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Mr Trent Zimmerman,
Federal member for North Sydney

The concept of the SHHL was proposed to Hon. Trent Zimmerman MP Federal Member for North Sydney in early 2016 and with his full support meetings were then held with residents during 2016.



The Hon. Gladys Berejiklian MP
The Premier, NSW

On the 20th of March 2017, The Premier Gladys Berejiklian announced that the Lavender Bay rail line was to remain in public hands. 'I can give an ironclad guarantee that a NSW Liberals & Nationals Government will never sell off the land and ensure that it remains a community asset in the event it is not needed for railway use'

'The N.S.W Government will establish a committee to investigate creating a scenic walking track along this unique stretch of railway land.



The Hon. Andrew Constance, MP
Minister for Transport and Infrastructure

Howard Collins
Chief Executive, Sydney Trains

In February 2017 representatives of the Sydney Harbour HighLine Association met with Trent Zimmerman and Mr Chris Muir, Chief of Staff for the Hon Andrew Constance MP Minister for Transport and Infrastructure.

As a result of that meeting Mr Muir replied that 'I can confirm that the Minister and Sydney Trains have agreed that work to create a walking path along the Lavender Bay Spur can commence on the side where tracks have been removed before the active rail line is closed on the other side of the spur.



Ms Felicity Wilson
Member for North Shore

One of my election commitments was to form the Lavender Bay HighLine Committee, a body of community organisations and government representatives, to investigate the feasibility of turning the Lavender Bay rail siding in part or entirely into a park and walkway for local residents as well as national and international visitors and to link it to Wendys Garden. The committee has been working for more than a year on detailed plans and projects.

I recently discussed the proposal with the Minister for Transport and Infrastructure and the Chief Executive Officer of Sydney Trains. We look forward to taking the next steps which will hopefully make this project possible in the future.

1. The Sydney Harbour HighLine Committee Membership

Chair

Ms Felicity Wilson
Member for North Shore

Members

Mr Iain Bartholomew
Waverton Precinct

Mr David Bennett
Sydney Heritage Trains

Mr David Bowman
Sydney Harbour HighLine Association

Cr Jilly Gibson,
Mayor North Sydney Council

Mr Rino Matarazzo
Deputy Executive Director Train Crew Central
& North West, Sydney Trains

Mr Tim Smith
Director Heritage Operations, Office of Environment and Heritage

Ms Joan Street
Lavender Bay Precinct

Ms Julie Turpie
Director of Event Development, Destination NSW

Mr Trent Zimmerman
Federal member for North Sydney

2. Why HighLines?

2.1

HighLines around the world: Paris. New York. Sydney!

Several years ago, disused train lines in Paris and New York were transformed into landscaped public recreational areas as part of urban regeneration projects.

The Sydney Harbour HighLine (SHHL) is a plan to utilise the unused segment of the train line between the present northern boundary of Luna Park and Union Street (nr Waverton station) into the Sydney Harbour HighLine (SHHL) – a positive social, environmental and recreational experience for everyone.



2.2

The importance of green space

The importance of green space in towns and cities has long been recognised throughout the world. The last decade, however, has seen an upsurge of interest in, and concern for, both the quality and quantity of green space in urban areas. In Sydney this has been driven partly by the need for more intensive development in urban areas focussed around the concept of high-density housing near transport hubs.

Sydney's green spaces are a vital component of its liveability and resilience as a city.

A Plan for Growing Sydney Direction 3.2 aims 'To create a network of interlinked, multipurpose open and green spaces across Sydney' also known as the Green Grid. This concept is also supported by the work of the Greater Sydney Commission. However, specific actions, policies, legislative changes and funding are required to shift this concept from rhetoric to reality.

In April 2018, the NSW Government, recognising the importance of green space announced that it was investing in more green, open space in Sydney to improve quality of life. Premier Gladys Berejiklian said, "We appreciate local communities just don't need the transport links and schools and hospitals," she said. "They also want liveability. They want the open space... We are looking at every single suburb across greater Sydney – wherever there's an opportunity for us to acquire a piece of land."

Currently there is massive development taking place on the lower North Shore. In Crows Nest and St Leonards alone, a huge influx of some 10,800 residents is expected. However, within sight of the high-rise building of Milsons Point, North Sydney CBD, Crows Nest and St Leonards lie a mixture of discrete parklands. There is no better way to make these parklands more accessible than to evolve the rail line between Union Street (near Waverton Station) and the present northern boundary of Luna Park to accommodate a walking trail. A trail that on any measure, will rival similar trails in New York and Paris.

In March 2017, Premier Gladys Berejiklian said that the Lavender Bay rail line was to remain in public hands. 'I can give an ironclad guarantee that a NSW Liberals & Nationals Government will never sell off the land and ensure that it remains a community asset in the event it is not needed for railway use'. 'The N.S.W Government will establish a committee to investigate creating a scenic walking track along this unique stretch of railway land.'

The work of the committee is now complete and it is time for the NSW Government to fund this project.

2. Why HighLines?

2.3

Tourism and the economy

Sydney is Australia's premier destination city and the gateway to New South Wales (NSW), attracting 15.4¹ million visitors in financial year ending June 2018. Sydney is recognised as Australia's premier destination city for good reason, with its beautiful natural harbour, iconic architectural landmarks and world-renowned events and attractions.

Tourism is one of the fastest growing economic sectors in the world and contributes significantly to economic growth and diversification through the creation of a wide range of employment opportunities.

Tourism makes a significant economic impact with visitors delivering a direct spend of more than \$10.1² billion into the Sydney economy in financial year ending June 2018.

Sydney has long-standing and successful tourism attractions like the Opera House, Harbour Bridge and Bridge Climb, Taronga Zoo, Sydney Aquarium and Wildlife Sydney, harbour cruises and the Sydney Tower. However, to remain competitive, Sydney needs to invest in new attractions to target new markets and to offer a new experience to return visitors.

The Sydney Harbour HighLine is such an attraction.

2.4

Global success of HighLines

The HighLine in New York has been astonishingly successful and has sparked a global craze for "rails-to-trails" projects. "The concept has become so popular because it satisfies two important criteria for modern cities:

- i) the desire to rejuvenate "the industrial detritus of the 19th century" and
- ii) the need to cater to the growing experience economy.

The rails-to-trails concept offers "a rare way of experiencing being in the city."³



¹ Source: Tourism Research Australia

² Source: Tourism Research Australia

³ Sharon Zukin, professor of sociology at Brooklyn College and author of "Naked City"

2. Why HighLines?

2.5

The Sydney Harbour HighLine – a linear garden connecting existing parks



The Sydney Harbour HighLine will be a linear garden connecting various parks in the lower north shore.

The Sydney Harbour HighLine will start at the present northern boundary of Luna Park. On the left is Art Barton Park and the Peter Kingston Walkway. On the right is Wendys Secret Garden. Surrounding this area is Lavender Bay Parklands comprising Clark Park, Watt Park and Quibaree Park.

The trail will then lead into 310 metres of tunnel with its cathedral ceiling.

The tunnel then opens onto Sawmillers Reserve - one of North Sydney's true hidden gems. It provides beautiful views of the harbour and an old shipwreck lies just offshore in Berrys Bay.

The beautiful former Manly Ferry, *South Steyne*, is moored in Berrys Bay.

At the head of Berrys Bay lies Waverton Park which offers panoramic views over Berrys Bay to the Sydney skyline. The Park is bordered by a magnificent row of Hill's Weeping figs.

Further on is Balls Head Reserve, one of North Sydney's most significant areas of urban bushland. It is a popular picnic spot and combines natural beauty with spectacular views.

The Coal Loader, on the western side of Waverton peninsula, is a regional learning hub for sustainable living, showcasing innovation and best practice.

The Sydney Harbour HighLine will be a linear garden connecting various parks into a grand mosaic – a new Sydney icon.

2. Why HighLines?

2.6

Connecting with existing tourism attractions

The Sydney Harbour HighLine will start within the shadow of the Harbour Bridge. It will be easily accessible from the city by train, by ferry or by strolling across the Bridge. The Bridge will link existing Sydney icons e.g. the Opera House, the Botanic Gardens, the Rocks, Barangaroo Headland Park with the new icon, the Sydney Harbour HighLine.

The Sydney Harbour HighLine will also link with the proposed new 80km Manly to Bondi Walk, expanding this spectacular walk to harbour foreshore west of the Harbour Bridge.

In addition, the Sydney Harbour HighLine will link with the Seven Bridges Walk - the 27km trail across the bridges around beautiful Sydney Harbour.



2.7

The Community

The Sydney Harbour HighLine will not only provide a linear garden between the current gardens of Berrys Bay and Lavender Bay but, due to its location within the existing rail corridor, it will not modify or impact upon the visual integrity of the neighbourhoods through which it will pass nor the views across Lavender Bay and Berrys Bay.

These areas are rich in Aboriginal and Maritime history. The Sydney Harbour HighLine respects this history. The walk will highlight Sydney's history, including the indigenous people who inhabited the land at the time of European colonisation, the arrival of the First Fleet, the transition from Aboriginal land to convict bay, then villas to working waterfront.

In addition, the railway itself has a rich history. The construction of the North Shore Railway Line in 1893 was a major event in the history of the North Shore, as it was a determinant in the pattern of subsequent settlement and urban expansion. It includes distinctive visual elements such as a viaduct and brick-lined tunnel, representing the technical achievements of the time. In addition, it has some rare examples of surviving manual signals remaining in the metropolitan area.

The Sydney Harbour HighLine represents a microcosm of the history of Sydney. The HighLine will include signage and information about this rich history and culture.

3. History, Art and Culture

3.1

Aboriginal history

Before 1788, the North Shore of Sydney was inhabited by two Aboriginal Clans, the Cammeraygal and Wallumedegal of the Kuringgai Tribe. Tribal boundaries were never clearly defined, so only approximate locations are known and carbon dating of archaeological material suggests these groups lived at least 5,800 years ago.

In 1790 Governor Phillip noted:

'About the north-west part of this harbour there is a tribe which is mentioned as being very powerful. This district is called Cammerra, the head of the tribe is named Cammerragal. The opposite shore is Wallumetta, and the tribe, Wallumedegal.'

A Cammeraygal man called Carradah met Lieutenant Lidgbird Ball of the ship Supply. They undertook an 'exchange' of names and adopted the title Mr Ball for himself. Balls Head, was named for the Englishman.

Today few, if any, of the Aboriginal people living in the northern suburbs can trace their ancestry to Cammeraygal or Wallumedegal tribes. Evidence of the first inhabitants is found in fire- charred caves, stencilled hands painted on stone, engravings of animals and weapons on rocks and middens of whitened seashells from ancient meals. Smallpox and land acquisition by colonists decimated the Cammeraygals.

Balls Head has some of the most significant remaining Aboriginal sites in North Sydney. The Australian Museum investigated a rock shelter at Balls Head in 1964 where the skeleton of a female was discovered. A small tooth with traces of vegetable gum found near the skeleton suggested that the woman had adorned her hair or wore a necklace. 450 artefacts were recovered from the shelter indicating it been used by women to gather shellfish, and men, who made and repaired implements.

Berry Island was known to be a fishing, hunting and camping site for Aboriginal communities. Evidence of the Aboriginal way of life including shell middens and axe grindings are still visible today. The Gadyan (Sydney Cockle) Track is a bush walk which interprets the Aboriginal history of the island, developed with the assistance of the Metropolitan Aboriginal Local Land Council and North Sydney Council.

LOCAL NAMES

CAMMERAY – from the Cammeraygals.

EUROKA STREET – thought to mean 'sunny corner'

KIRRIBILLI – from 'Kiarabilli' a good fishing spot.

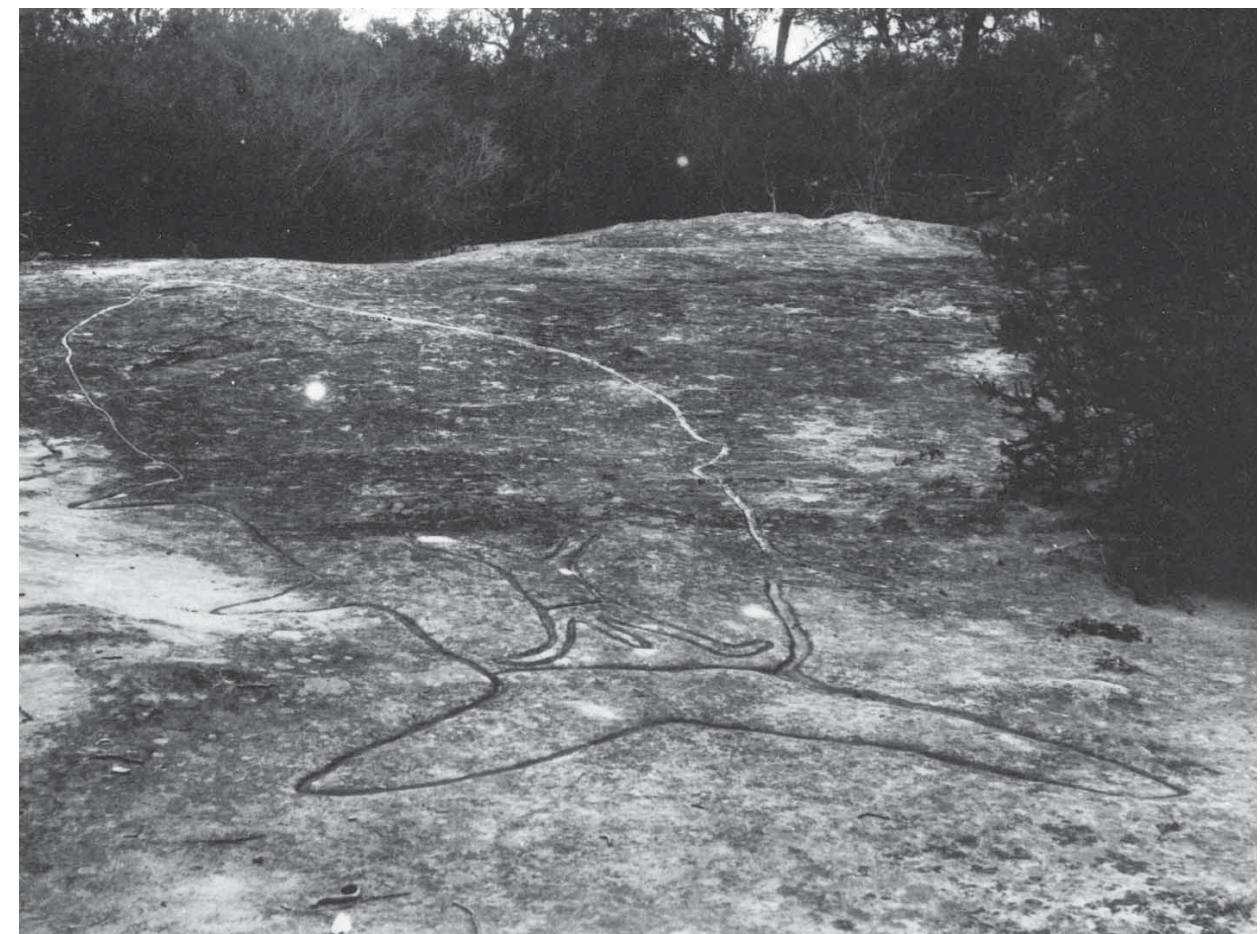
GOOWEEBAHREE – Lavender Bay may have been Quiberie, 'spring of fresh water'. This is a more recent variation of that name.

WALLUMETTA PLACE – another spelling for the Wallumedegals.

WARRINGAH EXPRESSWAY – signs of rain.

WARUNGAREEYAH – Blues Point.

WEEYUH WEEYUH – Careening Cove.



3. History, Art and Culture

3.2

Maritime history



Due to its location across the harbour from the city of Sydney, boating was always an important and essential connection for the lower North Shore.

Prior to the opening of the Sydney Harbour Bridge in 1932, "watermen" like Billy Blue were essential to those desiring to cross the harbour from the early 1800's.

