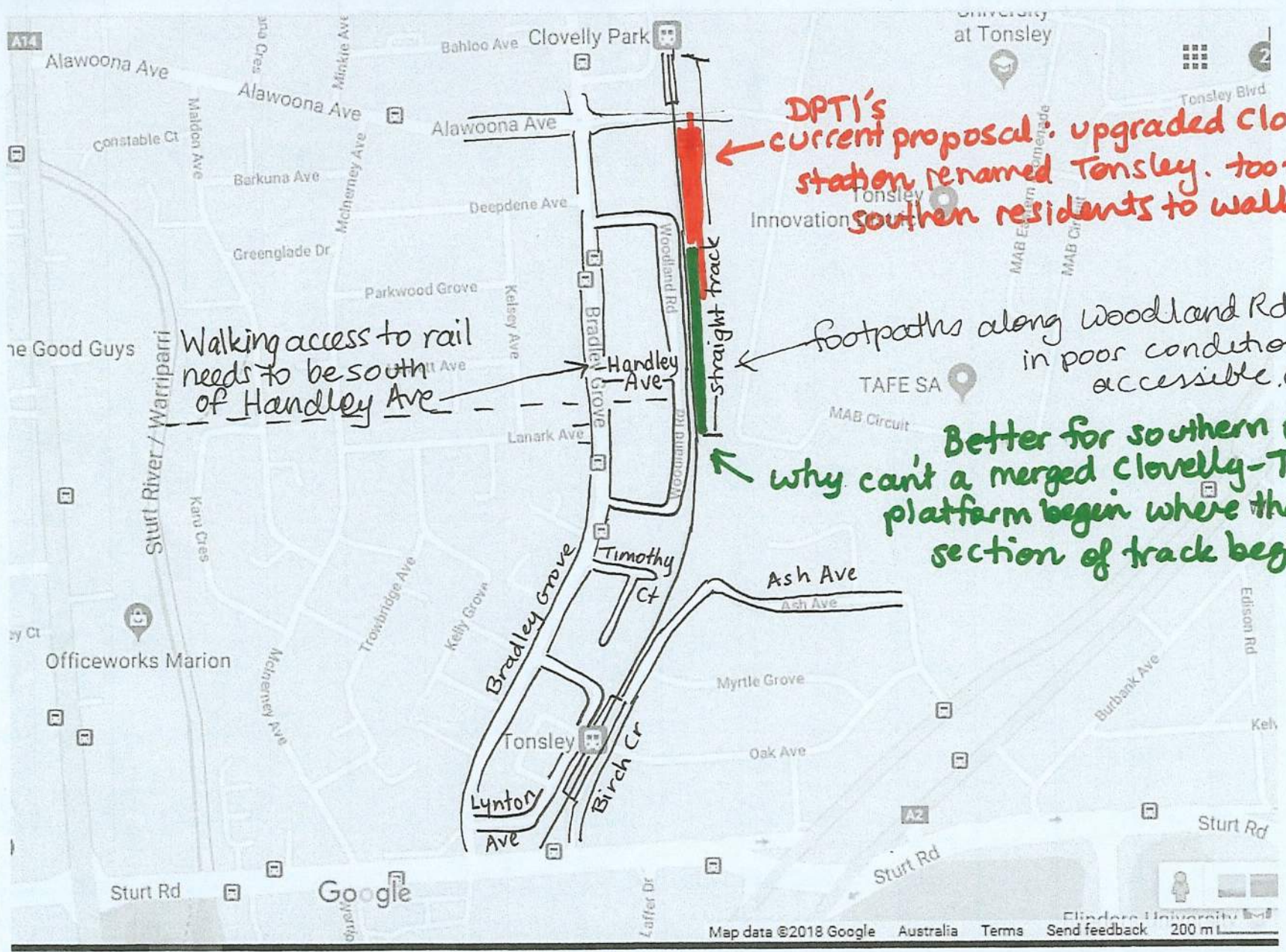


- existing tonsley catchment
- existing Clovelly Park catchment
- proposed upgraded Clovelly Park catchment
- proposed Flinders catchment

- ▨ non-residential
- ⋯ area outside Flinders Link catchment previously serviced by Tonsley Station

* station access needs to be south of Handley Ave to be within range of southern residents

MAP 2



DPTI's current proposal: upgraded Clovelly Park station renamed Tonsley. too far for southern residents to walk

Walking access to rail needs to be south of Handley Ave

Footpaths along Woodland Rd & Bradley Grove in poor condition. Not wheelchair accessible, or very difficult.

Better for southern residents why can't a merged Clovelly-Tonsley station platform begin where the straight section of track begins?

ATTACHMENT B

presented to Transport Minister Stephan Knoll on 9 August 2018



Existing Clovelly Park Station—proposed name change to Tonsley Station

Possible location of combined Clovelly park Tonsley Station—seems to have space for new station and car parking

Existing Tonsley Station—due to be removed when FlindersLink occurs

Proposed Flinders Station as part of Flinders Link

Map presented to Transport Minister Stephan Knoll
9 August 2018

Flinders Link Discussion Points

8 August 2018

Reason / Excuse from DPTI for not changing the Flinders Link design to include a replacement station to service Sturt Rd, Laffers Triangle and Southern Mitchell Park & Tonsley	Arguments and evidence against the DPTI's reasons
RELOCATED / REPLACEMENT STATION	
<p>"It will cost too much to rebuild a new replacement station" DPTI</p> <p>David Pisoni MP, former Shadow Transport Minister & Member of Public Works Committee suggested that an railway station built on flat land would cost approximately \$600,000. 11 Jan 2018.</p>	<ul style="list-style-type: none"> • The total budget for the Flinders Link Project is \$85 million. • \$600,000 is 0.7% of total budget of the Flinders Link project. Less than 1% is not significant in the context of the scale of the project that needs to service the community for 50 years or more.
ELEVATED STATION AT STURT RD	
<p><i>"The Tonsley station needs to be removed due to the new elevated track. However DPTI is undertaking a review to determine if the current railway stations need to be relocated. The relocation of a station is not currently part of this project."</i></p> <p>Public Works Committee Paper 343 tabled on 17 Oct 2017</p>	<ul style="list-style-type: none"> • Why not build an elevated station? • What research is the DPTI doing about this? • Has the DPTI completed its review? What is the outcome? • Where is the evidence to back up their decisions? • If previous proposals recognised the need to provide station access to serve southern Mitchell Park and Tonsley, Laffers Triangle and Sturt Road (including access to Sturt Police) why can't the current Flinders Link Project Team and DPTI planners? • Tonsley is at an important junction to collect passengers travelling from the hills (east and south) and from the Marion Shopping Centre and neighbouring suburbs.
<p>"We don't like elevated stations" DPTI</p>	<ul style="list-style-type: none"> • There is an elevated station at Port Adelaide (Port Rd) and an elevated tram stop at Glandore (South Rd) in current use. Where are the statistics/evidence of issues at those locations? Not forthcoming from DPTI. • If the DPTI can build elevated stations and tram stops and elevated expressways, how can an elevated station for Mitchell Park/Tonsley residents be beyond the realm of physics? • If the DPTI does not like elevated stations, why does it not close or remove Port Adelaide Railway Station and South Road Tram Stop?
<p>"Cannot put an elevated station on an incline" DPTI</p> <p>*Ben, Adelaide Metro Infoline confirmed that Tonsley station would be removed and quoted</p>	<ul style="list-style-type: none"> • According to the publicity generated by DPTI there is going to be a 650 m extension of the Tonsley rail line including 520 m* of level track to Flinders. Locate the elevated station on a section of level elevated track. • Will the rail bridge over Sturt Rd be on an incline? Will it be straight? Details not forthcoming from DPTI. • If the Sturt Rd rail bridge is straight and level, put a railway station on the

<p><i>"There would be 520 m of elevated track over Sturt Rd and Laffer's triangle within a year." 29 Aug 2017</i></p>	<p>rail bridge like the Glandore/ South Rd tram stop and Port Adelaide Railway Station.</p> <ul style="list-style-type: none"> • Extend the section of level track northwards from Sturt Rd to allow inclusion of an elevated Tonsley station. • Flinders Link has already planned an elevated walkway alongside the rail line (will wheelchair users be able to access it?) Why can't there be an elevated station included as well? • Build a replacement Tonsley station just before the incline. Ascot Park Railway station is just before an incline with its platform ending within metres of the Daws Rd bridge incline beginning.
<p>"An elevated station will cost too much" DPTI</p> <p>David Pisoni, former Shadow Transport Minister & Member of Public Works Committee suggested that an elevated station including lifts would cost approximately \$2–3 million. 11 Jan 2018.</p> <p><i>The Australian Government is contributing \$42.75 million towards the \$85.5 million project.</i></p> <p>Australian Government Department of Infrastructure, Regional Development and Cities, Flinders Link Project web page, last updated 24 May 2018, accessed 7 Aug 2018.</p>	<ul style="list-style-type: none"> • The total budget for the Flinders Link Project is \$85.5 million. • An elevated station of \$2-3m is 2.3-3.5% of total budget for Flinders Link project. Not significant in the scale of a project that needs to service the community for 50 years or more.
<p>ELEVATED WALKWAY & RAMP ACCESS</p>	
<p><i>"An integrated shared pedestrian/cycle path will provide an access point in close proximity to the current Tonsley Railway Station. This elevated path will provide direct access to the new station in the Flinders Precinct and will be wheelchair accessible."</i></p> <p>Correspondence from former Transport Minister Stephen Mullighan, 8 August 2017.</p> <p><i>The Flinders Link Project will create new connections to the health and university precincts, which will provide an elevated shared pedestrian and cycle path adjacent to the new rail line from Sturt Road to the new Flinders Station.</i></p> <p>Kelly Vincent MLC's information obtained from the office of</p>	<ul style="list-style-type: none"> • According to the Minister's letter, the elevated path will be wheelchair accessible but will it be flat or continuing on a gradient towards Flinders Medical Centre? Information not forthcoming from DPTI. • A long continuing gradient, however shallow, will not be accessible for manual wheelchair users without flat rest stops. Compare the Eastern Plaza of the RAH – the pathway towards the city centre has no flat sections and no rest points making it inaccessible for users of wheelchairs, walkers or for frail people. • How are wheelchair users supposed to access the elevated path from Lynton Ave/Sturt Rd? • Requests to install a lift at Sturt Rd/Birch Crescent were refused. • DPTI offered a ramp, with the combination of incline and height distance to travel, the potential energy required to reach the elevated walkway will be too arduous for manual wheelchair users, frail and elderly; not only would I be expected to manually wheel a greater distance but fighting gravity at the same time! • e.g. the switchback ramp at Port Adelaide railway station is too long and steep for me to handle independently with a manual wheelchair. I needed assistance to make it to the top. We should be designing infrastructure that maintains independence, not hinders it (for equity

<p>Transport Minister Mullighan, 4 Jan 2018.</p>	<p>and productivity).</p> <ul style="list-style-type: none"> • Inclines create a hazard for frail people using wheeled walkers, especially going down hill. Also treacherous for people on crutches or other issues with balance. • The initial proposal for a circular spiral shaped ramp looks dangerous, combining slow struggling wheelchair users and frail ambulant people with bicycles freewheeling downhill. • Any ramp needs to have rest spots along the way with hand rails low enough for wheelchair users and people of short stature to grab and catch a rest; e.g., double handrails at Marion Railway station and Flinders Medical Centre Northern Entrance. • The purpose of the elevated walkway was to achieve grade separation between pedestrians and Sturt Rd traffic. If people cannot get up to the elevated walkway, they will not use it, thus defeating the purpose. • If the elevated walkway does not meet its intended purpose, is it value for money?
<p>SECURITY & SAFETY ISSUES</p>	
<p>Elevated station has a security risk because it is isolated from the street</p>	<ul style="list-style-type: none"> • If this were the case, wouldn't the elevated walkway also be a security risk? What's the difference? The DPTI seems ok with the security risk of an elevated walkway. • If the elevated station was part of the elevated walkway, it would not be isolated as it would have lots of passing traffic on foot and wheel. The area between Lynton Ave, Birch Cr and Sturt Rd has plenty of daily passing foot traffic. • An elevated station at Sturt Rd would be right next to the Sturt Police Centre. Help would be at hand. Residents/patrons feel secure. • People feel safer walking 200-700 m to a nearby elevated station than walking 900-1300 m to a station further away. The shorter and quicker the walk, especially at night, the safer one will be as one is not on the streets as long and less vulnerable. • Local residents feel safer at a nearby elevated station within sight of the Sturt Police Station than walking further to the Clovelly Park Station which is adjacent to Alawoona Ave, a crime hotspot in Mitchell Park. SAPOL crime statistics, local media reports and anecdotal evidence in the neighbourhood show that Alawoona Ave is a continual crime hotspot in Mitchell Park. Residents don't feel safe there. • The extent to which a local environment is considered safe may also have an influence on the extent to which people will be willing to walk (Booth et al., 2000; Centres for Disease Control and Prevention, 1999).
<p>"We cannot put a lift at Birch Crescent/Sturt Rd due to safety concerns"</p> <p>"There is a plan to include a lift to the elevated walkway at South Rd."</p> <p>Tyla Clayson, Flinders Link Project Team, 10 Nov 2017.</p>	<ul style="list-style-type: none"> • Requests to install a lift to access the elevated walkway at Sturt Rd/Birch Crescent were refused. • Flinders Link is putting a lift at South Rd, Bedford Park. What's the difference? How can one lift proposal be safer than another? The DPTI are comfortable with a lift at South Rd. • Birch Crescent/Sturt Rd location is adjacent to the Sturt Police Centre (closer than proposed South Rd lift). It can't be in a safer location than that! • There is a lift in current operation at Glandore/South Rd Tram Stop • The purpose of the elevated walkway was to achieve grade separation between pedestrians and road traffic. If people cannot get up to the elevated walkway, they will not use it, thus defeating the purpose.

<p>"Lifts are problematic because there will be no access if the lift breaks down"</p>	<ul style="list-style-type: none"> • This is the case in myriad situations (e.g. Adelaide Railway Station) yet that doesn't prevent installation and use of lifts. • Flinders Link is putting a lift at South Rd, Bedford Park. What's the difference?
<p>OPPORTUNITIES TO MODIFY DESIGN</p>	
<p>"The engineering of the incline and the rail and bridges has been finalised and is set in stone." Matthew Leek, Flinders Link Project Team, 23 Oct 2017.</p> <p><i>"The Tonsley station needs to be removed due to the new elevated track. However DPTI is undertaking a review to determine if the current railway stations need to be relocated. The relocation of a station is not currently part of this project."</i> Public Works Committee Paper tabled on 17 Oct 2017.</p> <p>"Tonsley is going and there is nothing we can do about it." Tyla Clayson, Flinders Link Project Team, 10 Nov 2017.</p>	<ul style="list-style-type: none"> • How true are these statements now? (August 2018) • Previous design proposals (Darlington Traffic Study, Tonsley Park Transport Project) recognised the importance of a station to service Sturt Rd, Southern Mitchell Park and Tonsley and Laffers Triangle. Why is it suddenly unimportant when the suburb's population density and disability housing is increasing? E.g., three new disability dwellings have been approved and built approximately 250 m from the existing Tonsley Railway Station.
<p>ISSUES WITH THE INCLINE AND TRAIN SPECIFICATIONS</p>	
<p>"Removal of the current Tonsley station is for the bridge over Sturt Road. There is no way to reinstate Tonsley station in its current location because the rail would be on an incline there. There needs to be level track to place a station there." Matthew Leek, Darlington/Flinders Link Project Team, 23 Oct 2017</p>	<ul style="list-style-type: none"> • Build a replacement Tonsley station just before the incline. Ascot Park Railway station is just before an incline with its platform ending within metres of the Daws Rd bridge incline beginning. • DPTI has not been forthcoming with precise information about where the proposed Sturt Rd rail overpass bridge incline will end. • Based on other similar rail overpasses in the area, there is opinion that the Sturt Rd bridge incline will end adjacent to Ash Ave, Tonsley and Timothy Court, Mitchell Park. Why can't a replacement Tonsley station be built on the vacant land north of Ash Ave and south of the Tonsley TAFE building? This area is level and used to have railway sidings to service the former industrial site (Chrysler/Mitsubishi) • Extend the elevated track northwards to allow a level section to service an elevated station; i.e. begin the incline earlier on the line.
<p>Matthew Leek (Darlington/Flinders Link Project) said that the incline could not start earlier on the line because it needs to start 'quite a way back'. I wanted to know how far back. (I want to know where that is in relation to the landmarks and</p>	<ul style="list-style-type: none"> • Precisely how far back from Sturt Rd does the incline need to begin? • The DPTI has not been forthcoming in these detailed measurements. • A member of the Darlington Upgrade Community Liaison Group informed that the proposed Sturt Rd bridge will be 5.4 m high above the roadway. Based on that information: Proposed Sturt Rd Bridge height 5.4 m If gradient = 2% then slope = 1:50. 5.4 m x 50 = 270 m If gradient = 1.8% then slope = 1:55.6 5.4 m x 55.6 = 300.24 m

<p>streets in my neighbourhood) but Matthew Leek could not tell me!</p>	<p>From these calculations, the incline could be estimated to end around the vicinity of Ash Avenue, Tonsley and the northern end of Timothy Court, Mitchell Park.</p> <p>The gradients are based on those of other rail bridge approaches on the Seaford rail line where the Bombardier Adelaide A-City locomotives have no difficulties.</p>
<p>DPTI says that the trains need “a long run up” to get to the height of the Sturt Rd overpass and to get up the hill to Flinders Medical Centre.</p>	<ul style="list-style-type: none"> • Ascot Park Railway station is just before an incline with its platform ending within metres of the Daws Rd bridge incline beginning. Trains servicing Ascot Park do not need any extra long ‘run up’ between the station and the incline. • The trains are designed by a European country. Europe has mountains with railways that go over them. Is the DPTI telling us that the Adelaide Metro trains have extra difficulty going up the hill to FMC? • Did the SA Government commission trains that were underpowered to manage the incline required to get to FMC? • Bombardier Adelaide A-City EMU 25kV ‘optimised for Adelaide conditions’. Max speed 110 km/h 8 x 200kW traction motors (AC) per 3 car set. Max acceleration 0.8 m/s² deceleration max service 1.12 m/s² deceleration 1.2 m/s² • <i>The A-City will seat around 240 passengers with standing room for another 300. The wide-body train will provide more room for passengers and a host of other features, including:</i> <ul style="list-style-type: none"> - maximum speed of 110 kph. <p>Source: New Connections http://dpti.sa.gov.au/newconnections/article?item=217</p> • Online discussion in a rail enthusiasts’ forum (Wheels on Steel) suggested Adelaide’s Bombardier electric locomotives would be too slow at 110 km/h and should have the capacity to run at 160 km/h <i>“Why not just build to 160km/h and have capacity.”</i> <i>“let’s just not improve things, then complain later when it’s insufficient.”</i> <i>“110 km/h looks very outdated”</i> https://www.wheelsonsteel.com.au/showthread.php?tid=6313
<p>DISTANCE BETWEEN STATIONS</p>	
<p>“If a new Tonsley station were to be positioned just before or just after the incline, it would be too close to the next stations (Clovelly Park and Flinders Medical Centre respectively).” Matthew Leek, Darlington/Flinders Link Project Team, 23 Oct 2017</p>	<ul style="list-style-type: none"> • Mr Leek could not specify how close the stations would be. • Mr Leek explained that stations needed to be a certain distance apart but he couldn’t tell me precisely how far apart. • What is the minimum distance required between stations and why? This information was not forthcoming from DPTI • Where does it say stations need to be a set distance apart? • Is there a standard? If so, which standard? • There is no consistency in the distance between stations on the Adelaide Metro Network with distances between stations ranging from 4.21 km*(Dry Creek–Mawson Lakes) to 579.42 m* (Clovelly Park–Mitchell Park). The latter is not ‘too close’ for the Bombardier A-City 4000 Class electric trains currently servicing these stations. *Distance measured by Google Maps • Aside: Was the removal of Marino and Marino Rocks stations from the Seaford timetable an attempt to reduce patronage at those stations so that the DPTI can close them in future? This would be in line with opinion that stations need to be far apart for timetable efficiency. The distance between Marino and Marino Rocks stations is 624.44 m. Removing stations along a line, removes access points and forces people to use

	<p>motorised traffic.</p> <ul style="list-style-type: none"> State Government planners have been informed by the National Heart Foundation’s guidelines on ‘walkability’ which recommends that
WALKABILITY	
<p>The DPTI is satisfied that a rail service is accessible with a catchment zone of 800 m.</p>	<ul style="list-style-type: none"> A walkable catchment is generally defined as the area covered by a 5 minute walk (about 400 metres). <i>Tonsley Park Social + Community Planning Analysis to inform Renewal SA, Dept for Manufacturing , Innovation, Trade, Resources and Energy by Jensen Planning and Design Nov 2012</i> Walking SA advises a comfortable walk to a train station should be 10 minutes; that is 800 m based on able-bodied people walking 400 m in 5 minutes. But for those of us with mobility issues, you can double that time. E.g., It takes me almost 9 minutes to wheel 400 m and longer with a poor footpath. The actual distance of a walkable catchment area for a train station is influenced by the design of the streets and how physically able people are to walk. This consideration is IMPERATIVE in Mitchell Park and Tonsley which has a significant no, of people living with disability whether it be from ageing or other causes. For people with disabilities (including elderly) I suggest, based on personal experience, that those walking times be doubled; e.g. 400 m in 10 minutes because it takes me 30 minutes to wheel my manual wheelchair approximately 900 m and many elderly people in my neighbourhood walk slower than fit, younger people. The Heart Foundation research informs strategic plans and urban design protocols for cities around Australia. It disappoints me that the Heart Foundation documents are all about walking but fails to acknowledge wheelchair users (who are classed as 'pedestrians' and use walking paths too). The Heart Foundation Guidelines about walkability makes no mention of wheelchair users or people with disabilities. The guidelines about walking speeds and distances over time are based on able-bodied assumptions. Staff from Nicolle Flint’s office (Federal Member for Boothby) advise each station serves a radius of about 800 metres and it is important for the efficiency of a rail line that these radii meet or overlap in order to make the railway accessible for as many people as possible to be able to profit the most. “Without the existing Tonsley station, it would create a ‘public transport black spot’ in Mitchell Park” and the office was very concerned about that. “A Heart Foundation review argued that to maximise the potential health benefits a range of factors needed to be considered with density, including: The physical environment and the geographic location. The socio-cultural make up of residents and the local neighbourhood and ensuring building designs and amenities are suited to the population (e.g. families with children). (Giles-Corti B, Ryan K, Foster S. <i>Evidence review. Increasing density in Australia: maximising the health benefits and minimising harm.</i> Melbourne: National Heart Foundation of Australia, 2012.) “Research indicates that walking for transport is encouraged when the street network is more connected, obstacles are kept to a minimum, and there is no requirement to cross major roads.

	<p>(National Heart Foundation of Australia. <i>Position statement: the built environment and walking</i>. Melbourne: National Heart Foundation of Australia, 2009.)</p> <ul style="list-style-type: none"> • Mitchell Park and Tonsley are increasing in density with infill development. "A key principle in planning for increased residential density is ensuring accessibility to public transport." (Urbis Australia. <i>Unlocking smart growth in Australia's capital cities</i>. 2014)
ISSUES WITH CURVED TRACK	
"We cannot have a platform on a curved stretch of track"	<ul style="list-style-type: none"> • There are stations currently in service on the Adelaide Metro rail network where the platforms are on curved sections of track and being serviced by the modern electric railcars; e.g. Mitchell Park station is curved and trains do not need extra rail officers to service Mitchell Park station. • There are hills stations where the platforms are curved. • Redesign Flinders Link so the track is straight where we need it to be straight.
"Curved platforms create line of sight problems for train drivers"	<ul style="list-style-type: none"> • The electric trains have cameras installed on each railcar so the driver can see the length of the train on the outside. • The electric trains have cameras installed inside the cabins of each railcar to see the length of the train on the inside. • <i>The A-City will seat around 240 passengers with standing room for another 300. The wide-body train will provide more room for passengers and a host of other features, including:</i> <ul style="list-style-type: none"> - safety CCTV covering the rear, front and interior - maximum speed of 110 kph. <p>Source: <i>New Connections</i> http://dpti.sa.gov.au/newconnections/article?item=217 accessed 8 March 2018</p>
"Train drivers need to see what's happening on the platform further out from the train, not just along the length of the train." -Train driver, 25 July 2018	<ul style="list-style-type: none"> • There's simple technology that's relatively inexpensive that's been used successfully for years – wide angled mirrors! • What other camera/wireless technology has been investigated? • There are already security surveillance cameras in use on railway platforms – how about making that information accessible to the train driver? • Reintroduce rail guards or have a 'manned' station. This would also improve passenger perceptions of safety and encourage more passengers.
LACK OF INFORMATION FROM DPTI	
<i>The project will include:</i> * Removal of the existing Tonsley Station and construction of a new station adjacent to the Flinders Medical Centre; Australian Government Department of Infrastructure and Regional Development, 13 May 2016	<ul style="list-style-type: none"> • The DPTI has known the intention to remove Tonsley Station since before 13 May 2016 but gave no notice to local residents and users of Tonsley station - no opportunity for the public to respond or make submissions during the planning phase. The project had already moved to the pre-construction phase by the time the removal was announced. • We are told that information cannot be shared with residents because of "commercial in confidence" rules but if there are no contractors hired yet, how can there be any commercial contracts in place yet? • If the work has not gone out to tender yet, and tenders have not been announced, who does the information need to be 'in confidence' from?

- | | |
|--|---|
| | <ul style="list-style-type: none">• If there are contracts currently being negotiated, why doesn't the DPTI say that and be honest? |
|--|---|

Residents Calling to either:

- a) keep Tonsley station as an elevated station
- b) relocate the Tonsley station to the vacant land at the southern end of the Tonsley campus
- c) merge the Clovelly Park & Tonsley stations to a new station located 500 m south of the current so that the southern end of the platform and pedestrian crossover are as close as possible to the southern corner of Woodland Rd, Mitchell Park. The section of track is straight.

DPTI has not been forthcoming with design details that residents need in order to have informed discussion.

Previous proposals have highlighted that the new section of track will need to be duplicated in order to allow frequency of 15-minute services on the spur line. The current design has a single track, limiting future expansion of the line. (The catchment of the Tonsley Railway Station at Lynton Ave includes people from Eden Hills, Bellevue Heights, Bedford Park, Darlington, Flagstaff Hill, Aberfoyle Park, Craighburn, Happy Valley, Reynella & Morphett Vale, Sturt, Seaview Downs etc.)

World Class Urban Design:

It respects the needs and aspirations of the community that lives and works there

It creates opportunities for people to prosper and local businesses to thrive

It is well connected to surrounding areas

There is a range of transport options, including public transport, walking and bicycling

It is connected to places with jobs, schools, shops, facilities and services

It meets different people's needs, including a diversity of housing options

Things are built to last, where appropriate – they're made of robust materials, are designed well and there's a sense of quality

It considers current and future activities and can evolve and adapt over time

It feels comfortable to walk through, sit, stand, play, talk, read, or just relax and contemplate

You can be yourself and feel included as part of the community

It feels safe and secure, even at night or on your own

It prioritises people walking or riding before vehicles

It is easy to get around on foot, bike, wheelchair, pushing a pram or wheeling luggage

It encourages physical activity and social interaction, and promotes a healthy lifestyle

It integrates with the physical environment, including its topography, biodiversity, landscape and views, existing streets and buildings, and infrastructure

It incorporates the heritage, culture and historical context of surrounding communities and places

It is compatible with the surrounding social and economic activities

It acknowledges that urban design is primarily about creating places for people

It engages people in the development of their community

It champions universal design and accessibility

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Removal of Tonsley Station (near Sturt Rd)

Undermines Four of SA Government's Seven Strategic Priorities

South Australian Government "Seven Strategic Priorities"

<http://www.priorities.sa.gov.au/home>

1. Creating a vibrant city
2. An affordable place to live
3. Every chance for every child
4. Growing advanced manufacturing
5. Safe communities, healthy neighbourhoods
6. Realising the benefits of the mining boom for all
7. Premium food and wine from our clean environment

**Those underlined will be undermined by the removal of Tonsley Station by Flinders Link*

Priority as described on State Government web site	Effect of removing Tonsley Station
<p>1. Creating a vibrant city that energises and excites http://www.priorities.sa.gov.au/content/creating-a-vibrant-city</p> <p><i>Adelaide is consistently rated as one of the world's <u>most liveable cities</u></i></p> <p><i>It is recognised internationally for its <u>arts, festivals, fine foods and wine</u>.</i></p> <p><i>It has an <u>advanced economy</u>, world-class <u>universities</u> and a flourishing multicultural heritage.</i></p>	<p>Not very vibrant to have entire sectors of society unable to participate</p> <p>The Flinders Link infrastructure goes against the Vibrant City Priority by <u>removing access</u>, by making transport <u>less affordable</u> and in turn, isolating people in their homes with <u>unhealthy</u> outcomes!</p> <p>A city is <u>NOT Liveable</u> if an entire section of society cannot access the basic services of public transport, education, health care and employment opportunities</p> <p>Shameful embarrassment, cruel and discriminatory that <u>arts, festivals, fine foods and wine</u> are not to be enjoyed by people with disabilities because DPTI does not have full social inclusion in mind when designing their projects like Flinders Link</p> <p>Disability occurs across all cultures and age groups. Removal of public transport access hinders access to <u>universities</u> for South Australians with disabilities. It is <u>not an advanced economy</u> when sectors of society cannot take part.</p>

ATTACHMENT E

Priority as described on State Government web site

Effect of removing Tonsley Station

It has many of the qualities that mark out great cities.

Yet many of our young people are still leaving our state

If we want people to stay here we must show that we can accommodate more lifestyle and career choices

To achieve this, Adelaide needs more people living, working, investing, visiting and spending time in the city.

Vision for the Future

People from all cultural backgrounds feel welcome.

The true measure of any society can be found in how it treats its most vulnerable members.

“The moral test of government is how that government treats those who are in the dawn of life, the children; those who are in the twilight of life, the elderly; those who are in the shadows of life; the sick, the needy and the handicapped.” - Hubert Humphrey, former U.S. Vice President (1965-69).

“The test of our progress is . . . whether we provide enough for those who have too little.” - Franklin D. Roosevelt (32nd U.S. President)

Young people do not respect governments that are contradictory and hypocritical. If they feel that their needs are not being catered for, they will go to where their needs can be met. If you say that you want to encourage people to use public transport and discourage cars and, in the same breath, unfairly remove access to public transport for those who most need it, young people will see the disconnect and hold a negative view of the State of South Australia. **Why would they want to stay where the needs of communities are not met or acknowledged? Why would they want to stay where they have no say or control over their future? The discontent amongst our youth is real.**

People with disabilities can have more lifestyle and career choices when they have transport available to them so they can access education and healthcare so they can reach their potential. Removing access to affordable independent transport removes that choice. Removing access to transport from people with disabilities is discriminatory.

If you want more people spending time in the city, don't take away their access to transport and don't isolate them in their home or immediate streets

South Australia definitely does not make people with disabilities feel welcome when it removes existing supports and makes life harder for them and discriminates against them by violating their human rights. The disability community has a valuable cultural viewpoint to offer.

Priority as described on State Government web site

Effect of removing Tonsley Station

It is renowned for its festivals, cultural life and sporting events.

People with disabilities cannot participate in these festivals, cultural life and sporting events .if they have no access to transport. The Tonsley train station is essential access.

I am a person with disability who currently enjoys participating. During the year I supported the Tour Down Under, Adelaide Oval sporting fixtures, Etsy Markets, music performances, gallery exhibitions and the Maker Faire. I have participated in Maker Faire as a visitor, exhibitor and volunteer. People with disabilities have a lot to contribute to the economy and social vibrancy of these events. Access to the train service allows me to participate independently and more often. There have been many events I wanted to participate in but was unable to get there due to transport issues; e.g. no weekend service on Tonsley line.

Infrastructure and housing development reinforce the unique qualities that make Adelaide accessible, healthy and affordable.

What infrastructure? Why dismantle existing infrastructure that is being used and is vitally needed?

City squares and laneways are alive with people of all ages, enjoying public art, live music and an exciting choice of outdoor dining venues

People of all ages have disabilities. It is hard to enjoy art, music and dining venues when there is no wheelchair access to premises or accessible toilets. Too many venues and eateries do not provide accessible facilities. These venues are missing out on the economic benefits that patronage by people with disabilities and their associates can bring.

Adelaide supports an advanced and diversified state economy providing stimulating educational opportunities and careers for South Australians and attracting talented people and business investors from around the world

In the modern era of social inclusion and equity for people with disabilities, it is not advanced or equitable to be denying people with disabilities access to public transport by removing access where it already exists. This does not provide stimulating educational opportunities and careers for South Australians with disabilities. It reduces them. It is a retrograde step.

2. An affordable place to live

Removal of Tonsley Station and access to public transport will make life less affordable for those who rely on it.

<http://www.priorities.sa.gov.au/content/an-affordable-place-to-live>

Priority as described on State Government web site

Effect of removing Tonsley Station

The quality of life for South Australians is influenced by the rising costs of housing, transport and utilities ... The planning of our neighbourhoods and design of our homes can also help reduce the cost of living and improve our general wellbeing.

Vision for the Future

People enjoy a high quality of life, regardless of income, and feel that they have control over their lives ...

Homes and neighbourhoods are designed to conserve energy and water to help reduce demand and costs.

The DPTI is undermining the planning of our local neighbourhood with Flinders Link in its current form.

As a person with a disability I feel that I have little control over my life as my independence is being taken away and my ability to maintain health and function have been threatened (e.g. closure of hydrotherapy services at FMC, loss of train service, reliance on private transport to get to FMC medical appts.)

It doesn't conserve energy if I need to use taxis or private transport to get to the train. I have little energy of my own to spare due to disability –even if the footpaths were perfect, by the time I have wheeled to FMC or Clovelly Park, I will have no energy left for the train journey itself! Taking the train away will COST MORE for ME and the STATE GOVERNMENT – more in Access Vouchers, subsidy schemes and transport.

3. Every chance for every child

Removal of Tonsley Station will remove opportunities for children of families with disabilities. This includes children with disabilities and children who are young carers to either siblings, parents or another relative with a disability. Young carers are disadvantaged socially and financially already because of their caring responsibilities. This disadvantage affects educational and career opportunities. Families that rely on Carer Allowances and Disability Pensions struggle with poverty and rely on public transport as affordable access to education, training and work. Removal of Tonsley Station will profoundly affect the future chances of children in Mitchell Park / Tonsley suburb where many people with disabilities have been housed due to the existing access to the rail service.

<http://www.priorities.sa.gov.au/content/every-change-for-every-child>

Priority as described on State Government web site

Effect of removing Tonsley Station

... The single most important factor influencing a child's intellectual and social development is the quality of parenting and care they receive and the quality of the home learning environment... Every Chance for Every Child is about finding better ways of supporting and strengthening South Australian families and children to achieve their best.

Vision for the Future

South Australia is recognised nationally and internationally as a family and child-friendly state – a great place to live and raise healthy and creative children

Mitchell Park has many single parent families who need all the support they can get, including access to affordable transport. I am a single parent with a disability raising a family of three children. The Tonsley train station is our access to the wider community and social, cultural and educational opportunities. Without it, I cannot independently give my children the same experiences that other families take for granted such as visits to places of interest or special events. The Tonsley train station is a vital support for my family and many other families in Mitchell Park. The **Mitchell Park Kindergarten** uses the Tonsley station for educational excursions; e.g. Cumberland Park Kindergarten. The children are tiny and cannot easily walk almost a kilometre to and from Clovelly Park station. The students of **Suneden Specialist School** (a school for students with disabilities) also use Tonsley station "all the time"* for educational purposes. It is not child-friendly to deny a segment of the community access to education and opportunities to socialise.

The train is much better for prams and young children. Single parents struggling with young children and babies and toddlers in prams do not need to wake and remove babies from their prams in order to fold the pram for boarding, unlike busses. If you keep Tonsley station for wheelchair users you are also helping young children and teachers at local schools and Kindergarten and adjoining neighbourhood centre which offers social and educational programs for residents in the region.

Priority as described on State Government web site

Effect of removing Tonsley Station

All children can access high quality, affordable child care and preschool offered by trained staff using a rigorous curriculum.

Children and families with disabilities will not be able to access affordable child care and preschool services at Mitchell Park Kindergarten if they cannot get there. The Tonsley station is only two blocks away from this Kindergarten and trains will allow wheelchair users from more northerly parts of Mitchell Park and beyond to access Mitchell Park Kindergarten.

Schools are community hubs for services aimed at supporting families and children from the time they are born.

If schools are community hubs for services that support families, why are you taking away transport to our local social hubs? (Mitchell Park Kindergarten/community child care centre/neighbourhood centre complex, Clovelly Park Primary School, Suneden Specialist School, Sacred Heart Middle School, Mitchell Park Sports and Social Club, Tonsley Innovation Precinct.)

The state has realised the benefits of investing early in children and families and has saved from having a safer community with better health outcomes, less inequality, improved social cohesion and greater opportunities for the next generation

How does removal of access to public transport create less inequality, improved social cohesion and greater opportunities for the next generation? Flinders Link without Tonsley station at Sturt Rd will reduce social cohesion, reduce opportunities and widen the inequalities for families in Mitchell Park living with disabilities. **Young Carers and their families are vulnerable and removal of public transport will reduce the opportunities for these young people.**

5. Safe communities, healthy neighbourhoods

Exclusion of Tonsley Station does not promote a safer or healthier community in Mitchell Park & Tonsley.

It will isolate people in their homes or force them into cars making them less physically active.

<http://www.priorities.sa.gov.au/content/safe-communities-healthy-neighbourhoods>

Flinders Link is NOT well-designed because it overlooks the needs of the local community and discriminates against people with disabilities. Who's the 'we' who are supposed to be 'encouraging' and 'helping' people live healthier lives? The DPTI is doing the opposite.

Priority as described on State Government web site

Effect of removing Tonsley Station

Our crime rates have fallen significantly over the last decade yet the fear of crime remains high ...

Residents of Mitchell Park have a right to be fearful. **Removal of Tonsley Station will force people to use Clovelly Park station at Alawoona Ave, a section of Mitchell Park which is notorious for serious crime:**

<http://www.adelaidenow.com.au/news/law-order/residents-living-in-fear-after-petrol-attack-at-mitchell-park-in-adelaides-southern-suburbs/news-story/65d68ceea2ab3782f2cdb241d7d89970>

"RESIDENTS in a southern suburbs neighbourhood say they are living in fear ... They say the incident – in Alawoona Ave, Mitchell Park – is the latest in a string of violent altercations in the street.

Those living in the street say the thoroughfare is riddled with drug issues and violence.

One resident, who did not wish to be named, said she felt unsafe living in Alawoona Ave. "

etc.

Many of our neighbourhoods have been designed for cars.

The State Government admits that neighbourhoods have been designed for cars. This supports my case about the footpaths between our home and Clovelly Park station being too difficult and dangerous for wheelchair users to manage independently. I cannot always drive a car and even then, I cannot drive far or for long. We are a one car family and rely on public transport.

They do not promote people coming together in public spaces, or physical activity, and so contribute to lifestyle diseases like obesity.

The State Government says neighbourhoods that do not promote people coming together in public spaces, or physical activity, contribute to lifestyle diseases.

Removal of Tonsley station will restrict my ability to do these things.

Priority as described on State Government web site

Effect of removing Tonsley Station

If we can make our neighbourhoods visibly safer, and encourage more people to spend time outdoors in local playgrounds or parks or socialising with friends or neighbours, we will help people live healthier and happier lives.

Vision for the Future

South Australia's neighbourhoods are safe and welcoming.

People can live active and healthy lives and feel part of the community.

Neighbourhoods are friendly, places that make it easy for people to:

Exercise regularly and choose nutritious food

Walk or cycle to local services, and take buses, trains or trams to larger centres

Travel safely on our roads

The loss of independent transport DIScourages me from socialising with friends and spending time outdoors. The loss of Tonsley station will prevent me from doing many activities with my friends and family and will not promote a healthier or happier life for us. It will do the opposite, further isolating me in my home. The loss of opportunities to cross the tracks will prevent neighbours from socialising and accessing their local community.

My daughter will not feel safe if she is forced to walk alone approximately a kilometre home from Clovelly Park station alone in the dark for 6 months of the year when it gets dark early, especially when, as a music student, she is carrying lots of baggage (musical instruments) that impedes her full mobility and restricts her ability to defend herself or escape quickly. One cannot run away from threats when carrying such a load. Tonsley station is within 4 minutes from home reducing the time she is at risk.

I cannot live as actively and healthily as possible and cannot feel part of the community if I cannot access my immediate community. The Tonsley train station and rail service is imperative to access for me and my family and the residents of Mitchell Park and Tonsley.

How is taking an essential service like Tonsley station away from people making it easy for people to travel? Were people with impaired mobility considered when writing the sentence about walking to local services etc.?

Tonsley Station users are already exercising regularly to get to their daily rail commute. When they are forced to use cars or taxis, they will lose that regular exercise.

Mitchell Park and Tonsley residents are already walking to Tonsley station. For many, it is just within their range. They will not walk to a train station that is too far or too difficult to reach because it is out of range or uphill or with too many physical obstacles. This is already the case for Clovelly Park Station and Flinders Medical Centre.

Priority as described on State Government web site

Effect of removing Tonsley Station

Make friends and look out for each other

Feel safe and help prevent crime

Have a say in community life

Neighbourhoods are green, vibrant and there's plenty to do. Residents come from many cultures.

South Australia's neighbourhoods are a great place in which to live, grow up, have children and spend a lifetime.

One cannot make friends with people if there is no transport to reach the activities of interest.

I've been trying to have a say in community life but am not being heard or having my rights respected, adding to the feeling of having little control over one's life.

Has the State Government and DPTI forgotten the residents who come from a culture of disability?

Flinders Link will make it harder for me to raise my family by restricting and preventing our access to public transport of which we are regular users at the moment and it will increase our transport costs.

ATTACHMENT F (PART A)

PETITION TO THE SOUTH AUSTRALIAN MINISTER FOR TRANSPORT HON STEPHEN MULLIGHAN MP

KEEP TONSLEY STATION AT LYNTON AVENUE, MITCHELL PARK

(adjacent to Sturt Road, Mitchell Park & Birch Crescent, Tonsley (formerly Clovelly Park))

Petition contact person:
Jodie Pearce of 7 Hester Avenue,
Mitchell Park SA 5043

Email: savetonsleystation@gmail.com

Phone: 0403 747 163

Date petition initiated: 22 November 2017

The Flinders Link railway extension will remove Tonsley Railway Station permanently, adversely affecting the residents of Mitchell Park and Tonsley, particularly those with disabilities.

**PLEASE POSTPONE THE FLINDERS LINK PROJECT UNTIL THERE IS FUNDING TO
KEEP TONSLEY RAILWAY STATION IN ITS CURRENT POSITION
AND PROPERLY INTEGRATE FLINDERS LINK WITH THE LOCAL COMMUNITY.**







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ACCESS TO TONSLEY RAIL LINE IS ESSENTIAL FOR EQUITY FOR PEOPLE WITH DISABILITIES.

Name	Address	Signature
DAMON Pearce	7 HESTER AVE MITCHELL PARK	
THOMAS QUINN	9 HESTER AVE MITCHELL PARK	
NGUYEN THI XIM	Vietnam	
Chris McLaren	14 VEART CRT WOODCADFT	
SALLY CLARKE	32 CLYDEHOUSE RD SERRIFF PK	
Wanda Schneider	P.O Box 200 Louisa	

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savetonsleystation@gmail.com

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Name	Address	Signature
Chris Byrne	26 Burnley grove	
Olga Ershova	15 Powell St Kappy	
Michael Ourlas	2/28 Oak Ave Kappy	
Tara Madhur	57 Trowbridge Ave	
Farook Zabbou	57 Trowbridge Ave	
Noel Willson	40 Lynton Ave	
Deonie Guck-Devesa	14 Frembark Ave	
Colin Badenhorst	55 Grendal Playstaff Hill	
Dianne Jamett	3 Carlow St Sturt	
Jill Faulkner	26 Maldon Av Mitchell Pk	
Kerrin Madson	54 maldon Ave Mitchell Pa.	
Roger Creed	2 Timothy Ct Mitchell Pk	
Megan Moreton	13 Hester Ave	
LITH ANOUZI	Adelaide	
Daniel McPerson	45 Anclens Street North Adl	
Tan Yong Hui	15 Hallett Court	
Peter Dale	5 Mark Ct Midale	
Leon Eustace	10 Woodham Ct Ab Pk	
SWINTER	12 Harkin Ave Mitchell Park	
GIBYMON S.	48 PIC JEWELL ST AIB MITCHELL PK	
M. GILCHRIST	1 EMMA CLOSE MITCHELL PK	
Phuong Hoa	26 Motley Ave Fulham Gardens	
MARK WARD	MCHAREN FLAT	
Andrew Wilson	4 Birchwood Court Happy Valley	
David Munro	Playstaff Hill	
Dylan Browne	Mitchell park	

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Name	Address	Signature
Warren MANSFIELD	11 Torun Dr. Flagstaff	Warren Mansfield
Gerry MANSFIELD	11 Torun Dr Flagstaff	Gerry Mansfield
KIRA PAYNE	26 Burnley Grove, Mitchell Park	Kira Payne
Andrew O'Keefe	10 Conigley Cr, Aberfoyle Pk	Andrew O'Keefe
Brodie Stewart	4 Abbey Road, Mitchell Park	Brodie Stewart
Karen Cowte	49 Weaver Edwardstown	K.g. Cowte
M INABA MULLI	218 Ellenmore Tce Hillwood	M Inaba Mulli
Ryran McGlasson	29 Railway Tce Edwardstown	Ryran McGlasson
May Tshajis	36 Rose St Disput	May Tshajis
Michelle Scerni	5 Downey St Parkside	Michelle Scerni
PAULINE CHIRGWIN.	ABERFOYLE PARK.	Pauline Chirgwin
Tom Neill	22 Tandana Ct Happy Valley	Tom Neill
Emma Burke	9 Hayford Cres Mordialville	Emma Burke
Janine Eaton	21 St Georges Tce. ^{Belleve} Heights	Janine Eaton
Alexandra Wolfe	113 Parkmore Avenue	Alexandra Wolfe
Ryan Rowstan	unit 50 Flinders uni	Ryan Rowstan
JESS PALEY	55 BRADLEY GR MITCHELL	J. J. Paley
Helena Weiber	5 Greenwillow Cr Happy Valley	Helena Weiber
Callan Berry	20 Vauduse Drive Happy Valley	Callan Berry
DAVE HORIC	350A. STURT R TONSLEY	Dave Horic
Charles Xu	10 Aik Ave	Charles Xu
Shayail	4 Gunn Street, O'Halloran	Shayail
Nola Merritt	16/34 Daisy Ave, Mitchell Park	Nola M. Merritt
Akiyo Soyama	13 Quirk Road, Mitchell Park	Akiyo S
Janet Koles	14 Hester Ave Mitchell Park	Janet Koles

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Name	Address	Signature
Mike Koles	4 Hester Ave Mitchell Pk	x Koles
VANERIE GALLEN	6 HESTER AVE	V. D. Galen
Toni Baile	Coromandel Vly	Signature
ANNA CURKOWKE	18 M th MACQUEEN R	Anna Curkowska
Pam. Kenyon.	31 Lynton Ave. M. P.	Pam Kenyon
Mark Hunt	59 Myrtle Rd Hawthorn	Mark Hunt
Melissa Meixner	4 Harkin Crt Mitchell Pk	mmeixner
PETER SMITH	30 LYNTON AVE MITCHELL PK.	Smith
Shawn Smith	30 Lynton Ave Mitchell Pk	Smith
eg Butcher	1 Hester Ave Mitchell Pk	eg
Victoria Skinner	3/51 Bradley Couse Mitchell Pk	Skinner
David Mitchell	16 Earle R. F/Staff Hill	DM
Shannon Pearce	7 Hester Avenue Mitchell Pk	Shannon Pearce
Susan Wyatt	12 Timothy Court Mitchell Pk	Wyatt
Jenna Prizbilla	Port Willunga	Jenna Prizbilla
Istvan Heinrich	Mitchell Pk	Heinrich
Kaitlin Barchers	914A MARION RD STURT	Kaitlin Barchers
Helen Sharp	5, FURNESS CRT BLACKWOOD	Helen Sharp
Ellen Frouser-Barbour	290 Cross Rd, Clarence Pk	Ellen Barbour
Angela Mare	99 Henley Beach Rd	Angela Mare
James Strong	14 RINGFIELD AVE	James Strong
Emmi Moss	9 Ashman Ave Penrith	Emmi Moss
Bella Hriskin	72 ascot avenue valepark	Bella Hriskin
Helen Hriskin	" " " "	Helen Hriskin
Jordon Lee	17 Scenic Drive, Old Noarlunga	Jordon Lee
Louise Brayburn	1 Parkway Woodville Gardens	Louise Brayburn

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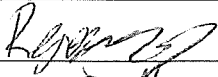

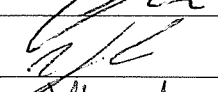

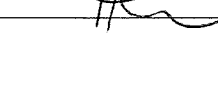
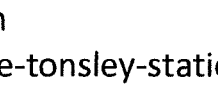
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Name	Address	Signature
Rebecca Gilbertson	Colonel Light Gardens	
Antonette Albanico	Seacombe Gardens	
Natalie Parrugia	maslin Beach	
YVONNE CARPENTER	SOMERTON PARK.	
Skye Ellorol.	Trott park	
Hayley Swoti	St Marys	

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Name	Address	Signature
SHARON TUTTAN	ELURIA CRT SHELDON PK	
Marnie Trebilcock	143 RIDLEY GROVE ^{FERRY DEN}	
Paul Felks	41 Piacentia Rd	
L Millard	40 Lynke - R ^{Mitchell PK}	
Alexa McArthur	1 Adeline Ct Marion	
Louise McArthur	1 Adeline Ct Marion	
VARINDERPAL DHILLON	3 Brookside Walk, Albany Beach	
JUDY STANOVSKIS	3 Fournelle MARION	
Margi Reeds	42 Abberville To Marion	
Nadmi Vlaholias	5 St Peters Glenelg EAST SA 5045	
Susan Burns	360 Dumbarton AVE Mitchell Pk.	
T. BOURQUE	25 Kelsey Ave Mitchell Pk.	
CARLEEN BILLINGHURST	61 BRADLEY GROVE PARK Mitchell Pk.	
JOSEPH de Plee	PENRITH CT. METCALLE	
SEFF ILLMAN	TWOODLAND RD.	
LORETTA MAHOON	114 Ford Av Toileys Pk.	
KAREN STOCKMAN	5 Oval Rd, Old Reynella	
Jayden Austin	11A Furner Rd, Mitchell Park	
Nicola Paplucci	11A Furner Rd, Mitchell Park	
Shane Douglas	Gilbert Rd, Christies Beach	
Lisa Smith	10 Albert Tce, Vale ^{Morpheh}	
Anne Britton	7 OLD MAIN STREET	
XXXXXXXXXX		
KYM BEST	MARION	
Luke Johnson	LINCOLN AV. STURT	

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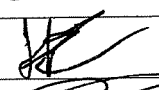

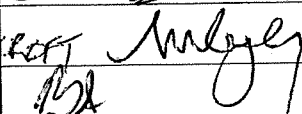

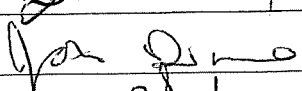
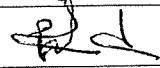
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ACCESS TO TONSLEY RAIL LINE IS ESSENTIAL FOR EQUITY FOR PEOPLE WITH DISABILITIES.

Name	Address	Signature
Holly Castle	20 Lamark ave, Mitchell park	
Koki Kagayudi		
Tom Quigley	4 Hassell Court, Woodcroft	
Melissa White		
Jon Sim	3/310 Kennedy St	
PAT MUFFATA	21 Portrush Rd. Payneham	

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Name	Address	Signature
Kelly Thomas-Prime M. Williams	20 Orchard Ave Everard Pk 5 Jervois, Tea ^{MARINO} 5049	
Kathryn Young	26 Birman Cres Flagstaff Hill	
Sharron Samels	292 Blackwood Rd CROMER	
LEON TREGENZA	6 LAWSON RD. HAPPY VALLEY	
NATASHA BENNETT	450A BELAIR RD BELAIR, 5052	
GREG PEARLE	12 MAYFIELD ST. OLD ZEYNELLA	
Lyn Stephens	11 KOLLERS RD HOVE	
Casper Stephens	11 KOLLER RD, HOVE	
Lucy Stephens	10 GILBERTSON ROAD	
Genevra Challans	11 KOLLER RD HOVE	
Kewansyah Yogan	19 MYRTLE GROVE	
Evi Kleemann	15 Fairholme Rd 5th Brighton Eickmann	
Siga English	28 Norman St. St. Marys 5002	
M. Przygorski	8 Moore St. Windsor Gap	
K Lecari	Cowper Stur B/Hill	
Laetta Smyth	Empire Rose St Morphettville	
Kathy Liles	28 Ophir Crescent Sealford Park	
Glenda Parkin	10 Harkin Avenue Mitchell Pk	
Jim IRONSIDE	49 DAVEY RD F/HILL	
Kath HARGREAVE	5 Dungan St MARION	
Mai Antoine	3/63 Wilson St, Mansfield Park	
Cortesse Razon	258 Diagonal Rd, Oaklands Pk	
Carocee Koles	7 Hester Ave Mitchell Pk	
MRE.F. MURPHY	2 Copley St Brook Haven	

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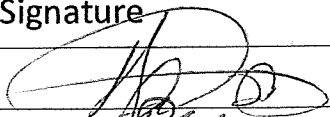

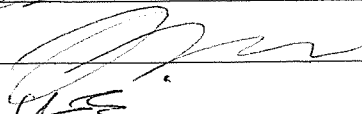
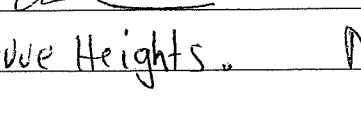

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Name	Address	Signature
ALAN TODD	13 FERWISSON AV BLACKWOOD PARK	
Nathan Starling	87a Thomas St, St Leonards	
Abe Oyevaar	500 Morphett rd, Warialda	
FRANCESCA FAIRBURN	6 STEVENS AVE. PARA HILLS	
Chelson Baird	38 Leich cresc. Stoddart Park	
Nahir Aranibar	19 Highland Dr, Bellevue Heights	Nahir A

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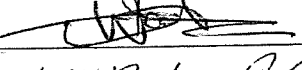

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When Flinders Link is complete, the new station will be over 650 metres away, uphill, at Flinders Medical Centre (FMC), Bedford Park. Many pedestrians cannot walk or wheel that distance, especially when it is an uphill journey all the way. The distance between Clovelly Park and FMC stations will be approximately 1.54 km.

For many wheelchair users, the train service is the ONLY ACCESSIBLE MODE of independent, affordable, public transport (as busses are inaccessible to many). Remove Tonsley station, you remove people's independence by taking away the option of public transport altogether.

ACCESS TO TONSLEY RAIL LINE IS ESSENTIAL FOR EQUITY FOR PEOPLE WITH DISABILITIES.

Name	Address	Signature
Jeff Lyons	36 Boronia Ave ^{Caro Valley}	
HELEN LACE	15 ANGLESEA LANE SEAFORD RISE	H LACE
BEVERLY QUINN	38A MAXWELL AVE. ^{EDWARDS TOWN}	B Quinn
Deanna Nates	39 Almona Ave Mitchell Park	
Jake Lock	30 B Meadon Ave, Mitchell Park	J Locke
Abdul Syman	5 Birch cres, clovelly park	

#savetonsleystation
savetonsleystation@gmail.com

<https://www.change.org/p/sa-minister-for-transport-save-tonsley-station-save-our-access-to-public-transport>

**PETITION TO THE SOUTH AUSTRALIAN MINISTER FOR TRANSPORT
HON STEPHEN MULLIGHAN MP**

KEEP TONSLEY STATION AT LYNTON AVENUE, MITCHELL PARK

(adjacent to Sturt Road, Mitchell Park & Birch Crescent, Tonsley (formerly Clovelly Park))

Petition contact person:
Jodie Pearce of 7 Hester Avenue,
Mitchell Park SA 5043

Email: savetonsleystation@gmail.com
Phone: 0403 747 163
Date petition initiated: 22 November 2017

The Flinders Link railway extension will remove Tonsley Railway Station permanently, adversely affecting the residents of Mitchell Park and Tonsley, particularly those with disabilities.

