

Traffic and Transport Assessment

Central Road, Drysdale Subdivision

V161743



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McLeods Developments Pty Ltd

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1 Introduction

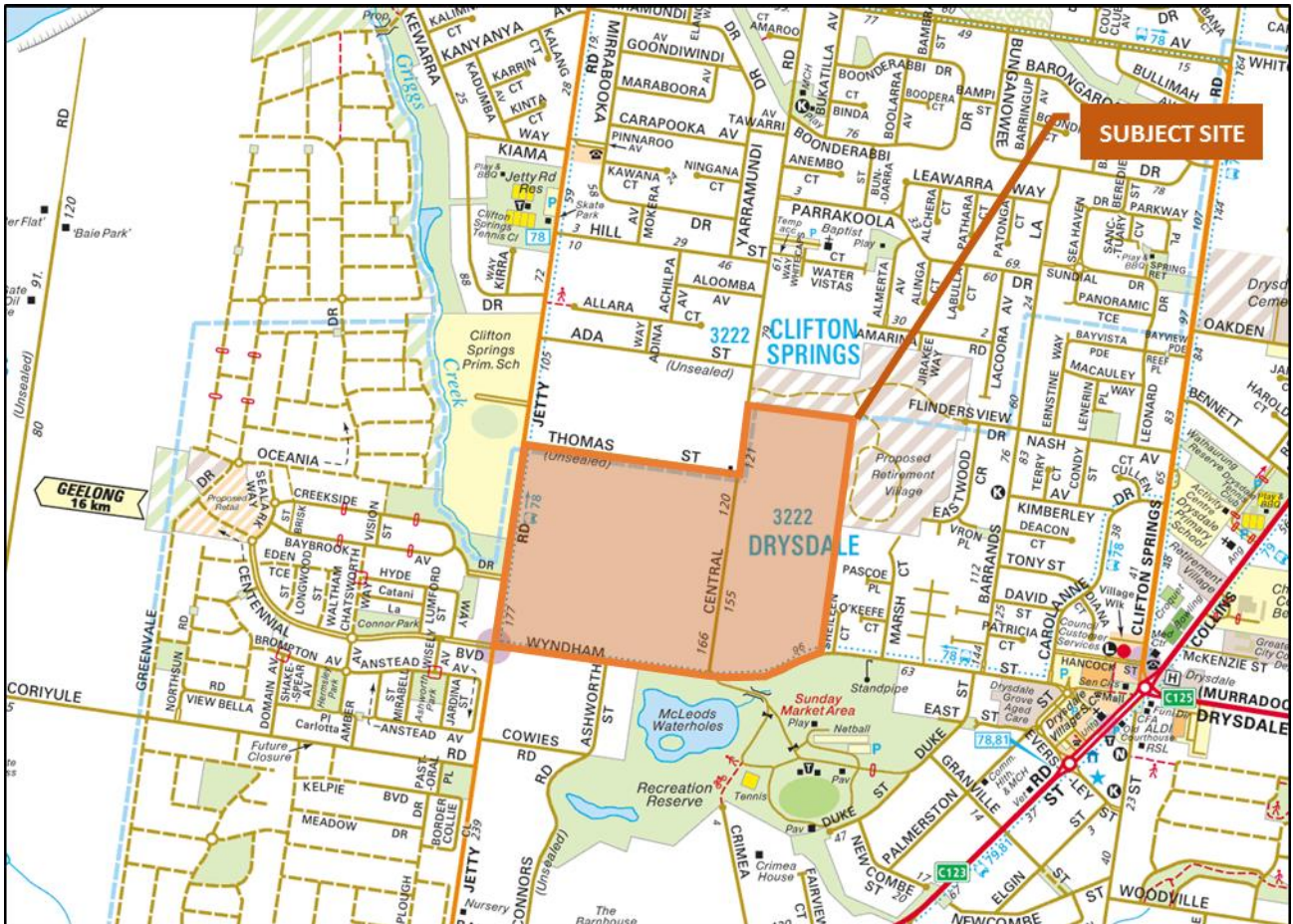
Cardno was retained by McLeods Developments Pty Ltd to undertake a traffic and transport assessment of the proposed residential subdivision on the north-east corner of the intersection of Jetty Road / Wyndham Street.