As can be evidenced from an advertisement in the *Sydney Gazette* of 2nd August 1807:

William Blue respectfully informs the public that, he being the only waterman licensed to ply a ferry on this Harbour, they will be accommodated with a tight and clean boat, an active oar and an unalterable inclination to serve those who honour him with their command ...

Many boatbuilding yards sprang up around the northern foreshores including the following in Lavender Bay and Berrys Bay:

One of the earliest boat builders was William Dunn who in the 1870s established his business on the western side of Lavender Bay before relocating to Berrys Bay. Small boat yards also sprung up on the eastern shore and, by the 20th century, it had become a thriving strip of engineering workshops together with launch and yacht building yards.

Quibaree Park located in Lavender Bay is named after the aboriginal word for "spring of fresh water". In that area are the remains of the Neptune Engineering slipway and there are many historic markers highlighting the former boat building heritage of the Lavender Bay area.

There is no question that, by the 1920s, the area was known to have the most extensive boat building works in Sydney.

Berrys Bay was home to a thriving maritime industry from the 1870s to 1930s.

Boatsheds and wharves stretched from Blues Point in the south to the edge of present day Waverton Park at the head of the bay.

Well established boat builders such as William Dunn, Walter Ford and William Langford moved their yards here in the 1870s. Joining the boat builders on the waterfront in the 1880s was the wood stacks and steam mills of John W Eaton's timberyard.

In the late 1800s, Alexander Berry built a wharf in the western arm of Berrys Bay to unload his ships bringing produce from the south coast.

Other notable marine activities in the bay included the establishment of Woodley's Ltd which built and serviced many vessels until 2011. It is now survived by the marina it established in 1968.

From 1912 until 1988, the bay was home to the Quarantine Launch Depot. Here incoming ships to Sydney Harbour were met by the vessels "Pasteur" and "Jenner" which were based at the depot to ferry sick passengers to the Quarantine Station on North Head. In 1988, the site was transferred to the Australian Maritime Museum as a site for maintenance of its heritage fleet.

Also, in the area, HMAS Waterhen was commissioned in 1962 as the parent establishment for Australia's Mine Countermeasures Force, the Clearance Diving Team and a base for many support craft.

Today, it is the Royal Navy's lead establishment for Mine Warfare and is home to six Huon Class mine hunter coastal vessels.

Whether by assisting the city with vessel transport or indeed protecting the country, Lavender Bay and Berrys Bay have a just place in Sydney's rich heritage.

3. History, Art and Culture

3.3

The Coal Loader

The Coal Loader on the western side of Waverton peninsula is a very special site where many paths of history intersect.

It was first a place of physical and spiritual sustenance for Aboriginal Australians. The Cammeraygal people lived on the peninsula for thousands of years. Evidence of their presence, in the form of a large rock carving, still survives at the site, which was protected and celebrated as a central element of the newly-built Coal Loader Centre for Sustainability.

The Coal Loader, itself, is a former industrial site that operated from the early 1920s to the early 1990s. It functioned primarily as a transfer depot for coal from bulk carriers to smaller coal-fired vessels. Some coal was also distributed to the local market by road transport.

A major component of the coal-loading operation was the extensive elevated platform structure, which housed a large coal stockpile. Beneath the platform are a series of tunnels, each with a number of chutes through which the coal was transferred into coal 'skips'. The skips operated on a cable-hauled railway system that ran as a continuous loop through the two western-most tunnels and then out onto the finger wharf in Balls Head Bay, where they loaded waiting steamers. This loading system was replaced by a high-speed conveyor in the mid-1970s which then serviced ships carrying export coal until 1992.

The site operated for over 70 years before being decommissioned. It was dedicated as public open space in 1997 and formally transferred to North Sydney Council in 2003.

Since this time Council has worked with a broad range of stakeholders to prepare plans for the site's transformation into the Coal Loader Centre for Sustainability.

The project was funded by a \$1.87 million grant from the Australian Government, \$860,000 from the NSW Government and \$3 million from North Sydney Council.

The Coal Loader Centre for Sustainability was officially opened in July 2011.

The Coal Loader today transforms an ex-industrial site to a place where you can be inspired by:

- best-practice sustainable technology
- community gardens
- food gardens
- native bush nursery
- regenerated waterfront parklands and much more.

The Coal Loader showcases innovation, enables hands-on learning about sustainability in everyday life, and serves as a community meeting point and hub for Council's extensive range of environmental and sustainability programs. Drop in, take a walk around, join a workshop, or pack a picnic and enjoy the stunning harbour views...

- visit the Genia McCaffery Centre for Sustainability
- book in for a sustainable living workshop
- wander around the inspiring community garden, community nursery, Aboriginal bush foods garden and chook run
- explore the parklands, which have been sustainably redeveloped, including the historic coal loading tunnels.

The Coal Loader Platform opened in March 2018 as public open space.

The last main stage of the redevelopment of the Coal Loader Centre for Sustainability, the Platform is one of Sydney's largest publicly accessible green roof spaces. The concrete and sandstone platform structure is one hectare in size (seven Olympic-sized swimming pools would fit side by side along its length) and is designed to be a multi-purpose recreational space with spectacular views of the harbour.



3. History, Art and Culture

3.4

Balls Head Reserve, Waverton

- Balls Head Reserve is a prominent headland at the tip of the Waverton Peninsula. This reserve is one of the most highly utilised bushland areas in North Sydney, with wonderful views of the harbour and city.
- Bush regeneration began on Balls Head in 1980 and the Bushcare group has been working weekly on the site since 1990. They have been involved in many projects including rehabilitating bushland around an Aboriginal engraving, weeding, planting and erosion control.
- Balls Head Reserve is a forested headland situated on Port Jackson, 1.5 kilometres (one mile) west of the Sydney Harbour Bridge. It is named after Lieutenant Henry Lidgbird Ball, a Royal Naval officer who commanded the Supply on the First Fleet. The original inhabitants were the Cammeraygal people. Evidence of their occupation includes art sites, middens and a spectacular petroglyph of a marine creature. An Aboriginal burial site within a rock shelter was documented by Sandra Bowdler, an archaeologist from the Australian Museum in 1964.
- Balls Head was celebrated in two poems by Henry Lawson. The second of these, 'The Sacrifice of Balls Head' protested against plans to build a coal bunkering depot there in 1916. It stands as an early articulation of conservationist sentiment. A Coal Loader was built by 1920.
- The area was proclaimed as a public reserve by Premier Jack Lang in 1926. By then much of the forest that Lawson had described was gone. A Beautification Committee was established by 1931 led by conservationist Walter Froggatt. Native trees were reintroduced to the headland throughout the decade. Many of these were sourced from the Royal Botanic Gardens, Sydney. A stone tablet acknowledging Froggatt's work was unveiled in 1938. It can still be seen near the car park at the southern end of the reserve.
- The reserve is now maintained by North Sydney Council and contains a well-preserved natural bushland area, one of the closest to the city of Sydney. Plants include the Sydney red gum, Port Jackson cypress, blueberry ash and Port Jackson fig. Many birds are found here, as are reptiles, flying foxes, microbats and marsupial mammals.
- It is a popular picnic and bushwalking site, with views of the city skyline and harbour.



3. History, Art and Culture

3.5

Wendys Secret Garden



Wendy Whitely commenced work on the garden in 1992. The land, owned by the NSW State Government, was a disused railway dump.

As the land was cleared, and tons of invasive weeds and rubbish were removed, Wendy and her two gardeners Corrado and Reuben began landscaping the space. There were no grand plans, the garden just evolved in response to the site.

Over the years the garden grew larger as Wendy and her team pushed further into the rubble, transforming it into a glorious place for all to share.

It's a steep, south facing block, bordered on the southern end by the railway land and iconic harbour views beyond and on the other side by a small park.

A network of pathways wind through the steep site to a clearing at the bottom of the space, with a central clump of Bangalow palms. The garden is also home to 3 of the very rare Wollemi Pine trees. The pathways are framed by beautiful timber bush rail balustrades and are supported by a huge number of rock and timber retaining walls, which were all built by hand by Wendy and her gardeners.

'The only way you could have built this space is exactly the way I've done it. We built it bit by bit without big machinery. We built the terraces with begged, borrowed and bought stuff.'

Wendys Garden has been the scene of hundreds of weddings and important life events. It is one of the most beautiful public gardens in Australia, however up until late 2015 its future was uncertain. In October 2015 the NSW State Government granted the North Sydney Council a 30-year lease for the garden with a 30-year option.

3.6

Art of Lavender Bay



Amidst the grevilleas and banksias planted on the right-hand side of the Board walk is Art Barton Park, named after the renowned artist of Luna Park. Arthur 'Art' Barton worked as an artist at Luna Park from 1935, the year of the park's opening, until 1970 when he retired. In the early 1950s he redesigned the entrance and created the welcoming clown-like face that became the iconic image of Luna Park. He came to be regarded as one of the finest exponents of fairground art in Australia.

A major feature of the pocket park is a small bronze sculpture, designed by cartoonist Michael Leunig and sculpted by Lavender Bay artist Peter Kingston. This sculpture was installed as a memorial to the victims of the Ghost Train Fire and the sandstone block bears their names.

Further along the boardwalk amongst the garden is a series of small sculptures by Lavender Bay artist and long-time resident Peter Kingston.

Peter Kingston is a local artist and long-time member of the Friends of Luna Park. Peter worked tirelessly to preserve the fabric and atmosphere of Luna Park from the 1970s to 1990s. In 2002 he cast and installed a series of small statues commemorating some of the best-loved characters from Australian popular culture from the early 20th century. Nestled amidst the shrubbery are in sequence: Bib and Bub, Ginger Meggs, the Magic Pudding, Felix the Cat, Luna Park Face, Boofhead, Blinky Bill and a Hegarty's Ferry.

4. Report from the Sydney Harbour HighLine Association in March 2018

4.1

Background

There is agreement between the Premier, the Minister for Transport and Sydney Trains that

- the Sydney Harbour High Line (SHHL) will extend from Waverton Station to Luna Park; and be built and used in conjunction with Sydney Trains and Transport Heritage NSW.

During 2016, meetings were held with State & Federal Government Members and the SHHL Association representatives.

During 2016 and 2017, a series of public meetings with local residents was conducted by the SHHL Association.

In February 2017, a proposal was put by the SHHL Association to Mr Chris Muir, Chief of Staff for the Minister for Transport and Infrastructure.

- Mr Muir advised
'I can confirm that the Minister and Sydney Trains have agreed that work to create a walking path along the Lavender Bay Spur can commence in the side where tracks have been removed before the active rail line is closed on the other side of the spur.'

In March 2017, the Premier and Ms Felicity Wilson MP guaranteed the Lavender Bay rail line will remain in public hands.

During 2017, Felicity Wilson convened two Committee meetings of stakeholders to discuss the establishment of the SHHL.

In August 2017 Mr Howard Collins, Chief Executive of Sydney Trains confirmed:

- Sydney Trains wants continued access to the rail line from Waverton Station to Luna Park
- The rail line will remain a Government asset.
- Sydney Trains will share the corridor with the SHHL providing there is a fence separating walkers from the trains.
- Sydney Trains does not want any pedestrian crossings on the rail line.
- Sydney Trains will conduct a detailed analysis and costing of the project that will be completed within months.
 - This analysis will be carried out by and at the cost of Sydney Trains. However, Sydney Trains does not have the funding for construction of the SHHL walking trail.
- The appointment of Mr Rino Matarazzo as Sydney Trains' representative on the project.

In November 2017, Mr Matarazzo presented a high-level analysis of the track to the Committee and raised a number of issues.

In December 2017, Messrs Howard Collins and Rino Matarazzo of Sydney Trains met with Ian Mutton and David Bowman of the SHHL Association. During this meeting

- Mr Matarazzo provided a copy of the high-level analysis, completed in August 2017, which he had presented to the Committee in November.

In March 2018, Mr Matarazzo advised that Sydney Trains had started investigation work for the relocation of the troughing.

- He advised that this work will take 4 months to complete.

4. Report from the Sydney Harbour HighLine Association in March 2018

4.2

SHHL Association Report at March 2018

The SHHL Association reviewed the Sydney Trains analysis dated 15th August 2017 that was released to the Association on 22nd December 2017.

4.2.1 Design requirements

Distance of safety fence from mid rail line			
Engineering Standard Track ESC 215 ASA 6.12		Sydney Trains	SHHL Design
3.0 metres		3.2 metres	3.2 metres
Width of walkway – 2 wheelchairs width			
Australian Standards 1428.2	North Sydney Council	Sydney Trains	SHHL Design
1.8 metres	1.5 metres	2.5 metres	2.5 metres

Ingress / Egress locations	North of line	Wheelchair access
Union Street	Yes	Yes
Dumbarton Street	Yes	Yes
Lavender Crescent	Yes	Yes
Wendy's Secret Garden	Yes	No

4.2.2 Design approach – summary of proposed works

It is intended that there be a fence separating trains from pedestrians for the full length of the High Line.

- The proposed fence will be 1.8 meters high colorbond pool-style fence as currently installed along the rail boundary with Dumbarton Street.
- The fence setback of 3.2 meters requested by Sydney Trains is met along the whole of the line (or the fence is located immediately to the north of a stanchion) except below the Victoria Bridge (and the tunnel, which is addressed below) where the available space permits a fence line of 3 meters (which is in accordance with ASA 6.12) and a walkway of 1.81 meters (which is in accordance with ASA 1428.2 and North Sydney Council pathway code) for a distance of approx. 4 meters

The land from the dividing fence and the walkway on the northern side, where possible, will be landscaped.

The High Line will extend to, but will not go beyond, the Commodore Crescent Bridge.

Older stanchions do not impede the fence setback and pathway requirements but in some cases are located in the landscaping corridor. It would be an advantage if they were replaced with new stanchions on the southern side of the rail corridor.

- It is suggested that older unused stanchions be removed.
- Should the newer stanchions not be moved then the pathway will be aligned so that the stanchions do not encroach onto the walkway.

It is intended that there be four access points, three of which will provide wheel chair access, and all will conform to Sydney Trains' design requirements.

4. Report from the Sydney Harbour HighLine Association in March 2018

4.2.3 The walkway

Union Street entrance to the High Line to Pedestrian Over-Bridge (Plan 1) Page 36

The Union Street entrance provides a linkage for pedestrians to the Waverton Parklands, Balls Head, the Coal Loader and Waverton Station.

Wheelchair access will be an integral part of this entry point.

Pedestrian Over-Bridge to the John Street bridge (Plan 2) Page 38

Where there is work required to meet Sydney Trains width requirements, excavation of the cliff face will be undertaken.

- From measurements available the quantity of excavation, if any, will be minimal.

A suspended walkway will be built at the John Street bridge to meet Sydney Trains walkway width requirements

- This walkway will be located where the previous rail line was constructed.

John Street bridge to Victoria Street bridge (Plans 2 & 3) Pages 38 and 40

The landscaping will reach to the edge of Dumbarton Street.

Wheelchair access will be an integral part of this entry point.

Access to Sawmillers Reserve will be via Victoria Street bridge.

- Where needed, a footpath will be built that provides access to Victoria Street bridge.

Victoria Street bridge to the western end of the Tunnel (Plan 4) Page 42

The land on the northern side of the rail line rises, in part, steeply

- Land beyond the embankment is generally maintained by neighbouring owners.
- A security fence will be erected between the landscaped High Line and the neighbouring properties on Queens Avenue.

Discussions have been held with some of these residents. These residents support the High Line concept and the landscaping approach.

The Tunnel

The tunnel is one of the major features of the High Line.

For residents, the tunnel links

- the western parks and reserves of Sawmillers Reserve, Waverton Park, Carradah Park, Berrys Bay, Balls Head Reserve and Lookout and the Coal Loader with
- the eastern parklands being Quibaree Park, Watt Park, Clark Park and Wendy's Secret Garden

For tourist groups, the tunnel with its cathedral ceiling provides a range of exciting opportunities. Although we are in the early days of design concepts we envisage the tunnel will be a significant tourist attraction that offers a visual display similar in style and quality to that seen in the Argyle Cut during Vivid.

