Exhibited

This planning application is open for public comment until 06 July 2026

Reference no	**PLN-26-0097**
Site	**HIGH STREET (BETWEEN 114 HIGH ST AND RED BRIDGE) WITH MINOR WORKS IN KING ST, QUEEN ST & ESPLANADE CAMPBELL TOWN**
Proposed Development	**Campbell Town Streetscape/Roadworks Project Stage 2 (Heritage Precinct)**
Zone	**Utilities**
Use class	**General Business, Utilities, General Residential**

Written representations may be made during this time to the General Manager;
mailed to PO Box 156, Longford, Tasmania 7301,
delivered to Council offices or
a pdf letter emailed to planning@nmc.tas.gov.au

(no special form required)

Exhibited

NORTHERN MIDLANDS COUNCIL

PLANNING APPLICATION

FOR BUILDINGS, WORKS AND CHANGE OF USE

(E.g. Residential houses, sheds, carports, retaining walls, visitor accommodation, commercial development, signage etc.)

Office Use Only:

The Proposal

Description of proposal:

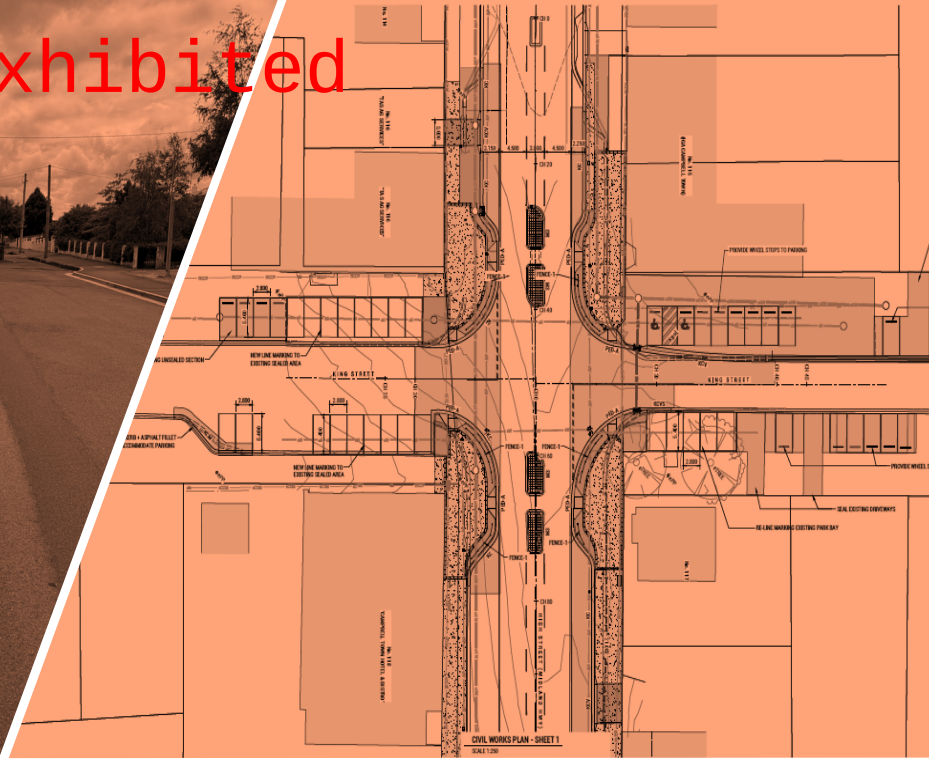
Campbell Town High Street Streetscape- Stage 2 - King Street to Esplanade.
Consisting of Kerb realignment, pedestrian barriers, street furniture, garden beds, signage, pavement ,replacement kerbs, pedestrian nodes and carriageway pavement

Driveway construction material:	NA

The Land

Site address:	High Street Campbell Town
Title reference:	C/T: NA
Existing buildings on site:	Road infrastructure and associated items
Existing use of site:	NA

Applicant justification of any variation/discretion to the *Tasmanian Planning Scheme – Northern Midlands*



PROPOSED STREETSCAPE IMPROVEMENTS
MIDLAND HIGHWAY, CAMPBELL TOWN

TRAFFIC ENGINEERING ASSESSMENT

SALT³

PROPOSED STREETSCAPE IMPROVEMENTS MIDLAND HIGHWAY, CAMPBELL TOWN
Client: Northern Midlands Council
Report Reference: 25696REP001
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Tuesday, March 10, 2026

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1 INTRODUCTION

SALT has been engaged by Northern Midlands Council to prepare the following Traffic Engineering Assessment for proposed streetscape works at the intersection of Midland Highway and King Street, and along Midland Highway (between King Street and Red Bridge) in Campbell Town.

The proposal will form the continuation of partially completed streetscape works along Midland Highway to the north of King Street, and will include:

- Construction of widened footpaths, verge areas and kerb outstands;
- Construction of traffic islands with pedestrian refuges;
- Realigning pram ramps to better direct pedestrians and reduce crossing distances.
- Sealing and re-line-marking existing parking spaces;
- Minor kerb and pavement works to provide additional 90-degree parking spaces along King Street.

In the course of preparing this report SALT has inspected the site and its surrounding environs (15.01.2026), commissioned turning movement at the intersection of Midland Highway and King Street (13.02.206) and undertaken intersection analysis using SIDRA10 software.

Our analysis indicates that the removal of excessive / redundant pavement from Midland Highway to provide improved landscaping and pedestrian accessibility will better serve Campbell Town as a township, whilst the modifications to the Midland Highway and King Street intersection will not detrimentally impact the arterial role of Midland Highway through the study area.

A copy of the develpoment plans prepared by rare consulting is attached at APPENDIX 1.

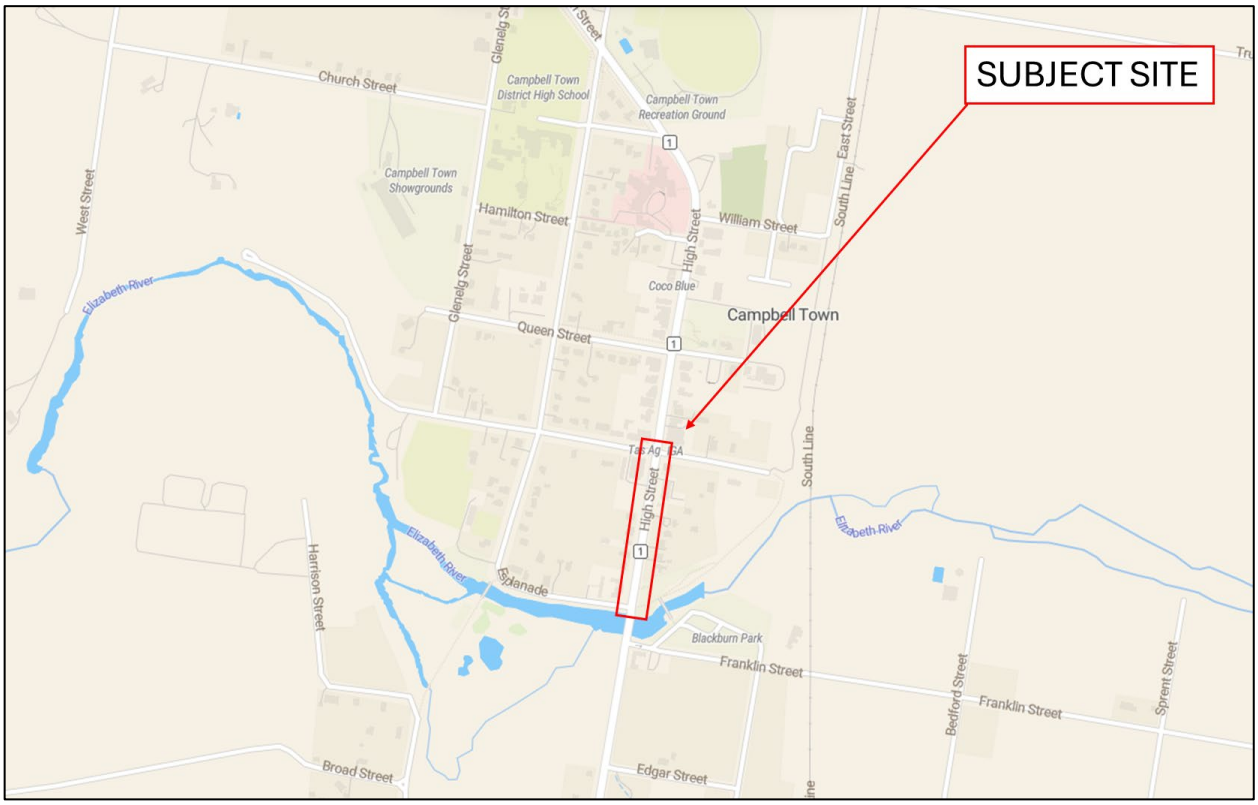
2 EXISTING CONDITIONS

2.1 STUDY AREA

The study area comprises the length of Midland Highway between King Street and Esplanade in Campbell Town, inclusive of the intersections with both streets at the northern and southern ends respectively.

Figure 1 shows the location of the site and surrounding road network.

Figure 1 Site Locality Plan



The northern end of the study area is fronted by commercial develpoment on both sides and forms the southern extent of the town centre.

The remainder of the study area is largely fronted by residential development with occasional commercial land uses.

2.2 ROAD NETWORK

2.2.1 MIDLAND HIGHWAY

Midland Highway (Highway 1) is a state road under the jurisdiction of the Department of State Growth (DSG).

It is the primary north-south highway through Tasmania, extending from Burnie at its northern end to Hobart at its southern end,, and provides both an arterial and 'High Street' function as it passes through Campbell Town.

Within the study area, Midland Highway has a reservation width of 30 metres which typically accommodates a single two-way carriageway of around 23 metres width.

This carriageway width is exceptionally wide and generally provides only a wide central travel lane and a wide kerbside parallel parking lane.

Tree beds are placed at regular longitudinal intervals approximately 2 metres from the face of kerb on both sides of the carriageway, effectively defining the unmarked edge of the travel lane.

This results in:

- A travel lane of around 6 metres width, which realistically could accommodate 2 travel lanes; and
- A parallel parking lane of almost 5.4 metres width, which would be wide enough to accommodate 90-degree parking.

Both verges accommodate bitumen footpaths that extend from the back of kerb to the edge of the reservation / property boundaries.

The eastern footpath has a width of around 3 metres and the western footpath has a width of around 4 metres.

The western footpath includes the 'Convict Brick Trail', which is a decorative length of red bricks dedicated to Tasmania's convict history.

Vehicle crossovers are regularly provided on both sides of the reservation, with several steeper crossovers on the western side requiring culverts in the kerbline to extend into the parking lane.

The following photographs show the typical layout of Midland Highway within the study area.

Figure 2 Midland Highway, looking south from King Street

Figure 3 Midland Highway, looking north from Red Bridge

To the north of the study area, Midland Highway provides a ghosted median and comprises a central travel lane and kerbside parking lane on both sides of the carriageway.

To the south of the study area, Midland Highway reduces to provide a single travel lane over the Red Bridge.

Figure 4 Midland Highway, looking north from Study Area

Figure 5 Midland Highway, looking south from Study Area

2.2.2 KING STREET

King Street is a local access street under the jurisdiction of Northern Midlands Council which extends in an east-west alignment through the north of the study area.

- To the east of Midland Highway, King Street has a reservation of approximately 30 metres width which accommodates a single two way carriageway of around 7.3 metres.

  Indented 90-degree car parking is provided between crossovers on both sides of the carriageway. Fully mountable kerb is provided between the carriageway and parking spaces, and a small barrier kerb is provided at the front of the spaces.

  A bitumen footpath is provided on the northern side of the reservation along the frontage of a supermarket on the northeastern corner of the intersection with Midland Highway.

  No footpath is provided on the southern side of the reservation.

  King Street terminates at a cul-de-sac approximately 200 metres east of Midland Highway.

Figure 6 King Street Eastern Leg, looking towards Midland Highway

- To the west of Midland Highway, King Street has a reservation of approximately 30 metres width which accommodates a single two way carriageway of around 15 metres width.

  The carriageway initially provides a single travel lane in each direction and indented 90-degee car parking on its southern side, before reverting back to a width of 10 metres to the west of the indentation and permitting parallel kerbside parking along its southern side.

  Indented 90-degree car parking between a fully mountable kerb and small barrier kerb is provided on the northern side.

  A bitumen footpath is provided on the northern side of the reservation from Midland Highway to the western edge of an agricultural business.

  A bitumen footpath is provided on the southern side of the reservation from Midland Highway to the western edge of a hotel, beyond which a concrete footpath has recently been constructed.

  King Street west of Midland Highway intersects two local streets (Bridge Street and Glenelg Street) then terminates near Elizabeth River approximately 700 metres west of the Highway.

Figure 7 King Street Western Leg, looking towards Midland Highway

2.2.3 ESPLANADE

Esplanade is a local street under the jurisdiction of Northern Midlands Council that extends westward from Midland Highway along the northern side of Elizabeth River, just north of the Red Bridge.

Esplanade is a one-way (westbound) street that provides a sealed carriageway of around 5 metres width.

A concrete footpath and a few 90-degree parking spaces are provided at grade on the northern side of the reservation along the frontage of a historic Coaching Inn, beyond which a grassed verge is provided.

A grassed verge is provided on the southern side of the reservation to the western edge of the Red Bridge wall, beyond which a walking trail is provided.

Figure 8 Esplanade, as viewed from Midland Highway

2.3 INTERSECTIONS

2.3.1 MIDLAND HIGHWAY / KING STREET

King Street intersects Midland Highway as the minor east-west aligned legs of a four-way 'Give-Way' controlled cross intersection.

Each King Street leg approaches a single approach and departure lane.

Midland Highway through the intersection provides a 23 metre wide carriageway. No turn lanes are provided into King Street, however the exceptionally wide carriageway allows through vehicles to pass vehicles propped to turn right into the King Street legs.

All four corners provide pram ramps that direct pedestrians into the centre of the intersection rather than across the four intersection legs.

On the northern leg, a length of kerb is missing on the western side of the carriageway along the frontage of a retail business and a wide pram ramp is provided on the eastern side in front of a supermarket.

Both elements can assist in facilitating pedestrian movement across the highway, however can be blocked by vehicles permitted to park along either kerbside. A splitter island in the centre of Midland Highway further obstructs pedestrian movement.

On the southern leg, a similar wide pram ramp is provided on the western side of the highway and no pram ramp is provided on the eastern side.

Figure 9 Pram ramps directing pedestrians into intersection (L) & Missing kerb on western side northern leg (R)

Figure 10 Pedestrians staging atop northern leg island (L) & vehicle blocking wide ramp on southern leg (R)

2.3.2 MIDLAND HIGHWAY / ESPLANADE

Esplanade intersects the western side of Midland Highway just north of the Red Bridge. Esplanade accommodates one-way (westbound) movements and provides a single departure lane only.

The Midland Highway carriageway over Red Bridge provides a single lane in each direction, then widens as it passes through the intersection to its typical cross section through the study area.

Pram ramps are provided on both sides of Midland Highway to the north of the intersection, where pedestrians can cross its 23 metre wide carriageway.

Figure 11 Pram ramps on northern side of Esplanade Intersection

2.4 PREVIOUS WORKS NORTH OF STUDY AREA

Streetscape works have been partially completed and are still under construction to the north of the site between Queen Street and William Street.

These works have included:

- Removing the angle parking from the eastern side of Midland Highway along the Valentine Park frontage to allow for a widened verge with improved landscaping and the establishment of a parallel kerbside parking lane;
- Drainage works along the western side of Midland Highway between the travel and parallel parking lane;
- Various works at the intersection of Midland Highway / Queen Street / Commonwealth Lane, including:
  - The establishment of kerb outstands on all four corners to provide better pram ramps, new street furniture and landscaping;
  - The construction of a raised splitter islands on both Midland Highway legs, each of which will provide 'cut throughs' to accommodate east-west pedestrian movements;
  - The construction of a raised pedestrian (wombat) crossing on the eastern Commonwealth Lane leg (yet to commence);
- The construction of compliant DDA Accessible spaces along Queen Street;
- Parking bay reorientation and line-marking along Queen Street (partially completed).

These works have primarily been undertaken to provide an improved, safer and more connected pedestrian network through the area.

Photographs showing these various works are provided below.

Figure 12 Improved Pram Ramps at Queen St (L) & Midland Highway at Proposed Median Cut Through (R)

Figure 13 Midland Hwy, looking north to widened verge (L) & Queen St DDA spaces and Street Furniture (R)

2.5 EXISTING TRAFFIC CONDITIONS

2.5.1 MIDLAND HIGHWAY TRAFFIC VOLUMES

SALT has sourced typical two-way traffic volumes for Midland Highway in the vicinity of the site from the Department of State Growth Traffic Data website.

The website indicates there is a permanent 'Weight in Motion' station on Midland Highway between Esk Highway and Lake Leak Road, approximately 6.5 kilometres north of the study area.

Short term traffic count stations were also installed along Midland Highway towards the northern (160m south of Pedder St) and southern (370m south of Torlesse St) extents of Campbell Town in November, 2025.

The location of the traffic count stations are shown at Figure 2 below.

Figure 14 DSG Traffic Count Station Locations

The two-way traffic volume data from each of the stations is presented at below.

Table 1 DSG Traffic Count Data

Location	Date	Average Weekday Total Traffic			%HV
		N'bound	S'bound	Total	
Northern Counter (160m south of Pedder St)	November 2025	3,292	3,641	6,933	24.7%
Southern Counter (370m south of Torlesse St)	November 2025	2,970	3,001	6,095	23.4%
Permanent Counter 6.5 kilometres north of study area)	2025 (Yearly)	3,687	3,600	7,287	21.5%

The short-term traffic counters to the north and south of the study area suggests Midland Highway within Campbell Town carries a daily traffic volume of around 6,000 to 7,000 vehicles per day, which is split roughly evenly in both directions and comprises a little over 20% Heavy Vehicles.

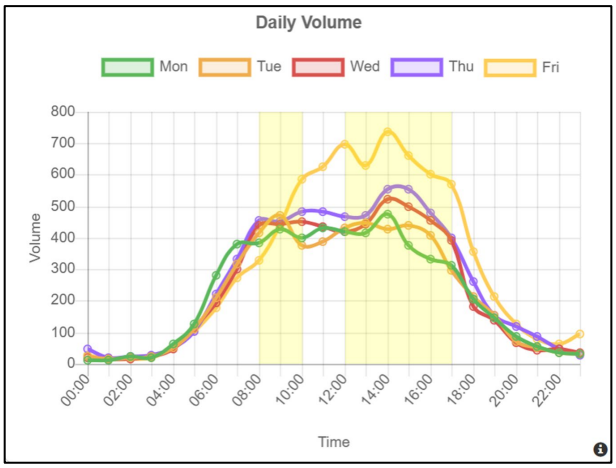
2.5.2 MIDLAND HIGHWAY / KING STREET TURNING VOLUMES

SALT engaged Matrix Traffic &Transport Data to undertake peak hour turning movement counts at the intersection of Midland Highway with King Street on Friday 13th February, 2026 between the following times:

- 8:00am & 10:00am; and
- 12:00pm & 5:00pm

This date was chosen as it did not coincide with any school or public holiday periods or Industry RDOs.

The day of week (Friday) was chosen after reviewing the daily volume traffic data for the southern short-term counting station (right) which suggested Friday generated higher traffic volumes than all other weekdays.



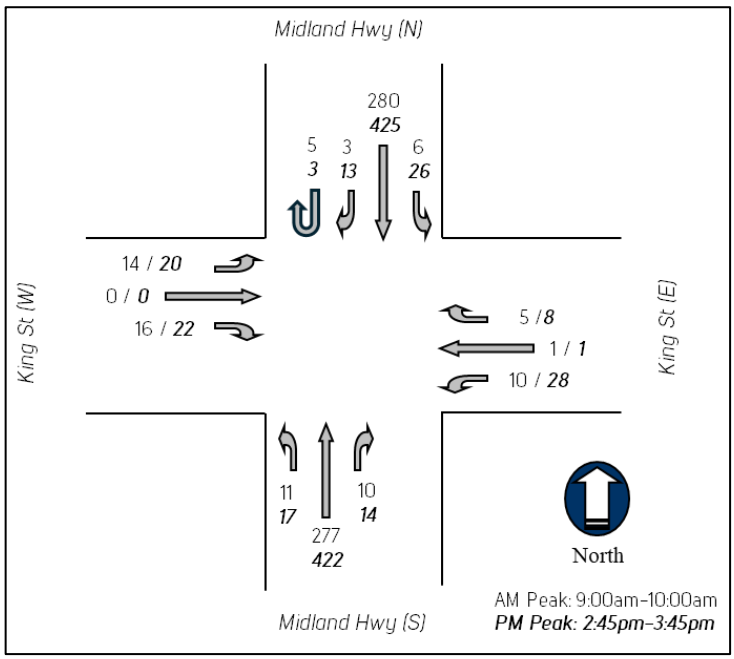
The times of day (shown highlighted, right) were chosen to capture the typical weekday morning peak period, as well as the higher of the two afternoon peaks that may occur during a Friday.

The surveys recorded the peak 1-hour periods of traffic activity at the following times:

- 9:00am – 10:00am; and
- 2:45pm – 3:45pm.

These volumes are presented at Figure 13, below.

Figure 15 Surveyed Traffic Volumes – Midland Highway / King Street



Based on the above, King Street west of Midland Highway carries 45 vehicle movements during the AM peak period and 73 vehicle movements during the PM peak period.

East of Midland Highway, King Street carries 32 vehicle movements during the AM peak period and 77 movements during the PM peak period.

2.5.3 EXISTING INTERSECTION OPERATION

SALT has reviewed the operation of the current intersection layout under the existing turning volumes at Figure 13 using SIDRA10 Intersection software.

This computer package measures the performance of an intersection using a range of parameters, as described below:

Degree of Saturation (D.O.S.) is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement.

Where an intersection is oversaturated, this indicates that not all traffic can pass through the control mechanism. Under such conditions, the degree of saturation would be greater than 1.0 (100%).

Austroads *"Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (AGTM3)" states that

> *"In practice the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to.*
>
> *These are usually called 'practical degrees of saturation."*

The *95th Percentile (95%ile) Queue* represents the maximum queue length, in metres, that can be expected in 95% of observed cycle lengths during the peak hour.

Average Delay is the delay time, in seconds, which can be expected over all vehicles making a particular movement in the peak hour.

Level of Service (L.O.S.) is a qualitative measure of traffic factors such as speed, volume of traffic, delays and freedom to manoeuvre.

Austroads *"Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (AGTM3)" states that the performance measure for defining LOS at an intersection is delay.

SIDRA assigns the Levels of Service ratings designated A to F at Table 2 to unsignalised intersections based on the average delay for all vehicle movements.

Table 2 Intersection Level of Service Ratings

L.O.S.	*Average Delay per Vehicle (d) in seconds*
A	*d ≤ 10*
B	*10 < d ≤ 15*
C	*15 < d ≤ 25*
D	*25 < d ≤ 35*
E	*35 < d ≤ 50*
F	*50 < d*

It is important to note that SIDRA provides LOS ratings at sign controlled intersections for individual movements and minor approaches only, as average delay is not a good LOS measure for major road movements with zero delays.

Whilst it is recognised that Midland Highway at the intersection is not line-marked as four lanes, it provides ample width for right-turning vehicles to prop near the centreline whilst allowing through vehicles to pass.

Accordingly, SALT has adopted the schematic layout at Figure 14 to assess the current operation of the intersection, which will allow vehicles to prop clear and cause no delays to through movements.

The key SIDRA outputs for both peak periods are summarised at Table 3

Figure 16 Existing Schematic Layout – Midland Hwy / King St Intersection

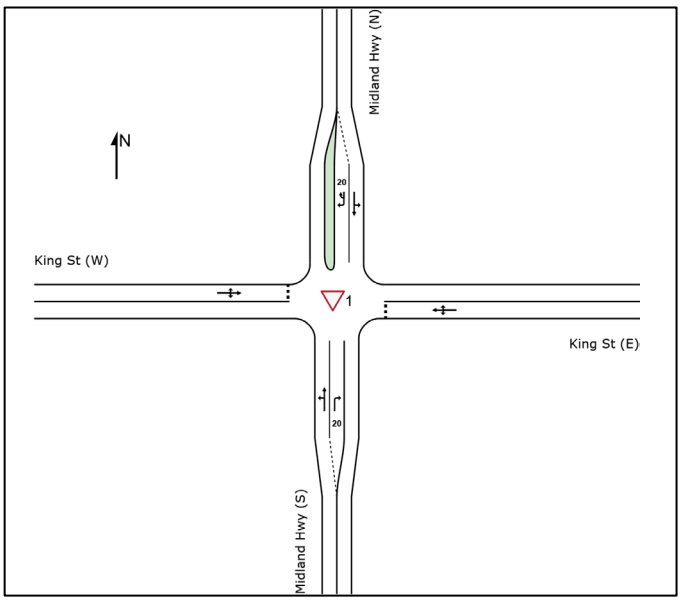


Table 3 Key SIDRA Outputs – Existing Schematic Layout

Approach	Movement	AM Peak Period			PM Peak Period		
		D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS	D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS
Midland Hwy (S)	Left	0.18	0.0	5.9 (A)	0.25	0.0	5.7 (A)
	Through	0.18	0.0	0.0 (A)	0.25	0.0	0.1 (A)
	Right	0.10	0.3	6.7 (A)	0.01	0.4	7.2 (A)
King St (E)	Left	0.03	0.7	6.8 (A)	0.09	2.0	7.8 (A)
	Through	0.03	0.7	11.2 (B)	0.09	2.0	19.4 (C)
	Right	0.03	0.7	13.9 (B)	0.09	2.0	24.7 (C)
Midland Hwy (N)	Left	0.17	0.0	5.6 (A)	0.26	0.0	5.6 (A)
	Through	0.17	0.0	0.0 (A)	0.26	0.0	0.1 (A)
	Right	0.01	0.2	6.5 (A)	0.02	0.5	7.2 (A)
	U-Turn	0.01	0.2	8.7 (A)	0.02	0.5	10.1 (B)
King St (W)	Left	0.08	1.9	7.1 (A)	0.15	3.6	7.9 (A)
	Through	0.08	1.9	11.4 (B)	0.15	3.6	19.9 (C)
	Right	0.08	1.9	16.3 (C)	0.15	3.6	24.9 (C)
Intersection		*0.18*	*1.9*	*1.2 (N/A)*	*0.26*	*3.6*	*1.7 (N/A)*

The analysis suggests the intersection currently operates well below capacity during both peak periods.

On Midland Highway:

- There is no delay to through movements;

  Delays to left and right-turning vehicles are minimal and generally only comprise geometric delay (i.e. the delay associated with a vehicle slowing, turning and accelerating) rather than stop line delay (i.e. the delay associated with a motorist waiting for a gap in opposing traffic in which to turn or cross); and
- Queue lengths do not exceed one (1) vehicle.

On King Street:

- Delays are greatest on the through and right-turn movements of both approaches.

  These are greater during the afternoon peak period due to the higher traffic volumes on Midland Highway into which vehicles are required to turn or cross; and
- Queue lengths do not exceed one (1) vehicle.

Detailed SIDRA outputs are attached at APPENDIX 2.

3 PROPOSAL

Northern Midlands Council is proposing to undertake streetscape works along Midland Highway between King Street and Red Bridge to provide improved pedestrian facilities.

At the intersection of Midland Highway and King Street, these works include:

- The establishment of kerb outstands on all four corners to provide wider verge areas on Midland Highway, less carriageway pavement and shorter pedestrian crossing distances.