In the course of preparing this assessment, the subject site and its environs have been inspected, plans of the development examined, and all relevant traffic and parking data collected and analysed.

2 Background and Existing Conditions

The subject site is located on the north-east corner of the intersection of Jetty Road / Wyndham Street, as shown in Figure 2-1.

Figure 2-1 Locality Map



Central Road operates from Wyndham Street north through the subject site, and continues north to Bay Shore Avenue.

The site has frontages to the following roads:

- > Jetty Road (approximately 480 metres)
- > Wyndham Street (approximately 710 metres)
- > Thomas Street (approximately 510 metres)
- > Central Road (approximately 160 metres excluding the section that bisects the site)

The subject site comprises 27 separate residential allotments, and the land is within the Rural Living Zone as defined by the Geelong Planning Scheme.

2.2 Road Network

2.2.1 Jetty Road

Jetty Road is a major local road running north-south between Geelong – Portarlington Road in the south and Bay Shore Avenue (and Port Phillip Bay) in the north. It forms the western boundary of the subject site between Wyndham Street and Thomas Street.

In the vicinity of the subject site, Jetty Road operates with a pavement of approximately 6.0 metres, catering for two-way traffic flow with a single lane in each direction, supplemented by a sealed shoulder, as shown in Figure 2-2.

Figure 2-2 Jetty Road, looking north adjacent to subject site



Figure 2-3 Jetty Road, looking north adjacent to subject site



2.2.2 Wyndham Street

Wyndham Street is a local road that connects Jetty Road in the west with the Drysdale Village Shopping Centre to the east.

Two distinct cross sections occur along this road, with the eastern portion (east of Marsh Court) providing an urban cross section incorporating kerb and channel and kerbside parking opportunities, while the western portion generally comprises a traffic lane in each direction with unsealed shoulders.

A speed limit of 60km/h applies.

Figure 2-4 and Figure 2-5 show views of Wyndham Street adjacent to the subject site.