- For example, the display on the southern wall and roof of the tunnel over its length of 310 meters might trace the history of the three peninsulas and the two bays from Milsons Point to Balls Head. It could highlight both the Aboriginal history through to white settlement and the Maritime history through to the building of the rail line and the Bridge.

Tunnel concerns expressed by Sydney Trains

Sydney Trains has raised concerns relating to the use of the tunnel by pedestrians:

- Safety
- Security
- Air Quality
- Emergency Access
- Lighting
- Drainage
- Anti-social behaviour

4. Report from the Sydney Harbour HighLine Association in March 2018

Safety

The High Line will be closed after dark, at least from Dumbarton Street to Wendys Secret Garden.

- Sydney Trains' speed limit is 40 klms p/h; trains operate at less than this speed particularly in the tunnel.
- There will be a fence separating the rail line from the walking trail.

Security

- See safety (above) and lighting (below).
- CCTV will be installed along the length of the tunnel
- The tunnel meets the requirements of ASA 6.12 by providing a mid- rail to fence distance of 3 meters (there are no stanchions in the tunnel and the 3 meters set back conforms to the code).

Air Quality Control

- The advice to hand is that the natural ventilation of the tunnel meets applicable clean air standards.

Emergency Access

- To be further investigated.

Lighting

- The lighting in the tunnel will meet international safety and design standards.

Drainage

- New drainage will be installed in conjunction with the pathway and fencing works.

Antisocial behaviour

- See Security and lighting (above).

East of Tunnel to Wendy's Secret Garden (Plans 5 & 6) Pages 44 and 45

Lavender Crescent access is currently used by Sydney Trains personnel and vehicles. It is proposed that this access will be open to the High Line and will offer a point of entry to Watt Park, Quibaree Park and the Peter Kingston walkway.

Wheelchair access will be an integral part of this entry point.

Sydney Trains has proposed the existing pathway from the Lavender Crescent entry to Wendys Secret Garden be closed to the public. It is proposed that:

- this pathway be shared by the public and Sydney Trains.
- the vacant land immediately adjoining Wendys Secret Garden and the Sydney Trains Depot be used for a café and amenities with access through to the Garden.
- The first stage of the High Line walking path would then commence/ terminate at this point. The second stage will commence from this location when Sydney Trains allow access to the corridor currently occupied by Line 6.

The Wendys Secret Garden entry will also provide access for pedestrians from Harbourview Crescent.

Wendys Secret Garden to Luna Park (Plan 7) Page 46

A major entry point was previously proposed from Harbourview Crescent using spoil from McMahon's Point Metro Shaft. This landscaping over the southern lines provided a ramp to the High Line at the Luna Park end while still preserving two operational lines for Heritage Trains and rehabilitation of the original platform. This proposal was rejected by Sydney Trains.

Therefore, the second stage will see the walkway extended below the Cliff Street rock face, over the Line 6 corridor, to the Luna Park boundary through to the Boardwalk and Harbour Bridge.

4. Report from the Sydney Harbour HighLine Association in March 2018

4.3

Operation of HighLine

The HighLine walking trail once completed will link, via the tunnel, parks under the care of North Sydney Council adjacent to Lavender Bay with those parklands and community facilities adjacent to Berrys Bay and Balls Head.

Howard Collins has advised Sydney Trains does not wish to operate or maintain the HighLine.

Hence, it is appropriate that the HighLine, a linear park, should be under the care of North Sydney Council. North Sydney Council has indicated its in-principle agreement to such an arrangement subject to funding being provided by the State Government.



Appendices

Location Photographs and Perspectives	20
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Expert Reports	
Glascott Landscape Civil	48
• Fencing	
• Paving	
• Drainage	
• Landscaping	
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• Fire services	
• Relocation of service troughing and stanchions	
Southern Cross Protection – CAGE Security	51
• CCTV & Help Point System	
Philips – LED Lighting Systems	53
• Tunnel lighting	
• The walkway, if required	





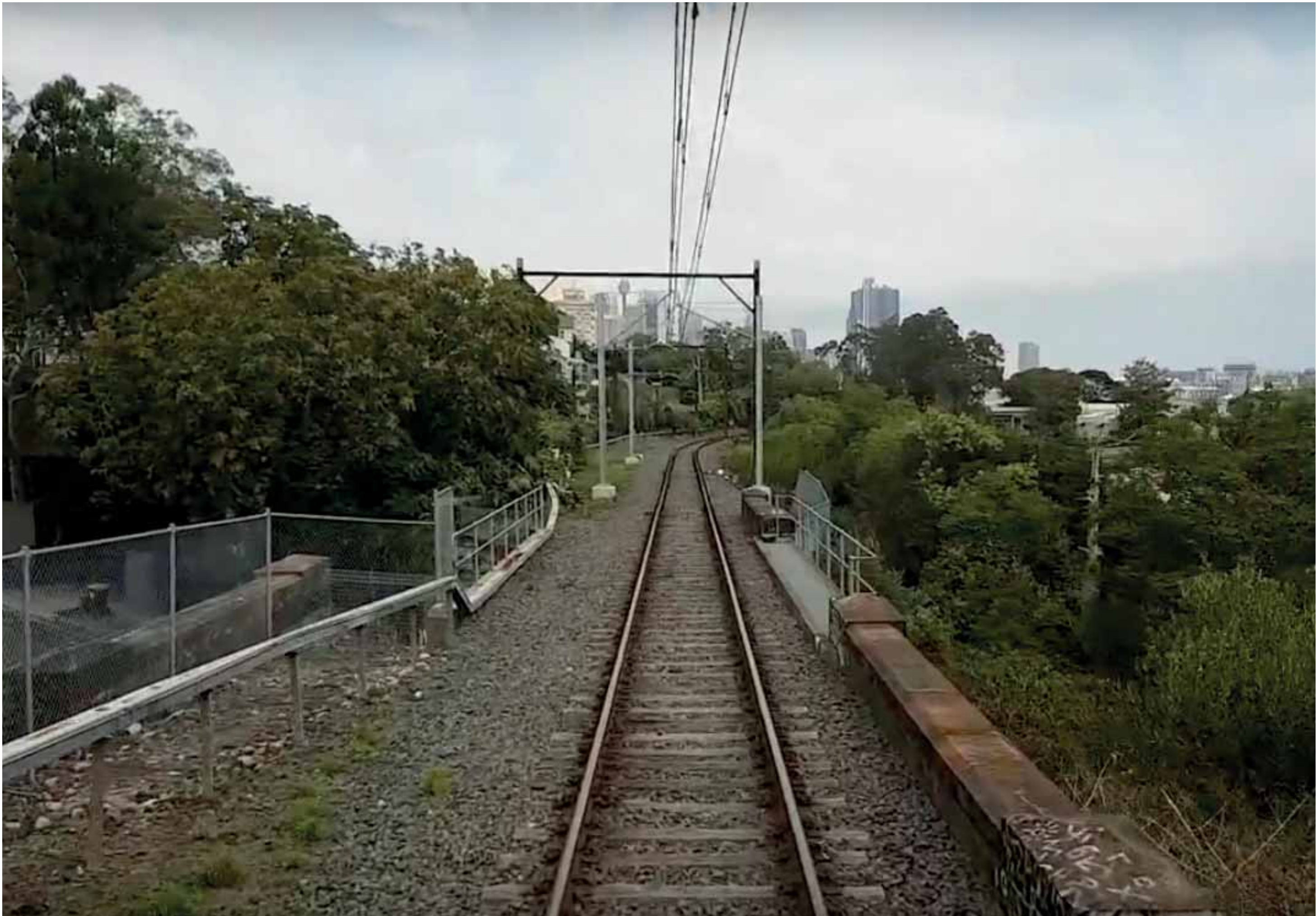
Union Street access, looking east





UNION STREET PERSPECTIVE







JOHN STREET BRIDGE PERSPECTIVE

TIM THROSBY NOV 2017





DUMBARTON STREET PERSPECTIVE

TIM THROSBY FEB 2018



Looking west from Victoria Street Bridge





Railcorp land at rear of Queens Avenue houses











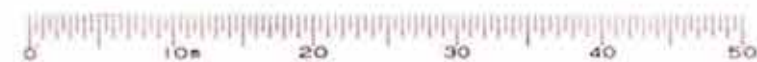




Eastern end of tunnel



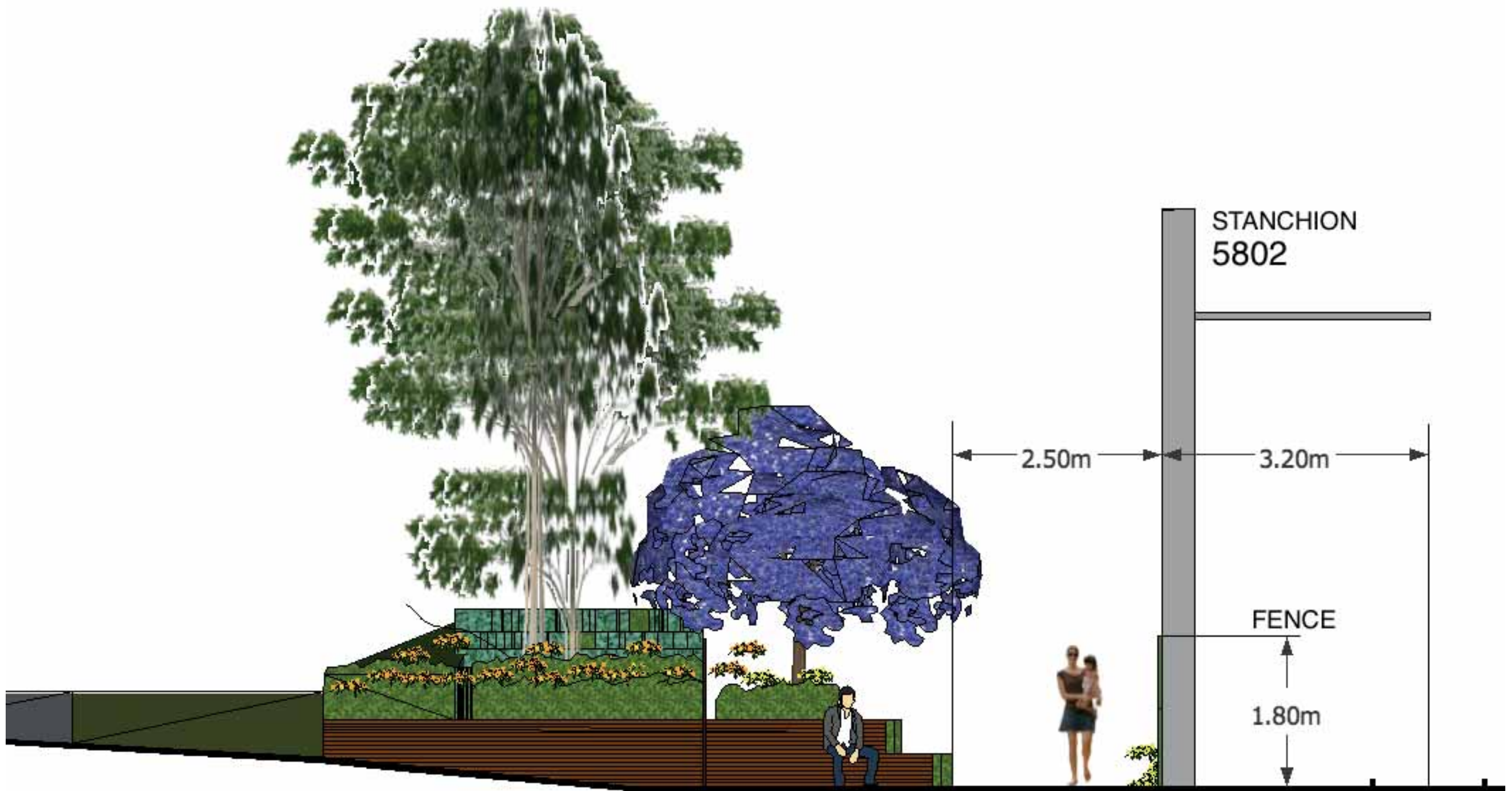
LANDSCAPED AREA  PAVED WALKWAY  FENCE 
NEW STANCHION  5802 OLD STANCHION  BOUNDARY 