  This includes constructing the missing section of kerb on the western side of Midland Highway, north of King Street;
- The construction of two new pram ramps on each corner, each of which will be aligned to direct pedestrians to cross a leg of the intersection (rather than directing pedestrians into the middle of the intersection); and
- The construction of splitter islands on the Midland Highway legs, both of which will provide 'cut through refuges' to allow the staging of east-west pedestrian movements over the highway;

Along King Street (West), these works include:

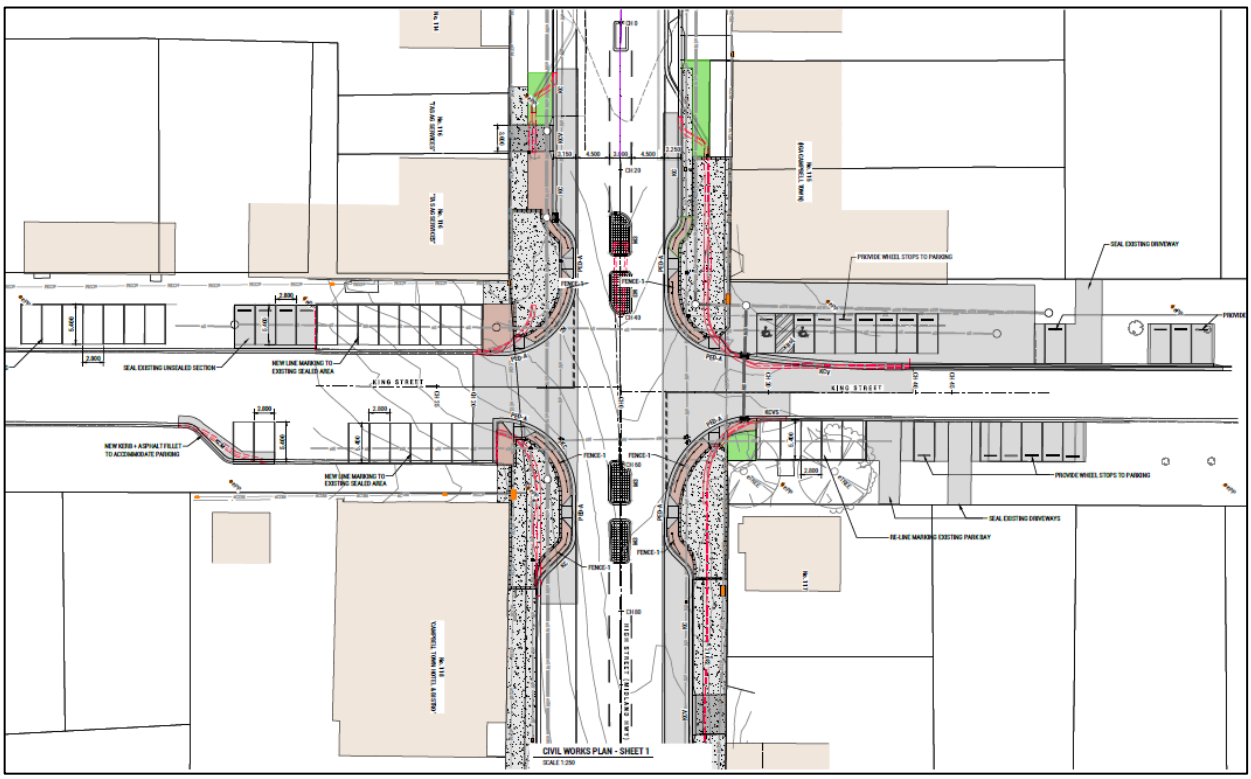
- Re-line marking the existing 90-degree car parking spaces on both sides of the carriageway;
- Sealing a small section of verge on the northern side of the carriageway (that is currently used for informal parking) to provide formalised 90-degee car parking spaces;
- Minor kerb and pavement works to the transition from 90-degree to parallel parking on the southern side of the carriageway, to provide 2 x 90-degree car parking spaces where informal parking currently occurs across the verge.

Along King Street (East), these works include:

- Sealing the 90-degree parking spaces along the northern side of the carriageway and installing wheel stops to prevent vehicle encroachment onto the footpath
- Conversion of the 1 x DDA Accessible space on the northern side of the carriageway into 2 x DDA Accessible spaces with dimensions that align with current design criteria;
- Sealing 90-degree parking spaces and driveways on both sides of the carriageway.

These works are shown in the excerpt from the development plans at Figure 17 below.

Figure 17 Proposed Midland Highway / King Street Works (Excerpt)



To the south of the King Street intersection, the following works are proposed:

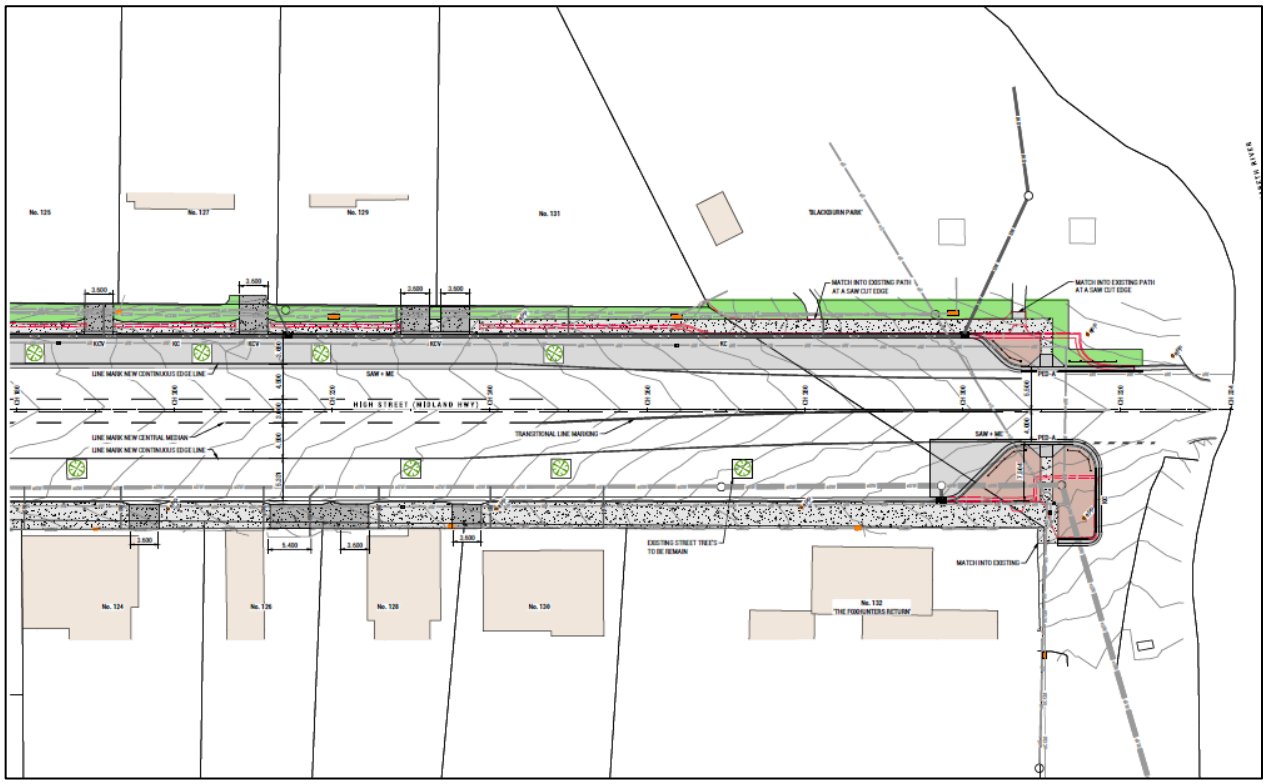
- The widening of the eastern Midland Highway verge and reconstruction of the vehicle crossings to abutting properties;
- The establishment of a new 3 metre wide ghosted median;
- Line-marking new continuous edge lines along the edge of the tree planter boxes to establish a single 4.5 metre wide travel lane in each direction; and
- Kerb infill and vehicle crossing reconstruction works along the western kerbside

At the intersection of Midland Highway and Esplanade:

- A new kerb outstand is proposed on the northwestern corner of the intersection to provide reduced pedestrian crossing distances.
- Widening of the verge on the eastern side of the carriageway;
- New pram crossings either side of Midland Highway; and
- Transitioning the ghosted median into 2 travel lanes as it approaches the Red Bridge.

The typical works along Midland Highway and the works at the Midland Highway / Esplanade intersection are shown in the excerpt from the development plans at Figure 18, below.

Figure 18 Proposed Midland Highway Works & Midland Highway / Esplanade Intersection Works (Excerpt)



These combined works will form the continuation of the partially constructed streetscape works north of the study area described in Section 2.4.

The modified Midland Highway and King Street intersection layout will closely reflect the modified layout of the Midland Highway and Queen Street intersection currently being reconstructed within that package of works.

4 DESIGN CONSIDERATIONS

SALT has undertaken a high level review of the development plans prepared by rare consulting.

(NOTE: SALT has not reviewed the functionality of the modified intersection design, which is required to be informed by swept path analysis using appropriate design and checking vehicles).

- The modifications to the Midland Highway and King Street intersection will result in:
  - 2 x 4.5 metre wide traffic lanes.

    These widths are appropriate to accommodate heavy vehicles with appropriate clearances to adjacent kerbs and obstructions;
  - Pram crossings with a width of 1.5 metres.
  - These widths exceed the minimum width requirement outlined in the *Australian Standard Design for Access and Mobility (AS1428.1:2021)*; and
  - Pedestrian refuges with a minimum storage length of 3.0 metres.
  - These lengths are appropriate for both pedestrians and cyclists to store clear of the traffic lanes;

  Most importantly, the changes will reduce pedestrian crossing distances on Midland Highway from a single
  two-way carriageway of 23 metres width, to two (2) 4.5 metre wide one-way carriageway.

  This arrangement reduces crossing distances, reduces crossing times, and will allow pedestrians to stage their movement so that they are only required to cross one stream of traffic at a time.
- The sealing and line-marking of car parking areas along King Street will yield 2.8m wide by 5.4m long 90-degree car parking spaces.

  These dimensions exceed the 2.5m width required for town centre car parking in the *Australian Standard for On-Street Car Parking (AS2890.5:2020)*.

  Similarly, the parking aisle width (measured from edge to edge of parking spaces on opposite sides of the carriageway) exceeds the 10.6m width requirement for parking to a low kerb on roads with a speed limit of 50km/h or less that carry less than 200 vehicles per hour as required by the standard

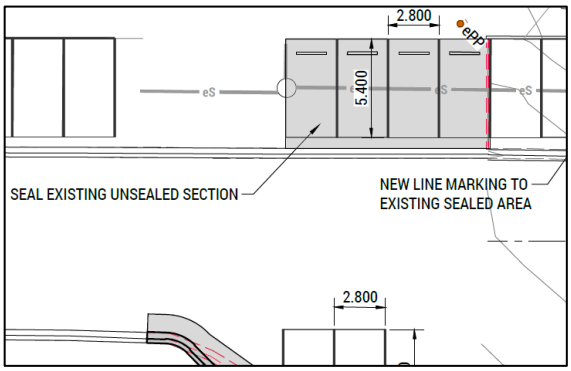
In reviewing the plans, the following recommendations are suggested:

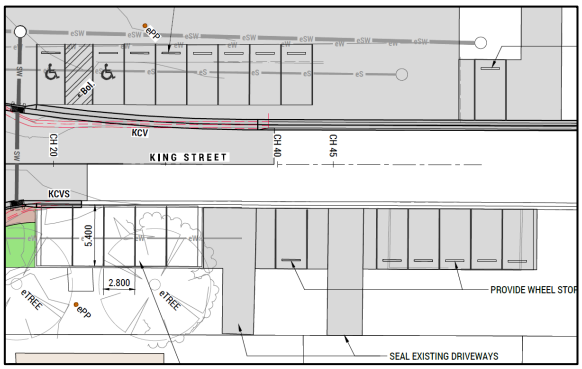
- The parking lane on the western side of Midland Highway south of King Street is shown to have a width of 5.33 metres. This closely aligns with the 5.4 metre length required for 90-degree car parking and could potentially be used as such.

  It is recommended that parking signs along this length of carriageway have 'PARALLEL' stencilled at the bottom of the sign face to reinforce this method of parking.

- The 90-degree car parking spaces proposed to be formalised on the northern side of King Street (west) are shown at-grade with the verge, with wheel stops at the front of spaces to maintain a clear walking area between parked vehicles and the bounding properties (below left).

  A similar arrangement is proposed along both sides of King Street (east), including within the DDA Accessible spaces on the northern side of the carriageway (below right).





Wheel stops present a tripping hazard, particularly if used irregularly throughout a car park design.

It is recommended that in each of these instances, the spaces be sealed to a low kerb that prevents vehicular intrusion onto the footpath.

This would mirror the arrangement already in place for the existing 90-degee parking space indentations.

5 DEVELOPMENT IMPACTS

5.1 TRAFFIC IMPACT

The subject proposal will reduce Midland Highway to a single lane in each direction where it passes through the King Street intersection.

As a result, there is no longer likely to be opportunity for northbound or southbound vehicles to pass vehicles propped to turn right into the minor King Street legs.

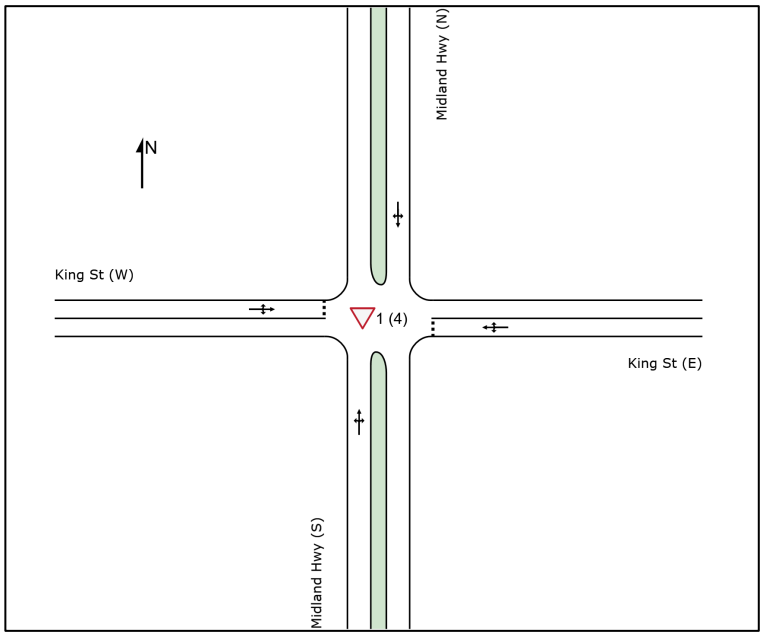
To assess the impact of this change, SALT has again assessed the operation of the intersection under the existing traffic volumes at Figure 13, albeit with the proposed intersection configuration presented in Figure 17.

In doing so, it is noted that the vehicles recorded undertaking a u-turn manoeuvre (north to north) at the intersection will no longer be able to do so.

Accordingly, these vehicle movements have been removed and included as right-turn (north to west) movements.

The schematic layout for the revised intersection arrangement is presented at Figure 19.

Figure 19 Proposed Intersection Schematic Layout



The key SIDRA outputs are presented for comparison with the outputs from our existing conditions analysis at Table 4.

Table 4 Comparison of Existing & Post-Development SIDRA Outputs

Peak	Approach	Movement	Existing Layout			Proposed Layout		
			D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS	D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS
AM Peak	Midland Hwy (S)	Left	0.18	0.0	5.9 (A)	0.17	1.0	6.6 (A)
		Through	0.18	0.0	0.0 (A)	0.17	1.0	0.1 (A)
		Right	0.10	0.3	6.7 (A)	0.17	1.0	7.1 (A)
	King St (E)	Left	0.03	0.7	6.8 (A)	0.0	0.5	6.5 (A)
		Through	0.03	0.7	11.2 (B)	0.0	0.5	8.0 (A)
		Right	0.03	0.7	13.9 (B)	0.0	0.5	9.8 (A)
	Midland Hwy (N)	Left	0.17	0.0	5.6 (A)	0.16	0.7	6.4 (A)
		Through	0.17	0.0	0.0 (A)	0.16	0.7	0.1 (A)
		Right	0.01	0.2	6.5 (A)	0.16	0.7	6.8 (A)
		U-Turn	0.01	0.2	8.7 (A)	-	-	-
	King St (W)	Left	0.08	1.9	7.1 (A)	0.05	1.3	6.8 (A)
		Through	0.08	1.9	11.4 (B)	0.05	1.3	8.1 (A)
		Right	0.08	1.9	16.3 (C)	0.05	1.3	11.1 (B)
	Intersection		*0.18*	*1.9*	*1.2 (N/A)*	*1.2 (N/A)*	*1.3*	*1.1 (N/A)*

Peak	Approach	Movement	Existing Layout			Proposed Layout		
			D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS	D.O.S	95th%ile Queue (m)	Average Delay (s) / LOS
PM Peak	Midland Hwy (S)	Left	0.25	0.0	5.7 (A)	0.25	1.5	6.9 (A)
		Through	0.25	0.0	0.1 (A)	0.25	1.5	0.1 (A)
		Right	0.01	0.4	7.2 (A)	0.25	1.5	7.8 (A)
	King St (E)	Left	0.09	2.0	7.8 (A)	0.06	1.3	7.3 (A)
		Through	0.09	2.0	19.4 (C)	0.06	1.3	11.5 (B)
		Right	0.09	2.0	24.7 (C)	0.06	1.3	14.5 (B)
	Midland Hwy (N)	Left	0.26	0.0	5.6 (A)	0.25	1.7	6.6 (A)
		Through	0.26	0.0	0.1 (A)	0.25	1.7	0.1 (A)
		Right	0.02	0.5	7.2 (A)	0.25	1.7	7.8 (A)
		U-Turn	0.02	0.5	10.1 (B)	-	-	-
	King St (W)	Left	0.15	3.6	7.9 (A)	0.09	2.1	7.3 (A)
		Through	0.15	3.6	19.9 (C)	0.09	2.1	11.8 (B)
		Right	0.15	3.6	24.9 (C)	0.09	2.1	14.6 (B)
	Intersection		*0.26*	*3.6*	*1.7 (N/A)*	*1.7 (N/A)*	*2.1*	*1.4 (N/A)*

The analysis suggests there will be an incremental increase in average delay (i.e. up to 0.1 seconds) to through movements along Midland Highway, caused by the occasional propping of vehicles waiting to turn right into either High Street leg.

When this occurs, a queue no greater than one (1) vehicle is expected to form.

On the King Street legs, the average delay to vehicles travelling straight through the intersection or turning right onto Midland Highway is expected to decrease.

This is due to the narrowing of the Midland Highway carriageway, which reduces the crossing and turning distances of these movements allowing SIDRA to adopt smaller 'gap acceptance' and 'follow-up headway' parameters (time gaps in opposing vehicles steams) for vehicles to undertake these manoeuvres.

Based on the above, the proposed intersection works will have no significant adverse impacts on arterial movements through Campbell Town, and will benefit local traffic crossing or turning from King Street.

5.2 PARKING IMPACTS

Based on a review of the develpoment plans, the kerb outstand works around the intersection of Midland Highway and King Street will result in a loss of approximately 4 parallel car parking spaces (-4 spaces).

This loss will be offset by the proposed pavement works along King Street, which will formalise approximately 4 additional 90-degree car parking spaces to the west a of Midland Highway, and approximately 6 additional 90-degree car parking spaces to the east of Midland Highway (+10 spaces).

To the south of the intersection, the widening of the verge along the eastern side of Midland Highway will prevent approximately 5 vehicles from parking in a parallel alignment between the tree planter boxes and existing kerb (through the practicality of vehicles parking in these locations is questionable). A further space will be lost from the western side of Midland Highway to allow for the construction of the kerb outstand north of Esplanade (-6 spaces).

Based on the above, there is anticipated to be no net change to the on-street car parking supply in the study area as a result of the proposed works.

6 CONCLUSION

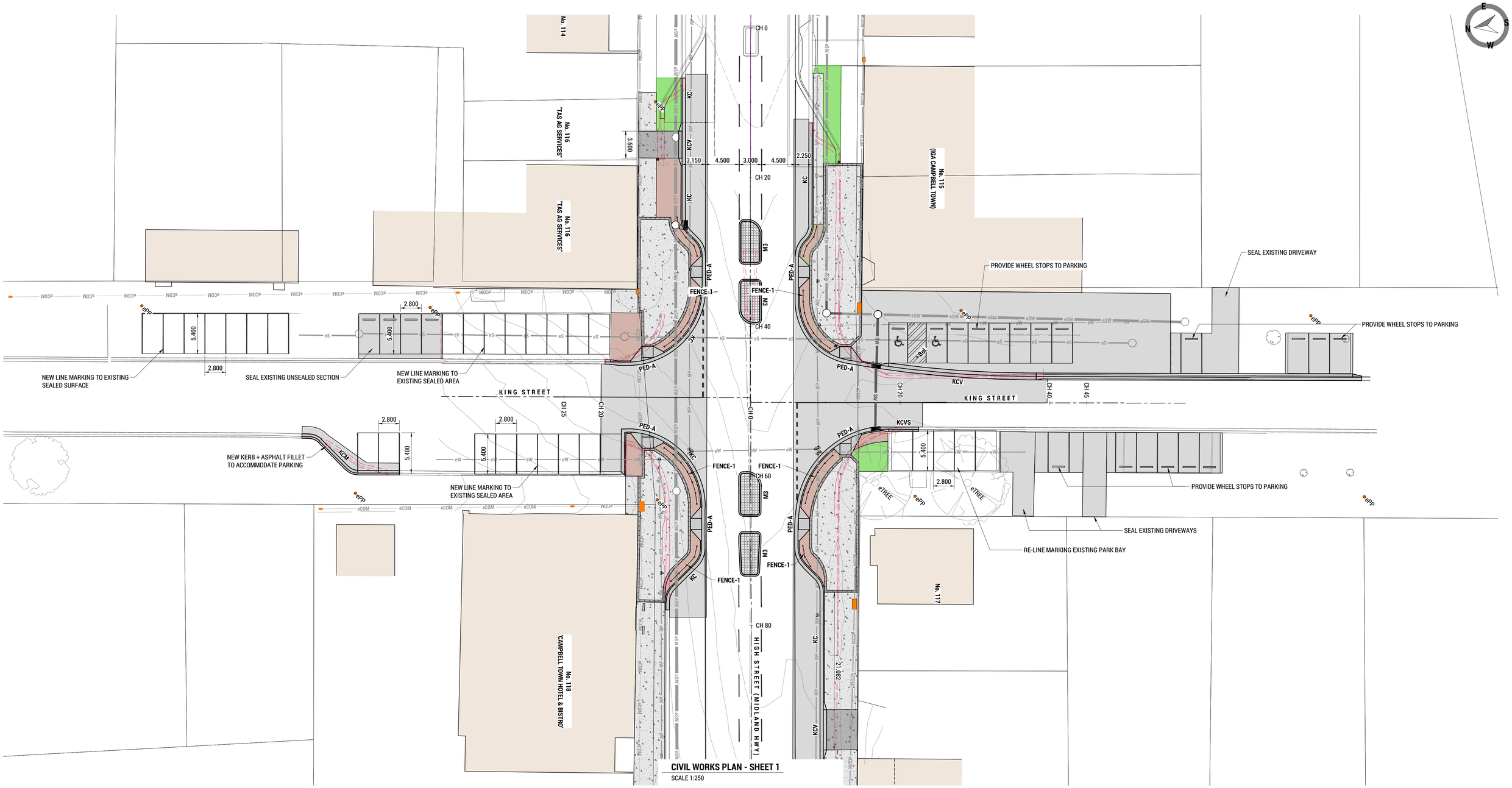
SALT has been engaged by Northern Midlands Council to review the traffic engineering impacts of proposed streetscape works at the intersection of Midland Highway and King Street, and along Midland Highway (between King Street and Red Bridge) in Campbell Town.

Based on the foregoing:

- The works will form the continuation of streetscape and intersection works that have been completed north of the site around the Midland Highway and Queen Street intersection;
- The removal of excessive / redundant pavement from Midland Highway will significantly improve the level of safety afforded to pedestrian within Cambell Town; and
- The modifications to the Midland Highway and King Street intersection will not detrimentally impact the arterial role of Midland Highway through the study area.

APPENDIX 1 DEVELOPMENT PLANS

Exhibited



CIVIL WORKS PLAN - SHEET 1
SCALE 1:250

LEGEND

	HOTMIX - TRAFFICABLE
	CONCRETE - TRAFFICABLE
	CONCRETE - PEDESTRIAN
	PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN
	GRASSED AREA
	MULCHED LANDSCAPED AREA
	EXISTING KERB TO BE DEMOLISHED

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

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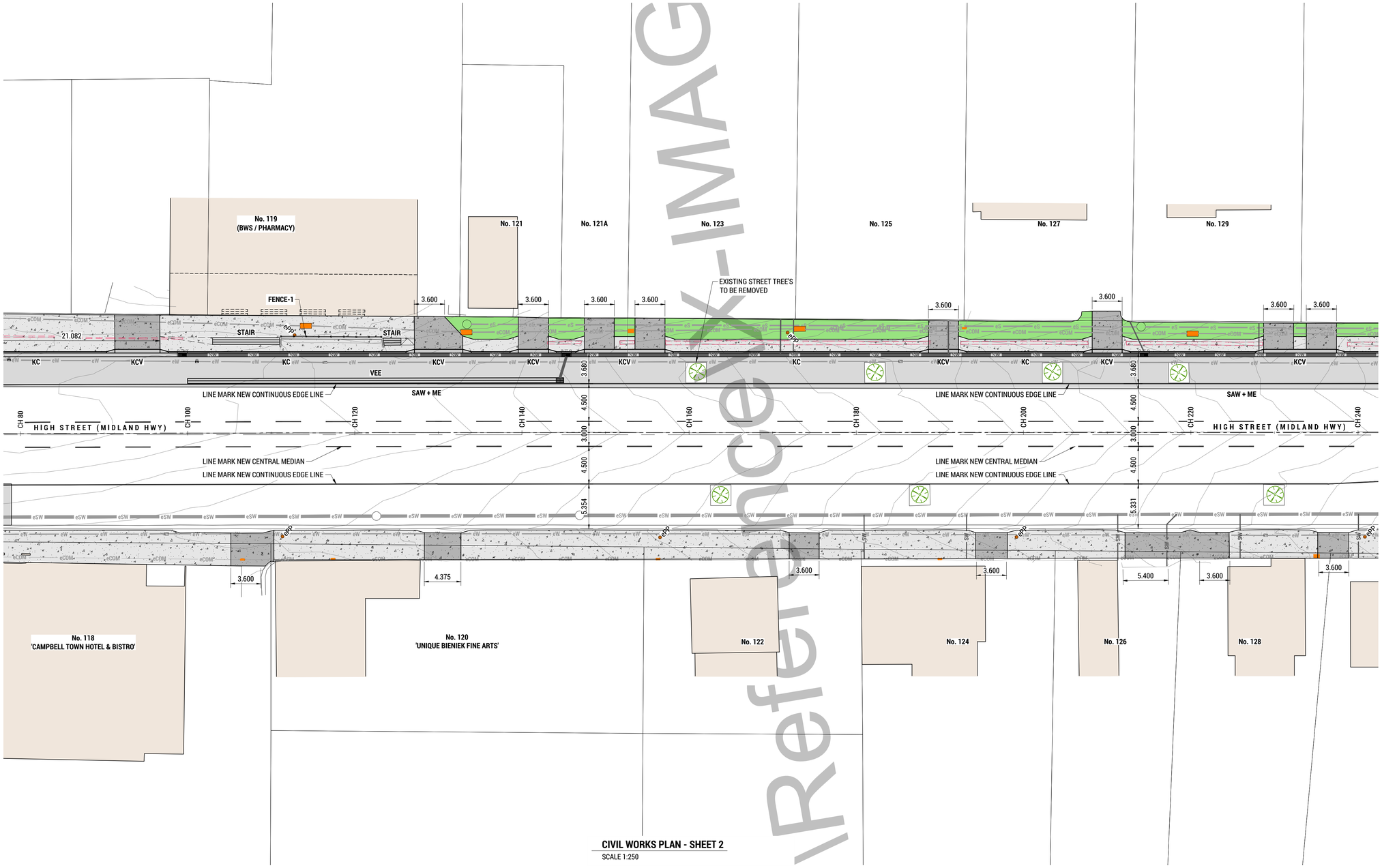
CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	PROPOSED WORKS PLAN - SHEET 1
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA01 REV: A

Exhibited



CIVIL WORKS PLAN - SHEET 2

SCALE 1:250

LEGEND

	HOTMIX - TRAFFICABLE
	CONCRETE - TRAFFICABLE
	CONCRETE - PEDESTRIAN
	PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN
	GRASSED AREA
	MULCHED LANDSCAPED AREA
	EXISTING KERB TO BE DEMOLISHED