Figure 2-4 Wyndham Street, looking east adjacent to subject site

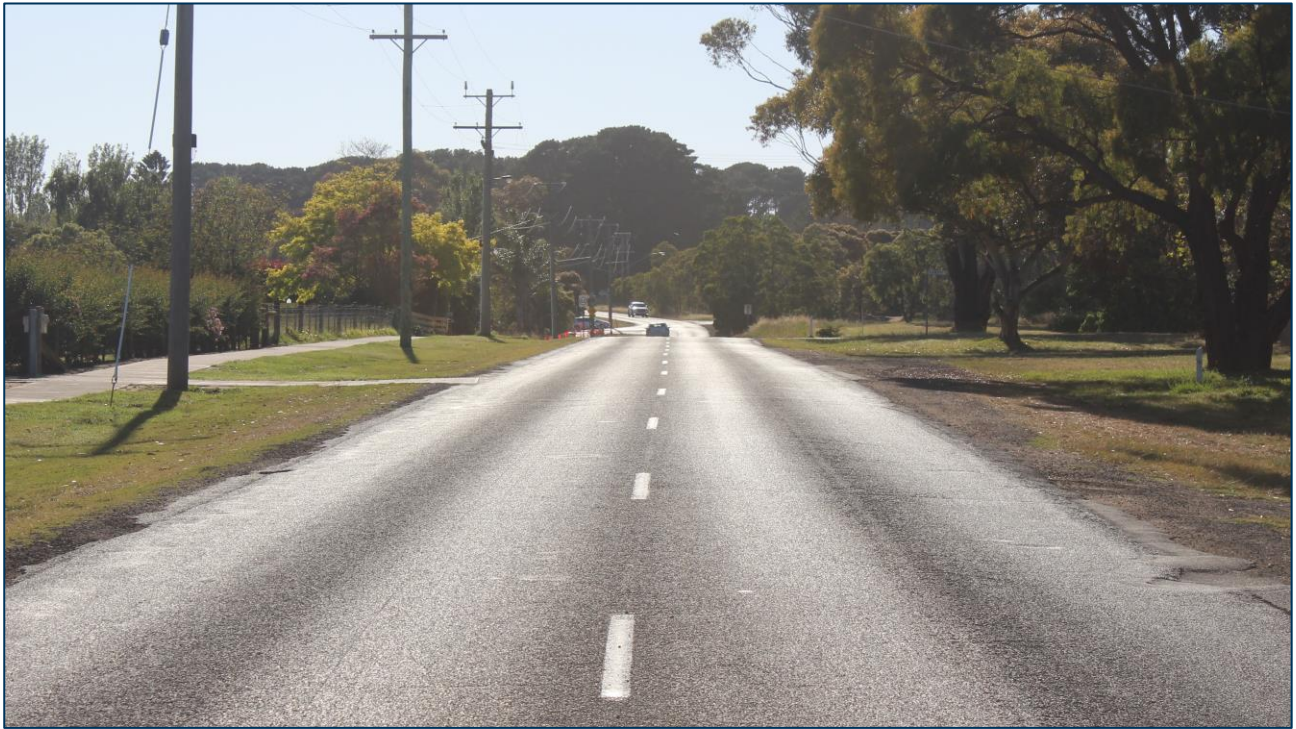


Figure 2-5 Wyndham Street, looking west adjacent to subject site



2.2.3 Thomas Street

Thomas Street is a local unsealed road operating from Jetty Road in the west to Central Road in the east. The road is closed at the Central Road end.

Thomas Street comprises a 6 metre carriageway with verges of approximately 5 metres on the north side and 8 metres on the south side.

Thomas Street provides access to only seven dwellings due to its closure at Central Road, and therefore carries very low traffic volumes currently. A residential subdivision is proposed to be constructed on the northern side of Thomas Street. Plans for the subdivision show a proposed formal hammerhead treatment at the eastern end of Thomas Street, thus it is understood that there are no plans to reopen the intersection of Central Road / Thomas Street.

Figure 2-6 shows Thomas Street adjacent to the subject site.

Figure 2-6 Thomas Street, looking east from Jetty Road



2.2.4 Jetty Road / Wyndham Street / Centennial Boulevard Intersection

The intersection of Jetty Road / Wyndham Street is a signalised cross intersection, providing access via Wyndham Street to Drysdale township and via Centennial Boulevard to Curlewis shopping centre.

Figure 2-7 shows an aerial view of the intersection.

Figure 2-7 Jetty Road / Wyndham Street / Centennial Boulevard Intersection



2.2.5 Wyndham Street / Central Road Intersection

The intersection of Wyndham Street / Central Road is a give way controlled T-intersection, as shown in Figure 2-8. A minor fourth leg operates on the southern side of the intersection, providing access to McLeods Waterholes.

Figure 2-8 Wyndham Street / Central Road Intersection



2.2.6 Jetty Road / Thomas Street Intersection

The intersection of Jetty Road / Thomas Street operates as a give way controlled T-intersection, as shown in Figure 2-9.

Figure 2-9 Jetty Road / Thomas Street Intersection



2.3 Public Transport

The level of public transport servicing Drysdale is reasonable for a town of this size, benefitting from its proximity to Geelong.

McHarry's operates Bus Route 61 from Geelong Station to Drysdale via Leopold and Clifton Springs. The route travels along Jetty Road between Portarlinton Road and Bay Shore Avenue, thus running adjacent to the subject site.

Additionally, Bus Route 60 operates from Geelong Station to St Leonards via Leopold, Drysdale and Portarlinton. The route stays on Portarlinton Road, approximately 1.5km south of the subject site or through Drysdale town approximately 1.1km east of the subject site.

2.4 Existing Traffic Volumes

Cardno commissioned automatic tube counters to be placed on Jetty Road and Wyndham Road adjacent to the site in order to establish current traffic volumes utilising the local road network over a one week period beginning Friday, 18th November 2016.