FEBRUARY 2018

SYDNEY HARBOUR HIGHLINE

PLAN 1

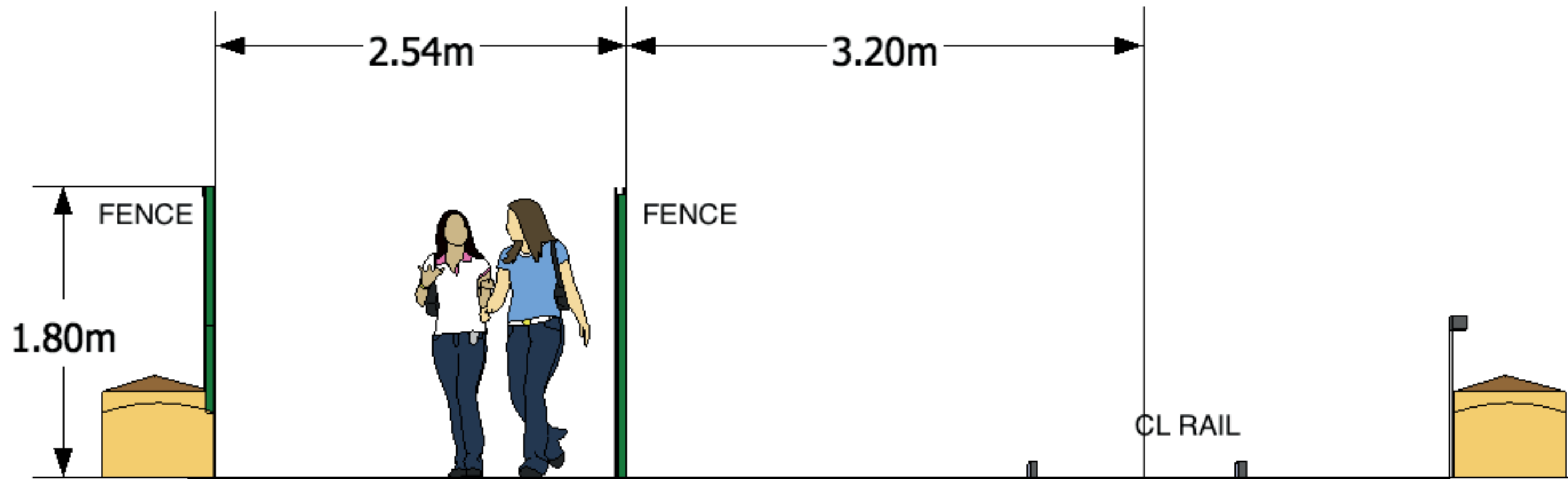


UNION STREET ENTRY SECTION AA

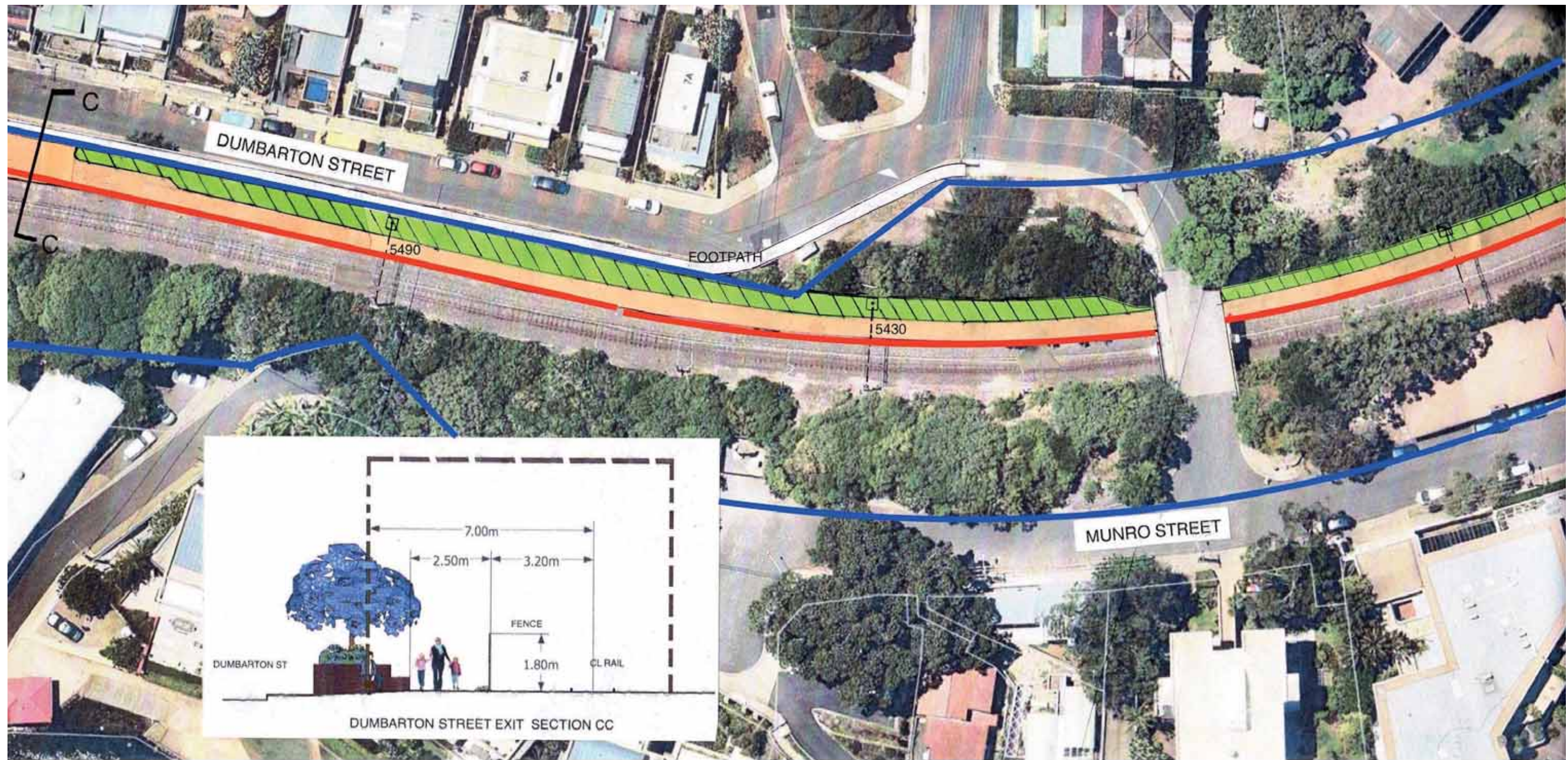


SYDNEY HARBOUR HIGHLINE

FEBRUARY 2018
PLAN 2



JOHN STREET BRIDGE SECTION BB



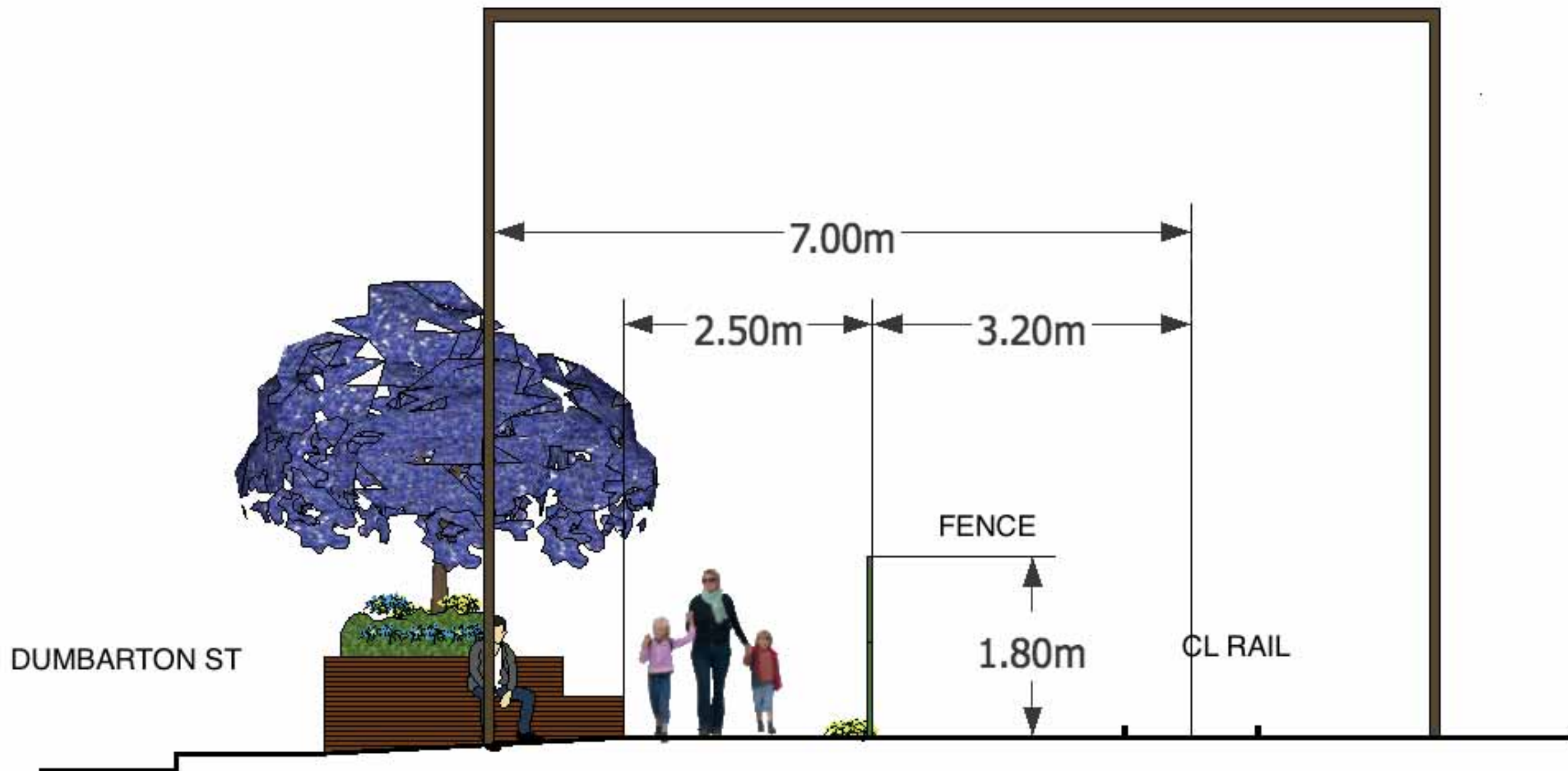
LANDSCAPED AREA PAVED WALKWAY FENCE
NEW STANCHION 5802 OLD STANCHION BOUNDARY



SYDNEY HARBOUR HIGHLINE

FEBRUARY 2018

PLAN 3

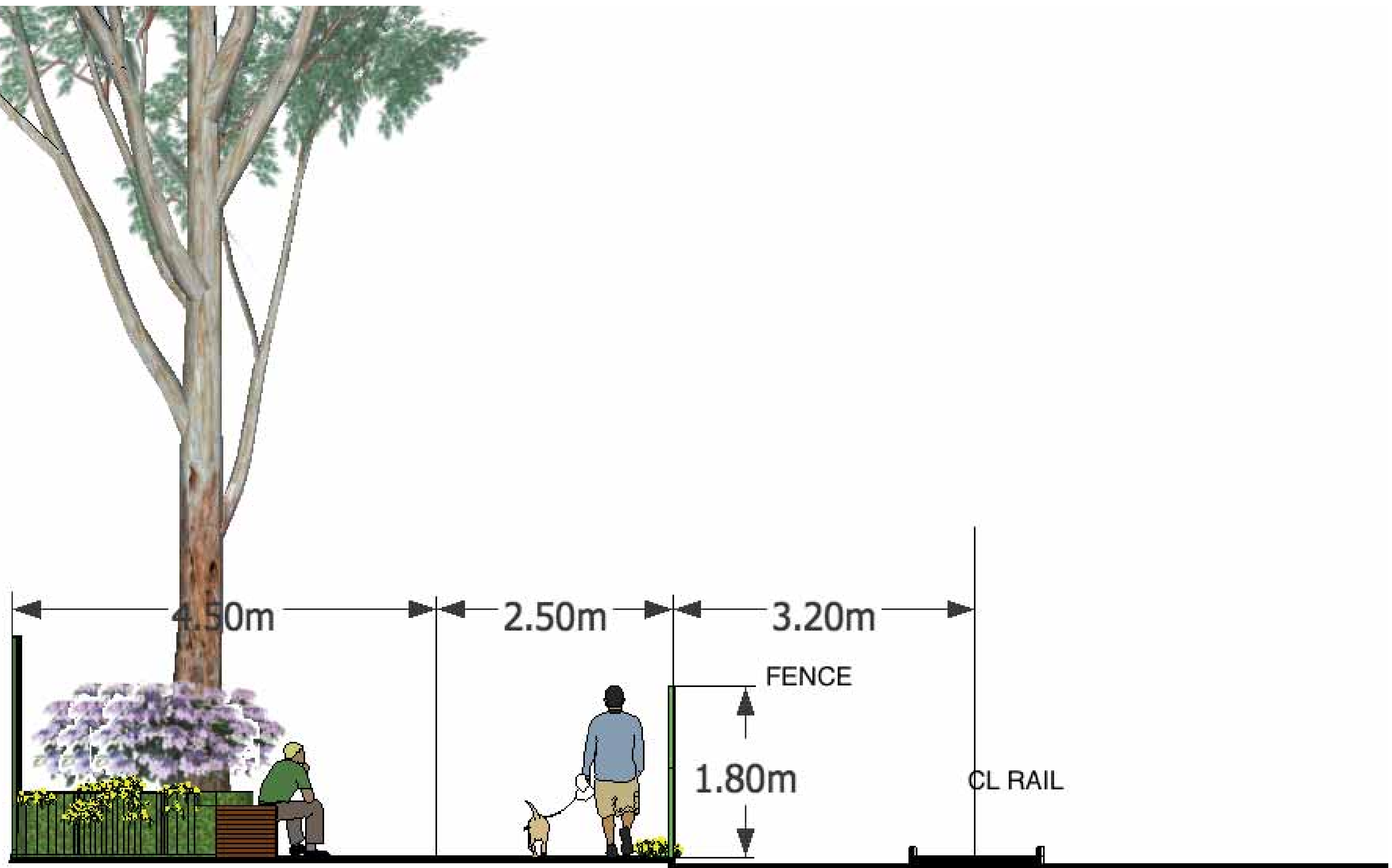


DUMBARTON STREET EXIT SECTION CC

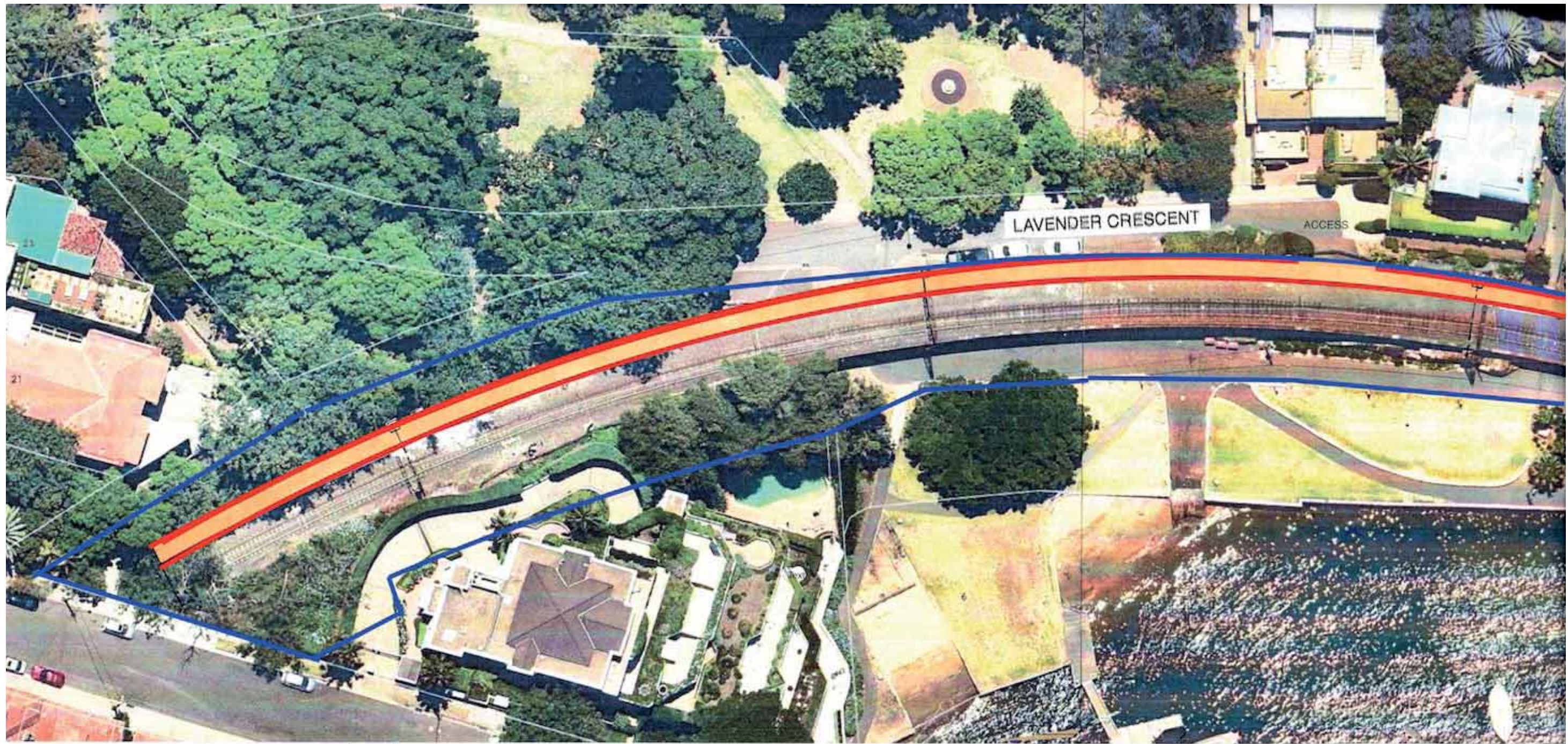








SYDNEY HARBOUR HIGHLINE

PLAN 4



QUEENS AVENUE SECTION DD



LANDSCAPED AREA  PAVED WALKWAY  FENCE 
 NEW STANCHION  5802 OLD STANCHION  BOUNDARY 









FEBRUARY 2018

SYDNEY HARBOUR HIGHLINE

PLAN 5



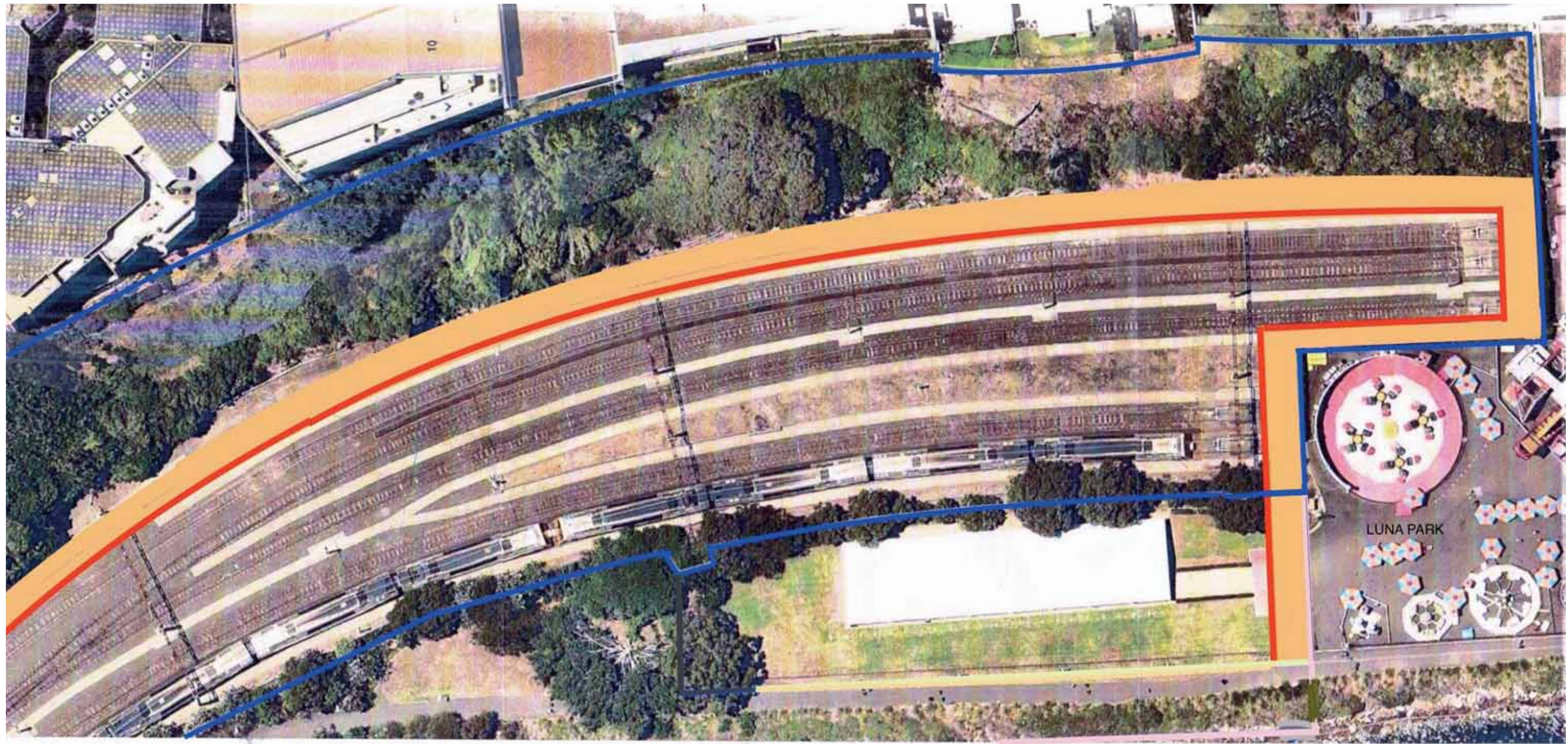
LANDSCAPED AREA  PAVED WALKWAY  FENCE 
NEW STANCHION  5802 OLD STANCHION  BOUNDARY 









FEBRUARY 2018

SYDNEY HARBOUR HIGHLINE

PLAN 6



LANDSCAPED AREA  PAVED WALKWAY  FENCE 
 NEW STANCHION  5802 OLD STANCHION  BOUNDARY 



FEBRUARY 2018

SYDNEY HARBOUR HIGHLINE

PLAN 7



SOUTH END PERSPECTIVE



TENDER SUBMISSION

21st February 2018

Proposal No: 5002

David Bowman



2 Dind Street, Milsons Point N.S.W 2061
david@sydneyharbourhighline.org.au
www.sydneyharbourhighline.org.au

Re: Sydney Harbour High Line - Landscaping Budget Costs

Thank you for the opportunity to provide our landscape quotation on your from Waverton Station to Luna Park.

Our offer of \$/Rates excluding GST has been based on the documents outlined below.
Please also refer to our standard conditions and project specific conditions listed at the bottom of our quotation.

Head Office – NSW
Unit 4, 15-17 Chaplin Drive
Lane Cove, NSW, 2066
P 02 9429 8500
F 02 9420 9774
E glascott@glascott.com.au

ACT Office
Level 1, 20 Pirie Street
Fyshwick, ACT, 2609
P 02 6262 8544
F 02 6262 8889

QLD Office
Unit 1, 55 Links Ave
Eagle Farm, QLD, 4009
P 07 3215 6400
F 07 3215 6499

VIC Office
31 Lawless Drive
Cranbourne North, VIC, 3977
P 03 5991 4191
F 03 5991 4209

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TENDER SUBMISSION

Sydney Harbour High Line - Landscaping
Budget Costs

LANDSCAPE WORKS QUOTATION (\$/Rates)

Item No.	Description	Quantity	Unit	Rate \$	Total \$
	FENCING (\$/Rates)				
	Supply and Install 1200mm high black powder coated tubular - including footings or core fixing of posts	1,200.00	M	197.15	
	Supply and Install 1800mm high black powder coated tubular - including footings or core fixing of posts	1,200.00	M	289.00	
	Supply and Install 2800-3000mm high Palisade powder coated fencing - including footings or core fixing of posts	1,200.00	M	793.00	
	Supply and Install 1200mm high Black Chain wire Fencing - including footings or core fixing of posts	1,200.00	M	111.00	
	Total for FENCING (\$/Rates)				\$0.00
	PAVING (\$/Rates)				
	Construction of 100mm concrete blinding slab to unit paving (25MPa/SL72) over compacted subgrade	3,000.00	M2	91.80	
	Supply & Lay Unit Paving 230x100x76mm (herringbone or stack bond pattern) over 25-30mm mortar bedding incl. joints (1200m x2.5m)	3,000.00	m2	198.50	
	S&I Sealing of unti paving	3,000.00	M2	18.45	
	Total for PAVING (\$/Rates)				\$0.00
	DRAINAGE (\$/Rates)				
	Fabrication and Install of Heel guard s/s trench grate and drain	1.00	M	595.00	
	S&I 100mm dia Subsoil Drainage connecting into existing stormwater pits.	1,200.00	M	35.50	
	Total for DRAINAGE (\$/Rates)				\$0.00
	LANDSCAPING (\$/Rates)				
	<u>Plants</u>				
	S&I Established Feature Trees (400L pot size)	1.00	Nos	1,625.00	
	S&I Shrubs 200mm pot size	1.00	NO.	18.10	
	S&I Groundcovers 150mm pot size	1.00	NO.	12.00	
	<u>Walls</u>				
	Construct concrete footing to Retaining Wall (1500mm wide x 300mm depth)	1.00	M	290.00	
	Construct Block Retaining Wall (incl backfill)	1.00	M2	255.00	

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TENDER SUBMISSION
Sydney Harbour High Line - Landscaping
Budget Costs

Item No.	Description	Quantity	Unit	Rate \$	Total \$
	Construction Sandstone Cladding (40-50mm thick)	1.00	M2	633.00	
	S&I Sandstone Capping (300-400mm wide x 80mm thick)	1.00	M	355.00	
	<u>Soft Material</u>				
	S&I Garden Soil (delivered in rigids)	1.00	M3	87.00	
	S&I Garden Mulch (delivered in rigids)	1.00	M3	77.00	
	<u>Miscellaneous</u>				
	S&I Custom Timber/Steel Bench - fixed to concrete footings (incl. shop drawings)	1.00	each	4,054.00	
	Supply & Install Automatic Irrigation System	1.00	M2	21.50	
	Construction of Cantilevered walkways (Steel Deck Walkway)	1.00	M2	1,051.00	
	Total for LANDSCAPING (\$/Rates)				\$0.00
Total Price					\$0.00

If you require any further information please don't hesitate to contact me.

Regards,

TRAVIS ATKINS
Estimation & Projects

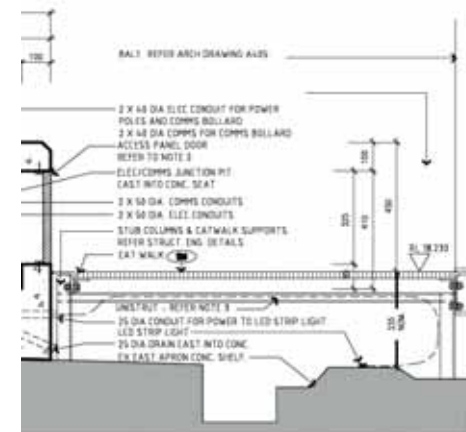
Glascott Landscape & Civil
Unit 4 / 15 - 17 Chaplin Drive, Lane Cove NSW 2066.
(02) 9429 8505
0425 299 742
Travis@glascott.com.au

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TENDER SUBMISSION
Sydney Harbour High Line - Landscaping
Budget Costs

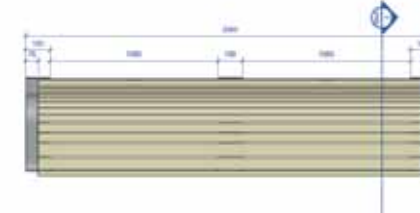


Metal walkway (design detail & finished product)
Coal Loader project.



Bowral Bricks 230x100mm - unit paving
(Australian Technology Park)

Fencing Options:
Tubular Flat Top
&
Palisade Fencing



Custom furniture design detail example

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SUSTAINABLE BUILDING CONSULTANTS

GF:sw

19th February, 2018

Mr. David Bowman
Vice President
Sydney Harbour High Line Incorporated
2 Dind Street
Milsons Point NSW 2016
EMAIL: david@sydneyharbourhighline.org.au

Dear David,

**RE: SYDNEY HARBOUR HIGH LINE
WALKING TRAIL**

Further to our discussion and your request for assistance on the likely costs for services works associated with the proposal to create a heritage walking trail on the rail corridor, we advise as follows:-

a) Tunnel Lighting

With a tunnel length of approximately 300 meters, the provision of overhead lighting to Australian Standard AS1680 at 80-100 lux, the estimated cost is \$18,000, including maintained fittings for emergency lighting purposes.

At this stage it is not clear where a metered electricity supply would be connected from the grid, however the lighting load is very low and an allowance of \$10,000 would be adequate in our opinion, including the switchboard and metering provisions.

b) Display/Directional Lighting Provisions

An additional allowance of \$12,000 should be made for provision of display and directional lighting, plus power supplies for video displays at intervals along the trail within the tunnel segment.

c) Tunnel Ventilation

In my opinion tunnel ventilation would not be required for the proposed utilisation by tour groups, particularly if the tours do not coincide with periods that train activities occur.

My reasons for this opinion are as follows:-