**PLEASE POSTPONE THE FLINDERS LINK PROJECT UNTIL THERE IS FUNDING TO
KEEP TONSLEY RAILWAY STATION IN ITS CURRENT POSITION
AND PROPERLY INTEGRATE FLINDERS LINK WITH THE LOCAL COMMUNITY.**





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Name	Address	Signature
Michelle Kacasia	Seacliff Park	
Nadia Jacobai	Henley Beach	
Sylvia MASO	HARRY VALLEY	
Wayne Stevens	Aberfoyle Park	Wayne Stevens
Belinda Odell	Aberfoyle Park	
Penny Elliott	Aberfoyle Park	P A Elliott

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 (adjacent to Sturt Road, Mitchell Park & Birch Crescent, Tonsley (formerly Clovelly Park))

Name	Address	Signature
Jeff Elliott	Aberfoyle Park	
Peta Nivelstein	Wynn Vale	
Christina Raymond	Hallett Cove	
Kiera Barge	Munno Para West	
Gh Montagu	ABERFOYLE PARK.	
Anne Lytle	Aberfoyle Park	
BRIAN LITTLE	ABERFOYLE PM	
CHRIS CIBLEY	EDWARDSTOWN	
Linda Sibley	Edwardstown	
Paul Clark	Mitchell Park.	
Josh Rogge	Mitchell Park	
Asha Senn-Habib	Oaklands Park	
Gaena George	Mr Sturt	
Rhiannon Burge	Glenelg North	
Sally Benbow	m/valo	
Maj LIPARI	SHESTER AVE Mitchell	
Peta Simeon	SEMPERPARA PARK	
JEFF MARSHALL	SEMPERPARA	
Gerardo Mendoza	Mitchell Park	
YINZI HE	Mitchell Park	
Tyson Frick	Christie Downs	
Walter R. J. Eglinton	Mitchell Park	

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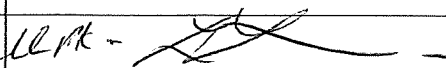
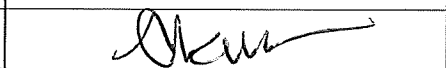

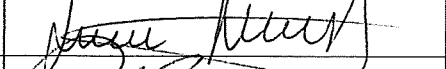
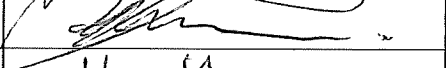

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Name	Address	Signature
Lucy Lipari	5 HESTER AVE MITCHELL PARK	
Alan Gaps	New Port, SA	
Alex Pantazopoulos	Northfield SA	
Fran McInerney	Aldinga Beach.	
Kerryanne Roran	Noarlunga Downs	
Von Lorenz	Brompton SA	

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PETITION TO THE SOUTH AUSTRALIAN MINISTER FOR TRANSPORT

HON STEPHEN MULLIGHAN MP

KEEP TONSLEY STATION AT LYNTON AVENUE, MITCHELL PARK

(adjacent to Sturt Road, Mitchell Park & Birch Crescent, Tonsley (formerly Clovelly Park))



Signatures crossed out are from people who signed the petition again replacing RAH with their suburb.

Name	Address	Signature
NICK SYLIANOU	10 KELLY GROVE MITCHELL PARK	[Signature]
TRIX MATSAY	ROYAL ADELAIDE HOSPITAL	[Signature]
Gail Clover	Royal Adelaide Hospital Gairloch	[Signature]
Patrick Imaysay	Royal Adelaide Hospital	[Signature]
Princy Shah	Royal Adelaide Hosp	[Signature]
Steve Kerridge	RAH	[Signature]
Fran McHenry	RAH	[Signature]
Alicia Weisman	RAH	[Signature]
T. Daven	RAH 2G	[Signature]
Ar [unclear]	RAH 2G	[Signature]
V. Pearson	RAH 2GW1	[Signature]
T. Kent	RAH 2GW1	[Signature]
D. Trethke	RAH 2GW1	[Signature]
A. Pantazopoulos	RAH	[Signature]
[Signature]	RAH	[Signature]
Ellen Burns	RAH	[Signature]
Deborah Barker	RAH 2FC	[Signature]
M. Kimson	RAH 2FC	[Signature]
S. Wright	RAH 2FC	[Signature]
B. Robinson	RAH 2GB	[Signature]
ALBIN JOHN	RAH 2FC	[Signature]
Alex Jovic	RAH 2GB	[Signature]
Jasmin Fernandez	RAH 2B	[Signature]
Fate Singh	RAH	[Signature]
Edwin Pielas	RAH	[Signature]
Rebecca Lewis	RAH	[Signature]

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Name	Address	Signature
Jordan	200th Finslan	Jordan
J. Cameron	5 th Plympton	J. Cameron
C. Lam	EDWARDS TOWN	C. Lam
R. SAMUELS	256 Sir Donald Brad. Drv.	R. SAMUELS
Y. SANG	Klemzig	Y. SANG
Gemma Wilson	Pasadena	Gemma Wilson
M. Caballes	Hendon	M. Caballes
Mimi Mpozi	Clearview	Mimi Mpozi
TAMMY BORNHOEFT	TORRENS PARK	TAMMY BORNHOEFT
Sajina Rup	5/17 birkailla TLE, plympton	Sajina Rup
Cassie Tiedtke	Ethelton	Cassie Tiedtke
Gabrielle Flanagan	Plympton	Gabrielle Flanagan
Janice Ferran	HECTORVILLE	Janice Ferran
Ann Lipni	Sempton	Ann Lipni
Chris Impagnatiello	Semaphore	Chris Impagnatiello
PATRICK IMAYSAY	Parafeld Gardens	PATRICK IMAYSAY
TERON PAUL	CRAFERS WEST	TERON PAUL
Gail Clover	Magill	Gail Clover
Abbey Reher	Flagstaff hill	ajelcher.
TERESA SULLIVAN	North Plympton	TERESA SULLIVAN
PATRICIA IMAYSAY	Adelaide	PATRICIA IMAYSAY
LIANA GIRVIN	ST MARYS	LIANA GIRVIN
Rebecca Story	MARINO	Rebecca Story
Lynde Aron	Brackney	Lynde Aron
E. Garcia	Klemzig	E. Garcia
Peter Scaleri	Kidman Plc	P. Scaleri

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Name	Address	Signature
Sarah Brown	Burton SA.	
Katherine Campbell	Seachiff Park	
Angelique Tzanakis	Hawthorn SA	
Hoa Chau	North Adelaide	
Lisa Penny	Kent town	
JINSH SAKARIA	MACILL	
Amy Cimicani	modbury Heights	
ARYA MUKUND	SALISBURY	
L. Granger	Woodville	
Tshwoni SHRESHA	Wood Mansfield Park	
Mel Pitt	9/55 Grasswren Way	
Charlie Lipan	15V ^{Murrayson Lakes} North Adelaide ^{Medbury}	
Sora Cant	Norwood	
Karin Lynch	Pasadena.	
Yvonne Conthwaile	modbury	
Blingshaw Ipaty	30 Hillmoss	
FIONA GARRETT	ADIELADE	
SALLY-ANNE GARRETT	ADIELADE	
Navina Phyal	Nosthfield	
Linda Rusten	Munne Para.	
Fan Zhang	Camden Park	
Brenton Bert	North Adelaide	
Domenico Trimboli	Woodville South	
Maria Trimboli	Woodville South	
Lorena Baylar	Netley	

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Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Glenda Lee		SA	5008	Australia	22/11/2017	I am a wheelchair user and have many friends who are wheelchair users in Mitchell Park. Bus travel is out for me as it is too rough so trains are the go. Removing Tonsley station will be a huge disadvantage to us. We are already shut out of lots of places so to remove access is a retrograde move!!
c robinson	Carlisle	England	CA4 0DG	UK	22/11/2017	Everybody needs access to public transport.
Ann-Marie Loebel		SA	5045	Australia	22/11/2017	I support independence not increased dependence
Carey Scheer		SA	5068	Australia	22/11/2017	I'm signing because the right and freedom to be able to travel and get around is vital for everyone.
Sharon Hazel			4017	Australia	22/11/2017	Fairs fair....Everyone should have accessibility and retain their independence.
Lynne Johnston		SA	5290	Australia	22/11/2017	I do not believe it is right to close the Tonsley Station, too many disabled and elderly residents depend on this station.
Andi Sebastian			3056	Australia	22/11/2017	I know the Tonsley station well and when I ran my business, had a colleague who uses a wheelchair who lived near and used that station. I am shocked that the SA government would take a step that will lessen affordable transport for a significant community of vulnerable people including families with children, older people, schoolkids and people with mobility difficulties including those using a wheelchair. Please reconsider.
Jacqueline Evans			4403	Australia	23/11/2017	People need access

ATTACHMENT F (PART B)

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jacky Chant	Mitchell Park	SA	S043	Australia	23/11/2017	So wrong to deny those of us who use wheelchairs appropriate travel options. Certainly not social inclusion.
Joel Dawson	Beaumont	SA	S066	Australia	23/11/2017	this shit aint good
Debra Schroeder			S1S	Australia	23/11/2017	Leave the station there, if customers are using it that's a no brainer!
Dr Caroline Ellison	Singapore		5062	Australia	23/11/2017	Why can't we have both, don't disadvantage those who need Tonsley station
Jodie Pearce	Mitchell Park	SA	S046	Australia	23/11/2017	The wheelchair seating clinic is adjacent to Woodville railway station. Access to Tonsley station means I can catch the trains the entire way and do it independently. An Access Cab will cost me around \$40 each way to attend these necessary appointments. \$80 is a huge proportion of a meagre disability support pension! I cannot afford to use taxis on a regular basis, even with SATSS vouchers.
Joanne Perkins		SA	5108	Australia	23/11/2017	It is needed by the community
Elle Gregory	Coonawarra	SA	S263	Australia	23/11/2017	Public transport is required to support the community.
Adrienne Kajewski		SA	S161	Australia	23/11/2017	I want to stand up and be counted.
Ann Wharldall		SA	S016	Australia	23/11/2017	Every one should have access to public transport
Jodie Louden		SA	S018	Australia	23/11/2017	People with disabilities have limited enough choices and now the NDIS is coming in it means even more difficulties for them to be part of their community, as transport funds maybe reduced. This may result in more isolation, loneliness for people already discriminated
Scott Hissey			4S07	Australia	23/11/2017	I support access to public transport for all
Rick Neagle		SA	S068	Australia	23/11/2017	Count Me In

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Carol Sutton	Robbinsville	North Carolina	28771	US	23/11/2017	Accessible affordable public transit, don't take it away!
Romana Challans	Seacliff Park	SA	5049	Australia	23/11/2017	Disabled people will be unduly affected by this closure, as will a number of elderly residents. Buses are not a reliable option until every fleet is disability friendly. Also let's encourage bike riders and families with bigger prams! Finally trains are more environmentally friendly. The more stops the more users.
Belinda Hawker		SA	5049	Australia	23/11/2017	This is a vital station for many people. All avenues should be made to keep open.
Paul Schulz		SA	5095	Australia	23/11/2017	This station provides access to Tonsley Innovation Space.
Sue Beaumont		SA	5048	Australia	23/11/2017	Sounds like poor planning when the needs of those who are disabled are not considered.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce		SA	5046	Australia	24/11/2017	Nor the needs of the general community. There are also concerns about the loss of existing level crossings which neighbours use daily to get across their suburb and keep in touch. When I contacted the SA Department of Transport and Infrastructure in August 2016, the response was, "We'll have to get back to you on that." I have no idea about when the design plan was submitted to the funding bodies but the Federal funding wasn't confirmed until May 2017. The department must have had at least 5-8 months to amend their submission to consider people with disabilities and the social impact of the design. The lack of will to review the original engineering plan is disappointing to say the least. The DPTI say they cannot change the engineering because the trains "need a long 'run-up' and "cannot get up the hill otherwise". When I asked specifically "how long a run-up do they need?" the DPTI could not (or would not) give me a figure. I have been trying to ascertain where this 'run

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

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Sharon Leech		SA	5050	Australia	23/11/2017	Adelaide needs more public transport not less as we grow the city. People with disabilities and the elderly need to be able to be as independent as they can to be able to thrive in their lives and their community. Our current bus services are not providing a flexible or reliable service for people with disabilities therefore keeping an existing train service is really needed.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Andrew Davey		SA	5042	Australia	24/11/2017	The Tonsley line is not sufficient as it is but altering stations is ridiculous. Futhermore, there needs to be a station at the Thirza Ave. crossing. There are a lot of wheelchair/mobility scooter users in this whole part of the inner south so let's fix it now without having to retrofit later.
Paul Mccoy		SA	5088	Australia	24/11/2017	As a disabled person I agree loss of access and transport is a big issue for us all, this is a backward move
K Collins	Craigburn Farm	SA	5051	Australia	24/11/2017	It hardly seems justified to close down a service currently being offered. The proposed new station next to Flinders Medical Centre is roughly the same distance from Tonsley Station (now) as the distance between Mitchell Park and Clovelly Park stations, so they cannot argue proximity.
Jodie Pearce		SA	5046	Australia	24/11/2017	Thank you for making that point. Google Maps show that the distance between the current Clovelly Park and Tonsley Stations is 902.29 metres. Distance from Mitchell Park to Clovelly Park stations is 603 metres. Total distance from Mitchell Park to Tonsley stations is 1.54 km. From Celtic Avenue to Tonsley Station the stretch of track is 1.74 km. Using Google Maps the distance between the current Clovelly Park station and the proposed FMC station is 1.62 km. The Fed Dept of Infrastructure & Regional Development's Flinders Link page says that the extension of the Tonsley line will be 650 m long with 520 metres of elevated track.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

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Jodie Pearce		SA	5046	Australia	10/12/2017	In fact, there is no consistency of distance between railway stations on the Adelaide Metro network. Stations are as close as 600 m and as far apart as 4 km. That does not reflect any standard requirement to me!
Caroline Lloyd		SA	5075	Australia	24/11/2017	Don't make life harder for people in wheelchairs!
Margaret Flaherty			4852	Australia	24/11/2017	This needs much more consultation for a satisfactory outcome fir all users.
Bernice Wuttke	Sellicks Beach	South Australia	5174	Australia	24/11/2017	Keeping the Tonsley Railway Station will enable residents of Mitchell Park and Tonsley to access public transport. It is VITAL that members of the public that are in need of wheelchair mobility have this available. It most definetly DOES NOT require removal. As per the petition:- PLEASE POSTPONE THE FLINDERS LINK PROJECT UNTIL THERE IS FUNDING TO KEEP TONSLEY RAILWAY STATION IN ITS CURRENT POSITION AND PROPERLY INTEGRATE FLINDERS LINK WITH THE LOCAL COMMUNITY. - ACCESS TO TONSLEY RAIL LINE IS ESSENTIAL FOR EQUITY FOR PEOPLE WITH DISABILITIES.Access to the Tonsley train line is essential for Mitchell Park and Tonsley residents to access employment, education, healthcare, local services and the wider community. I would suggest strongly that this decision be reversed!
David Slater		SA	5012	Australia	24/11/2017	Removing access points will not encourage use.
John Smith			2615	Australia	25/11/2017	As a person reliant on a wheelchair I am signing in solidarity. Too often our needs are overlooked or ignored when some thought and a little compassion can make all the difference.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce		SA	5046	Australia	10/12/2017	I'm sick of people with disabilities being treated as an afterthought. We don't sit at home all day waiting for meals on wheels - we are employees, parents, students, teachers, etc. We have lives to lead and we need equitable access to services, especially public transport to fulfill our potentials.
Dr Paul Smith		SA	5174	Australia	25/11/2017	Public Transport is an important process in the reduction of Greenhouse enhancing gas emissions. Keep the Stations open and expand the network.
Natasha Hancock		SA	5163	Australia	25/11/2017	The powers that decide this kind of stuff need to stop discriminating against people with disabilities
Cat Gunn	Lower Mitcham	SA	5062	Australia	25/11/2017	train is also only accessible option for users of tricycles
Penny Finch		SA	5158	Australia	26/11/2017	Why would they close this stop when so many people would use it
Leah Eustace	Adelaide	SA	5159	Australia	26/11/2017	I feel safe at Tonsley Station even after dark as it's close to residences and a police and ambulance station. Parking will be a problem at Flinders and I don't feel as safe at Clovelly Park Station.
Danny Buchanan				Australia	27/11/2017	I care.
Jane Bange		SA	5052	Australia	28/11/2017	I think we should be able to have both stations, not one or the other. The Department wasn't keen on Millswood reopening but people are using it so it's staying. Build the new one, keep Tonsley and, if it doesn't get enough patronage, then close it. But first give it a chance.
David Lawrence	Adelaide	SA	5108	Australia	28/11/2017	Gov need to think about people with disability instead of dollars first
Lyn Burke			4800	Australia	28/11/2017	My cousin needs this facility
Philippa Dominish		SA	5064	Australia	29/11/2017	We need to be improving access to public transport for people with disabilities not taking it away!

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Maria Purvis		SA	5204	Australia	29/11/2017	I'm sick of this inept Government's stupidity.
Jenny Allen	Adelaide	SA	5016	Australia	29/11/2017	If the government wants to encourage us to use public transport then this is a "no brainer"
Elena G Cretan		SA	5089	Australia	29/11/2017	Affordable, public transport for all but especially for members of our community with disabilities is crucial to participating in and contributing to the community we live in.
Lu Liu	Adelaide	SA	5000	Australia	29/11/2017	We decided to live where we live because it's easy to access to public transport. You can decide to close or open a coffee shop or pizza place, but it's not right to remove infrastructure without consulting with local residents. I have to say I'm disgusted by this decision.
Sarah Bown	Edwardstown	SA	5039	Australia	29/11/2017	So many people rely on this station. Keep it open and available to all people
Rebecca Wells	Adelaide	SA	5044	Australia	29/11/2017	Sarah asked me to shes an amazing young lady who despite her disability goes out of her way to help others in various ways including volunteering with red cross. If sarah doesnt have access to the train she will loose her independence as she is bound to her chair for mobility. Everyone deserves access to transport and to be able to participate in the community.
Margaret Bell	Adelaide	SA	5075	Australia	29/11/2017	Please keep it open
Helen Kelly		SA	5162	Australia	29/11/2017	It is important for everyone to have access to this public transport

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Suzanne Duyster			2447	Australia	29/11/2017	If it's used by many, it should be kept! All public transport should be made wheelchair accessible, stations as well, to promote it (environmentally friendlier) and to prevent the disabled from feeling like they don't belong in this world. Australia calling itself a well developed, modern country means taking care of and providing possibilities for the disabled. And looking at climate change: all ways of travelling with public transport made possible for EVERYONE, should be encouraged!!!
Jodie Pearce		SA	5046	Australia	10/12/2017	Most people will acquire some kind of age-related disability in their advancing years so the closure of a railway station affects a significant proportion of the population.
Claire Hunt		SA	5050	Australia	30/11/2017	Its ridiculous to close this station, where will people park and ride now! Imagine getting rid of the South Road Tram stop, this is exactly the same thing and a major station that is used by many to access work, school, appointments, access to the city, major sporting events and social events like the Adelaide Show and Christmas Carols, all the events that happen over Mad March, you are cutting off peoples access to attend. The Clovelly Park station is too far from Flinders. where is the parking to catch the tram, where is the safety in accessing the ramp for disabled, not to mention all the extra traffic that will be circulating and congesting the streets around this area just to catch the train. This seriously needs the attention of someone who knows the area and the people that live, commute and depend on the Tonsley station (at the end of the currently train line), not Clovelly Park soon to be renamed Tonsley!
Jodie Pearce		SA	5046	Australia	10/12/2017	I'm not an expert on many things but I am an expert on my neighbourhood and the needs of people who live in it!

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park		5046	Australia	20/03/2018	Speaking of Park n Rides - what will happen to the '600-space park n ride' at Tonsley when developers put a supermarket and retail centre there - will there be competition for parking between commuters and shoppers? I wonder how it will all pan out...
Maria Umlas	Mile End	SA	5031	Australia	30/11/2017	My husband and I use Tonsley station going to work everyday and medical appointments for my son in the city. It is more convenient than taking a bus. I cannot imagine going to Flinders just to take the train. Please keep this station open!
Jodie Pearce	Mitchell Park		5046	Australia	20/03/2018	Did you know that the new dental hospital on North Terrace does not have public carparking which means people who cannot walk far need to either catch a tram or taxi. The nearest carpark is the convention centre car park. The nearest council Upark is uphill in Light Square. There is a trend for urban planners to try and reduce the demand for car travel by reducing the number of available car parking spaces on new developments. If governments are going to follow that trend, then they need to back it up with easy access to public transport services that everyone can use.
Siyi Ong		SA	5042	Australia	30/11/2017	I live in this area. One of the reason I don't use the station often is because of its limited service they have now. I believe after they extended this line and have increased train frequency I will definitely use this station more.
Judy Yang	Adelaide	SA	5000	Australia	30/11/2017	Please keep it open...
Mark Nielsen		SA	5162	Australia	30/11/2017	If this station is kept open and services increased it will be a big boost to the area. The only reason it's not used more now is because of the limited service.
Leonie Nielsen		SA	5163	Australia	1/12/2017	Don't waste money removing it. Keep it!
Anwar Nader		SA	5088	Australia	1/12/2017	It is unfair to close this. So many people use this station!!

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
deb phillips		SA	5042	Australia	4/12/2017	In january 2017, suburb name was changed to represent the tonsley station. After changing address details with multiple organisations, they are now closing the station. Why have taxpayers wasted their time and money to change all their details if the station is going? I am not happy! To walk nearly a km to the nearest train station is an unacceptable inconvenience. SAVE TONSLEY STATION.
Jodie Pearce		SA	5046	Australia	10/12/2017	For many it is more than 'inconvenience' - for many it is physically impossible.
Maureen Potter		SA	5035	Australia	4/12/2017	I believe this service is required
gavin hargrave				Australia	4/12/2017	i live in tonsley and use the train constantly
Jennifer Tuckwell		SA	5035	Australia	4/12/2017	It will be a valuable link to Founders MC for disabled people.
margret gilchrist	Adelaide	SA	5043	Australia	5/12/2017	Dear Annabel Digance MP, As a local resident of Mitchell Park, I use the train to the city often, as do many other local residents. I strongly oppose the TONSLEY Station being removed if the train line is to be extended to the Flinders Precinct. It would greatly disadvantage many who are unable to travel the extra distance to other train stops. I don't think people in Adelaide are aware of how we local residents are adversely affected by the South Road development. Constant loud noise, very heavy volume of traffic on our smaller suburban streets, local parking spaces being used by those living outside the area. Add to these, if our local train station is removed, we are severely disadvantaged. Please assist us to keep the TONSLEY train station. Thank you, Margret Gilchrist

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jim Klement	Auburn		2144	Australia	5/12/2017	I moved to this location for the convenience of having a train station near by as I am an injured veteran now they are removing it. Looks like I will have to look for new residence. Thanks state government
Jodie Pearce		SA	5046	Australia	10/12/2017	It makes me angry that this is happening to you and others in the neighbourhood.
Kate Burton	Brompton	SA	5007	Australia	5/12/2017	People need close access to public transport
Matthew Buck		SA	5039	Australia	7/12/2017	If an elevated station can be built for the tramline over South Road, with lifts and staircases, the same can be done at Tonsley. To do any less would be a travesty verging on criminal neglect. As well, the extension needs to go as far as possible towards Flinders Uni. If that means it becomes a 700 metre extension rather than a 650m extension, then so much the better. With a bit of forethought the new Flinders spur line can become as popular as the Seaford line. There is no reason why it can't become the preferred method of transport for people to go to both the hospital and the university. For that to really happen though, Ascot Park station would need to be extended eastwards to straddle both railway lines, to avoid poor connections at Woodlands Park.

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce		SA	5046	Australia	10/12/2017	If one is changing trains at Woodlands between Tonsley and Seaford it is very frustrating because one train arrives as the other departs so one always "just misses" the connection, leaving passengers waiting for up to half an hour for the next train. This sort of timetabling does not encourage Tonsley line usage or train usage in general for locals who want to move around the district. It just encourages people to get into their cars, if they are lucky to have access or to afford car travel.
Lea Tompkins			2880	Australia	7/12/2017	My family use this station regularly
Kali Wilde			2032	Australia	8/12/2017	Disabled people need full access to the world
margaret kennedy	wicklow		xx xxx	Ireland	8/12/2017	A signature from Republic of Ireland...don't stop disabled people travelling. that is what will happen. please consider the issue as a 'right to travel' issue,freedom, not just a 'business idea', whatever idea it is, its bad one!
Jodie Pearce		SA	5046	Australia	10/12/2017	Thank you for your long-distance support, Margaret. It is definitely a human rights and equity issue.
Wayne Oldfield	Moonta	SA	5558	Australia	8/12/2017	Removal of Tonsley station discriminates against local residents, especially wheelchair users and people with disabilities, short stature or frail health (of which Mitchell Park has a significant number) because the train is their only affordable access to independent travel.
Cheryl Boyce		SA	5048	Australia	9/12/2017	The removal of this station will affect so many. Make their already difficult life more so. Politicians have made many false promises. It seems they have no conscience. Please sign to help save Tonsley for those who live near and desperately rely on it.

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Zoe Nguyen	Adelaide	SA	5000	Australia	9/12/2017	I live near the Tonsley railway station, i travel to my uni in the city everyday by this train, if it is closed I would be struggled traveling to school by buses which cost me a lot of time and inconveniences. Please help us-international students to go to schools and to get closer with the Adelaide city.
Elly O'Loughlin				Australia	10/12/2017	Everyone should have access to their community. Equal access for all!
Anh Pham		SA	5042	Australia	10/12/2017	I have lived next to the Tonsley station for 2 years and it's no doubt that this train and station help me a lot in travelling to city for studying. Using bus takes me around 30 to 50 minutes, depending on the traffic, but taking this train from city to Tonsley station just costs me 25 minutes no matter how bad the traffic is in rush hour. Moreover, I can have snap when taying in the train, which couldn't be done when using bus cauz I have to watch the bus stop in order not to miss the stop close to my house. This benefits the students like me, who have to travel to city to study for a whole day, and save time for more study at home, or for part time job.Removing the Tonsley station makes us have to walk 1.5km to Clovelly Station, or take the bus, which is often affected by the traffic. This also brings inconvenience to the users having disabilities. Please keep the Tonsley station.
Kerry Ferrari	Adelaide	SA	5007	Australia	11/12/2017	Should be adding more to public transport NOT less. Grrr.
Brian Matthews	Normanville	SA	5204	Australia	11/12/2017	Seems a really silly move

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	20/03/2018	It seems at odds with modern notions of 'liveable cities', 'sustainability' 'walkability' and mass transport efficiency to leave a section of neighbourhood adjacent to a train line in a 'public transport black spot' as described by a staffer in Nicolle Flint's office.
John Austin		SA	5153	Australia	11/12/2017	We do not want to take a step backwards in regard to giving independence to those who depend on this mode of transport.
Jennifer Hodgson	Paralowie	SA	5108	Australia	11/12/2017	Equal rights
Phường Nguyễn	Hanoi			Vietnam	11/12/2017	People with disability seem to be left out of many building project. Hear they say, they are visible and their voice should be take in to account.

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Alan Tipper		SA	5043	Australia	12/12/2017	I really take exception to the lack of consultation with local residents about the closure of Tonsley station. I was confused when I read in the local Messenger Newspaper some months ago of a change of name for Clovelly Park Station to Tonsley Station and am appalled at this devious method of announcing a change of name for Clovelly Park Station to Tonsley Station without the upfront story explaining closure of the existing Tonsley Station. Is the Messenger Newspaper colluding in this deceit by ignoring full disclosure of the fact about the station closure that impacts on not only the local train users but all commuters wanting a train stop at the Sturt Road end of Mitchell Park. In fact another station at Thirza Avenue to service Marion and Ascot Park Station users and cut out the long winded trip to Woodland Park Station to catch spur line to Tonsley Station is also on my mind. Adding Thirza Station also offers public transport access to Sacret Heart College Middle School, Clovelly Park Primary and also Hamil

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park		5046	Australia	17/04/2018	I agree with you about a station near Thirza Avenue. People in that area are midway between Ascot Park station on the Seaford line to the north and Mitchell Park station on the Tonsley line to the south. Each of those are outside easy pedestrian distance for people with limited mobility. They also have pedestrian barriers like no easy, direct walking path to the south and the barrier of Hamilton Secondary College's oval to the south and crossing a major road (Daws Road) to the north. I am told that there is no bus service running along that section of Daws Rd either. I believe that Thirza Avenue has traditionally had a concentration of people with disabilities living in and close to it. The Tonsley line, being shorter than Seaford, would give wheelchair users near Thirza Avenue a better chance of getting a spot on the train than the often overcrowded peak Seaford services.
Kevin Murphy	Adelaide	SA	5086	Australia	12/12/2017	this service must be given not taken away
Sumah Roach			3561	Australia	13/12/2017	public transport is a must for disabled
Ian Kissock		SA	5039	Australia	13/12/2017	If the Tonsley Railway Station closes disable people who live in the area will be disadvantaged
Annette Short	Adelaide	SA	5000	Australia	13/12/2017	Access and equity is important
Nahir Aranibar	Australia			Bahamas	14/12/2017	Because it will affect the community overall The Government said it will extend the Tonsley Line to Flinders !!! But not once did they say or alert the community of closing Tonsley Station at all. It's not fair on all the COMMUNITY that rely's on this transport. Not fair not fair, SO FOR THE MINISTER OF TRANSPORT IT'S ABOUT TIME YOU START LISTENING TO THE PEOPLE IN THE COMMUNITY! !!!

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Anne Woolford	Glenelg East	SA	5045	Australia	14/12/2017	The disadvantaged are the very ones who need public transport most so leave the station there
Alice Lucas		SA	5096	Australia	14/12/2017	The station is a need for the community, not simply a convenience.
Patricia Ryan		SA	5159	Australia	16/12/2017	People and their abilities matter
Sharon Thomson		SA	5042	Australia	18/12/2017	We need to keep Tonsley Station for people with disabilities the elderly and the whole community
Jodie Pearce	Mitchell Park		5046	Australia	17/04/2018	Yes, Sharon, I agree with you about the whole community. Often when something is designed to benefit a minority, the benefits extend to other people who were not originally targetted; e.g. disability access often helps parents with prams or younger people recovering from illness or injury or frail people of all ages. Trains have the room for cyclists and mobility tricycles too which buses cannot accommodate.(Some countries have bike carriers installed on their public buses.)
kathy mackinder		SA	5084	Australia	18/12/2017	Im signing cause r loosing our public transport in most of the other states there buses and trams and train all stop running a lot later than ours i dont even think u can get a bus here after 1am
Jodie Pearce	Mitchell Park	SA	5046	Australia	17/04/2018	A new Tonsley rail timetable will begin on 22 April 2018 increasing daytime frequency from 30 minutes to 20 minutes but it will mean that the last Tonsley train from Adelaide on weekdays will be leaving 13 minutes earlier than the existing timetable (currently leaving at 6:43 p.m. - already rather early for a weeknight and soon to be leaving at 6:30 p.m.).There are still no weekend or evening services scheduled.
Rhonda Ball		SA	5019	Australia	18/12/2017	We need public transport 樂樂樂樂

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Marjorie Buchanan		SA	4503	Australia	18/12/2017	I believe it is the rights of all to have safe , assessible public transport . It is a much needed service.
Tracey Bayly	Adelaide	SA	5000	Australia	22/12/2017	There are a lot of elderly people who rely on the Tonsley station to get around.
Doris Maso		SA	5025	Australia	24/12/2017	I work in the disability field and there are a lot of people living close to tonsley station who would use it. The station needs to be up graded make it more accessible not sit doyen. [shut down?]
Jennifer Luscombe	Christie Downs	SA	5164	Australia	25/12/2017	I am signing this because bus travel for me too is not comfortable or safe. Trains are the way to go.
kathy holt	North Adelaide	SA	5006	Australia	26/12/2017	I support people who use wheelchairs and we catch the train all the time. It is affordable for them.
Jodie Pearce	Mitchell Park	SA	5046	Australia	17/04/2018	Yes, Kathy! Affordability is so important for people on low and fixed incomes. Not every person with a disability is on a disability pension; but many are struggling to survive on a pension with the added expenses of disability; e.g. assistive technology, mobility equipment and maintenance of equipment, cost of support services for basic activities like personal care, cooking, cleaning and shopping, medical expenses such as regular treatment services, allied health, medication and consumables. Many of these extra expenses are also often incurred by people as they age and become frail.
Sharon Dredge	Flagstaff Hill	SA	5159	Australia	26/12/2017	I know people with disabilities that depend on this station! Keep it open!
Jodie Pearce	Mitchell Park	SA	5046	Australia	20/03/2018	Me too!
Hannah Belton	Adelaide	SA	5052	Australia	26/12/2017	It's cutting off people who rely on public transport links
matthew tricker		SA	5112	Australia	27/12/2017	Its everyone's RIGHT to be able to access public transportation that suits there needs without costing a fortune to take.

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
amanda tebbutt			810	Australia	3/01/2018	Amanda tebbutt
Kerry Broadbent		SA	5168	Australia	8/01/2018	Do not close Tonsley Station which is accessible for disabled and other transport users. Govt must consult with the community most affected by this closure
Andrew Gillan				Australia	14/01/2018	Pensioners need the Tonsley station for access to the city .
Jodie Pearce	Mitchell Park		5046	Australia	20/03/2018	At least with access to the train, we can get to city health services like the dental hospital and the RAH even if we cannot drive to FMC. If Flinders Link takes away access to the train for southern Mitchell Park & Tonsley residents, then we won't be able to catch the train to either FMC or the city and will be forced into cars and taxis. Lack of access to public transport limits choices for people.
Pat Tronnolone	Adelaide	SA	5000	Australia	16/01/2018	Pat Tronnolone
Amy Schlein			4300	Australia	21/02/2018	The lack of transport is already ridiculous, we don't need something like this to set us back
Jodie Pearce	Mitchell Park		5046	Australia	17/04/2018	I agree that transport options for people with disabilities are already limited and not always as reliable or as accessible as the train service. The beauty of trains is that they are not competing with other traffic and thus easier to stick to a timetable. This reliability that trains offer will help people with disabilities sustain employment and education. One good thing about this campaign which brought more attention to the plight of Tonsley rail line users, is that Adelaide Metro will be increasing the daytime frequency of services from every 30 minutes to every 20 minutes most of the day. A new timetable becomes effective on 22 April 2018. I'll be sharing more about that in another update soon.
Barbara Webb				Australia	19/03/2018	Barbara Webb

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Barbara Webb				Australia	19/03/2018	Tonsley is my local station, and part of the reason I purchased a home in this area 3 years ago. to have access to train and bus services in my later years. There are many impaired persons that use this station and it would be discriminating against everyone (impaired or not) that needs this mode of transport. The W90 also needs revamping as usually it is the older buses that service our area, and these don't have access for wheelchairs, walkers, or prams.
Jodie Pearce	Mitchell Park		5046	Australia	17/04/2018	I know that some people, who have the capability, have preferred to use the bus stops on Sturt Rd because there is a variety of bus routes on that road and thus greater frequency for nearby destinations like FMC and better access to cross-suburban destinations (saving the time of having to go into the city and out again on radial routes). Unfortunately, because of the new Birch Crescent intersection, DPTI has permanently removed Bus Stop 28 effective yesterday (17 April 2018) which was close to the existing Tonsley station. That was a bus stop that people used to connect with Blackwood and other cross-suburban bus services. Now people need to walk uphill to the next stop which is closer to the intersection of South Rd. The other Sturt Rd bus stop which used to be just west of Bradley Grove has also been moved further west, closer to Marion Road. I don't know why that one needed to be moved. Again, it means that residents are walking further distances. If the train station locations are changing/disappeari

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park		5046	Australia	20/03/2018	At least with access to the train, we can get to city health services like the dental hospital and the RAH even if we cannot drive to FMC. If Flinders Link takes away access to the train for southern Mitchell Park & Tonsley residents, then we won't be able to catch the train to either FMC or the city and will be forced into cars and taxis. Lack of access to public transport limits choices for people.
Linda Crawford	Adelaide		5000	Australia	9/05/2018	I need this station! If it goes I will need to drive to a station even though i live along the line!
Jodie Pearce	Mitchell Park		5046	Australia	6/06/2018	Me too Linda! Except it's not so simple for me. My disability causes severe fatigue which means I am not able to drive home after my journey so driving myself to a station is not an option for me - I would need to arrange a taxi (expensive, unreliable, and they don't like to pick up short trips of less than 1 km which leaves a person waiting with the risk of missing the train) or get someone to drop me to and from the station. Say goodbye to independent transport. Say hello to being stuck at home and unable to get on with living in the world.

Discussion in response to Petition Update: Clovelly Park Station Access & New Information

Romana Challans	Seacliff Park	SA	5049	Australia	4/12/2017	I actually am still forced to use the road to get to it from Tonsley, but am aware this is changing. The platform is definitely the wrong height, and embarking/disembarking is quite frightening and even the drivers have often commented on that aspect.
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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/12/2017	<p>Hi Romana, When you mention Tonsley above do you mean the Tonsley Innovation Precinct? I alighted from the train at Clovelly Park station today and yes, that boarding ramp is still definitely DANGEROUS. I will not be able to get up that boarding ramp because it is so steep. If the Transport Minister thinks Clovelly Park is an acceptable option for the community then he is mistaken.</p> <p>I also tried to wheel home from Clovelly Park station and took photos of examples of poor pavement condition. If the pavement is impassable, it is also difficult to cross over to the other side of the street because of the lips on the driveways. Bradley Grove is definitely not an accessible route to access Clovelly Park station from the suburb around Tonsley station.</p> <p>P.S. Thank you Romana for taking time to add your personal experience to the comments. The more that people speak up, the better our chance to be heard.</p>
Philip Baldwin			5042	Australia	20/08/2018	<p>I like others in our community use public transport for a verity of reasons. I believe the main reason they are closing these station's is to funnel people into the new Tonsley development and into Flinders Medical, as for the local residents they have no interest in you or me, that is until the next election. Don't vote for them, let your local MP know, they should be standing up for what the people want, not just following the party policy blindly , choose and independent candidate instead.....</p>
Sue Iredale			3500	Australia	20/08/2018	<p>The community desperately needs the service</p>

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park		5046	Australia	6/09/2018	I agree with taking action through our Members of Parliament and other candidates and local government too. It's often the local governments that bear the costs of social isolation and ill health in their communities. Ultimately we all pay as a community. I would encourage everyone who is concerned to follow your advice and contact their local representatives in numbers. One voice is just one voice but it needs to be amplified. If you disagree with the removal of Tonsley Railway Station and want to see a station to serve the Sturt Road end of the suburb, the Police Station and other businesses, workplaces, childcare centres and schools around Sturt Rd and Laffers triangle, write that email and make that phone call today! Before it's too late! Spread the word in your social circles, business networks and media. Thank you for your input.

Discussion in response to Petition Update: Travel Tales & Clovelly Park Station Confirmed INACCESSIBLE

Jodie Pearce	Mitchell Park	SA	5046	Australia	18/12/2017	Today (Mon 18 Dec 2017) it looked like the footpath on Alawoona Avenue (western side of the line) was blocked off by large barriers - the type you see for car races or on freeways. Wheelchair users would have needed to somehow not get bogged by going through the car park at Kirra Avenue or go back to Bradley Grove and either wheel on the roadway or battle the pavers on the opposite footpath. Able-bodied people don't always appreciate that detours can be the difference between a frail person being able to manage or push them past their physical limits.
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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Romana Challans	Seacliff Park	SA	5049	Australia	5/12/2017	As I just posted to Facebook, I have to go on the road as the 'access' gravel bed is killing my wheelchair. I know they are planning to fix it but this is worryingly scary for me every day - especially in wet weather!
Jodie Pearce	Mitchell Park	SA	5046	Australia	5/12/2017	<p>I am so sorry that you are in this predicament. The poor access is unacceptable.</p> <p>I know of several people who were forced to give up their studies due to substandard or non-existent access to transport and premises like this. It's just another way to deny access to education for people with disabilities. The irony is that, for people with physical disabilities that preclude manual, non-skilled labour, access to academic and higher level courses is an important route towards financial and personal independence and a better quality of life instead of being forced into the poverty traps of a government pension and government housing.</p>
Suzanne Duyster			2447	Australia	5/12/2017	Hi Jodie, it is indeed quite an ordeal to travel that way. Have you contacted any of the organisations that stand up for the disabled and visually impaired? They might want to go and have a look, write a report or recommendation for you to hand over to councils, committees, NSW Transport etc. Maybe you can get the APTNSW involved? That's if you haven't already. And otherwise, the media is a good option, too! Keep up the good work!!

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	5/12/2017	Thank you for the great ideas Suzanne and for supporting this petition. I am in South Australia so I am not familiar with those organisations that you mentioned but if you would like to be so kind as to raise their awareness of the campaign here, they may like to alert their affiliate organisations in South Australia. There are so many people on my list to contact and I am working my way through but I am only one person and struggling with chronic illness at the same time. Any extra help to raise awareness and support would be most appreciated. It is about time governments realised that they are judged by the way they treat their constituents. Tonsley & Mitchell Park locals are feeling that their concerns are being dismissed by the SA Transport Department (DPTI). It is certainly discriminatory to remove access where access previously existed, even worse when it is from an ageing neighbourhood with a large number of people with disabilities. If you manage to pick up the phone or send an email or share a link, Suzanne, please let me know with either a comment here or you can email savetonsleystation@gmail.com Please spread the word far and wide. We can't allow governments to ignore the social needs of our communities.

Discussion in response to Petition Update: Local Stories, DPTI Responses and New Contacts Added

Andrew Davey		SA	5042	Australia	30/12/2017	I'm sick and tired of these overpaid educated idiots thinking they know what's best for our local community. I would love them to spend one week in our lives and see how hard it is. People of Clovelly/Tonsley and Mitchell Park must fight this decision. I also suggest we bring it to Kelly Vincent's attention at the Dignity Party.
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Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/01/2018	<p>Thank you for your opinion, Andrew, and apologies for the delay in responding to you. Thank you for your suggestions for further action. I have been working hard to raise awareness of the need to keep Tonsley Station with various agencies, government and non-government, including Hon Kelly Vincent MLC of the Dignity Party. I first raised the issue with Ms Vincent on 1 June 2017. She has been working behind the scenes and is keeping a close eye on the Flinders Link project.</p> <p>The issue has also been raised with the Minister for Disabilities, Katrine Hildyard as well as state and federal MPs. I hope that the Minister for Planning, Transport and Infrastructure (DPTI), Hon Stephen Mullighan MP, will keep his parliamentary colleagues up to date with any developments around Flinders Link. I will post a petition update today with the latest word from the DPTI.</p> <p>Our politicians must remember that every decision they make affects someone's life; e.g. the loss of access to the train service for people with disabilities will not just affect their transport options, it will affect their financial situation - increase in transport costs on a small budget will mean cutbacks elsewhere, perhaps essentials like food, utilities and medication, in turn, their health may suffer because they don't turn on that air conditioner when they should or go without medication to pay the bills (I have been in that situation myself). Similarly for other local residents.</p>

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Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/01/2018	Consequences of political decisions may be complex. An issue with transport can have a domino effect on work, education, health, household management, child care, volunteering, recreation and relationships, not just for the people with disabilities but for their families, carers and support workers. There are some issues that may not be apparent to those who do not have lived experience of disability or the local area which is why it is so important for planners and policy makers to listen to advice from members of the public who will be affected by their decisions.
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	4/01/2018	For example, extra transport costs may not be limited to taxi fares. It may also include the need for support staff to drive to other railway stations to reduce taxi fares, or equipment upgrades like motorised mobility devices with ongoing costs for maintenance, electricity (battery charging) etc. This is assuming a person has equipment upgrades available to them either financially or through government assistance. Those receiving equipment through the State Government's Domiciliary Equipment Service may not have any choice about the equipment issued to them.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	4/01/2018	The extra exertion and time required to get to further stations may also have negative health impacts and reduce energy for other important activities. If extra support hours for a driver are not approved by disability agencies, hours used for other tasks like personal care, social support, cooking or cleaning may be sacrificed in order to have transport support. Cutting back on cleaning may affect a tenancy and so forth. I worry that the current design of Flinders Link and the decision to remove Tonsley Station without a replacement is short-sighted, narrow-minded and motivated by short-term financial concerns without consideration for the long term social costs within the broader context of the community in which it will be placed.

Discussion in response to Petition Update: Tonsley Station Media Mentions

Margret Gilchrist				Australia	18/12/2017	Thanks for all your work Jodie xm
Cheryl Boyce		SA	5048	Australia	19/12/2017	Another gross failure by our State Government. Tonsley Station as it has been known for decades is essential to remain for locals and more importantly with those with disabilities. As usual poor decisions made by those in power with no idea of the impact of the removal of the Tonsley station will have on those totally dependent on it. They need to get out from behind their desk and communicate with the people who rely on this service.
Jodie Pearce	Mitchell Park	SA	5046	Australia	20/12/2017	It certainly feels like decisions have been made without regard to the specific needs of this particular community.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/01/2018	<p>The most frustrating aspect of all of this, Cheryl & Margaret, is that residents have been expressing their concerns to the DPTI and local MPs from the outset and have been dissatisfied with the response. They feel that their concerns are being ignored.</p> <p>When we read in the local papers about DPTI ignoring the needs of residents and MPs in other areas (e.g. Pine Ave crossing at Seacliff), it suggests that the DPTI is only interested in its own agenda at the expense of the public for which it is meant to serve.</p> <p>In the case of Pine Avenue pedestrian rail crossing in Seacliff which was closed against calls to keep it open, one of the City of Marion Councillors, Tim Gard, described the DPTI's response as 'lazy and mean' (Messenger Newspapers 29 Nov 2017) while the local Member of Parliament (Bright) David Spiers felt that the DPTI only 'paid lip service' to community concerns and its consultation was 'a complete sham'.</p> <p>Holdfast Bay Councillor John Smedley said that the State Government's consultation was 'merely a public relations exercise and a waste of time' (Messenger newspaper 22 Nov 2017).</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/01/2018	<p>This petition is the result of much frustration and fear about the future of our neighbourhood and our lives. People have tried to use appropriate channels of communication without success.</p> <p>The Terms of Reference for the Community Liaison Group which is run by the DPTI forbids members of the group (such as those representing residents, local businesses etc.) from using social media channels to communicate information unless they have express permission from EVERY member of that group. In this day and age, with electronic communications like social media being one of the most effective ways of distributing information to the community, how are the resident representatives supposed to effectively engage with their communities if they are denied access to those channels? How are members of the community supposed to know that we even have residents chosen to represent us in a Community Liaison Group if it isn't publicised by the DPTI?</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	4/01/2018	<p>The lack of effective and appropriate public engagement from the DPTI is stunning.</p> <p>Now the DPTI says it will have a consultation process early in 2018. What will be the purpose of that consultation? Will it be a token gesture that will have no influence on the outcome? Will it be a two-way consultation or one-way? Consultation could mean a one-way presentation of the DPTI telling the neighbourhood what they will do without negotiation or it could mean a two-way open discussion with room for change and adjustments to the Flinders Link design and budget? I hope it is the latter but judging from previous experiences, I am not confident.</p> <p>This is why it is so important for as many people as possible to write those letters, contact their MPs and advocates, support this petition and add their comments and stories to share with the Minister and Premier. Removal of train stations makes the State's Strategic Priorities for safer, healthier communities and liveable cities a joke.</p>

Discussion in response to Petition Update: Transcript of Channel 9 News Report

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
David Lord				Australia	20/12/2017	Is this another design developed to make the rail rebuilding easier at the expense of those who will be disenfranchised? To often the so called improvements are these days only decided on cost and ease of construction. It is up to the designers to convince the community that the station is no longer required, or provide a solution that still serves the area the station has always served and provides proper access to the disabled. No loss of access can be tolerated, if alternatives make it so difficult to provide proper access, then the funding and continued funding of providing alternative community access should be costed into the project on a needs basis and be provided annually by statute.
Jodie Pearce	Mitchell Park	SA	5046	Australia	21/12/2017	You are not alone in your views, David. There are concerns in the community that the project seems to be guided more by financial investment than social investment. Thank you for for your suggestion.

Discussion in response to Petition Update: Transcript of FIVEaa Breakfast Segment

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Ken Harrison				Australia	24/12/2017	<p>Government departments act is if they do NOT operate under Australian law.</p> <p>In the 1980's Otford Station on the southern edge of the Royal National Park was earmarked for an upgrade. The locals and everybody who used the station wanted it left the way it was. It was over 100 years old, milled from cedar cut on the site, it had all of the original brass point gear, old clocks, original ticket office and equipment - you know the story, a lovely old place... Anyway the supporters went to the NSW Land and Environment court to get a injunction to stop it. The injunction was to be handed down on the Monday and the bulldozers were brought in on the Sunday to clear everything. It was all pushed into a pile, the irreplaceable cedar beams smashed, it was all buried in landfill. The Ceder buildings are gone, replaced with concrete block houses. Sometimes its better to spend a tiny bit more on maintenance - they let it run down so they could justify it. I'd rather have have a nice old building and a happy community.</p> <p>Merry Christmas everyone.</p>
Jodie Pearce	Mitchell Park	SA	5046	Australia	27/12/2017	<p>I'm so sorry to learn of that chain of events. That's very sad and mean of the people who sent in the bulldozers. We elect our representatives to stand up for the communities who voted them in - not to go against the greater good.</p>
Discussion in response to Petition Update: News for the New Year						
Jennifer Tuckwell		SA	5035	Australia	5/01/2018	<p>Keep the pressure on DPTI. They seem to be listening.</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	27/12/2017	Oh yes, I definitely will to the best of my ability but one voice is not enough, We need everybody to speak up in whatever capacity they can to get the message through to the Transport Minister and DPTI that taking public transport access away from the people who need it most is not acceptable. Any one of us could be affected by disability, financial difficulties, the loss of private transport etc. and find ourselves in a situation where public transport is a necessity and not a mere inconvenience. Every bit of support is appreciated and necessary so thank you so much for taking the time to read the updates and leave a comment. Your words mean a lot to me and have strengthened my resolve. Thank you, Jennifer!
Ben Salmon			5052	Australia	5/01/2018	Is the incline of the track sufficient to allow a ground level tunnel in a suitable location, similar to the Emerson overpass under south road? There appears to be a suitable location for a ground level cross at the spur of Timothy Ct through to Birch Cres which should be far enough back from the bridge to allow sufficient run up for the rail line. Furthermore, if the station can not be supported in the current location due to the required run-up for the track it could be moved to the east side of the track just north of the Timothy Cres spur and could incorporate the level crossing site to allow access from both sides of the track. I apologise if these have already been considered, I have not been following the discussion on this petition.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	5/01/2018	<p>Thanks for your ideas and research, Ben. Your questions are valid and reasonable. I have heard similar ideas and queries from local residents. Unfortunately, I can't tell you anything about the incline at all (except that there will be one where Tonsley station now stands) because the DPTI refused to answer my specific questions about it such as "where will the incline begin?" "Next to which streets will it begin?" and "How far back from Sturt Road (or from Alawoona Ave) will the incline begin?" I have been chasing this information since at least June 2017.</p> <p>For an agency that says there will be no negotiation on the actual railway tracks or bridge design because the engineering has been finalised, that information should be available.</p> <p>My experience was: an Officer from DPTI promised to get back to me with the figures I'd requested and did not do it in a timely fashion. Eventually, he came back to me quoting the same figures everybody had heard before (from the Minister's initial announcement of Flinders Link in May 2016 and from the Federal Government) - "the rail line will be extended by 650 metres including 520 m of elevated track."</p> <p>I asked whether I could see any plans to get an idea of where the incline would start and was told that the information is confidential. How is a community supposed to have an informed discussion without all of the relevant, accurate information?</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	5/01/2018	<p>The location you refer to, north of Timothy Crs and east of the track is currently vacant land and has been vacant for a long time. It looks like there would be sufficient space to build a station there and that would be acceptable to many local residents, including myself, as long as it is as far south as possible with safe and easy pathways that don't require long detours.</p> <p>Tonsley residents tell me they already suggested that site for a potential "New" Tonsley station but it was rejected by the DPTI on the grounds that there is no money to build it. What happened to the \$63million announced in the 2013-14 budget allocated to upgrading Clovelly Park and Tonsley stations? These stations are still not DDA compliant. The Federal Government ha already committed half the funds for that purpose according to news reports. Why can't that be used to build a 'New' replacement Tonsley station?</p> <p>I am hoping that the DPTI can reconsider that option as part of its review.</p>
Jodie Pearce	Mitchell Park	SA	5046	Australia	5/01/2018	<p>Reference: Adams, Kara, "\$63m upgrade plan for Clovelly Park and Tonsley stations", Guardian Messenger, Messenger Newspapers , 20 May 2013: http://www.adelaidenow.com.au/news/south-australia/m-upgrade-plan-for-clovelly-park-and-tonsley-stations/news-story/abe8382fd0b0cd0eaf0b05e6d6b75bff?sv=89802afda9bc275fd5a5398d40af9f67</p> <p>"The Federal Government has committed half the funds towards the project, with the State Government expected to pay for the rest"</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Discussion in response to Petition Update: Busy January						
Andrew Gillan				Australia	31/01/2018	The plight of people like myself who desperately rely on our Tonsley station to access the city without having to use our cars to reduce travel costs and car wear and tear is huge and even though the rail line has to over Sturt road a platform could be engineered with stairway access to keep the station where it currently is.
Jodie Pearce	Mitchell Park	SA	5046	Australia	31/01/2018	Thank you Andrew for sharing your experience. It is important that the decision-makers hear the real stories of people like yourself. I too, am desperate to keep the station because I cannot always use private transport. I don't always have someone available to help me to get to places and I certainly cannot afford taxi fares. The train is my independence. I agree with you Andrew, that the costs of maintaining and running a vehicle are significant, especially for those of us who are living on fixed or low incomes like many residents in the Mitchell Park area. I have heard suggestions from a number of people about making a level section of track close to Sturt Road. An elevated station seems to be the most frequent suggestion. Please be aware that many elderly, frail, or people with disabilities are unable to use stairs. This includes younger people (under 65) who may have joint or heart or other problems. Long flights of stairs can be impractical for people of short stature. Wheelchairs, prams, walkers, bicycles and tricycles (including specialised mobility tricycles which are a healthy alternative to wheelchairs if able to be used) cannot use stairs. Stairs may also be dangerous or impossible for people using crutches.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	31/01/2018	<p>People with disabilities have said that they should not be forced to use Access Taxis due to removal of the train because taxis cost too much and I agree.</p> <p>Compare the fares for train passengers which are much cheaper than taxis for the same journey. It costs me at least \$80 for a return trip across town for necessary healthcare appointments by taxi (and that is after the State Government's SATSS voucher scheme is taken into account). The same trip on a train from Tonsley station costs me a maximum of two concession fares (costing between \$1.92 and \$5.40 depending on ticket type and time of day).</p> <p>SATSS vouchers (South Australian Transport Subsidy Scheme) are provided by the State Government to people with disabilities to subsidise a portion of access taxi fares. These subsidies are approximately 10 times dearer than the regular Adelaide Metro fares. If people with disabilities can use the train service, it saves taxpayer funds being used on taxi fares.</p>
Jodie Pearce	Mitchell Park	SA	5046	Australia	31/01/2018	<p>What about Seniors Card holders who get free travel on public transport between 9:01 am and 3:00 pm weekdays? Older people with disabilities who are forced to use Access Taxis are not given the same benefits.</p> <p>How is this fair or equitable?</p> <p>Removing access to public transport and forcing people with disabilities to use Access Taxis is tantamount to segregation.</p> <p>Perhaps one could make a similar argument about political classes segregating the people of poorer or vulnerable neighbourhoods into a contained area like a public housing apartment block or isolating them in a suburb without easy access to move out of that suburb?</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Discussion in response to Petition Update:						
KEEP THE CONVERSATION GOING You've signed your name, now raise your voice!						
David Anderson					1/03/2018	such a shame the disabled (i am a wheelchair user) are treated as second class citizens. Access to housing & transport being the biggest.
Jodie Pearce	Mitchell Park	SA	5046	Australia	3/03/2018	Agreed, David. It is shameful. Housing and transport are the keys to accessing education and employment which, in turn, allow people to live more independently and lift them out of poverty (but you and I already know this!)
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	3/03/2018	In the case of Tonsley railway station on Lynton Ave, it's removal will not only affect people with disabilities but everyone in a significant geographical section of the suburb either side of the existing Tonsley station. Thank you for signing the petition and sharing your experience. Tales of lived experience of real people help to prove to decision makers that we are not making it up when we say we NEED our station. Another update is coming soon.