The results are summarised in Table 2-1 (Jetty Road) and Table 2-2 (Wyndham Street).

Table 2-1 Jetty Road Existing Traffic Volumes

Period	Direction	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Weekday Average
AM Peak: 8:00am to 9:00pm	Northbound	184	151	72	172	179	180	207	184
	Southbound	355	235	147	340	384	354	366	360
	Total	539	386	219	512	563	534	573	544
PM Peak: 3:00pm to 4:00pm	Northbound	391	290	276	367	374	356	348	367
	Southbound	310	223	208	267	300	272	270	284
	Total	701	513	484	634	674	628	618	651
24 Hour	Northbound	3717	3686	3199	3353	3408	3447	3472	3479
	Southbound	3365	3512	2995	3231	3481	3444	3432	3451
	Total	7382	7198	6194	6584	6883	6891	6904	6929

Table 2-2 Wyndham Street Existing Traffic Volumes

Period	Direction	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Weekday Average
AM Peak: 8:00am to 9:00pm	Eastbound	158	86	68	174	170	162	174	168
	Westbound	302	132	118	210	267	316	287	276
	Total	460	218	186	384	437	478	461	444
PM Peak: 3:00pm to 4:00pm	Eastbound	377	190	201	281	345	316	358	335
	Westbound	294	131	149	217	241	263	284	260
	Total	671	321	350	498	586	579	642	595
24 Hour	Eastbound	3131	2241	2172	2706	2884	3062	3088	2974
	Westbound	3096	2146	2162	2492	2650	2901	2917	2811
	Total	6227	4387	4334	5198	5535	5963	6005	5786

3 Background Documentation

3.1 Drysdale Clifton Springs Structure Plan

The Drysdale Clifton Springs Structure Plan was adopted by the City of Greater Geelong in September 2010 and was implemented into the Geelong Planning Scheme via amendment C194 in January 2011.

The subject site was identified within the Concept Plan as a current residential development opportunity:

“Consistent with the 1992 Structure Plan, the area bound by Jetty Road, Wyndham Street, Central Road (including the large Residential 1 zoned allotments to the north east) and Ada Street is considered suitable for residential development. This area is within close proximity to the town centre, has access recreational spaces and community facilities and is connected to appropriate infrastructure. The development of this area will achieve the long term objective of linking Drysdale and Clifton Springs together and help to integrate the Jetty Road Urban Growth Area with the rest of the community.”

Figure 3-1 shows the concept plan for the Central Road subdivision as produced within the Drysdale Clifton Springs Structure Plan.