- i. The rate of ventilation required for human occupancy under Australian Standard AS1668 Part 2 is very low at 10 l/s/person.

A 25 person tour group would require a ventilation capacity of 250 l/s.
- ii. The volume of air in the tunnel is estimated at approximately 45m³/m, caters for several minutes of occupancy of the tour group in a single location without considering the effects of natural ventilation due to the open ends of the tunnel, or the adjoining tunnel segments.

SYDNEY Level 1, Tower 1, 495 Victoria Avenue, Chatswood NSW 2067
PHONE +61 2 9419 4100 FAX +61 2 9411 8460 EMAIL syd@floth.com.au ABN 23 808 082 432
File: G:\2018\Sydney Harbour High Line\2018-02-19 Sydney Harbour High Line - Walking Trail.doc

www.floth.com.au
SYDNEY BRISBANE
PERTH MELBOURNE JAKARTA



SUSTAINABLE BUILDING CONSULTANTS

iii. The required ventilation rate of 250 l/s for a tour group is achieved by natural ventilation when the wind induced air velocity in the tunnel is above 0.006 m/s, roughly 0.022 kph, a velocity which is below the order of accuracy of air measurement instruments.

iv. The natural ventilation provisions, assuming roughly 45m² of tunnel cross sectional at each end of the tunnel provide sufficient natural ventilation for an effective area of 1800m² for full time occupancy by 180 people under the provisions of the National Code for Construction (NCC) Part F4.5.

v. The effective area of tunnel floor is approximately 2,480m².

Having taken all these factors into consideration, I do not consider that mechanical ventilation would provide any significant benefit.

However, should mechanical ventilation be required, a system of jet fans would be provided at 50m intervals at high level above trail corridor in the tunnel.

The estimated cost for this installation is \$45,000.

d) Rail Services Troughing Relocation

At this stage we do not know the content of the cabling in these existing troughs.

On the assumption that contents are purely signal control cabling for the shunt switches and lights, our estimate for relocating approximately 1600m of the troughing is in the order of \$90,000 to \$120,000.

e) Relocation of Stanchions for Overhead Rail Electricity Supply

This particular work is not within our area of expertise.

I have asked for assistance from Calibre Consulting, a firm that undertakes railway design works, with respect to the estimate of costs for relocation of 3 stanchions. The estimated cost for relocation of 3 stanchions is \$75,000, including footings and foundations.

Yours faithfully,
FLOTH PTY LTD

**GEORGE FLOTH
DIRECTOR
gfloth@floth.com.au**

Page 2
G:\2018\Sydney Harbour High Line\2018-02-19 Sydney Harbour High Line - Walking Trail.doc

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SYDNEY BRISBANE
PERTH MELBOURNE JAKARTA



7/03/2018

David Bowman
2 Dind St
Milsons Point N.S.W 2061

Dear David

Re: Sydney Harbour High Line Project Train Tunnel CCTV and Help Point System.

Southern Cross Protection provides intelligent and comprehensive integrated, effective security solutions. We service a broad and varied clientele within Private Enterprise, Government Agencies and Critical Infrastructure. We can provide a full suite of services ranging from Electronic Security Design and Installation, Cybersecurity Consulting, Investigations, Background Checks, Alarm/Video Monitoring, Mobile Patrols, Static Guards, and more.

Through CAGE Security, which is our Electronic Security subsidiary, Southern Cross Protection can offer you 35 years of experience in Electronic Security, specialising in engineered security solutions to complex problems. You can have full peace of mind that with Southern Cross Protection, the security of your people and assets is in good hands.

The benefit of using our service and introducing subsequent recommendations is that it will maximise your ability to continue to operate with minimal disruption to your people and assets in the face of security risks. Other benefits include improvements in safety of staff, safety of customers, asset retention, operational continuity, and brand protection; as well as reduced likelihood of damage to property and assets; and critically focused application of your security expenditure.

Further to our discussion and emailed information, we take pleasure in submitting our proposal, consisting of budget pricing and on a general system design based on local regulations guide lines, our industry experience and advice obtained from Bou Waterhouse a security consultant from Jacobs consulting group.

Southern Cross Protection Pty Ltd | ABN 93 094 077 255 | NSW M/L 409990871
Phone: 02 9923 9923 | Fax: 02 9571 5752 | Suite 28/26-32 Pirrama Road, Pyrmont NSW 2009 Australia
www.sxprotection.com.au



For the final system design, we would recommend that a consultant was engaged to conduct a complete risk assessment to confirm our design. We have been advised that an approximate cost for a complete risk assessment would be \$15,000.00

CCTV System

We propose installing a 22 Camera System, consisting of 5MP High Resolution Cameras with Infrared illuminators. Our design is based on 2 cameras located at the entry and 2 cameras located at the exit points of the train tunnel, then a further 16 cameras spaced 50 meters in clusters of 3 to view each side of the respective part of the train tunnel and the other overlooking the help point. We also propose installing a local viewing work station and recording facility in the proposed kiosk with sufficient recording storage capacity for approximately 90 days.

The proposed cameras will have infrared illuminators, therefore will produce pictures at 0 Lux Illumination, but for high definition pictures that will provide sufficient clarity for face identification, an illumination lighting level of approximately 7 to 10 Lux is required.

Remote Viewing and Help Point System.

We propose the Southern Cross, Orien CCTV Remote Viewing System with help points and two way communication connection. The proposed Orien CCTV and Help Point System will be connected to our 24hour monitoring station through the 4G network, where the operators can view all cameras and communicate with all help points when and if required.

For the supply and installation of the complete CCTV and Help Points systems based on the above, we estimate a budget price of \$175,000 to \$200,000.00 Ex GST

For ongoing remote video monitoring service costs will be approximately \$90.00 Per Month Ex GST

Southern Cross Protection Pty Ltd | ABN 93 094 077 255 | NSW M/L 409990871
OPhone: 02 9923 9923 | Fax: 02 9571 5752 | Suite 28/26-32 Pirrama Road, Pyrmont NSW 2009 Australia
www.sxprotection.com.au



Again, thank you for the opportunity to provide our proposal. Please call me for further information if required.