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

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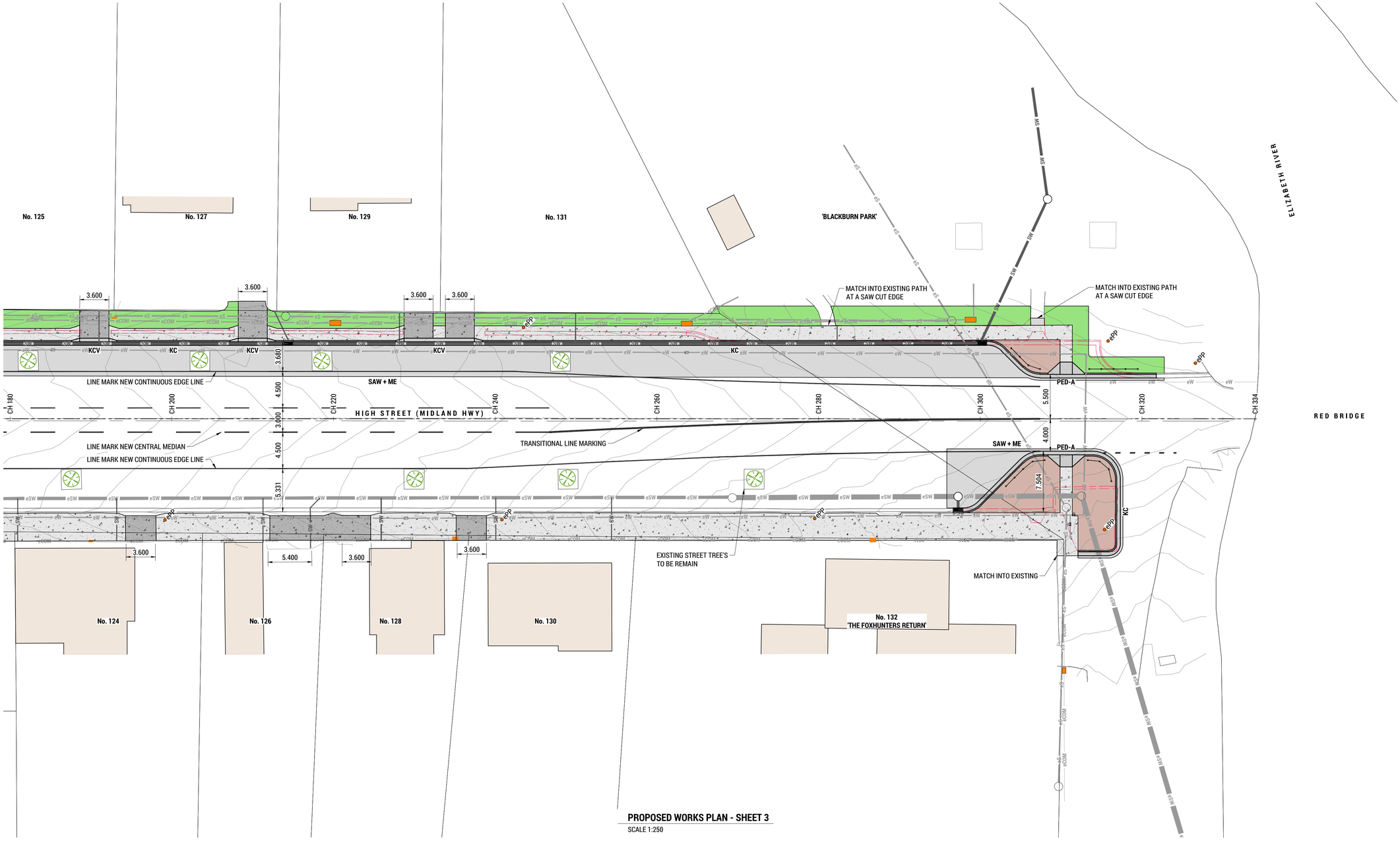
PROJECT:	STREETSCAPE
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN
TITLE:	PROPOSED WORKS PLAN - SHEET 2
SCALE:	1:250
SHEET SIZE:	A1
DWGs IN SET:	-
PROJECT No:	251023
DWG No:	CDA02
REV:	A

Exhibited



PROPOSED WORKS PLAN - SHEET 3
SCALE 1:250

LEGEND

	HOTMIX - TRAFFICABLE
	CONCRETE - TRAFFICABLE
	CONCRETE - PEDESTRIAN
	PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN
	GRASSED AREA
	MULCHED LANDSCAPED AREA
	EXISTING KERB TO BE DEMOLISHED

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

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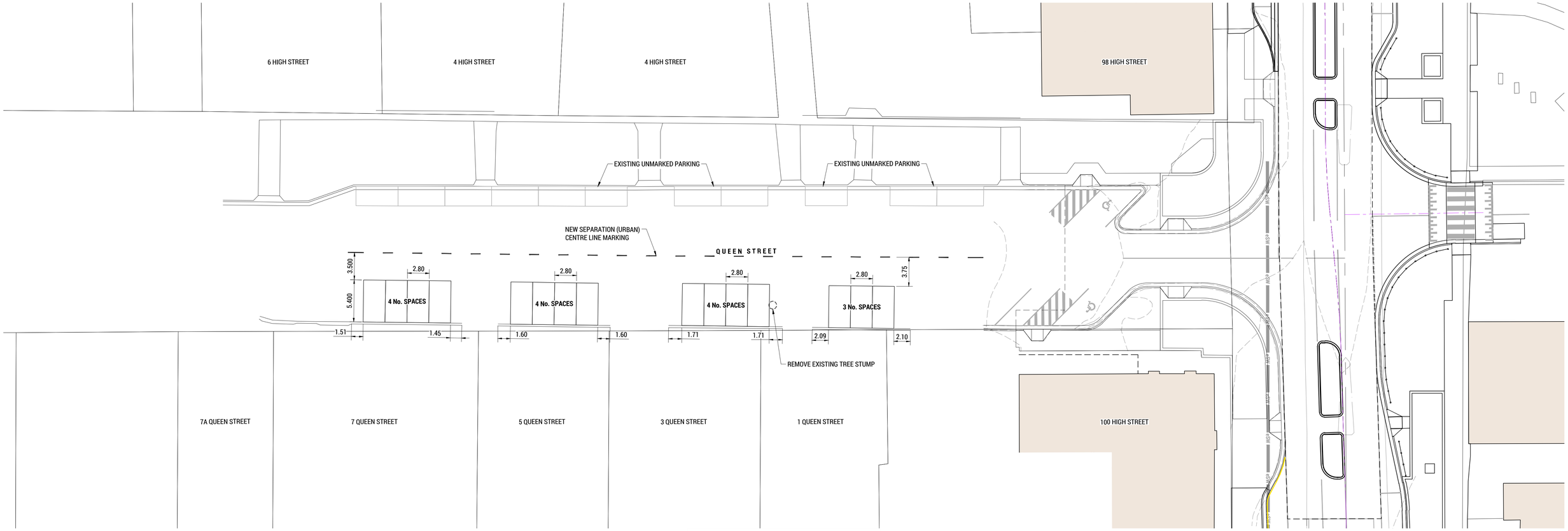
CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	PROPOSED WORKS PLAN - SHEET 3
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA03 REV: A

Exhibited



PROPOSED WORKS PLAN - SHEET 4

SCALE 1:250

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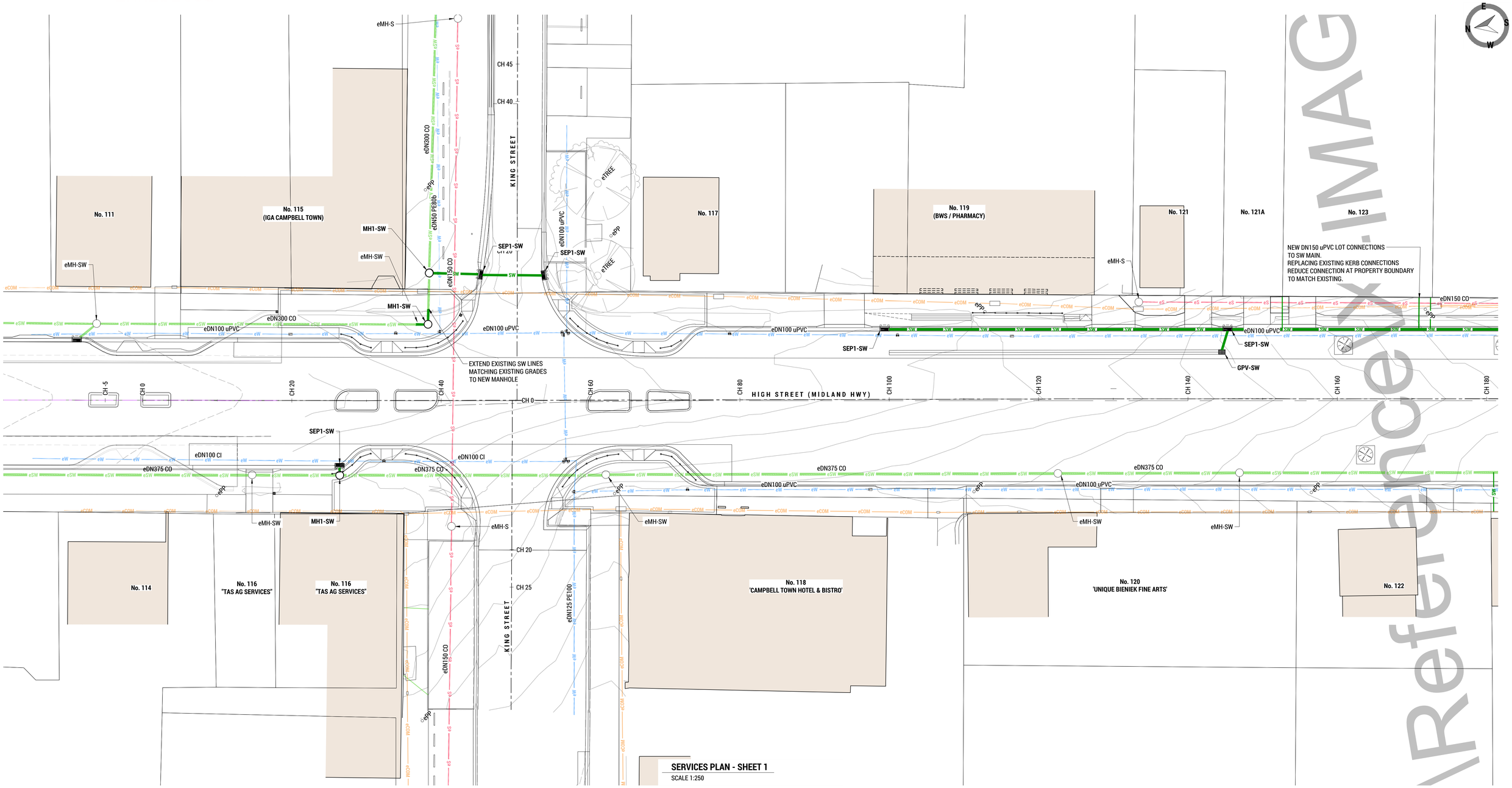
CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	PROPOSED WORKS PLAN - SHEET 4
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA04 REV: A

Exhibited



LEGEND

eSW	EXISTING STORM WATER MAIN	MH-S	SEWER MANHOLE
SW	PROPOSED STORMWATER MAIN	MH-SW	STORMWATER MANHOLE
eS	EXISTING SEWER MAIN	SEP-SW	SIDE ENTRY PIT
S	PROPOSED SEWER MAIN	HW-SW	HEADWALL
AG	PROPOSED AG DRAIN	GP-SW	GRATED PIT
eW	EXISTING WATER MAIN	GPV-SW	GRATED VEE PIT
W	PROPOSED WATER MAIN	eFP	EXISTING FIRE PLUG
		eSV	EXISTING STOP VALVE
		eM	EXISTING WATER METER

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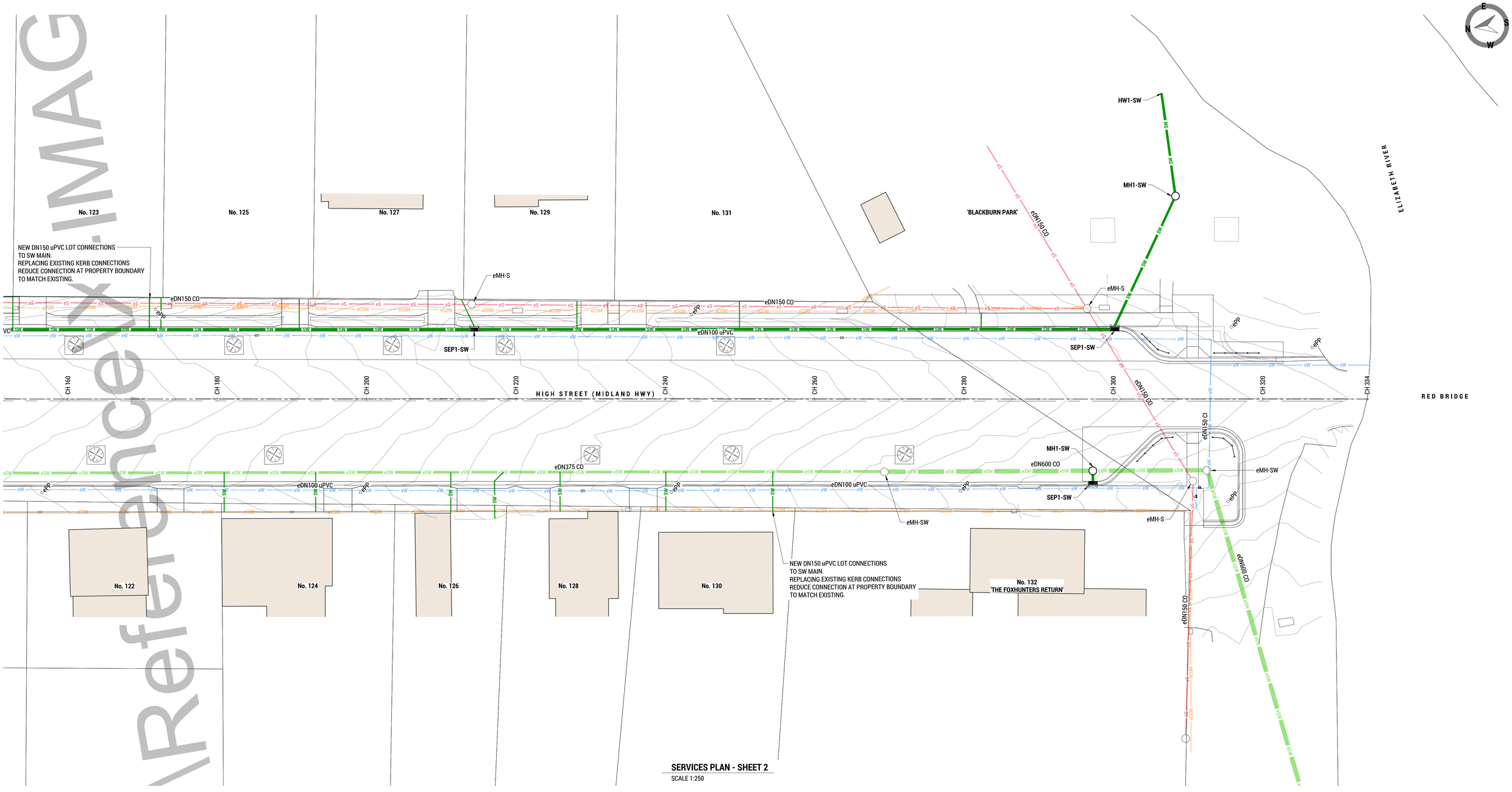
CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	SERVICES PLAN - SHEET 1
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA11 REV: A

Exhibited



SERVICES PLAN - SHEET 2

SCALE 1:250

LEGEND

eSW	EXISTING STORM WATER MAIN	MH-S	SEWER MANHOLE
SW	PROPOSED STORMWATER MAIN	MH-SW	STORMWATER MANHOLE
eS	EXISTING SEWER MAIN	SEP-SW	SIDE ENTRY PIT
S	PROPOSED SEWER MAIN	HW-SW	HEADWALL
AG	PROPOSED AG DRAIN	GP-SW	GRATED PIT
eW	EXISTING WATER MAIN	GPV-SW	GRATED VEE PIT
W	PROPOSED WATER MAIN	eFP	EXISTING FIRE PLUG
		eSV	EXISTING STOP VALVE
		eM	EXISTING WATER METER

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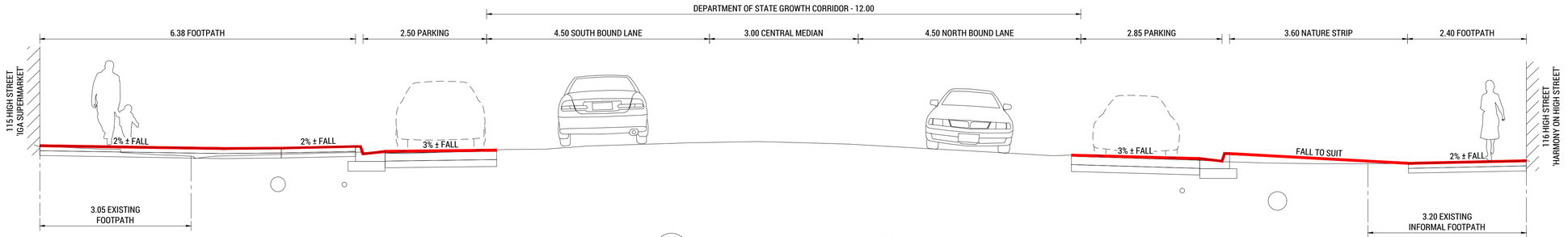
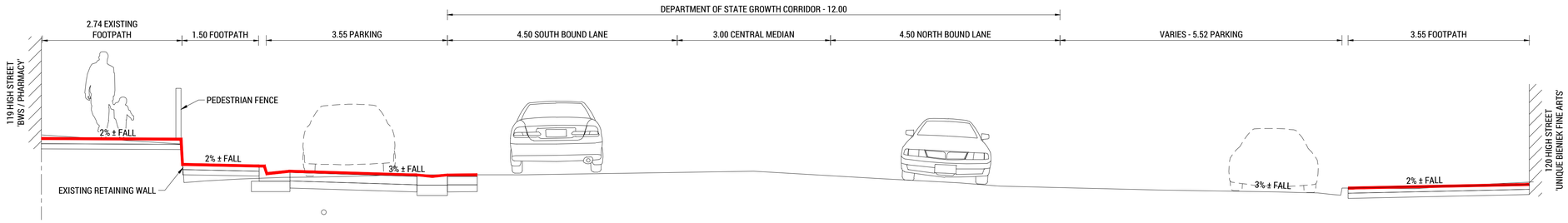
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA12 REV: A

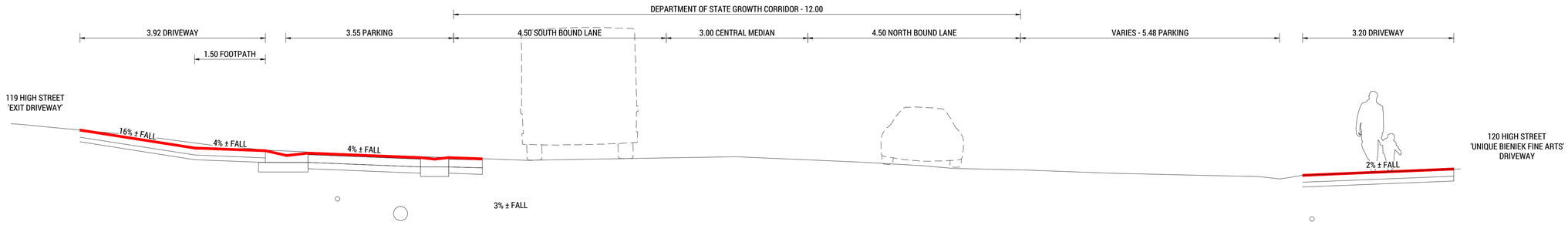
Exhibited



01 **TYPICAL ROAD SECTION - HIGH STREET CH: 20**
SCALE 1:50



02 **TYPICAL ROAD SECTION - HIGH STREET CH: 120**
SCALE 1:50



03 **TYPICAL ROAD SECTION - HIGH STREET CH: 130**
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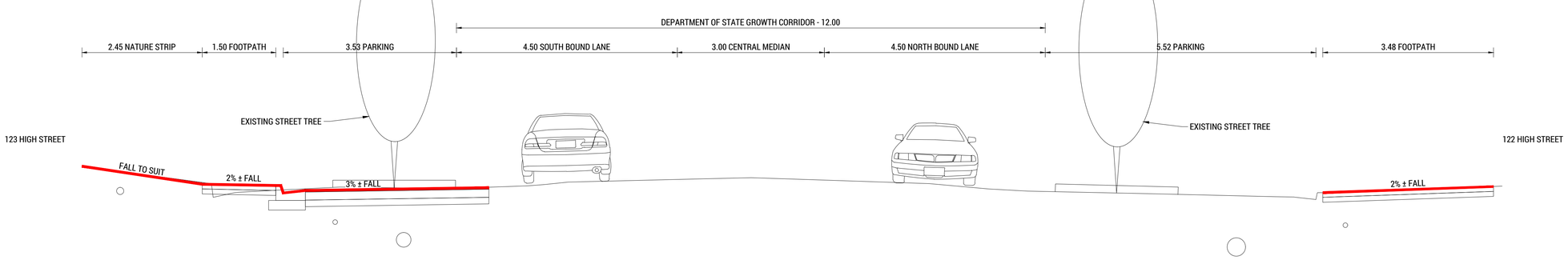

04 **TYPICAL ROAD SECTION - HIGH STREET CH: 160**
SCALE 1:50

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CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: TYPICAL SECTIONS - SHEET 1
PROJECT: STREETSCAPE	
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:50 SHEET SIZE: A1 DWGs IN SET: -
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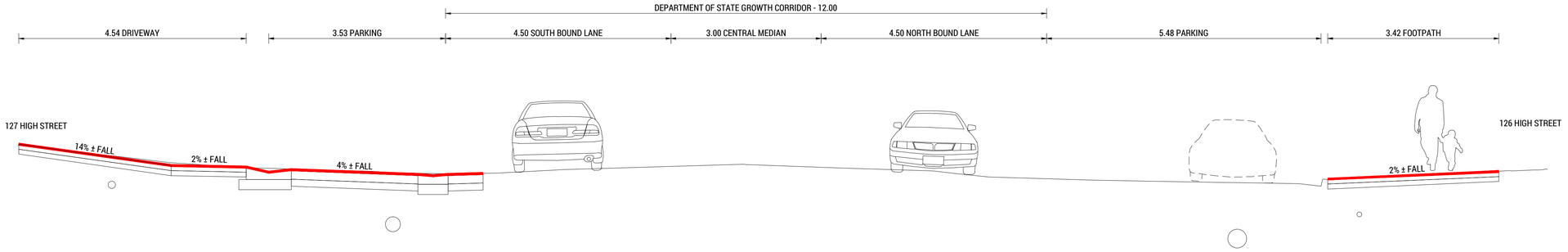
Exhibited



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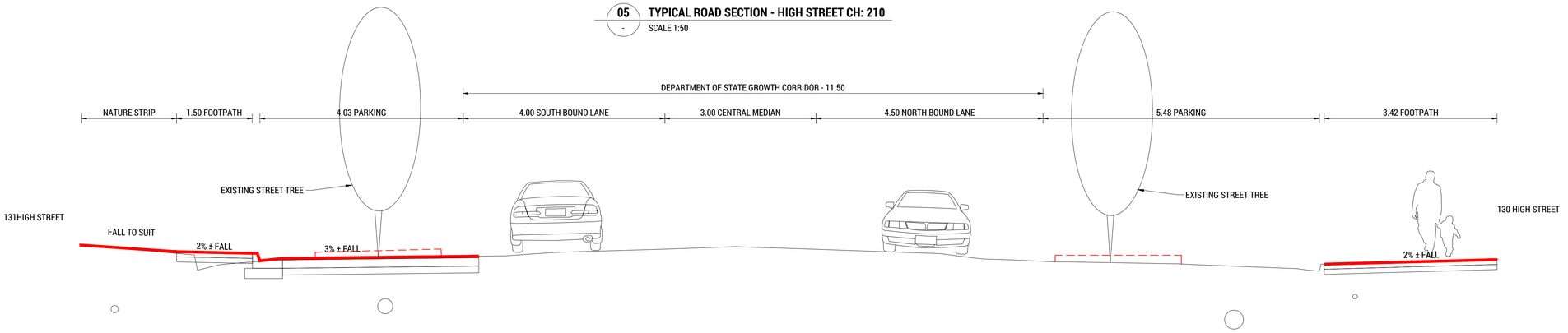

06 - **TYPICAL ROAD SECTION - HIGH STREET CH: 250**
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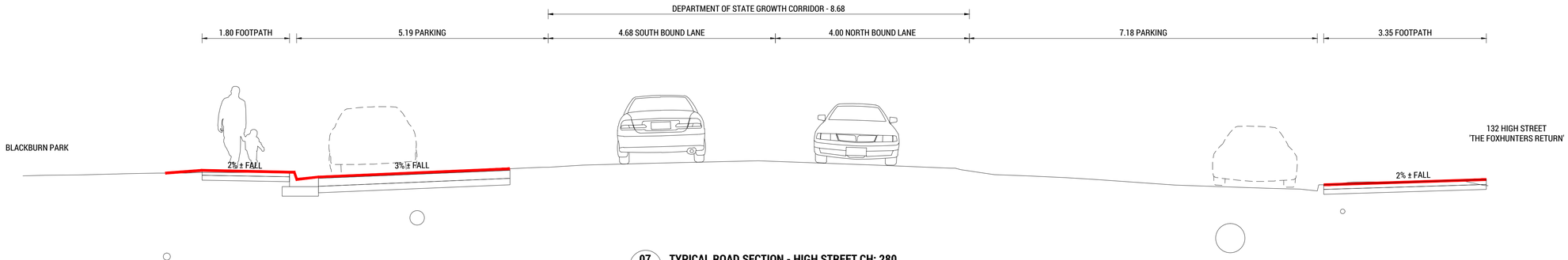

07 - **TYPICAL ROAD SECTION - HIGH STREET CH: 280**
SCALE 1:50

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CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: TYPICAL SECTIONS - SHEET 2
PROJECT: STREETSCAPE	
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:50 SHEET SIZE: A1 DWGs IN SET: -
	PROJECT No: 251023 DWG No: CDA22 REV: A

APPENDIX 2 SIDRA OUTPUTS

MOVEMENT SUMMARY

Site: [1] AM Ex (Folder1)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

MiKi AM Peak
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Midland Hwy (S)															
1	L2	All MCs	12	27.3	12	27.3	0.175	5.9	LOS A	0.0	0.0	0.00	0.02	0.00	55.9
2	T1	All MCs	292	15.9	292	15.9	0.175	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
3	R2	All MCs	11	10.0	11	10.0	0.009	6.7	LOS A	0.0	0.3	0.40	0.58	0.40	51.2
Approach			314	16.1	314	16.1	0.175	0.5	NA	0.0	0.3	0.01	0.04	0.01	59.2
East: King St (E)															
4	L2	All MCs	11	0.0	11	0.0	0.028	6.8	LOS A	0.1	0.7	0.51	0.65	0.51	50.2
5	T1	All MCs	1	0.0	1	0.0	0.028	11.2	LOS B	0.1	0.7	0.51	0.65	0.51	50.5
6	R2	All MCs	5	0.0	5	0.0	0.028	13.9	LOS B	0.1	0.7	0.51	0.65	0.51	50.1
Approach			17	0.0	17	0.0	0.028	9.3	LOS A	0.1	0.7	0.51	0.65	0.51	50.2
North: Midland Hwy (N)															
7	L2	All MCs	6	0.0	6	0.0	0.171	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.3
8	T1	All MCs	295	13.6	295	13.6	0.171	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
9	R2	All MCs	3	0.0	3	0.0	0.009	6.5	LOS A	0.0	0.2	0.42	0.61	0.42	51.0
9u	U	All MCs	5	0.0	5	0.0	0.009	8.7	LOS A	0.0	0.2	0.42	0.61	0.42	50.8
Approach			309	12.9	309	12.9	0.171	0.4	NA	0.0	0.2	0.01	0.03	0.01	59.4
West: King St (W)															
10	L2	All MCs	15	7.1	15	7.1	0.076	7.1	LOS A	0.3	1.9	0.58	0.75	0.58	48.2
11	T1	All MCs	1	0.0	1	0.0	0.076	11.4	LOS B	0.3	1.9	0.58	0.75	0.58	48.8
12	R2	All MCs	17	12.5	17	12.5	0.076	16.3	LOS C	0.3	1.9	0.58	0.75	0.58	47.8
Approach			33	9.7	33	9.7	0.076	12.0	LOS B	0.3	1.9	0.58	0.75	0.58	48.0
All Vehicles			673	13.9	673	13.9	0.175	1.2	NA	0.3	1.9	0.05	0.09	0.05	58.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [1 (5)] PM Ex (Folder1)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