Discussion in response to Petition Update:

The Plan for the Replacement Clovelly Park Station but Renamed Tonsley

Helen Partington					14/03/2018	Hope you have pleaded your cause with Carolyn Habib
Jodie Pearce	Mitchell Park	SA	5046	Australia	14/03/2018	Yes Helen, I have been in contact with Carolyn Habib. She took a proactive response by swiftly meeting with me and then organising a community meeting where she listened to concerns of residents yo inform her policy. Her words have accurately echoed the feelings of the local community.
Neil Phillis					14/03/2018	Yours is a just cause so keep pressing on

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	14/03/2018	Thank you Neil. When you support and accommodate one section of society (e.g. wheelchair users) the benefits usually extends to a wider section (e.g. elderly, parents with prams, tourists with luggage, mobility tricycles regular cyclists and people with wheelie-walkers etc.) while making life easier for everyone.
Kerry Broadbent					14/03/2018	Contact Kelly Vincent and her office. They would be able to offer you assistance as they are the Dignity Party for the disabled in South Australia/
Jodie Pearce	Mitchell Park	SA	5046	Australia	14/03/2018	Kerry, I have been in touch with all the major parties including Kelly Vincent's Dignity team. Kelly Vincent's team truly understands the profound importance of access to rail transport for people with disabilities. I am not convinced that the other parties have anything more than a superficial understanding of disability although some are willing to learn. Kelly Vincent's Dignity team was the first to provide meaningful and practical assistance back in June 2017 in seeking clarity about the future of Tonsley station after I had been getting nowhere with government agencies or local government. The other parties did not show active interest until the election drew nearer. It is disappointing that people with disabilities have been campaigning for decades to have their issues considered when it comes to planning and yet government agencies like the DPTI and Renewal SA are still failing to include the needs of people with disabilities at the outset of their projects. In this modern day and age of supposed social enlightenment, this is unacceptable to me and my neighbours.
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	14/03/2018	Thank you so much, Kerry, for your support of this petition and our campaign to save our access to public transport. It is most valued and appreciated.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
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Discussion in response to Petition Update:

Petition Sent to New Transport Minister with Meeting Request

Neil Phillis

19/04/2018

As Kerry noted: Transport must be accessible for people with a wide range of disabilities People should not have walk far to a train stop.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce	Mitchell Park	SA	5046	Australia	6/06/2018	<p>Hi Neil, Apologies for the delayed reply. Thank you for taking time to comment and I agree with you.</p> <p>If you do research into the current buzzwords of urban design "liveability" and "walkability" you will find the current advice is that distance to a train station should be a "comfortable walk" and take no longer than 10 minutes. This ideal is based on the notion that an ABLE-bodied person can walk 400 metres in 5 minutes (and 800m in 10 mins) and thus the 'catchment area' of a railway station is a radius of approximately 800m. This is backed up by my own anecdotal evidence when people in the neighbourhood give their suggestions about where a new Tonsley station should be. As soon as the distance is approximately 800m or greater, people say it is too far and they won't bother to use the station.</p> <p>On a simple map, this 800m radius, 'as the crow flies', does not take into account that the actual distance of a walkable catchment area for a train station is influenced by the layout and design of the streets and how physically able people are to walk (as noted in a Tonsley Park Planning Analysis prepared for Renewal SA).</p> <p>This consideration is imperative in Mitchell Park and Tonsley which has a significant no. of people living with disability whether it be from ageing or other causes.</p> <p>When it comes to people with mobility issues, you can take the 5-minute</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Andrew Gillan					19/04/2018	Losing the Tonsley station will stop people like myself from being able to travel around the metropolitan area not only the city but the likes of outer harbour,trams to Glenelg and entertainment centre,if we are going to upgrade the line please do it for the public and not go for a cheaper alternative which in the future will become insignificant.Please do the right thing for the people who gave you the opportunity to support your community.
Jodie Pearce	Mitchell Park	SA	5046	Australia	6/06/2018	<p>I can feel your dismay in your words, Andrew, and I share that.</p> <p>Please excuse my tardy reply due to health issues. You are so right that access to our station is not just a local issue - it is a broader issue for access to independent travel around the wider metropolitan area.</p> <p>It is about affordable transport and access to basic facilities that many take for granted like health, education, arts, sport, shopping, family, religious, cultural and other social events. If the government and people of Australia are truly serious about giving EVERYONE a fair go (and that includes people with disabilities, those on low incomes and the very young and very old), then they need to start with the basics like providing access to public transport. We need more railway stations and tram stops, not fewer. If the Transport Department (DPTI) cannot provide transport to those who need it most, then we need to be asking in a broader discussion, "Who and what is public transport for?"</p> <p>Thank you for sharing your situation and adding your voice to save Tonsley station.</p>

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Kerry Broadbent					19/04/2018	Transport must be accessible for people with a wide range of disabilities People should not have walk far to a train stop.
Jodie Pearce	Mitchell Park	SA	5046	Australia	6/06/2018	<p>Hi Kerry,</p> <p>Sorry it has taken me a while to reply to your comment. Unfortunately health and disability issues got in the way. Your comment was echoed by Neil Phillis in a subsequent comment to which I have given a lengthy answer! You may wish to read that one but the short answer is:</p> <p>the current advice is that distance to a train station should be a "comfortable walk" and take no longer than 10 minutes. This ideal is based on the notion that an ABLE-bodied person can walk 400 metres in 5 minutes (and 800m in 10 mins) and thus the 'catchment area' of a railway station is a radius of approximately 800m.</p> <p>When it comes to people with mobility issues, you can take the 5-minute time to walk 400m and effectively double it to get an accurate idea of the walkability of a neighbourhood for people with disabilities.</p> <p>I tried it - it took me over 30 minutes to wheel the 900m from Clovelly Park station at Alawoona Avenue to my home in southern Mitchell Park and left me exhausted - and that was only a one way journey! A station at Alawoona Avenue is not accessible for me because it is not "walkable" or "liveable". You may wish to look up the current Urban Design buzzwords "Walkability" and "Liveability" because state governments all over Australia are throwing them around but are they putting them into practice? Not in Tonsley and Mitchell Park at the moment!</p>

Discussion in response to Petition Update:

Transport Minister's Words to Tonsley & Mitchell Park Residents

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Bob Plewa	North Adelaide	SA	5006	Australia	21/08/2018	
Jodie Pearce	Mitchell Park	SA	5046	Australia	22/08/2018	Remove Tonsley and Clovelly stations, and build one half way. This was what residents were expecting originally but now there seems to be a push from government and planners to keep the one station (Clovelly) close to its original position at Alawoona Avenue. The developers of the Tonsley Innovation Precinct and Tonsley Village want a "mainstreet development" at Alawoona Avenue with a station to be at the hub. It's all about the planning buzzwords "placemaking" and "liveable cities" but it seems this is only 'liveable' for some (e.g. people who buy into the new Tonsley Innovation Precinct even though the Mitchell Park station is planned to be moved southwards by 150 metres to cater for Tonsley Village residents) and not 'liveable' for others like those in southern Mitchell Park and Tonsley who are losing their railway station and cannot walk the distance to either Clovelly or (uphill to) the Flinders Medical Centre.
C&A Fowler				Australia	20/08/2018	Oh, for God's sake, put in a blasted lift! Cheapskate thinking. Removing the station is a stupid idea. Vote Greens, they care about public transport!
Jodie Pearce	Mitchell Park	SA	5046	Australia	22/08/2018	The Greens representative for our area pre-election was Jo Moate who informed me in March 2018 that it was confirmed that the Tonsley Railway station would be removed and "local reps have also expressed the community dissatisfaction with the issue." The Flinders Link Project planners know that the community is unhappy.

Save Tonsley Station - Change.org petition online comments 18 Oct 2018

Name	City	State	Postal Code	Country	Date	Comment / Reason for signing / Discussion
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	22/08/2018	The Flinders Link answer to pedestrian access to Flinders Medical Centre station is an elevated walkway but they would not include a lift at Birch Crescent for disability access on the basis that lifts are not safe and yet they are happy to install a lift at the South Road overpass. Also, the lift at Birch Crescent would be adjacent to the Sturt Police Station - how safe is that? Also with all of the passing foot and cycle traffic predicted for the elevated walkway, the notion that an elevated station would be unsafe due to isolation doesn't make sense. The Tonsley Railway Station and pedestrian crossover gets plenty of foot traffic daily from locals.
Jodie Pearce (continued)	Mitchell Park	SA	5046	Australia	22/08/2018	I have used the elevated station at Port Adelaide with assistance but I would not be able to use it independently because of the length, gradient and number of the switchback ramps. I run out of puff! I needed someone to push my wheelchair up that ramp. I would not like to be pushing a person in a heavier wheelchair up a switchback ramp to access an elevated walkway or station. Ramps also can cause problems for people with crutches and older people with walking frames - on sloping paths, wheelie walkers can "get away" from the user on the downhill. These things need to be considered - it's not always as simple as "just add a ramp." One needs to consider the length, gradient, and the difference in height between top and bottom as one fights gravity going uphill whether it is on a ramp at Tonsley or up the hill to Flinders Medical Centre.



*In reply please quote
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Ms Laura Kerber
Senior Planning Officer – Major Development and Crown
State Commission Assessment Panel
Level 5, 50 Flinders Street
ADELAIDE SA 5000

Dear Ms Kerber,

***DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT:
RESPONSE TO SUBMISSION FROM EUGENE BOISVERT***

In response to the submission dated 12 October 2018 from Mr Eugene Boisvert, I provide the following information.

The existing Tonsley Railway Station cannot remain in its current location due to the elevation required for the train bridge to clear Sturt Road, Laffer's Triangle and Main South Road. The existing station will be demolished, and the new Flinders Station will be built within approximately 600 metres of the current Tonsley Station, connecting the Flinders precinct to the metropolitan rail network.

The Department of Planning, Transport and Infrastructure will undertake a consultative program and study into increasing access to public transport for residents along the Tonsley line. The study and program will investigate and consult on options to build a new Tonsley train station and the feasibility of a new 15 minute service to Flinders Station.

Yours sincerely,

Neil Welsh
Project Lead

09 November 2018



*In reply please quote
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ABN 92 366 288 135

Ms Laura Kerber
Senior Planning Officer – Major Development and Crown
State Commission Assessment Panel
Level 5, 50 Flinders Street
ADELAIDE SA 5000

Dear Ms Kerber,

***DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT:
RESPONSE TO SUBMISSION FROM ROBIN LEWIS***

In response to the submission dated 24 September 2018 from Robin Lewis,
I provide the following information.

The Flinders Link Project will include pedestrian and cycle connections at the
corner of Sturt Road and Birch Crescent, and also a cross over point between
Oak Avenue and Brayden Court. There will be lifts at either side of Main South
Road to provide vertical access to the shared use path.

After an extensive options analysis and criteria assessment, a single track to
support bidirectional train service operations was deemed the most suitable
option in this instance.

Yours sincerely,

Neil Welsh
Project Lead

09 November 2018



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Dear Ms Kerber,

*DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM MR AIDAN STANGER*

In response to the submission dated 19 October 2018 from Mr Aidan Stanger, I provide the following information.

The Department of Planning, Transport and Infrastructure (DPTI) considered a number of options for the improvement of rail connectivity to the Flinders Precinct. Each option explored alterations to the current Tonsley passenger rail line in terms of station locations and both horizontal and vertical alignment options. Each option was assessed against a wide range of factors with Alignment to Overarching Rail Connectivity Strategy; Value; and Construction Impacts forming key criteria.

The outcome described in the Development Application is representative of DPTI's preferred option, as it represents a cost-effective solution that best aligns with the overarching rail connectivity strategy. In addition, this option strongly supports and facilitates delivery of the land use aspirations for the Flinders precinct.

DPTI considered options that were similar in nature to that suggested by Mr Stanger, but these were not selected for progression as their demerits, particularly in relation to cost, construction and stakeholder impacts outweighed other assessment criteria.

Yours sincerely,

Neil Welsh
Project Lead

09 November 2018



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Dear Ms Kerber,

*DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM MS JODIE PEARCE*

I refer to the submission dated 19 October 2018 from Ms Jodie Pearce. The submission contained a large amount of feedback which was considered by the project team. The following information addresses key points from Ms Pearce's submission.

Anti-graffiti treatments

Anti-graffiti treatment to the façade of the viaduct ramp, north of Sturt Road, takes the form of varied textured concrete cladding panels. These panels have previously been installed at another metropolitan railway station, and advice from the Rail Infrastructure Maintenance section of DPTI suggests that the textured surfaces have had a positive effect as a deterrent to graffiti attack, especially the quick natured 'tagging' attacks.

Footpath treatments around Lynton Avenue and Birch Crescent

The pedestrian underpass between Birch Crescent and Lynton Avenue, and the footpath works on Lynton Avenue, will be exposed aggregate concrete, the same finish as the Darlington Upgrade Project footpath works. Additional information regarding surface finishes and usage can be made available if requested.

Access at Sturt Road / Birch Crescent

The lifts and stairs at the corner of Flinders Drive and Main South Road will connect Laffer Triangle and surrounds to the elevated shared use path. A vertical connection at the intersection of Sturt Road and Birch Crescent is not considered an appropriate outcome as new at-grade connections will be available from this location, going along Flinders Drive to the lift and stairs at the corner of Flinders Drive and Main South Road. This connection is supported by the inclusion of activated pedestrian crossings at the Sturt Road / Birch Crescent intersection.

Switchback ramp design

The switchback ramp has been designed to facilitate both pedestrian and cyclist movement in accordance with relevant standards. The design consists of a series of 10 three-metre wide ramps which have a grade of 4%. This grade provides a balance between the two user groups and ensures ease of navigation by pedestrians and cyclists travelling up, while reducing the risk of increased speeds when travelling down. The path is locally widened to approximately nine metres in the vicinity of the U-turn area to provide additional room for this manoeuvre, reducing the risk of conflict between different user groups. The 10 ramps are separated by nine landings, each approximately 1.2 metres long, with the length of the landing at the U-turn area being approximately 4.7 metres long.

The viaduct path is of a constant grade of 2.65%, which is considered to be a flat path and not a ramp. The elevated walkway between the Flinders Plaza and Flinders Medical Centre is at a flat grade of 0.9-1.2% and does not require flat landings in this section. In the span where the grade increases to 6.9%, flat landings have been incorporated as required by the relevant design codes. There are alternative at-grade paths along Flinders Drive as part of the Darlington Upgrade Project.

While it is recognised that distance and travel time to a train station will be increased for a portion of existing users, the project will improve accessibility to key destinations within the Flinders precinct, and provide safe, direct access for pedestrians and cyclists.

Yours sincerely,



Neil Welsh
Project Lead

09 November 2018



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Ms Laura Kerber
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Dear Ms Kerber,

***DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM CITY OF MITCHAM***

In response to the submission dated 9 November 2018 from Mr Marc Duncan, City of Mitcham, I note the favourable comments made by Council in response to the proposal and provide the following information.

Areas for Council care and control

The project acknowledges the need to commence consultation and negotiation with Council regarding intention to vest areas to Council for care and control. It is expected that the project team will invite Council to commence these discussions in the near future. It is likely that the areas subject to negotiation will be limited to the back of curb pedestrian and cyclist transition space adjacent the eastern lift and stair area at Main South Road and the elevated shared user path within the council boundary.

Safety measures around viaduct lifts (conflict between pedestrians and cyclists)

The viaduct shared use path is of a consistent, clear three-metre width throughout including where it passes the lift/stair core 1. The opening threshold between the lift/stair core 1 and the viaduct is a clear 7.5 metres wide (grid marks 3-6 in attached drawing CS1-DRG-352043) and prior to the threshold, before entering the shared use path, a 600mm wide row of tactile ground indicators will be installed.

The stair structure has an open aluminium cladding along grid marks A1-A3 and the viaduct has a 50% 'open' perforated anti-throw screen. It is expected that adequate

visibility through the screens will be available to allow users to see into each structure.

The interface between the two structures is considered to be suitably 'open' to ensure that adequate sightlines and warning queues are available to users. Reinforcement through the use of signage will be considered during the detailed design, and implemented if considered necessary.

At Flinders station, the lift and stair structures have been separated, with the stairs leading directly onto the open plaza area separate from the direct line of the shared use path. The three-metre wide shared use path from the viaduct combines with a three-metre wide path from the lift, to effectively create a six-metre wide ramped pathway up to the Flinders station plaza. Again, interface between the two areas is considered to be suitably 'open' to ensure that adequate sightlines and warning queues are available to users. Reinforcement through the use of balustrading and signage will be considered during the detailed design and implemented if considered necessary.

Lighting around Flinders station

Lighting around the new station will include the following areas:

- Station platform (open and covered portions);
- Flinders station plaza area (open and covered portions) including lift and stairs as well as station amenity buildings;
- Elevated walkway to Flinders Medical Centre;
- Shared use path on the viaduct; and
- Lift and stairs on the viaduct.

Lighting has been designed to meet the necessary standards and codes. Levels range from 14 lux to 160 lux depending on the requirement for the area. Feature lighting has not been included which has assisted in managing unintended light spill. The lighting design package can be made available to Council for review if requested.

Vegetation and landscaping

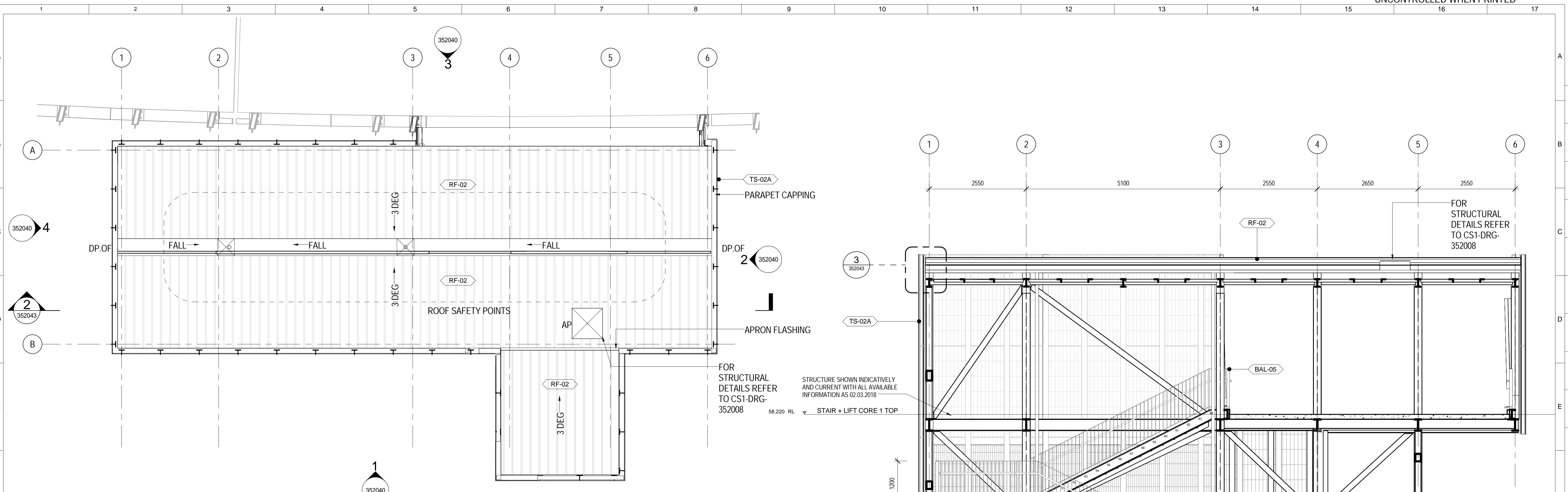
In addition to the new vegetation being planted, the project is committed to retaining mature trees where opportunities exist to do so.

Yours sincerely,

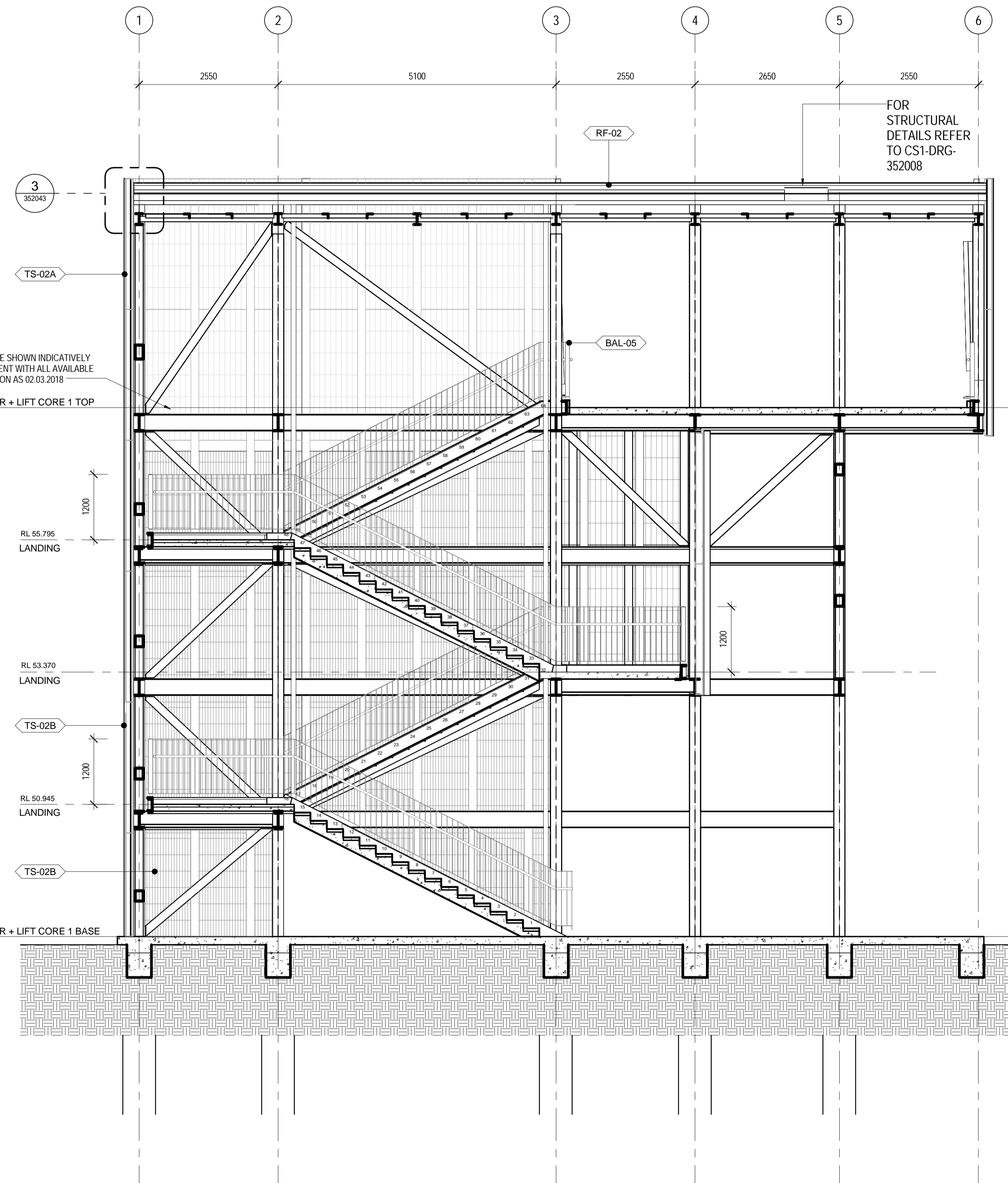


Neil Welsh
Project Lead

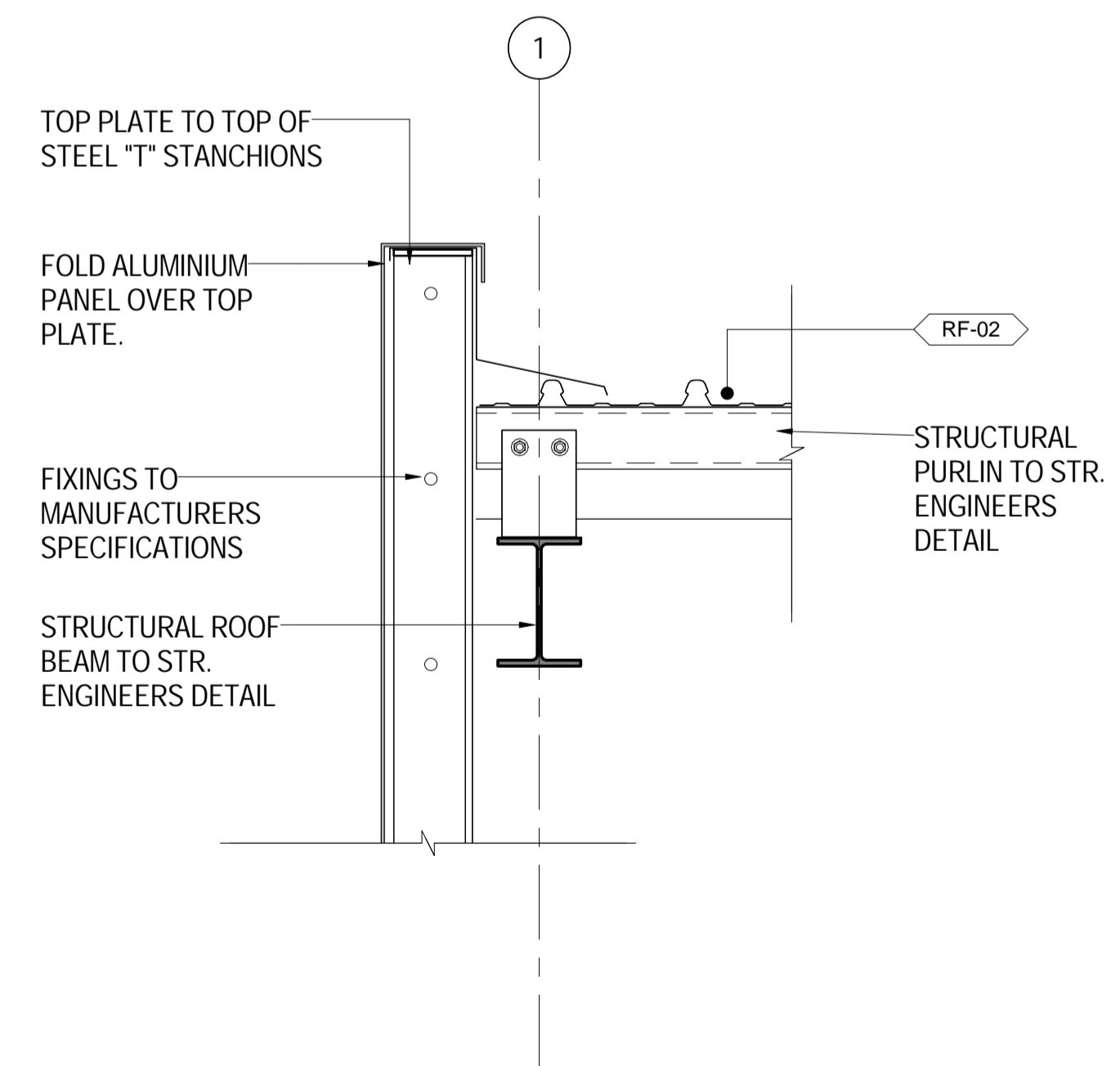
15 January 2019



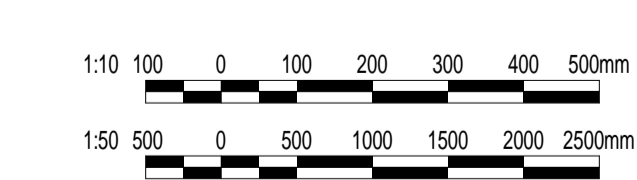
1 STAIR + LIFT CORE 1 ROOF PLAN
SCALE 1:50



2 STAIR + LIFT CORE 1 SECTION
SCALE 1:50



3 TS-02 TO ROOF SECTION DETAIL
SCALE 1:10



A ISSUED FOR 70% REVIEW				DRN				17.04.18				DESIGNED: FLD				FLINDERS LINE ARCHITECTURE				Government of South Australia Department of Planning, Transport and Infrastructure							
REV DESCRIPTION				DSGN				CHK				APRV				GATEWAY SOUTH				ARCHITECTURE - VIADUCT				CS1-DRG-352043			
				17.04.18								INDEX SHEET REF: CS1-DRG-351695				STAIR + LIFT CORE 1 ROOF PLAN + SECTION				SCALE(S): As Indicated							
				DATE								PROJECT APPROVAL: D. RICHTER								REVISION: A							
												DATE: 17.04.18								SIZE: A1							
																				SHEET:							

PLOTTED: 16/04/2018 9:51:30 AM



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Dear Ms Kerber,

***DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM CITY OF MARION***

In response to the submission dated 31 October 2018 from Alex Wright, City of Marion, I provide the following information.

Overall built form design

We note the favourable comments made by Council in response to the proposal and its view that the proposal meets the provisions of the Development Plan. Further, that the proposal provides an integrated transport network and connections that are safe and convenient. These are key outcomes sought by the Department in this proposal.

In terms of Councils comments on "Overall built form design" we note Councils encouragement in the use of appropriate lighting whilst ensuring the effects of these on residential properties is not unreasonable. The proposal is designed having regard to CPTED principles and will meet the necessary standards to ensure that light levels are appropriate.

The visual amenity of the structures results from their function. They require solid form, however the design incorporates treatments and associated landscaping, together with existing vegetation, to soften and articulate the overall visual presence of the elements.

Council commented on any future noise attenuation works. Should further attenuation works be required, care will be taken in the design to minimise visual effects. This is assisted in part by some existing landscaping but a style that is

sympathetic with the overall design theme together with treatments to limit visibility and articulate its form will be addressed.

We note Council's encouragement on minimising the use of energy and water and concur.

Council has made several comments on a range of components of the documents provided with the application. A number of these are not technically Development. The Department proposes to ensure the form and standard of the infrastructure provided meets the wide-ranging needs of the community and that it will be a significant and attractive part of our urban environment.

The matters of detail in large measure will be accommodated in the final detailing of the project and the various management plans that arise out of the tendering and pre-construction phase. It is also acknowledged that the project elements meet all necessary standards and safety as well as ensure a high amenity and functionality for users and those resident in the locality.

The Flinders Link project team is currently reviewing all comments provided in Appendix 1 of Council's submission and will continue to collaborate with City of Marion on these items.

Regulated Trees and Landscaping

Tree 833 is a Regulated Tree located on private property which shares a boundary with the rail corridor. It has been indicated that this tree is not expected to require removing but rather pruning of the root system and possibly the canopy. The new drainage basin will be built adjacent Tree 833 and the earthworks proposed fall within the calculated tree protection zone. This zone indicates an area around a tree where the highest concentration of roots is expected to be found.

As the tree is located on private property, the accuracy of the position and the tree protection zone is still unconfirmed, drawing CS1-DRG-352328 highlights that construction should be cautious in this area. A condition of the final hold point release is that this drawing is amended to state that "*Location of survey trees in private property have limited accuracy. Trees are to be retained. Works adjacent these trees are to proceed with caution and, if within the tree protection zone, under direction of onsite arborist.*"

All trees to be planted on the project will be of a semi-mature state, 1.5m-2.5m tall with a trunk caliper of 30-50mm. The majority of shrub planting will be in the form of tube stock, although there are a number of 140mm pots being supplied also. In addition to the new vegetation being planted, the project is committed to retaining attractive semi-mature trees where opportunities exist to do so. Council has been involved in the design process which identified the proposed vegetation species. Alternatives suggested by Council have been incorporated into the design.

Yours sincerely,



Neil Welsh
Project Lead

/s/ November 2018



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Ms Laura Kerber
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Dear Ms Kerber,

*DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM OFFICE FOR DESIGN AND ARCHITECTURE
SA*

In response to the submission dated 31 October 2018 from Ms Belinda Chan, Office for Design and Architecture SA, I provide the following information.

Location of all lighting and CCTV posts (and their integration with the staunchions) with the view to ensure consistency in spacing as the vertical elements will be a significant visual component for the structural ribbon element:

- In response to ODASA comments received as part of the design review process for Design Package RDP-32 Superstructure, the project team is investigating further collocation of lighting/CCTV to minimise inconsistent spacing of vertical elements. Design modification will be supported contingent upon validation of technical outcome compliance, budget availability, maintainability and analysis of other potential flow on effects of implementing this design change. It is understood that major improvements have been identified for inclusion in the next design revision with an indication that all lighting/CCTV has been collocated. The project team will provide ODASA with evidence of this design change when it has been received from the designer.

*Confirmation of the feature lighting on key elements ref. Urban Design Overview p19
3.2.7 Minimise whole of life costs;*

- Feature lighting is not being progressed in the detailed design.

Location of all services cabinets, transformers and switching cubicles across the project (on the viaduct, switchback ramp, pedestrian walkway and station), including the transformer indicated on DRG-352155 to ensure integration of elements with landscaping, the three phase outlet 10A isolator for evaporative cooler indicated on DRG-352155 to ensure material integration with wall element. This could be shown on elevations on DRG-352519 and 352521;

- A sketch has been attached which indicates the location of all cabinets, transformers, etc. Each location has a cross reference to the applicable design drawings which have also been attached.
- The project team is working with the designers to alter the location of the distribution board depicted in drawing CS1-DRG-359835 at the south west corner of the transition area between the station and the elevated walkway. The currently depicted location sits within a public thoroughfare and is not considered appropriate. It the intention of the project team to have this distribution board moved to an area outside of the walkway, potentially to the garden area to the west of its current location.

Location of signage on the shared path – ref. Urban Design Overview p21 3.3.1 650 metre Rail Track Extension.

- Refer to SK0241 – Wayfinding, Traffic Control Signage and Line Marking for indicative locations of signage on the shared path. The project team is continuing to progress the wayfinding regime with both external and internal stakeholders including the Darlington Upgrade Project.

Confirmation of locations for use of WSUD, recycled materials and solar collection ref: p19 Urban Design Overview 3.2.3 ESD

- WSUD has been incorporated in the design of the detention basins sited between the proposed Flinders Station and Main South Road and also within the rail corridor near between Lynton Ave and Woodlands Road.
- The project team is continuing to explore opportunities for use of recycled materials although it is likely that this will be limited to the possible reuse of construction materials from elsewhere on site.
- Solar collection has not yet been incorporated into the design however further opportunities for this may be present at the proposed Flinders Station. The future incorporation of solar collection will be contingent upon validation of budget availability, technical compliance and whole of life cost/benefit analysis.

Confirmation of the consistency of perforations to screens across the viaduct– ref. Urban Design Overview p17 3.2.2. Articulation of Form, and intent to provide barrier and screen elements to be lightweight and transparent to maximise views out and increase legibility except adjacent the Sturt Police Station where for security reasons observations is limited;

- Current indication is that the perforated screen on the viaduct will be 50% transparency with spaced 12.7mm diameter circular holes consistently spaced for all screen panels on the inside (eastern side) of the viaduct as well as from Abutment B (station end) to the northern vertical transport connection on the outside (western/southern side). The level of transparency will transition via intermediate perforation screens from this point heading towards Abutment A with a transparency of 20-25% in areas of direct overview of the adjacent Sturt Police Station compound. Further detail will become available at the next submission of

RDP-32 Viaduct Superstructure which ODASA will receive for review when submitted.

Proposed strategy to prevent bird roosting on pier headstocks





- A final strategy has not yet been confirmed. The project team is working with stakeholders to ensure the outcome is appropriate given the impact that some methods such as permanent barriers or nets have on access for asset condition inspections. Fine spikes may be suitable however this solution has not yet been accepted.

Pier protection crash barrier locations and any implications for proposed landscaping and pedestrian/cyclist access;

- The attached sketch, *180723_Flinders Drive Layout....*, indicates locations for pier protection barriers consistent with the Flinders Drive realignment concept layout which is under design development by the Darlington Upgrade Project. The barriers indicated on this sketch will be concrete with appropriate end terminal treatments.
- No significant impacts to the Flinders Link landscaping or Darlington Upgrade Project pedestrian/cyclist access functionality are expected. Due to the partial closure of Laffer Drive at the junction of Flinders Drive Pier 6 does not require any form of pier protection. The potential inclusion of a midblock pedestrian refuge in the centre median on Flinders Drive in the vicinity of Pier 6 will lead to opportunities to realign the Laffer Drive footpath to be on the southern side of the pier 6. The Flinders Link landscaping design is expected to be modified so as to integrate the footpath and also extend garden bed up to the new Laffer Drive kerb line.

Confirmation of concrete finishes RS-01, RS-02, RS-03, RS-04, PC-01, PC-02;

- The table below provides indication as to the finishes for RS-01 to RS-04. PC-01 and PC-02 finishes are yet to be confirmed. Finishes for the RS and PC panels will be formally detailed at the next design revision. ODASA will receive this package for review when it is submitted.

Item ID / Tag	Supplier	Product Description	Colour/Pattern/Finish type	Example Image	Warranty/Remarks	General Location
RS-01	Formliner: Reckli	Reinforced Earth precast concrete wall panels. Square form, 1980x1980mm arranged in a vertical stretcher bond. Textured, form liner finish	Natural Grey Concrete - Class 2 finish Reckli 1/317 RUSTIC			Western Ramp (bottom)
RS-02	Formliner: Reckli	Reinforced Earth precast concrete wall panels. Square form, 1980x1980mm arranged in a vertical stretcher bond. Textured, form liner finish	Natural Grey Concrete - form finish Class 2 finish Reckli 2/168 SOMME			Western Ramp (top)
RS-03	Formliner: Reckli	Reinforced Earth precast concrete wall panels. Square form, 1980x1980mm arranged in a vertical stretcher bond. Textured, form liner finish	Natural Grey Concrete - form finish Class 2 finish Reckli 2/47 RHEIN - HORIZONTAL			Western Ramp (highlight)
RS-04	Formliner: Reckli	Reinforced Earth precast concrete wall panels. Square form, 1980x1980mm arranged in a vertical stretcher bond. Textured, form liner finish	Natural Grey Concrete - form finish Class 2 finish Reckli 2/47 RHEIN			RSS walls adjacent Abutment B

Confirmation of materiality and finish of DT-04 (DRG-352519);

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Confirmation of TS-06 (DRG-35007);

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Confirmation if the steel box girders will be fabricated as curved or straight/faceted elements.

- Yes, the steel box girders will be fabricated as curved elements.

Clarification of the interface of the perforated screen with Abutment B– an elevation of the east face of the pedestrian walkway of Pier 2 and Abutment A should indicate this.

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Clarification of the finish to the Abutment A retaining wall associated with the pedestrian walkway ref: DRG-35007 Abutment A Axo;

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Confirmation of detailing between the elevated walkway and the piers (DRG-35003/4);

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Clarification of the fence type to be used at either ends of the pedestrian underpass – Urban Design Overview p24 3.3.3 Cross Rail Access – Underpass;

- The design team is aiming to remove this detail during progression of the design which will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Confirmation of balustrade type proposed for the switchback ramp ref: p24 Urban Design Overview 3.3.2 Switchback Ramp and Stairs.

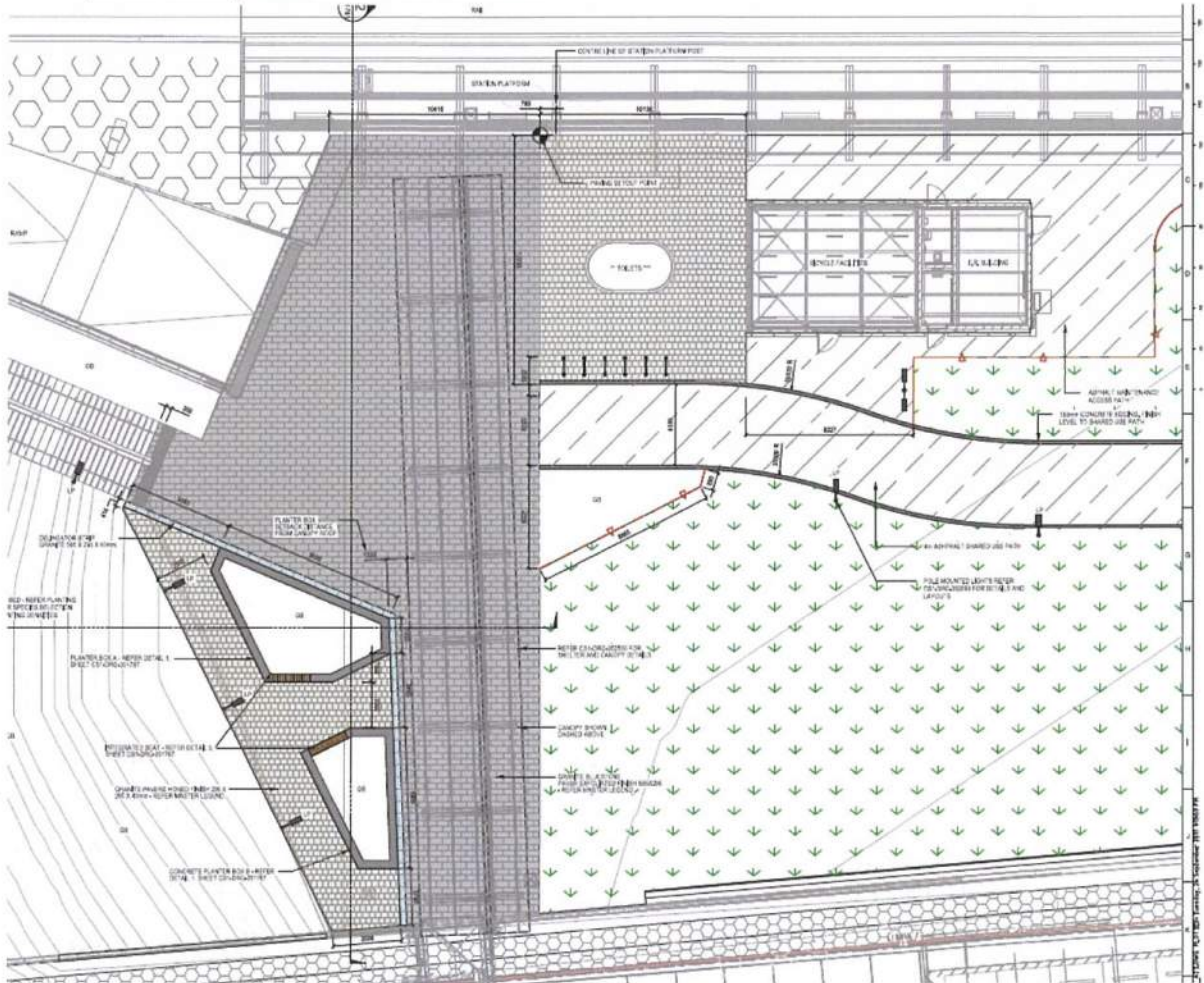
- Monowills

Urban Design Overview Stair + Lift East – clarification if the small section of landscape can be delivered as part of this project to ensure a coordinated design outcome.

- Assuming this comment is referring to the section on referenced image bounded by the broken red line and marked “*Darlington Upgrade Project Works*” then yes, the works will be coordinated to ensure a consolidated outcome in this location. Both project teams are committed to maximising design integration and construction efficiencies at these interface points.

Confirmation that the posts for the covered walkway between the platform and the elevated walkway are not conflicting with pedestrian desire lines to the middle of the platform, or causing a potential hazard for cyclists moving from the viaduct to the SUP and vice versa (DRG-352500).

- This is correct. Confirmation will be available when design package RDP-12 Landscaping is next issued. ODASA will receive this package for review when it is submitted. The extract from a pre-100% design drawing is included below which indicates the Shared Use Path has been realigned so as to have a straight approach when entering the Flinders Station plaza. SUP width is 4m and shelter posts are spaced at 4.2m centres.



Confirmation of lighting locations and the relationship with other urban/architectural elements ref: note Light to be located in landscape (DRG-352517);

- The image included above indicates lighting locations have been reassigned to pathway edges as indicated in the lower left corner of the image. Not shown on this image is the lighting configuration at the transition from the viaduct shared use path to the plaza area. This detail is currently under review with the project team indicating a preference for the lighting to be integrated with vertical stanchions integral to the fence line on the retaining wall edge between the shared use path and the stairs to Main South Road. This would be similar to the configuration to the lighting arrangement on the viaduct. Confirmation of this detail will be available at the next design review gate which will be submitted to ODASA for review.

DRG-352524 & Schedules – Confirmation of the difference between TS02A, B and C;

- This information is not yet available and will be detailed in the 100% design. ODASA will receive this package for review when it is submitted.

Confirmation of landscape maintenance responsibilities and collaboration with Council regarding species selection.

- The project team is yet to finalise landscape maintenance responsibility agreements with affected stakeholders. City of Marion representatives have been regularly consulted regarding landscaping and species selection. City of Marion have participated in formal review and commentary on Design Package RDP-12 Landscaping at all review gates.

Confirmation if all planting will be irrigated, to ensure coordination and maintenance responsibilities – ref. Design Report – Landscape 6.2 Irrigation.

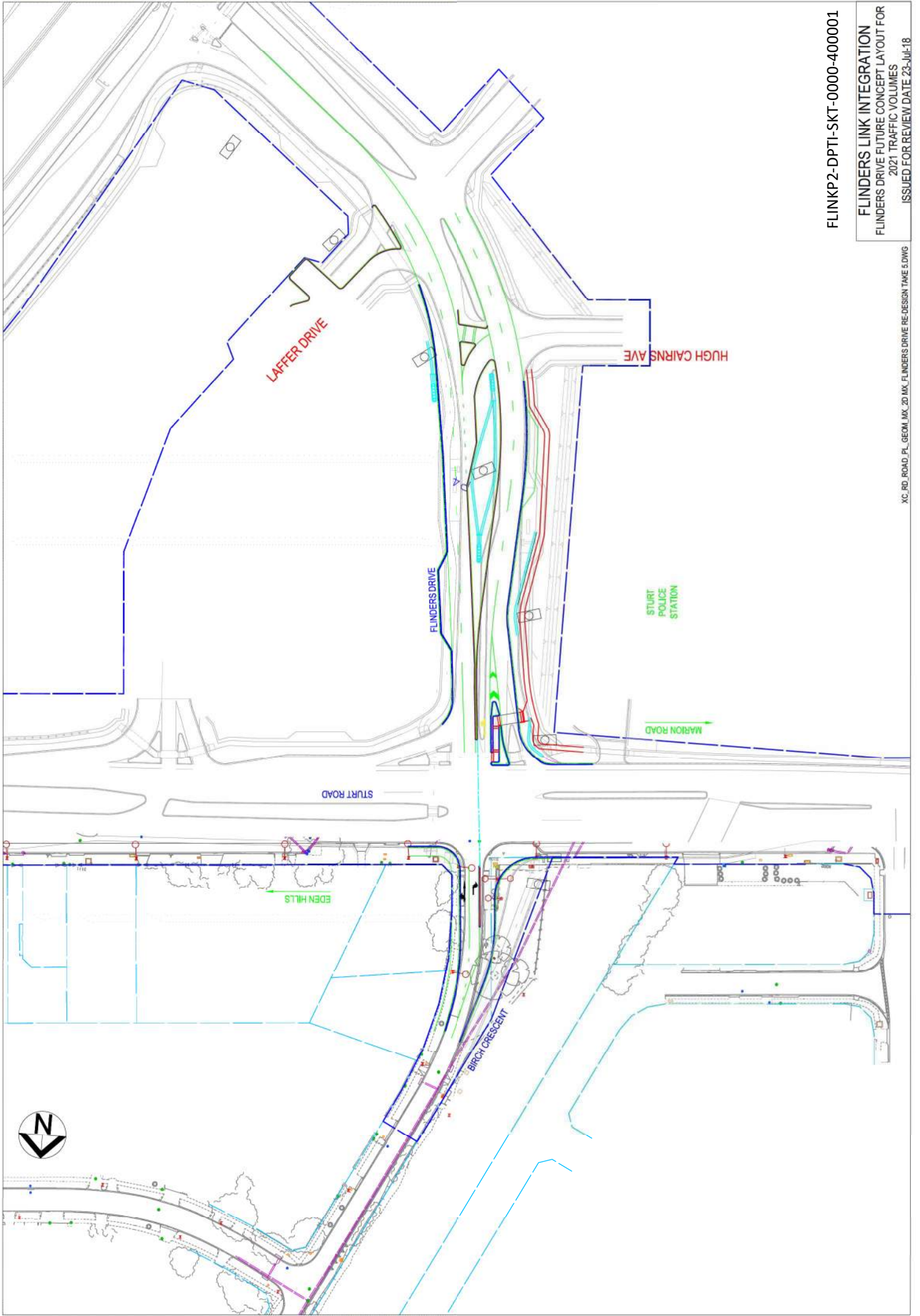
- Irrigation is confirmed for all project delivered plantings. The project team is continuing negotiation with stakeholders regarding ongoing maintenance responsibilities.

Yours sincerely,



Neil Welsh
Project Lead

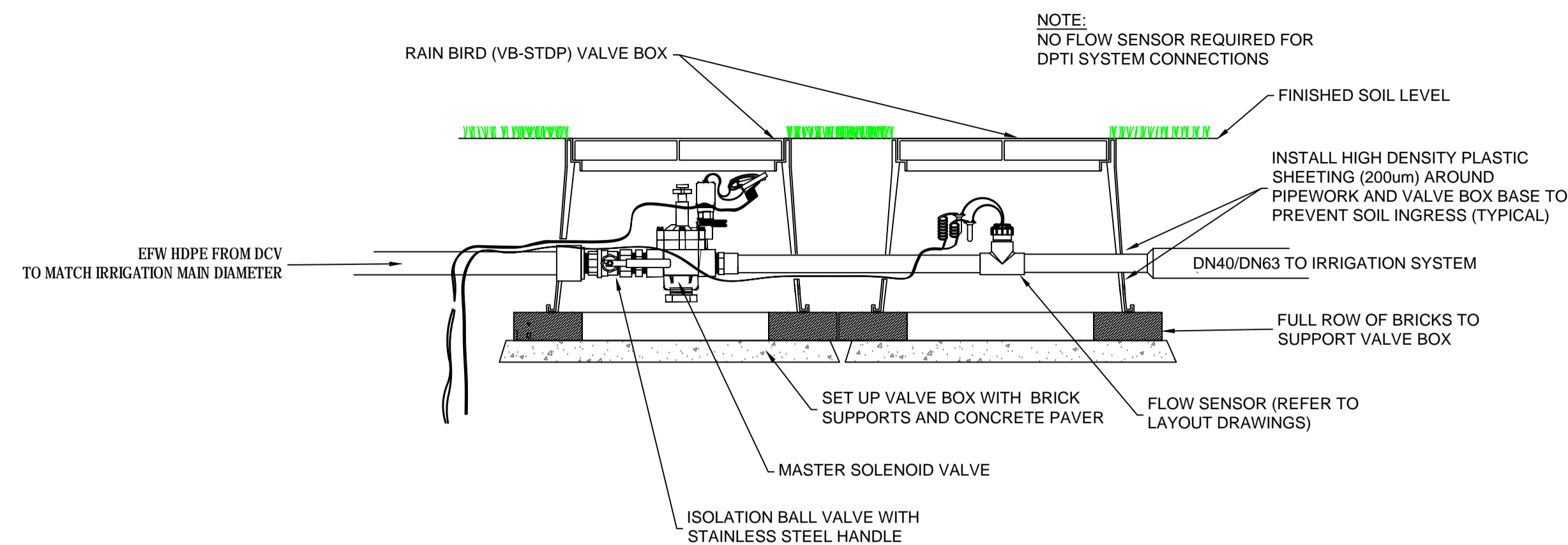
12 November 2018



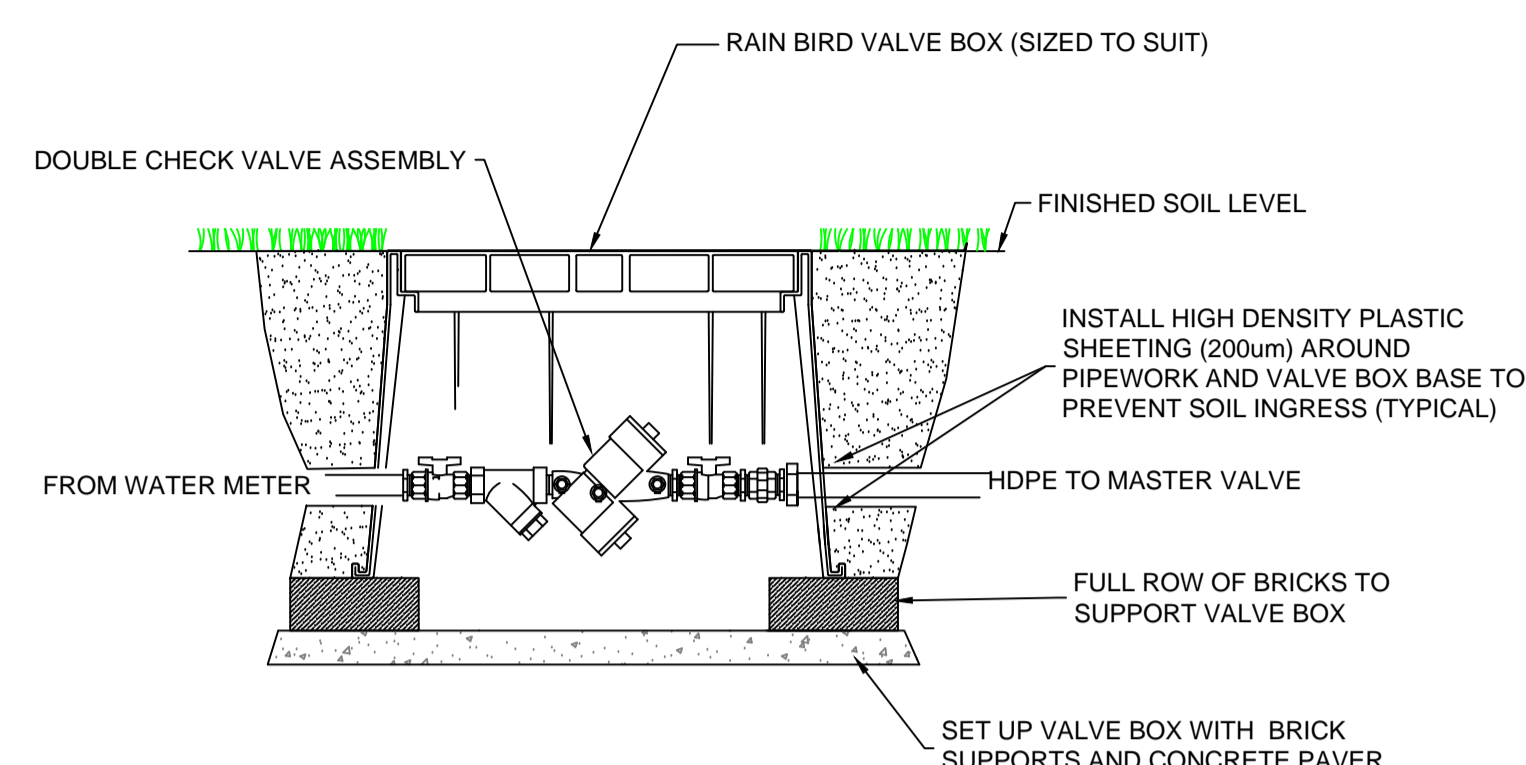
FLINKP2-DPTI-SKT-0000-400001

FLINDERS LINK INTEGRATION
 FLINDERS DRIVE FUTURE CONCEPT LAYOUT FOR
 2021 TRAFFIC VOLUMES
 ISSUED FOR REVIEW DATE 23-JUL-18