Sincerely,

Frank Minchella
Business Development Manager

P: 0416 923 665
E: frank.minchella@sxprotection.com.au
W: www.sxprotection.com.au

Southern Cross Protection Pty Ltd | ABN 93 094 077 255 | NSW M/L 409990871
Phone: 02 9923 9923 | Fax: 02 9571 5752 | Suite 28/26-32 Pirrama Road, Pyrmont NSW 2009 Australia
www.sxprotection.com.au



Please find listed below the “BUDGET” pricing for the options listed above. Please use this for budgetary purposes only at this stage.

BUDGET Pricing	Price*
Option 1A-1: Wall Mounted Luminaires, Metronomis LED Fluid (Luminaires & components & Services) (Mounting bracket price TBA later)	\$29,112.00
Option 1A-2: Wall Mounted Luminaires, City Spirit Cone (Luminaires & components & Services) (Mounting bracket price TBA later)	\$13,434.00
Option 1B-1: Concealed pathway, Vaya Tube RGB (320m) (Luminaires & components & Services)	\$302,203.00
Option 1B-2: Concealed pathway, Vaya Tube RGB (First 40m) (Luminaires & components & Services)	\$103,628.00
Option 2A-1: Continuous wall grazing, ColorGraze MX4 (320m) (Luminaires & components & Services)	\$468,615.00
Option 2A-2: Continuous wall grazing, ColorGraze MX4 (First 40m) (Luminaires & components)	\$156,728.00
Option 2B-1: Concealed pathway + Continuous wall grazing (320m) (Luminaires & components)	\$748,211.00
Option 2B-2: Concealed pathway + Continuous wall grazing (First 40m) (Luminaires & components)	\$273,904.00

Additional Options	Price*
ActiveSite with Essential One Services (1 year subscription)	\$14,838.00
Graze Accessories (subject to requirements) (further info)	-

Notes

*All pricing is in Australian Dollar (AUD) and excludes GST.

Sydney Trains HighLine



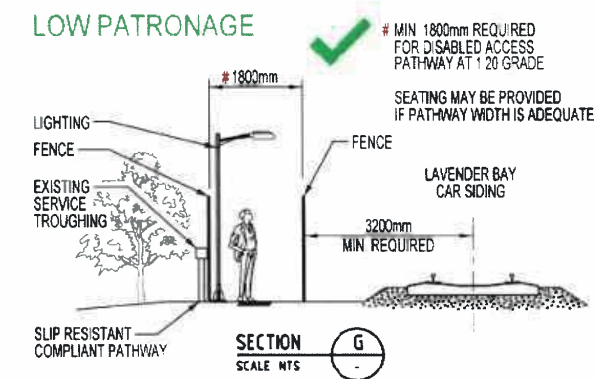
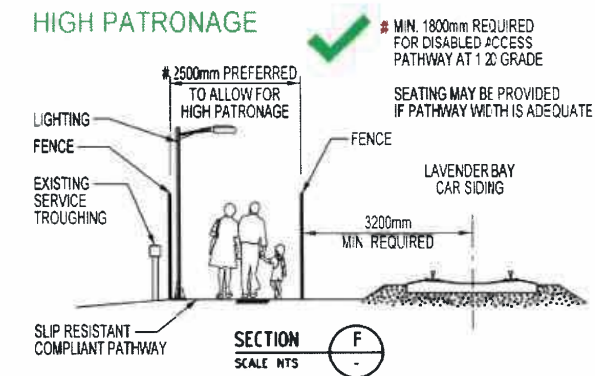
Commercial in Confidence

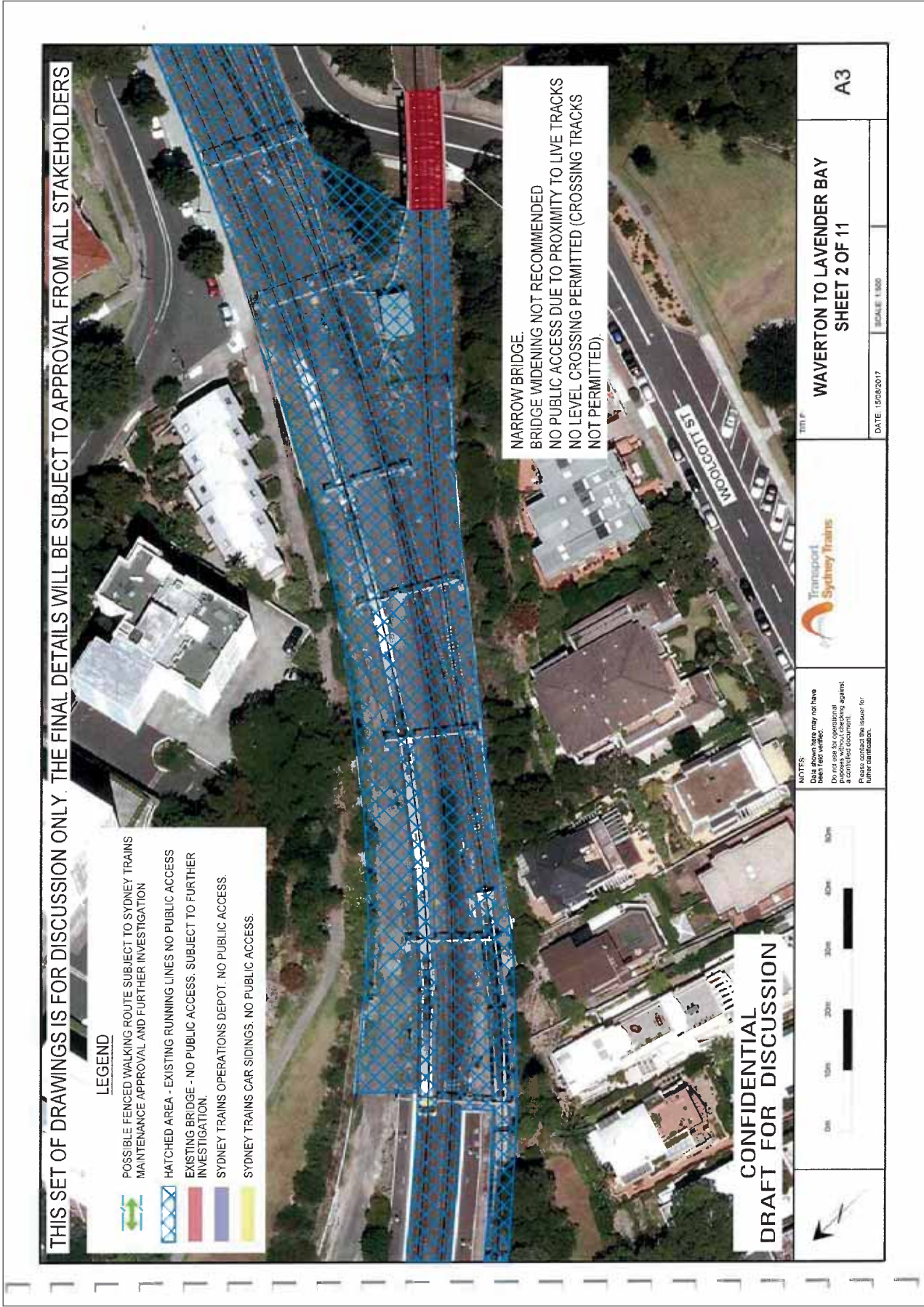
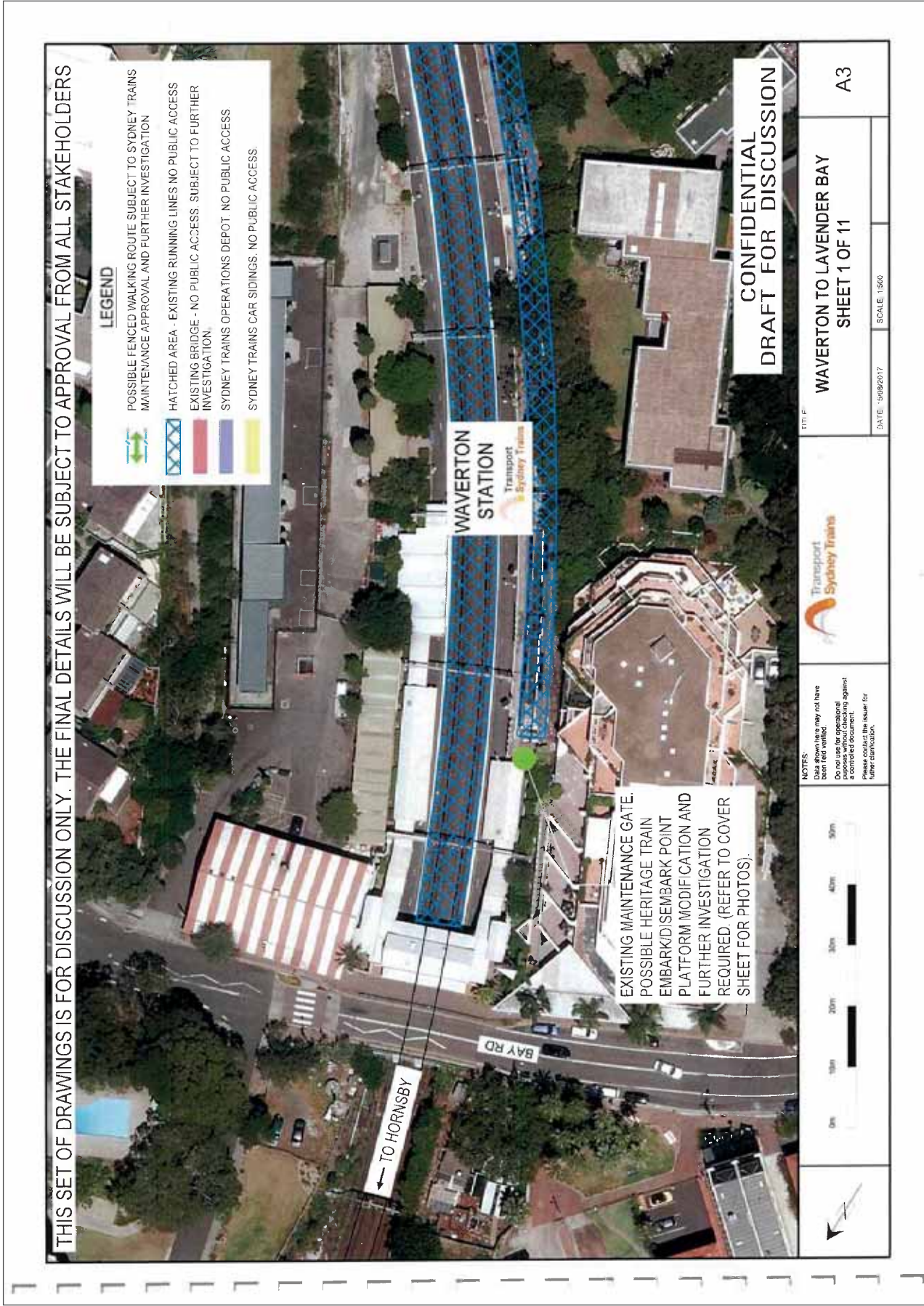
REPORT from SYDNEY TRAINS

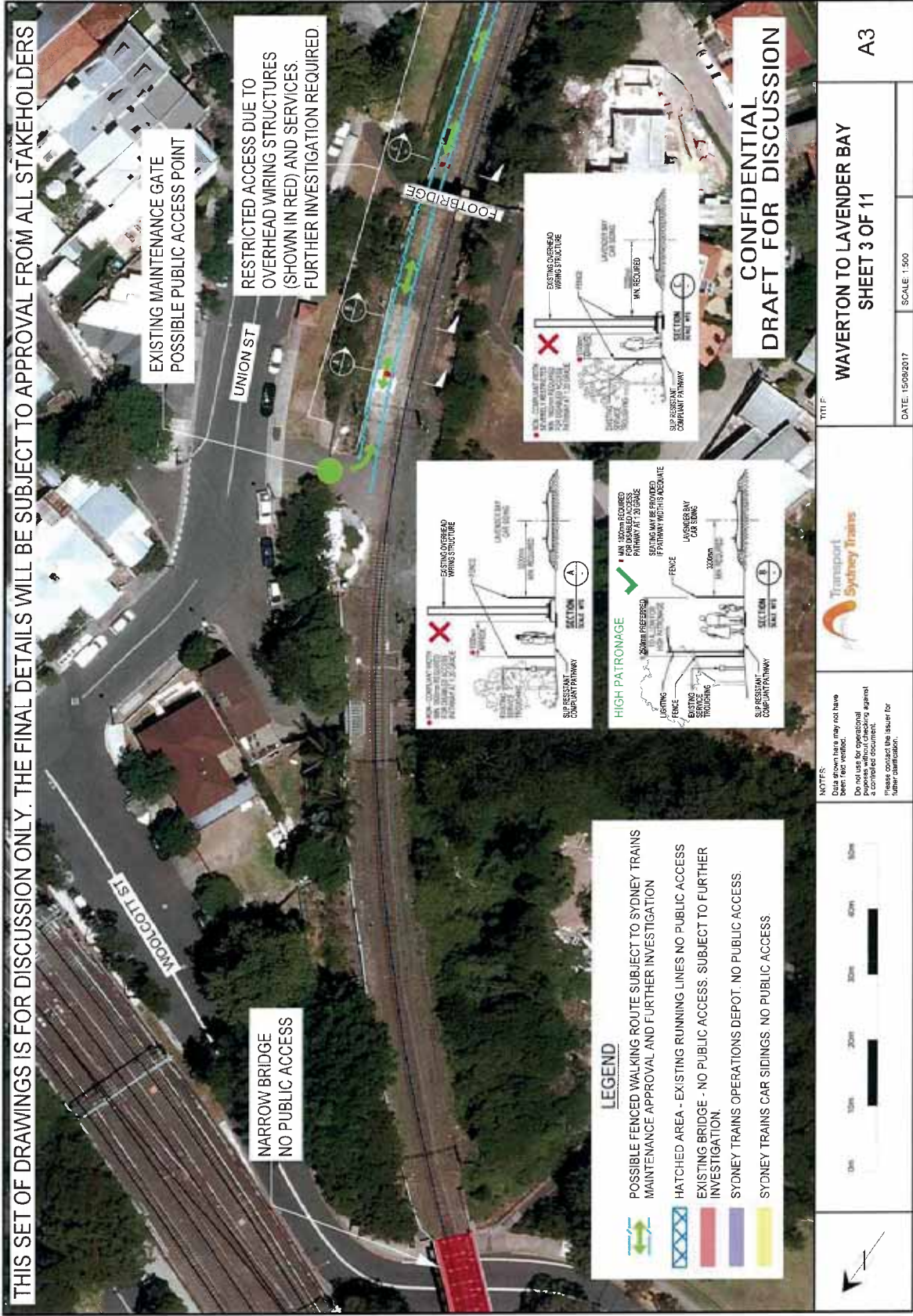
Basically we have two compliant footpath widths