MiKi AM Peak
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Midland Hwy (S)															
1	L2	All MCs	18	11.8	18	11.8	0.252	5.7	LOS A	0.0	0.0	0.00	0.02	0.00	56.6
2	T1	All MCs	444	6.4	444	6.4	0.252	0.1	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
3	R2	All MCs	15	0.0	15	0.0	0.013	7.2	LOS A	0.1	0.4	0.48	0.63	0.48	51.3
Approach			477	6.4	477	6.4	0.252	0.5	NA	0.1	0.4	0.01	0.04	0.01	59.2
East: King St (E)															
4	L2	All MCs	29	0.0	29	0.0	0.086	7.8	LOS A	0.3	2.0	0.61	0.78	0.61	48.5
5	T1	All MCs	1	0.0	1	0.0	0.086	19.4	LOS C	0.3	2.0	0.61	0.78	0.61	48.9
6	R2	All MCs	8	0.0	8	0.0	0.086	24.7	LOS C	0.3	2.0	0.61	0.78	0.61	48.5
Approach			39	0.0	39	0.0	0.086	11.8	LOS B	0.3	2.0	0.61	0.78	0.61	48.5
North: Midland Hwy (N)															
7	L2	All MCs	27	0.0	27	0.0	0.257	5.6	LOS A	0.0	0.0	0.00	0.03	0.00	57.1
8	T1	All MCs	447	6.1	447	6.1	0.257	0.1	LOS A	0.0	0.0	0.00	0.03	0.00	59.5
9	R2	All MCs	14	0.0	14	0.0	0.017	7.2	LOS A	0.1	0.5	0.49	0.64	0.49	51.1
9u	U	All MCs	3	0.0	3	0.0	0.017	10.1	LOS B	0.1	0.5	0.49	0.64	0.49	50.8
Approach			492	5.6	492	5.6	0.257	0.6	NA	0.1	0.5	0.02	0.06	0.02	59.0
West: King St (W)															
10	L2	All MCs	21	0.0	21	0.0	0.154	7.9	LOS A	0.5	3.6	0.72	0.88	0.72	45.4
11	T1	All MCs	1	0.0	1	0.0	0.154	19.9	LOS C	0.5	3.6	0.72	0.88	0.72	45.8
12	R2	All MCs	23	0.0	23	0.0	0.154	24.9	LOS C	0.5	3.6	0.72	0.88	0.72	45.3
Approach			45	0.0	45	0.0	0.154	16.9	LOS C	0.5	3.6	0.72	0.88	0.72	45.4
All Vehicles			1053	5.5	1053	5.5	0.257	1.7	NA	0.5	3.6	0.07	0.11	0.07	57.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [1 (3)] AM Post (Folder1)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

MiKi AM Peak
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Midland Hwy (S)															
1	L2	All MCs	12	27.3	12	27.3	0.171	6.6	LOS A	0.1	1.0	0.05	0.07	0.05	55.7
2	T1	All MCs	292	15.9	292	15.9	0.171	0.1	LOS A	0.1	1.0	0.05	0.07	0.05	59.4
3	R2	All MCs	11	10.0	11	10.0	0.171	7.1	LOS A	0.1	1.0	0.05	0.07	0.05	56.5
Approach			314	16.1	314	16.1	0.171	0.6	NA	0.1	1.0	0.05	0.07	0.05	59.2
East: King St (E)															
4	L2	All MCs	11	0.0	11	0.0	0.020	6.5	LOS A	0.1	0.5	0.44	0.61	0.44	51.3
5	T1	All MCs	1	0.0	1	0.0	0.020	8.0	LOS A	0.1	0.5	0.44	0.61	0.44	51.7
6	R2	All MCs	5	0.0	5	0.0	0.020	9.8	LOS A	0.1	0.5	0.44	0.61	0.44	51.3
Approach			17	0.0	17	0.0	0.020	7.7	LOS A	0.1	0.5	0.44	0.61	0.44	51.3
North: Midland Hwy (N)															
7	L2	All MCs	6	0.0	6	0.0	0.164	6.4	LOS A	0.1	0.7	0.04	0.05	0.04	57.1
8	T1	All MCs	295	13.6	295	13.6	0.164	0.1	LOS A	0.1	0.7	0.04	0.05	0.04	59.5
9	R2	All MCs	8	0.0	8	0.0	0.164	6.8	LOS A	0.1	0.7	0.04	0.05	0.04	57.1
Approach			309	12.9	309	12.9	0.164	0.4	NA	0.1	0.7	0.04	0.05	0.04	59.4
West: King St (W)															
10	L2	All MCs	15	7.1	15	7.1	0.051	6.8	LOS A	0.2	1.3	0.49	0.68	0.49	50.1
11	T1	All MCs	1	0.0	1	0.0	0.051	8.1	LOS A	0.2	1.3	0.49	0.68	0.49	50.8
12	R2	All MCs	17	12.5	17	12.5	0.051	11.1	LOS B	0.2	1.3	0.49	0.68	0.49	49.9
Approach			33	9.7	33	9.7	0.051	9.1	LOS A	0.2	1.3	0.49	0.68	0.49	50.1
All Vehicles			673	13.9	673	13.9	0.171	1.1	NA	0.2	1.3	0.07	0.11	0.07	58.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: [1 (4)] PM Post (Folder1)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

MiKi AM Peak
Site Category: (None)
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Midland Hwy (S)															
1	L2	All MCs	18	11.8	18	11.8	0.247	6.9	LOS A	0.2	1.5	0.06	0.09	0.06	56.4
2	T1	All MCs	444	6.4	444	6.4	0.247	0.1	LOS A	0.2	1.5	0.06	0.09	0.06	59.4
3	R2	All MCs	15	0.0	15	0.0	0.247	7.8	LOS A	0.2	1.5	0.06	0.09	0.06	56.9
Approach			477	6.4	477	6.4	0.247	0.6	NA	0.2	1.5	0.06	0.09	0.06	59.2
East: King St (E)															
4	L2	All MCs	29	0.0	29	0.0	0.056	7.3	LOS A	0.2	1.3	0.54	0.71	0.54	50.4
5	T1	All MCs	1	0.0	1	0.0	0.056	11.5	LOS B	0.2	1.3	0.54	0.71	0.54	50.8
6	R2	All MCs	8	0.0	8	0.0	0.056	14.5	LOS B	0.2	1.3	0.54	0.71	0.54	50.4
Approach			39	0.0	39	0.0	0.056	8.9	LOS A	0.2	1.3	0.54	0.71	0.54	50.4
North: Midland Hwy (N)															
7	L2	All MCs	27	0.0	27	0.0	0.254	6.6	LOS A	0.2	1.7	0.06	0.10	0.06	56.8
8	T1	All MCs	447	6.1	447	6.1	0.254	0.1	LOS A	0.2	1.7	0.06	0.10	0.06	59.2
9	R2	All MCs	17	0.0	17	0.0	0.254	7.8	LOS A	0.2	1.7	0.06	0.10	0.06	56.7
Approach			492	5.6	492	5.6	0.254	0.8	NA	0.2	1.7	0.06	0.10	0.06	59.0
West: King St (W)															
10	L2	All MCs	21	0.0	21	0.0	0.092	7.3	LOS A	0.3	2.1	0.60	0.80	0.60	48.9
11	T1	All MCs	1	0.0	1	0.0	0.092	11.8	LOS B	0.3	2.1	0.60	0.80	0.60	49.3
12	R2	All MCs	23	0.0	23	0.0	0.092	14.6	LOS B	0.3	2.1	0.60	0.80	0.60	48.9
Approach			45	0.0	45	0.0	0.092	11.1	LOS B	0.3	2.1	0.60	0.80	0.60	48.9
All Vehicles			1053	5.5	1053	5.5	0.254	1.4	NA	0.3	2.1	0.10	0.15	0.10	58.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Exhibited

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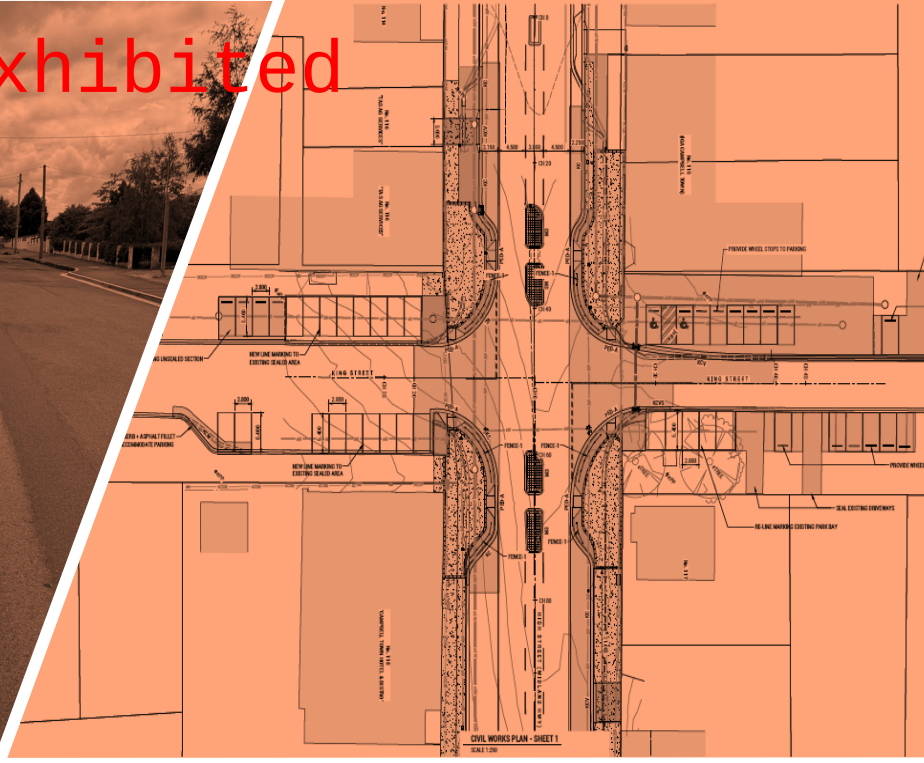

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CLIENT:
NORTHERN MIDLANDS COUNCIL

PROJECT:
STREETSCAPE

ADDRESS:
MAIN ROAD (QUEEN ST - RED BRIDGE)

PROJECT No:
251023

ISSUED FOR / DESCRIPTION:
DEVELOPMENT APPROVAL

DRAWINGS:

C0V - COVER SHEET
CDA00 - GENERAL ARRANGEMENT & STAGING PLAN
CDA01 - CIVIL WORKS PLAN - SHEET 1
CDA02 - CIVIL WORKS PLAN - SHEET 2
CDA03 - CIVIL WORKS PLAN - SHEET 3
CDA04 - CIVIL WORKS PLAN - SHEET 4
CDA11 - DRAINAGE PLAN - SHEET 1
CDA12 - DRAINAGE PLAN - SHEET 2
CDA31 - VEHICLE TURN PATH - 12.5m TRUCK / BUS
CDA32 - VEHICLE TURN PATH - 14.5m BUS
CDA33 - VEHICLE TURN PATH - 19.0m SEMI TRAILER

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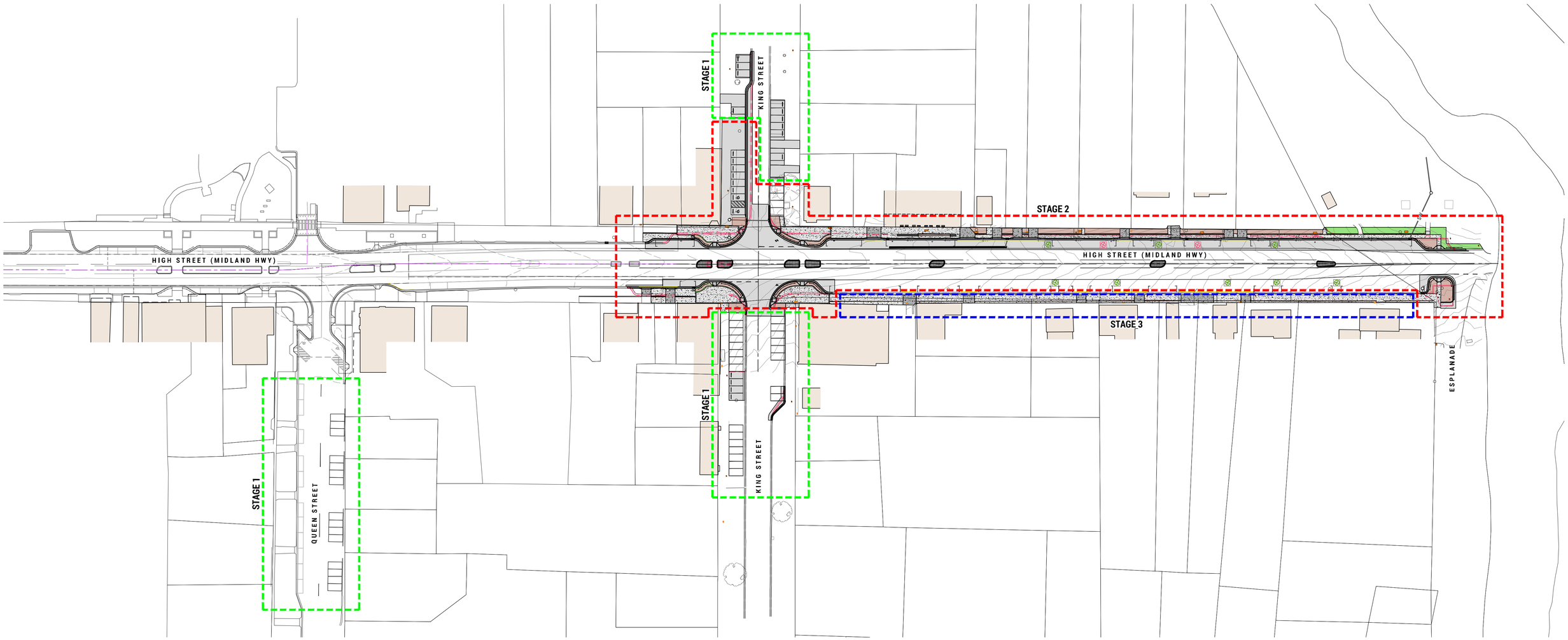
CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: COVER SHEET
PROJECT: STREETSCAPE	
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: - SHEET SIZE: A1 DWGs IN SET: -
	PROJECT No: 251023 DWG No: COV REV: A

Exhibited



GENERAL ARRANGEMENT & STAGING PLAN
SCALE 1:750

STAGE 1
- QUEEN STREET PARKING / LINE MARKING
- KING STREET EAST & WEST PARKING / LINE MARKING

STAGE 2
- KING STREET INTERSECTION
- HIGH STREET EAST KERB / FOOTPATH WORKS
- ESPLANADE CROSSING POINT

STAGE 3
- HIGH STREET WEST FOOTPATH WORKS

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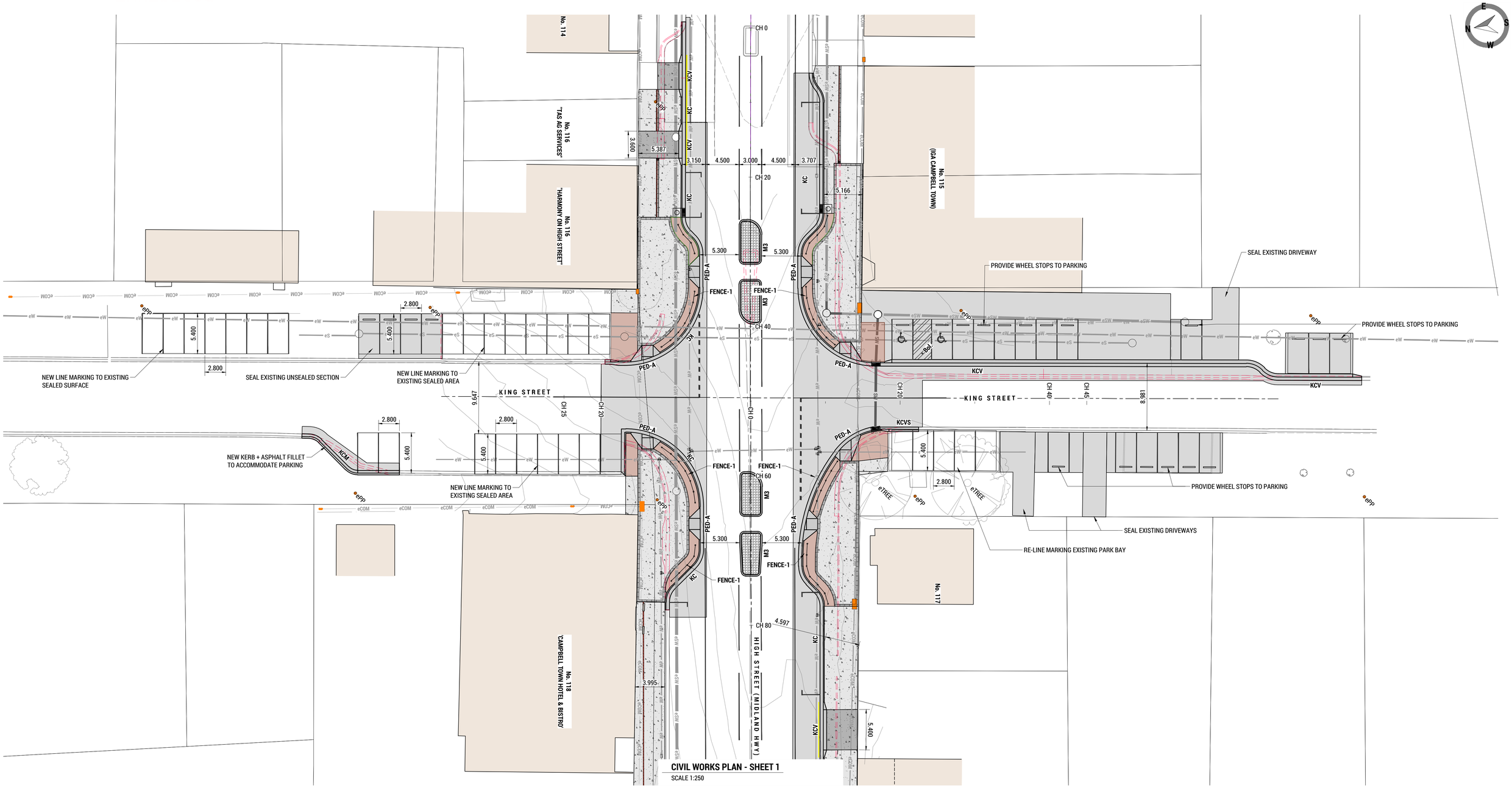
CLIENT: **NORTHERN MIDLANDS COUNCIL**	TITLE: **GENERAL ARRANGEMENT & STAGING PLAN**
PROJECT: **STREETSCAPE**	
ADDRESS: **HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN**	SCALE: **1:250** SHEET SIZE: **A1** DWGs IN SET: **-**
	PROJECT No: **251023** DWG No: **CDA00** REV: **A**

Exhibited



LEGEND

- HOTMIX - TRAFFICABLE
- CONCRETE - TRAFFICABLE
- CONCRETE - PEDESTRIAN
- PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN
- PAVER BANDING + CONVICT BRICK
- CONVICT BRICK
- GRASSED AREA
- MULCHED LANDSCAPED AREA
- EXISTING KERB TO BE DEMOLISHED

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

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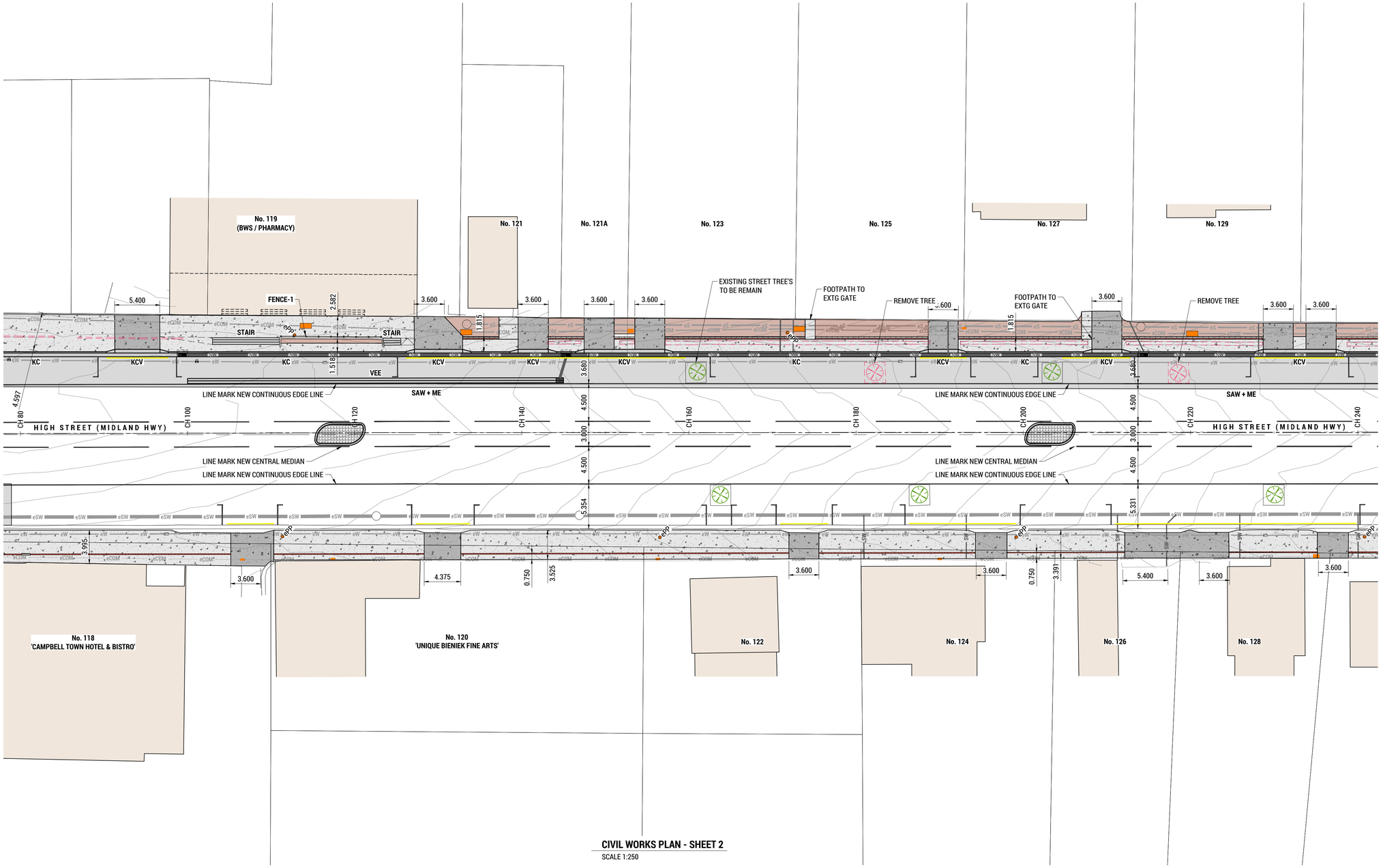
CLIENT:	NORTHERN MIDLANDS COUNCIL
PROJECT:	STREETSCAPE
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN

TITLE: PROPOSED WORKS PLAN - SHEET 1

SCALE: 1:250 SHEET SIZE: A1 DWGs IN SET: -

PROJECT No: 251023 DWG No: CDA01 REV: A

Exhibited



CIVIL WORKS PLAN - SHEET 2

SCALE 1:250

LEGEND

	HOTMIX - TRAFFICABLE
	CONCRETE - TRAFFICABLE
	CONCRETE - PEDESTRIAN
	PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN
	PAVER BANDING + CONVICT BRICK
	CONVICT BRICK
	GRASSED AREA
	MULCHED LANDSCAPED AREA
	EXISTING KERB TO BE DEMOLISHED

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

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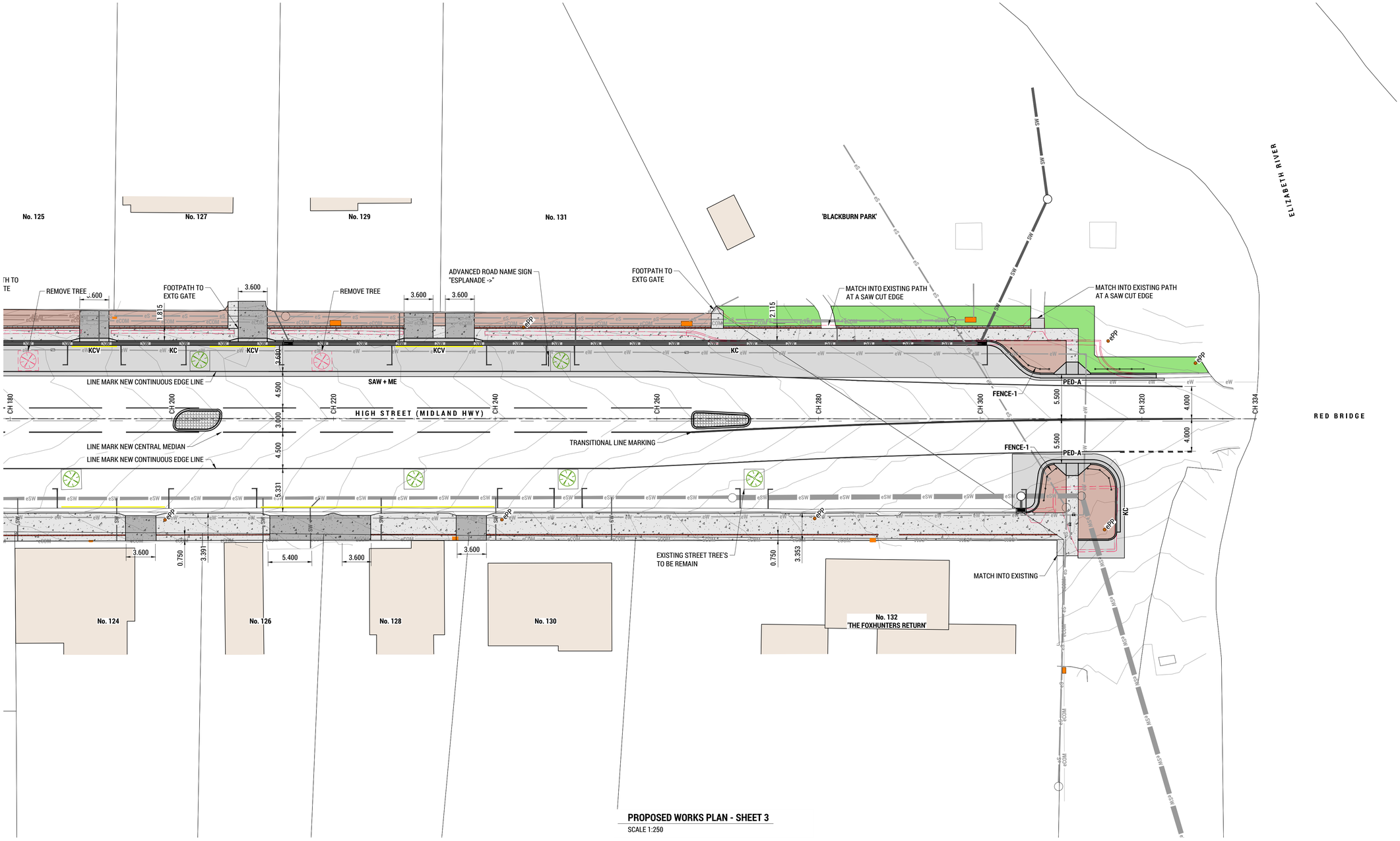
PROJECT:	**STREETSCAPE**
ADDRESS:	**HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN**
TITLE:	**PROPOSED WORKS PLAN - SHEET 2**
SCALE:	**1:250**
SHEET SIZE:	**A1**
DWGs IN SET:	**-**
PROJECT No:	**251023**
DWG No:	**CDA02**
REV:	**A**

Exhibited



PROPOSED WORKS PLAN - SHEET 3

SCALE 1:250

LEGEND

HOTMIX - TRAFFICABLE	GRASSED AREA
CONCRETE - TRAFFICABLE	MULCHED LANDSCAPED AREA
CONCRETE - PEDESTRIAN	EXISTING KERB TO BE DEMOLISHED
PAVER BANDING / TRIM (300 WIDE) - PEDESTRIAN	
PAVER BANDING + CONVICT BRICK	
CONVICT BRICK	