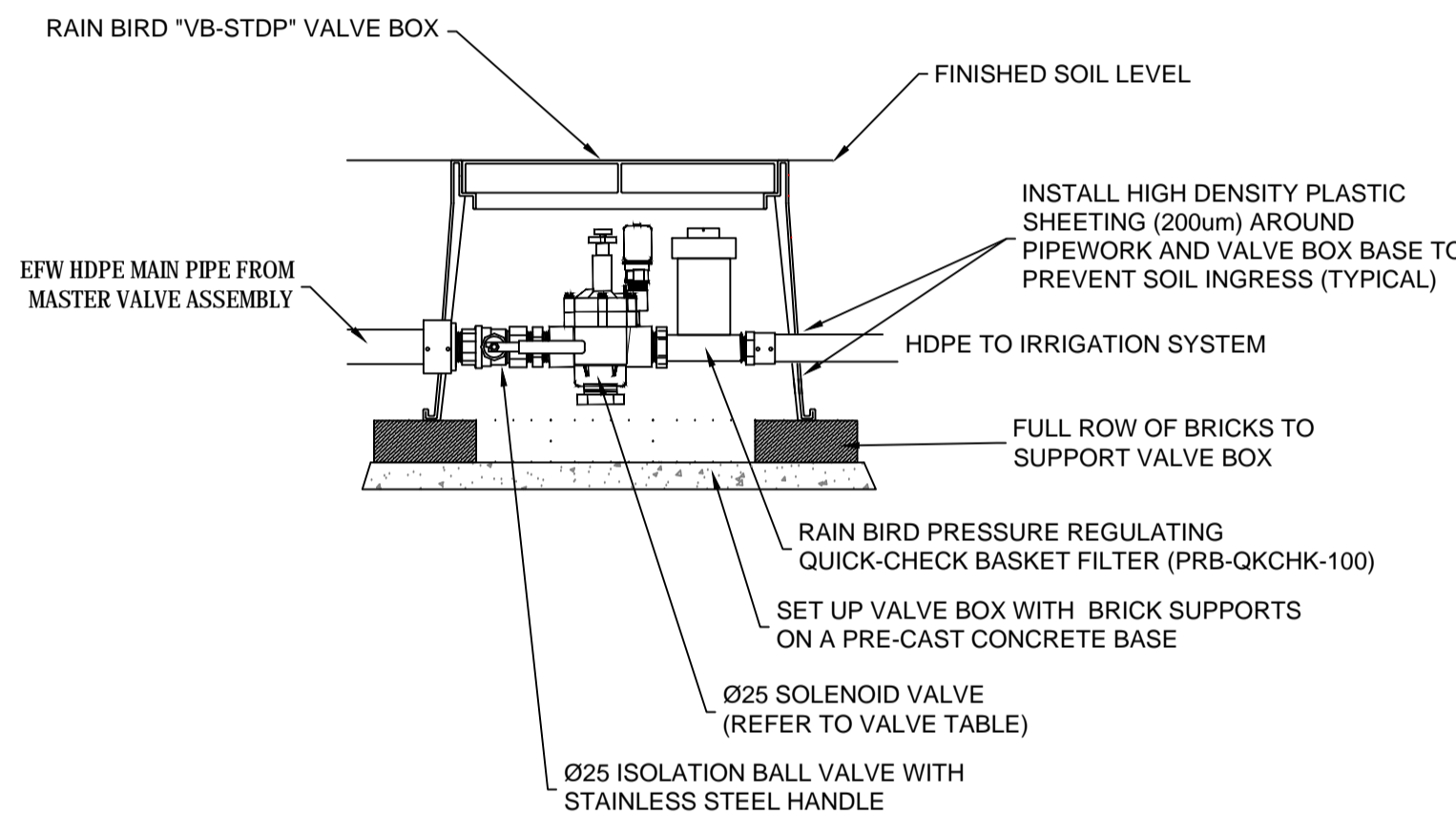
XC_RD_ROAD_FL_GEOM_MX_2D_MX_FLINDERS DRIVE RE-DESIGN TAKE 5.DWG



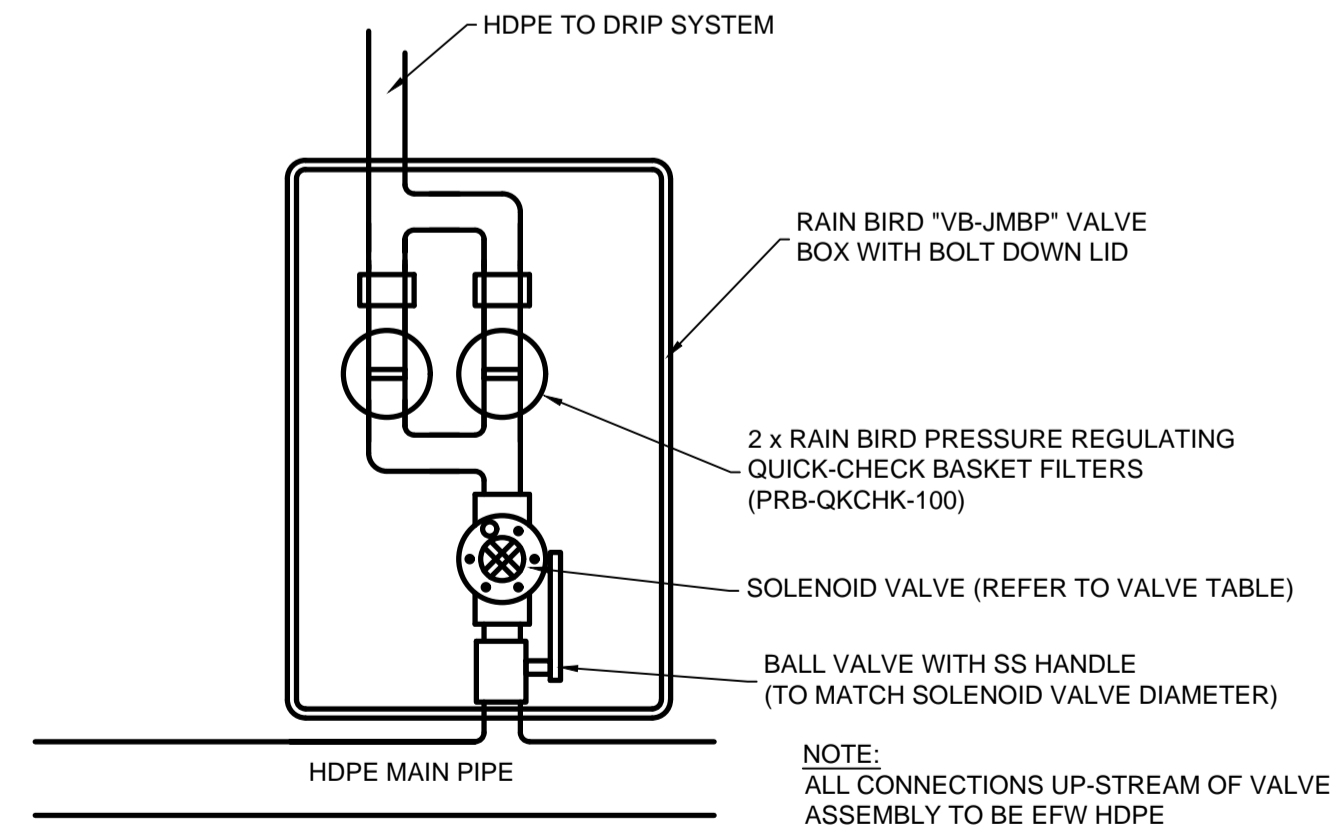
01 MASTER CONTROL VALVE / FLOW SENSOR ASSEMBLY
NOT TO SCALE



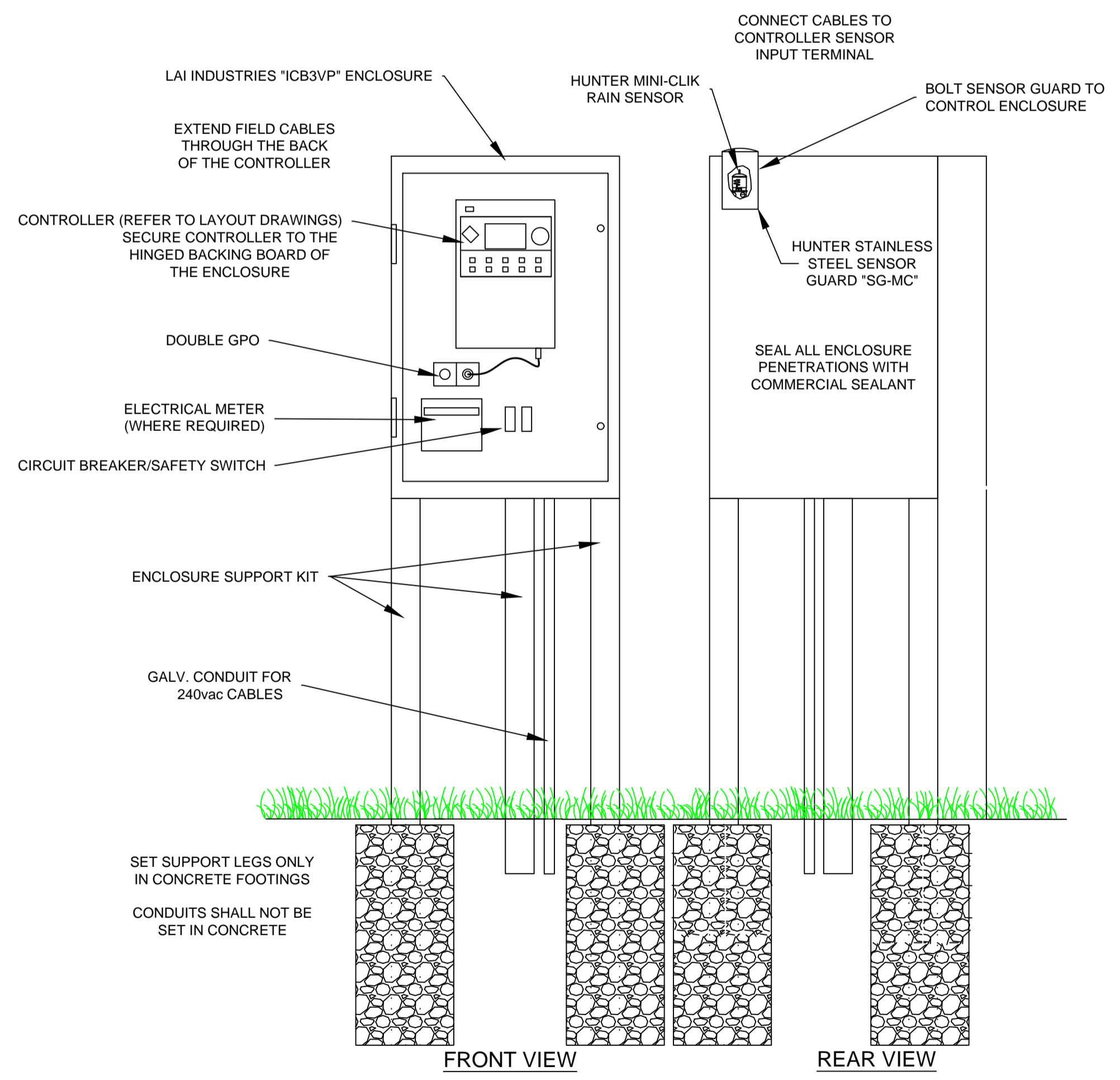
02 DOUBLE CHECK VALVE ASSEMBLY
NOT TO SCALE



03 CONTROL VALVE ASSEMBLY (DRIP LOW FLOW <80L/m)
NOT TO SCALE



04 CONTROL VALVE ASSEMBLY (DRIP HIGH FLOW >80L/m) DUAL
NOT TO SCALE



05 CONTROL ENCLOSURE ASSEMBLY
NOT TO SCALE

A		ISSUED FOR 100% DESIGN		DC	DC	NN	-	10.08.18	DRAFTING CHECK	ORIG/DATE DESIGN	INDEPENDENT CHECK	TECHNICAL APPROVAL	PROJECT APPROVAL	DATE
REV	DESCRIPTION	1		DRN	DSGN	CHK	APRV	DATE	← 100 MILLIMETRES ON ORIGINAL DRAWING			G. GENTNER	W. KING	10.08.18

NOT FOR CONSTRUCTION

RDP12 - IRRIGATION

GATEWAY SOUTH

DESIGNED: DJC
DRAFTED: DJC
CHECKED: NN
APPROVED:

FLINDERS LINE IRRIGATION DETAILS

SHEET 01

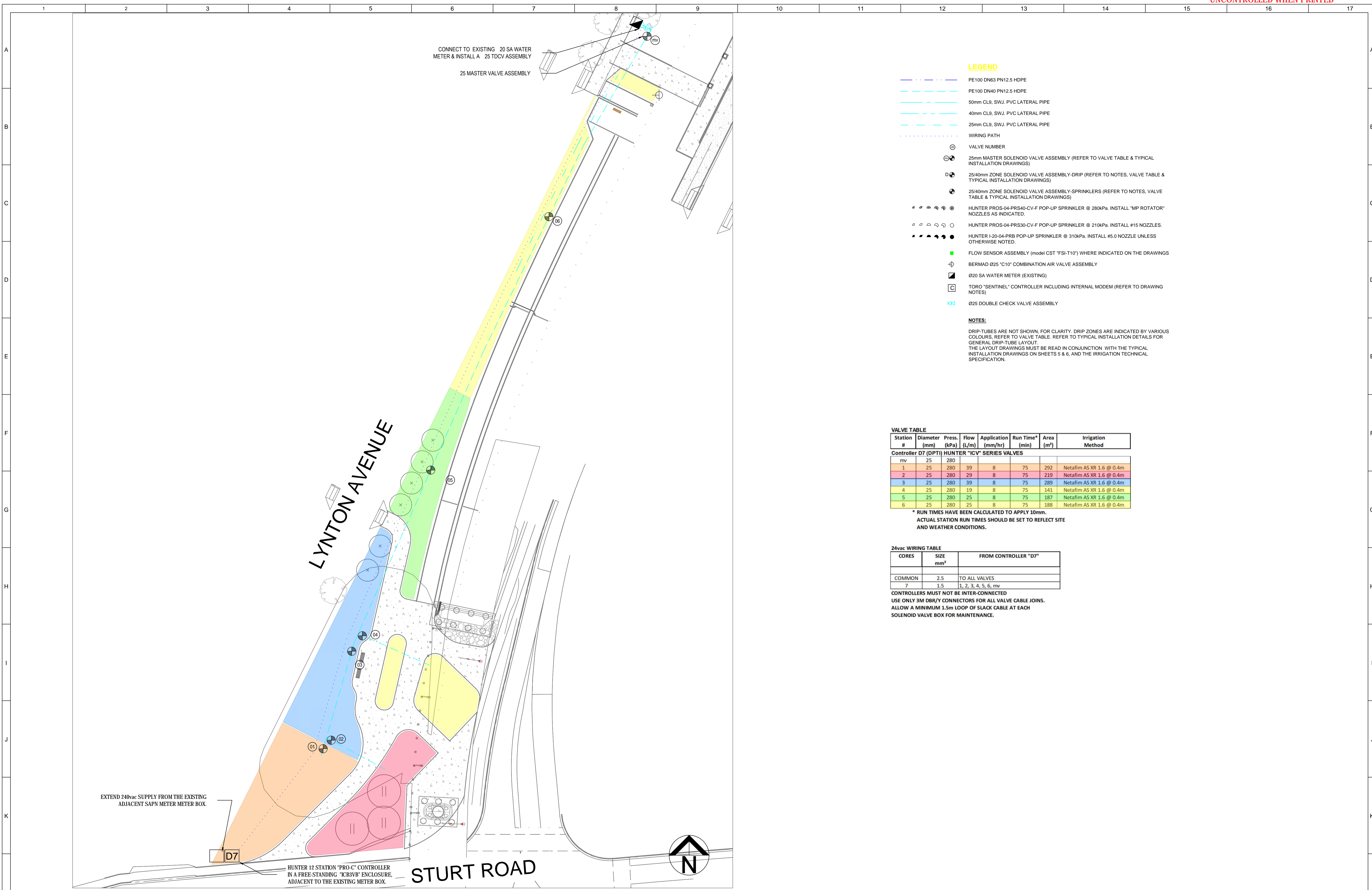
PLAN

Government of South Australia
Department of Planning, Transport and Infrastructure

CSI-DRG-351779

SCALE(S): N.T.S. SIZE: A1
REVISION: A SHEET: 5 OF 6

CAD FILE NAME: FLD_DPTI_RAIL_A1_IRRIGATION.DWG PLOTTED: Monday, 3 September 2018 4:51:04 PM



LEGEND

- PE100 DN63 PN12.5 HDPE
- PE100 DN40 PN12.5 HDPE
- 50mm CL9, SWJ, PVC LATERAL PIPE
- 40mm CL9, SWJ, PVC LATERAL PIPE
- 25mm CL9, SWJ, PVC LATERAL PIPE
- WIRING PATH
- VALVE NUMBER
- 25mm MASTER SOLENOID VALVE ASSEMBLY (REFER TO VALVE TABLE & TYPICAL INSTALLATION DRAWINGS)
- 25/40mm ZONE SOLENOID VALVE ASSEMBLY-DRIP (REFER TO NOTES, VALVE TABLE & TYPICAL INSTALLATION DRAWINGS)
- 25/40mm ZONE SOLENOID VALVE ASSEMBLY-SPRINKLERS (REFER TO NOTES, VALVE TABLE & TYPICAL INSTALLATION DRAWINGS)
- HUNTER PROS-04-PRS40-CV-F POP-UP SPRINKLER @ 280kPa. INSTALL "MP ROTATOR" NOZZLES AS INDICATED.
- HUNTER PROS-04-PRS30-CV-F POP-UP SPRINKLER @ 210kPa. INSTALL #15 NOZZLES.
- HUNTER I-20-04-PRB POP-UP SPRINKLER @ 310kPa. INSTALL #5.0 NOZZLE UNLESS OTHERWISE NOTED.
- FLOW SENSOR ASSEMBLY (model CST 'FSI-T10') WHERE INDICATED ON THE DRAWINGS
- BERMAD Ø25 "C10" COMBINATION AIR VALVE ASSEMBLY
- Ø20 SA WATER METER (EXISTING)
- TORO "SENTINEL" CONTROLLER INCLUDING INTERNAL MODEM (REFER TO DRAWING NOTES)
- Ø25 DOUBLE CHECK VALVE ASSEMBLY

NOTES:

DRIP-TUBES ARE NOT SHOWN, FOR CLARITY, DRIP ZONES ARE INDICATED BY VARIOUS COLOURS. REFER TO VALVE TABLE. REFER TO TYPICAL INSTALLATION DETAILS FOR GENERAL DRIP-TUBE LAYOUT.
THE LAYOUT DRAWINGS MUST BE READ IN CONJUNCTION WITH THE TYPICAL INSTALLATION DRAWINGS ON SHEETS 5 & 6, AND THE IRRIGATION TECHNICAL SPECIFICATION.

VALVE TABLE

Station #	Diameter (mm)	Press. (kPa)	Flow (L/m)	Application (mm/hr)	Run Time* (min)	Area (m ²)	Irrigation Method
mv	25	280					
1	25	280	39	8	75	292	Netafim AS XR 1.6 @ 0.4m
2	25	280	29	8	75	219	Netafim AS XR 1.6 @ 0.4m
3	25	280	39	8	75	289	Netafim AS XR 1.6 @ 0.4m
4	25	280	19	8	75	141	Netafim AS XR 1.6 @ 0.4m
5	25	280	25	8	75	187	Netafim AS XR 1.6 @ 0.4m
6	25	280	25	8	75	188	Netafim AS XR 1.6 @ 0.4m

* RUN TIMES HAVE BEEN CALCULATED TO APPLY 10mm.
ACTUAL STATION RUN TIMES SHOULD BE SET TO REFLECT SITE AND WEATHER CONDITIONS.

24vac WIRING TABLE

CORES	SIZE mm ²	FROM CONTROLLER "D7"
COMMON	2.5	TO ALL VALVES
7	1.5	1, 2, 3, 4, 5, 6, mv

CONTROLLERS MUST NOT BE INTER-CONNECTED
USE ONLY 3M DBR/Y CONNECTORS FOR ALL VALVE CABLE JOINS.
ALLOW A MINIMUM 1.5m LOOP OF SLACK CABLE AT EACH SOLENOID VALVE BOX FOR MAINTENANCE.

NOT FOR CONSTRUCTION



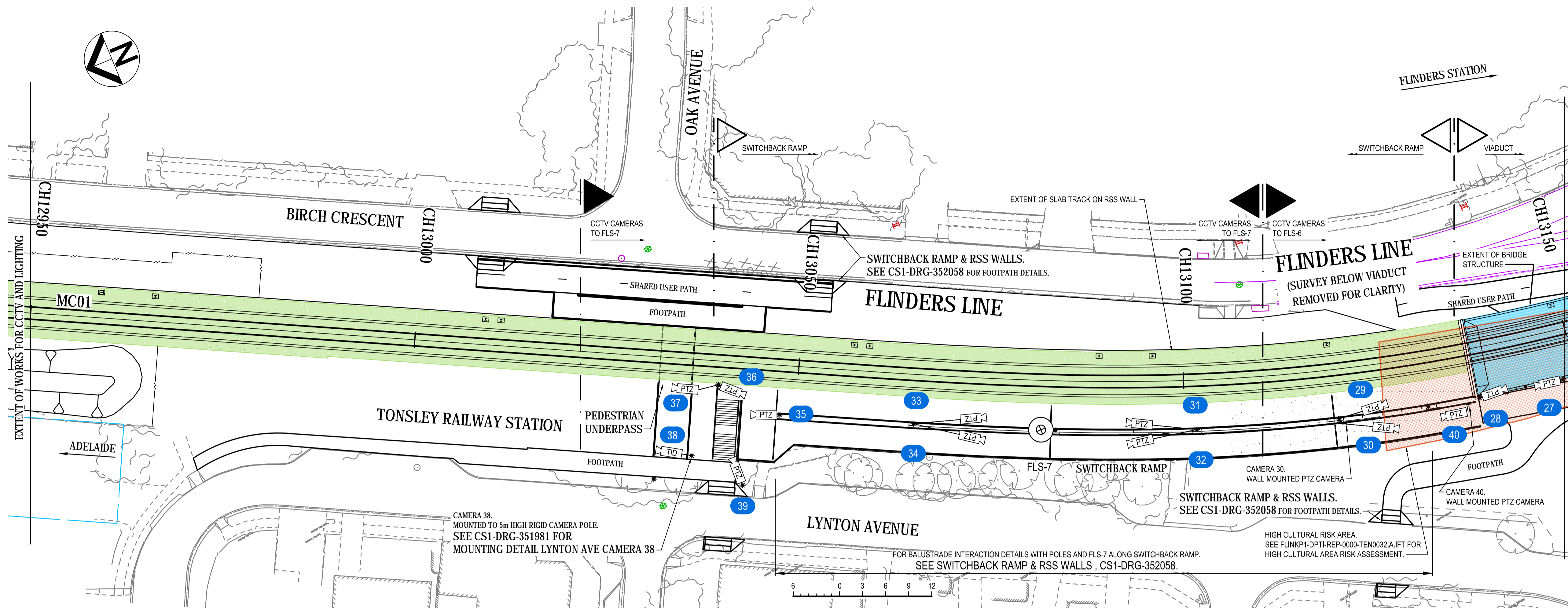
DESIGNED: DJC
DRAFTED: DJC
CHECKED: NN
APPROVED:

FLINDERS LINE
IRRIGATION LAYOUT
12.950km - 13.150km
PLAN

Government of South Australia
Department of Planning, Transport and Infrastructure
CSI-DRG-351785
SCALE(S): 1:300
REVISION: A
SHEET: 1 OF 6

REV	DESCRIPTION	DC	DRN	DC	DSGN	NN	CHK	APRV	DATE
A	ISSUED FOR 100% DESIGN								10.08.18

DRAFTING CHECK: G. GENTNER
ORIGRATE/DESIGN: W. KING
INDEPENDENT CHECK: G. GENTNER
TECHNICAL APPROVAL: G. GENTNER
PROJECT APPROVAL: W. KING
DATE: 10.08.18
TITLE: -
DATE: -
ALL DIMENSIONS ARE IN METRES UNO

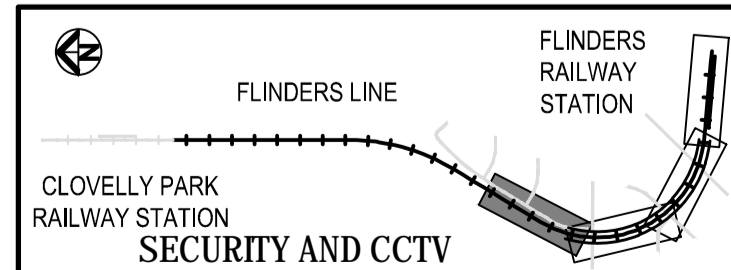


NOTES (SECURITY & CCTV):

1. PROVIDE 12-CORE OPTICAL FIBRE CABLING IN CONDUIT BETWEEN FLS-1 AND FLS-7. SEE SCHEMATIC WIRING DIAGRAM CS1-DRG-351985.
2. PROVIDE 12 CORE OPTICAL FIBRE CABLING IN UNDERGROUND CONDUIT / PIT NETWORK BETWEEN FLS-1 AND THE STATION COMMUNICATIONS EQUIPMENT ROOM (ER). SEE:- CONDUIT PLANS CS1-DRG-351987 TO CS1-DRG-351990. DUCT DETAILS CS1-DRG-351983.
3. ALL CABLING INSTALLED ON CABLE TRAY IN CHANNEL ON VIADUCT.
4. ALL UNDERGROUND AND CONCEALED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE PVC. ALL EXPOSED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE GALVANISED STEEL.

LEGEND (SECURITY & CCTV)

SYMBOL	DESCRIPTION
*	POLE OR CUSTOM SUPPORT (SEE CS1-DRG-351981 FOR DETAILS)
TID	THERMAL IMAGING DETECTOR - FIXED
PTZ	C.C.T.V. CAMERA - PAN, TILT, ZOOM
FIXED	C.C.T.V. CAMERA - FIXED
XX	C.C.T.V. CAMERA - ID NUMBER
FLS-1	FIELD LAN SWITCH (FLS) ENCLOSURE
---	EXISTING SURVEY
---	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)



REV	DESCRIPTION	DRN	DSGN	CHK	APRV	DATE
C	ISSUED FOR 100% REVIEW	-	-	-	-	30.08.18
B	ISSUED FOR 70% REVIEW	-	-	-	-	04.04.18
A	ISSUED FOR 30% REVIEW	-	-	-	-	19.12.17

NOT FOR CONSTRUCTION

RDP17 - VIADUCT CCTV AND LIGHTING

GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351974

DATE: 30.08.18

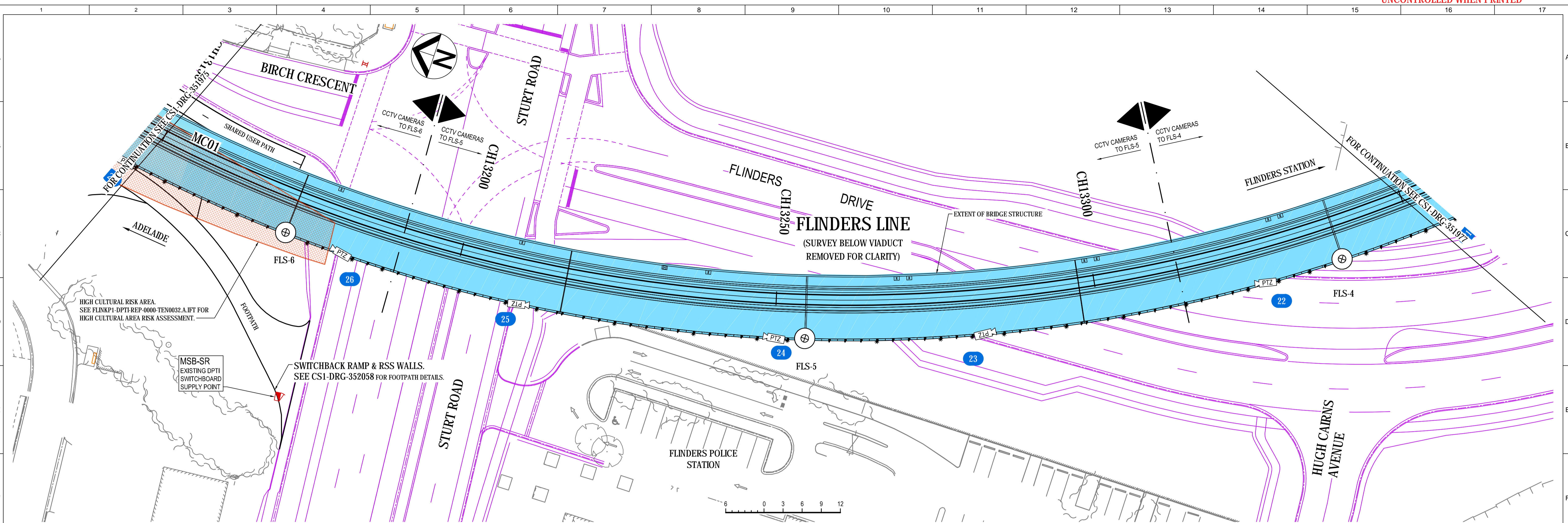
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DRAFTED: FLD
CHECKED: FLD
APPROVED:
TITLE: -
DATE: -

FLINDERS LINE
VIA DUCT
SECURITY AND CCTV - 12.950km - 13.150km
PLAN

Government of South Australia
Department of Planning, Transport and Infrastructure

CS1-DRG-351975

SCALE(S): 1:300 SIZE: A1
REVISION: C SHEET: 2 OF 31

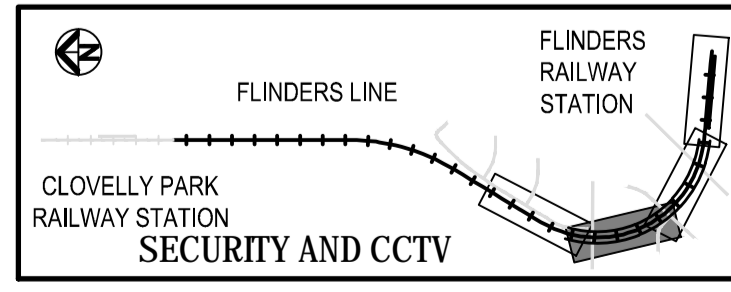


NOTES (SECURITY & CCTV):

1. PROVIDE 12-CORE OPTICAL FIBRE CABLING IN CONDUIT BETWEEN FLS-1 AND FLS-7. SEE SCHEMATIC WIRING DIAGRAM CS1-DRG-351985.
2. PROVIDE 12 CORE OPTICAL FIBRE CABLING IN UNDERGROUND CONDUIT / PIT NETWORK BETWEEN FLS-1 AND THE STATION COMMUNICATIONS EQUIPMENT ROOM (ER). SEE:- CONDUIT PLANS CS1-DRG-351987 TO CS1-DRG-351990. DUCT DETAILS CS1-DRG-351983.
3. ALL CABLING INSTALLED ON CABLE TRAY IN CHANNEL ON VIADUCT.
4. ALL UNDERGROUND AND CONCEALED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE PVC. ALL EXPOSED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE GALVANISED STEEL.

LEGEND (SECURITY & CCTV)

SYMBOL	DESCRIPTION
*	POLE OR CUSTOM SUPPORT (SEE CS1-DRG-351981 FOR DETAILS)
TID	THERMAL IMAGING DETECTOR - FIXED
PTZ	C.C.T.V. CAMERA - PAN, TILT, ZOOM
FIXED	C.C.T.V. CAMERA - FIXED
XX	C.C.T.V. CAMERA - ID NUMBER
FLS-1	FIELD LAN SWITCH (FLS) ENCLOSURE
---	EXISTING SURVEY
---	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)



C	ISSUED FOR 100% REVIEW	30.08.18
B	ISSUED FOR 70% REVIEW	04.04.18
A	ISSUED FOR 30% REVIEW	19.12.17
REV	DESCRIPTION	DATE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
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14		
15		
16		
17		

NOT FOR CONSTRUCTION

RDP17 - VIADUCT CCTV AND LIGHTING

GATEWAY SOUTH

INDEX SHEET REF: CS1-DRG-351974

THESEAL APPROVAL: J.FRAGOS DATE: 30.08.18

PROJECT APPROVAL: W.KING DATE: 30.08.18

ALL DIMENSIONS ARE IN METRES UNO

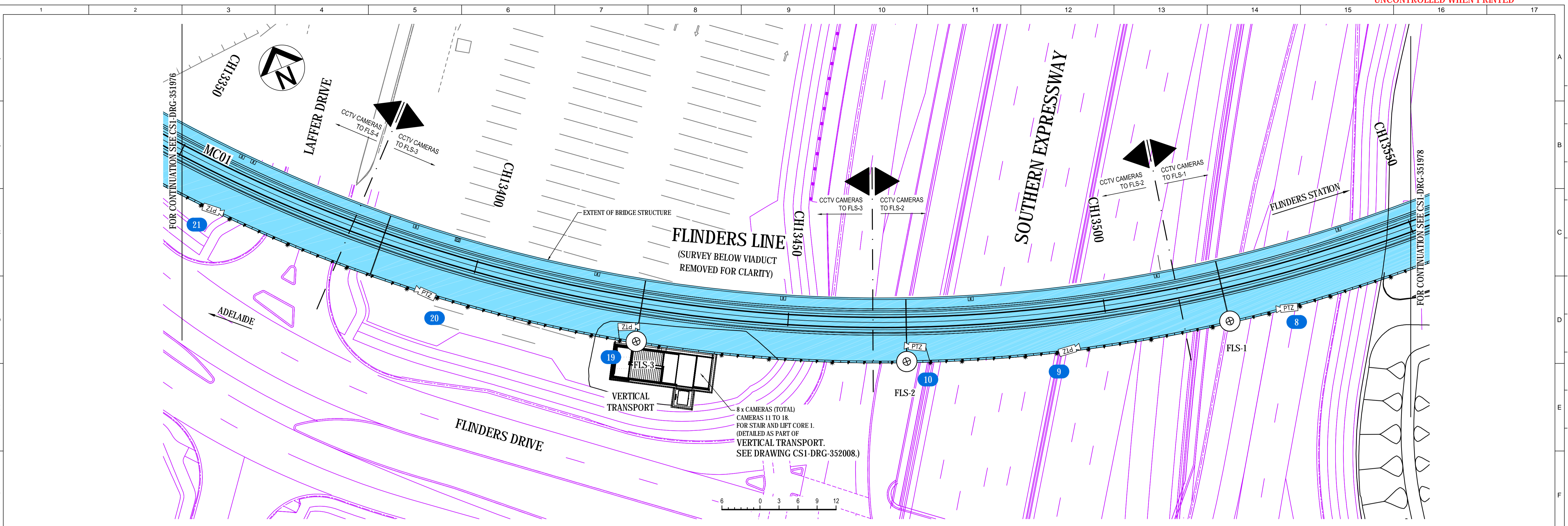
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DRAFTED:	FLD
CHECKED:	FLD
APPROVED:	
TITLE:	
DATE:	

FLINDERS LINE
VIA DUCT
SECURITY AND CCTV - 13.150km - 13.350km
PLAN

Government of South Australia
Department of Planning, Transport and Infrastructure

CS1-DRG-351976

SCALE(S): 1:300 SIZE: A1
REVISION: C SHEET: 3 OF 31

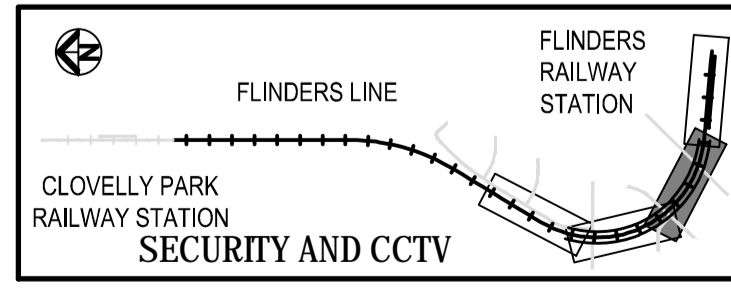


NOTES (SECURITY & CCTV):

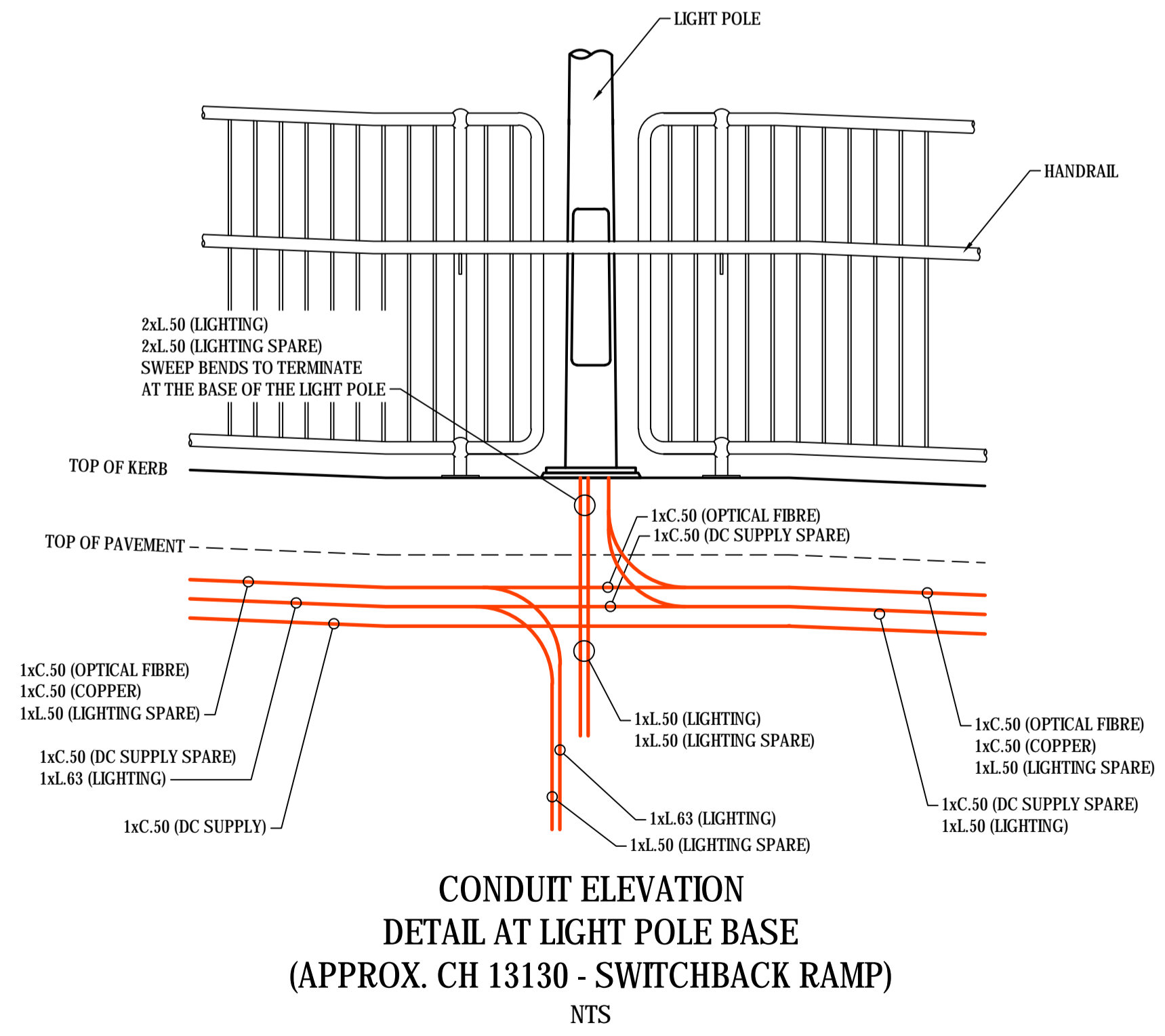
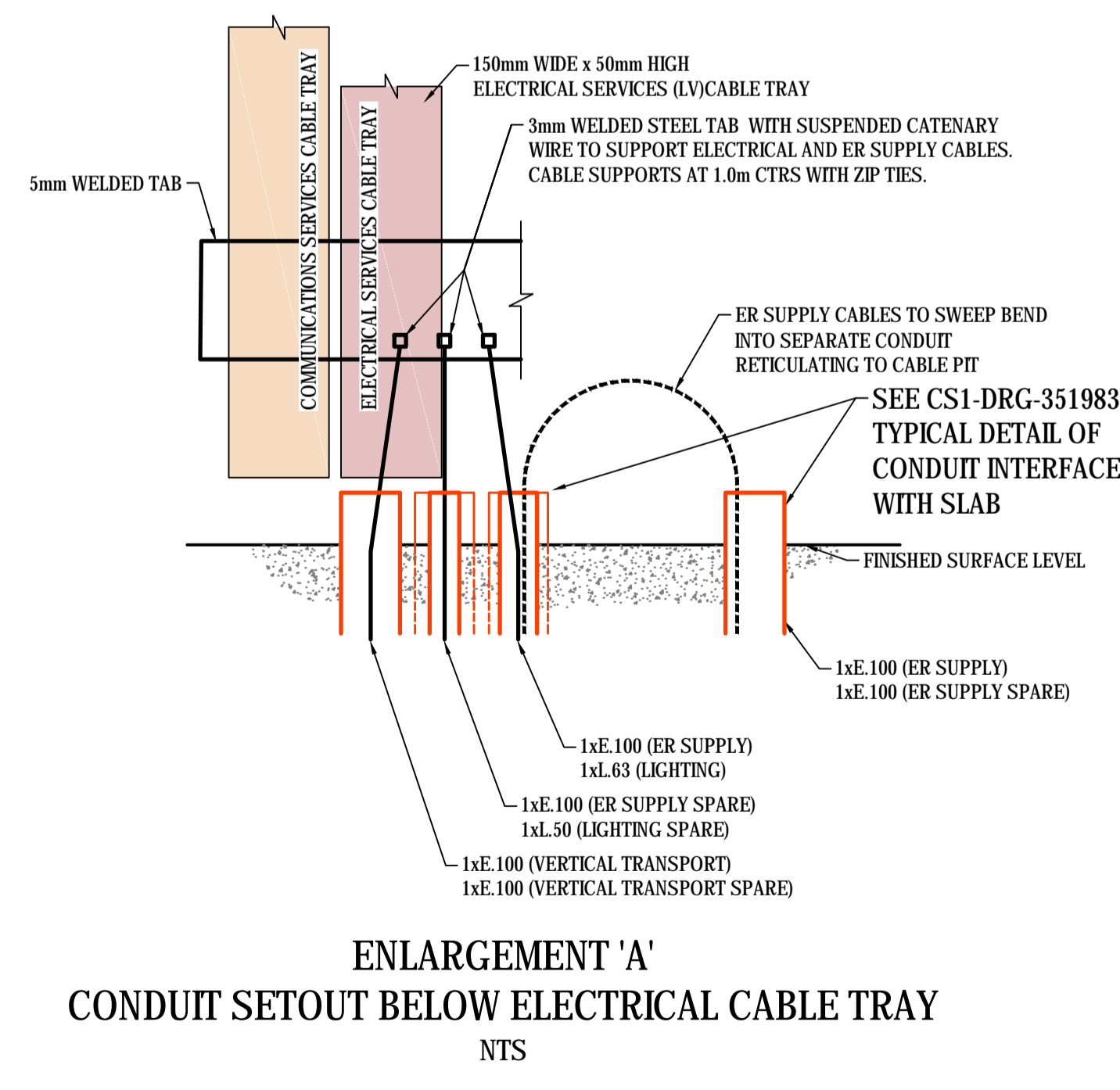
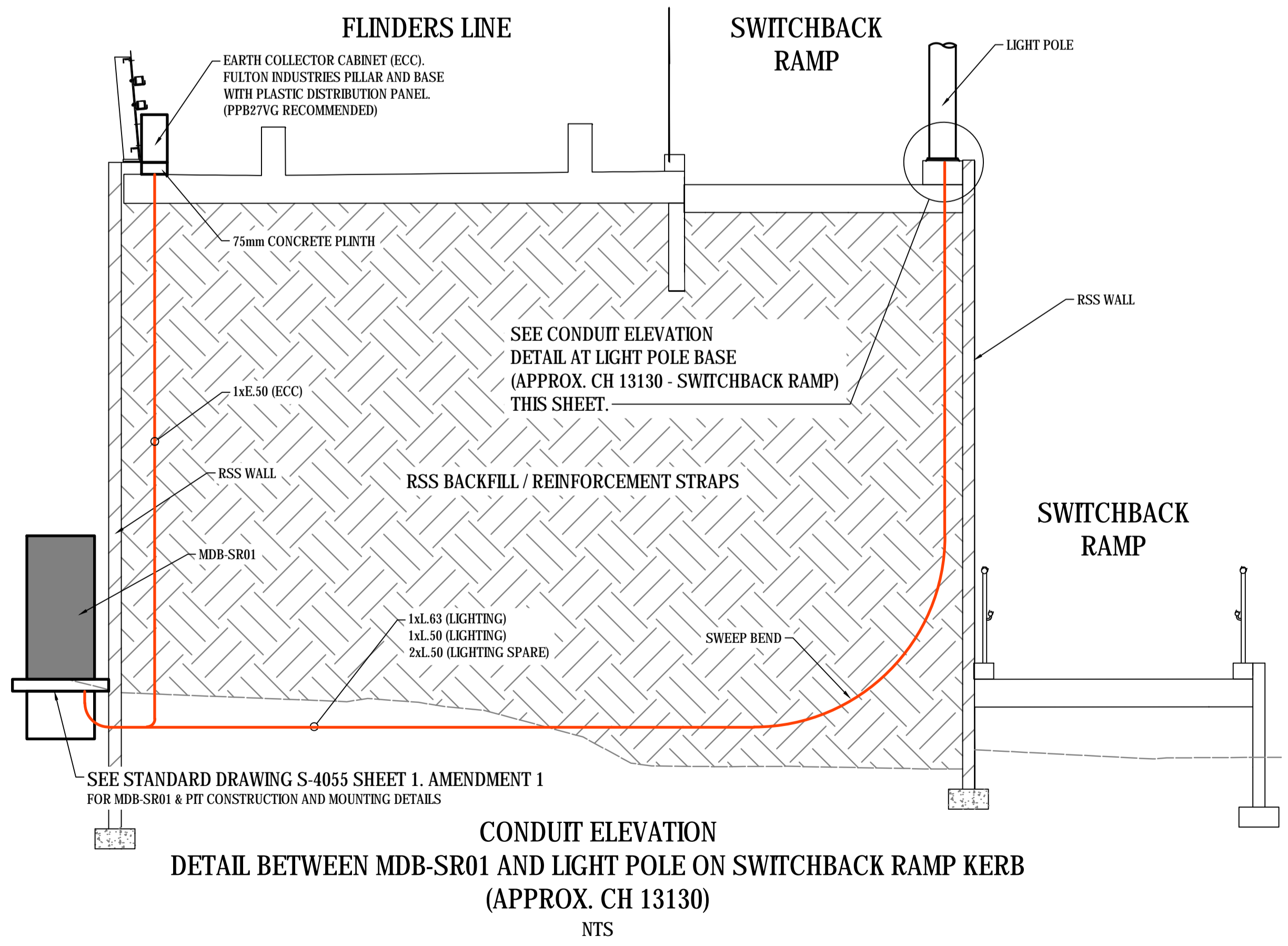
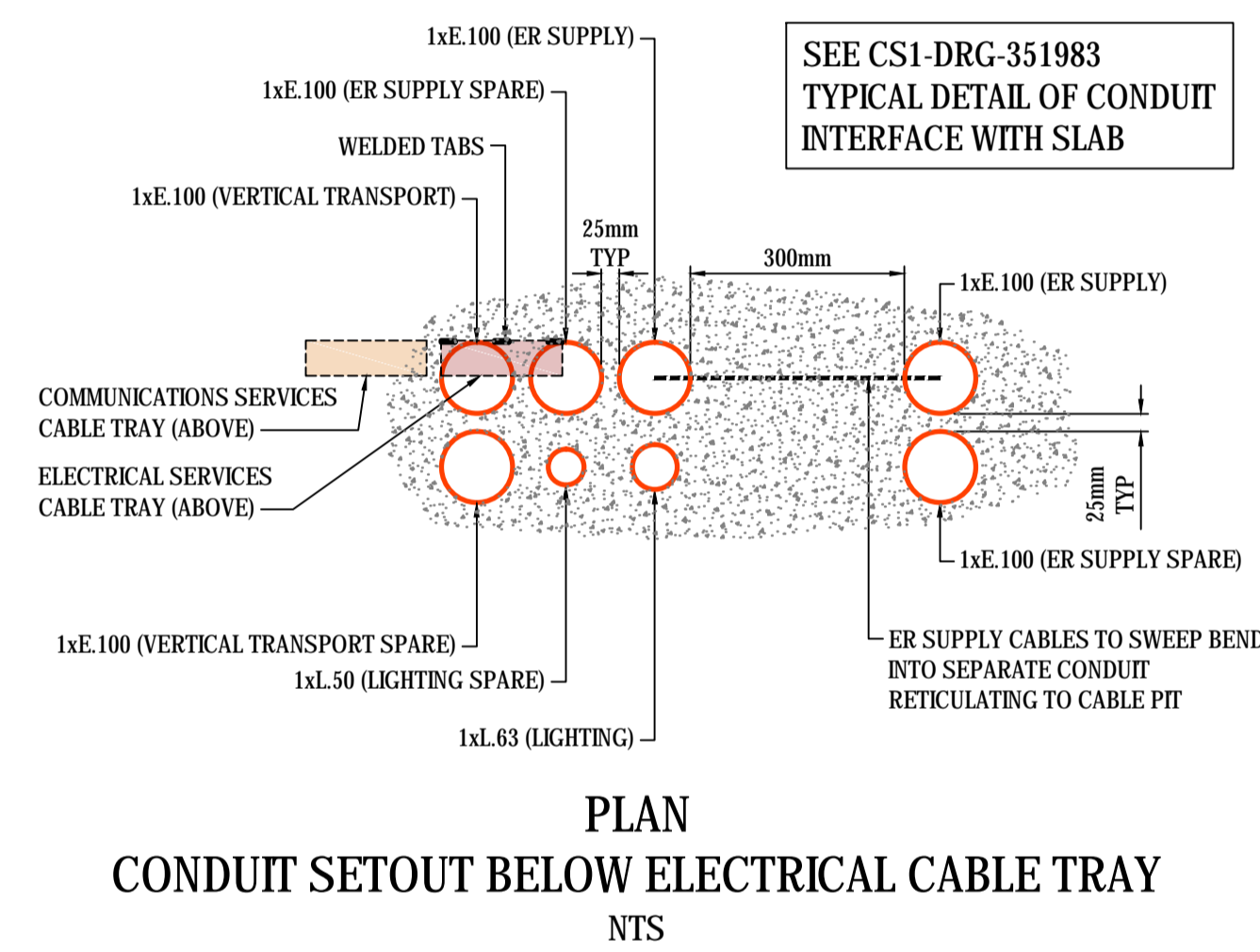
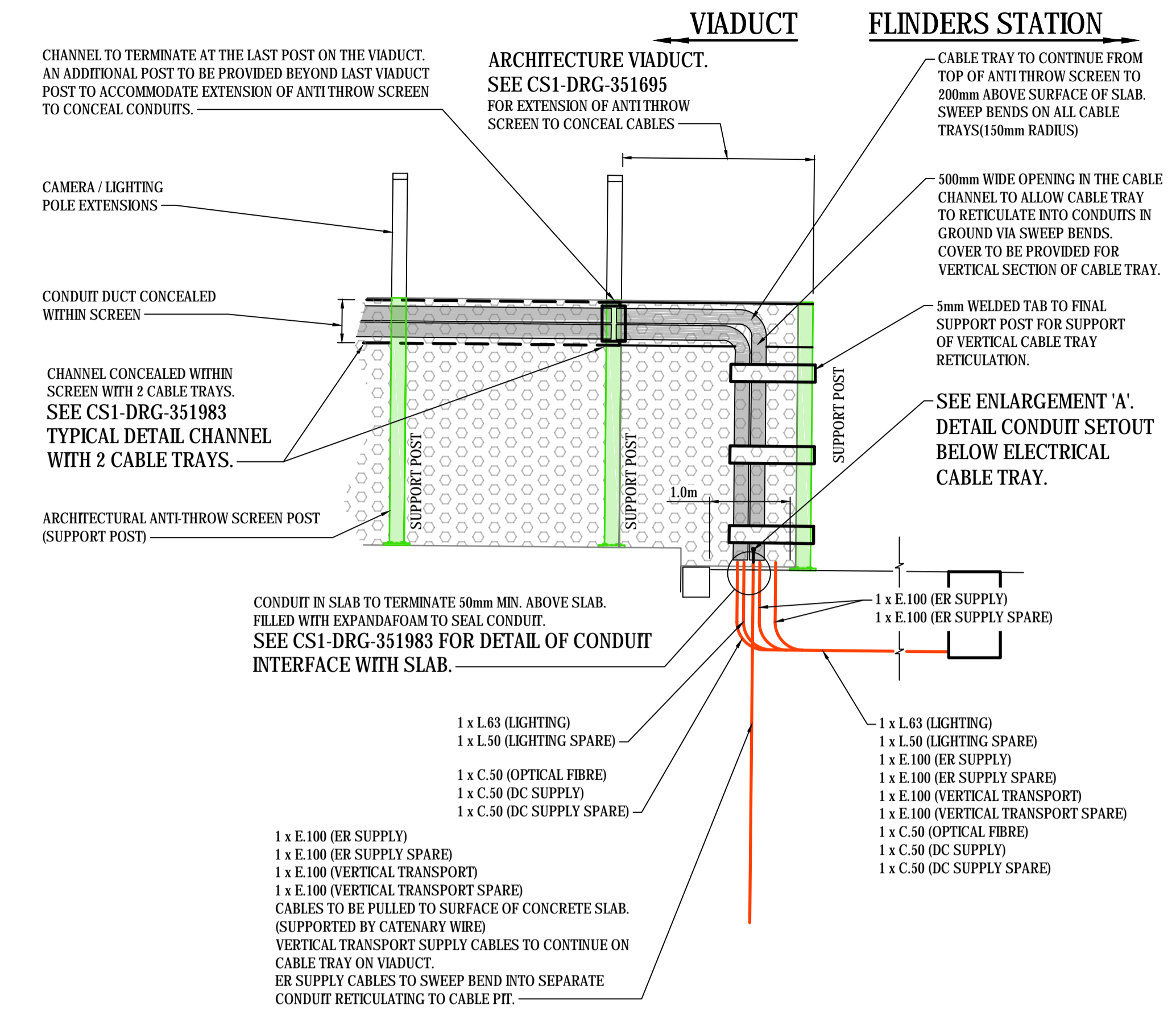
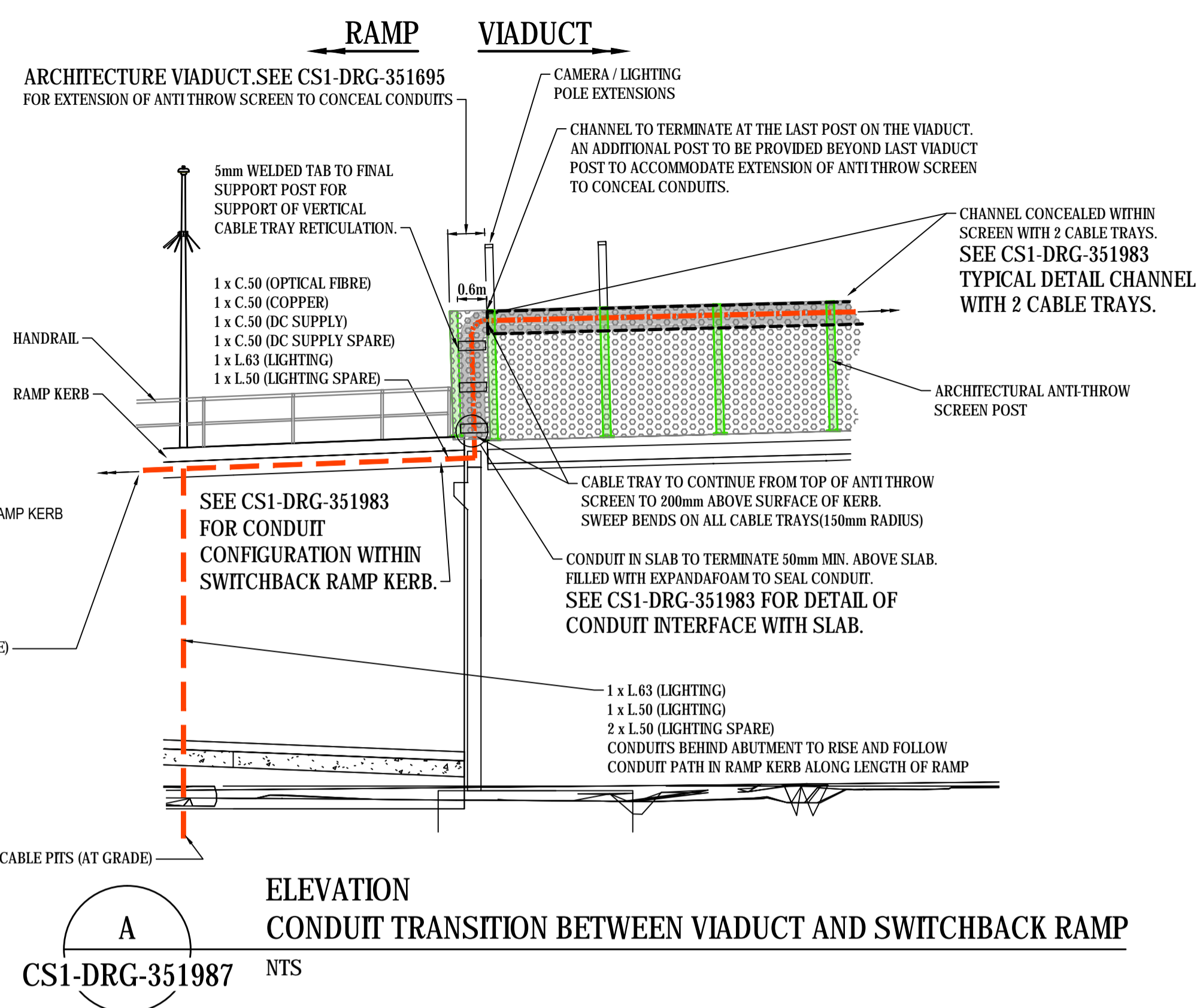
1. PROVIDE 12-CORE OPTICAL FIBRE CABLING IN CONDUIT BETWEEN FLS-1 AND FLS-7. SEE SCHEMATIC WIRING DIAGRAM CS1-DRG-351985.
2. PROVIDE 12 CORE OPTICAL FIBRE CABLING IN UNDERGROUND CONDUIT / PIT NETWORK BETWEEN FLS-1 AND THE STATION COMMUNICATIONS EQUIPMENT ROOM (ER). SEE:- CONDUIT PLANS CS1-DRG-351987 TO CS1-DRG-351990. DUCT DETAILS CS1-DRG-351983.
3. ALL CABLING INSTALLED ON CABLE TRAY IN CHANNEL ON VIADUCT.
4. ALL UNDERGROUND AND CONCEALED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE PVC. ALL EXPOSED ELECTRICAL AND COMMUNICATIONS CONDUITS TO BE GALVANISED STEEL.