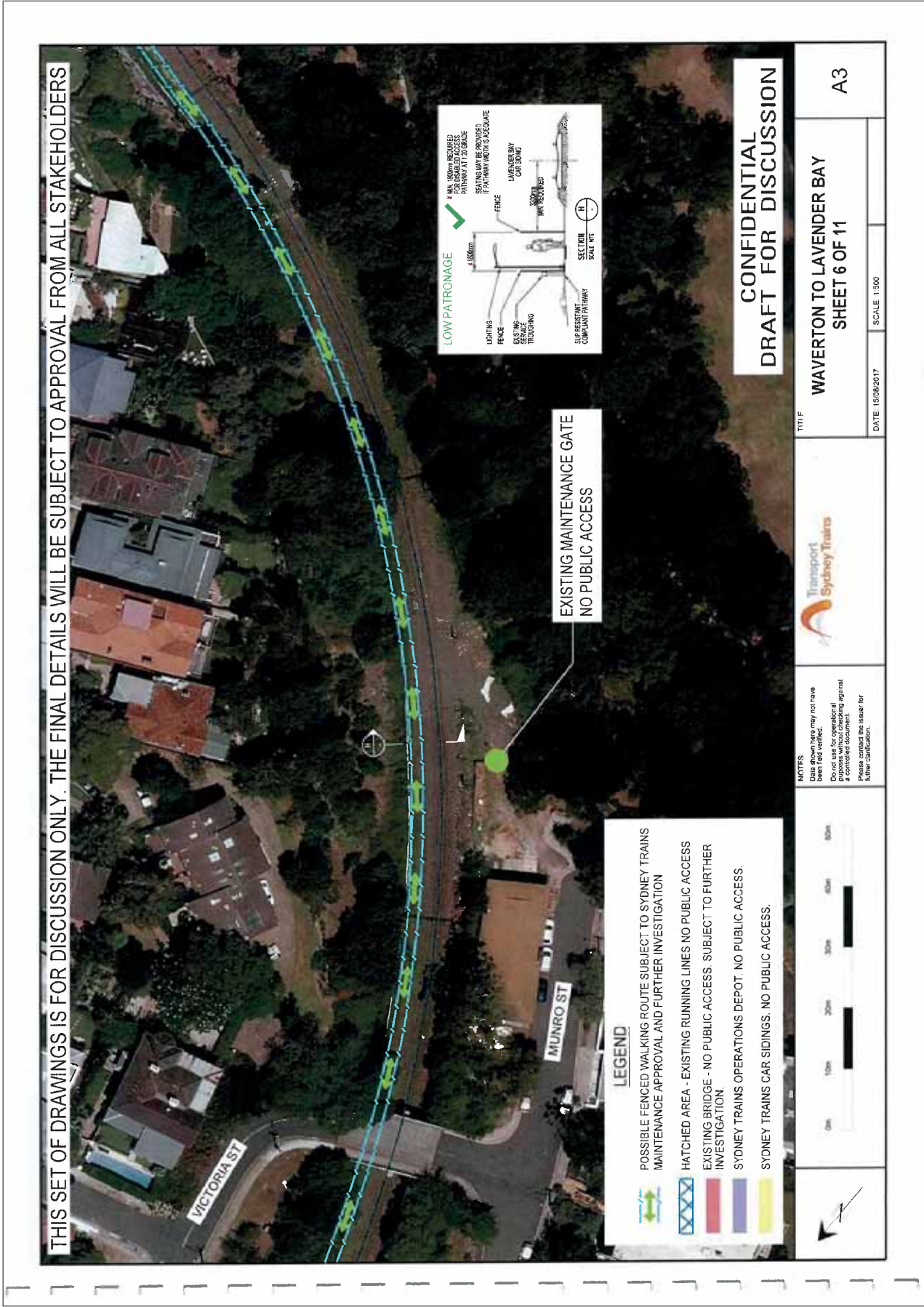
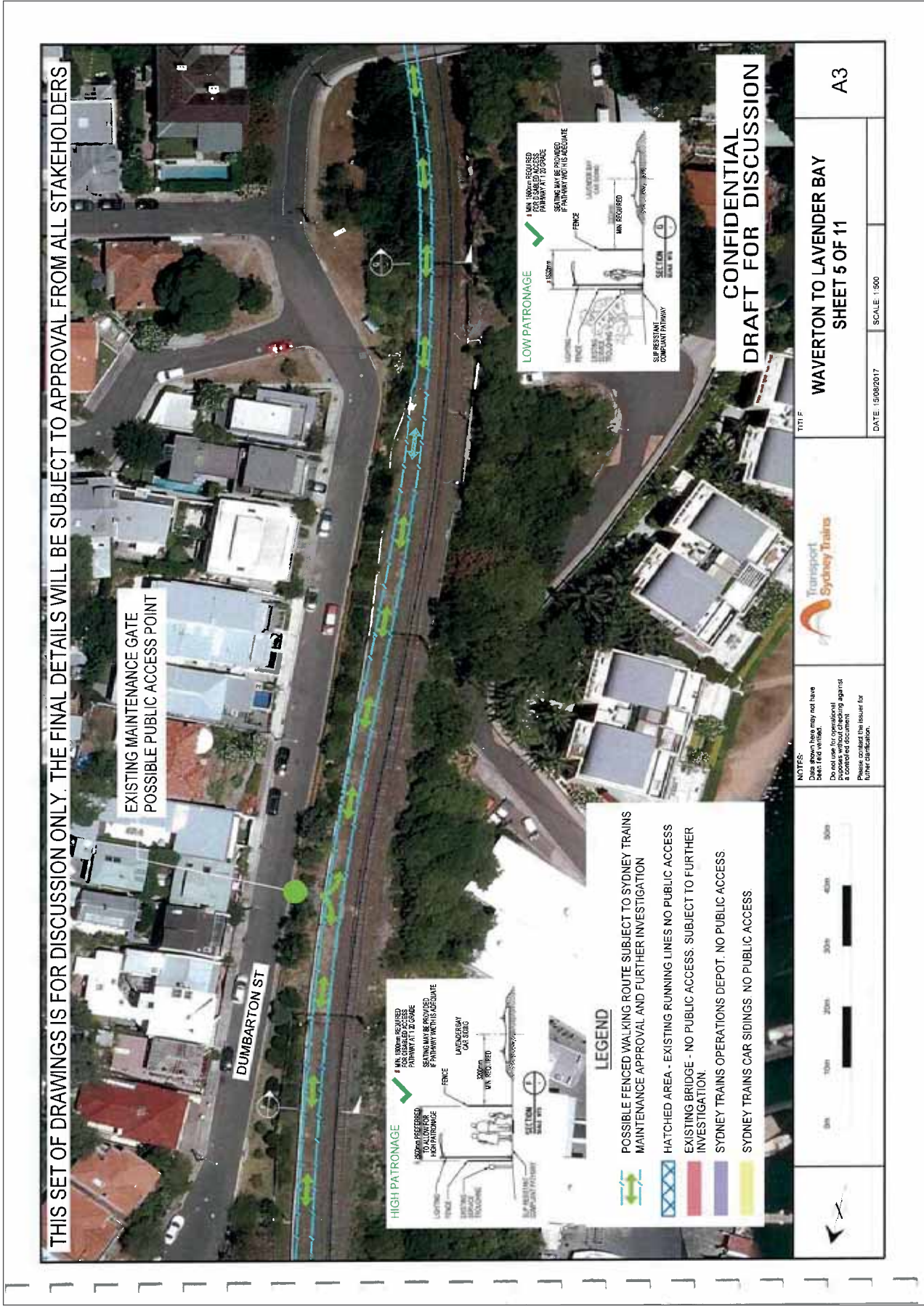
1. High Patronage usage – Minimum 2500mm clearance to allow for Disabled Access
2. Low Patronage usage – Minimum 1800mm clearance to allow for Disabled Access

Any footpath widths less than 1800mm is NON Compliant.









THIS SET OF DRAWINGS IS FOR DISCUSSION ONLY. THE FINAL DETAILS WILL BE SUBJECT TO APPROVAL FROM ALL STAKEHOLDERS



- LEGEND**
- POSSIBLE FENCED WALKING ROUTE SUBJECT TO SYDNEY TRAINS MAINTENANCE APPROVAL AND FURTHER INVESTIGATION
 - HATCHED AREA - EXISTING RUNNING LINES NO PUBLIC ACCESS
 - EXISTING BRIDGE - NO PUBLIC ACCESS. SUBJECT TO FURTHER INVESTIGATION
 - SYDNEY TRAINS OPERATIONS DEPOT. NO PUBLIC ACCESS.
 - SYDNEY TRAINS CAR SIDINGS. NO PUBLIC ACCESS.

**CONFIDENTIAL
DRAFT FOR DISCUSSION**

WAVERTON TO LAVENDER BAY
SHEET 7 OF 11

A3

DATE: 15/09/2017 SCALE: 1:500

NOTES:
Data shown here may not have been field verified.
Do not use for operational purposes without consulting against a controlled document.
Please contact the issuer for further clarification.



THIS SET OF DRAWINGS IS FOR DISCUSSION ONLY. THE FINAL DETAILS WILL BE SUBJECT TO APPROVAL FROM ALL STAKEHOLDERS



- LEGEND**
- POSSIBLE FENCED WALKING ROUTE SUBJECT TO SYDNEY TRAINS MAINTENANCE APPROVAL AND FURTHER INVESTIGATION
 - HATCHED AREA - EXISTING RUNNING LINES NO PUBLIC ACCESS
 - EXISTING BRIDGE - NO PUBLIC ACCESS. SUBJECT TO FURTHER INVESTIGATION
 - SYDNEY TRAINS OPERATIONS DEPOT. NO PUBLIC ACCESS.
 - SYDNEY TRAINS CAR SIDINGS. NO PUBLIC ACCESS.

**CONFIDENTIAL
DRAFT FOR DISCUSSION**

WAVERTON TO LAVENDER BAY
SHEET 8 OF 11

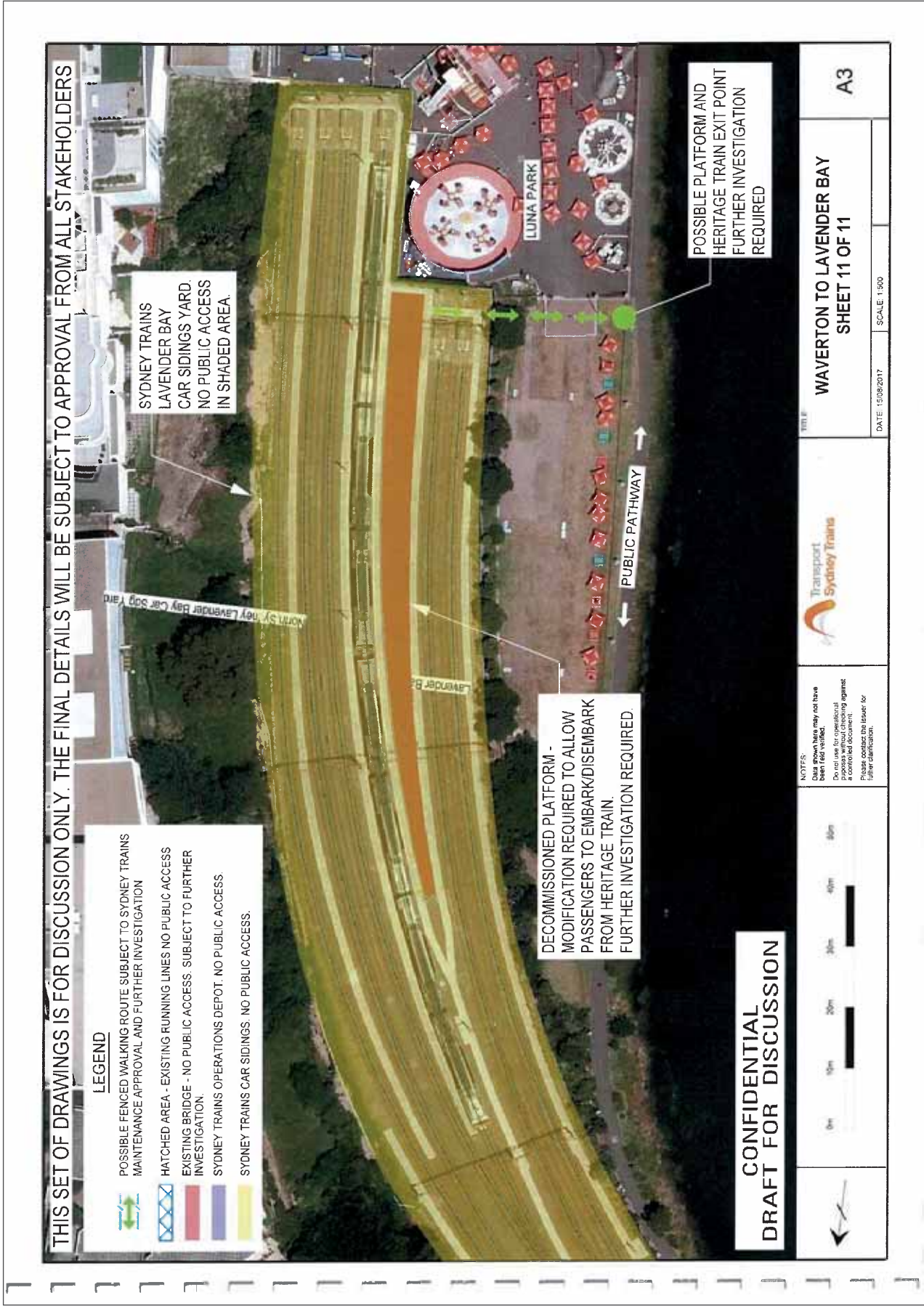
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DATE: 15/09/2017 SCALE: 1:500

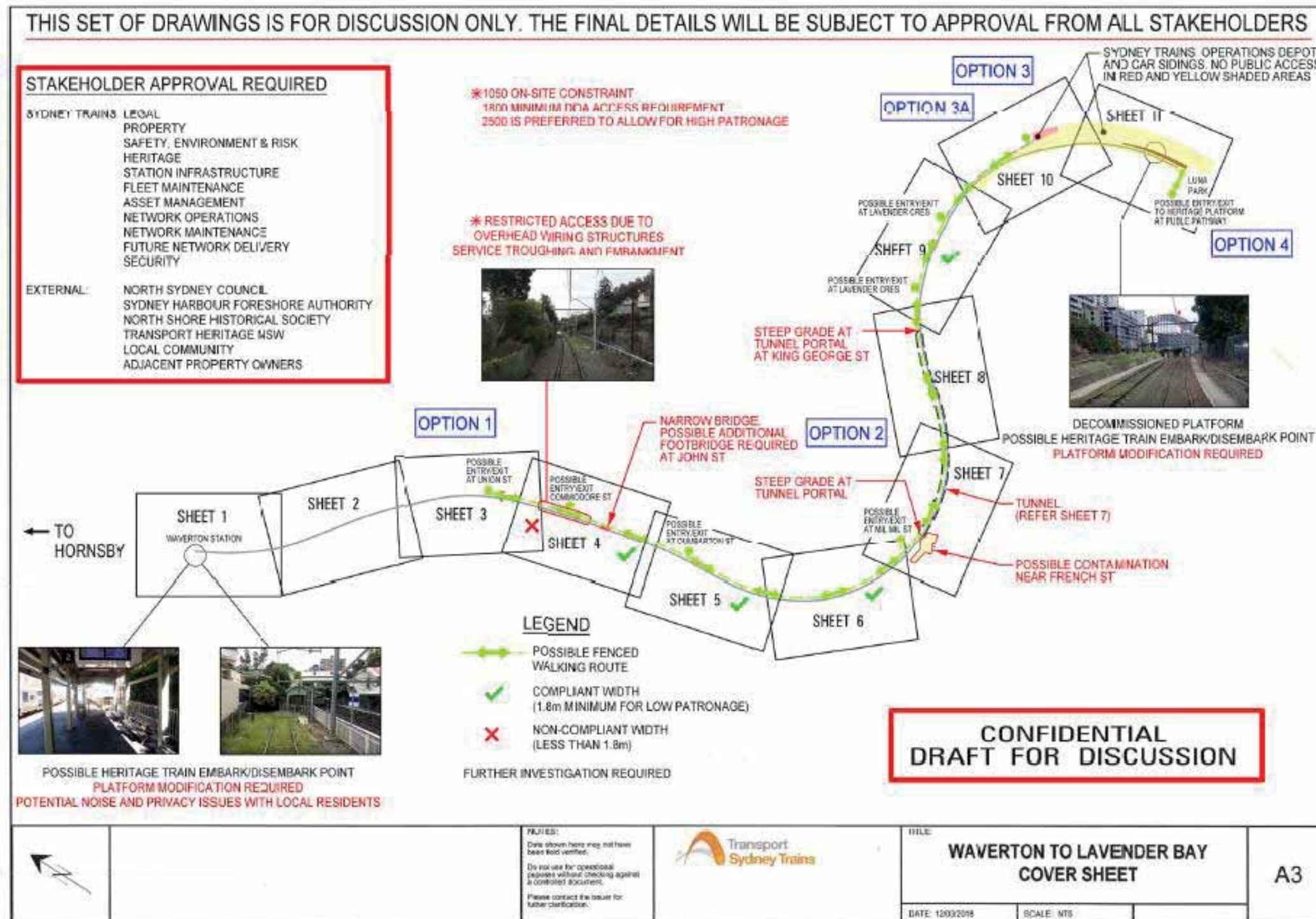
NOTES:
Data shown here may not have been field verified.
Do not use for operational purposes without consulting against a controlled document.
Please contact the issuer for further clarification.