KC	KERB & CHANNEL
KCV	KERB & CHANNEL VEHICULAR
KCM	KERB & CHANNEL MOUNTABLE
VEE	0.6m WIDE VEE CHANNEL
M3	DSG MOUNTABLE KERB
PED	PEDESTRIAN ACCESS RAMP
Bol	BOLLARD
FENCE-1	PEDESTRIAN FENCE
SAW	SAW CUT
ME	MATCH EXISTING
ePP	EXISTING POWER POLE

NORTHERN MIDLANDS COUNCIL

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CLIENT: **NORTHERN MIDLANDS COUNCIL**	TITLE: **PROPOSED WORKS PLAN - SHEET 3**
PROJECT: **STREETSCAPE**	
ADDRESS: **HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN**	SCALE: **1:250** SHEET SIZE: **A1** DWGs IN SET: **-**
	PROJECT No: **251023** DWG No: **CDA03** REV: **A**

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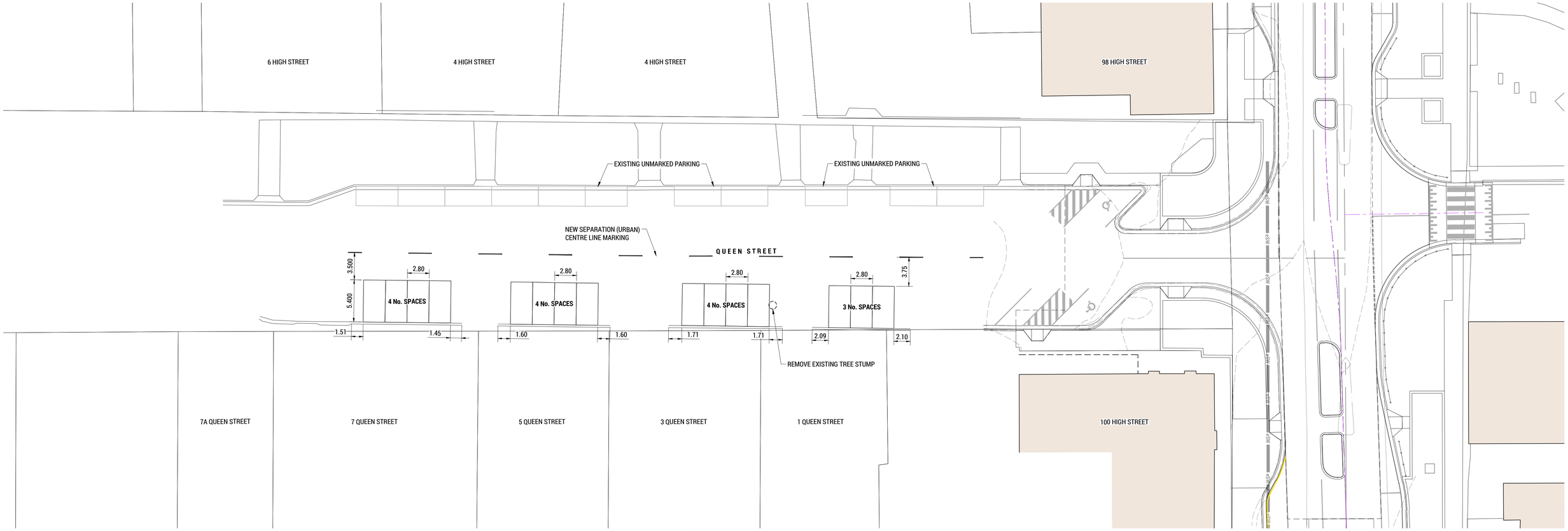

PROPOSED WORKS PLAN - SHEET 4

SCALE 1:250

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CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: PROPOSED WORKS PLAN - SHEET 4
PROJECT: STREETSCAPE	SCALE: 1:250 SHEET SIZE: A1 DWGs IN SET: -
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	PROJECT No: 251023 DWG No: CDA04 REV: A

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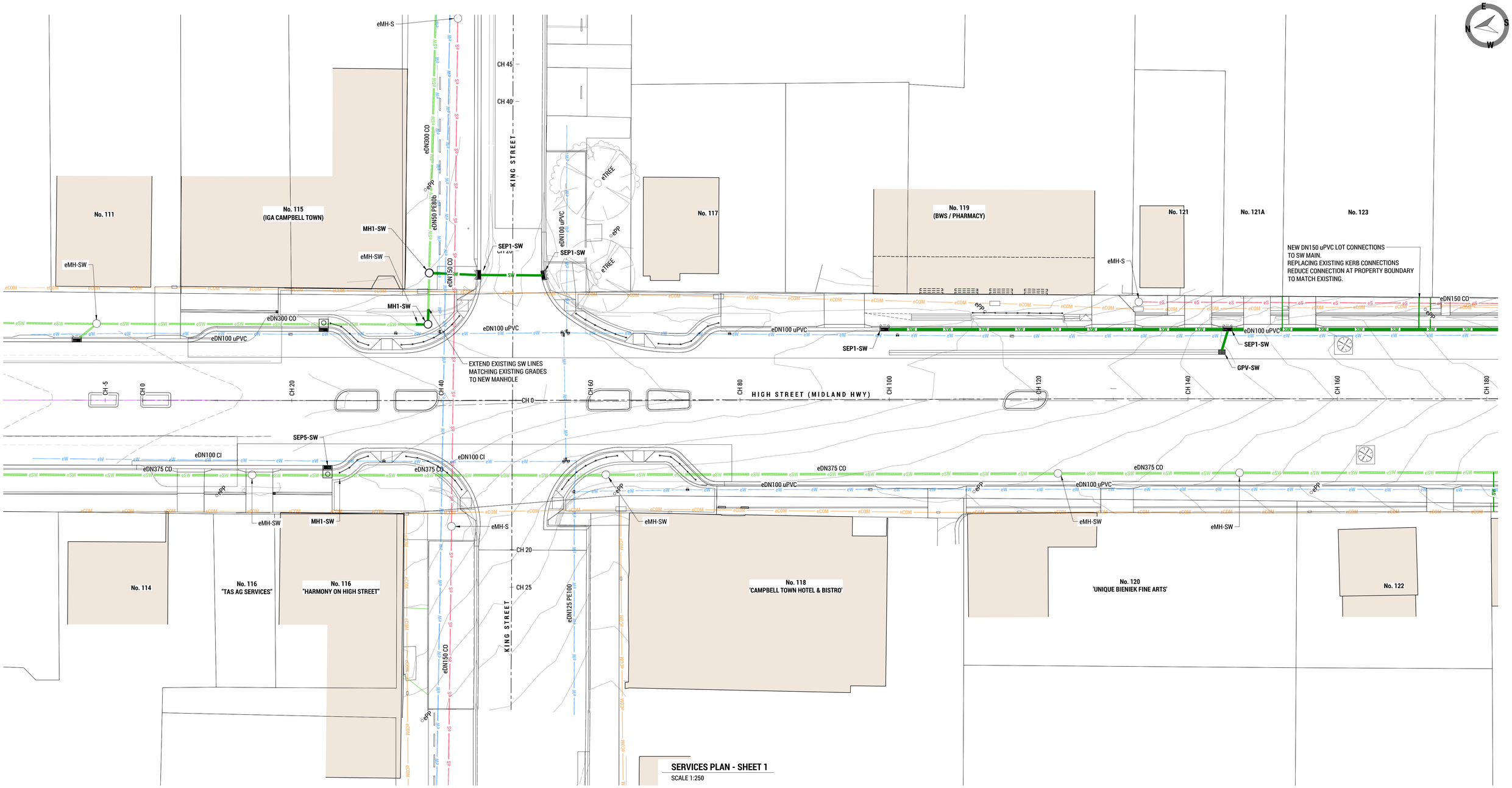

SERVICES PLAN - SHEET 1
SCALE 1:250

LEGEND

eSW	EXISTING STORM WATER MAIN	MH-S	SEWER MANHOLE
SW	PROPOSED STORMWATER MAIN	MH-SW	STORMWATER MANHOLE
eS	EXISTING SEWER MAIN	SEP-SW	SIDE ENTRY PIT
S	PROPOSED SEWER MAIN	HW-SW	HEADWALL
AG	PROPOSED AG DRAIN	GP-SW	GRATED PIT
eW	EXISTING WATER MAIN	GPV-SW	GRATED VEE PIT
W	PROPOSED WATER MAIN	eFP	EXISTING FIRE PLUG
		eSV	EXISTING STOP VALVE
		eM	EXISTING WATER METER

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CLIENT:	NORTHERN MIDLANDS COUNCIL
PROJECT:	STREETSCAPE
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN
TITLE:	SERVICES PLAN - SHEET 1
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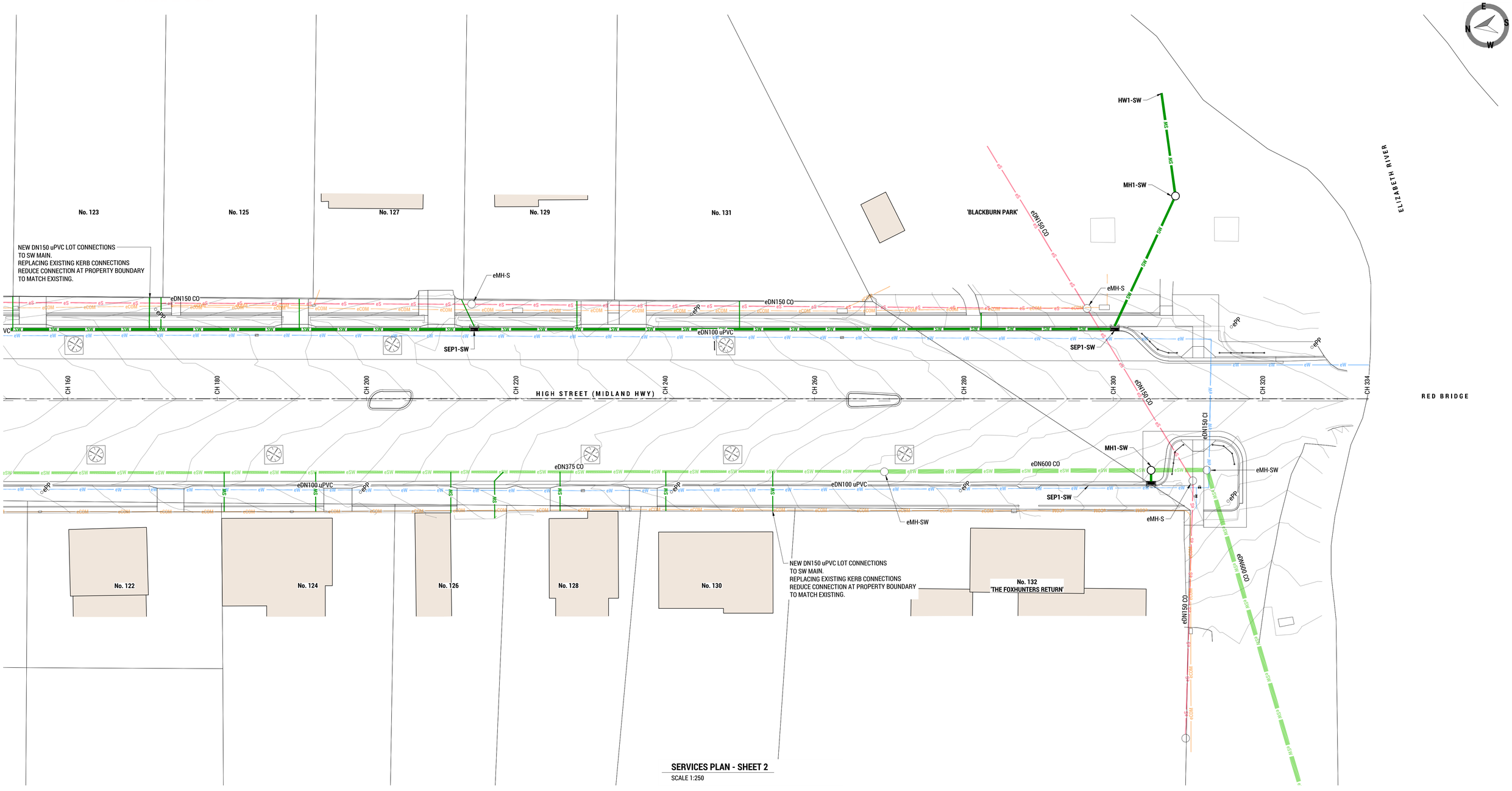
PROJECT No:	251023
DWG No:	CDA11
REV:	A

Exhibited



SERVICES PLAN - SHEET 2

SCALE 1:250

LEGEND

eSW	EXISTING STORM WATER MAIN	MH-S	SEWER MANHOLE
SW	PROPOSED STORMWATER MAIN	MH-SW	STORMWATER MANHOLE
eS	EXISTING SEWER MAIN	SEP-SW	SIDE ENTRY PIT
S	PROPOSED SEWER MAIN	HW-SW	HEADWALL
AG	PROPOSED AG DRAIN	GP-SW	GRATED PIT
eW	EXISTING WATER MAIN	GPV-SW	GRATED VEE PIT
W	PROPOSED WATER MAIN	eFP	EXISTING FIRE PLUG
		eSV	EXISTING STOP VALVE
		eM	EXISTING WATER METER

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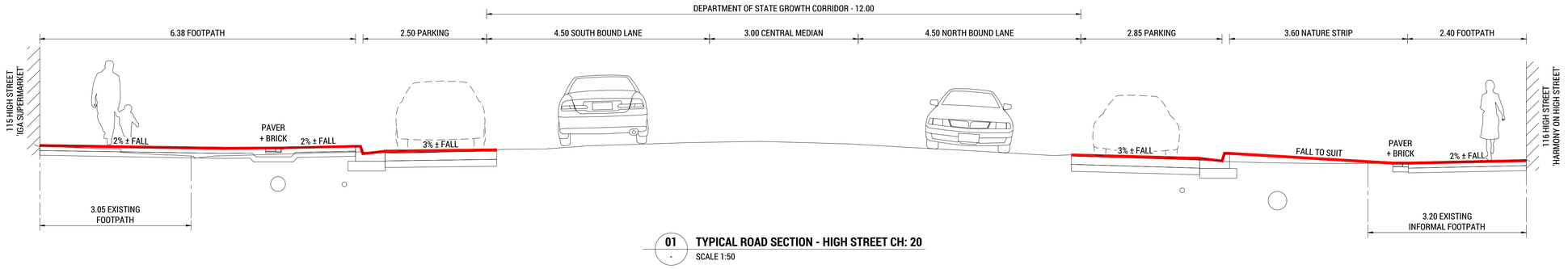
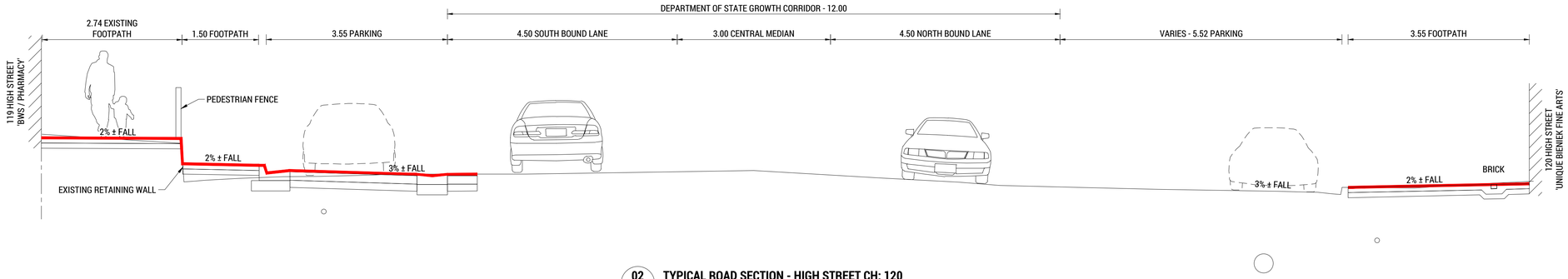
CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: SERVICES PLAN - SHEET 2
PROJECT: STREETSCAPE	
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250 SHEET SIZE: A1 DWGs IN SET: -
	PROJECT No: 251023 DWG No: CDA12 REV: A

Exhibited



01 - **TYPICAL ROAD SECTION - HIGH STREET CH: 20**
SCALE 1:50



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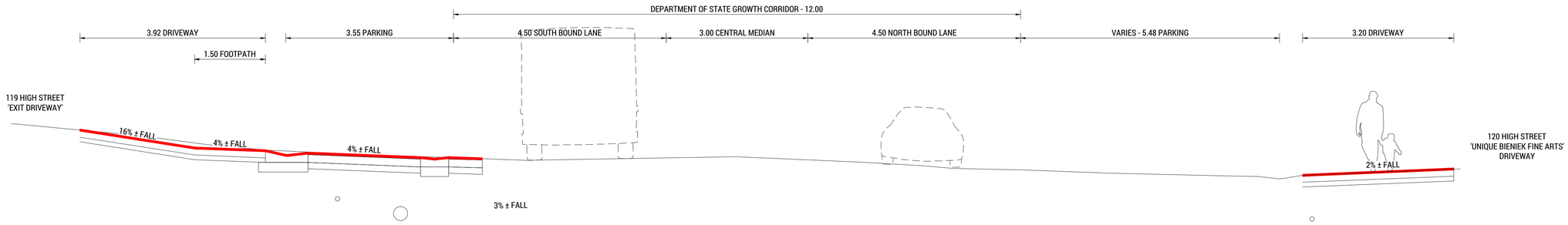

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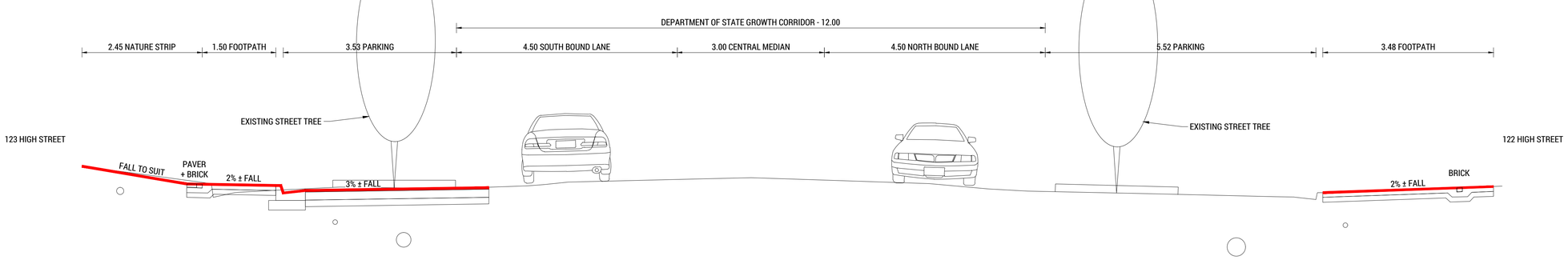

04 - **TYPICAL ROAD SECTION - HIGH STREET CH: 160**
SCALE 1:50

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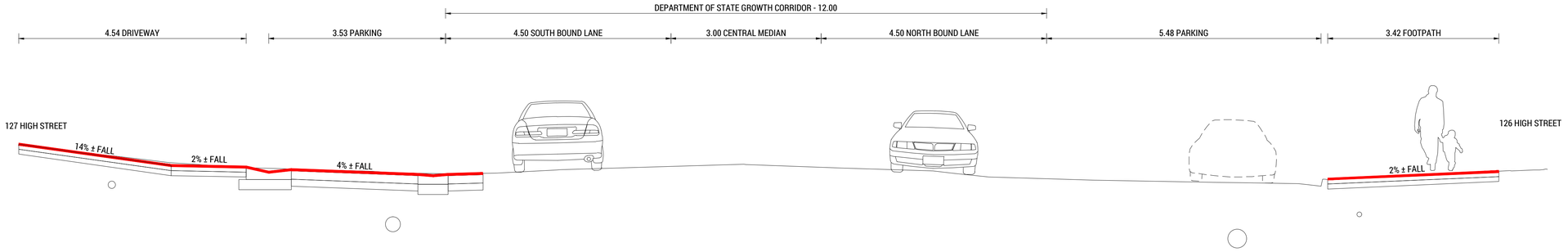
CLIENT: **NORTHERN MIDLANDS COUNCIL**	TITLE: **TYPICAL SECTIONS - SHEET 1**
PROJECT: **STREETSCAPE**	
ADDRESS: **HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN**	SCALE: **1:50** SHEET SIZE: **A1** DWGs IN SET: **-**
	PROJECT No: **251023** DWG No: **CDA22** REV: **A**

Exhibited



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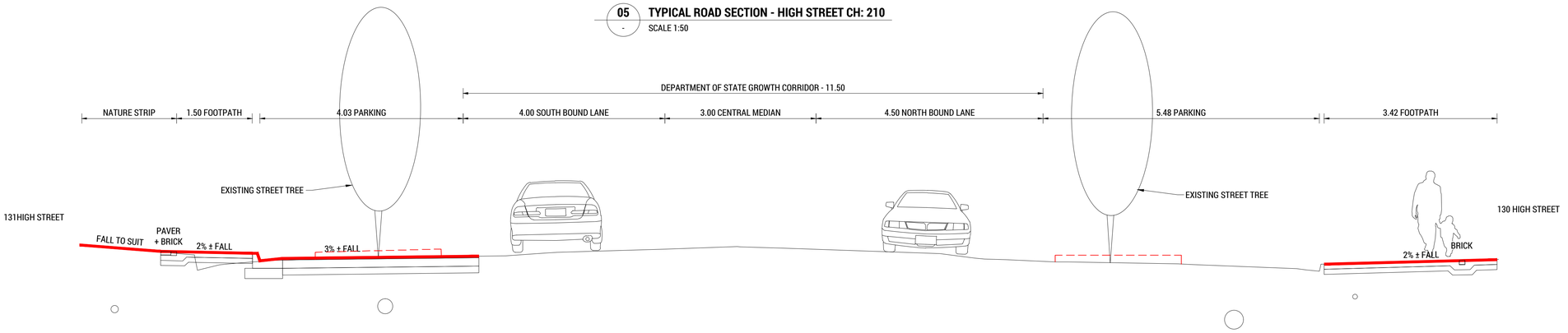
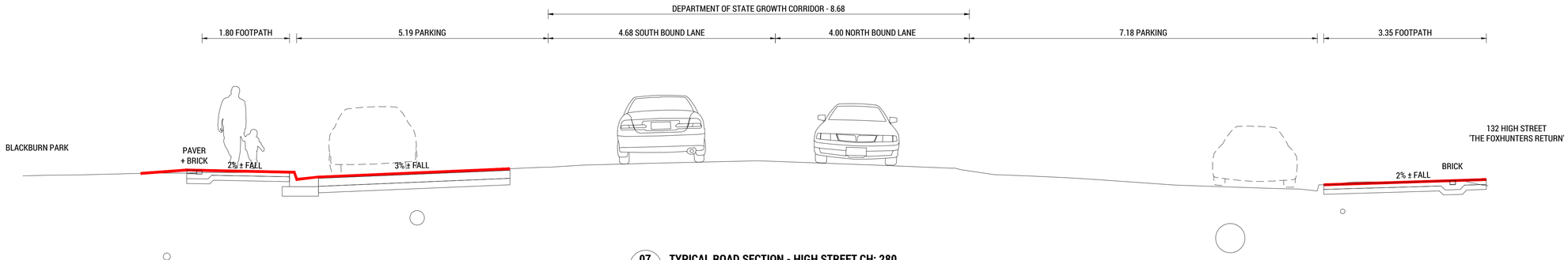
SCALE 1:50



06 - **TYPICAL ROAD SECTION - HIGH STREET CH: 250**
SCALE 1:50



07 - **TYPICAL ROAD SECTION - HIGH STREET CH: 280**
SCALE 1:50

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CLIENT: **NORTHERN MIDLANDS COUNCIL**
PROJECT: **STREETSCAPE**
ADDRESS: **HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN**

TITLE: **TYPICAL SECTIONS - SHEET 2**
SCALE: **1:50** SHEET SIZE: **A1** DWGs IN SET: **-**
PROJECT No: **251023** DWG No: **CDA22** REV: **A**

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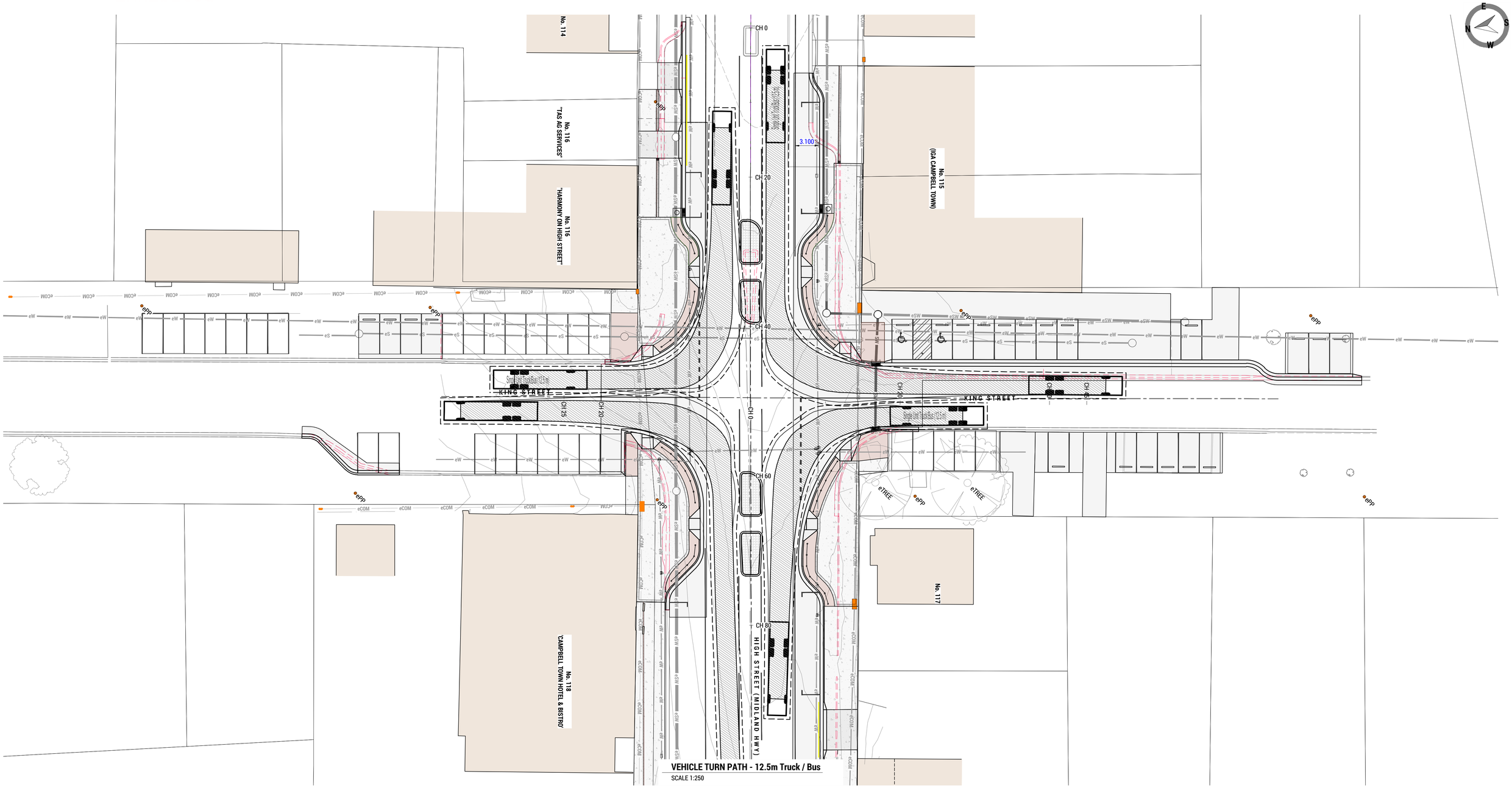