LEGEND (SECURITY & CCTV)

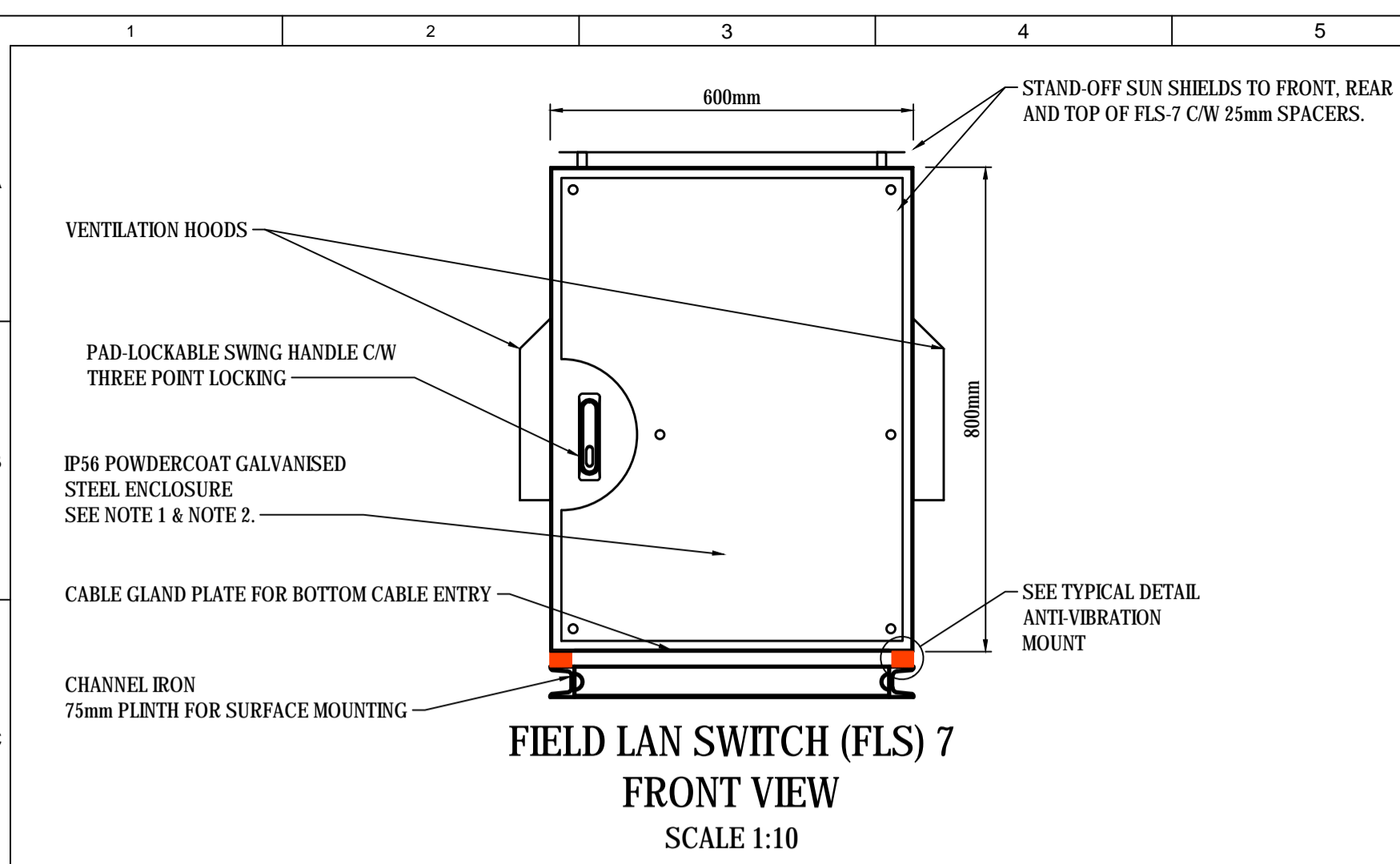
SYMBOL	DESCRIPTION
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TID	THERMAL IMAGING DETECTOR - FIXED
PTZ	C.C.T.V. CAMERA - PAN, TILT, ZOOM
FIXED	C.C.T.V. CAMERA - FIXED
XX	C.C.T.V. CAMERA - ID NUMBER
FLS-1	FIELD LAN SWITCH (FLS) ENCLOSURE
---	EXISTING SURVEY
---	EXISTING SURVEY* CONSTRUCTION WORKS CURRENTLY IN PROGRESS (BY OTHERS)



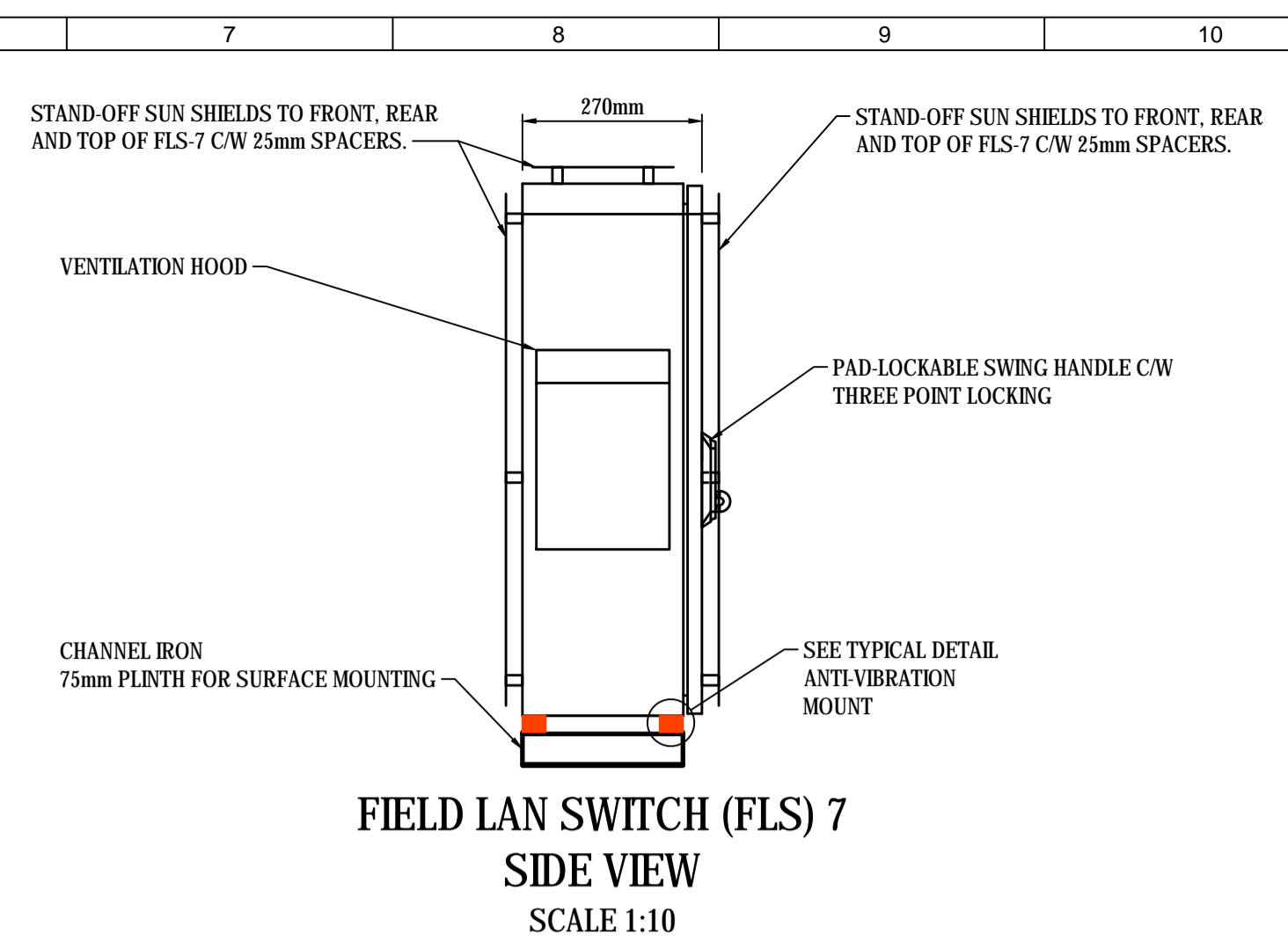
<p>C ISSUED FOR 100% REVIEW</p> <p>B ISSUED FOR 70% REVIEW</p> <p>A ISSUED FOR 30% REVIEW</p> <p>REV DESCRIPTION</p>	<p>NOT FOR CONSTRUCTION</p>	<p>RDP17 - VIADUCT CCTV AND LIGHTING</p> <p>GATEWAY SOUTH</p>	<p>DESIGNED: FLD</p> <p>DRAFTED: FLD</p> <p>CHECKED: FLD</p> <p>APPROVED:</p>	<p>FLINDERS LINE</p> <p>VIA DUCT</p> <p>SECURITY AND CCTV - 13.350km - 13.550km</p> <p>PLAN</p>	<p>Government of South Australia</p> <p>Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-351977</p> <p>SCALE(S): 1:300 SIZE: A1</p> <p>REVISION: C SHEET: 4 OF 31</p>																				
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>DRN</td> <td>DSGN</td> <td>CHK</td> <td>APRV</td> <td>DATE</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>30.08.18</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>04.04.18</td> </tr> <tr> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>19.12.17</td> </tr> </table>	DRN	DSGN	CHK	APRV	DATE	-	-	-	-	30.08.18	-	-	-	-	04.04.18	-	-	-	-	19.12.17	<p>INDEX SHEET REF: CS1-DRG-351974</p> <p>THESEAL APPROVAL: J.FRAGOS PROJECT APPROVAL: W.KING DATE: 30.08.18</p> <p>ALL DIMENSIONS ARE IN METRES UNO</p>	<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>	<p>TITLE: -</p> <p>DATE: -</p>		
DRN	DSGN	CHK	APRV	DATE																					
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-	-	-	-	04.04.18																					
-	-	-	-	19.12.17																					



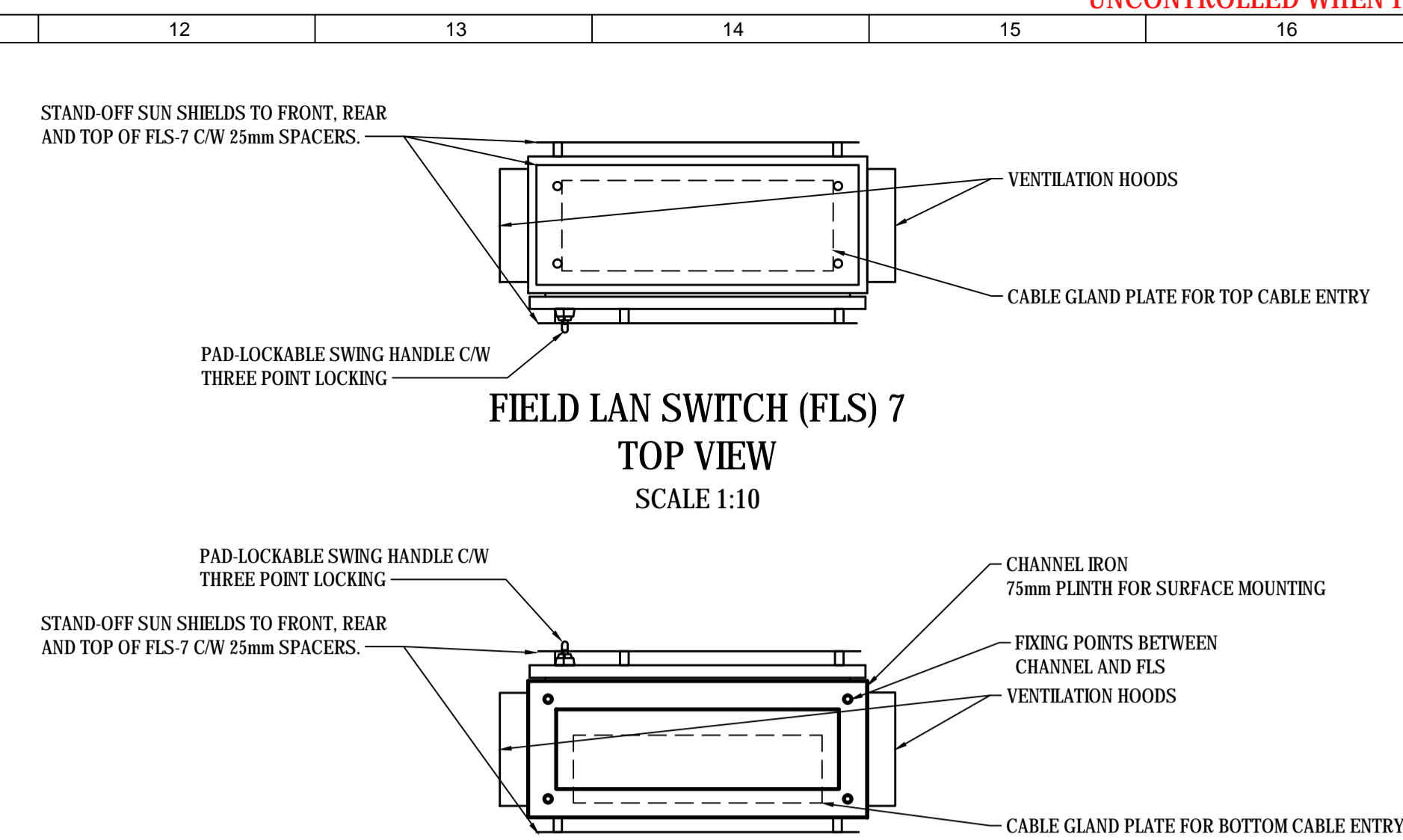
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<p>INDEX SHEET REF: CS1-DRG-351974</p>				<p>THE ORIGINAL APPROVAL: W. KING PROJECT APPROVAL: J. FRAGOS DATE: 30.08.18</p>				<p>TITLE: - DATE: -</p>				<p>CS1-DRG-351979 SCALE(S): AS SHOWN REVISION: B</p>				<p>SIZE: A1 SHEET: 6 OF 31</p>			
<p>ISSUED FOR 100% REVIEW</p>				<p>ISSUED FOR 70% REVIEW</p>				<p>DRN DSGN CHK APRV DATE</p>				<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>ALL DIMENSIONS ARE IN METRES UNO</p>			



FIELD LAN SWITCH (FLS) 7
FRONT VIEW
SCALE 1:10

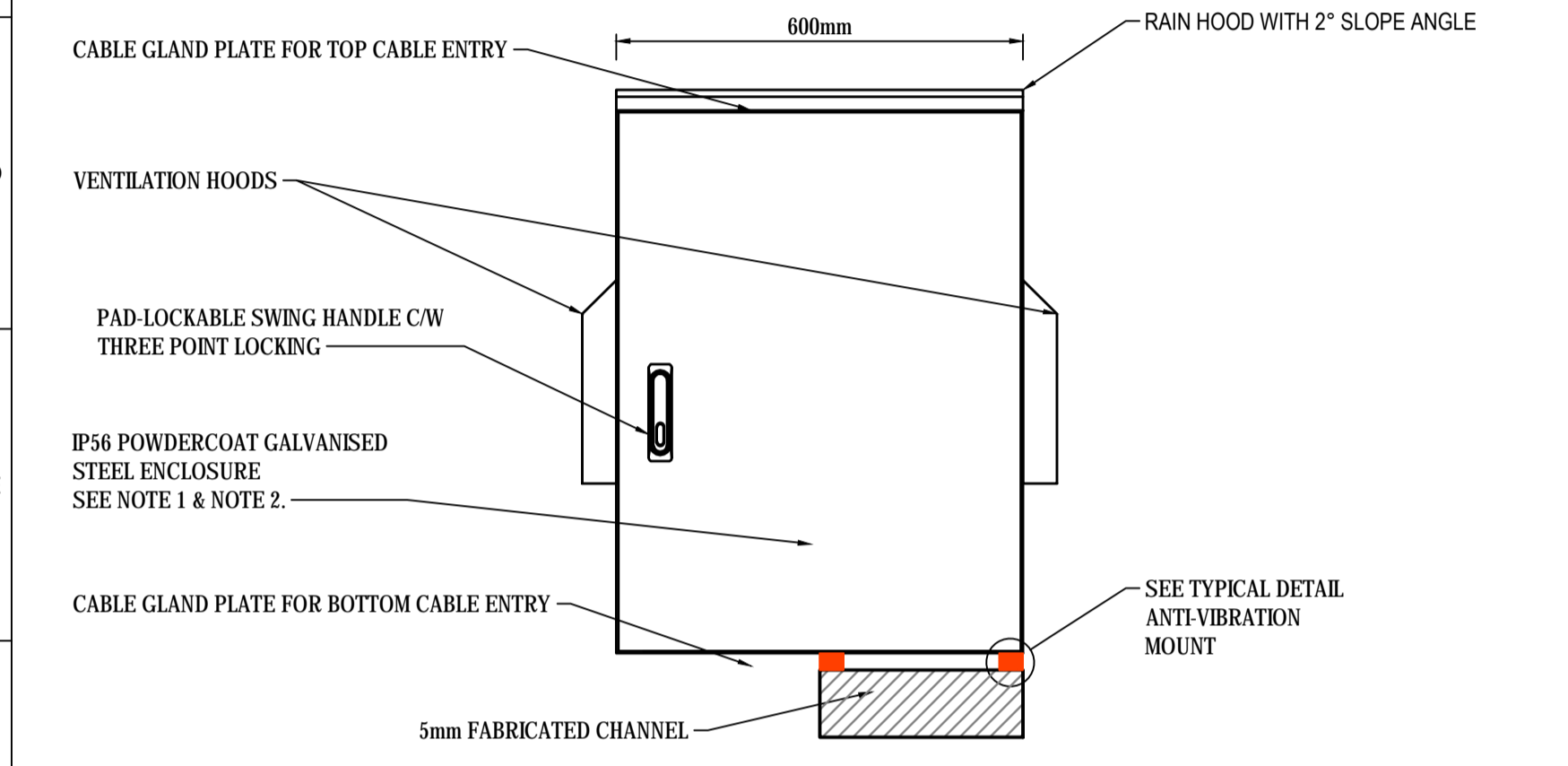


FIELD LAN SWITCH (FLS) 7
SIDE VIEW
SCALE 1:10

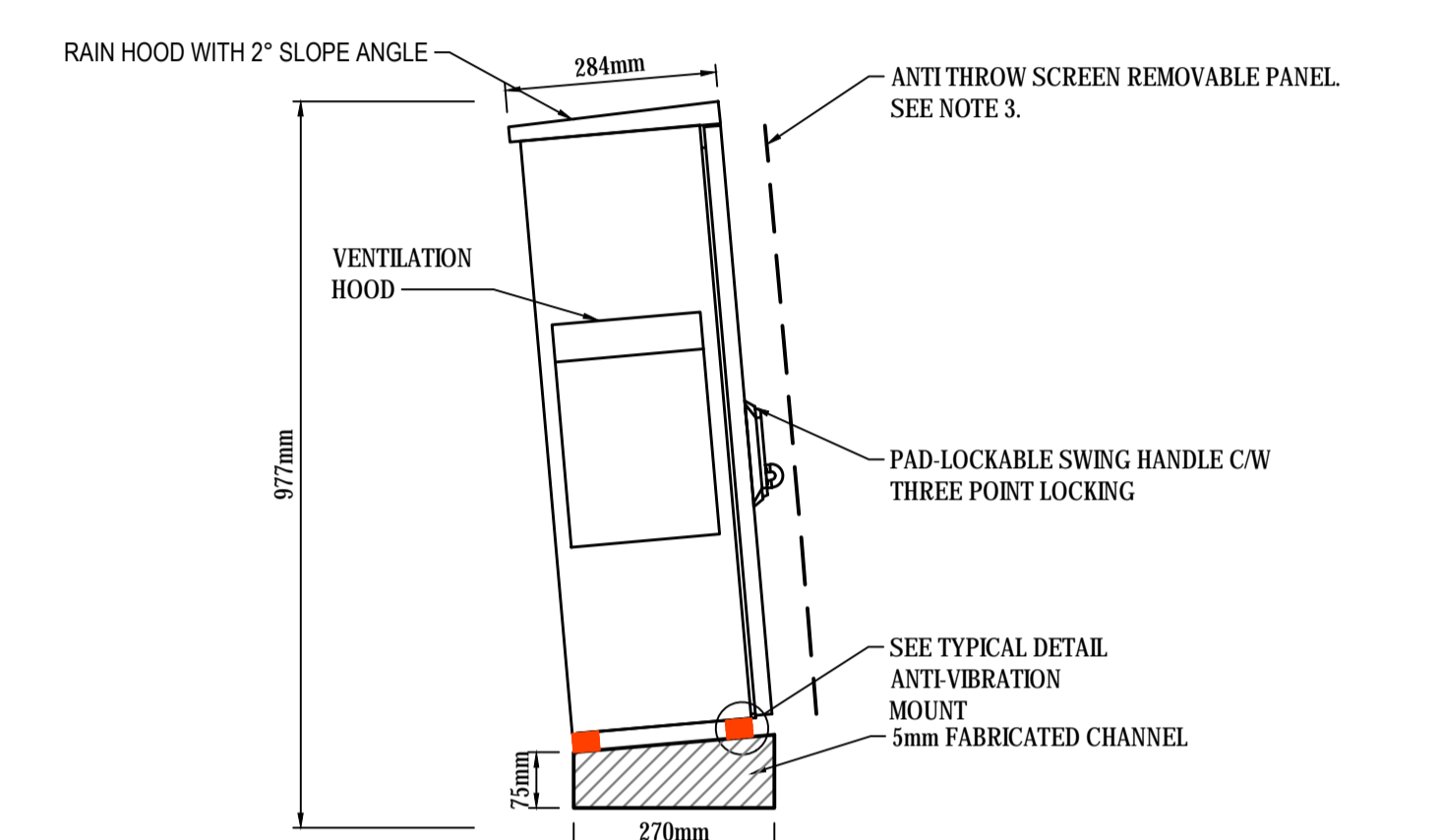


FIELD LAN SWITCH (FLS) 7
TOP VIEW
SCALE 1:10

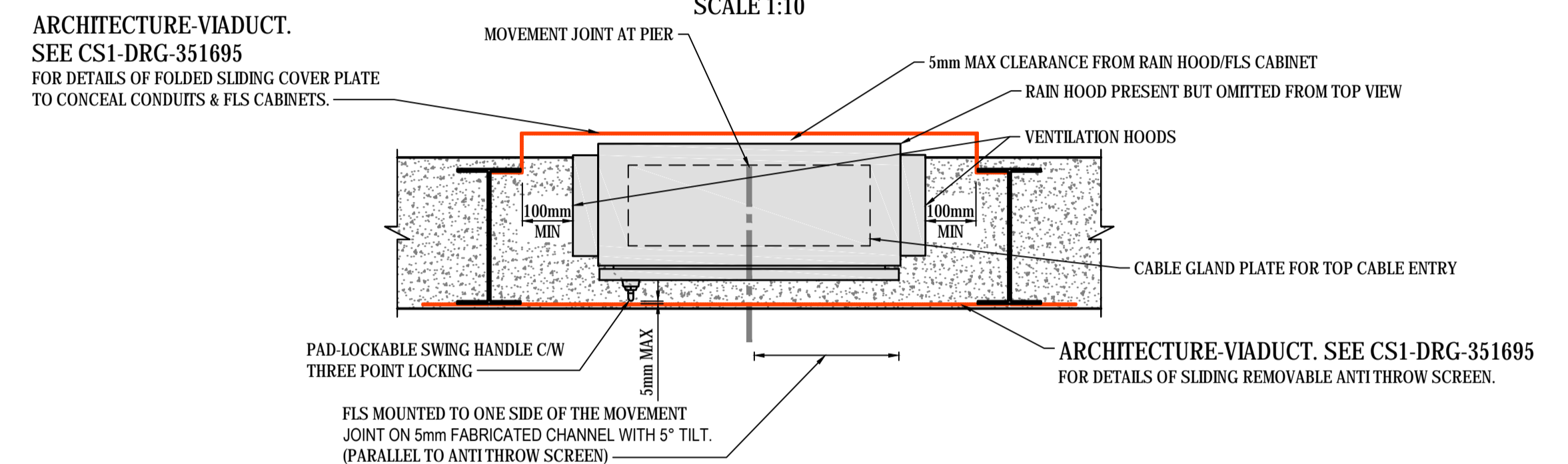
FIELD LAN SWITCH (FLS) 7
BOTTOM VIEW
SCALE 1:10



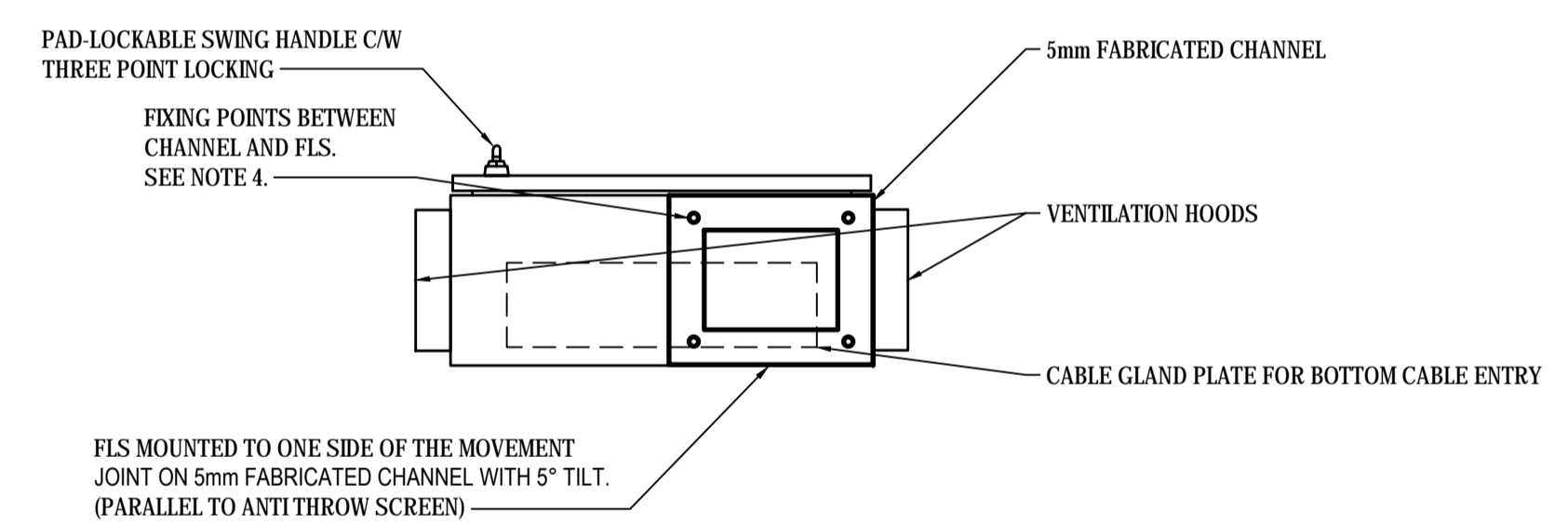
FIELD LAN SWITCH (FLS) FLS-1, 2, 3, 4, 5, 6
FRONT VIEW
SCALE 1:10



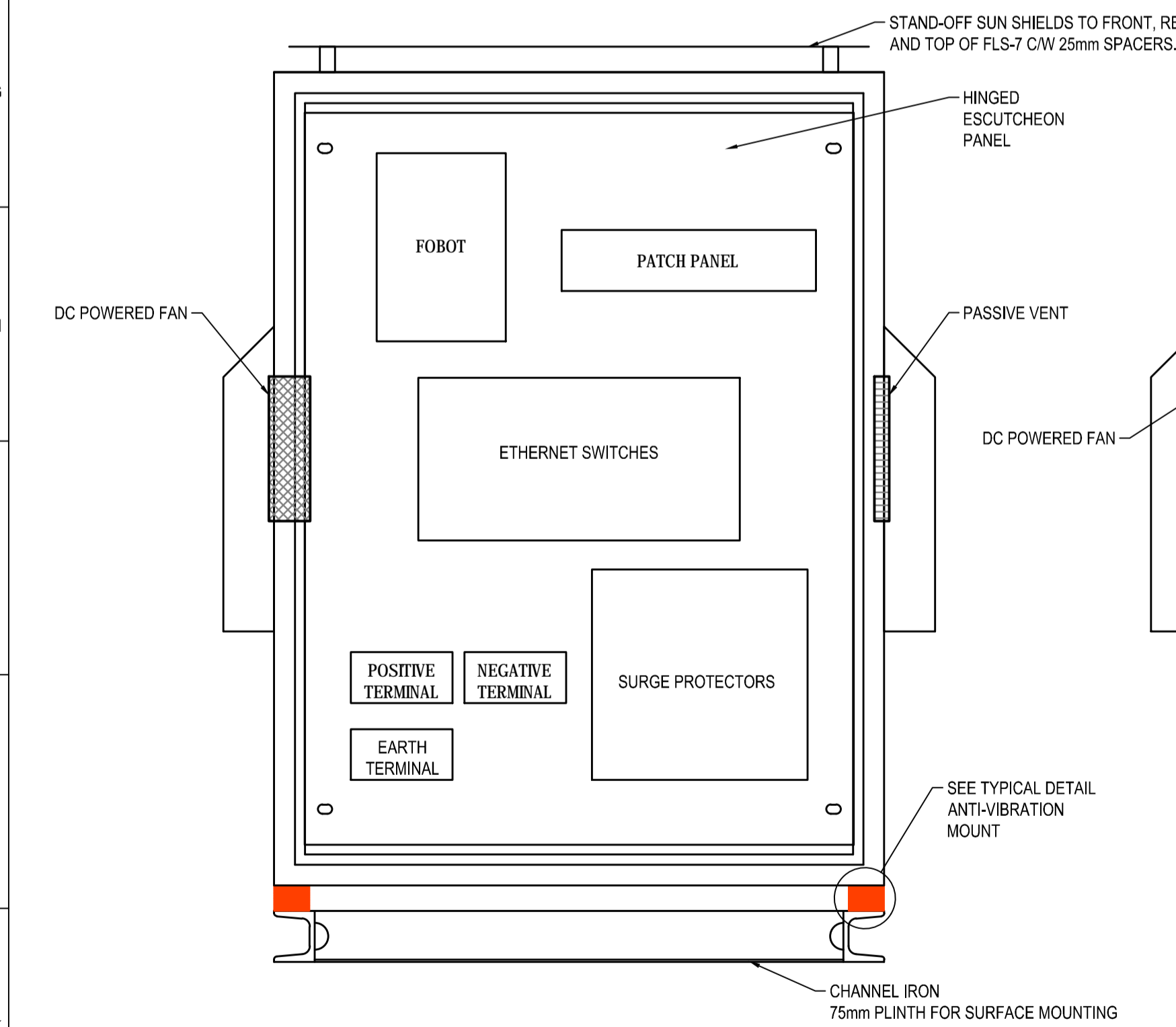
FIELD LAN SWITCH (FLS) FLS-1, 2, 3, 4, 5, 6
SIDE VIEW
SCALE 1:10



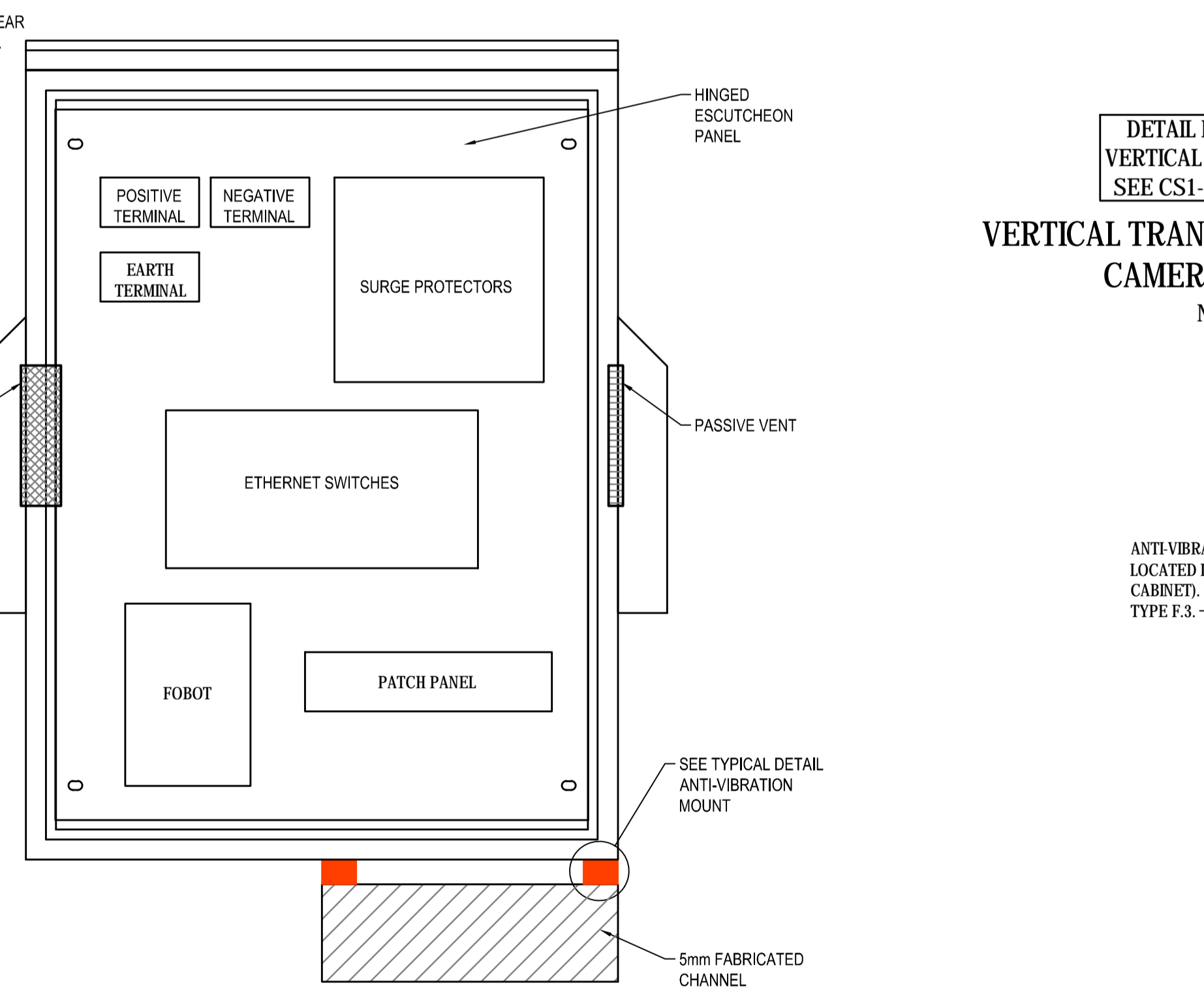
FIELD LAN SWITCH (FLS) FLS-1, 2, 3, 4, 5, 6
TOP VIEW
SCALE 1:10



FIELD LAN SWITCH (FLS) FLS-1, 2, 3, 4, 5, 6
BOTTOM VIEW
SCALE 1:10

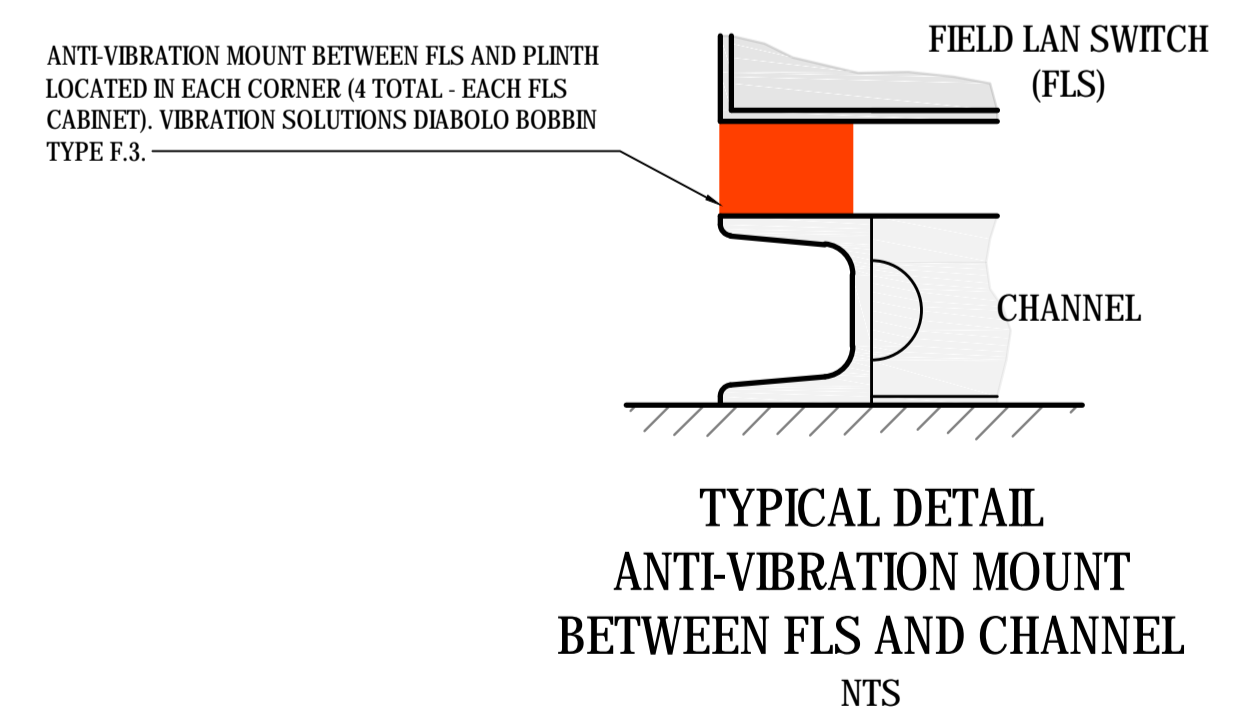


ELEVATION
FIELD LAN SWITCH (FLS) FRONT VIEW DOOR REMOVED
BOTTOM CABLE ENTRY SUGGESTED EQUIPMENT LAYOUT
FOR FLS-7
SCALE 1:5



ELEVATION
FIELD LAN SWITCH (FLS) FRONT VIEW DOOR REMOVED
TOP CABLE ENTRY SUGGESTED EQUIPMENT LAYOUT
FOR FLS-1, 2, 3, 4, 5, 6
SCALE 1:5

DETAIL MOVED TO
VERTICAL TRANSPORT
SEE CS1-DRG-352008
VERTICAL TRANSPORT - VIADUCT
CAMERA DETAIL
NTS



TYPICAL DETAIL
ANTI-VIBRATION MOUNT
BETWEEN FLS AND CHANNEL
NTS

- NOTES:**
- IP RATING OF THE ENCLOSURE IS WITHOUT THE VENTS.
 - PROVIDE THERMAL RATED PAINT / POWDERCOATING FOR ALL EXTERIOR SURFACES OF ALL FLS ENCLOSURES, INCLUDING DOOR.
 - ARCHITECTURE-VIADUCT. SEE CS1-DRG-351695 FOR INTERACTION OF FIELD LAN SWITCH (FLS) AND ANTI THROW SCREEN ON VIADUCT.
 - VIADUCT-SUPERSTRUCTURE. SEE CS1-DRG-360006 FOR CHANNEL TO SLAB FIXING POINTS ON VIADUCT.
 - ALLOW MIN 1m TAIL FOR OPTICAL FIBRE INTO EACH FLS CABINET.

<p>NOT FOR CONSTRUCTION</p>				<p>INDEX SHEET REF: CS1-DRG-351974</p>				<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>				<p>FLINDERS LINE VIA DUCT SECURITY AND CCTV - SHEET 01 ELEVATION AND DETAILS</p>				<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>			
<p>ISSUED FOR 100% REVIEW</p>				<p>30.08.18</p>				<p>DATE: 30.08.18</p>				<p>CS1-DRG-351980</p>							
<p>ISSUED FOR 70% REVIEW</p>				<p>04.04.18</p>				<p>DATE: 30.08.18</p>				<p>SCALE(S): AS SHOWN SIZE: A1</p>							
<p>DESCRIPTION</p>				<p>DRN DSGN CHK APRV DATE</p>				<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>				<p>REVISION: B SHEET: 7 OF 31</p>							

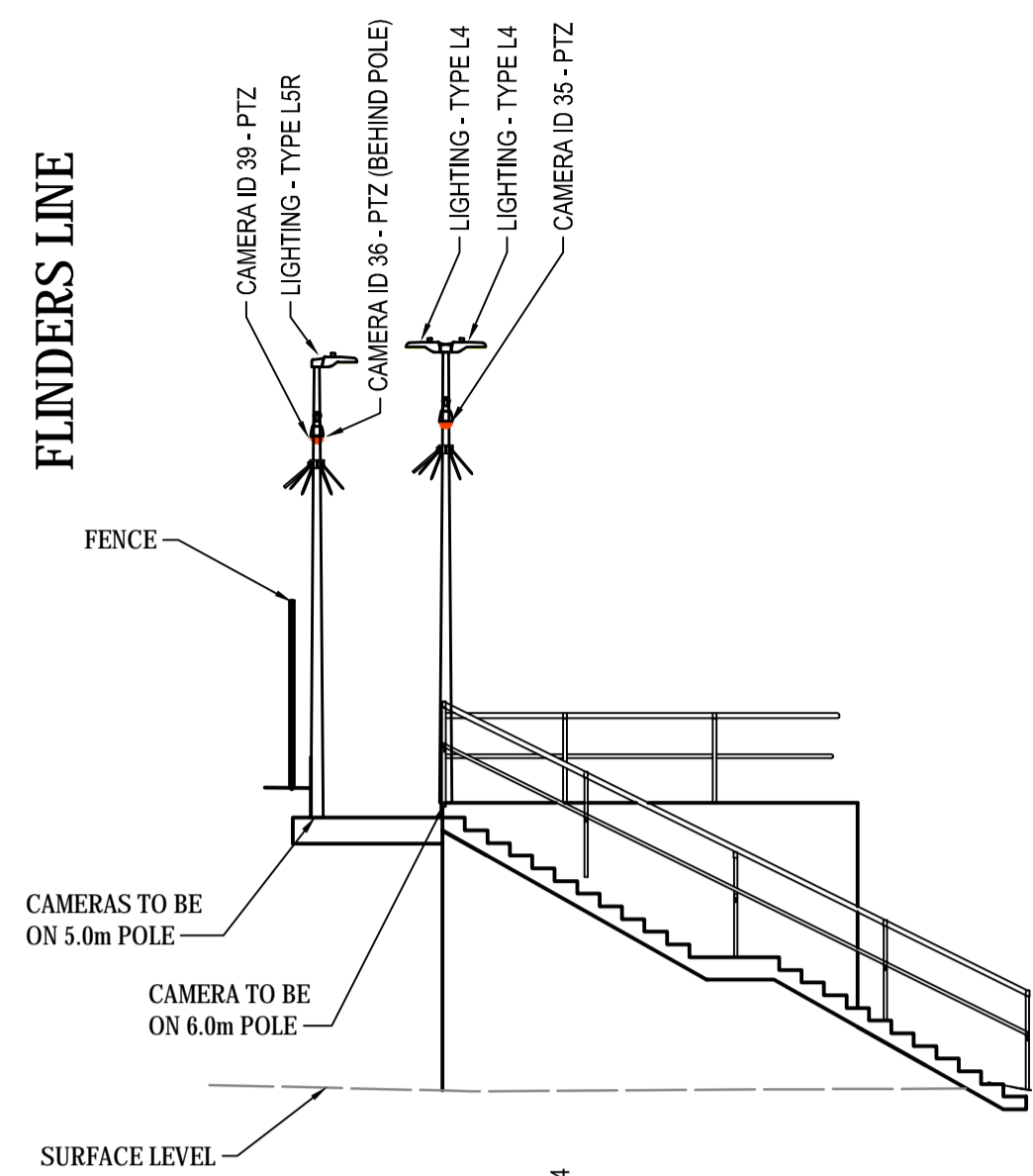
FLINDERS LINE

FLINDERS LINE

ADELAIDE

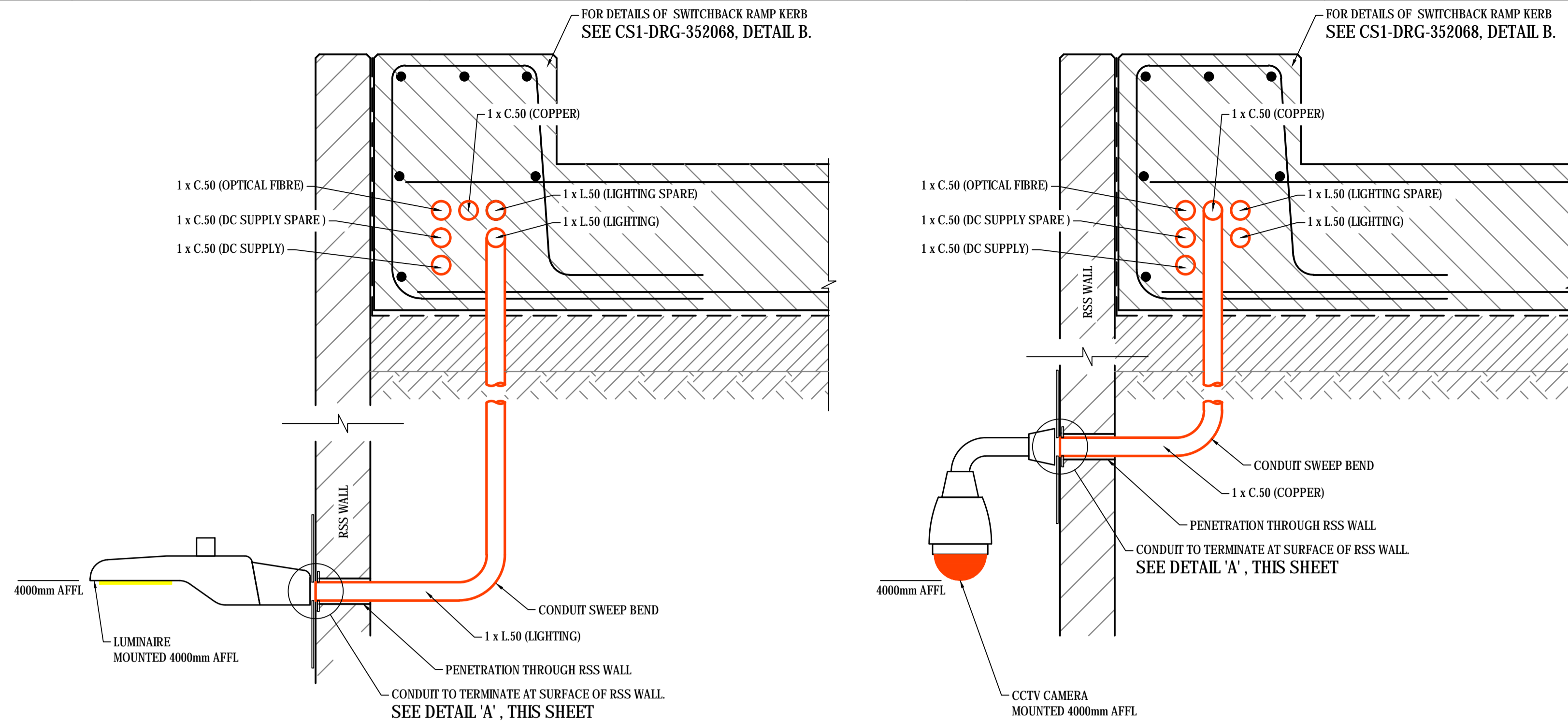
FLINDERS LINE

FLINDERS STATION
FLINDERS LINE VIADUCT



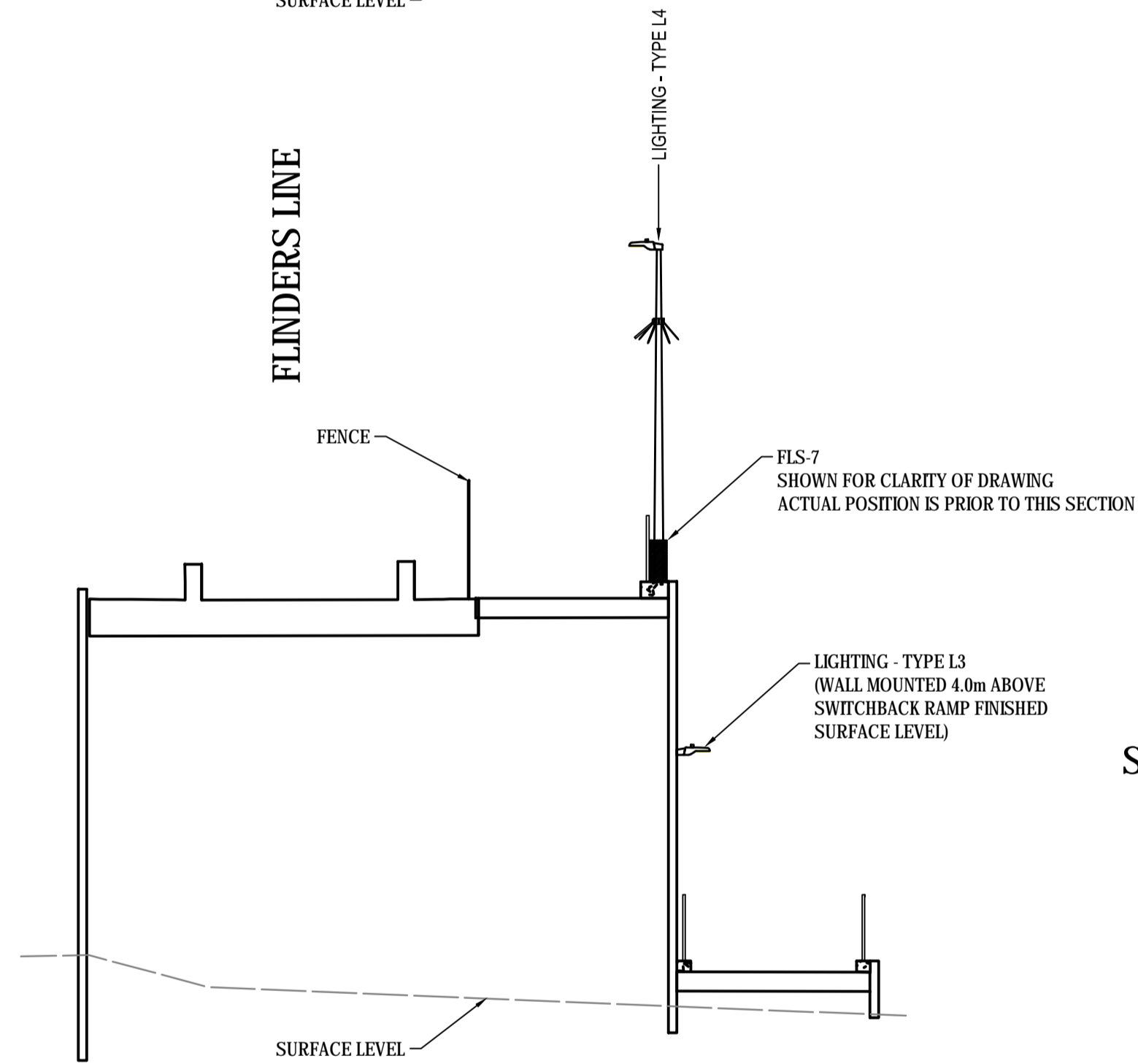
SWITCHBACK RAMP SECTION THROUGH NORTHERN END LANDING AND STAIRCASE (NEAR TONSLEY RAILWAY STATION)

SCALE 1:100



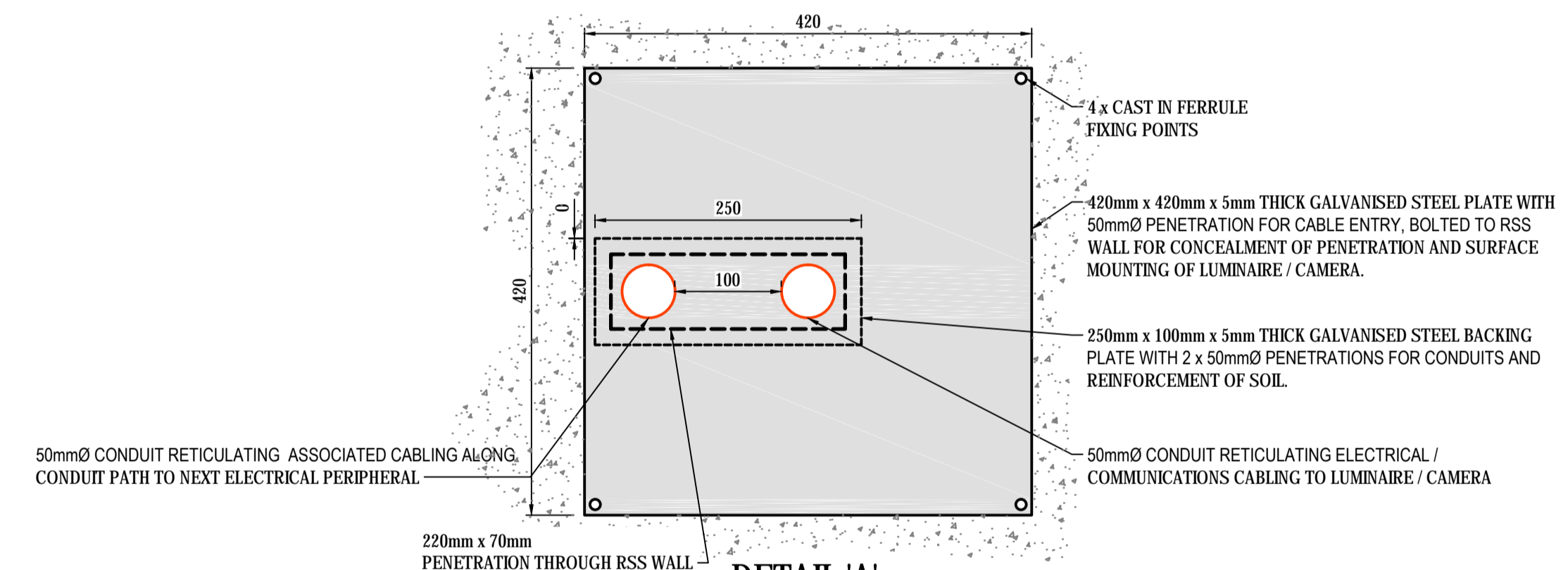
CONDUIT ELEVATION DETAIL (TYPICAL) TO WALL MOUNTED LUMINAIRES ON SWITCHBACK RAMP

CONDUIT ELEVATION DETAIL TO WALL MOUNTED CCTV CAMERA ON SWITCHBACK RAMP

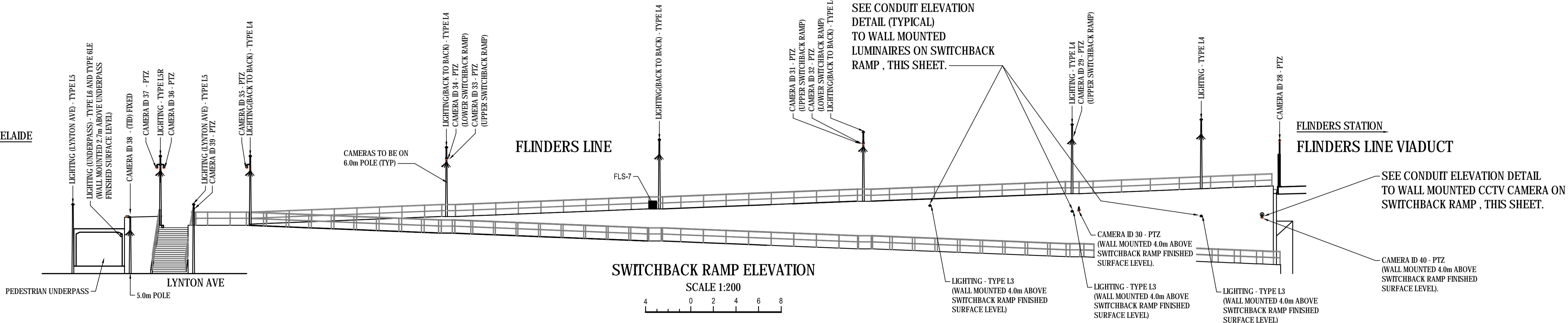


SWITCHBACK RAMP SECTION THROUGH SOUTHERN END (NEAR VIADUCT)