Original Costing Proposal



Assumptions

1	Estimate based on minimum clearances only shown as per Sydney Trains drawing
2	Estimate based on field notes no concept design or design confirmed by discipline design
3	OHWS and OHW allowances are provisional only.
4	Rates and Prices based on the following sources (no detailed, first principal estimate has been carried out) : (1) Sydney Trains Qualified Unit Rate Information 2017/18 (ST QUR 2017/18) (2) Clyde Pathway widening project 2017 (3) AE Edwards Schedule of Rates Information Clyde Hub 2017 (4) Sydney Trains MSA rates for Fencing Contractors (5) Consultant costs in Annexures to Sydney Highline Association Report to Lavender Bay Rail Line Committee - March 2018
5	Assume no suitable access at Commodore St, Mil Mil St, Lavender Cres (at NS298CS location)
6	No DDA allowance for any active systems i.e. lifts
7	Assumes DDA access to and from Wendy's Secret Garden (WSG) will be By Others
8	Assumes DDA access to and from Luna Park of Lavender Bay foreshore will be By Others
9	Estimate allows for a provisional amount of landscaping at nominated areas however does not include landscaping furniture, planter boxes, fencing and paving concepts etc. S&I costs based on information provided by as per Sydney Highline Association Report to Lavender Bay Rail Line Committee - March 2018
10	Provisional amount has been allowed for Fire, Life and Safety provisions for Tunnel only. Passive and active systems to be determined after independent report has been complied
11	Assumes width from current drivers walkway at Lavender Bay Cres to Drivers sheds is adequate to allow vehicular access to enable maintenance to Sydney Trains rail infrastructures and services
12	No allowance for run-off water treatment to existing stormwater culverts and drainage systems
13	Assume grade from Union St Waverton to Lavender Bay is suitable for DDA 1:20 - no allowance for transition ramps
14	No allowance for intercom or help points or other systems along path route
15	Dollars expressed in 2018 and one year construction
16	Allowance for landscaping to identified areas is a basic provision only in detailed areas

Cost estimate prepared by Sydney Trains . *This information was provided on a Commercial in Confidence basis. Hence the costings have been excluded for reasons of probity.*

Highline Study / Concept Estimate Contingency Class 4 - DRAFT				
Date: June 2018 - Rev 4				
Summary		Option 1 Enhanced Urban Fencing	Option 2 Palisade	Option 3 Close Spaced Weld Mesh
DIRECT COSTS				
Tunnel Clean				
Earthworks				
Drainage				
Johns Street Pedestrian Bridge				
Retaining Walls				
Access Roads Repairs and Rework				
Access Platforms & Safe Place				
Concrete Path				
Fence & Gates				
Heritage Platform Works				
Track				
Signals				
Metronet/DTRS				
OHWS & OHW				
Electrical				
Fire Systems				
Landscaping (Allowances to select areas only)				
DIRECT COSTS				
INDIRECTS				
Contractor Prelims, OH & Profit				
CONSTRUCTION COSTS				
Client Costs				
PROJECT ESTIMATE		P50		
Escalation				
Contingency / Project Range				
Contingency Class 4 Study or Feasibility -20 + 30%		Low Most Likely Upper		
		TOC P90		

Tunnel Clean



Tunnel exit to Lavender Bay. Assume GST to be relocated new fence installed. Tunnel lining and safe places (right hand side) to be cleaned of soot, mould and vegetation (no allowance for any tunnel waterproofing or coatings or drip shields).

Assume train radio cables to remain (left hand side up high). Assume new tunnel signal repeater NS 298 CS required on right hand side of tunnel due to new fence obstructing full sighting of associated signal NS 298 CS.



Tunnel entrance Waverton side. Assume GST to be relocated to new fence line or preferably on other side of tunnel wall. Assume tunnel floor is sound for subgrade and path

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Earth Works



Cut and groom required to allow for adequate width for path and lighting. Assume rock bolt allowance to stabilise rock cutting.



View to Lavender Bay - Cut and groom works required to allow path and lighting. GST to be relocated behind new fence (adjacent to structure).

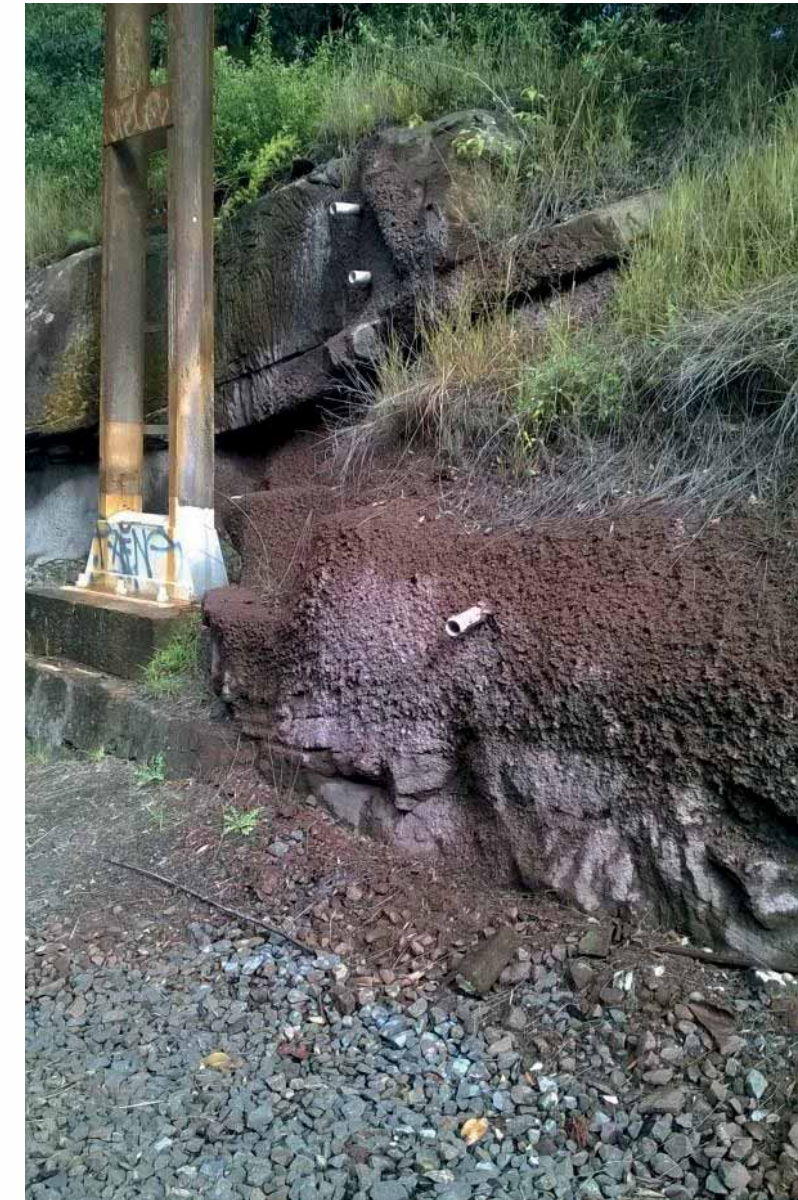
Drainage Works Required



Existing surface water at Victoria St OB. Assume path subgrade to be built up to facilitate drainage to new track drainage. GST relocation.



Munro St. Standing water and erosion. GST to be moved behind proposed fence. Vegetation to be cleared new erosion protection and boundary fence required (adjacent property owners) Path on built up subgrade to facilitate run off to new track drainage.



Embankment stabilisation with weep holes – allow for dish drain at back of path facilitate seepage water away from path.

John Street Bridge



View of abutment area of Waverton side pedestrian walkway. Retaining wall structure required (Wing wall) to enable path and lighting.



Existing abutment wing wall repair and strengthening required.



Wing wall to a transition retaining wall (approx. 30 mtrs) structure required to allow adequate path and lighting.

Retaining Walls



Cut and groom required to allow for adequate width for path and lighting. Assume rock bolt allowance to stabilise rock cutting.



Another view of required retaining wall structure within existing property (showing embankment widening) to allow for path and lighting.

Path, Fence and Gates

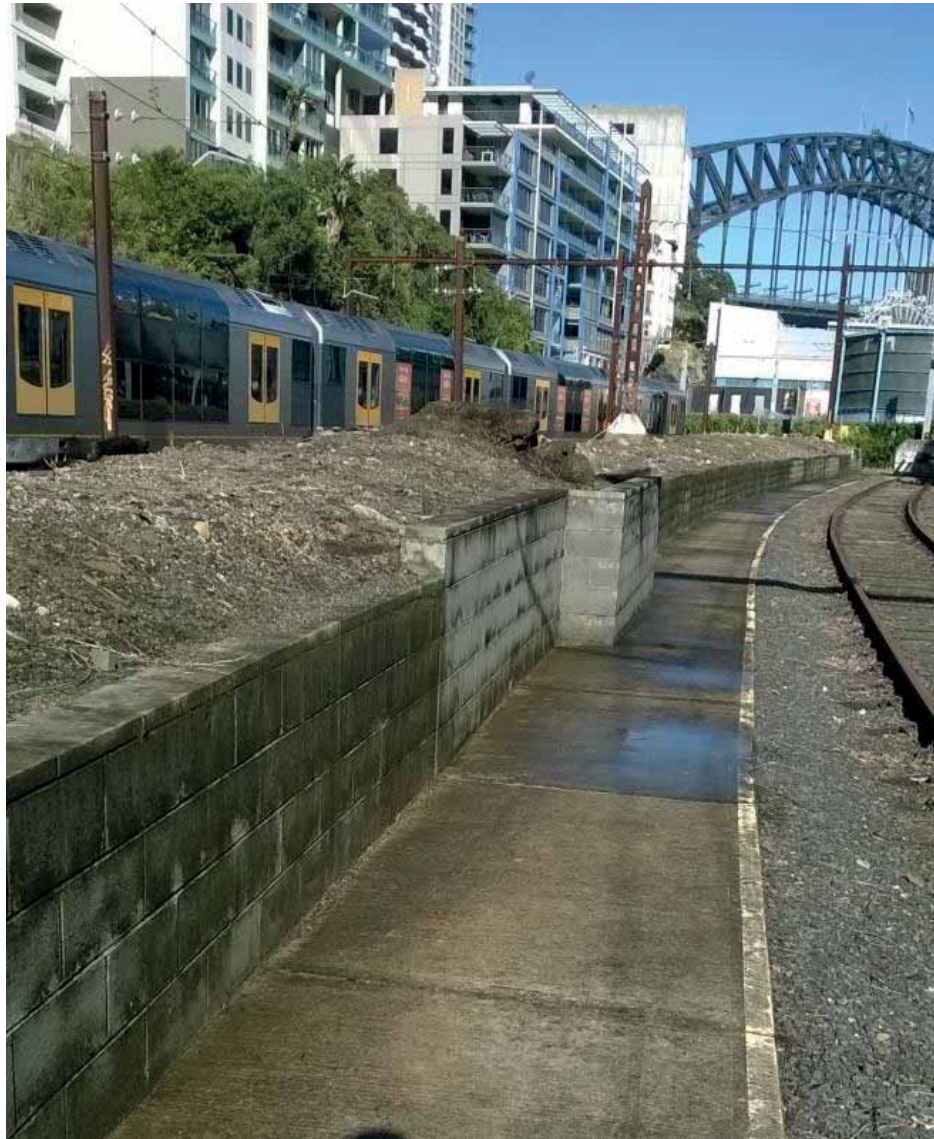


Path example used for pricing - Clyde Station to Sydney Train Clyde Depot construction 2017. Approx 2.4 mtrs wide including electrical pit and pipe for associated lighting. Surface drainage to track via path cross fall (assume Highline path same).



Sample path

Heritage Platform



View of heritage platform . Assume existing block wall is structurally sound and will be heightened to bring platform to required height for platform slab soffit. Assume existing fill is non-contaminated and will be spread to provide platform underslab stability.



Assume 150 th RC or Precast slab. Assume as special events (daytime) platform - cross falls to platform edge (i.e no insitu drainage). Assume existing OHWS remain, no allowance for awing structures, lighting, seating, SPI, DVA audio loop cctv etc.

Track, Signals, Systems



Signal NS 298 CS to be moved to new location due to path alignment conflict however creates a signal sighting issue, rock bolting and repeater signal required.



DTRS cabinets and battery bank to be moved due to path alignment conflict.

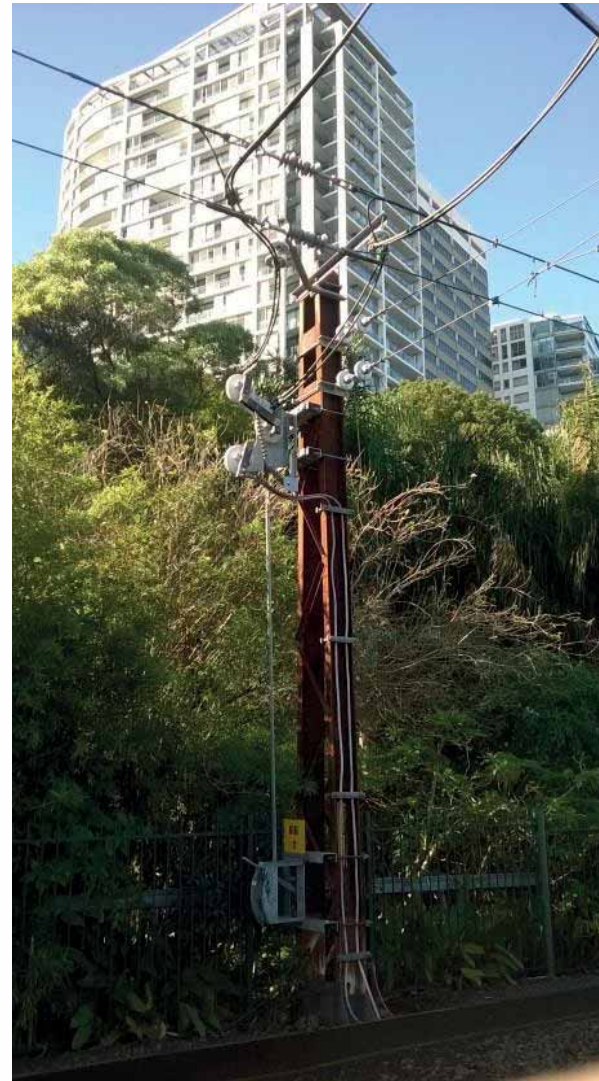


Signal cabinet NS 298 CS to be moved to new location due to path alignment conflict.

Overhead Wire, Structures and Switching



Another view showing OHW running under existing drivers walkway (new path alignment) assume insulators and or OHWS and OHW rebuild required to siding(s).



Switching structure to be relocated behind new fence line . New portal structure required. Note potential OHWS and OHW redesign works required to facilitate OHW to sidings.



Proposed exit point for walkway . Assume guy footing shown changed to free standing anchor mast (FSAM) to allow path access to WSG exit.

Electrical and Lighting



Lighting example used for pricing (unless specified otherwise) - Shows (proposed) lighting and lighting spacing (approx 25 mtrs).



Lighting example



Close up of proposed lighting conduit pit in path and pit lid detail.