VEHICLE TURN PATH - 12.5m Truck / Bus

SCALE 1:250

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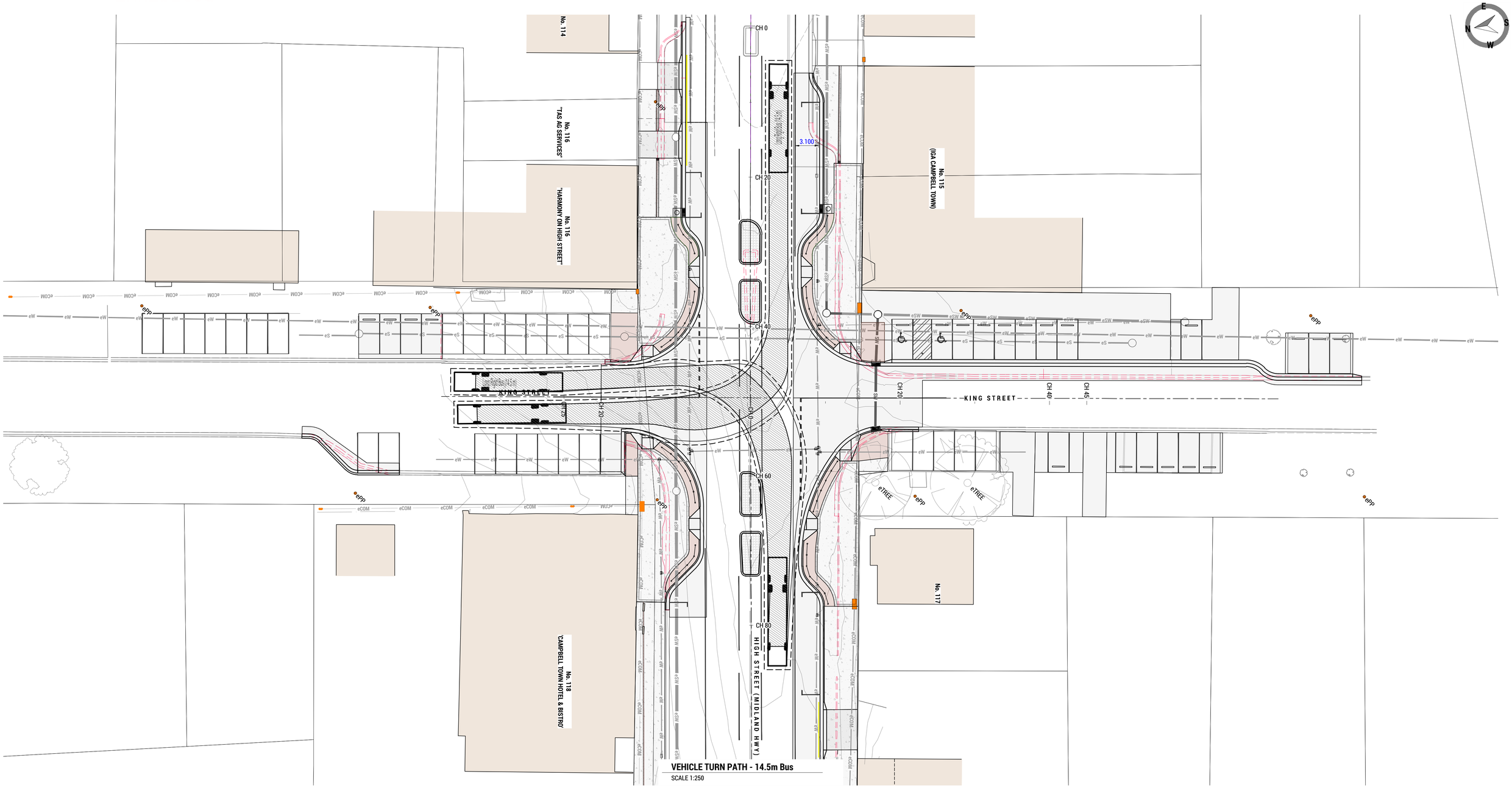
CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: VEHICLE TURN PATH - 12.5m TRUCK / BUS
PROJECT: STREETSCAPE	SCALE: 1:250 SHEET SIZE: A1 DWGs IN SET: -
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	PROJECT No: 251023 DWG No: CDA31 REV: A

Exhibited



VEHICLE TURN PATH - 14.5m Bus
SCALE 1:250

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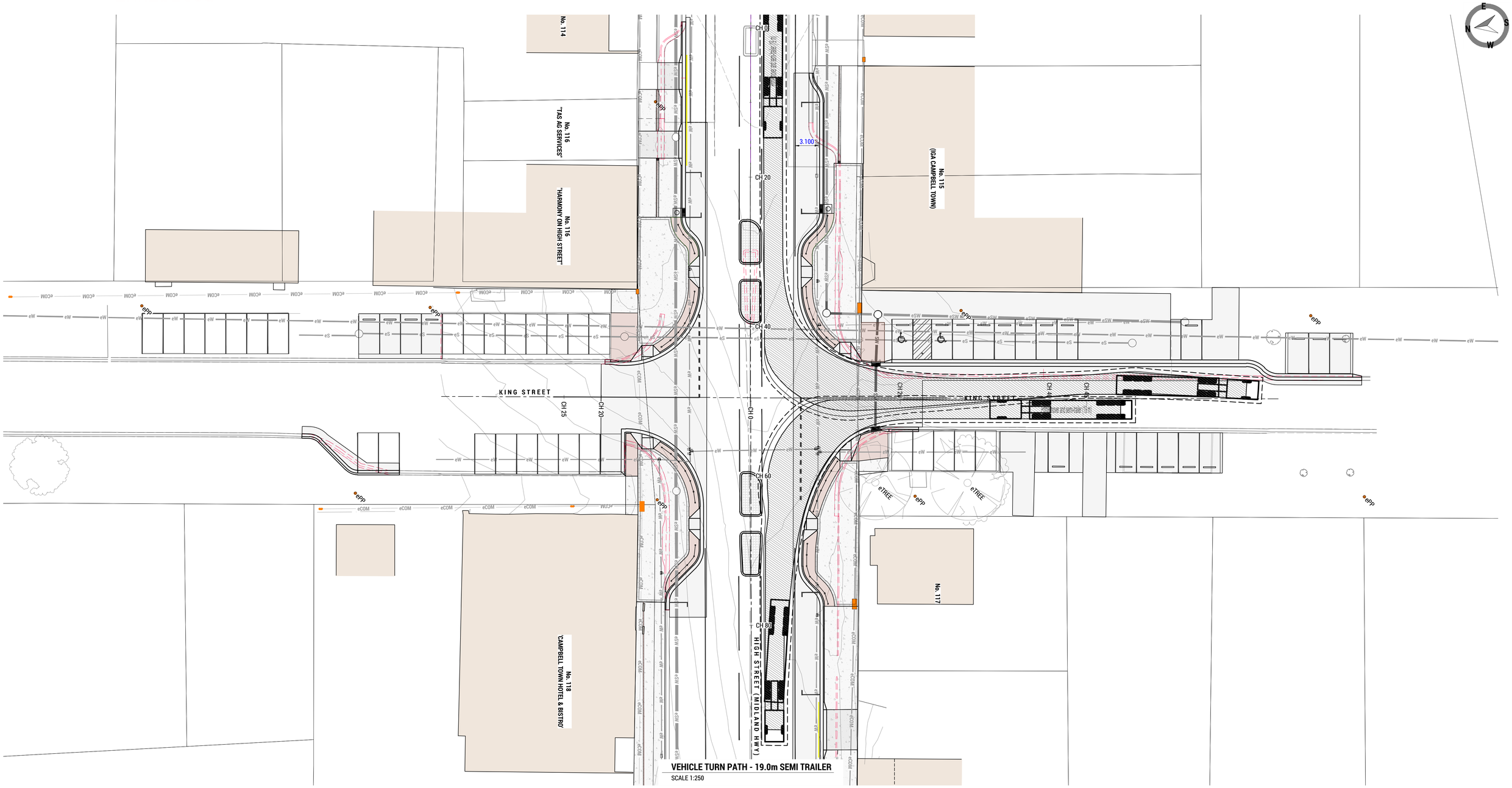
CLIENT: NORTHERN MIDLANDS COUNCIL	TITLE: VEHICLE TURN PATH - 14.5m BUS
PROJECT: STREETSCAPE	
ADDRESS: HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250 SHEET SIZE: A1 DWGs IN SET: -
	PROJECT No: 251023 DWG No: CDA32 REV: A

Exhibited



VEHICLE TURN PATH - 19.0m SEMI TRAILER

SCALE 1:250

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CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	VEHICLE TURN PATH - 19.0m SEMI TRAILER
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:250	SHEET SIZE: A1 DWGs IN SET: -
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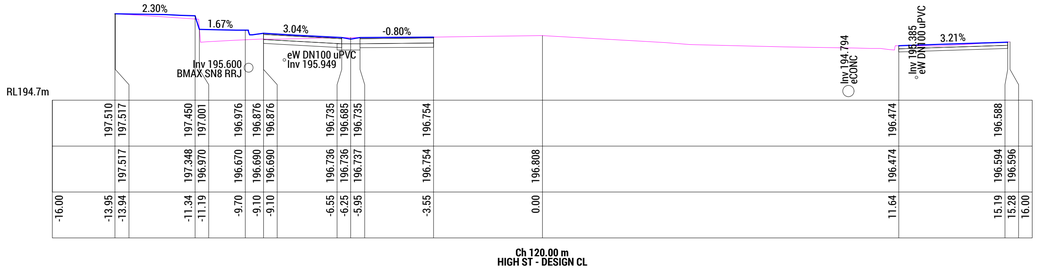

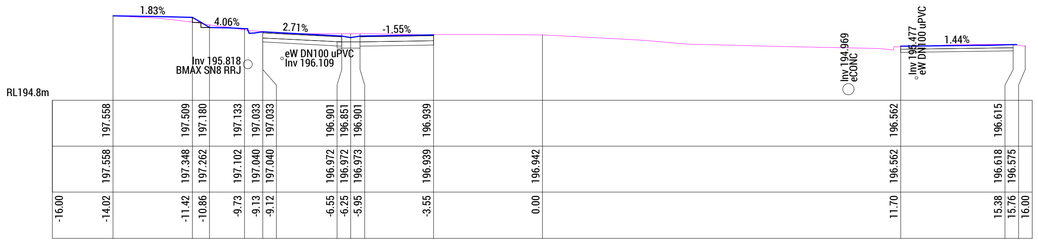

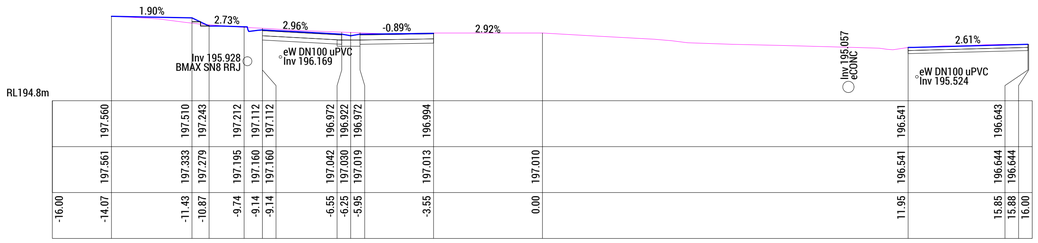

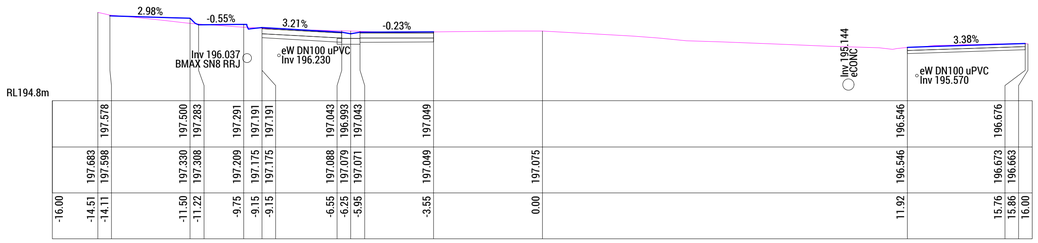

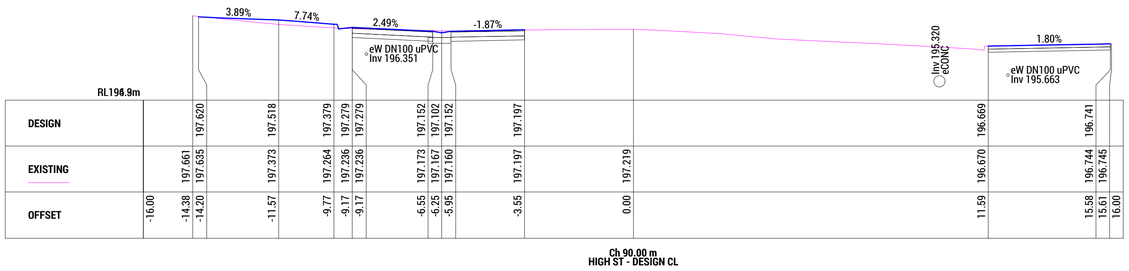

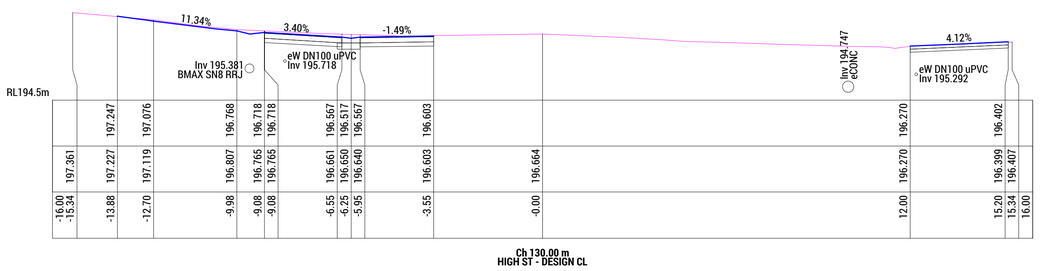

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CLIENT:	NORTHERN MIDLANDS COUNCIL	TITLE:	CROSS SECTIONS HIGH ST - DESIGN CL - CH 90 - 130
PROJECT:	STREETSCAPE		
ADDRESS:	HIGH ST (QUEEN ST - RED BRIDGE) CAMPBELL TOWN	SCALE: 1:50	SHEET SIZE: A1 DWGs IN SET: -
		PROJECT No: 251023	DWG No: CDA25 REV: A

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LANDSCAPE WORKS
TECHNICAL SPECIFICATION

CAMPBELL TOWN
STREETSCAPE

High Street (Midland Highway)
From King Street through to The Red Bridge.

Campbell Town, Tasmania.

Prepared by:

LANGE design
landscape architecture

ISSUE	DATE
A	14 / 05 / 2026

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PRELIMINARIES – LANDSCAPE WORKS

1.0 SCOPE OF WORKS

The scope of the works to be undertaken from this contract are depicted on the drawings included in the Tender documents, as described in the Specification and qualified in these Preliminaries – Landscape Works.

The works to be performed are set out in the following documents:

a) General Conditions of Contract.

b) Annexure to the General Conditions of Contract.

c) Conditions of Contract.

d) Conditions of Tendering.

e) Preliminaries – Landscape Works.

f) Specification – Landscape Works.

g) The following drawings:

- NMCCCTSS1117 CS02 – Cover Sheet
- NMCCCTSS1117 SF05 – Landscape Plan – Surface Finishes and Furniture.
- NMCCCTSS1117 SF06 – Landscape Plan – Surface Finishes and Furniture.
- NMCCCTSS1117 SF07 – Landscape Plan – Surface Finishes and Furniture.
- NMCCCTSS1117 PP01 – Landscape Plan –Planting.
- NMCCCTSS1117 PP02 – Landscape Plan - Planting.
- NMCCCTSS1117 PP03 – Landscape Plan - Planting.
- NMCCCTSS1117 LD03 – Landscape Details.

The Scope of Work items listed in the technical specification does not quantify the works or the full list of items required to be undertaken.

Requirements of individual technical sections of the specification take precedence over any conflicting requirements in the preliminaries.

Order of Precedence: Where discrepancies in the contract arise, the following order of precedence will be used:

- Letter of Acceptance
- Annexure to the General Conditions of Contract
- Standard General Conditions of Contract
- Written Site Instructions
- Addenda to Technical Specifications

- Contract Drawings
- Technical Specification

2.0 EXCLUDED WORKS

All works described in this specification and on the drawings shall be carried out by the contractor, those works required by regulation or law to be carried out by other authorities (water connections, electrical certifications, etc) shall be engaged directly by the contractor. All fees and charges for such work shall be paid for by the contractor.

3.0 MATERIALS & WORKMANSHIP

The Client's Representative will permit substitutions for specified materials which are not available or cannot reasonably be provided in time to meet the program. The Client's Representative will permit substitutions for such materials provided that applications for substitution are made as soon as it is known that specified materials are unavailable. The Client's Representative shall approve substitutions if the Client's Representative is satisfied that the proposed substitute is satisfactory for the purpose intended.

Unless otherwise specified, manufactured items to be used in the work under the contract, are to be used in accordance with current recommendations published by the manufacturer.

Workmanship shall be of the highest quality of its respective kind and conform with the best practices of the trade. Only suitably qualified persons shall perform work on this project relevant to their area of expertise.

9.0 ORDERING

Within 14 days of the date of acceptance of tender, furnish proof of ordering the required materials, particularly **advanced trees and other plant stock**, and advise immediately if any supply difficulties are encountered.

No extension of time will be granted if any material/product is not available due to late ordering.

10.0 DOCUMENT SUBMISSIONS

Before plant material is delivered to site, provide details of lead times for delivery and address of suppliers so that plants can be inspected in the nursery.

11.0 PROTECTION

The complete protection of the work executed under this contract shall be the sole responsibility of the Contractor. The Contractor shall make good any damage caused to materials or workmanship associated with this contract.

The Contractor, at its own expense, shall replace materials and/or redo works that are deemed defective in quality and/or appearance, vandalised or stolen prior to the agreed Practical Completion date.

Temporary Protection Fencing: Unless installed by the project supervisor, the Contractor shall ensure the erection of a sturdy 2.0 metre high temporary mesh protection fence to secure the site from public. The cost of the fence shall be at the Contractor's expense throughout the duration of the contract.

Equipment Operation: Cement mixers and/or cutting machinery shall be positioned so that dust is not blown on to nearby areas, and/or vegetation. It is the Contractor's responsibility that all care is taken to provide a safe and comfortable work environment and continued use of the adjacent areas, during and after construction hours.

12.0 ENVIRONMENTAL PROTECTION

Noise Control: The Contractor is required to take all practical precautions to minimise noise resulting from work under the Contract. Fit all motorised construction equipment with noise suppressors and use so that noise is minimised. Do not use loud hailers. Wet saws are to be used to cut pavers, within a suitable enclosure to the approval of the Client's Representative.

Dust Control: Minimise air-borne dust arising from the performance of the works under the Contract. Dust control as in accordance with The International Erosion Control Association Guidelines (1993).

Water Quality: Water quality to be maintained. Sampling of water quality is to be undertaken if directed by the Client's Representative.

Clean Plant & Equipment: Ensure that the wheels, tracks and body surface of all vehicles and plant entering and leaving the site are free of soil, organic material and pathogens. Ensure that soil, organic material and pathogens do not contaminate the site or surrounding properties.

Ozone Protection: Minimise the use of chlorofluorocarbons, halons and other compounds directly implicated in depletion of the ozone layer.

Soil Erosion Control: Minimise erosion of soil from any lands used or occupied in the performance of the work under the contract.

Pests: Do not introduce weeds, phytophthora, insect or animal pests to the property.

13.0 HOLD POINTS

Give sufficient notice (at least two working days) so that the Client's Representative may undertake site inspections at the following stages:

- Layout of service lines prior to backfilling of trenches as required.
- Set out of new pavements, fencing and garden edging/planting areas.
- Preparations/excavations for landscape planting work including trees.
- Upon completion of landscape works.
- End of plant establishment/maintenance period.
- Completion of defects liability period.

The Contractor shall advise the Client's Representative as soon as possible of any specific site issues for resolution/approval.

Special site meetings may be requested by giving a minimum of four working days' notice.

14.0 PLANT ESTABLISHMENT PERIOD

The Contractor shall form an agreement and coordinate the establishment period with Council upon signing the work contract.

END OF SECTION

TECHNICAL SPECIFICATION - LANDSCAPE WORKS

1 GENERAL

1.1 GENERAL NOTES

This specification and the information held herein shall be used as a guide for the quality of finish and the workmanship expectations for all landscape works required for this project.

Where required, the tenderer shall seek clarification and/or guidance for any landscape component either covered within this specification or that has not been included within this specification but may well be required to complete the intention of the landscape as depicted on the provided landscape drawings.

1.2 SCOPE OF WORK

Provide the labour, materials, plant and services, to carry out the operations necessary for the proper performance of the hard and soft landscape works as shown on the drawings and as specified herein. All works within this section shall be carried out by an approved Contractor and shall include but not be limited to the following, unless agreed otherwise in the contract:

- Earthworks, excavation, site levelling / trimming.
- Installation of services including subsoil drainage (landscape).
- Construction of new pavements, general footings, barriers, furniture and edging.
- Construction of planting areas including cultivation and spreading of site soil .
- Supply and spread mulch to garden beds.
- Defects period for hard landscape works.

1.3 STANDARDS

Australian Standards: Unless otherwise specified in the Contract, and where applicable, materials and workmanship shall be in accordance with the relevant standards of the Standards Association of Australia.

1.4 INSPECTION

Periodic Inspections: The Client's Representative or his agent shall make regular inspections of the works in progress.

END OF SECTION

2 EARTHWORKS

2.1 GENERAL

Unless performed by the principle Civil Contractor, the Contractor shall accept the site in its existing state after civil bulk earthworks and allow for all filling, grading and trimming, removal of spoils, excavation, cleaning, and surface finishes as specified herein.

Prior to the commencement of any works, the Contractor shall locate and verify all existing services; any significant discrepancies shall be reported to the Client's Representative before proceeding with the work. It is the Contractor's responsibility to determine the actual service locations on the site prior to commencing work.

It is the responsibility of the Contractor to adequately drain the site and comply with the Environment Protection Authority (E.P.A.) construction run off requirements during all stages of construction.

The Contractor shall arrange a site inspection with the Client's Representative prior to the start of any construction works to record any evident damage to existing features.

All surfaces and services damaged or disturbed during the progress of these works shall be made good with materials of similar nature to match existing conditions at the Contractor's expense.

Topsoil: Suitable excavated topsoil and subgrade material (approved as fill) shall be stockpiled separately in the area nominated by the Client's Representative for use in the contract if required.

Existing topsoil stockpiled on site shall be used to provide the base for modified topsoil proposed garden beds and grassing areas as specified.

All additional fill or topsoil material required due to a shortfall of suitable excavated and existing material shall be imported as specified.

Excavation and stripping shall not exceed 30mm depth under the drip line of existing trees to be retained. Excavation and stripping of topsoil shall only be carried out within the area required to carry out specified surrounding works.

Existing grassed areas, which are not affected by the works shall be retained.

2.2 EXCAVATION

Generally: Excavate to the correct design levels and profiles for footings, ground slabs, pads, service trenches, pits, pavements, filling, landscaping and the like, to the required sizes and depths.

Make provision for compaction and settlement. Remove surplus excavated soil from the site unless otherwise directed by the Client's Representative.

Excavate over the site to give correct levels and profiles as the basis for construction, paving, filling and landscaping. Make allowance for compaction or settlement.

Excavation for Landscaping: Excavate and grade areas to be landscaped for placing of topsoil. Leave work in a clean, rubbish free condition for planting.

2.3 SITE CLEARING AND MINOR GRADING

Protection: Adequately protect from damage all structures and services which are beyond the limits allowed to the Contractor as shown. Where concrete, diesel oil or any other material harmful to vegetation has been spilt on the topsoil or sub grade, the affected areas shall be excavated and spoil removed from site.

Minor Grading: Supply all the machinery and equipment necessary to do the job in an efficient manner. All earthwork shall be carried out in accordance with any levels indicated on drawings, and to ensure water flows away from buildings and drains to sumps and drains.

Grade finished ground surfaces to falls indicated, and to ensure natural surface drainage to pits and surface drains.

Corners and intersections of planes shall be rounded and gradual. Grading from edging's shall have horizontal shoulders, minimum width 1000mm, before any change of level.

Protect all services. Any services damaged during site works shall be repaired, replaced or rectified at the Contractor's expense.

Spoil: Remove from site all vegetative material resulting from clearing unless agreed otherwise with the Client's Representative.

2.4 FILLING

Refer to project engineer's drawings and specifications.

2.4.1 Preparation For Filling

Refer to project engineer's drawings and specifications.

2.4.2 Placing Filling

Refer to project engineer's drawings and specifications.

3.4.3 Compaction Of Filling

Refer to project engineer's drawings and specifications.

2.5 CULTIVATION

Preparation: Prepare the sub-grade to receive topsoil by cultivation, and where directed treat the area to be topsoiled with a non-residual herbicide. Remove existing weeds as specified.

Herbicide Types: Non-residual.

Cultivation: Cultivate by ripping to the depths specified below, to loosen the compacted ground. Do not disturb services or tree roots; if necessary cultivate these areas by hand. During cultivation, thoroughly mix in any materials specified to be incorporated into the sub-grade.

Deleterious Material: Remove stones exceeding 50 mm, and any other deleterious material brought to the surface during cultivation, including roots, sticks, weeds and the like.

Sub-Grade Surfaces: Trim after cultivation to shapes and levels such that the required depth of topsoil can be placed to the specified finished surface levels.

Cultivation Depths: Excavate to depth of required topsoil layer for planting and turf areas and break up base to a further depth of 150mm.

2.6 TOPSOIL SPREADING

General: Prepare sub-grade / drainage layers as necessary to receive topsoil. If harmful material has been spilt on the sub-grade, remove the contaminated material from site and replace with topsoil at no extra cost.

Topsoil shall be a modified site topsoil as specified as the preferred medium. Place topsoil to the lines and levels shown on the drawings.

NOTE: Pre-empt natural settling of topsoil prior to placement of planting and mulch.

Planting and grassing areas: Spread topsoil to an even depth over cultivated sub grade and as follows;

- Cultivate topsoil into sub grade.
- Thoroughly water to prevent voids.
- Rake over lightly to attain finished profiles.
- The finished surface of the soil shall be at a level which allows the surface of the mulching material and turf to finish 25mm below the adjoining finished surface levels.

END OF SECTION

3 DRAINAGE WORKS

3.1 GENERAL

Provide subsoil drainage to planting and grass areas where shown on the drawings including connection to approved discharge points, as determined on site to prevent ponding. Underground services and drainage layouts are subject to the requirements of the relevant authority.

REFER TO PROJECT ENGINEER'S DRAWINGS AND SPECIFICATIONS FOR SITE STORMWATER DRAINAGE.

3.2 SUBSOIL DRAINAGE

Generally: Provide subsoil drainage as required to alleviate ponding, dampness and the like. Connect drains to stormwater pits and/or underground drainage lines as directed by Client's Representative.

Provide inspection openings at the upstream end of agricultural pipes as specified.

Agricultural drain: Agricultural drain materials may include:

- Perforated plastic pipe: Type 1, Class 100 (corrugated) (AS 2439).
- Slotted 100 mm diameter UPVC pipe.
- Joints, elbows, tees and end plugs shall be fitted to the manufacturer's specification.
- Other suitable proprietary products including geotechnical drainage fabric.

Pipe Laying: Provide trenching and appropriate clearance for the proper laying and jointing of pipes. Minimum depth of drainage trench to be 350mm, and width 200mm. Trench to be lined with filter fabric as specified prior to placement of pipe work and backfilling.

Filter fabric to fully envelope aggregate backfill. Discharge pipes to stormwater outlets where required.

Drainage Aggregate: 10mmØ recycled concrete.

Filter Fabric: GEOFABRICS AUSTRALASIA Pty Ltd 'Bidum A14' (or equivalent).

END OF SECTION

4 INSITU CONCRETE WORKS

4.1 GENERAL

Concrete works shall include the construction of the following:

- Concrete pavement.
- General footings.

The work shall include the supply of all labour, tools, materials and plant necessary for the construction of all concrete works.

The Contractor shall construct all concrete work, including reinforcement, and shall supply, transport and place all concrete required for the work strictly in accordance with the strengths and other requirements shown on the Drawings, this specification and the current Code AS 3600-1994 Concrete Structures.

4.2 COLOUR PIGMENT

Concrete pathways shall be integrally coloured pigment concentrate by Concrete Colour Systems (1800 077 744), or approved equal, mixed into grey cement in accordance with CCS specifications.

The pigment concentrate for each colour concrete type is as follows:

- PT1: Plain grey cement, light wood float finish.
- PT2: 'ABILOX Black CAF X-2' 8.3%, grey cement, 7-10mm sharp bluestone aggregate, light exposed finish.
- PT3: ABILOX 'Mornington Peninsula 8.3%', 7-10mm sharp bluestone aggregate, light exposed finish.
- PT4: Plain grey cement 10mm Calderstone aggregate, light exposed finish, with 1m grid 'Decorative Saw Cuts'.
- PT5: ABILOX 'Black CAF X-2' 8.3%, grey cement, light wood float finish.
- PT6: Plain grey cement, 20mm dia. crushed tan coloured stone, heavy exposed finish.