SCALE 1:100



PENETRATION THROUGH RSS WALL FOR WALL MOUNTED LUMINAIRES AND CAMERAS

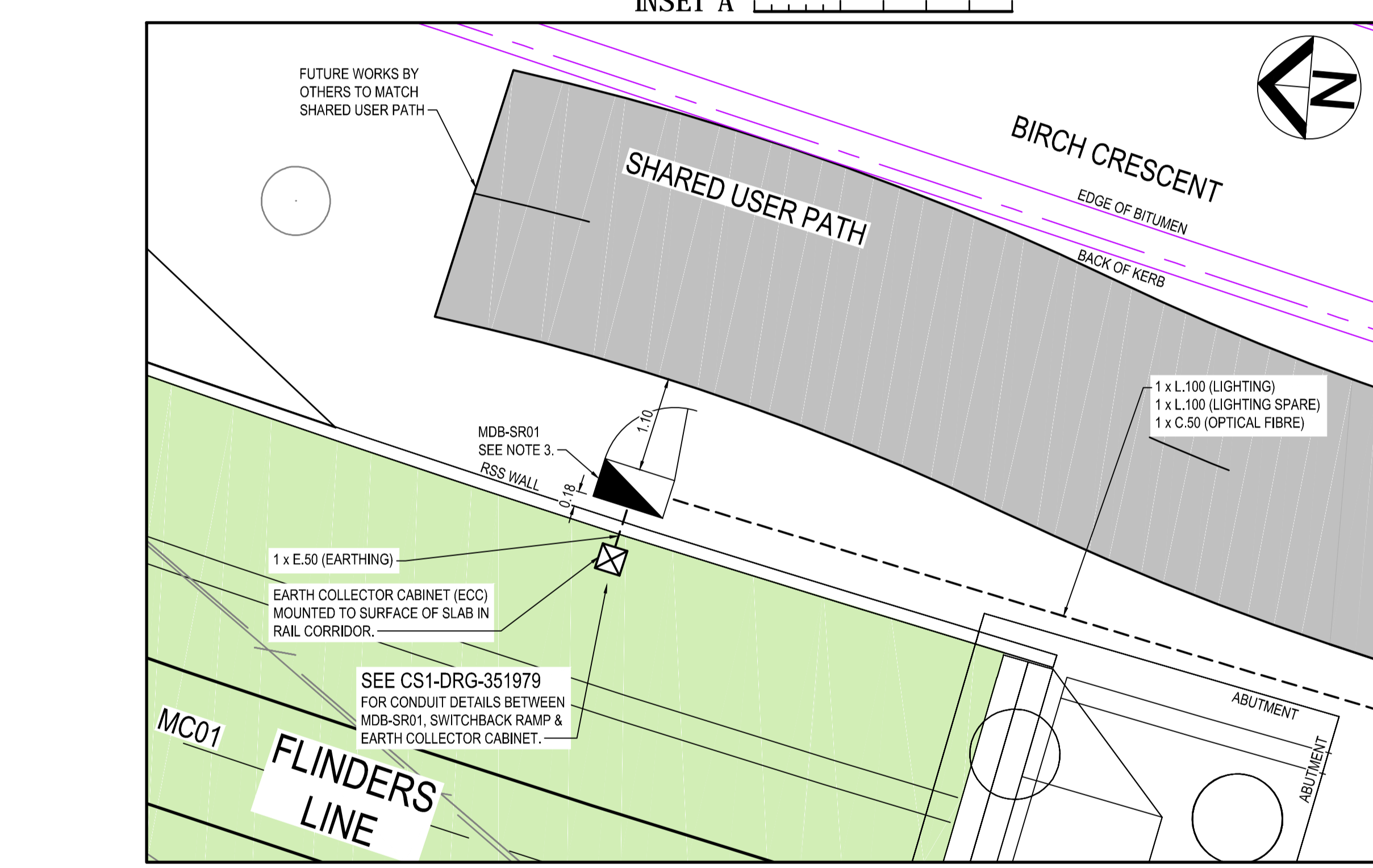
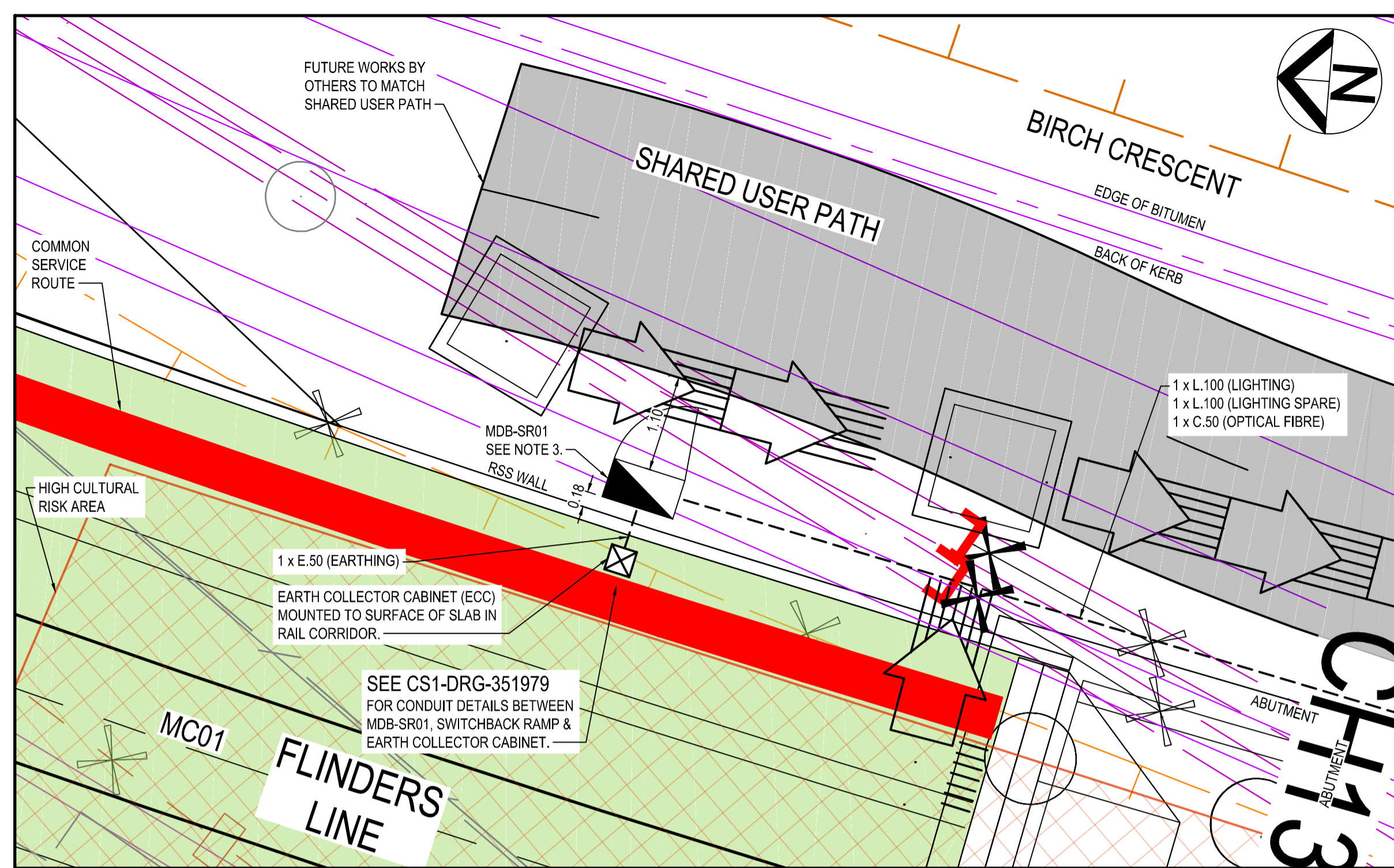


SWITCHBACK RAMP ELEVATION

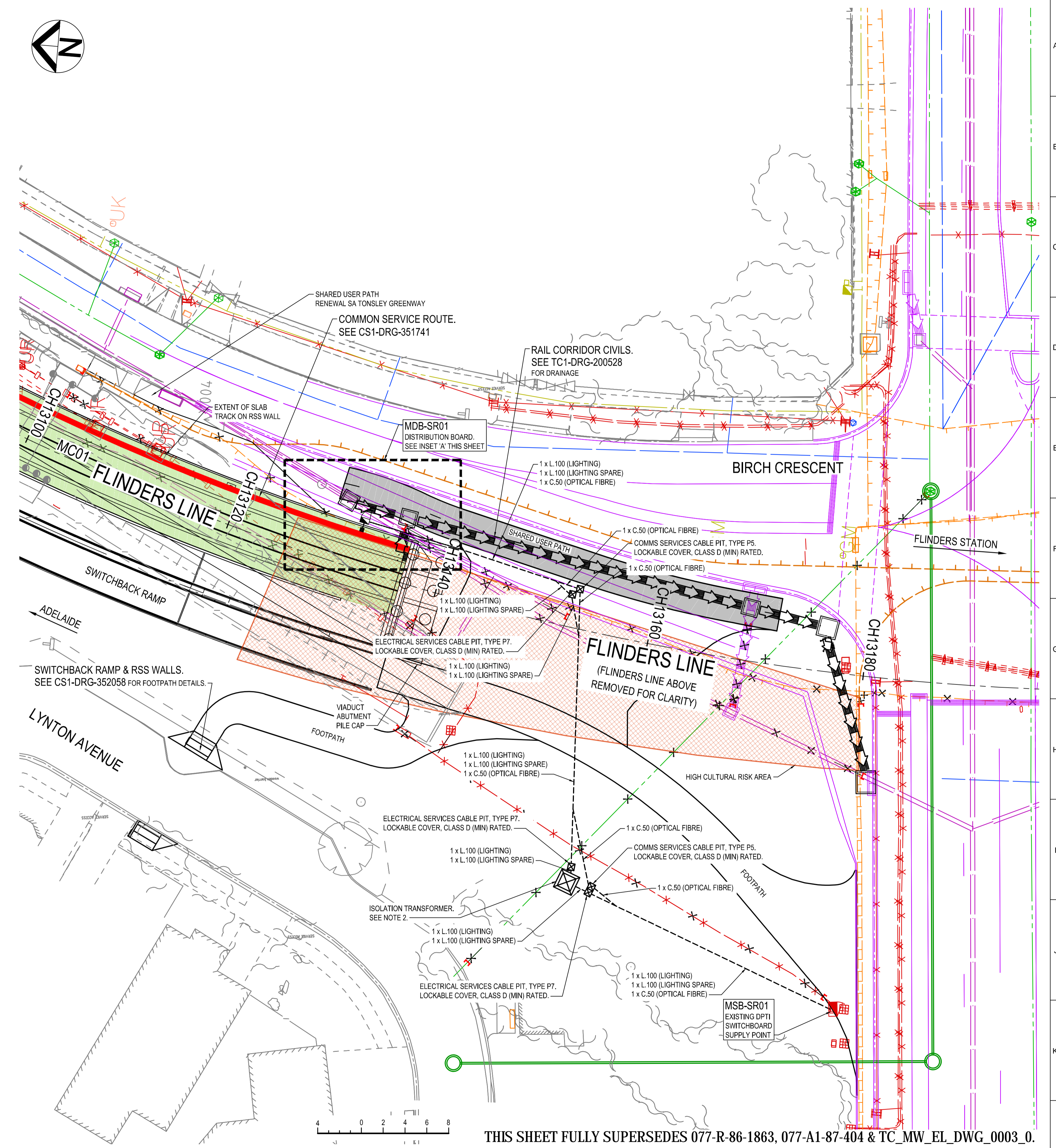
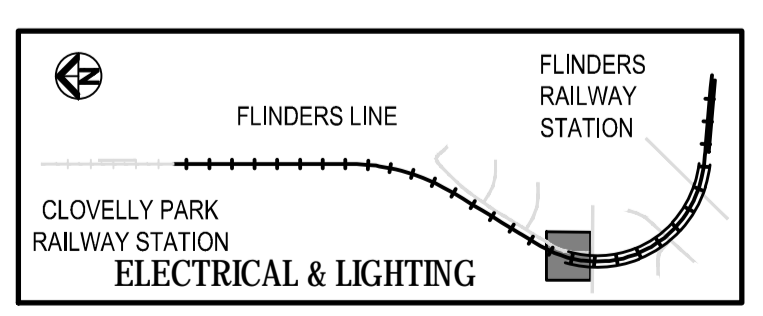
SCALE 1:200

<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>INDEX SHEET REF: CS1-DRG-351974</p> <p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>										<p>FLINDERS LINE VIA DUCT ELECTRICAL, CCTV AND LIGHTING - SHEET 03 ELEVATION AND DETAILS</p>					<p>Government of South Australia Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-351982</p> <p>SCALE(S): AS SHOWN REVISION: B SIZE: A1 SHEET: 9 OF 31</p>				
<p>ISSUED FOR 100% REVIEW</p> <p>ISSUED FOR 70% REVIEW</p>										<p>30.08.18 04.04.18</p>					<p>30.08.18</p>				
<p>DRN DSGN CHK APRV DATE</p>										<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>					<p>ALL DIMENSIONS ARE IN METRES UNO</p>				

CAD FILE NAME: CS1-DRG-351982.DWG PLOTTED: Thursday, 30 August 2018 11:03:30 AM

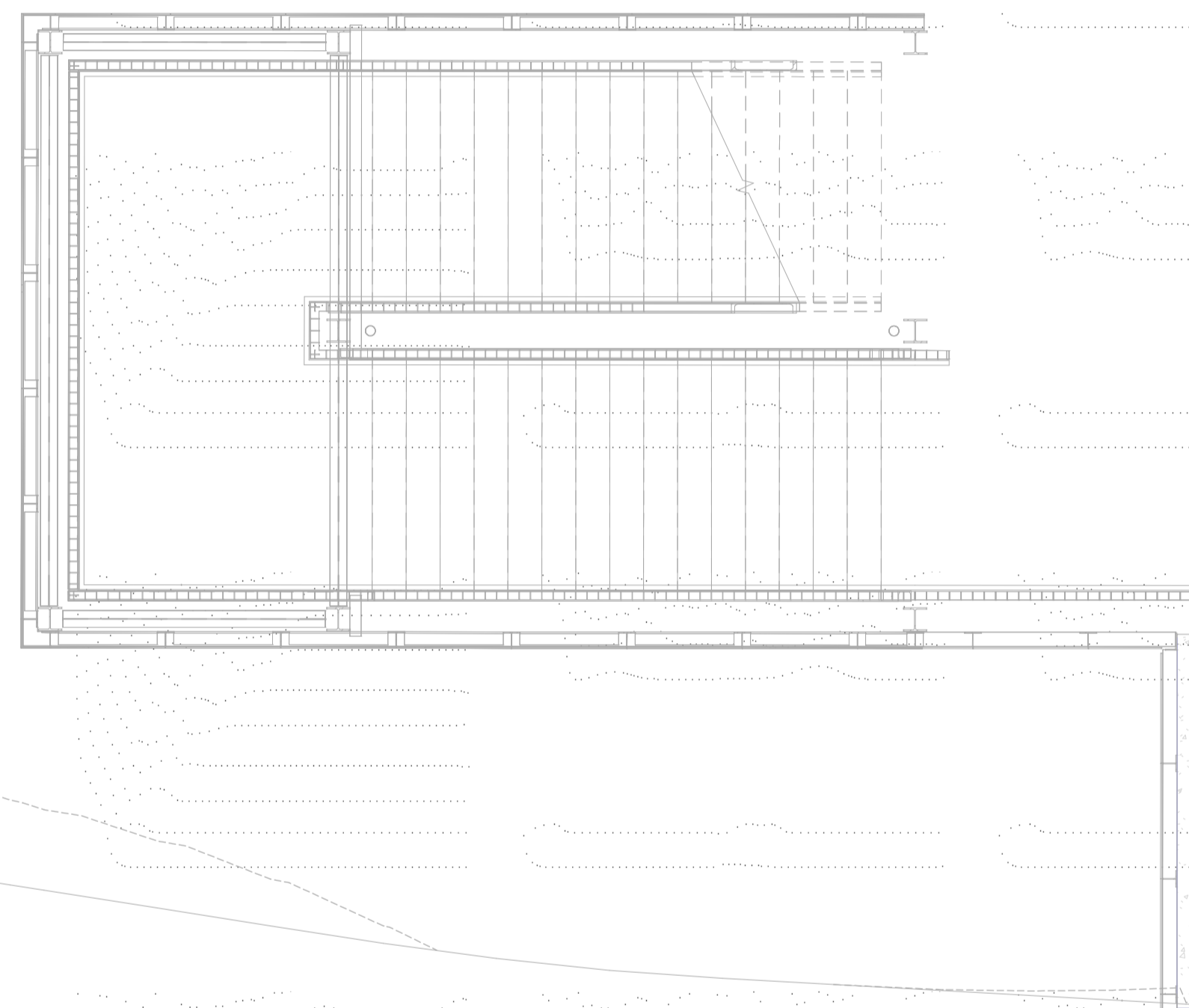


- NOTES (ELECTRICAL AND LIGHTING):**
- FOR LIGHTING DRAWINGS, SEE CS1-DRG-351994 TO CS1-DRG-351997.
 - ISOLATION TRANSFORMER DETAILS AND CHARACTERISTICS TO COMPLY WITH DPTI STATIONS ELECTRICAL INFRASTRUCTURE STANDARDS (D074) - APPENDIX A.
 - SEE DPTI STANDARD DRAWING S-4055 SHEET 54, AMENDMENT No.1 FOR MDB-SR01 CONSTRUCTION & MOUNTING DETAILS AND EQUIPMENT LAYOUT.



THIS SHEET FULLY SUPERSEDES 077-R-86-1863, 077-A1-87-404 & TC_MW_EL_DWG_0003_0.

<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>INDEX SHEET REF: CS1-DRG-351974</p> <p>THESEAL APPROVAL: J.FRAGOS PROJECT APPROVAL: W.KING DATE: 30.08.18</p>				<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>				<p>FLINDERS LINE VIA DUCT ELECTRICAL AND LIGHTING - POWER SUPPLY - SHEET 01 PLAN AND DETAILS</p>				<p>Government of South Australia Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-351992 SCALE(S): 1:200 SIZE: A1 REVISION: B SHEET: 18 OF 31</p>											
REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV	DATE	DRN	DSGN	CHK	APRV	DATE	DRN	DSGN	CHK	APRV	DATE	DRN	DSGN	CHK	APRV	DATE	
B	ISSUED FOR 100% REVIEW	30.08.18																					
A	ISSUED FOR 70% REVIEW	04.04.18																					



STAIR AND LIFT CORE 1 - LEVEL 1
SCALE: 1:50

- PROVIDE DUCTWORK BELLMOUTH DOWNSTREAM OF DUCTWORK PENETRATIONS.
- 750x675 SUPPLY AIR PENETRATION, SEALED WEATHERTIGHT TO CONCRETE LIFT SHAFT.
- SOAKAGE PIT FOR PACKAGED UNIT CONDENSATE TO BE IN ACCORDANCE WITH DPTI STANDARD DETAIL G-28.
- PROVIDE FLEXIBLE DUCTWORK CONNECTIONS TO ELIMINATE VIBRATION TRANSFER TO LIFT SHAFT STRUCTURE.
- PAC - LIFT1**
VERTICAL PACKAGED TYPE AIR CONDITIONING UNIT TO BE MOUNTED ON PLINTH AT LOW LEVEL. AIR CONDITIONING UNIT TO SERVE LIFT SHAFT. MOTORISED DAMPER AND WEATHER PROOF LOUVRE FOR AIR RELIEF TO BE PROVIDED AT TOP OF SHAFT. PACKAGED UNIT TO BE PROVIDED WITHIN VANDAL PROOF CAGE.
- 600x675 RETURN AIR PENETRATION, SEALED WEATHERTIGHT TO CONCRETE LIFT SHAFT.
- PROVIDE FREESTANDING, LOCKABLE, WEATHERPROOF CONTROLS CABINET WITHIN VANDAL PROOF CAGE FOR STORAGE OF CONTROLS EQUIPMENT. LOCATE ADJACENT LIFT CORE. POWER AND CONTROLS CABLING TO BE RETICULATED TO AIR CONDITIONING UNIT WITHIN STEEL CONDUIT.
- PACKAGED UNIT TO BE CONTROLLED VIA TEMPERATURE SENSOR LOCATED AT TOP OF LIFT SHAFT. WHEN TEMPERATURE EXCEEDS 28 DEGREES THE EVAPORATIVE COOLER SHALL OPERATE. MINIMUM OPERATION TIME FOR PACKAGED UNIT SHALL BE 30 MINUTES.
- LIFT CAR TO BE PROVIDED VIA PROPRIETARY AIR CONDITIONING SYSTEM.



STAIR AND LIFT CORE 1 - ISOMETRIC VIEW
NOT TO SCALE

REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV
B	ISSUE FOR 70% REVIEW	17.04.18				
A	ISSUE FOR 30% REVIEW	19.12.17				

NOT FOR CONSTRUCTION

RPD019 - VERTICAL TRANSPORT

GATEWAY SOUTH

DESIGNED: JWC
DRAFTED: JWC
CHECKED: NK
APPROVED:

INDEX SHEET REF: CS1.DRG-352008

TECHNICAL APPROVAL: J. CLARKE
PROJECT APPROVAL: D. RICHTER

TITLE: STAIR AND LIFT CORE 1 - HVAC LAYOUT
DATE:

100 MILLIMETRES ON ORIGINAL DRAWING

FLINDERS LINK
VERTICAL TRANSPORT
STAIR AND LIFT CORE 1 - HVAC LAYOUT
PLAN AND ISOMETRIC

Government of South Australia
Department of Planning,
Transport and Infrastructure

CS1-DRG-352044

SCALE(S): 1:50
REVISION: B

SIZE: A1
SHEET:

PLOTTED: 17/04/2018 9:04:18 PM

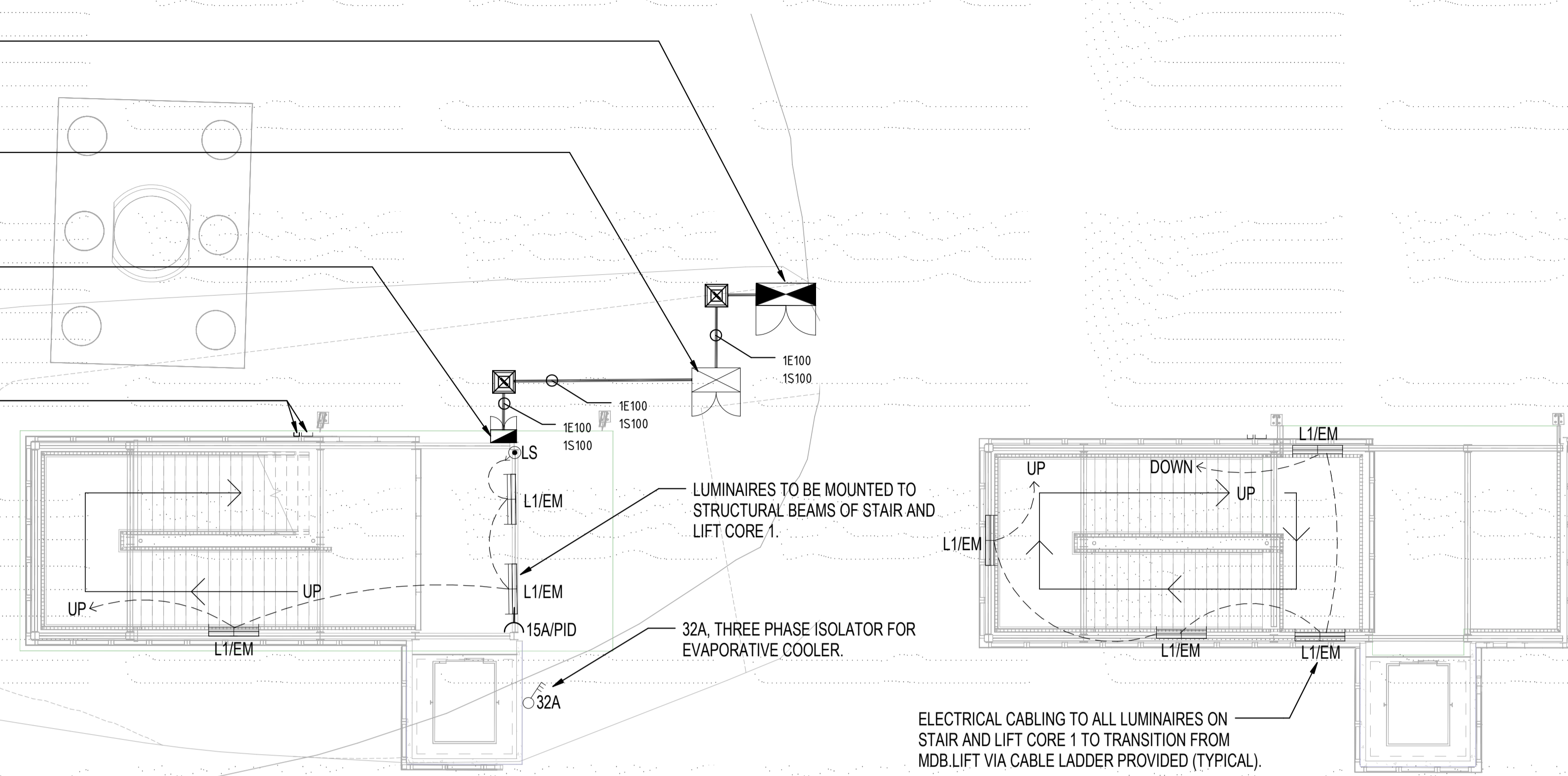


MAIN SWITCH BOARD (MSB.WEST)
(NEW)
LOCATED ADJACENT TO ISOLATION TRANSFORMER
MAXIMUM DIMENSIONS: 1600mm(W) x 600mm(D) x 2200mm(H)
600mm CLEARANCE FROM DOOR SWING.

ISOLATION TRANSFORMER
(NEW)
MAXIMUM DIMENSIONS:
1300mm(W) x 650mm(D) x 1150mm(H)
600mm CLEARANCE FROM DOOR SWING.

MAIN DISTRIBUTION BOARD (MDB.LIFT)
(NEW)
LOCATED EXTERNAL STAIR AND LIFT CORE 1
MAXIMUM DIMENSIONS:
700mm(W) x 350mm(D) x 2000mm(H)
600mm CLEARANCE FROM DOOR SWING.

1 OFF 300mm WIDE ELECTRICAL AND 1 OFF 150mm WIDE COMMUNICATION CABLE LADDER FOR RETICULATION OF SERVICES TO VIADUCT LEVEL. LADDERS TO BE LOCATED BEHIND CLADDING WITH ALL SERVICES CABLING CONCEALED WITHIN BUILDING FABRIC.

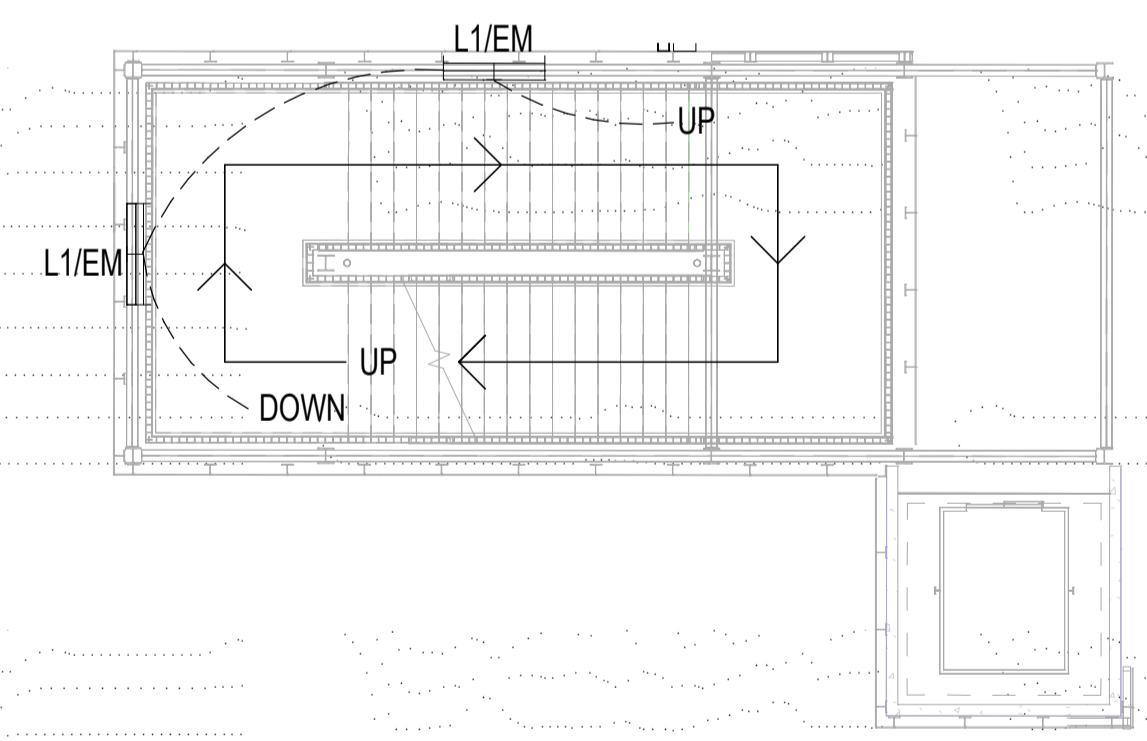


STAIR AND LIFT CORE 1 - LEVEL 1
SCALE: 1:100

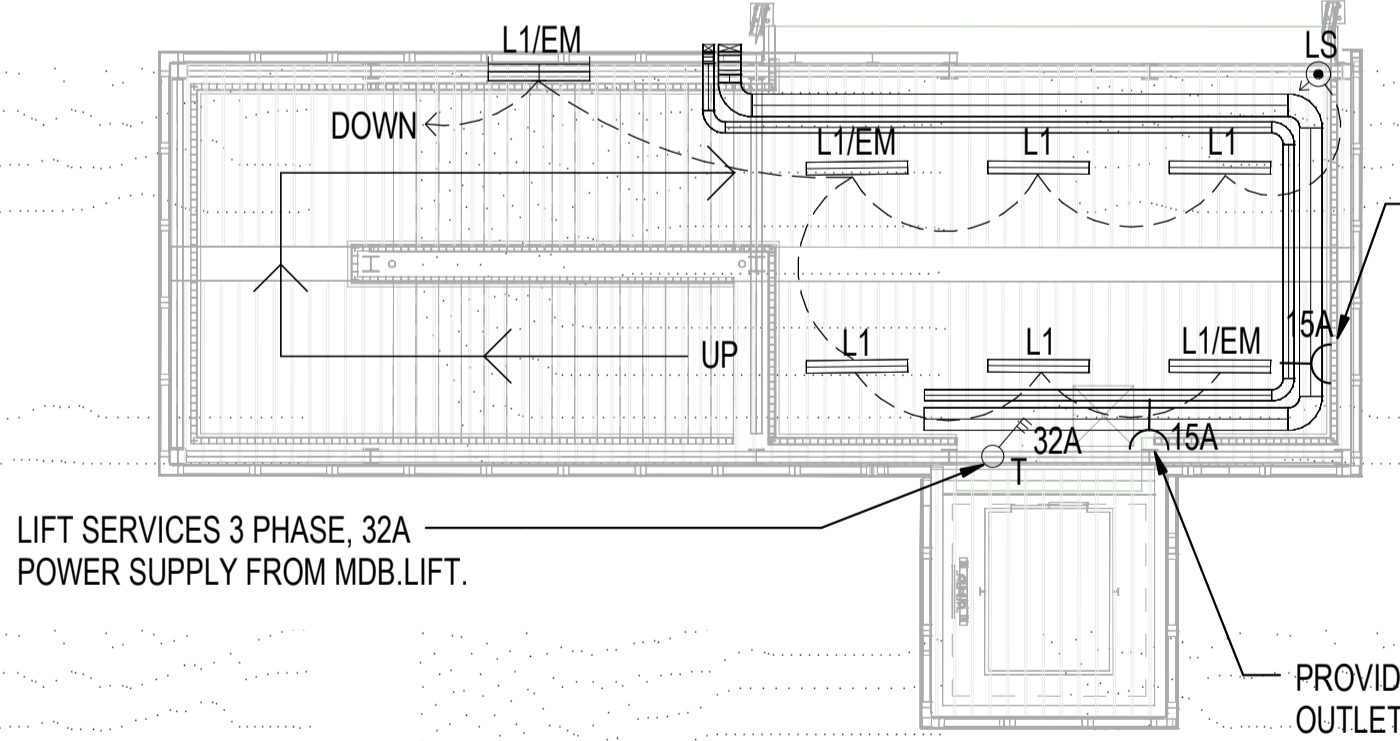
STAIR AND LIFT CORE 1 - LEVEL 3
SCALE: 1:100



POWER AND LIGHTING LAYOUT - ISOMETRIC VIEW
NOT TO SCALE



STAIR AND LIFT CORE 1 - LEVEL 2
SCALE: 1:100



STAIR AND LIFT CORE 1 - LEVEL 4
SCALE: 1:100

LEGEND OF SYMBOLS

- L1 LINEAR EXTRUSION LUMINAIRE (SELECTION: THORN GLADIATOR LED - 4000lm, 49W, (80lm/W), IP56 WEATHERPROOF, SURFACE MOUNTED LINEAR LED LUMINAIRE - 1340mm x 167mm x 120 mm).
- L1/EM AS PER 'L1', HOWEVER COMPRISING MAINTAINED EMERGENCY BATTERY PACK.
- 15A 15A, IP56 SWITCHED SOCKET OUTLET INSTALLED RECESSED WITHIN STRUCTURAL BEAM BEHIND PADLOCKABLE COVER TO DPTI STANDARDS.
- LS 180 DEGREE PIR DALI LUMINAIRE MOTION SENSOR.
- ISOLATION TRANSFORMER.
- MAIN SWITCH BOARD (MSB). DOUBLE SKINNED CABINET. TYPICAL.
- MAIN DISTRIBUTION BOARD (MDB). DOUBLE SKINNED CABINET. TYPICAL.
- WEATHERPROOF ISOLATOR. T - DENOTES 2m CABLE TAIL PROVIDED BETWEEN ISOLATOR AND LIFT DISTRIBUTION BOARD.
- ELECTRICAL CLASS D PIT AND LID COMBINATION.
- UNDERGROUND ELECTRICAL ACCESS CONDUIT AND CABLING. 1E100 DENOTES HEAVY DUTY 100mm UNDERGROUND ELECTRICAL CONDUIT.
- SWITCHED CIRCUIT
- CABLE LADDER

REV	DESCRIPTION	DATE	DRN	DSGN	CHK	APRV	DATE
B	ISSUED FOR 70% REVIEW	17.04.18					
A	ISSUED FOR 30% REVIEW	19.12.17					

NOT FOR CONSTRUCTION

RPD019 - VERTICAL TRANSPORT

GATEWAY SOUTH

DESIGNED: FLD
DRAFTED: FLD
CHECKED: FLD
APPROVED:

INDEX SHEET REF: CS1.DRG-352008

TECHNICAL APPROVAL: V.PAPAGEORGIOU
PROJECT APPROVAL: D.RICHTER

TITLE: STAIR AND LIFT CORE 1 - POWER AND LIGHTING LAYOUT
DATE:

FLINDERS LINE
LIFT
STAIR AND LIFT CORE 1 - POWER AND LIGHTING LAYOUT
PLAN

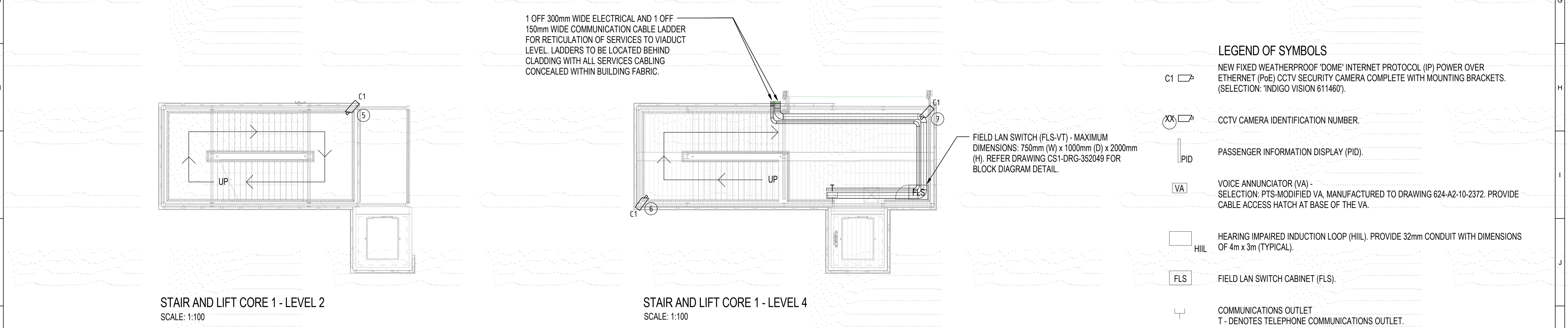
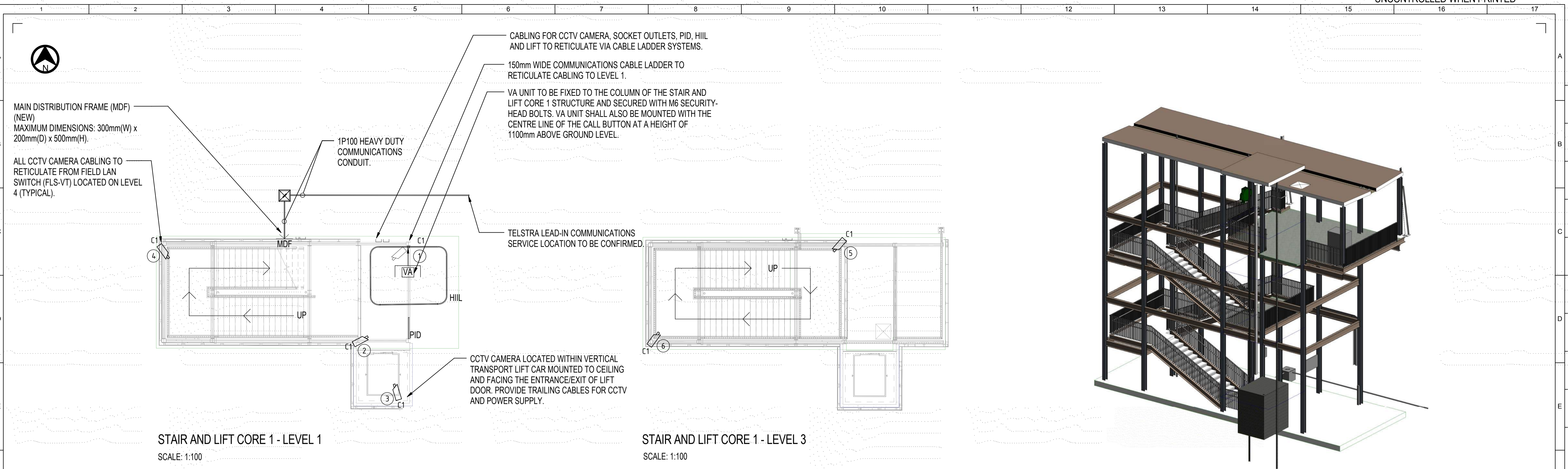
Government of South Australia
Department of Planning,
Transport and Infrastructure

CS1-DRG-352046

SCALE(S): 1:100
REVISION: B

SIZE: A1
SHEET:

PLOTTED: 17/04/2018 8:46:48 PM



- LEGEND OF SYMBOLS**
- C1 [Symbol] NEW FIXED WEATHERPROOF 'DOME' INTERNET PROTOCOL (IP) POWER OVER ETHERNET (PoE) CCTV SECURITY CAMERA COMPLETE WITH MOUNTING BRACKETS. (SELECTION: 'INDIGO VISION 611460').
 - XX [Symbol] CCTV CAMERA IDENTIFICATION NUMBER.
 - PID [Symbol] PASSENGER INFORMATION DISPLAY (PID).
 - VA [Symbol] VOICE ANNUNCIATOR (VA) - SELECTION: PTS-MODIFIED VA, MANUFACTURED TO DRAWING 624-A2-10-2372. PROVIDE CABLE ACCESS HATCH AT BASE OF THE VA.
 - HIL [Symbol] HEARING IMPAIRED INDUCTION LOOP (HIL). PROVIDE 32mm CONDUIT WITH DIMENSIONS OF 4m x 3m (TYPICAL).
 - FLS [Symbol] FIELD LAN SWITCH CABINET (FLS).
 - T [Symbol] COMMUNICATIONS OUTLET T - DENOTES TELEPHONE COMMUNICATIONS OUTLET.
 - [Symbol] CABLE LADDER
 - [Symbol] COMMUNICATIONS PIT

NOT FOR CONSTRUCTION				RPD019 - VERTICAL TRANSPORT				DESIGNED: FLD		FLINDERS LINE			
				GATEWAY SOUTH				DRAFTED: FLD		LIFT			
								CHECKED: FLD		STAIR AND LIFT CORE - COMMUNICATIONS AND CCTV			
								APPROVED:		SYSTEM LAYOUT PLAN			
								TITLE: DATE:		CS1-DRG-352048			
								INDEX SHEET REF: CS1-DRG-352008		SCALE(S): 1:100 SIZE: A1			
								TECHNICAL APPROVAL: V.PAPAGEORGIOU PROJECT APPROVAL: D.RICHTER		REVISION: B SHEET:			
								DATE: 19.12.17		100 MILLIMETRES ON ORIGINAL DRAWING			
										PLOTTED: 17/04/2018 8:36:59 PM			



LEGEND OF SYMBOLS

- PAN-TILT-ZOOM (PTZ) INTERNET PROTOCOL (IP) POWER OVER ETHERNET (PoE) CCTV SECURITY CAMERA C/W DOME AND MOUNTING BRACKETS. INSTALLED AT 5m AFL ON JOINT-USE CCTV AND LIGHTING POLE. (SELECTION: 'INDIGO VISION 511797' OR DPTI APPROVED EQUIVALENT).
- FIXED 'DOME', INTERNET PROTOCOL (IP) POWER OVER ETHERNET (PoE) CCTV CAMERA COMPLETE WITH BRACKETS. (SELECTION: INDIGO VISION '511739').
- PLASTIC OR CONCRETE COMMUNICATIONS PIT. n=1 TO 7 REPRESENTS DPTI PIT SIZE. LOCKABLE LID, MINIMUM CLASS C LID.
- PLASTIC OR CONCRETE EXTRA LOW VOLTAGE PIT. n=1 TO 7 PRESENTS DPTI PIT SIZE. LOCKABLE LID, MINIMUM CLASS C LID.
- UNDERGROUND COMMUNICATIONS CONDUIT ROUTE.
- UNDERGROUND EXTRA LOW VOLTAGE CONDUIT ROUTE.
- JOINT USE CCTV AND LIGHTING POLE.
- DIAMETER OF CONDUIT SERVICE TYPE
ELV - DENOTES EXTRA LOW VOLTAGE
C - DENOTES COMMUNICATIONS SERVICES
S - DENOTES SPARE
No. OF

PROPOSED LOCATION OF SAPN PAD MOUNTED TRANSFORMER. MAXIMUM DIMENSIONS 1950(W)x1662(D)x1627(H).

REFER DRAWINGS CS1-DRG-360156 DETAIL 7 FOR CONDUIT ARRANGEMENT

1 off Ø50mm SPARE COMMUNICATIONS UNDERGROUND CONDUITS FOR FUTURE CONNECTION TO MSB POWER MONITORING UNIT.

TRANSITION OF COMMUNICATIONS CONDUIT TO VIADUCT LEVEL AND CONTINUE TO EQUIPMENT ROOM.

COMMUNICATIONS CONDUIT CONTINUE TO LIFT 2 FOR CCTV CAMERA WITHIN LIFT 2.

MAIN SWITCH BOARD (MSB.EAST) (NEW)
DIMENSIONS: 1400mm(W)x400mm(D)x2100mm(H).
PROVIDE 600mm CLEARANCE FROM DOOR SWING. PROVIDE CONCRETE FOOTING AND PAD TO SUIT MAIN SWITCHBOARD.

ISOLATION TRANSFORMER (NEW)
DIMENSIONS: 1500mm(W)x1500mm(D)x1700mm(H).
PROVIDE 600mm CLEARANCE FROM DOOR SWING. PROVIDE CONCRETE FOOTING AND PAD TO SUIT ISOLATION TRANSFORMER.

FOR CONTINUATION REFER TO DRAWING CS1-DRG-359839

COMMUNICATIONS CONDUIT FROM STATION EQUIPMENT ROOM.

CCTV CAMERA MOUNTED ON JOINT USE POLE TO PROVIDE CCTV COVERAGE AT ENTRY/EXIT OF VIADUCT.

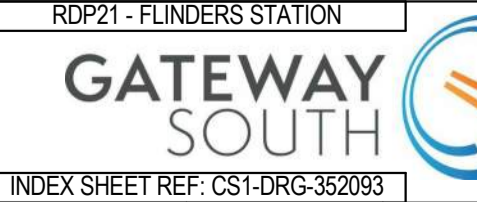
- NOTES:
- FOR PIT DETAILS REFER TO DPTI STANDARD DRAWING S-4055 SHEETS 33-35, 50 AND 51. ENSURE ALL PIT LIDS ARE FINISHED TO FINAL SURFACE LEVELS.
 - REFER DRAWING CS1-DRG-360158 FOR UNDERGROUND CONDUIT DETAILS.

STATION - PLAZA PRECINCT - COMMUNICATIONS LAYOUT - SHEET 1 OF 4

SCALE 1:100



NOT FOR CONSTRUCTION



DESIGNED:	FLD
DRAFTED:	FLD
CHECKED:	FLD
APPROVED:	
TECHNICAL APPROVAL:	V.PAPAGEORGIOU
PROJECT APPROVAL:	D. RICHTER
DATE:	31.08.18

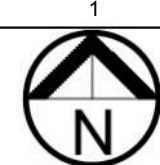
FLINDERS LINE
FLINDERS STATION
FLINDERS STATION - COMMS LAYOUT SHEET 1 OF 4
PLANS AND DETAILS



CS1-DRG-352156
SCALE(S): 1:100 SIZE: A1
REVISION: C SHEET:

REV	DESCRIPTION	DRN	DSGN	CHK	APRV	DATE
C	ISSUED FOR 100% REVIEW	-	-	-	-	31.08.18
B	ISSUED FOR 70% REVIEW	-	-	-	-	24.04.18
A	ISSUED FOR 30% REVIEW	-	-	-	-	21.12.17

PLOTTED: 31/08/2018 6:09:26 PM



PROVIDE ANCHOR BLOCKS TO DRAINAGE PIPEWORK INSTALLED AT GRADE AT TOP AND BOTTOM OF DRAIN AND AT INTERVALS OF NO MORE THAN 3.0m IN ACCORDANCE WITH AS/NZS3500.

Ø100 SANITARY DRAINAGE AND Ø32 DCW PIPEWORK INSTALLED AT GRADE OF APPROXIMATELY 33% TO MATCH INCLINE OF GROUND WITHIN COMMON SERVICES TRENCH. APPROXIMATE MINIMUM DEPTH 600mm.

DETAIL 1 - PIPEWORK INSTALLED ON SLOPE

NOT TO SCALE
FOR INFORMATION ONLY

50mm HIGH SIGNAGE:
"BACK FLOW PREVENTION VALVE"

2mm THICK SHEETMETAL CABINET COMPLETE WITH LOCKABLE ACCESS DOORS, POWDER COATED WITH COLOUR TO SUIT ARCHITECTS REQUIREMENTS.

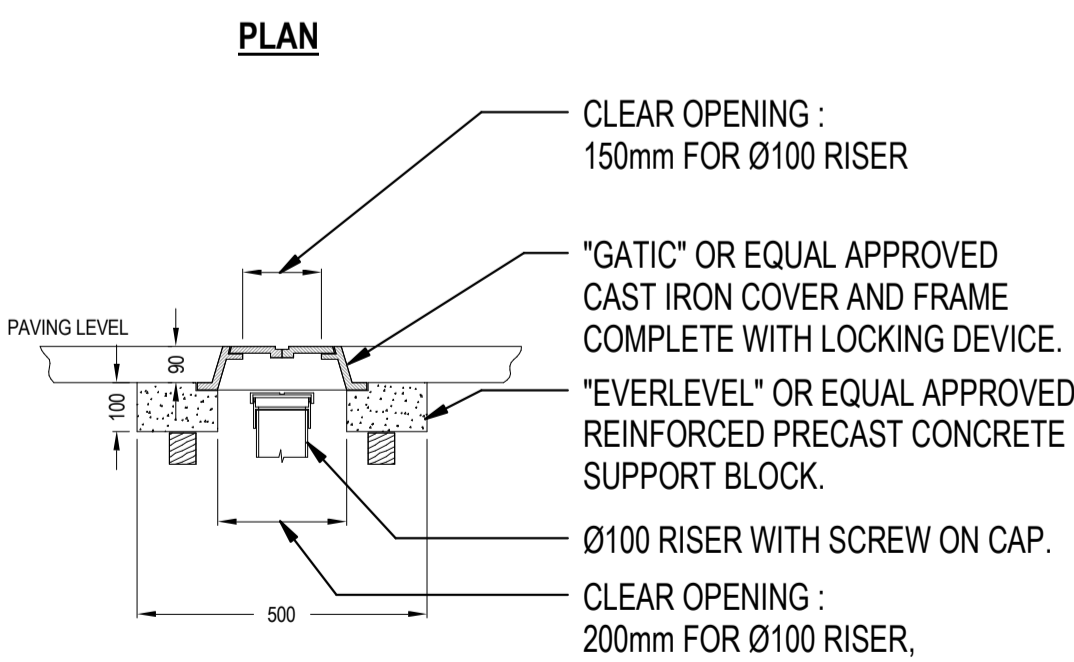
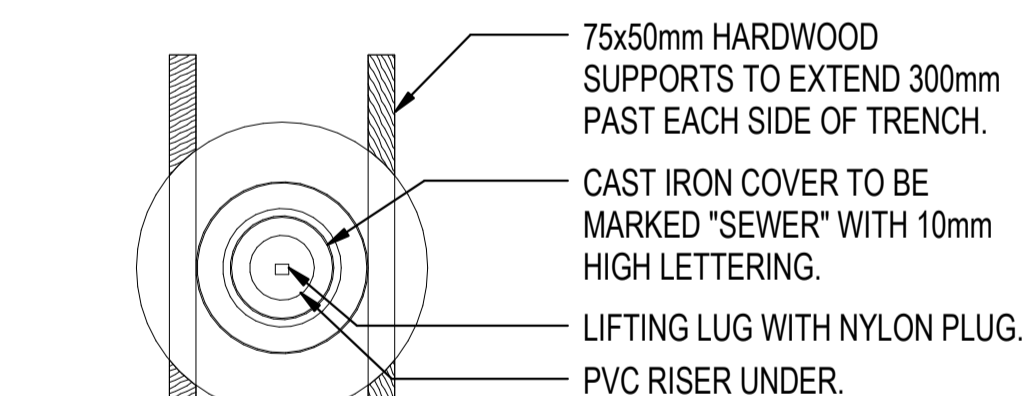
Ø40 ISOLATION VALVE.

IDENTIFICATION TAG FIXED TO ISOLATION VALVES.

100mm THICK CONCRETE PLINTH BY CONTRACTOR.

DETAIL 2 - TESTABLE DOUBLE CHECK VALVE IN ABOVE GROUND ENCLOSURE

NOT TO SCALE
FOR INFORMATION ONLY



DETAIL 3 - INSPECTION OPENING TO SURFACE WITH HEAVY DUTY COVER

NOT TO SCALE
FOR INFORMATION ONLY

3.0m SECTION OF PIPEWORK TO BE GRADED AT 6.0% MINIMUM GRADE TO ENSURE MINIMUM COVER IS MAINTAINED.

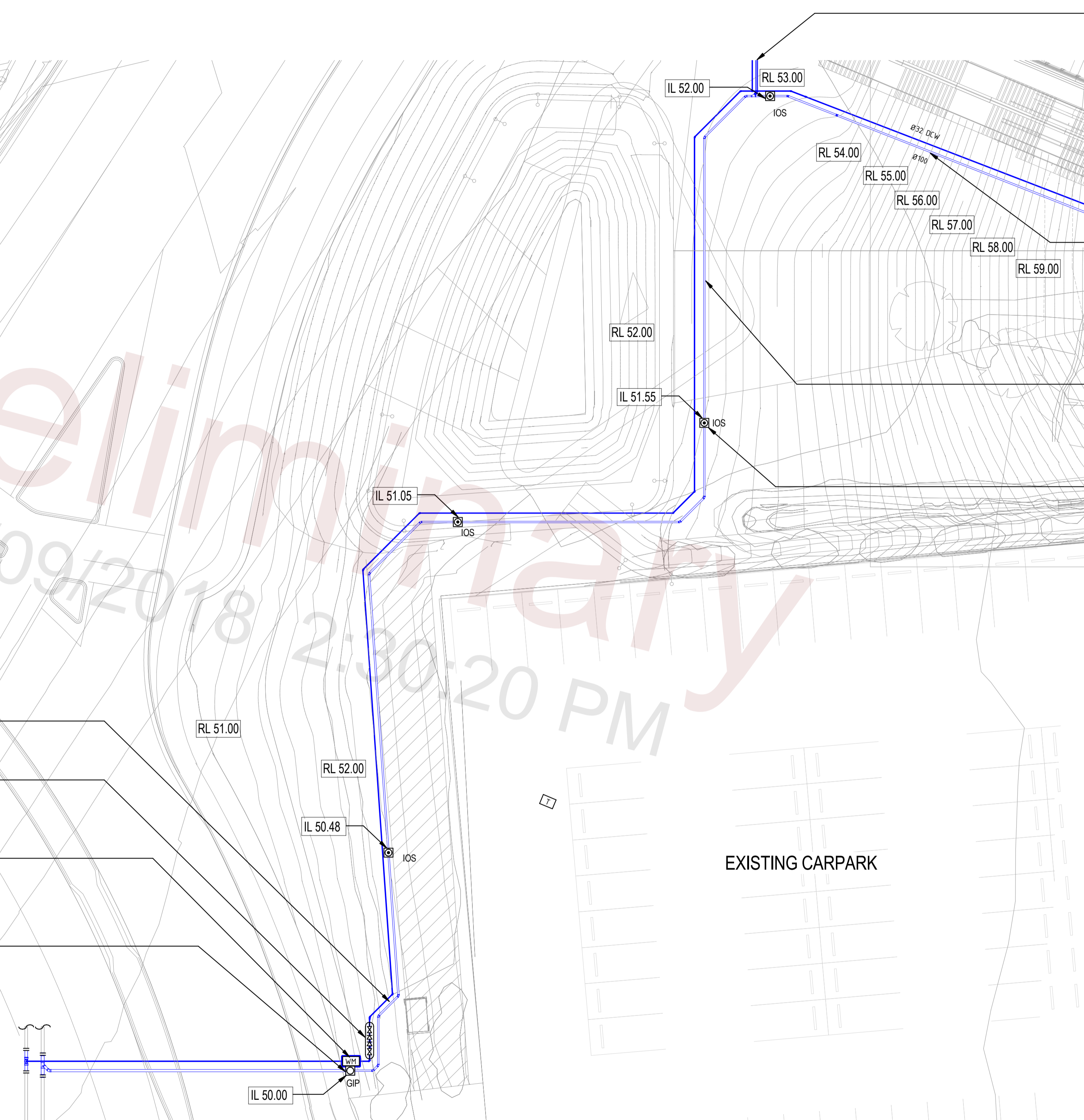
Ø40 TESTABLE DOUBLE CHECK VALVE IN VANDAL PROOF ABOVE ENCLOSURE ON INCOMING WATER SUPPLY TO SITE. REFER ADJACENT DETAIL 2 FOR FURTHER INFORMATION.

MAKE APPLICATION AND PAY ASSOCIATED FEES TO 'SA WATER CORPORATION' FOR NEW Ø40 WATER METER CONNECTION OFF FLINDERS DRIVE. WATER METER TO BE INSTALLED WITHIN CAST IRON FOOTPATH BOX.

MAKE APPLICATION AND PAY ASSOCIATED FEES TO 'SA WATER CORPORATION' FOR NEW Ø150 SEWER CONNECTION OFF FLINDERS DRIVE.

STATION PLAZA - HYDRAULICS SERVICES PLAN VIEW

SCALE: 1:200 AT A1



REFER TO DRAWING "CS1-DRG-360159" FOR CONTINUATION.