4.3 CONCRETE SUPPLY AND PLACEMENT

Refer to project engineer's drawings and specifications.

4.4 JOINTS

Refer to project engineer's drawings and specifications.

Decorative Saw-cut Joints: Where shown on the drawings, install 3mm wide by 25mm deep Machine Sawn Joints following the finishing of the concrete. Ensure saw-joints extend the full length across the concrete pavement to the edge of the concrete. Joints are to be left unfilled.

4.5 REINFORCEMENTS

Refer to project engineer's drawings and specifications.

4.6 STRENGTH

Refer to project engineer's drawings and specifications.

4.7 CONSISTENCY

Refer to project engineer's drawings and specifications.

4.8 CONCRETE THICKNESS

Refer to project engineer's drawings and specifications.

4.9 FORMWORK

All concrete pavements and walls shall be installed to alignments consisting of smooth flowing curves and/or straight lines indicated on the drawings. Avoid truncations and deviations.

Unless shown otherwise, pathways and walls shall be consistently the same width as shown on the drawings and details.

4.10 POURING

Refer to project engineer's drawings and specifications.

4.11 DEFECTIVE CONCRETE

The Contractor shall be fully responsible for employing defective methods of mixing, placing, protecting and curing concrete, and for the adequacy of forms. Approval of any such work or methods by the Client's Representative will not relieve the Contractor of their responsibility.

Concrete which is not placed and completed in accordance with this specification or which, in the opinion of the Client's Representative, is defective shall be removed and replaced by the Contractor at the Contractor's expense.

4.12 CURING AND PROTECTION OF CONCRETE

Approved covering shall be provided to protect the concrete surfaces against rain, hail, dust or any other cause that may damage the concrete during the carrying out of the work.

The formwork may be stripped after 24 hours, but sufficient timbering must be provided to protect all exposed edges for at least four (4) days or longer.

Concrete shall be protected from premature drying at least seven (7) days after initial set has taken place. All covering material shall be kept continuously wet so that the concrete surface is always moist.

4.13 FINISHING

General: Ensure all edges are rounded with 10mm nominal radius.

All paving shall freely drain and the finished surface shall conform to the following tolerances:

- within +/- 5 mm of design thickness;
- within +/- 5 mm when tested with a 3 m straight edge.

Perpends must align and not deviate more than +/- 2 mm over 3 metre straight edge, off the building line or kerb edge.

Cross falls on all paved surfaces shall be as shown on the Set-out Plan. The finished surface of all pavements shall be free draining and shall not pond water.

Deficient areas shall be made good to the satisfaction of the Client's Representative.

Exposed finish: Concrete pavement where shown on the drawings shall be trowelled smoothly prior to exposing.

Exposure method shall consist of applying a diluted liquid retardant equal to PRIME EXPOSURE 'Exposed Aggregate Retarder', applied strictly to manufacturer's recommendations.

Depth of exposure shall be a light application to remove the top 1mm layer of the trowelled finish to reveal sand grains and top surface of aggregates.

Light Wood Float Finish: Apply a wood float finish to concrete pavement as indicated on the drawings, using a light sweeping motion, to achieve a non-slip rating as specified in the engineer's specification.

4.14 CONCRETE SPILLS, SMEARS OR STAINS

The contractor shall ensure all concrete spills, smears or stains on adjoining surfaces, structures or vegetation are removed prior to concrete setting. Failure to clean any spills, smears or stains will not be accepted, and the contractor will be directed by the Client's Representative to removed such spills, smears and stains as the Contractors own expense.

4.15 PROTECTION FROM TRAFFIC

No pedestrian or vehicle traffic will be permitted on the concrete works until curing is complete to the satisfaction of the Client's Representative.

The Contractor shall take such measures to ensure the pavement is protected at all times to prevent staining from foot traffic, vehicular traffic, etc.

END OF SECTION

5 FURNITURE

5.1 SEATING

Supply and install seating where indicated on the drawings and as specified below.

Seating shall be fixed to pavements with M10 x 75m galvanised anchor bolts, unless otherwise approved by the Client's Representative.

TYPE:

- **S1**: Northern Midlands Council ornate seat with backrest, with a satin black finish.

5.2 LITTER BIN SURROUND

Supply and install litter bin surrounds where indicated on the drawings and as specified below.

Litter bin surrounds shall be fixed to pavements with M10 x 75m galvanised anchor bolts, unless otherwise approved by the Client's Representative.

Where bins are positioned within lawn or planting areas, install bins over a 100mm thick reinforced, charcoal coloured concrete pad.

TYPE:

- **B1**: Northern Midlands Council Litter Bin Surround*, 120Lt.

END OF SECTION

6 PLANT MATERIALS

6.1 MODIFIED SITE TOPSOIL

Preference is for the use of modified site topsoil for grassing and planting areas, with site topsoil ameliorated in accordance with the recommendations of a certified agronomist. The Agronomist shall be engaged by the Contractor within seven (7) Days of being awarded the contract.

All available site topsoil shall be stock piled on site as a result of site clearing works, and shall be used as a priority over imported topsoil.

Issue independent test results and agronomist's reports to the Client's Representative to substantiate that the soil proposed for use complies.

Amelioration method: The modified site topsoil shall be ameliorated in accordance with the agronomist's recommendations.

Modified site topsoil shall be screened prior to installation and be free from materials toxic to plant growth, noxious weeds, stones, roots, and other extraneous materials greater than 20mm diameter.

Mixing modified site topsoil with a skidsteer or backhoe is not acceptable.

Screening after soil has been installed shall not be accepted.

Type and depth:

- Planting areas – 300mm depth (min).
- Advanced trees – Refer details.
- Grass seeding areas –100mm depth (min).

6.2 IMPORTED TOPSOIL MIX

If site topsoil is deemed unviable to ameliorate as determined by the Client's Representative, the use of imported topsoil shall be granted.

Imported topsoil shall be a medium textured organic soil in accordance with the requirements of AS 4419-2003 and appendices, including Bio Assay of high horticultural quality containing a minimum of **10% organic matter** (measured as organic carbon) without structural defects, toxic materials or high salt content and with a pH of between 5.8 and 6.5.

Provide independent test results and agronomist's reports to substantiate that the soil proposed for use complies.

All imported topsoil shall be free from materials toxic to plant growth, noxious weeds, stones, roots, and other extraneous materials.

6.3 ORGANIC MULCH

General: All revegetation areas and planting beds, shall be mulched.

Mulch shall be slashed hardwood mulch from non-weed species, and composted for a minimum of 12 weeks before installation. Mulch shall be free from soil, weed growth, stones, metal and plastics. Sticks and/or timber splinters longer than 100mm will not be accepted.

Place mulch so that it is not in contact with the stems of plants.

Organic Mulch: Aged chipped tree waste.

Depth: 100mm to landscape planting areas.

6.4 PLANTS

Generally: Plants shall be vigorous, well established, hardened off, of good form consistent with species or variety (not soft or forced), free from disease and insect pests, with large healthy root systems and no evidence of having been restricted or damaged.

Plant Supply: The plant material shall be ordered by the Contractor and delivery arrangements shall be made by the Contractor.

Substitutions: Make no substitutions unless approved in writing. Substitutions will not be approved if the Contractor has not complied with the Specification.

Labelling: Label at least one plant of each species or variety in a batch with a durable, readable tag.

Replacements: Replace, with plants of the same specified type, quality and size, any plants which fail, are stolen or are damaged during the work under the Contract.

Warranty: Furnish a warranty from the supplier attesting that the plants are true to the specified species and type, and free from diseases, pests, weeds and the like.

Storage: Wherever possible, plants shall be planted immediately after delivery to the site. If this is not possible, keep them in good condition by appropriate storage methods, or as may be directed.

Prevent theft, drying out or damage from any cause including frost, wind, sun, vermin, animals and the like. Provide an on-site nursery for holding plant stock on site for more than 48 hours, of sufficient size, with provision for watering.

6.5 PLANT CONTAINERS

Sizes: Supply plants in weed-free containers of the sizes specified in the PLANT SCHEDULE as shown on the drawings.

END OF SECTION

7 PLANTING WORKS

7.1 EXCAVATING FOR PLANTING

Planting areas: Excavate a hole for each plant large enough to provide not less than 200mm all around the root system of the plant or as shown otherwise on the Details.

7.2 PLANTING

Locations: Do not vary the plant locations from those shown on the Drawings unless otherwise directed. If it appears necessary to vary the locations and spacings to avoid service lines, or to cover the area uniformly, or for similar reasons, apply for directions.

Watering: Thoroughly water the plants before planting begins, immediately after planting, and thereafter as required to maintain growth rates free of stress.

Depth of Planting: When the plant is in its final position in its hole or bed, the top soil level of the plant root ball shall be level with the finished surface of the soil surrounding the hole or bed. Test the depth by measuring the sides of containers. If backfilling is required to correct the depth, use topsoil mixture.

Placing: When the hole or bed appears to be of correct size, and not before, remove the plant from the container with minimum disturbance to the root ball, and place it in its final position, in the centre of the hole and plumb.

Backfilling: Backfill with imported topsoil mixture as specified.

Groundwork: Lightly tamp down the mixture and water to eliminate air pockets.

Watering Basins: Construct a watering basin around the base of each individually planted tree, consisting of a raised ring of soil capable of holding a minimum of 10 litres.

7.3 MULCH SPREADING

Spread mulches evenly and rake smooth to finish 25 mm below surrounding finished levels unless otherwise specified. Grade the finished surface evenly between design surface levels.

7.4 SPRAYING

Report any evidence of insect attack or disease amongst plant material immediately it is noted. If so directed, spray with an insecticide and/or fungicide approved prior to use, in accordance with manufacturer's recommendations, and to comply with statutory requirements.

7.5 WEEDING AND RUBBISH REMOVAL

Collect empty plant containers daily during planting operations and remove or store on site for later removal if permitted, but ensure they are not able to be scattered by wind or other causes. Regularly remove, by hand, rubbish and weed growth that may occur or recur throughout turfed, planted and mulched areas.

END OF SECTION

8 IRRIGATION

8.1 GENERAL

The Contractor shall be responsible for the design, supply and installation of the irrigation system as specified below.

The irrigation system shall designed by a qualified and licensed irrigation design consultant with experience in designing systems suitable for this size project.

The irrigation water main connection point and controller location shall be determined on site with the Client's Representative.

The irrigation system shall utilise potable water and computer control panel for up to 20 stations unless approved otherwise by the Client's Representative.

Design Drawings shall consist of, but not limited to;

- Head Loss Calculation
- Irrigation Programme
- Schedule of Rates
- In Line Drip Tubes
- Valves
- Valve boxes
- Automatic control unit
- Rain-switch
- Electronic Controller/s.

The irrigation system design shall be presented to the Client's Representative in both electronic PDF format and hardcopy form as scaled drawings (1:100 or 1:200 scale at A1drawing sheets), and accompanied detailed technical specification with all materials and components clearly documented.

The proposed irrigation drawings shall be approved by the client's representative prior to the ordering and installation of the system.

Documents shall also include installation details, specific product details/brochures and maintenance manuals requirements of the irrigation system.

END OF SECTION

9 PRACTICAL COMPLETION OF WORKS

9.1 GENERAL

An agreed date shall be set for Practical Completion during the signing of the contract between the Contractor and the Client. This date shall take into consideration an adequate time period for the manufacture, delivery and installation of all landscape components as specified and as shown on the drawings.

The Contractor shall complete **ALL** construction works prior to the agreed date for Practical Completion, and prior to being issued a Certificate of Practical Completion.

The agreed date of Practical Completion may be amended as a result of valid and approved Extension of Time requests by the Contractor due to unforeseen supply matters and/or inclement weather.

Penalties against the Contractor for exceeding the agreed date of Practical Completion may be imposed by the Client's Representative. Refer to the Contract for penalties.

A Certificate of Practical Completion will be issued by the Client's Representative to the Contractor, when the works are sufficiently complete for the area to be safety used for the purpose for which they have been design.

A Certificate of Practical Completion will not be issued until the following have been provided by the Contractor and approved by the Client's Representative;

- Product brochures, documentation and/or operation manuals,
- Other agency inspections and approvals,
- Certifications and third-party approvals (Plumbing, etc).
- Maintenance/Establishment Period Program/s.

9.2 DEFECTS PRIOR TO PRACTICAL COMPLETION

All defects identified and reported by the Client's Representative during the works period, shall be rectified prior to the issuing of a Certificate of Practical Completion.

Any defects that are not rectified within this time period may result in penalties being imposed by the Client's Representative against the Contractor for exceeding the agreed date of Practical Completion may. Refer to the Contract for penalties.

The Defects Liability Period is separate from the defects to be rectified as identified by the Client's Representative, during the construction of works up to Practical Completion.

END OF SECTION

10 DEFECTS LIABILITY PERIOD

10.1 GENERAL

The timeframe and commencement date for the Defects Liability Period shall be determined in the Contract between the Contractor and the Client.

The duration of the for Defects Liability Period, unless agreed otherwise in the contract, shall be for a minimum period of;

Hard Landscape Works:	Fifty Two (52) weeks.
Planting Works:	Twenty six (26) weeks.

Tasks: During this period the Contractor shall replace any item or material supplied by the Contractor and used in the works that is proven to be faulty. The Contractor shall also rectify any part of the works found to be faulty due to poor workmanship or incorrect installation practices.

Hard Landscape Works: The Contractor shall be responsible for any failure of hard landscape works covered by the specifications and drawings due to faulty workmanship or materials or installation for the period specified and shall replace any such fault at the Contractor's expense.

Planting Works: All plant failures prior to the practical completion of works and for the period specified after the date of Practical Completion, shall be replaced by the Contractor at the Contractor's expense.

Plant failure shall include, but not limited to, dying/dead plants, broken stems and/or branches, diseased roots, stems and/or leaves, insect infected roots, stems and/or leaves, or stolen.

END OF SECTION

11 MAINTENANCE AND ESTABLISHMENT PERIOD

11.1 GENERAL

The Contractor shall maintain and establish the hard and soft landscape works immediately after the Contractor has been issue with a Certificate of Practical Completion by the Client's Representative.

The Contractor shall be responsible for maintaining and establishing the hard and soft landscape works for, unless agreed otherwise in the contract, a minimum period of;

Maintenance Period: Twenty six (26) weeks.

Establishment Period: Twenty six (26) weeks.

Maintenance and Establishment refers to the protection, care, maintenance of the Contract area by accepted horticultural and landscape practices, as well as immediately rectifying any defects that become apparent within the Contract area under normal use for which the area has been designed.

Tasks shall include, but shall not be limited to, the following items where required:

- Weeding planting areas.
- Pest and disease control to planting areas.
- Re-mulching to planting areas.
- Checking irrigation system to planting areas.
- Maintaining a neat and tidy space.

11.2 PROGRAM OF WORKS

The Contractor shall provide a proposed Maintenance and Establishment program to the Client's Representative for approval prior to being issued a Certificate of Practical Completion, and make amendments as required.

The Contractor shall comply with the approved program during the agreed timeframe of the Maintenance and Establishment Period.

11.3 WEEDING AND RUBBISH REMOVAL

During the Maintenance and Establishment period, remove by hand, rubbish and weed growth that may occur throughout the contract area.

Eliminate broad leafed weeds by selective herbicides approved by the local authority and applied in accordance with current Occupational Health and Safety Legislation.

Ensure that spraying is carried out on a calm day and protect all plants from spray drift damage. This work is to be carried out regularly so that at weekly intervals the area may be observed in a completely clean and tidy condition.

11.4 REPLACEMENT

The Contractor at their own cost, shall replace within five (5) working days of detection, all plants and lawn / grass seeding areas that are unhealthy, damaged, dead or stolen.

11.5 SUBSIDENCE

The Contractor shall be responsible for making good any subsidence or depressions that occur during the Maintenance and Establishment Period.

11.6 REQUIREMENTS

Maintenance and Establishment shall include the care of the soft landscaping by accepted horticultural practices including watering, fertilising, weeding, pest and disease control, staking, pruning, replacement, re-planting, mulching and keeping the site neat and tidy.

Defects to the landscaping during the maintenance period shall be rectified immediately.

Mulched surfaces shall be kept clean and tidy, and reinstated or topped up where required. Soil erosion or subsidence shall be made good.

11.7 INSECTICIDE SPRAYING

Notify the Client's Representative of any occurrence of insect attack or evidence of disease, and prior to the commencement of any spraying.

Spray against insect and fungus infestation in accordance with the manufacturer's recommendations as required, or if directed by the Client's Representative.

11.8 PRUNING

Carry out pruning to trees provide a clear trunk and to encourage growth of dense foliage, to remove damaged growth, where beneficial to the condition of the plant-stock, or as directed by the Client's Representative.

11.9 VANDALISM

Where plant-stock is dead, damaged, destroyed or stolen by others before completion of the Maintenance and Establishment Period, report damage to the Client's Representative and carry out a joint inspection. Rectify or replace damaged plant-stock as directed and carry out a further joint inspection after completion.

Where damage occurs before Practical Completion, the Contractor shall pay for all costs of rectification or replacement.

Where damage occurs during the Maintenance and Establishment Period, the costs will be determined by the Client's Representative. Pay for all other reinstatement costs not due to vandalism.

Replacements shall be of the same species, and shall be free from disease and weeds.

11.10 URGENT WORKS

Notwithstanding anything to the contrary of the Contract, The Client's Representative may instruct the Contractor to perform urgent maintenance works. Should the Contractor fail to carry out the work immediately, the Client's Representative reserves the right without further notice to employ others to carry out such work and charge it to the Contractor.

11.11 CERTIFICATE OF FINAL COMPLETION

On completion of the Maintenance and Establishment Period, the Contractor shall arrange a joint inspection with the Client's Representative.

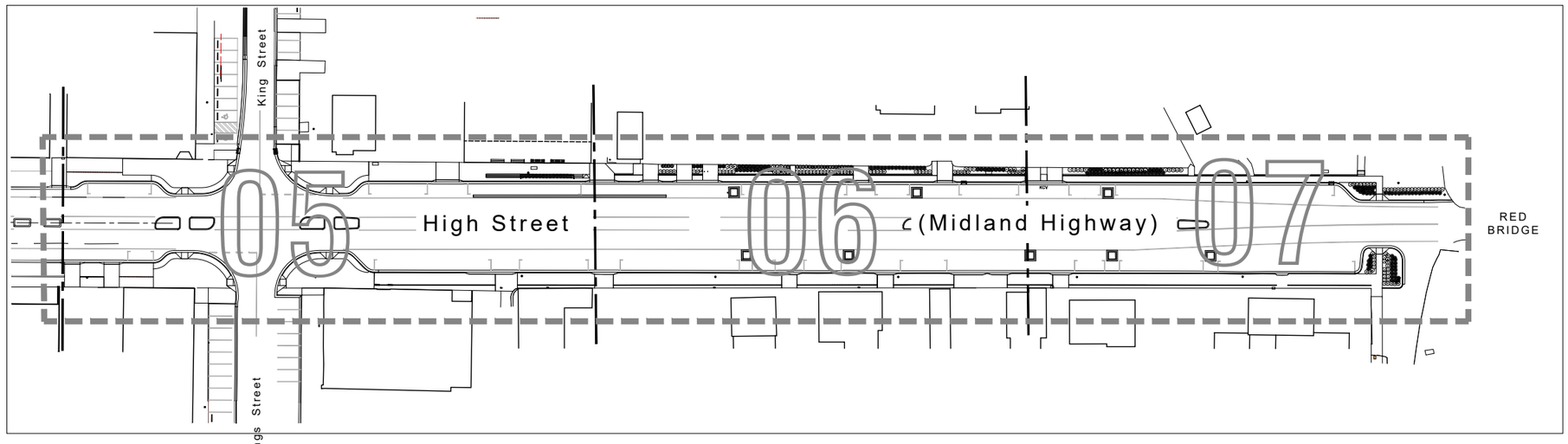
All work shall be completed and all defects rectified prior to receiving a Certificate of Final Completion, and the handing over of works to the Client's Representative.

Once a Certificate of Final Completion has been issued, Council will then take full ownership and responsibility for the ongoing maintenance of the project site.

END OF SECTION

END OF SPECIFICATION

Exhibited



CAMPBELL TOWN STREETSCAPE REDEVELOPMENT
STAGE: High Street from King Street to Red Bridge, Campbell Town, Tasmania

DRAWING SCHEDULE

DRAWING NAME	DRAWING NUMBER	ISSUE
Landscape Plan - Cover Sheet	NMCCTSS1117 - CS02	A
Landscape Plan - Surface Finishes and Furniture	NMCCTSS1117 - SF05	A
Landscape Plan - Surface Finishes and Furniture	NMCCTSS1117 - SF06	A
Landscape Plan - Surface Finishes and Furniture	NMCCTSS1117 - SF07	A
Landscape Plan - Planting	NMCCTSS1117 - PP05	A
Landscape Plan - Planting	NMCCTSS1117 - PP06	A
Landscape Plan - Planting	NMCCTSS1117 - PP07	A
Landscape Details	NMCCTSS1117 - LD03	A

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this full project set, the landscape technical specification, and the engineer's drawings and specifications.

LANGE design landscape architecture
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ABN: 97 468 721 622
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Launceston TAS 5017
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CLIENT: NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

Landscape works drawings, associated specifications and details shall be read in conjunction with all other project consultants approved drawings including; architectural, engineering, hydraulic, and electrical services.

DIAL BEFORE YOU DIG. Check all underground services prior to commencement of any works.

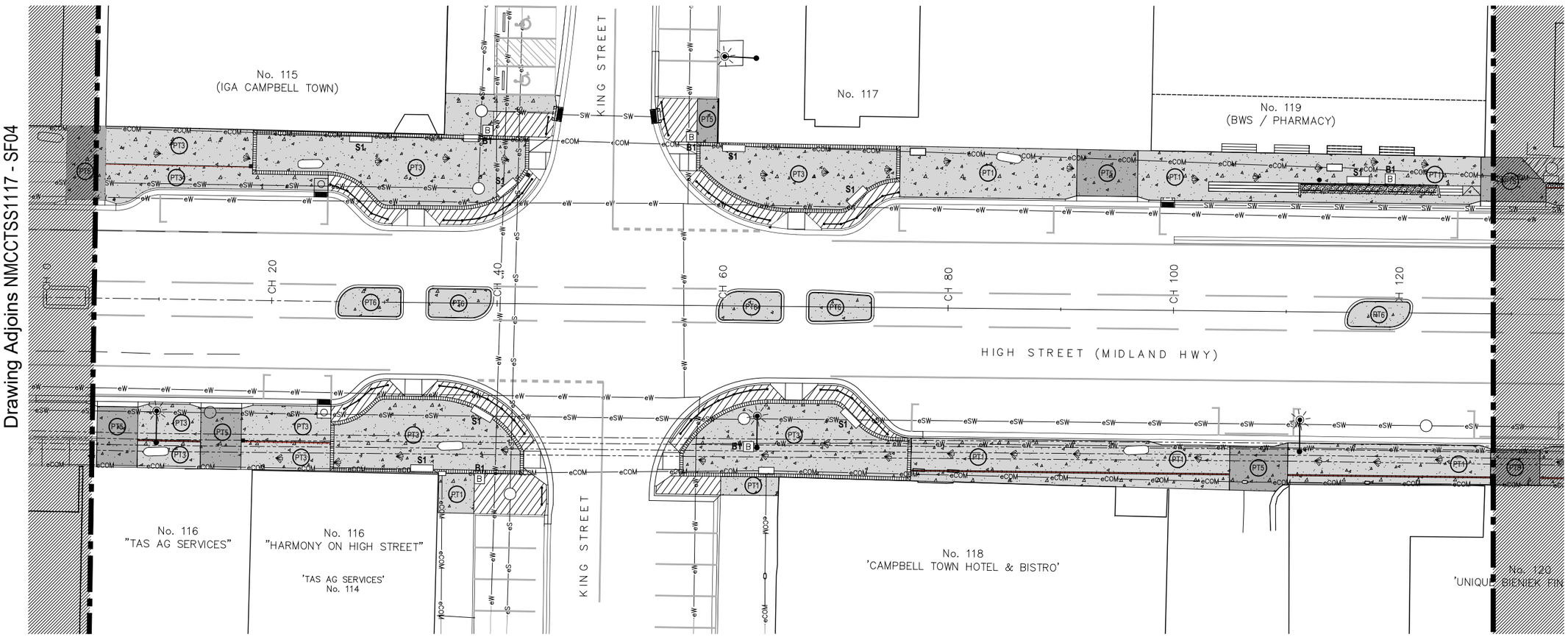
Ensure all dimensions are checked on site prior to commencement of landscape works. All dimensions shown on drawings and details are in millimetres unless noted otherwise.

PROJECT
CAMPBELL TOWN STREETSCAPE REDEVELOPMENT
STAGE: High Street from King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE
LANDSCAPE PLAN - Cover Sheet

DRAWING INFORMATION
Scale Bar 0 5 10 20m
North
Date 14/05/26
Project Stage TENDER
Sheet 1/8
DRAWING No. NMCCTSS1117 - CS02
Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings.
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings.
- Underground services inspection lids as shown on the engineer's drawings.
- Sewer manhole and stormwater manhole as shown on the engineer's drawings.
- Concrete Pavement Type as specified, and as detailed on the engineer's drawings.
- 300 x 200 x 65mm Precast concrete unit paver feature trim, as specified, and as detailed on the engineer's drawings.
- Convict brick trail as per engineer's detail.
- Planting areas as specified.
- Sub soil drainage to trees and gardens beds as specified.
- Grassing as specified.
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.
- Seating Type and Litter Bin Type as specified.

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

FURNITURE SCHEDULE

CODE	TYPE	QTY
S1	Seat with back rest as specified.	8
B1	Litter bin surround, 120Lt as specified.	5

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CLIENT

NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

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DIAL BEFORE YOU DIG. Check all underground services prior to commencement of any works.

Ensure all dimensions are checked on site prior to commencement of landscape works. All dimensions shown on drawings and details are in millimetres unless noted otherwise.

PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: High Street from King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE PLAN - Surface Finishes and Furniture

DRAWING INFORMATION

Scale Bar 0 1 2 5 10m

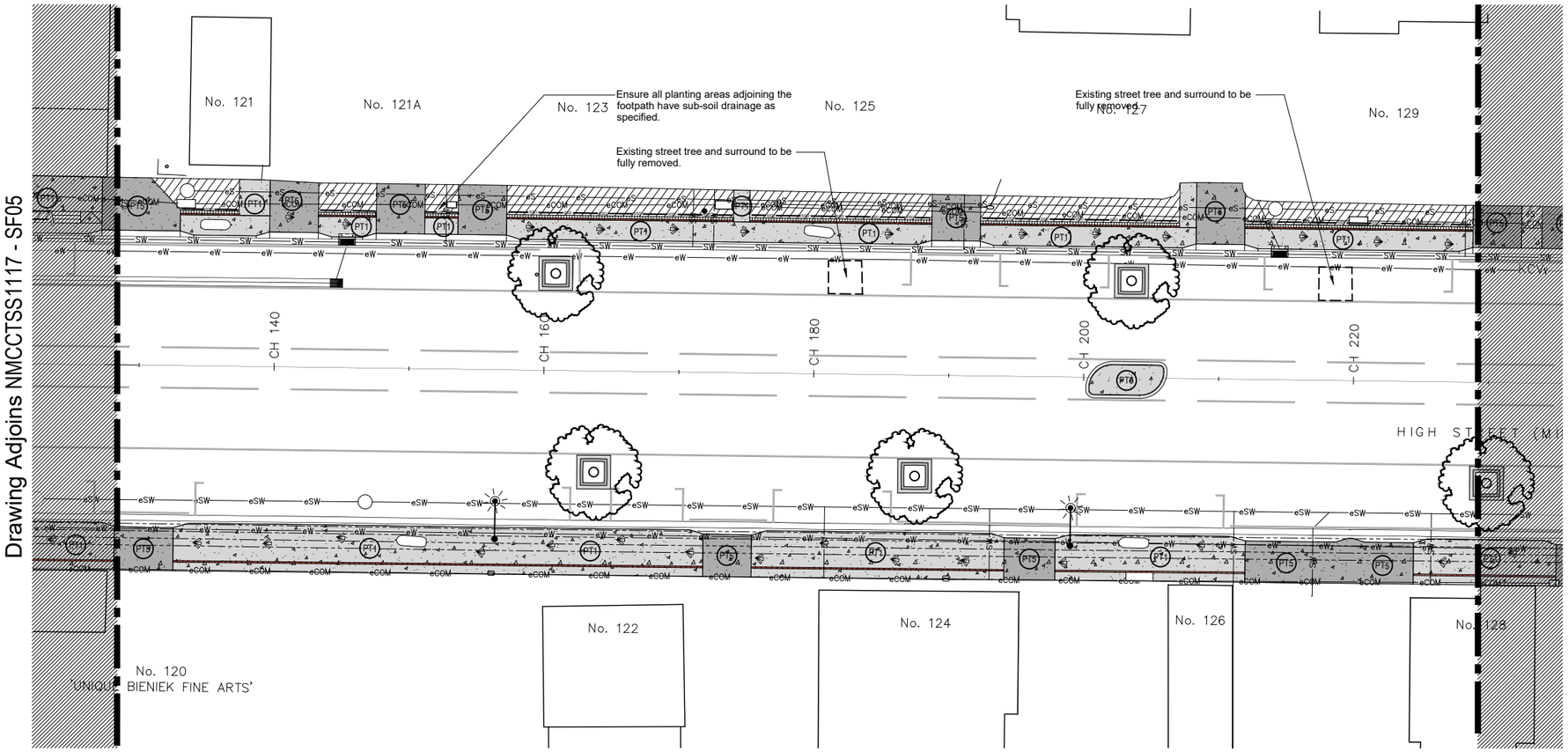
North

Date	Project Stage	Sheet
14/05/26	TENDER	2/8

DRAWING No. NMCCTSS1117 - SF05

Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings. (eW, eCOM, ePWR, eSW, eS)
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings. (PP)
- Underground services inspection lids as shown on the engineer's drawings. (T, SV, GPT, WM)
- Sewer manhole and stormwater manhole as shown on the engineer's drawings. (S, SW)
- Concrete Pavement Type as specified, and as detailed on the engineer's drawings. (PT3)
- 300 x 200 x 65mm Precast concrete unit paver feature trim, as specified, and as detailed on the engineer's drawings.
- Convict brick trail as per engineer's detail.
- Planting areas as specified.
- Sub soil drainage to trees and gardens beds as specified.
- Grassing as specified.
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.
- Seating Type and Litter Bin Type as specified. (S1, B1)

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

FURNITURE SCHEDULE

CODE	TYPE	QTY
S1	Seat with back rest as specified.	8
B1	Litter bin surround, 120Lt as specified.	5

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CLIENT: NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

Landscape works drawings, associated specifications and details shall be read in conjunction with all other project consultants approved drawings including; architectural, engineering, hydraulic, and electrical services.

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE PLAN - Surface Finishes and Furniture

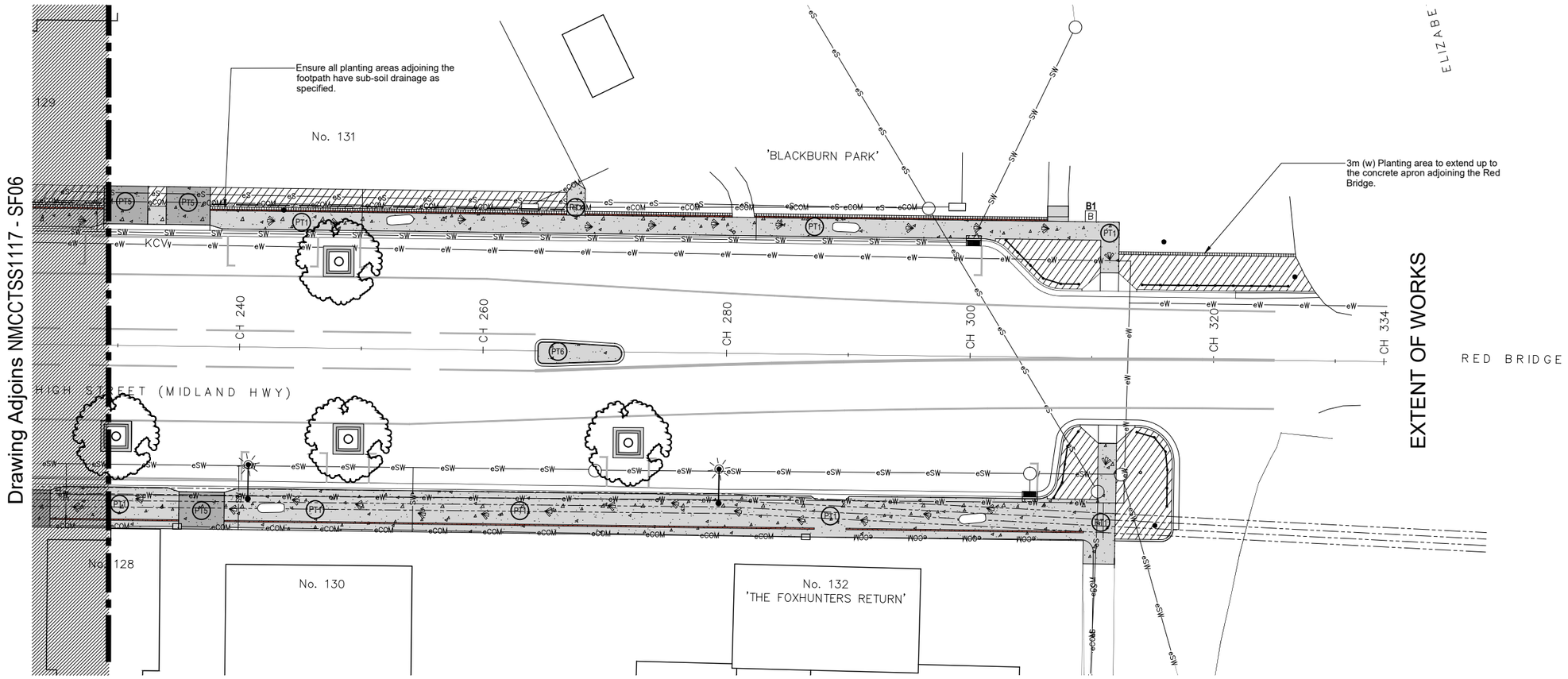
DRAWING INFORMATION

Scale Bar 0 1 2 5 10m — North

Date	Project Stage	Sheet
14/05/26	TENDER	3/8

DRAWING No. NMCCTSS1117 - SF06 — Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings. (eW, eCOM, ePWR, eSW, eS)
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings. (PP)
- Underground services inspection lids as shown on the engineer's drawings. (T, SV, eFB, eM)
- Sewer manhole and stormwater manhole as shown on the engineer's drawings. (S, eSW)
- Concrete Pavement Type as specified, and as detailed on the engineer's drawings. (PT3)
- 300 x 200 x 65mm Precast concrete unit paver feature trim, as specified, and as detailed on the engineer's drawings.
- Convict brick trail as per engineer's detail.
- Planting areas as specified.
- Sub soil drainage to trees and gardens beds as specified.
- Grassing as specified.
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.
- Seating Type and Litter Bin Type as specified. (S1, B1)

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

FURNITURE SCHEDULE

CODE	TYPE	QTY
S1	Seat with back rest as specified.	8
B1	Litter bin surround, 120Lt as specified.	5

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ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE PLAN - Surface Finishes and Furniture

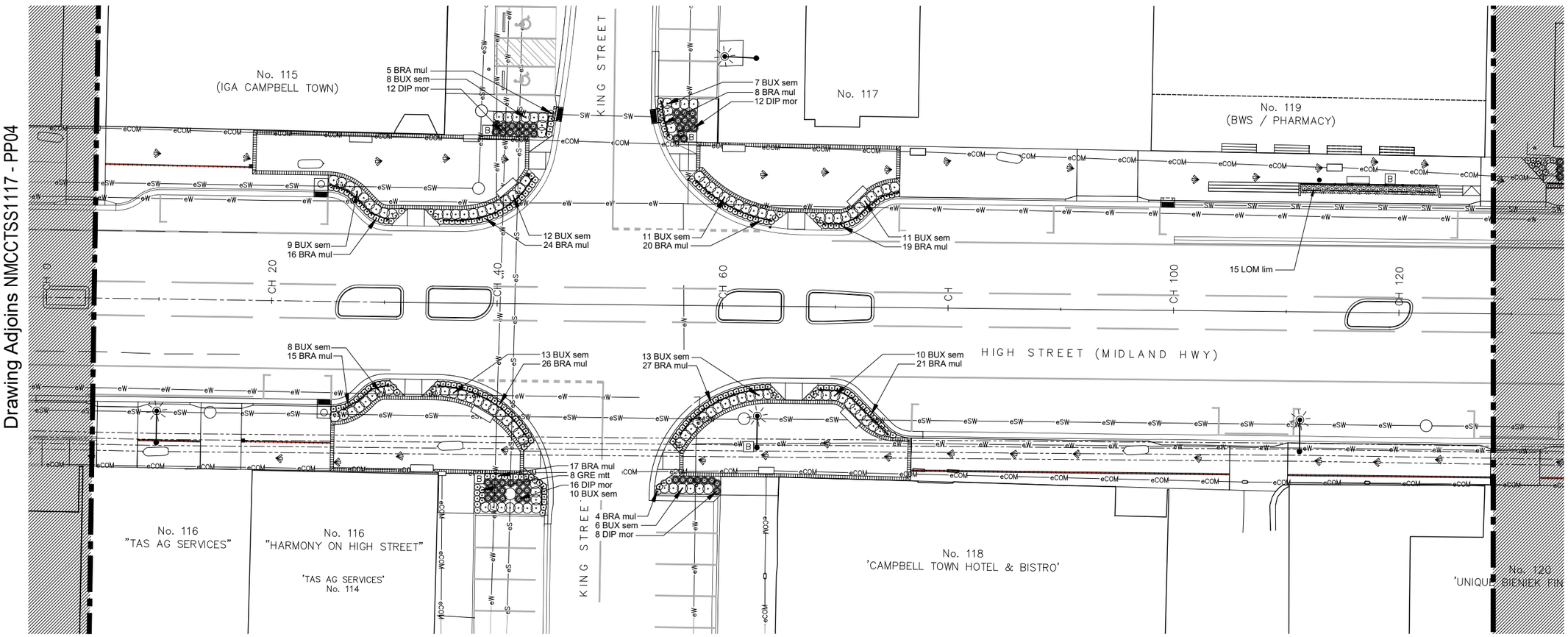
DRAWING INFORMATION

Scale Bar 0 1 2 5 10m — North

Date	Project Stage	Sheet
14/05/26	TENDER	4/8

DRAWING No. NMCCTSS1117 - SF07 — Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings.
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings.
- Underground services inspection lids as shown on the engineer's drawings.
- Sewer manhole and stormwater manhole as shown on the engineer's drawings.
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

PLANTING SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	H x W*	POT	QTY
Shrubs & Groundcovers					
BRA mul	*Brachyscombe multifida*	River Daisy	.2 x .6m	140mm	202
BUX sem	*Buxus sempervirens*	English Box	.8 x .8m	140mm	115
DIP mor	*Diplarrena moraea*	Native Flag Iris	1 x 1m	140mm	48
GRE mtt	*Grevillea var. 'Mt Tamboritha'*	Mt Tamboritha	.3 x .8m	140mm	8
LOM lim	*Lomandra longifolia cultivar*	Lime Tuff	1 x 1m	140mm	15

* Approximate height and width of plant at maturity.

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CLIENT

NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: High Street from King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE PLAN - Planting

DRAWING INFORMATION

Scale Bar 0 1 2 5 10m

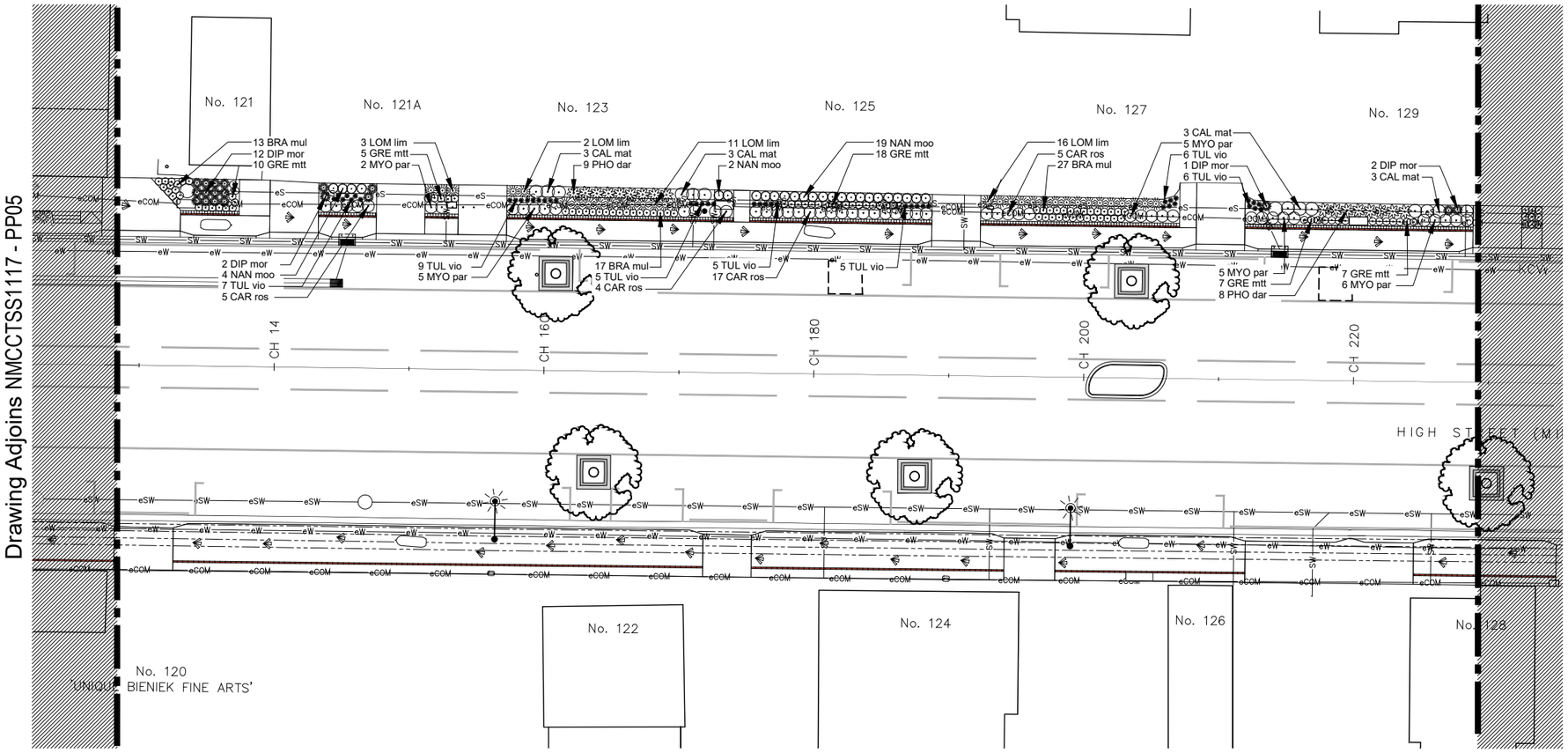
North

Date	Project Stage	Sheet
14/05/26	TENDER	5/8

DRAWING No. NMCCTSS1117 - PP05

Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings. (eW, eCOM, ePWR, eSW, eS)
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings. (PP)
- Underground services inspection lids as shown on the engineer's drawings. (SV, T, GPO, SM)
- Sewer manhole and stormwater manhole as shown on the engineer's drawings. (S, SW)
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

PLANTING SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	H x W*	POT	QTY
Shrubs & Groundcovers					
BRA mul	*Brachyscombe multifida*	River Daisy	.2 x .6m	140mm	57
CAL mat	*Callistemon cultivar*	Matthew Flinders	1 x 1m	200mm	12
CAR ros	*Carpobrotus rossii*	Coastal Pigface	.1 x 1m	140mm	31
DIP mor	*Diplarrena moraea*	Native Flag Iris	.8 x .8m	140mm	17
GRE mtt	*Grevillea var. 'Mt Tamboritha'*	Mt Tamboritha	.3 x .8m	140mm	47
LOM lim	*Lomandra longifolia cultivar*	Lime Tuff	1 x 1m	140mm	32
MYO par	*Myoporum parvifolium cultivar*	Yareena	.1 x 1m	140mm	23
NAN moo	*Nandina domestica cultivar*	Moon Bay	1 x 1m	200mm	25
PHO dar	*Phormium tenax dwarf cultivar*	Dark Delight	1 x 1m	200mm	17
TUL vio	*Tulbaghia violaceae*	Society Garlic	.4 x .4m	140mm	43

* Approximate height and width of plant at maturity.

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CLIENT

NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE PLAN - Planting

DRAWING INFORMATION

Scale Bar 0 1 2 5 10m

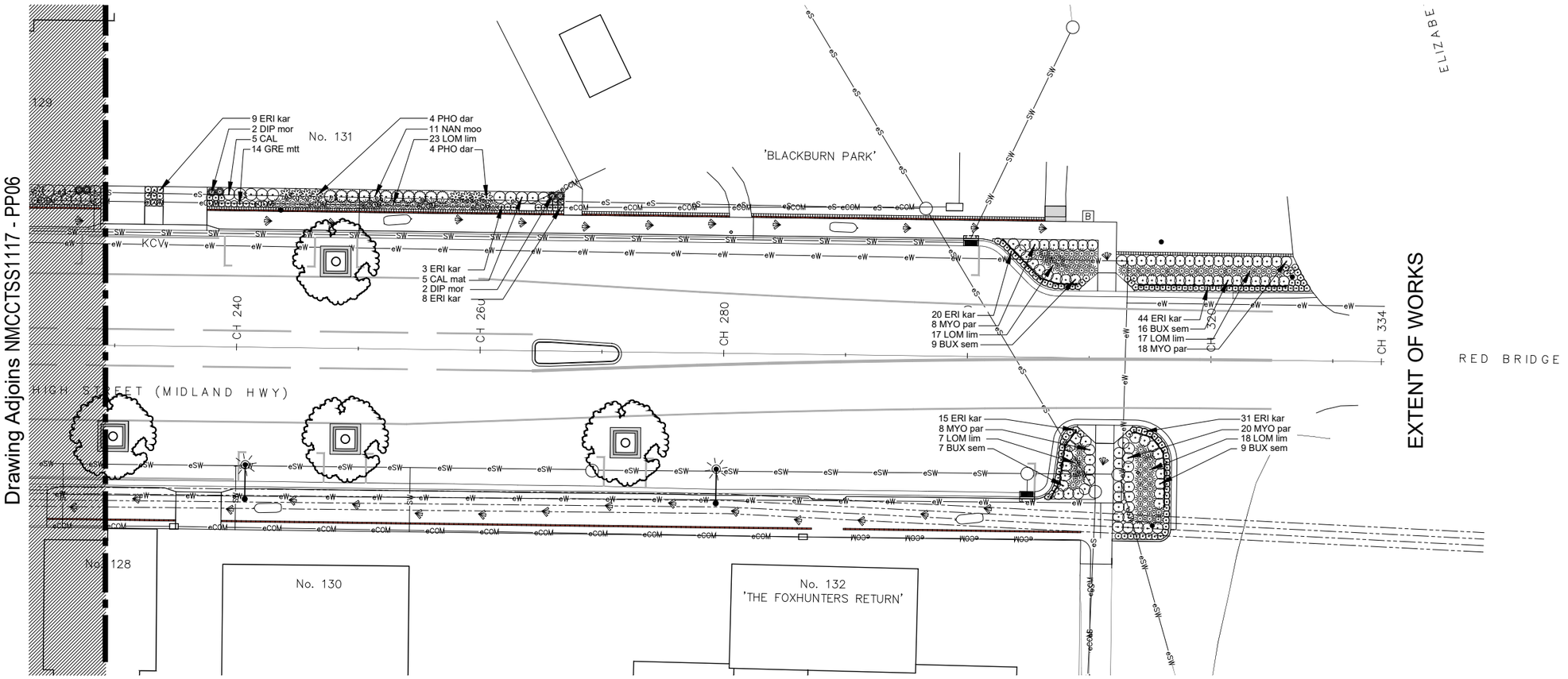
North

Date	Project Stage	Sheet
14/05/26	TENDER	6/8

DRAWING No. NMCCTSS1117 - PP06

Issue A

Exhibited



LEGEND

- Services as shown on the engineer's drawings. (eW, eCOM, ePWR, eSW, eS)
- Overhead powerlines as shown on the engineer's drawings.
- Power poles and overhead street lights as shown on the engineer's drawings. (PP)
- Underground services inspection lids as shown on the engineer's drawings. (SV, T, BFP, GM, BM)
- Sewer manhole and stormwater manhole as shown on the engineer's drawings. (S, SW)
- 200 x 200 x 40mm Precast concrete unit paver edging as detailed.
- Pedestrian Barrier as detailed.
- Convict Ship motif and Broad Arrow motif embedded into concrete pavement as detailed.

THIS DRAWING SET SHALL BE READ AS A1 SIZE PLANS.

This plan shall be read in conjunction with all other plans within this set, the landscape technical specification, and the engineer's drawings, details and specifications.

PLANTING SCHEDULE

CODE	BOTANICAL NAME	COMMON NAME	H x W*	POT	QTY
Shrubs & Groundcovers					
BUX sem	*Buxus sempeivirens*	English Box	1 x 1m	140mm	40
CAL mat	*Callistemon cultivar*	Matthew Flinders	1 x 1m	200mm	10
DIP mor	*Diplarrena moraea*	Native Flag Iris	.8 x .8m	140mm	4
ERI kar	*Erigeron karvinskianus*	Seaside Daisy	.3 x .8m	140mm	130
GRE mtt	*Grevillea var. 'Mt Tamboritha'*	Mt Tamboritha	.3 x .8m	140mm	14
LOM lim	*Lomandra longifolia cultivar*	Lime Tuff	1 x 1m	140mm	82
MYO par	*Myoporum parvifolium*	Yareena	.1 x 1m	140mm	54
NAN moo	*Nandina doemstica cultivar*	Moon Bay	1 x 1m	200mm	11
PHO dar	*Phormium tenax dwarf cultivar*	Dark Delight	1 x 1m	200mm	8

* Approximate height and width of plant at maturity.

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CLIENT: NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date
A	TENDER Issue	14/05/26

NOTES

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT

STAGE: King Street to Red Bridge, Campbell Town, Tasmania

DRAWING TITLE

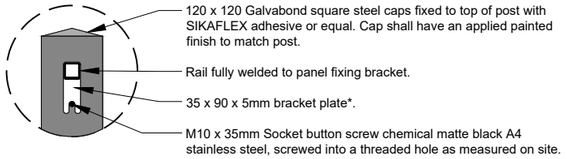
LANDSCAPE PLAN - Planting

DRAWING INFORMATION

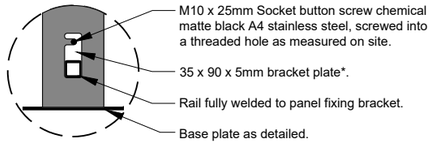
Scale Bar 0 1 2 5 10m — North

Date: 14/05/26 | Project Stage: TENDER | Sheet: 7/8

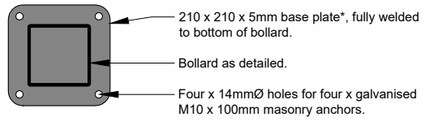
DRAWING No.: NMCCTSS1117 - PP07 | Issue: A



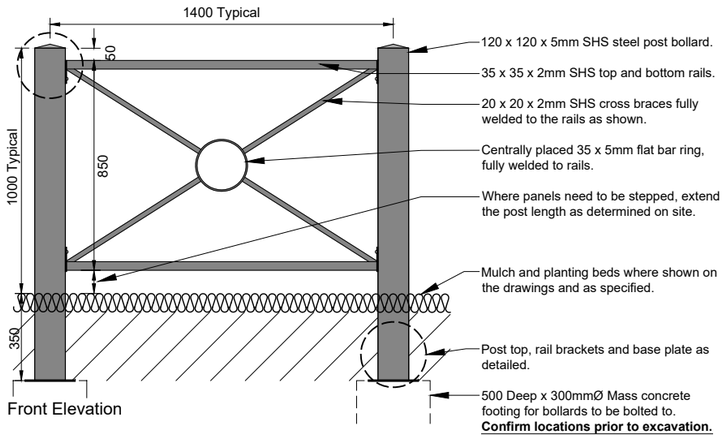
Bollard Top & Panel Bracket



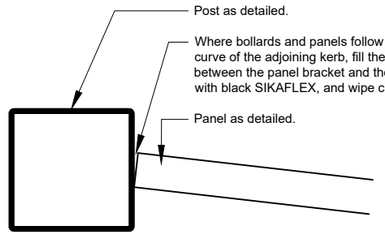
Bollard Base & Panel Bracket



Bollard Base Plate



Front Elevation



Plan - Panel to Bollard Gap

APPLIED PAINTED FINISH SPECIFICATION

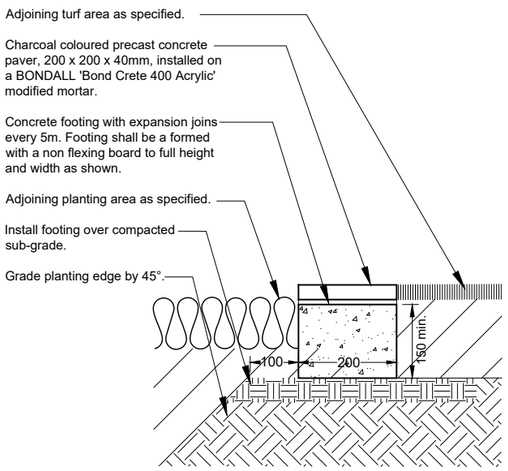
Once all welding is completed, all welding splatters removed, all edges shall be smooth over with sandpaper to remove sharp corners.

All steel components shall have a two-pack applied painted finish, including the preparation and priming of all surfaces as per paint manufacturers recommendation.

Paint shall be satin black in colour and equal to JOTUN 'Super Durable', unless approved otherwise by the Client's Representative.

PEDESTRIAN BARRIER

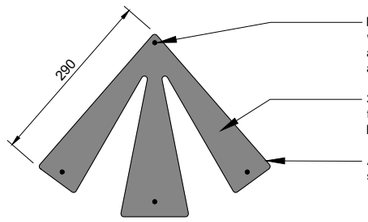
* Denotes pattern is available in .dwg format for laser cutting.



Section

PRECAST CONCRETE UNIT PAVER EDGING

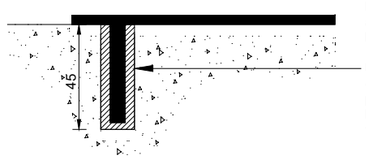
NOTE:
Broad Arrow pattern is available in .dwg format for laser cutting.



Plan

NOTE:
Ensure locations and orientation of arrows are established prior to drilling holes in the pavement.

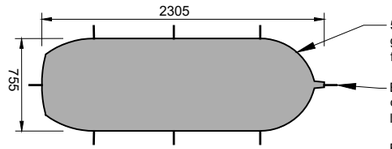
Using a template, drill 8mmØ holes 45mm deep (min), into concrete pavement. Flush holes prior to adding RAMSET 'Chemset' in accordance with manufacturers recommendations.



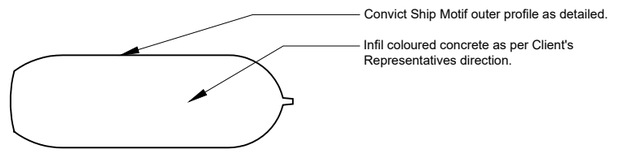
Section

BROAD ARROW MOTIF PAVEMENT ART

NOTE:
Convict Ship motif pattern is available in .dwg format for laser cutting which may be used to manufacturer the outer profile.



Plan - Convict Ship Motif Outer Profile



Plan - Convict Ship Motif Pavement Art

CONVICT SHIP MOTIF PAVEMENT ART

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CLIENT: NORTHERN MIDLANDS COUNCIL

ISSUE SCHEDULE

Issue	Description	Date

NOTES

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PROJECT

CAMPBELL TOWN STREETSCAPE REDEVELOPMENT
STAGE ONE: William Street to 111 / 112 High Street, Campbell Town, Tasmania

DRAWING TITLE

LANDSCAPE DETAILS

DRAWING INFORMATION

Scale Bar | North

Date | Project Stage | Sheet 10/10

DRAWING No. NMCCTSS1117 - LD03 | Issue