REFER TO DRAWING "CS1-DRG-359844" FOR CONTINUATION.

Ø100 SANITARY DRAINAGE AND Ø32 DCW PIPEWORK INSTALLED AT GRADE TO MATCH INCLINE OF GROUND WITHIN COMMON SERVICES TRENCH. APPROXIMATE MINIMUM DEPTH 600mm. REFER TO ADJACENT DETAIL 1 FOR FURTHER INFORMATION.

Ø100 SANITARY DRAINAGE AND Ø32 DCW PIPEWORK EXTENDING INGROUND TO AUTHORITY CONNECTION. PIPEWORK INSTALLED WITHIN COMMON SERVICES TRENCH.

Ø100 INSPECTION OPENINGS ON INGROUND SANITARY DRAINAGE TO SURFACE COMPLETE WITH CAST IRON COVER FOR COMPLIANCE WITH AS/NZS3500. REFER ADJACENT DETAIL 3 FOR FURTHER INFORMATION (TYPICAL, MAXIMUM 30m INTERVALS).

LEGEND OF SYMBOLS

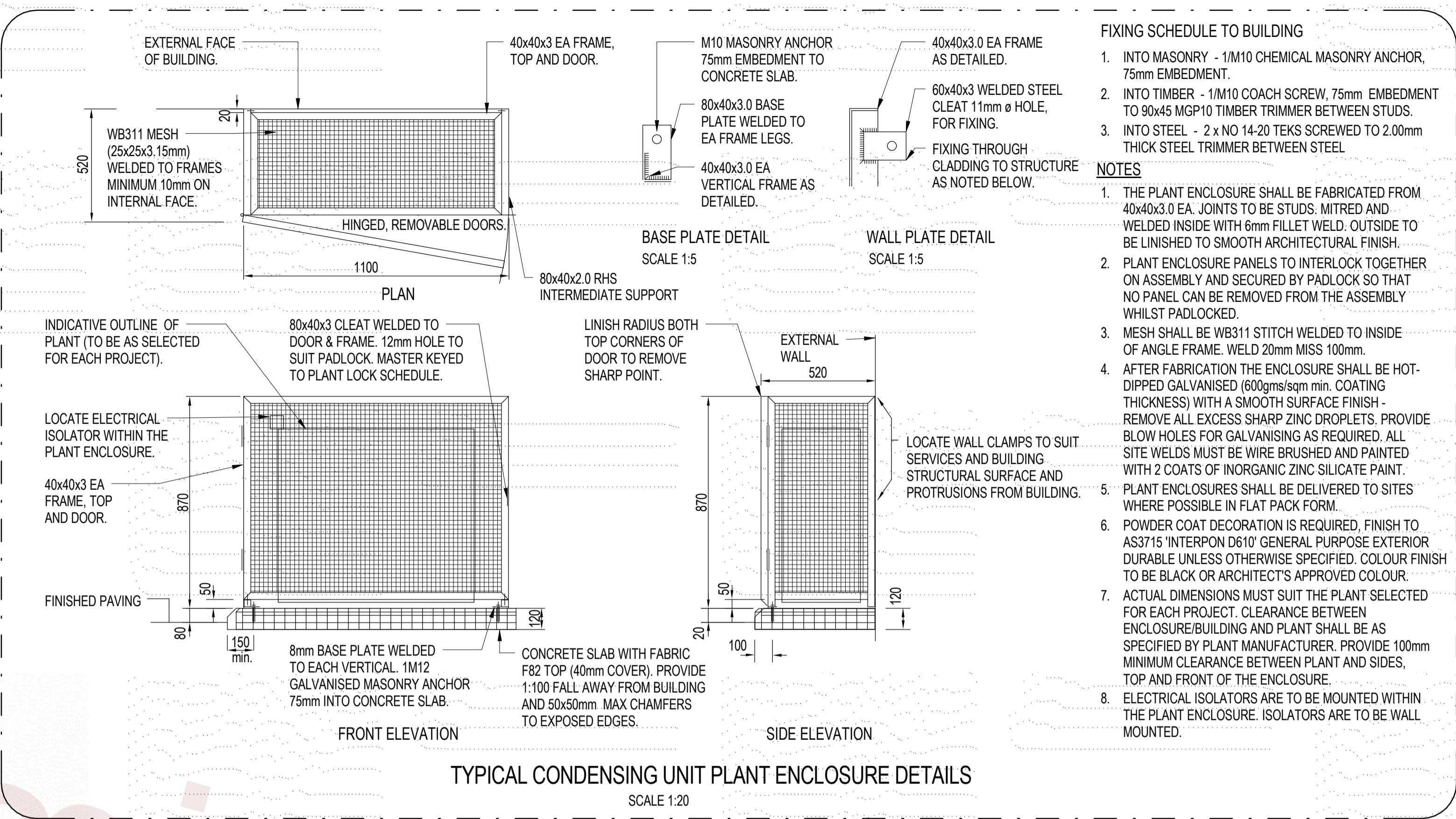
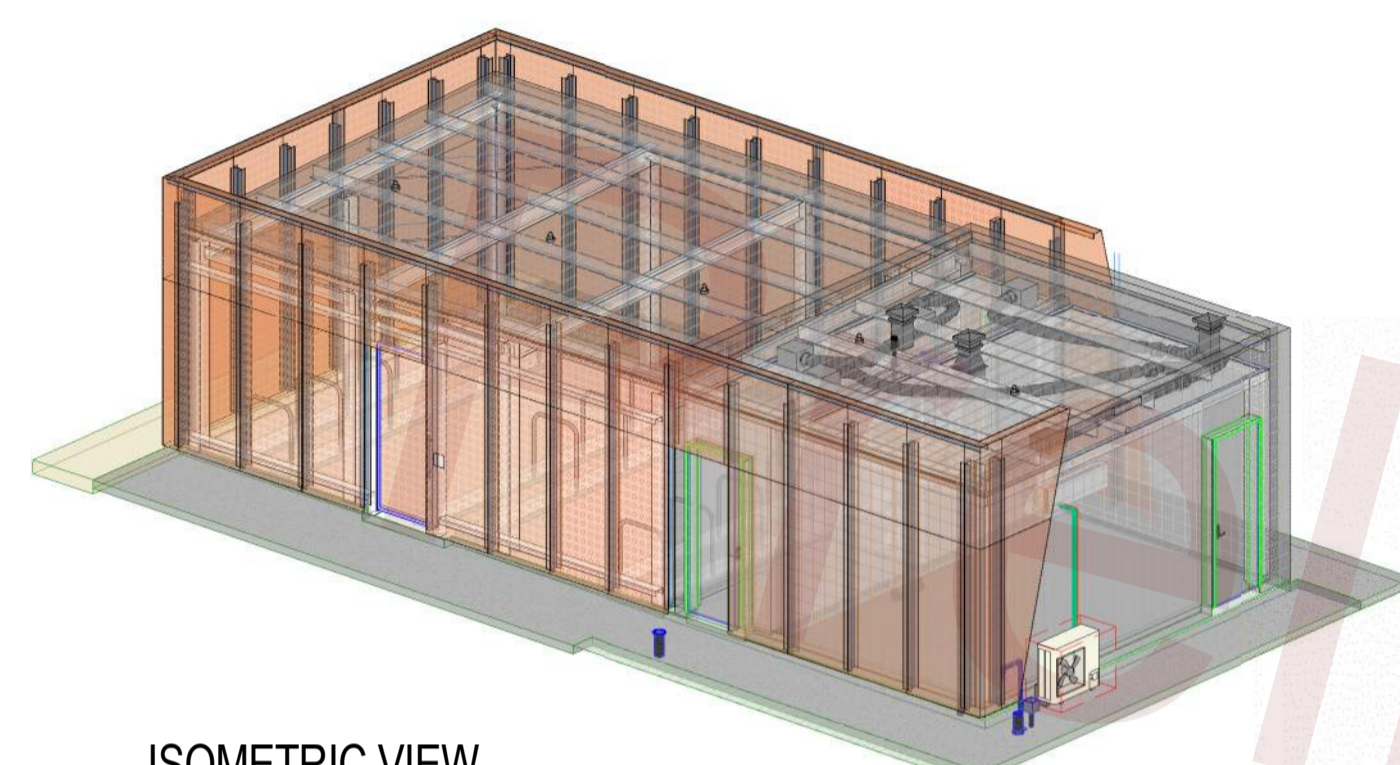
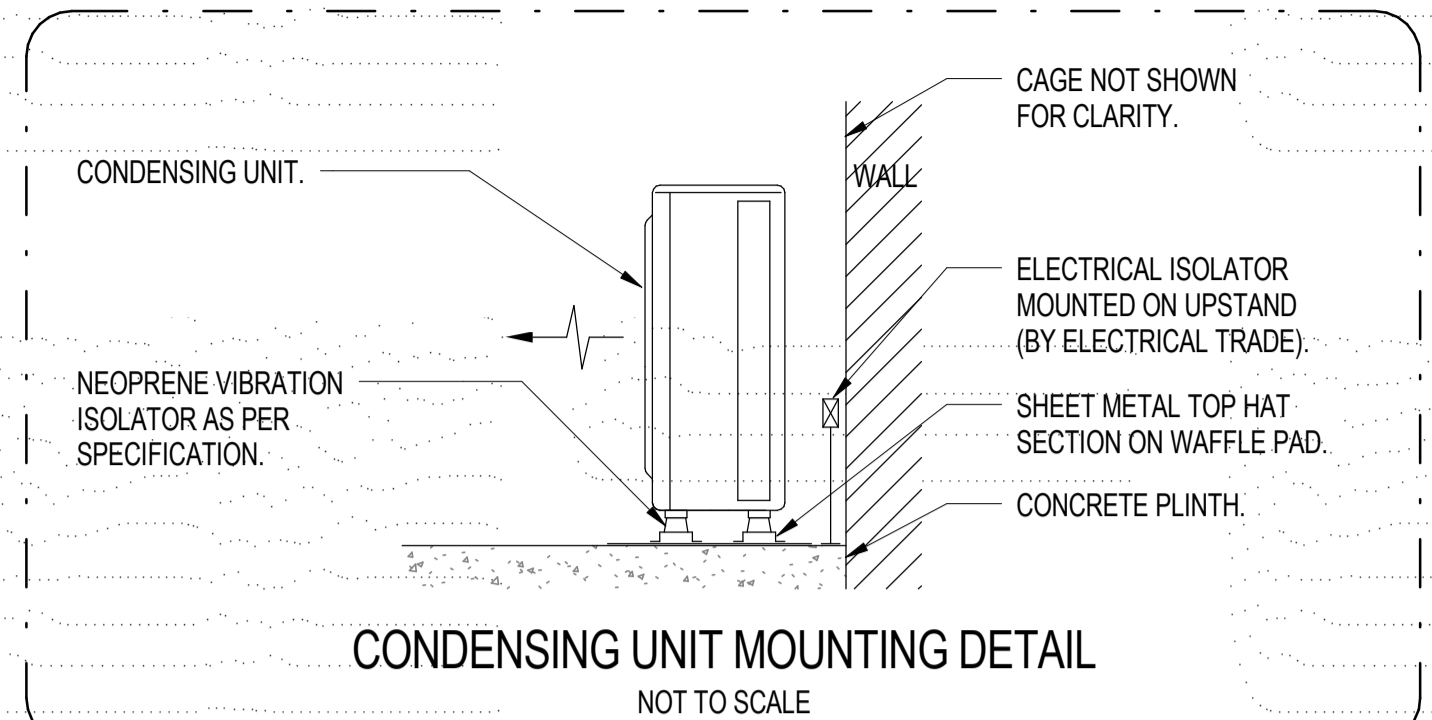
- WP SCREW NOSE BIBCOCK LOCATED WITHIN VANDAL RESISTANT BOX.
- EHWU ELECTRIC INSTANTANEOUS HOT WATER UNIT
- IV ISOLATION VALVE WITHIN INGROUND BOX
- SBB SCREW NOSE BIBCOCK WITH VACUUM BREAKER
- GT GULLY TRAP
- FWT FLOOR WASTE TRAP
- AFSL ABOVE FINISHED SURFACE LEVEL
- WMT 'SA WATER CORPORATION' WATER METER
- GIP GOVERNMENT INSPECTION OPENING
- IOS INSPECTION OPENING TO SURFACE COMPLETE WITH HEAVY DUTY CAST IRON COVER
- IL INVERT LEVEL
- RL REFERENCE LEVEL

<p>ISSUED FOR 100% REVIEW</p> <p>ISSUED FOR 70% REVIEW</p> <p>ISSUED FOR 30% REVIEW</p> <p>REV DESCRIPTION</p>					<p>31.08.18</p> <p>24.04.18</p> <p>21.12.17</p>					<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>INDEX SHEET REF: CS1-DRG-352093</p> <p>100 MILLIMETRES ON ORIGINAL DRAWING</p>					<p>DESIGNED: FLD</p> <p>DRAFTED: FLD</p> <p>CHECKED: FLD</p> <p>APPROVED:</p>					<p>FLINDERS LINE</p> <p>FLINDERS STATION</p> <p>FLINDERS STATION - HYDRAULICS LAYOUT - SHEET 1 OF 4</p> <p>PLANS AND DETAILS</p>					<p>Government of South Australia</p> <p>Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-352159</p> <p>SCALE(S): As indicated</p> <p>REVISION: C</p> <p>SIZE: A1</p> <p>SHEET:</p>				
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GENERAL NOTES

- THE MECHANICAL SERVICES DRAWINGS SHALL BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS, DETAILS AND OTHER ENGINEERING DRAWINGS AND SPECIFICATION AND WITH OTHER SUCH WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- IF ANY DISCREPANCY OCCURS ON THE ENGINEERS DRAWINGS OR BETWEEN DRAWING AND SPECIFICATION, THE CONTRACTOR SHALL DURING TENDERING ASSUME THE LARGER/GREATER. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER AND BE INCLUDED IN ANY TENDER.
- UNLESS NOTED OTHERWISE ALL DIMENSIONS ARE IN MILLIMETRES. ALL DUCTWORK SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS ONLY.
- ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE RELEVANT AUSTRALIAN STANDARDS, CODES AND THE CONTRACT SPECIFICATION.
- ALL DUCTWORK SHALL CONFORM TO THE STANDARDS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (S.M.A.C.N.A.).
- DO NOT SCALE OFF DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED FROM THE ARCHITECTS DRAWINGS AND BY ACTUAL SITE MEASUREMENTS PRIOR TO MANUFACTURING AND INSTALLING MECHANICAL SERVICES.



- FIXING SCHEDULE TO BUILDING**
- INTO MASONRY - 1M10 CHEMICAL MASONRY ANCHOR, 75mm EMBEDMENT.
 - INTO TIMBER - 1M10 COACH SCREW, 75mm EMBEDMENT TO 90x45 MGP10 TIMBER TRIMMER BETWEEN STUDS.
 - INTO STEEL - 2 x NO 14-20 TEEKS SCREWED TO 2.00mm THICK STEEL TRIMMER BETWEEN STEEL
- NOTES**
- THE PLANT ENCLOSURE SHALL BE FABRICATED FROM 40x40x3.0 EA. JOINTS TO BE STUDS. MITRED AND WELDED INSIDE WITH 6mm FILLET WELD. OUTSIDE TO BE FINISHED TO SMOOTH ARCHITECTURAL FINISH.
 - PLANT ENCLOSURE PANELS TO INTERLOCK TOGETHER ON ASSEMBLY AND SECURED BY PADLOCK SO THAT NO PANEL CAN BE REMOVED FROM THE ASSEMBLY WHILST PADLOCKED.
 - MESH SHALL BE WB311 STITCH WELDED TO INSIDE OF ANGLE FRAME. WELD 20mm MISS 100mm.
 - AFTER FABRICATION THE ENCLOSURE SHALL BE HOT-DIPPED GALVANISED (600gms/sqm min. COATING THICKNESS) WITH A SMOOTH SURFACE FINISH - REMOVE ALL EXCESS SHARP ZINC DROPLETS. PROVIDE BLOW HOLES FOR GALVANISING AS REQUIRED. ALL SITE WELDS MUST BE WIRE BRUSHED AND PAINTED WITH 2 COATS OF INORGANIC ZINC SILICATE PAINT.
 - PLANT ENCLOSURES SHALL BE DELIVERED TO SITES WHERE POSSIBLE IN FLAT PACK FORM.
 - POWDER COAT DECORATION IS REQUIRED, FINISH TO AS3715 'INTERPON D610' GENERAL PURPOSE EXTERIOR DURABLE UNLESS OTHERWISE SPECIFIED. COLOUR FINISH TO BE BLACK OR ARCHITECT'S APPROVED COLOUR.
 - ACTUAL DIMENSIONS MUST SUIT THE PLANT SELECTED FOR EACH PROJECT. CLEARANCE BETWEEN ENCLOSURE/BUILDING AND PLANT SHALL BE AS SPECIFIED BY PLANT MANUFACTURER. PROVIDE 100mm MINIMUM CLEARANCE BETWEEN PLANT AND SIDES, TOP AND FRONT OF THE ENCLOSURE.
 - ELECTRICAL ISOLATORS ARE TO BE MOUNTED WITHIN THE PLANT ENCLOSURE. ISOLATORS ARE TO BE WALL MOUNTED.

LEGEND OF SYMBOLS

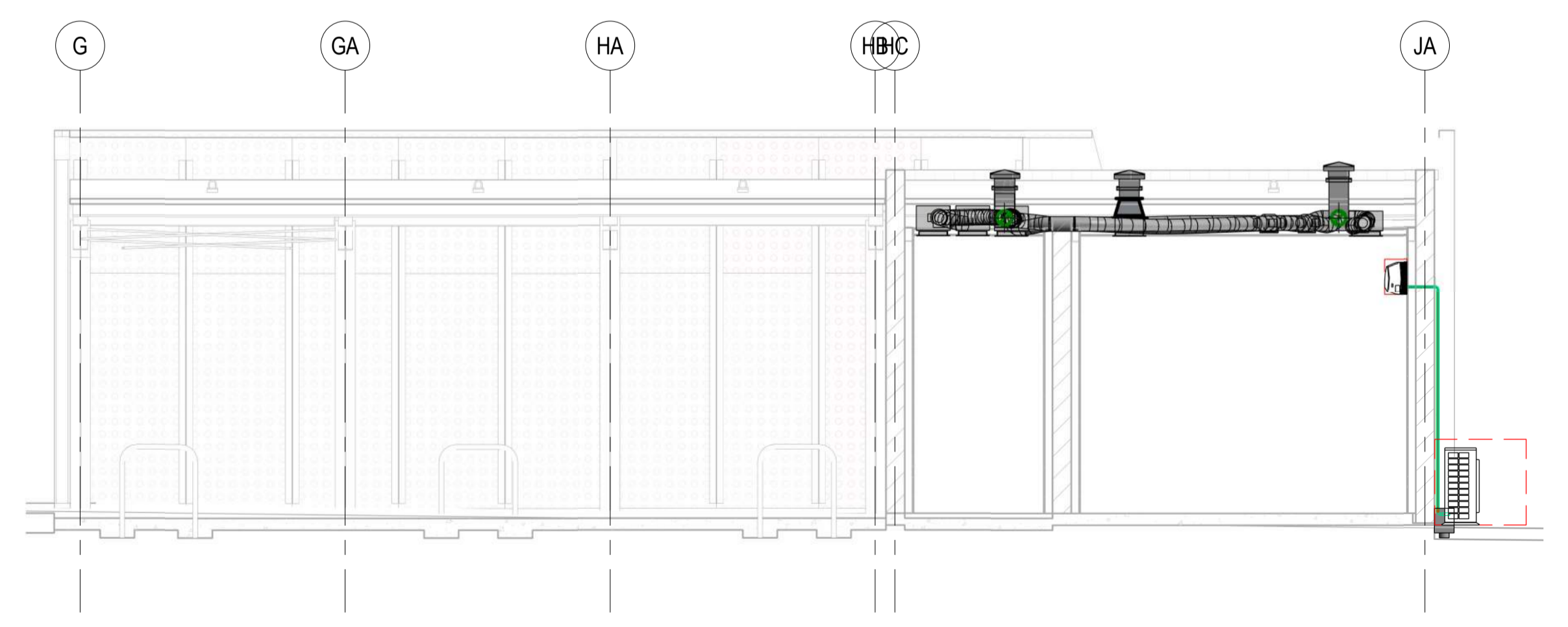
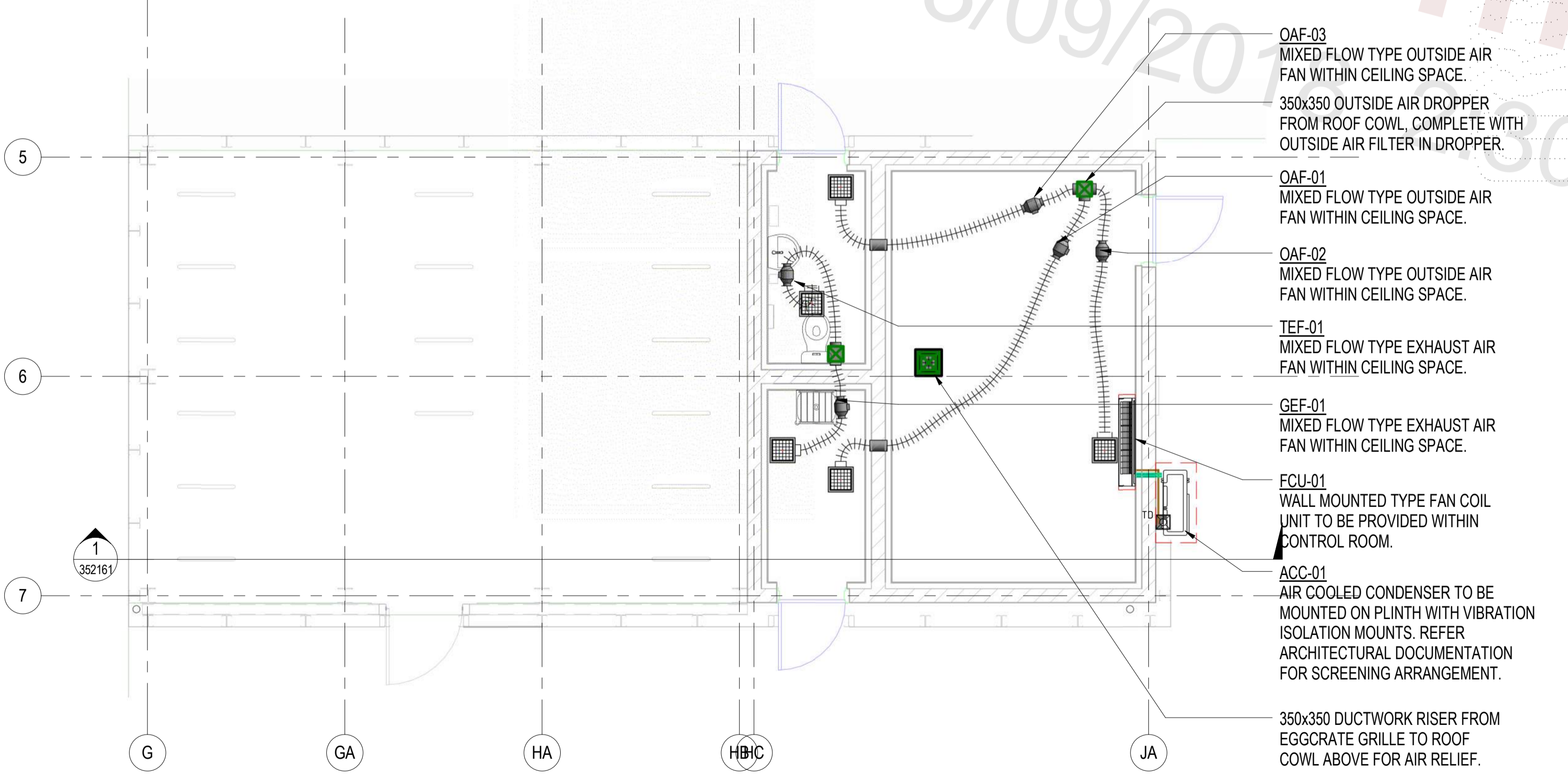
- CIRCULAR SPIRAL WOUND DUCTWORK
- DUCTWORK RISER
- NCC COMPLIANT INSULATED FLEXIBLE DUCTING
- EGGCRATE TYPE GRILLE
- REFRIGERANT PIPEWORK (INSULATED)
- CONDENSATE DRAIN
- TUNDISH

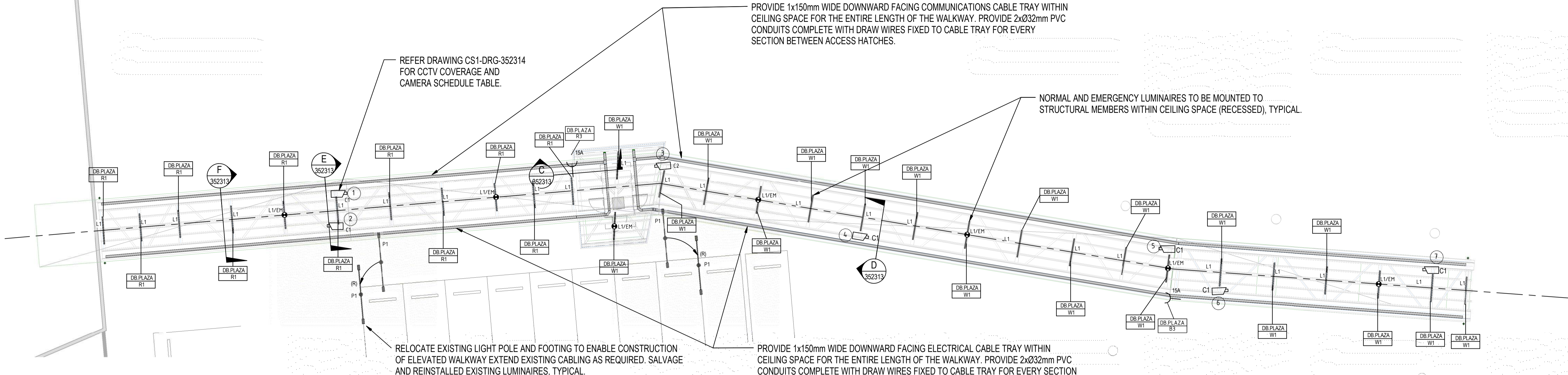
ABBREVIATIONS

- EAG EXHAUST AIR GRILLE
- OAG OUTSIDE AIR GRILLE
- OAL OUTSIDE AIR LOUVER
- OAC OUTSIDE AIR COWL
- EAC EXHAUST AIR COWL
- ECG EGGCRATE GRILLE
- TEF TOILET EXHAUST FAN
- GEF GENERAL EXHAUST FAN
- OAF OUTSIDE AIR FAN
- ACC AIR COOLED CONDENSER
- FCU FAN COIL UNIT

FLEXIBLE DUCTWORK SCHEDULE (UNLESS OTHERWISE STATED)

FLOW L/s	SIZE (mm)
LESS THAN 95	Ø200
100-150	Ø250
155-210	Ø300
215-290	Ø350
295-375	Ø400
380-480	Ø450
485-550	Ø500

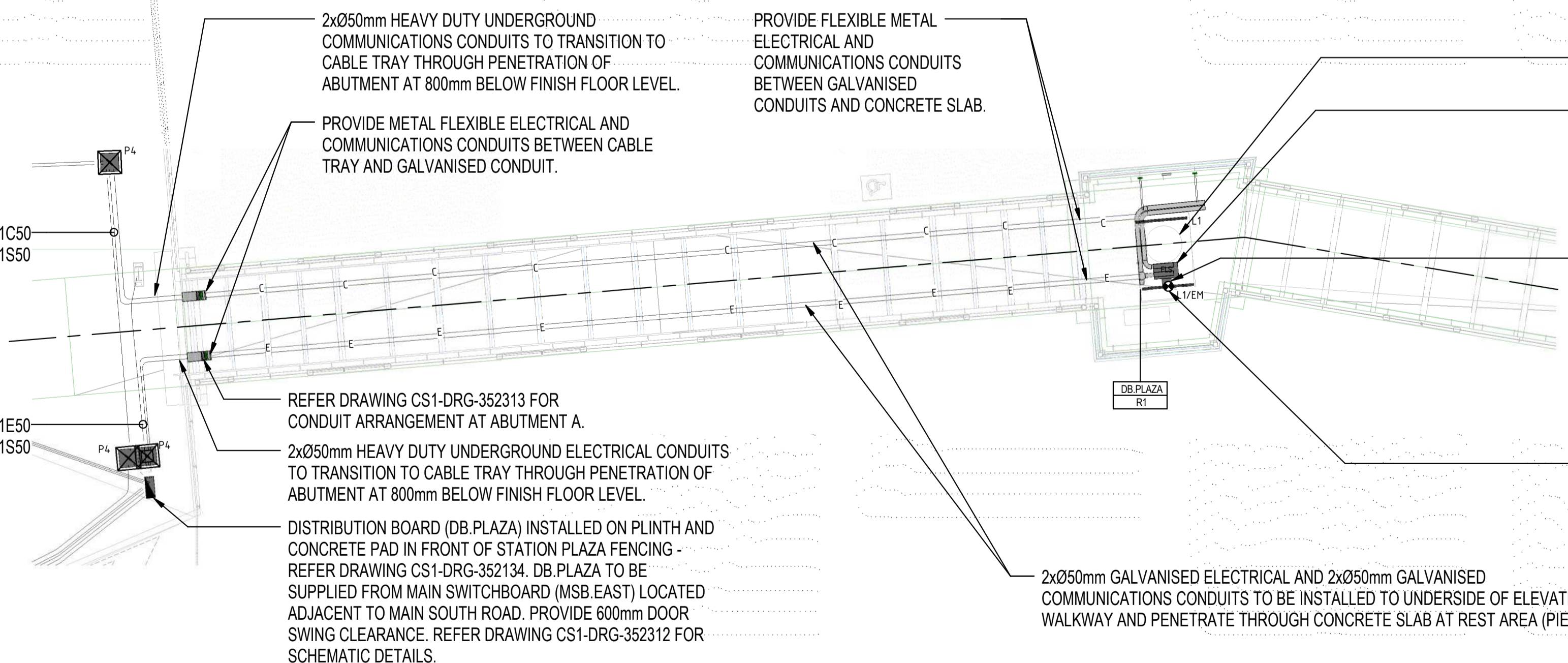




ELEVATED WALKWAY - HIGHER LEVEL - ELECTRICAL AND COMMUNICATIONS SERVICES
SCALE: 1:125

LEGEND OF SYMBOLS

- P1 EXISTING FLINDERS MEDICAL CENTRE CAR PARK POLE MOUNTED LUMINAIRE
- L1 LINEAR EXTRUSION LUMINAIRE (SELECTION: KERO LIGHTING - XT1 3.0: RECESSED-DPTI-OCR. 4350mm, 54W, IP66 WEATHERPROOF, VANDAL RESISTANT (IK10+) RECESSED LINEAR LED LUMINAIRE, DIMMABLE, DALI SELV WITH OPEN CIRCUIT REPORTING - 1702mm(L)x80mm(W)x80mm(H)).
- L1/EM AS PER 'L1', HOWEVER COMPRISING MAINTAINED EMERGENCY BATTERY PACK. DUAL ADDRESS TYPE, COMPATIBLE WITH DALI AND AUTOMATED BATTERY TESTING.
- 15A 15A, IP56 SWITCHED SOCKET OUTLET INSTALLED ONTO COLUMN BEHIND PADLOCKABLE STEEL COVER TO DPTI STANDARDS.
- C1 FIXED 'DOME' CCTV CAMERA, INTERNET PROTOCOL (IP) POWER OVER ETHERNET (PoE) CCTV CAMERA COMPLETE WITH BRACKETS. (SELECTION: 'INDIGO VISION 511739).
- C2 PAN TILT ZOOM (PTZ) INTERNET PROTOCOL (IP) POWER OVER ETHERNET (PoE) CCTV SECURITY CAMERA COMPLETE WITH DOME AND BRACKETS. (SELECTION: 'INDIGO VISION 511797).
- XX CCTV CAMERA IDENTIFICATION.
- DB PLAZA DISTRIBUTION BOARD (DB.PLAZA).
- FLS FIELD LAN SWITCH (FLS-EW).
- P4 ELECTRICAL PIT (TYPE P4). DIMENSIONS: 704mm(L)x398mm(W)x830mm(D). P4 REPRESENTS DPTI PIT SIZE. LOCKABLE LID, MINIMUM CLASS C LID.
- P4 COMMUNICATIONS PIT (TYPE P4). DIMENSIONS: 704mm(L)x398mm(W)x830mm(D). P4 REPRESENTS DPTI PIT SIZE. LOCKABLE LID, MINIMUM CLASS C LID.
- Cable tray.
- Electrical conduit route.
- Communication conduit route.
- (R) DENOTES TO BE RELOCATED.
- DIAMETER OF CONDUIT SERVICES TYPE E-DENOTES ELECTRICAL SERVICES C-DENOTES COMMUNICATIONS SERVICES S-DENOTES SPARE No. OF



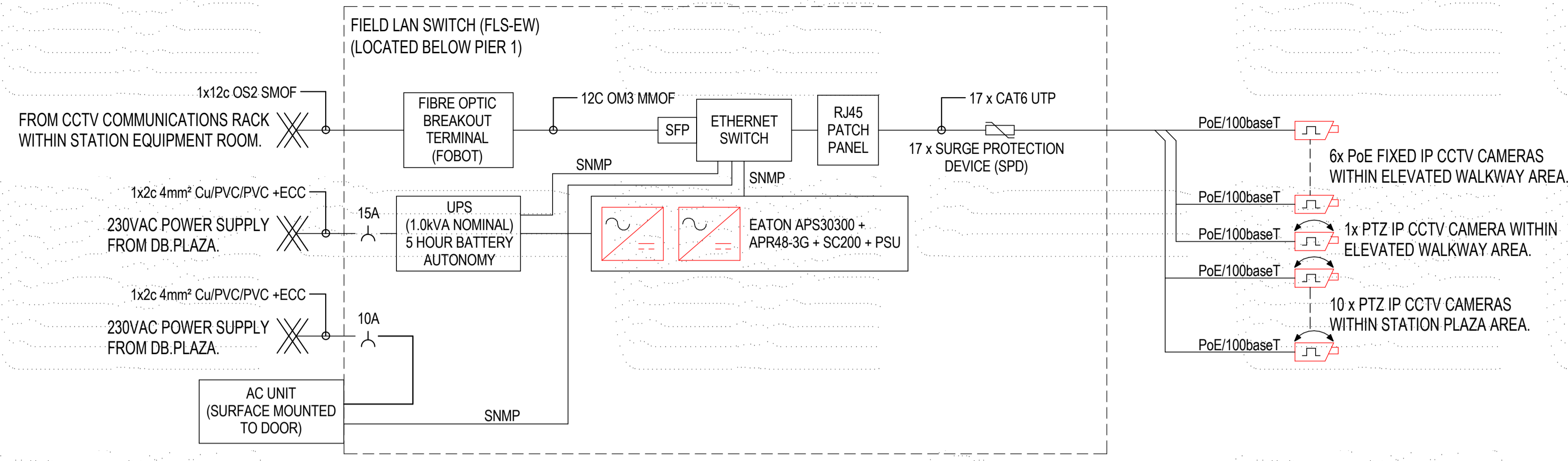
ELEVATED WALKWAY - LOWER LEVEL - ELECTRICAL AND COMMUNICATIONS SERVICES
SCALE: 1:125
NOTE: ALL ELECTRICAL AND COMMUNICATIONS CONDUITS WILL BE INSTALLED WITH 6mm POLYPROPYLENE ROPE (DRAW WIRE).

NOT FOR CONSTRUCTION					GATEWAY SOUTH		RDP024 - ELEVATED WALKWAY		DESIGNED: FLD		FLINDERS LINE	
									DRAFTED: FLD		FLINDERS STATION BRIDGE	
									CHECKED: FLD		ELEVATED WALKWAY - ELECTRICAL COMMUNICATIONS	
									APPROVED:		SERVICES PLAN	
											Government of South Australia Department of Planning, Transport and Infrastructure	
											CS1-DRG-352310	
											SCALE(S): As indicated SIZE: A1	
											REVISION: C SHEET:	
											16	

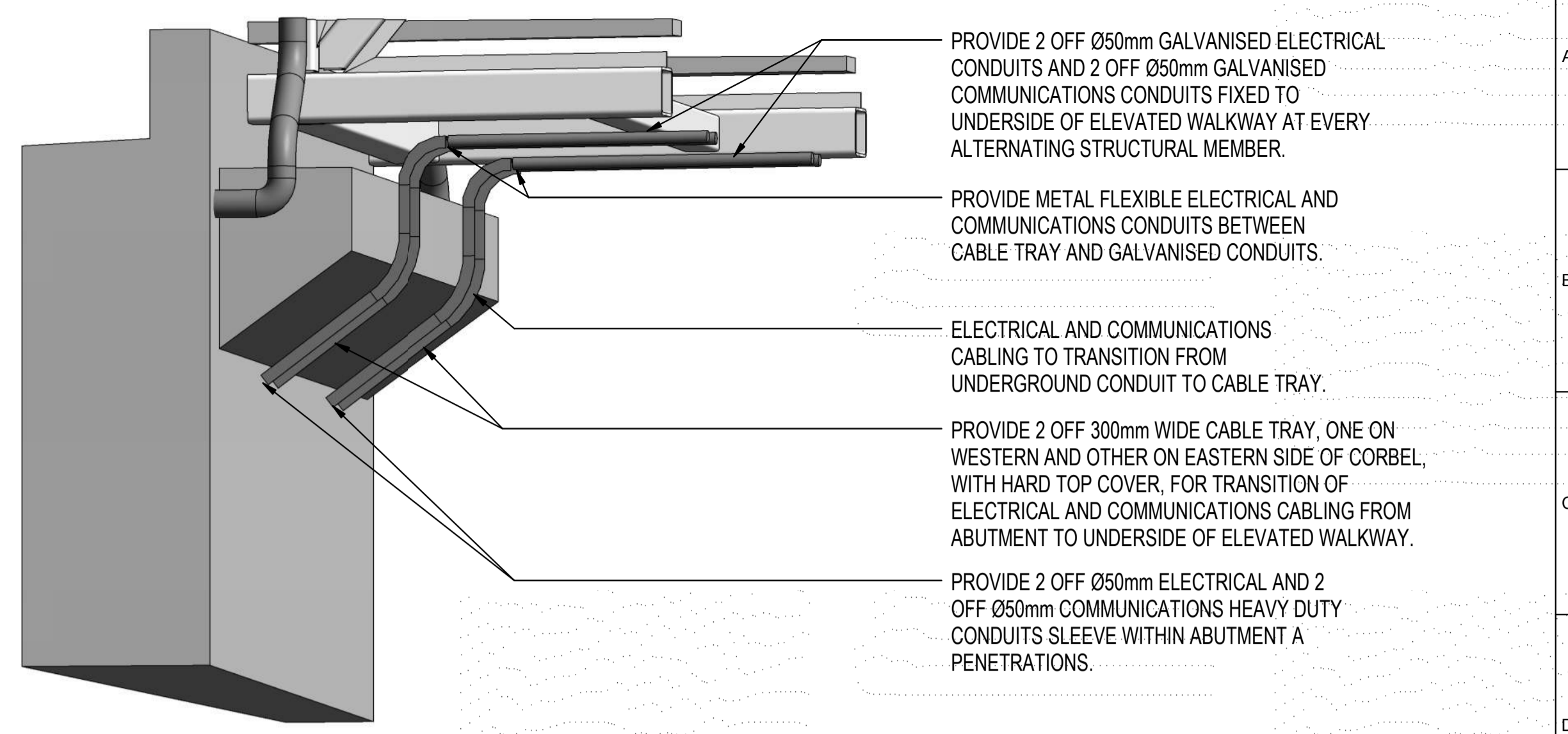
REV	DESCRIPTION	DRN	DSGN	CHK	APRV	DATE
C	ISSUED FOR TENDER RE-PRICE					29.08.18
B	ISSUED FOR 70% REVIEW					12.04.18
A	ISSUED FOR 30% REVIEW					15.12.17

INDEX SHEET REF: CS1-DRG-35231		TECHNICAL APPROVAL: V. PAPAIOORGIOU		PROJECT APPROVAL: D. RICHTER		DATE: 29.08.18	
100 MILLIMETRES ON ORIGINAL DRAWING							

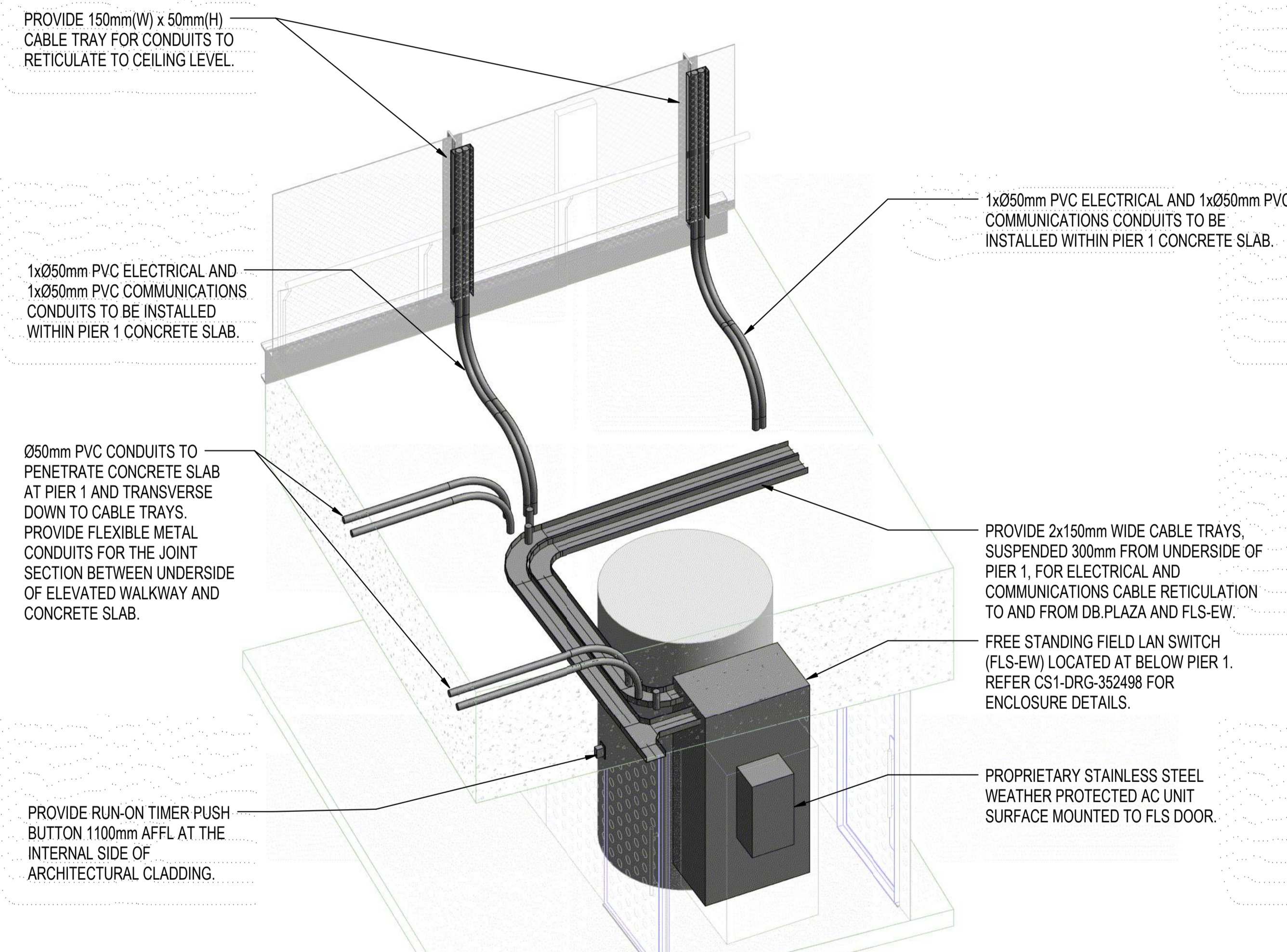
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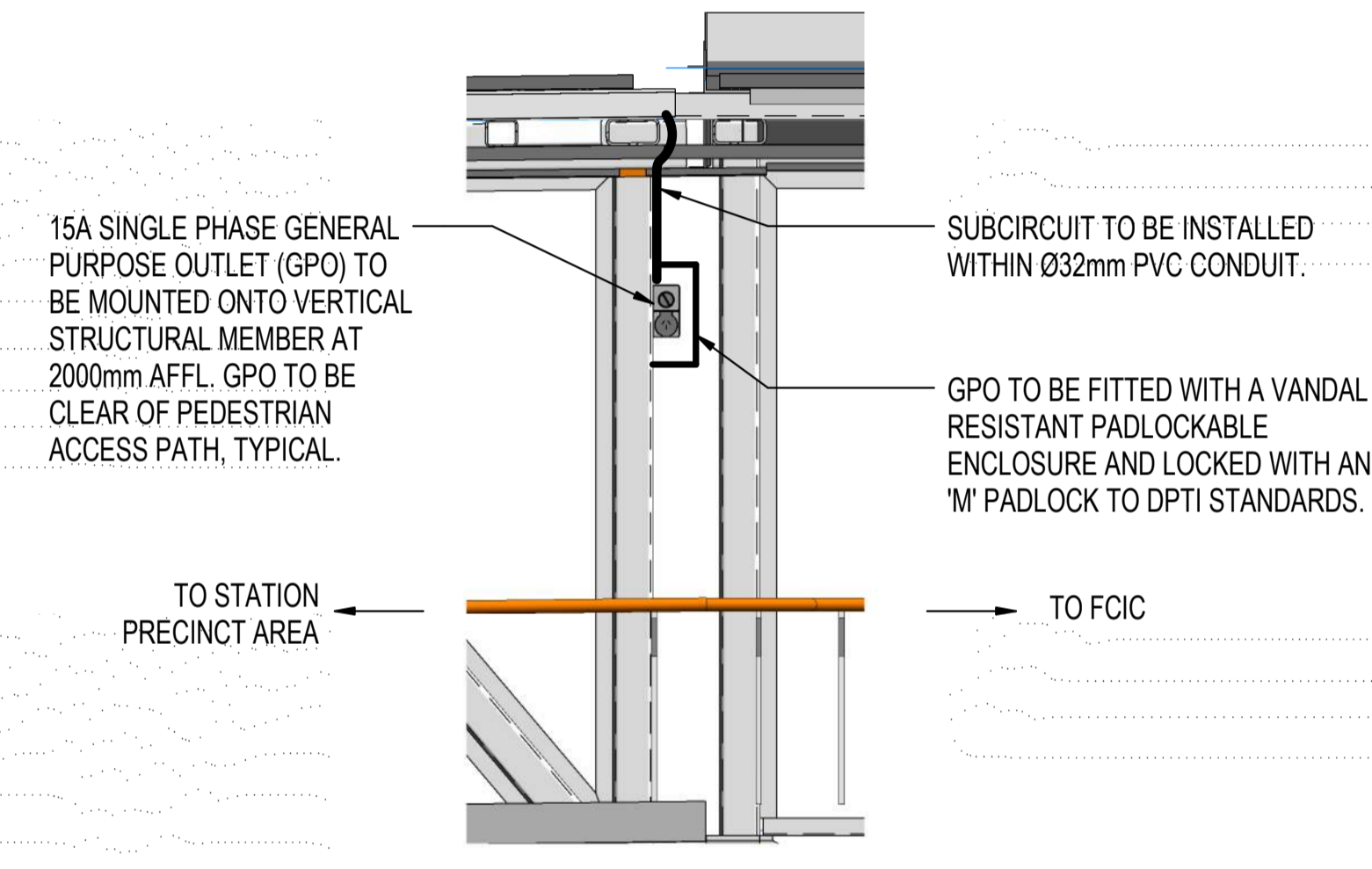
COMMUNICATIONS SCHEMATIC - FIELD LAN SWITCH (FLS-EW)
 NOT TO SCALE
 NOTE: REFER TO COMMUNICATIONS DIAGRAM DRAWING CS1-DRG-359843 FOR FURTHER DETAILS.



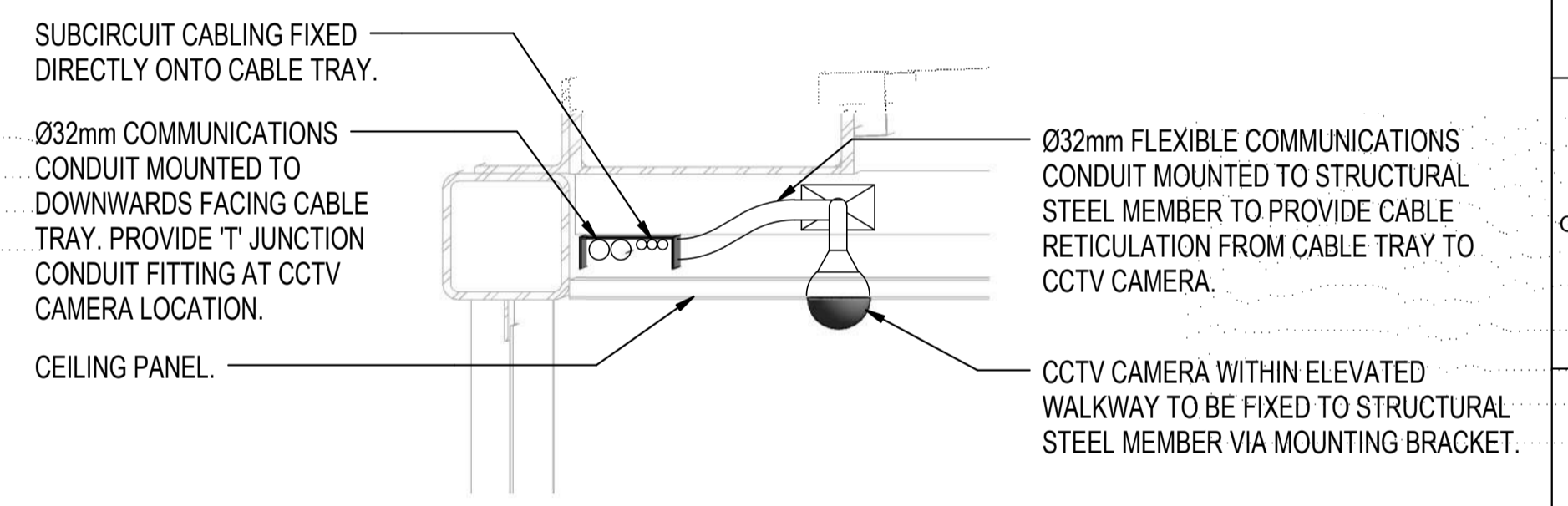
ISOMETRIC VIEW - CONDUIT ARRANGEMENT AT ABUTMENT A



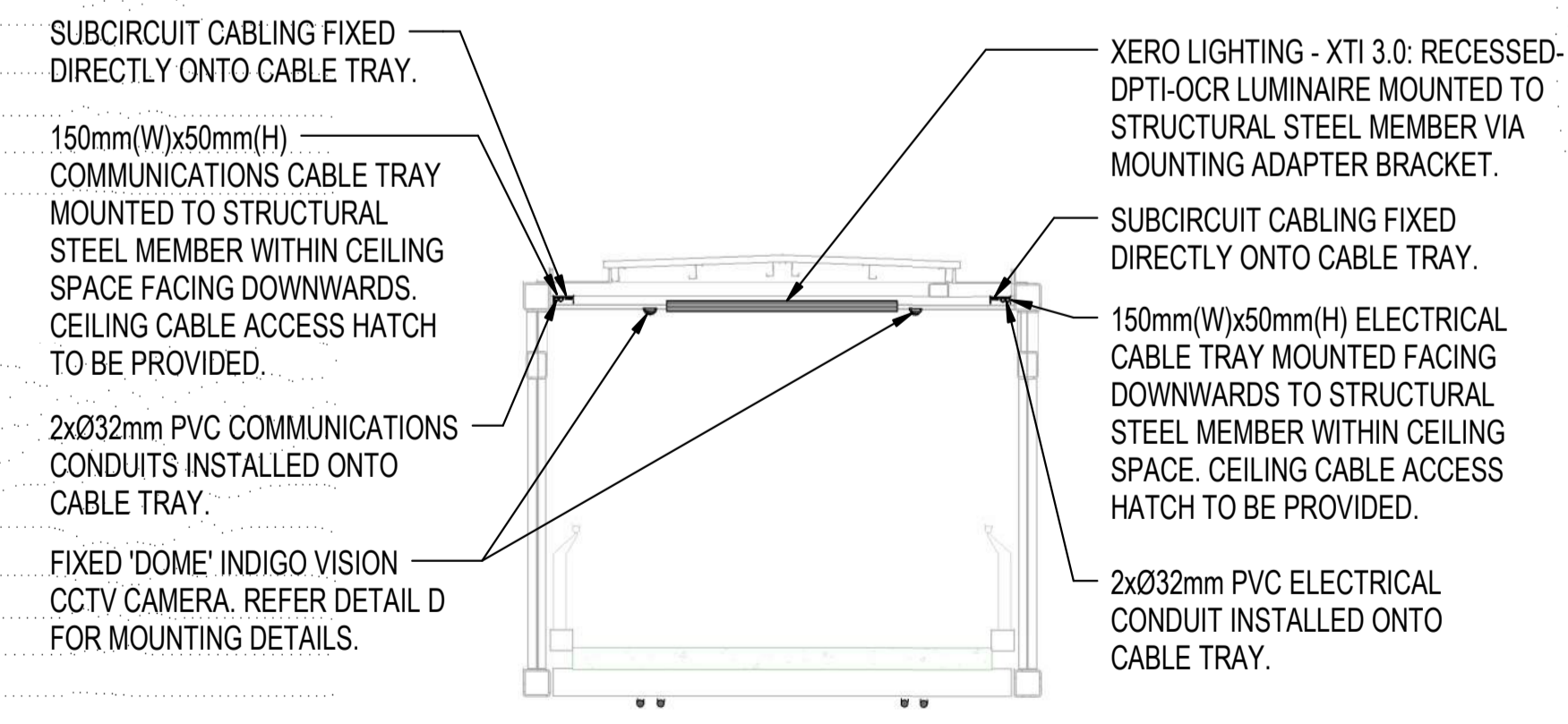
ISOMETRIC VIEW - CONDUIT ARRANGEMENT AT PIER 1



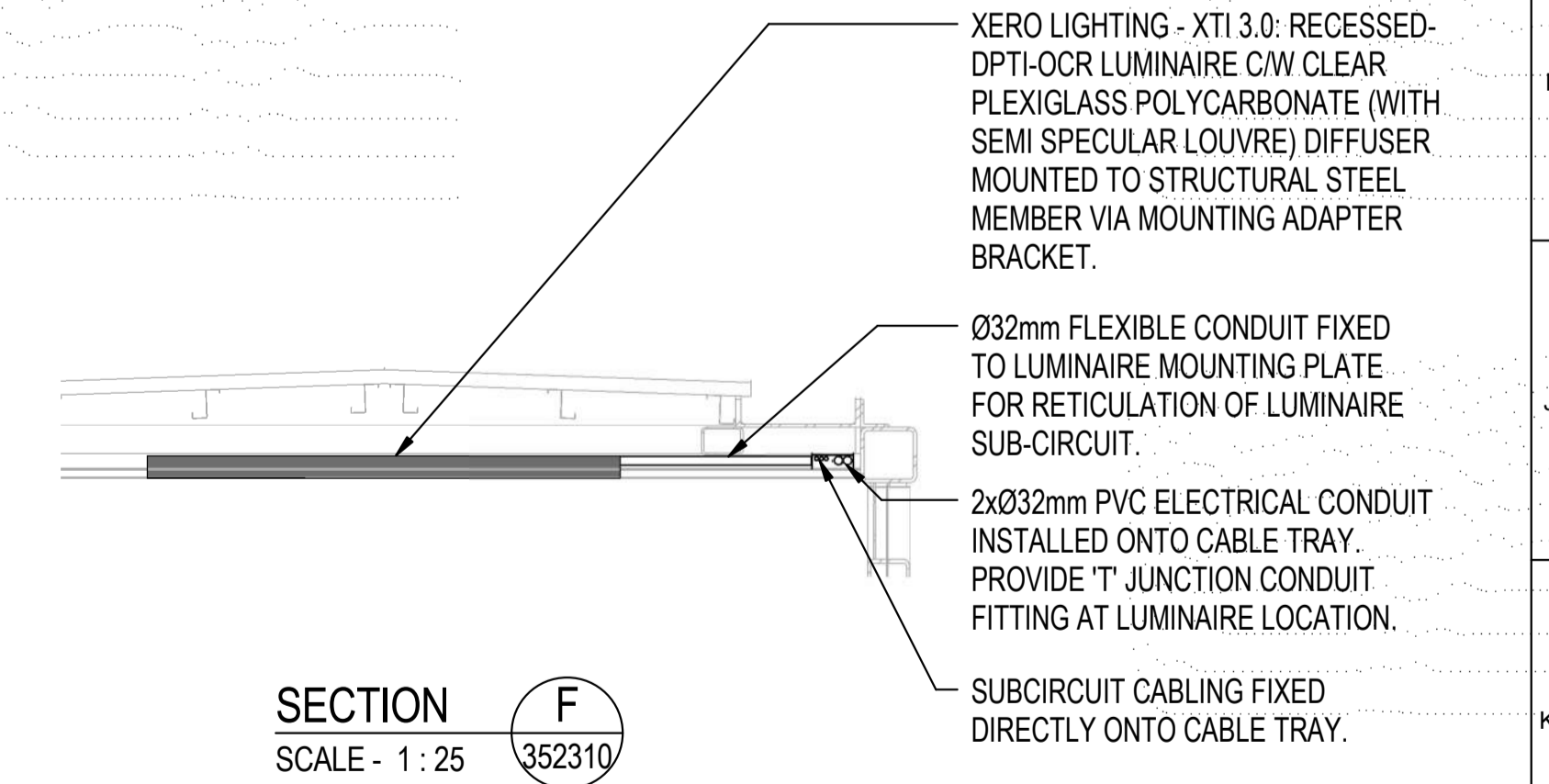
SECTION C
 SCALE - 1 : 25



SECTION D
 SCALE - 1 : 10



SECTION E
 SCALE - 1 : 50

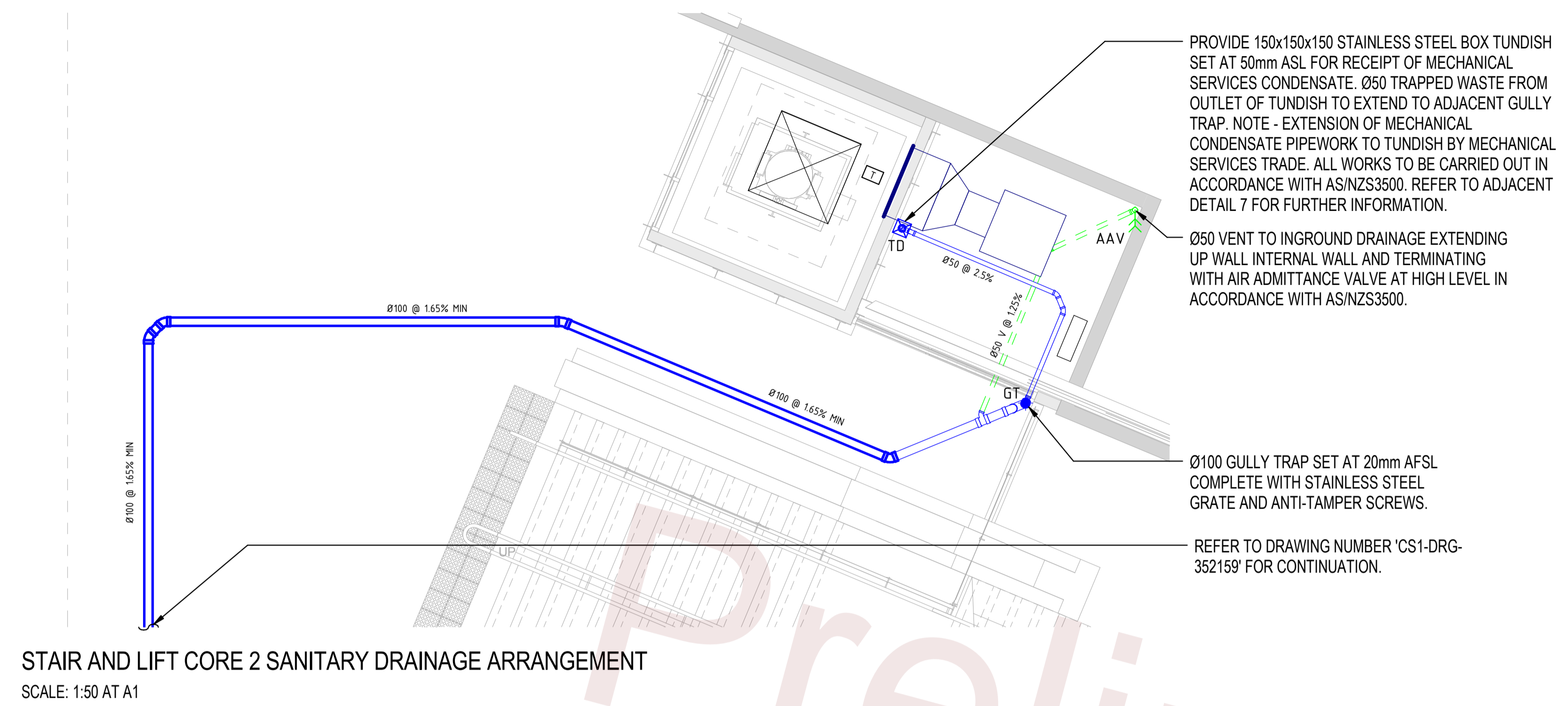


SECTION F
 SCALE - 1 : 25

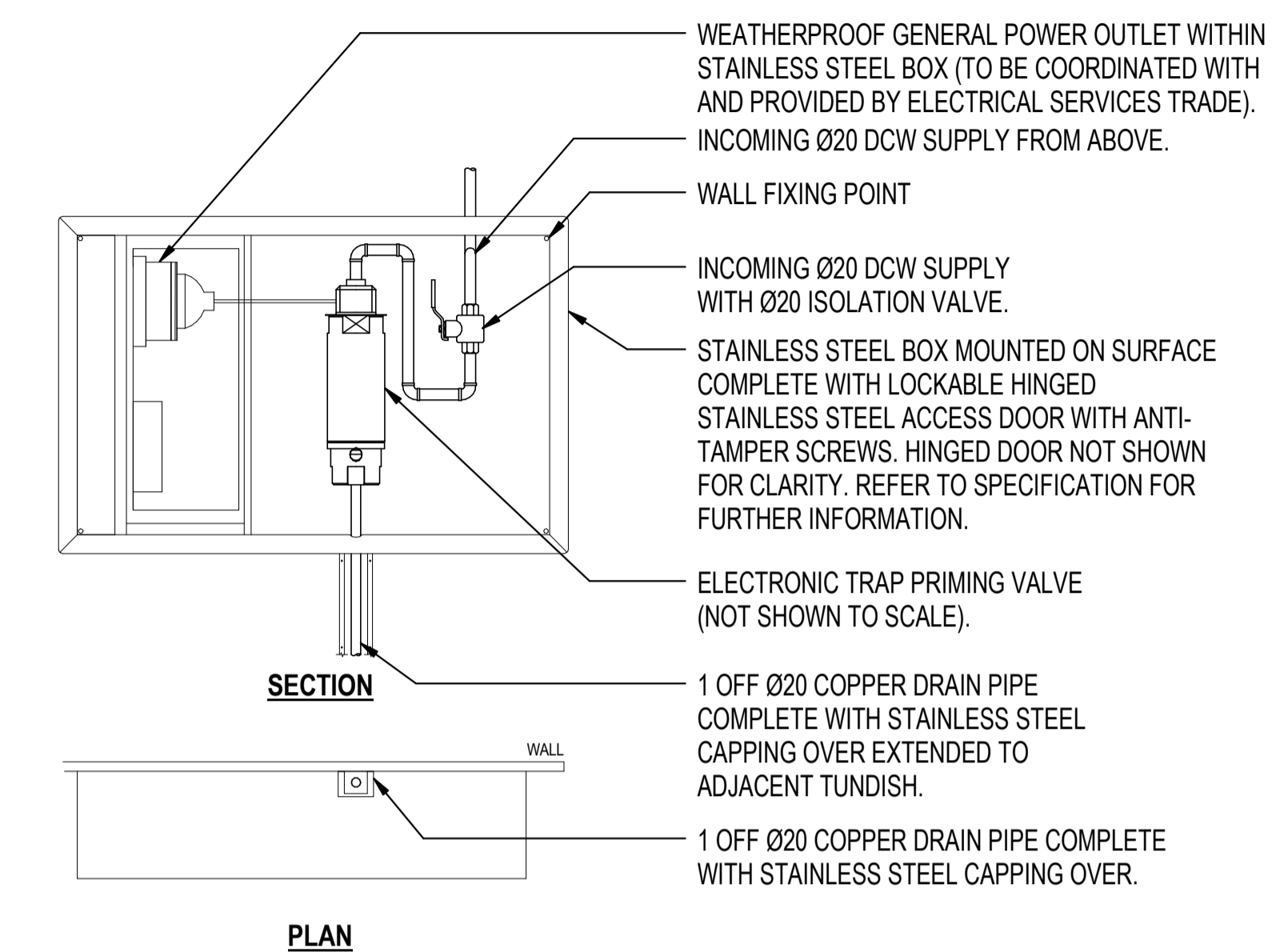
LEGEND OF ABBREVIATIONS

SMOF	SINGLE MODE OPTICAL FIBRE
MMOF	MULTI MODE OPTICAL FIBRE
CAT6	CATEGORY 6 CABLE
UTP	UNSHIELDED TWISTED PAIR
SFP	SMALL FORM-FACTOR PLUGGABLE
SNMP	SIMPLE NETWORK MANAGEMENT PROTOCOL

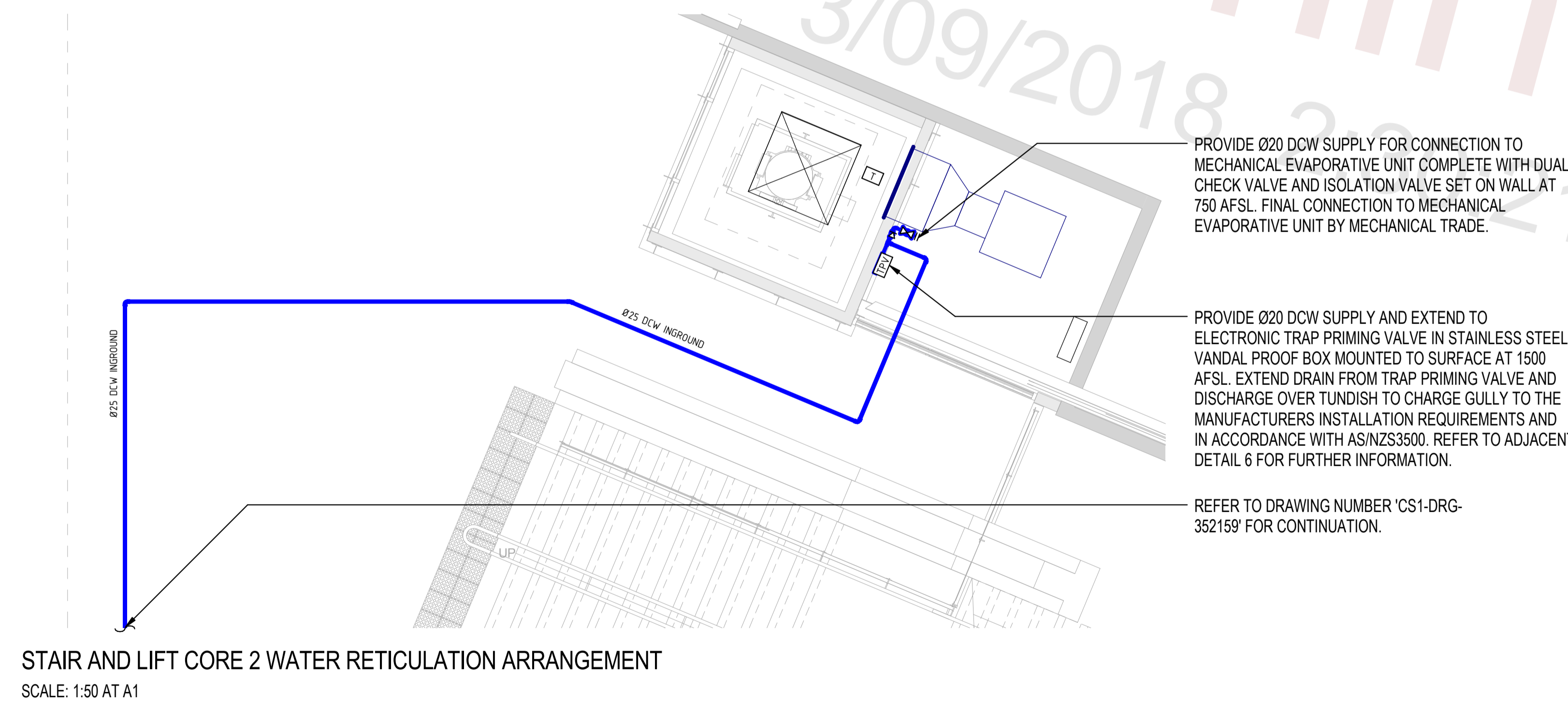
<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>RDPO24 - ELEVATED WALKWAY</p>								<p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>		<p>FLINDERS LINE FLINDERS STATION BRIDGE ELEVATED WALKWAY - COMMUNICATIONS SCHEMATIC AND DETAILS PLAN AND DETAIL</p>		<p>Government of South Australia Department of Planning, Transport and Infrastructure</p>	
<p>INDEX SHEET REF: CS1-DRG-352310</p> <p>DATE: 29.08.18</p>								<p>TITLE: - DATE: -</p>		<p>CS1-DRG-352313</p>		<p>SCALE(S): As indicated REVISION: B</p>	
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>								<p>DATE: 29.08.18</p>		<p>SIZE: A1 SHEET:</p>		<p>PLOTTED: 20/08/2018 3:05:59 PM</p>	



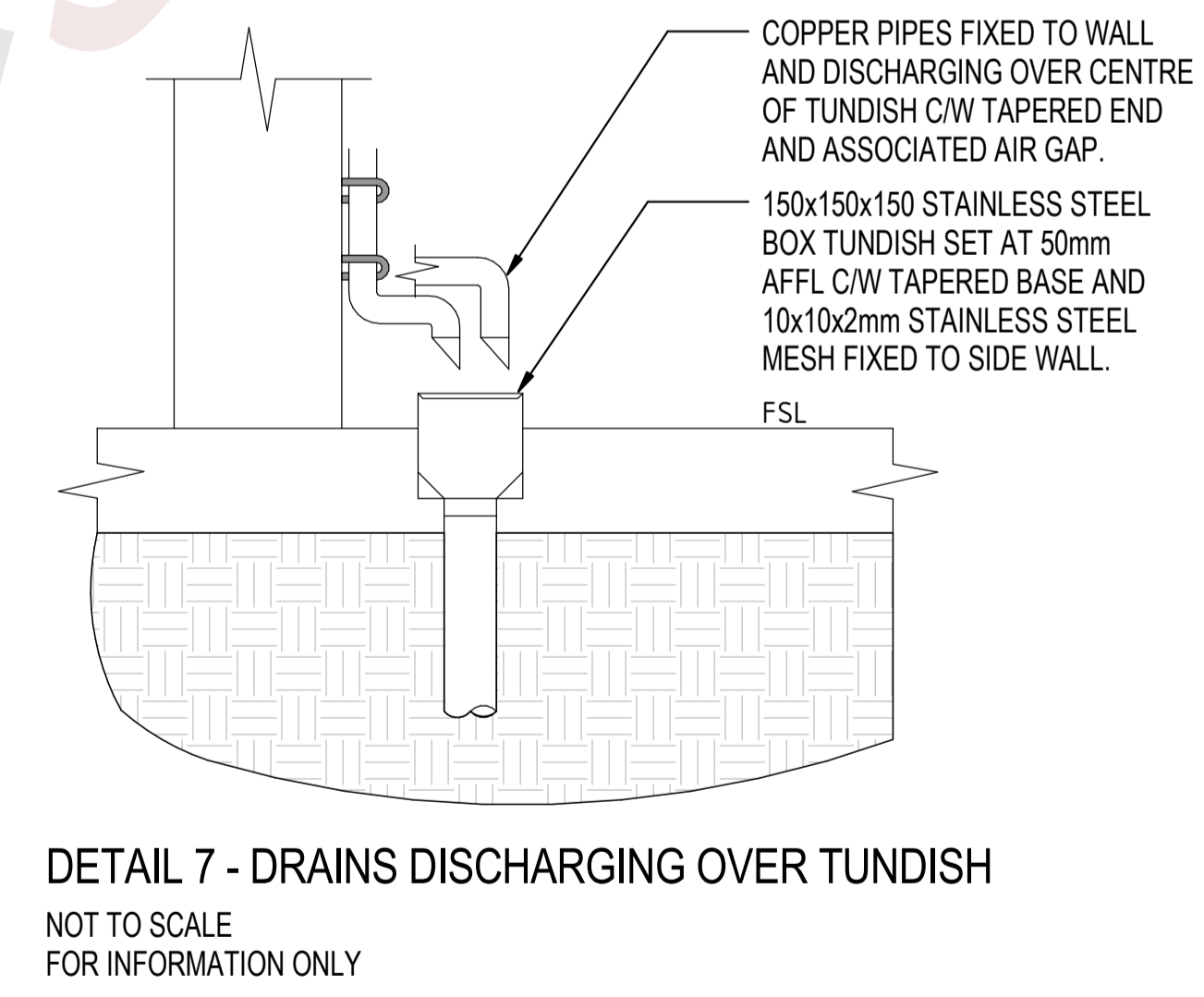
STAIR AND LIFT CORE 2 SANITARY DRAINAGE ARRANGEMENT
SCALE: 1:50 AT A1



DETAIL 6 - TRAP PRIMING VALVE WITHIN WALL MOUNTED BOX
NOT TO SCALE
FOR INFORMATION ONLY



STAIR AND LIFT CORE 2 WATER RETICULATION ARRANGEMENT
SCALE: 1:50 AT A1



DETAIL 7 - DRAINS DISCHARGING OVER TUNDISH
NOT TO SCALE
FOR INFORMATION ONLY

<p>NOT FOR CONSTRUCTION</p> <p>GATEWAY SOUTH</p> <p>INDEX SHEET REF: CS1-DRG-352093</p>								<p>RDP21 - FLINDERS STATION</p> <p>DESIGNED: FLD DRAFTED: FLD CHECKED: FLD APPROVED:</p>		<p>FLINDERS LINE FLINDERS STATION FLINDERS STATION - STAIR AND LIFT CORE 2 - HYDRAULICS LAYOUT PLANS AND DETAILS</p>		<p>Government of South Australia Department of Planning, Transport and Infrastructure</p> <p>CS1-DRG-360159</p> <p>SCALE(S): As indicated REVISION: A</p>		<p>SIZE: A1 SHEET:</p>	
<p>ISSUED FOR 100% REVIEW</p>								<p>DATE: 31.08.18</p>		<p>DATE: 31.08.18</p>		<p>DATE: -</p>		<p>DATE: -</p>	
<p>100 MILLIMETRES ON ORIGINAL DRAWING</p>								<p>DRN DSGN CHK APRV DATE</p>		<p>DRN DSGN CHK APRV DATE</p>		<p>DRN DSGN CHK APRV DATE</p>		<p>DRN DSGN CHK APRV DATE</p>	



*In reply please quote
Enquiries to Neil Welsh
Telephone 0418 866 649*

**PEOPLE AND BUSINESS
DIVISION**

77 Grenfell Street
Adelaide SA 5000

GPO Box 1533
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Telephone: 08 8343 2222
Facsimile: 08 8343 2768

ABN 92 366 288 135

Ms Laura Kerber
Senior Planning Officer – Major Development and Crown
State Commission Assessment Panel
Level 5, 50 Flinders Street
ADELAIDE SA 5000

Dear Ms Kerber,

*DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT -
RESPONSE TO SUBMISSION FROM OFFICE FOR DESIGN AND ARCHITECTURE
SA*

In response to the submission dated 23 November 2018 from Ms Kirsteen Mackay, Office for Design and Architecture SA, I note the generally positive and supportive comments contained therein.

I also note that it is suggested that certain elements of the application may benefit from further clarification or protection as part of the planning permission. The project team is expecting to receive further information related to these elements within the next couple of weeks and remain committed to the provision of this information to assist with the approval process. It is acknowledged that should these elements be of such concern as to the granting of Development Approval that the application of conditional approval may be appropriate.

The design team has responded positively to design review comments from ODASA representatives and have had particular regard to the alignment and integration of infrastructure elements ensuring even spacing of the stanchions to create a clean uncluttered appearance. This has resulted in consolidation of the viaduct vertical elements including colocation of CCTV and lighting to create consistent and even distribution of these items across the length of the viaduct. Extension of the viaduct screen stanchions has been utilised to support the integration of these elements.

The installation of Field LAN service boxes is required at regular intervals along the length of the viaduct to support CCTV infrastructure. The design has resulted in placement of these boxes within the screen overlap areas at the viaduct deck expansion

joints. This has resulted in even and consistent spacing as well as minimised visibility of these items due to the internal and external screen configuration at these joints.

The project team remains open to all opportunities to share our design detail for review and will make information available to address the items specifically addressed above, as well as those more generally of concern, as it becomes available.

Yours sincerely,

A handwritten signature in black ink, appearing to be 'NW', with a large loop at the end.

Neil Welsh
Project Lead

/6 January 2019



*In reply please quote
Enquiries to Neil Welsh
Telephone 0418 866 649*

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ABN 92 366 288 135

Ms Laura Kerber
Senior Planning Officer – Major Development and Crown
State Commission Assessment Panel
Level 5, 50 Flinders Street
ADELAIDE SA 5000

Dear Ms Kerber,

*DEVELOPMENT APPLICATION 100/V075/18 - FLINDERS LINK PROJECT - RESPONSE TO
SUBMISSION FROM THE ENVIRONMENT PROTECTION AUTHORITY*

In response to the submission dated 25 September 2018 from the Environment Protection Authority (EPA), I provide the following information.

On 22 October 2018, representatives from the EPA and the project team, including designer representatives, met to discuss the EPA's submission and request for information. The information below is a summary of what was discussed at this meeting.

1. *Provide clarification if further design changes / remainder of the design work to be completed would alter the layout and location of the proposed rail line infrastructure.*

The latest alignment and cross-sections will be adopted. Resonate will review the latest design and advise whether additional modelling is necessary to determine any significant change in noise impact.

2. *Provide the AECOM report, or updated noise measurements should be undertaken to validate the modelling data.*

The report produced in 2010 is available online at (http://www.dtei.sa.gov.au/data/assets/pdf_file/0009/54477/Environment_Report_Summary_for_Web.PDF). Please refer to Section D, 11.4 'Existing Conditions'. A summary of the measured levels are presented in the report information, however the noise assessment does not rely on these measurements to draw its conclusions. Modelled existing noise levels are presented at each receiver location based on the current rolling stock and timetable. Accurate noise logging of existing rail noise levels may not be feasible at some locations due to noise from ongoing construction works.

3. *Provide details relating to the day time and night time movements for passenger rail cars utilising the proposed rail extension to the new Flinders Station.*

The proposed future timetable has recently changed and represents a significant increase in movements, including the addition of a number of night time movements. Additional modelling will be undertaken based on the latest updated timetable.

4. *Provide any further details relating to treatments / mitigation measures proposed (that are in accordance with the Minister's Specification SA78B) for the existing building (Sturt Police Station).*

The Sturt Police Station is not a 'Noise Sensitive Receiver' in accordance with the EPA's *Guidelines for the assessment of noise from rail infrastructure* or Minister's Specification SA78B. No information has been received indicating that the Sturt Police Station is a particularly noise sensitive receiver requiring additional consideration.

5. *Provide clarification on the location and details for barrier design – Figure 2 of the 30% design report.*

Clarification on the location and details for the barrier design is being sought based on the latest cross-sections.

6. *Provide clarification on how noise from wheel squeal has been integrated into the noise modelling (it is noted that in section 4.5 of the Curve Squeal report that a 5db exposure level and 14db L_{max} was implemented to the noise model). Do the results tables (Table 6 & 8) in Section 6 and 7 include this penalty? Were the noted penalties in Section 4 included in results Table 6 and 8?*

The predicted noise levels in Table 6 (*Predicted 2019 rail noise levels without mitigation*) of the Design Report includes an adjustment for wheel squeal, whereas Table 7 (*Predicted 2019 rail noise levels with curve squeal mitigation*) does not. The results in Table 8 include adjustments for curve squeal (assuming curve squeal is not mitigated). The adjustment is applied to the curved length of track only.

7. *Provide further details on the selected wheel squeal mitigation measures proposed to be implemented for the final design. Appropriate data on the effectiveness of selected mitigation measures would assist the EPA in its review of this assessment.*

The effectiveness of wheel squeal mitigation varies considerably depending on rolling stock, curve radius, track and wheel conditions, and a number of other variables. The curve squeal reports cite a number of interstate or international studies on the effectiveness of various mitigation measures. Typically, the measures have highly variable degrees of success (even between different trains of the same stock). Caution should be taken when applying the results of these studies to this project, which may have different track and rolling stock properties. The approach adopted to date has been to utilise the existing vehicle mounted track lubrication system. Should any residual curve squeal contribute to excessive noise levels on opening, additional mitigation measures may be adopted including further curve squeal mitigation, noise barriers, or house treatments (where appropriate). Based on noise modelling to date, the addition of noise barriers is predicted to result in compliant noise levels at all location, even when a conservative adjustment for curve squeal noise is applied. This approach will be reviewed with the design team once the results of further noise modelling are available.

An updated Design Noise Assessment Report as part of progressive design development. This will be provided once complete.

Yours sincerely,



Neil Welsh
Project Lead

09 November 2018

ATTACHMENT 7

DEVELOPMENT PLAN PROVISIONS

MITCHAM CITY DEVELOPMENT PLAN CONSOLIDATED – 20 FEBRUARY 2018

REGIONAL ACTIVITY ZONE

OB 1 A zone that has a focus of land uses that are state wide, national and international attractors supported by a mix of compatible land uses.

OB 2 Well designed and functional mixed use areas with a walkable urban form, pedestrian and cyclist friendly streetscapes, and active street frontages that facilitate personal interaction and promote public transport use.

OB 3 The design and layout of development to encourage walking and cycling and promote public transport use and healthy neighbourhoods.

OB 4 A mixed use zone with a variety and concentration of activity close to key focal points such as education or health facilities, fixed transit stops, or high quality open space areas.

OB 5 Development that ensures the long-term operational, safety, and aviation requirements of helicopter landing sites continue to be met.

OB 6 Development that contributes to the desired character of the zone.

DESIRED CHARACTER

This zone is part of a larger destination that includes land within the City of Marion and takes in a range of education, health, research and employment facilities of regional significance. While these activities will be the focus for development in the zone, other activities will be encouraged to provide a supporting role such as medium to high density housing and other forms of accommodation, mixed use developments and quality public open spaces.

Areas of mixed use development will be encouraged to provide places where people can meet and socialise that are vibrant, interesting and safe.

The general design and layout of buildings and activities, in combination with open space areas, are expected to foster a sense of identity and create vehicle, pedestrian and cycle connections to and between major activity hubs, transport facilities, and local destinations (eg shops, schools, local parks) within and beyond the zone's boundaries. The Tonsley rail line extension, railway station north of the Flinders Medical Centre station, and upgrades to road infrastructure and pedestrian/cycle paths across the Main South Road and Sturt Road corridors, as identified on Concept Plan Fig Mit/1 - Bedford Park, will be used to guide development and encourage a pedestrian oriented environment.

Sharing of facilities including communal open space, vehicle and bicycle parking facilities and access ways is encouraged.

Building design will be of a high quality, contemporary and innovative design that integrates with the landscape setting. It will, promote a high amenity public realm and contribute to a coherent, legible, safe and well-connected pedestrian friendly environment through a range of techniques including: orientating building entrances to the street; minimising large parking areas; placing on-site parking behind buildings; landscaping and surface treatments; street furniture; building design; provision of wide footpaths; use of

trees to shade pedestrian areas and soften built form and; the integration of colonnades, courtyards and awnings. Consistency in the use of these elements will visually connect different areas within the zone.

Water Sensitive Urban Design systems, including the harvest, treatment, storage and reuse of stormwater, will be integrated throughout the zone. Harvested stormwater will improve the aesthetic and functional value of open spaces, including public access ways and greenways. Development will incorporate innovative technologies, alternative power generation and associated testing facilities that complement the research and education focus on the Flinders precinct.

The zone will consist of a Core Area, Flinders Village Area and Open Space Area as identified on Concept Plan Fig Mit/1 - Bedford Park.

Flinders Village Area

The Flinders Village Area will be focused around the Flinders Link rail station. It will cater for medium to high density, inter-generational residential developments including multi-storey dwellings, residential flats, student accommodation, aged care and affordable housing, as well as tourist accommodation. The Area will also be the focus for a variety of mixed uses that support the daily needs of on-site residents such as retail, entertainment and community facilities; together with offices and consulting rooms that complement the health, education and research activities of the Core Area. Ground level land uses such as entertainment and retail, which provide night and day activation will be concentrated around the Flinders Link station to promote interest, safe movement and convenient access to goods and services. In the short term, this will be provided with temporary activation which will be transitioned to permanent development over the medium to long term. Features and activities that attract people and add vitality to the area such as display windows, retail shopfronts and outdoor dining areas will generally be at street level.

The Flinders Link rail station will provide an important public transport link between the Flinders site, Tonsley and the Adelaide central business district. There will be a significant focus on safe and efficient movement for vehicles (including emergency vehicles and helicopters), pedestrians and cyclists throughout the Area as well as to adjacent areas and key sites. Building design will emphasise movement between the rail station and the Flinders Medical precinct, potentially via a pedestrian overpass, and the Flinders University.

Public open space will play an important role by providing a variety of safe, amenable and functional areas for social, recreational and environmental opportunities. It will incorporate public art and community facilities. Extensive landscaping will be provided throughout the site to ensure a cohesive environment.

PDC 8 Development should be consistent with the desired character for the zone.

PDC 12 The height and location of buildings and structures should not adversely affect the long-term operational, safety and aviation requirements of helicopter landing sites.

COUNCIL WIDE

OB 1 Development complementing that in adjoining council areas.

OB 7 A movement system which provides for the safety of pedestrian, cycle and vehicular traffic.

OB 19 Development located and designed to minimise adverse impact and conflict between land uses.

OB 20 Protect community health and amenity from adverse impacts of development.

OB 21 Protect desired land uses from the encroachment of incompatible development.

OB 29 Development which maximises the use of stormwater.

PDC 2 Development should be orderly and economic.

PDC 10 Development should not take place unless served by an adequate water supply and waste water disposal system.

PDC 22 Development that emits noise (other than music noise) should include noise attenuation measures that achieve the relevant Environment Protection (Noise) Policy criteria when assessed at the nearest existing noise sensitive premises.

PDC 55 The size of lifts, lobbies and corridors should be sufficient to accommodate movement of bicycles, strollers, mobility aids and visitor waiting areas.

PDC 74 (a) Development should minimise the removal of existing vegetation on the site and provide appropriate replacement of any vegetation that is required to be removed. Development should not involve the removal of any remnant native vegetation or other vegetation that contributes to the character of the site and the desired character of the locality.

b) Development should preserve the long-term stability and health of existing vegetation by avoiding construction, excavation and filling of land close to the trunks of trees and minimising impervious surfaces beneath the canopy of trees. In particular, the construction of dwellings and in-ground swimming pools, or the excavation or filling of land that alters the natural ground level by more than 300 millimetres, should not be undertaken beneath the canopy of any tree.

(c) Development should provide landscaping that enhances the appearance and amenity of the site and complements the desired character of the locality. Landscaping should incorporate species of a type and size appropriate to their location, and have regard to the species contained in Table Mit/2. In particular development of group dwellings, residential flat buildings, row dwellings, multiple dwellings, boarding houses or accommodation for the aged should provide effective landscaping to assist in enhancement of buildings, screening and shading private open space and car parking areas, and screening utility and storage areas.

PDC 77 All services should be installed:

(a) underground in both public and private areas; and

(b) where possible, in common trenches and connected to each allotment at a single point.

PDC 78 (a) Major development and land division should incorporate stormwater management that directs major stormwater flows through areas of open space designed and controlled to prevent erosion and the likely entry of floodwaters into buildings based on an Annual Exceedence Probability of 1 percent.

PDC 79 Development of stormwater management systems should be designed and located to improve the quality of stormwater, minimise pollutant transfer to receiving waters, and protect downstream receiving waters from high levels of flow.

108 Development within centre zones, the Regional Activity Zone or the Suburban Activity Node Zone should conform to the following access, movement and car parking principles (except where otherwise stated in the zone):

(a) development should provide safe and convenient access for private cars, cyclists, pedestrians, service vehicles, emergency vehicles and public utility vehicles;

- (c) pedestrians should be channelled onto pedestrian paths by use of barriers to reduce the possibility of pedestrian and vehicular conflict within the centre;
- (d) pedestrian paths should be:
 - (i) constructed with minimal grade changes or steps and require driveways to change level where they cross; and
 - (ii) paved with a material which contrasts with driveway and parking area paving;
- (e) areas and facilities should be provided for the parking and securing of bicycles, storage of shopping trolleys and hitching of dogs, provided that the facilities for the hitching of dogs are not within pedestrian movement areas;

PDC 109 Development within centre zones, the Regional Activity Zone or the Suburban Activity Node Zone should conform with the following design principles (except where otherwise stated in the zone):

- (a) Development should provide for the integration of existing and future facilities so as to promote ease of pedestrian movement and sharing of facilities, while retaining opportunities for future expansion within the zone;
- (b) Minimal grade separation should exist between and within development which is to be accessible to the public. Where grade separation does occur, the different levels should be connected by ramps with slopes of not more than 1-in-14 and/or alternative facilities for access by disabled persons between the different levels should be provided;
- (d) Development should provide:
 - (i) off-street loading, service areas and service vehicle manoeuvring areas;
 - (ii) lighting for building and ancillary areas, with no light-spill causing nuisance or hazard;
 - (vi) public facilities including toilets, infant changing facilities for parents, seating, telephones and community information boards;
- (e) Development should not cause a nuisance or hazard arising from:
 - (i) microclimatic conditions;
 - (ii) excessive noise;
 - (iii) odours;
 - (iv) overlooking;
 - (v) overshadowing; or
 - (vi) visual intrusion;
- (f) Where appropriate and practicable, development should:
 - (i) provide parking, access and facilities for the physically handicapped;
 - (ii) minimise energy consumption for lighting, heating, cooling and ventilation;
 - (iii) provide public spaces such as malls, plazas and courtyards;
 - (iv) provide public facilities including toilets, seating, telephones and community information boards; and
 - (v) provide access for public transport and sheltered waiting areas for passengers;
- (g) Landscaping should be provided and maintained to:
 - (i) soften the hard outline of the built-form;
 - (ii) establish a buffer between development in the zone and adjacent areas;
 - (iii) complement and re-inforce the landscaping associated with adjacent development, except where such adjacent landscaping is inadequate, so as to enhance the visual appearance and character of the zone;
 - (iv) shade, define and create windbreaks for pedestrian paths and spaces;
 - (v) screen service yards, loading areas and outdoor storage areas;
 - (vi) screen, shade and enhance the appearance of car parking areas by utilizing clean trunked trees with high canopies and by planting between roadways and car parking areas; and
 - (vii) divide large car parking areas into smaller, visually separate areas;
- (h) Species of plants used in landscaping should be of type which:
 - (i) complements the naturally occurring vegetation within the locality; and
 - (ii) will not cause a hazard or nuisance by way of dropped berries, fruit or nuts, or by the profuse display of flowers which may attract large numbers of bees; and

PDC 118 Development should conform with the following principles relating to traffic, parking and vehicles access, in addition to any relevant land use specific parking standards:

(a) Development should provide safe and convenient access for private vehicles, cyclists, pedestrians, service vehicles, emergency vehicles and public utility vehicles.

PDC 192 The appearance of land, buildings, and objects should not impair the amenity of the locality in which they are situated.

PDC 196 Development should incorporate landscaping as an integral part of the design of the development.

PDC 198 Tree and shrub species should be selected, located and maintained on the site of a development so as to provide shade for pedestrians and parked vehicles and should be of a type and in such location as to avoid structural damage to buildings both on and adjacent to the site.

PDC 199 Planting species utilized within landscaped areas in association with development should be of a type which require minimal maintenance.

PDC 200 Where practicable, landscaped areas associated with development should be served by an automatic watering system.

PDC 201 Landscaping should enhance the appearance of development, establish visual buffers to adjacent development and screen service, loading, outdoor storage and car parking areas.

MARION COUNCIL DEVELOPMENT PLAN CONSOLIDATED – 20 FEBRUARY 2018

REGIONAL ACTIVITY ZONE

OB 1 A zone that has a focus of land uses that are state wide, national and international attractors supported by a mix of compatible land uses including shops, entertainment, medium and high density residential.

OB 2 Well designed and functional mixed use areas with a walkable urban form, pedestrian and cyclist friendly streetscapes, and active street frontages that facilitate personal interaction and promote public transport use.

OB 3 The design and layout of development to encourage walking and cycling and promote public transport use and healthy neighbourhoods.

OB 4 A mixed use zone with a variety and concentration of day-time and night-time activity close to key focal points such as an education or health facility, a fixed transit stop, an activity centre or high quality open space areas.

OB 5 Development that minimises environmental health impacts upon human health, local amenity and the environment.

OB 6 Development that contributes to the desired character of the zone.

DESIRED CHARACTER

This zone is part of a larger destination that includes land within the City of Mitcham and takes in a range of education, health, research and employment facilities of regional significance. While these activities will be the focus for development in the zone, other activities will be encouraged to provide a supporting role such as clusters of medium to

high density housing and other forms of accommodation, mixed use developments, quality public open spaces and public transport infrastructure.

Key entry points to the Tonsley precinct will incorporate a 'gateway' design that creates an entrance statement and experience that highlights the unique environment and community of Tonsley.

Development will be of high quality urban design and will contribute to the provision of a coherent public realm by framing streets. Buildings at the interface of the zone will create an appropriate transition of development in terms of design, scale, massing and intensity of land use.

A high quality public realm will be incorporated with a pedestrian and cycle network that delivers a cohesive, amenable and safe pedestrian environment through landscaping, surface treatments, street furniture, wayfinding and public art and building design. Colonnades, courtyards, awnings and street furniture will be encouraged, together with wide footpaths and street trees to shade the footpath and soften the built form. Consistency in the use of these elements will visually connect different areas within the zone. A hierarchy of open spaces will be provided across the precinct, designed in a manner to enable a variety of experiences and functions, including play and activation, and incorporate stormwater management functions where appropriate. Safe, efficient and pleasant movement and access ways will be provided for public transport, private vehicles, pedestrians and cyclists throughout the Tonsley precinct and particularly to key destinations, as well as to adjacent areas including the adjacent rail station and Flinders University.

Water Sensitive Urban Design systems, including the harvest, treatment, storage and reuse of storm water, will be integrated throughout the zone. Harvested storm water will improve the aesthetic and functional value of open spaces, including public access ways and greenways.

The integration of vegetation and water into the design of developments is encouraged to reduce the urban heat island effect, including landscaping (particularly if actively or passively irrigated), living architecture (green roofs and walls), and water bodies or features.

The zone will include Regional Activity Core Area (Tonsley), Core Area (Laffer's Triangle), a Transition Area, and Commercial Area (Tonsley) as identified on *Concept Plan Map Mar/7 - Laffer's Triangle* and *Concept Plan Map Mar/8 - Tonsley*.

PDC 5 Development should be undertaken in accordance with the Core, Commercial (Tonsley) and Transition Areas as identified on *Concept Plan Map Mar/7 - Laffer's Triangle* and *Concept Plan Map Mar/8 - Tonsley*.

PDC 10 Non-residential development at the interface with sensitive development, including residential development, should seek to minimise impacts of visual appearance, building bulk and scale, overshadowing, noise, vibration, chemical over-spray, air quality, odour, dust, hours of operation and on-street car parking.

PDC 11 Development should be consistent with the desired character for the zone.

RESIDENTIAL ZONE

OB 2 Increased dwelling densities in close proximity to centres, public and community transport routes and public open spaces.

PDC 3 Vacant or underutilised land should be developed in an efficient and co-ordinated manner to increase housing choice by providing dwellings at densities higher than, but compatible with adjoining residential development.

POLICY AREA 12 MEDIUM DENSITY

OB 1 A residential policy area comprising a range of medium-density dwellings designed to integrate with areas of open space, neighbouring centres or public transport nodes.

OB 3 Development that supports the viability of community services and infrastructure and reflects good residential design principles.

OB 4 Development that contributes to the desired character of the policy area.

PDC 2 Development should not be undertaken unless it is consistent with the desired character for the policy area.

POLICY AREA 16 REGENERATION

OB 5 Improved environmental outcomes.

OB 7 More efficient use of land.

OB 8 Improved community services and infrastructure.

OB 9 Higher dwelling densities in close proximity to centres, public transport routes and public open spaces.

OB 11 Development that contributes to the desired character of the policy area.

Desired Character

Within the context of the Council area and the surrounding region this policy area represents a key opportunity to achieve strategic goals such as improved living conditions, environmental outcomes, and community services and infrastructure.

New development will occur at densities greater than the current density of housing to increase the number of dwellings and the number of residents within the policy area and justify the improvement of infrastructure and other services.

PDC 2 Development should not be undertaken unless it is consistent with the desired character for the policy area.

NEIGHBOURHOOD CENTRE ZONE

OB 3 A centre accommodating residential development in conjunction with non-residential development.

GENERAL SECTION

Crime Prevention

OB 1 A safe, secure, crime resistant environment where land uses are integrated and designed to facilitate community surveillance.

PDC 1 Development should be designed to maximise surveillance of public spaces through the incorporation of clear lines of sight, appropriate lighting and the use of visible permeable barriers wherever practicable.

PDC 3 Development should provide a robust environment that is resistant to vandalism and graffiti.

PDC 4 Development should provide lighting in frequently used public spaces including those:

- (a) along dedicated cyclist and pedestrian pathways, laneways and access routes
- (b) around public facilities such as toilets, telephones, bus stops, seating, litter bins, automatic teller machines, taxi ranks and car parks.

PDC 5 Development, including car park facilities should incorporate signage and lighting that indicate the entrances and pathways to, from and within sites.

PDC 6 Landscaping should be used to assist in discouraging crime by:

- (a) screen planting areas susceptible to vandalism
- (b) planting trees or ground covers, rather than shrubs, alongside footpaths
- (c) planting vegetation other than ground covers a minimum distance of two metres from footpaths to reduce concealment opportunities.

PDC 7 Site planning, buildings, fences, landscaping and other features should clearly differentiate public, communal and private areas.

PDC 8 Buildings should be designed to minimise and discourage access between roofs, balconies and windows of adjoining dwellings.

PDC 9 Public toilets should be located, sited and designed:

- (a) to promote the visibility of people entering and exiting the facility (eg by avoiding recessed entrances and dense shrubbery that obstructs passive surveillance)
- (b) near public and community transport links and pedestrian and cyclist networks to maximise visibility.

PDC 10 Development should avoid pedestrian entrapment spots and movement predictors (eg routes or paths that are predictable or unchangeable and offer no choice to pedestrians).

Design and Appearance

OB 1 Development of a high design standard and appearance that responds to and reinforces positive aspects of the local environment and built form.

OB 2 Roads, open spaces, paths, buildings and land uses laid out and linked so that they are easy to understand and navigate.

PDC 1 Buildings should reflect the desired character of the locality while incorporating contemporary designs that have regard to the following:

- (a) building height, mass and proportion
- (b) external materials, patterns, colours and decorative elements
- (c) roof form and pitch
- (d) façade articulation and detailing
- (e) verandas, eaves, parapets and window screens.

PDC 14 Buildings, landscaping, paving and signage should have a coordinated appearance that maintains and enhances the visual attractiveness of the locality.

PDC 16 Building design should emphasise pedestrian entry points to provide perceptible and direct access from public street frontages and vehicle parking areas.

PDC 20 Outdoor storage, loading and service areas should be:

- (a) screened from public view by a combination of built form, solid fencing and/or landscaping
- (b) conveniently located and designed to enable the manoeuvring of service and delivery vehicles
- (c) sited away from sensitive land uses.

Energy Efficiency

PDC 4 Public infrastructure and lighting, should be designed to generate and use renewable energy.

Hazards

OB 9 Appropriate assessment and remediation of site contamination to ensure land is suitable for the proposed use and provides a safe and healthy living and working environment.

Flooding

PDC 5 Development should not be undertaken in areas liable to inundation by tidal, drainage or flood waters unless the development can achieve all of the following:

- (a) it is developed with a public stormwater system capable of catering for a 1-in-100 year average return interval flood event

PDC 6 Development, including earthworks associated with development, should not do any of the following:

- (a) impede the flow of floodwaters through the land or other surrounding land
- (b) increase the potential hazard risk to public safety of persons during a flood event
- (c) aggravate the potential for erosion or siltation or lead to the destruction of vegetation during a flood
- (d) cause any adverse effect on the floodway function
- (e) increase the risk of flooding of other land
- (f) obstruct a watercourse.

Site Contamination

PDC 19 Development, including land division, should not occur where site contamination has occurred unless the site has been assessed and remediated as necessary to ensure that it is suitable and safe for the proposed use.

Infrastructure

OB 1 Infrastructure provided in an economical and environmentally sensitive manner.

OB 2 Infrastructure, including social infrastructure, provided in advance of need.

OB 4 The visual impact of infrastructure facilities minimised.

OB 5 The efficient and cost-effective use of existing infrastructure.

PDC 1 Development should not occur without the provision of adequate utilities and services, including:

- (a) electricity supply

- (b) water supply
- (c) drainage and stormwater systems
- (d) waste disposal
- (e) effluent disposal systems
- (f) formed all-weather public roads
- (g) telecommunications services
- (h) social infrastructure, community services and facilities
- (i) gas services.

PDC 2 Development should only occur only where it provides, or has access to, relevant easements for the supply of infrastructure.

PDC 3 Development should incorporate provision for the supply of infrastructure services to be located within common service trenches where practicable.

PDC 4 Development should not take place until adequate and co-ordinated drainage of the land is assured.

PDC 5 Development in urban areas should not occur without provision of an adequate reticulated domestic quality mains water supply and an appropriate waste treatment system.

PDC 10 Utilities and services, including access roads and tracks, should be sited on areas already cleared of native vegetation. If this is not possible, their siting should cause minimal interference or disturbance to existing native vegetation and biodiversity.

PDC 11 Utility buildings and structures should be grouped with non-residential development where possible.

Interface between Land Uses

OB 1 Development located and designed to minimise adverse impact and conflict between land uses.

OB 2 Protect community health and amenity from adverse impacts of development.

PDC 1 Development should not detrimentally affect the amenity of the locality or cause unreasonable interference through any of the following:

- (a) the emission of effluent, odour, smoke, fumes, dust or other airborne pollutants
- (b) noise
- (c) vibration
- (d) electrical interference
- (e) light spill
- (f) glare
- (g) hours of operation
- (h) traffic impacts.

Landscaping, Fences and Walls

OB 1 The amenity of land and development enhanced with appropriate planting and other landscaping works, using locally indigenous plant species where possible.

OB 2 Functional fences and walls that enhance the attractiveness of development.

PDC 1 Development should incorporate open space and landscaping in order to:

- (a) complement built form and reduce the visual impact of larger buildings (eg taller and broader plantings against taller and bulkier building components)
- (b) enhance the appearance of road frontages

- (c) screen service yards, loading areas and outdoor storage areas
- (d) minimise maintenance and watering requirements
- (e) enhance and define outdoor spaces, including car parking areas
- (f) provide shade and shelter
- (g) assist in climate control within buildings
- (h) maintain privacy
- (i) maximise stormwater re-use
- (j) complement existing native vegetation
- (k) contribute to the viability of ecosystems and species
- (l) promote water and biodiversity conservation.

PDC 2 Landscaping should:

- (a) include the planting of locally indigenous species where appropriate
- (b) be oriented towards the street frontage
- (c) result in the appropriate clearance from powerlines and other infrastructure being maintained.

PDC 3 Landscaped areas along road frontages should have a width of not less than 2 metres and be protected from damage by vehicles and pedestrians.

PDC 4 Landscaping should not:

- (a) unreasonably restrict solar access to adjoining development
- (b) cause damage to buildings, paths and other landscaping from root invasion, soil disturbance or plant overcrowding
- (c) introduce pest plants
- (d) increase the risk of bushfire
- (e) remove opportunities for passive surveillance
- (f) increase autumnal leaf fall in waterways
- (g) increase the risk of weed invasion.

PDC 5 Fences and walls, including retaining walls, should:

- (a) not result in damage to neighbouring trees
- (b) be compatible with the associated development and with existing predominant, attractive fences and walls in the locality
- (c) enable some visibility of buildings from and to the street to enhance safety and allow casual surveillance
- (d) incorporate articulation or other detailing where there is a large expanse of wall facing the street
- (e) assist in highlighting building entrances
- (f) be sited and limited in height, to ensure adequate sight lines for motorists and pedestrians especially on corner sites
- (g) in the case of side and rear boundaries, be of sufficient height to maintain privacy and/or security without adversely affecting the visual amenity or access to sunlight of adjoining land
- (h) be constructed of non-flammable materials.

Natural Resources

OB 1 Retention, protection and restoration of the natural resources and environment.

OB 2 Protection of the quality and quantity of South Australia's surface waters, including inland, marine and estuarine and underground waters.

OB 5 Development consistent with the principles of water sensitive design.

OB 6 Development sited and designed to:

- (a) protect natural ecological systems

- (b) achieve the sustainable use of water
- (c) protect water quality, including receiving waters
- (d) reduce runoff and peak flows and prevent the risk of downstream flooding
- (e) minimise demand on reticulated water supplies
- (f) maximise the harvest and use of stormwater
- (g) protect stormwater from pollution sources.

OB 7 Storage and use of stormwater which avoids adverse impact on public health and safety.

PDC 1 Development should be undertaken with minimum impact on the natural environment, including air and water quality, land, soil, biodiversity, and scenically attractive areas.

PDC 2 Development should ensure that South Australia's natural assets, such as biodiversity, water and soil, are protected and enhanced.

PDC 5 Development should be designed to maximise conservation, minimise consumption and encourage re-use of water resources.

PDC 6 Development should not take place if it results in unsustainable use of surface or underground water resources.

PDC 7 Development should be sited and designed to:

- (a) capture and re-use stormwater, where practical
- (b) minimise surface water runoff
- (c) prevent soil erosion and water pollution
- (d) protect and enhance natural water flows
- (e) protect water quality by providing adequate separation distances from watercourses and other water bodies
- (f) not contribute to an increase in salinity levels
- (g) avoid the water logging of soil or the release of toxic elements
- (h) maintain natural hydrological systems and not adversely affect:
 - (i) the quantity and quality of groundwater
 - (ii) the depth and directional flow of groundwater
 - (iii) the quality and function of natural springs.

PDC 8 Water discharged from a development site should:

- (a) be of a physical, chemical and biological condition equivalent to or better than its pre-developed state
- (b) not exceed the rate of discharge from the site as it existed in pre-development conditions.

PDC 9 Development should include stormwater management systems to protect it from damage during a minimum of a 1-in-100 year average return interval flood.

PDC 10 Development should have adequate provision to control any stormwater over-flow runoff from the site and should be sited and designed to improve the quality of stormwater and minimise pollutant transfer to receiving waters.

PDC 11 Development should include stormwater management systems to mitigate peak flows and manage the rate and duration of stormwater discharges from the site to ensure the carrying capacities of downstream systems are not overloaded.

PDC 12 Development should include stormwater management systems to minimise the discharge of sediment, suspended solids, organic matter, nutrients, bacteria, litter and other contaminants to the stormwater system.

PDC 13 Stormwater management systems should preserve natural drainage systems, including the associated environmental flows.

PDC 14 Stormwater management systems should:

- (a) maximise the potential for stormwater harvesting and reuse, either on-site or as close as practicable to the source
- (b) utilise, but not be limited to, one or more of the following harvesting methods:
 - (i) the collection of roof water in tanks
 - (ii) the discharge to open space, landscaping or garden areas, including strips adjacent to car parks
 - (iii) the incorporation of detention and retention facilities
 - (iv) aquifer recharge.

PDC 15 Where it is not practicable to detain or dispose of stormwater on site, only clean stormwater runoff should enter the public stormwater drainage system.

PDC 16 Artificial wetland systems, including detention and retention basins, should be sited and designed to:

- (a) ensure public health and safety is protected
- (b) minimise potential public health risks arising from the breeding of mosquitoes.

PDC 27 Development should comply with the current Environment Protection (Water Quality) Policy.

PDC 28 Development should retain existing areas of native vegetation and where possible contribute to revegetation using locally indigenous plant species.

PDC 33 Where native vegetation is to be removed, it should be replaced in a suitable location on the site with locally indigenous vegetation to ensure that there is not a net loss of native vegetation and biodiversity.

Orderly and Sustainable Development

OB 1 Orderly and economical development that creates a safe, convenient and pleasant environment in which to live.

OB 2 Development occurring in an orderly sequence and in a compact form to enable the efficient provision of public services and facilities.

OB 4 Development that does not prejudice the achievement of the provisions of the Development Plan.

PDC 7 Development should be located and staged to achieve the economical provision of public services and infrastructure, and to maximise the use of existing services and infrastructure.

PDC 8 Where development is expected to impact upon the existing infrastructure network (including the transport network), development should demonstrate how the undue effect will be addressed.

Transportation and Access

OB 1 A comprehensive, integrated, affordable and efficient air, rail, sea, road, cycle and pedestrian transport system that will:

- (a) provide equitable access to a range of public, community and private transport services for all people

- (b) ensure a high level of safety
- (c) effectively support the economic development of the State
- (d) have minimal negative environmental and social impacts
- (e) maintain options for the introduction of suitable new transport technologies.

PDC 2 Development that:

- (a) provides safe and efficient movement for all transport modes
- (b) ensures access for vehicles including emergency services, public infrastructure maintenance and commercial vehicles
- (c) provides off-street parking
- (d) is appropriately located so that it supports and makes best use of existing transport facilities and networks
- (e) provides convenient and safe access to public transport stops.

PDC 4 Provision of safe, pleasant, accessible, integrated and permeable pedestrian and cycling networks that are connected to the public transport network.

PDC 2 Development should be integrated with existing transport networks, particularly major rail, road and public transport corridors as shown on *Location Maps* and *Overlay Maps - Transport*, and designed to minimise its potential impact on the functional performance of the transport network.

PDC 3 Transport corridors should be sited and designed so as to not unreasonably interfere with the health and amenity of adjacent sensitive land uses.

PDC 7 The location and design of public and community transport set-down and pick-up points should maximise safety and minimise the isolation and vulnerability of users.

PDC 8 Development should provide safe and convenient access for all anticipated modes of transport.

PDC 9 Development at intersections, pedestrian and cycle crossings, and crossovers to allotments should maintain or enhance sightlines for motorists, cyclists and pedestrians to ensure safety for all road users and pedestrians.

PDC 15 Development should ensure that a permeable street and path network is established that encourages walking and cycling through the provision of safe, convenient and attractive routes with connections to adjoining streets, paths, open spaces, schools, pedestrian crossing points on arterial roads, public and community transport stops and activity centres.

PDC 16 Development should provide access, and accommodate multiple route options, for pedestrians and cyclists by enhancing and integrating with:

- (a) open space networks, recreational trails, parks, reserves, and sport and recreation areas
- (b) Adelaide's principal cycling network (Bikedirect), which includes arterial roads, local roads and off-road paths as depicted in *Overlay Maps - Transport*.

PDC 17 New developments should give priority to and not compromise existing designated bicycle routes.

PDC 18 Where development coincides with, intersects or divides a proposed bicycle route or corridor, development should incorporate through-access for cyclists.

PDC 19 Development should encourage and facilitate cycling as a mode of transport by incorporating end-of-journey facilities including:

- (a) showers, changing facilities and secure lockers

(b) signage indicating the location of bicycle facilities.

PDC 20 On-site secure bicycle parking facilities should be:

- (a) located in a prominent place
- (b) located at ground floor level
- (c) located undercover
- (d) located where surveillance is possible
- (e) well lit and well signed
- (f) close to well used entrances
- (g) accessible by cycling along a safe, well lit route.

PDC 21 Pedestrian and cycling facilities and networks should be designed and provided in accordance with relevant provisions of the *Australian Standards and Austroads Guides*.

PDC 23 Development should be provided with safe and convenient access which:

- (a) avoids unreasonable interference with the flow of traffic on adjoining roads
- (b) provides appropriate separation distances from existing roads or level crossings
- (c) accommodates the type and volume of traffic likely to be generated by the development or land use and minimises induced traffic through over-provision
- (d) is sited and designed to minimise any adverse impacts on the occupants of and visitors to neighbouring properties.

PDC 32 Development should be sited and designed to provide convenient access for people with a disability.