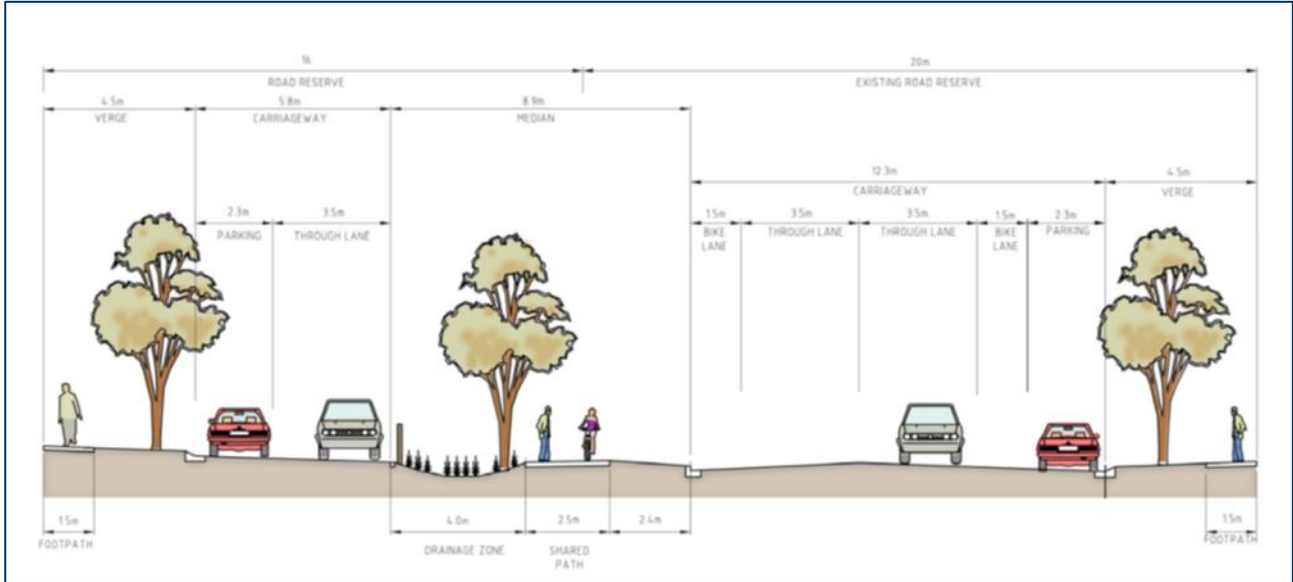
Figure 3-1 Central Road Concept Plan



3.2 Jetty Road Urban Growth Area Infrastructure Plan

The ultimate Jetty Road cross section has been specified in the Jetty Road Urban Growth Area Infrastructure Plan (dated February 2010), as shown in Figure 3-2.

Figure 3-2 Ultimate Jetty Road Cross Section



4 Proposal

4.1 General

It is proposed to develop the site as a residential subdivision catering for in the order of 550 standard residential lots.

Access to the land will be available from Jetty Road, Wyndham Street, Thomas Street and Central Road.

The indicative subdivision layout is provided in Figure 4-1.

Figure 4-1 Subdivision Layout Concept



4.2 Road Network and Hierarchy

The indicative subdivision road network has been designed around the existing Thomas Street and Central Road alignments in order to complement and function with the existing road network.

Primary access to the subdivision will be available via a give-way controlled T-intersection to Jetty Road, in addition to intersections to Wyndham Street, Thomas Street and Central Road.

The indicative subdivision road network is shown in Figure 4-2.

Figure 4-2 Subdivision Road Network Concept Plan



5 Design Considerations

5.1 Access and Intersection Treatments

5.1.1 Jetty Road / Site Access

It is proposed to construct a Type CHR give-way controlled intersection at the intersection of Jetty Road / Site Access, as shown in Appendix A. The intersection is located north of the existing Creekside Drive, with the proposed right turn lane backing onto the right turn lane for that intersection.

This intersection is expected to be the main access into the site. It has been located in order to maximise the available sight distance for the intersection whilst not interfering with the Creekside Drive intersection.

This intersection is to be constructed prior to any dwellings along the main east-west road being occupied.

5.1.2 Jetty Road / Thomas Street

The Thomas Street intersection will be the secondary access to/from Jetty Road, and therefore will carry lower traffic volumes associated with the proposal. As such, no upgrade works are proposed for the intersection itself.

It is noted that the eastern end of Thomas Street is currently being constructed as a hammer head in association with the subdivision to the north of the site, and it is anticipated that the road will continue to operate as a cul-de-sac in the future. Therefore, Thomas Street is anticipated to continue to function as a local access road, providing access to properties immediately abutting the road and those within the immediate surrounds.

5.1.3 Wyndham Street / Central Road

It is proposed to upgrade the intersection of Wyndham Street / Central Road to provide a right turn lane for vehicles entering Central Road from the east. Access to the reserve on the south side of Wyndham Street will be maintained, and is anticipated to continue to operate adequately.

Appendix A provides a concept plan for the intersection of Wyndham Street / Central Road. A pedestrian refuge is proposed to on the western side of the intersection.

This intersection is proposed to be constructed with the formalisation of the southern portion of Central Road or when development of the site reaches 360 dwellings.

5.1.4 Wyndham Street / Minor Accesses

The proposed Wyndham Street access points between Jetty Road and Central Road are proposed to be simple give-way style intersections, as they are expected to carry significantly lower traffic volumes than Central Road.

5.2 Modifications to the Existing Road Network

5.2.1 Jetty Road

The site has a frontage of approximately 500 metres to Jetty Road.

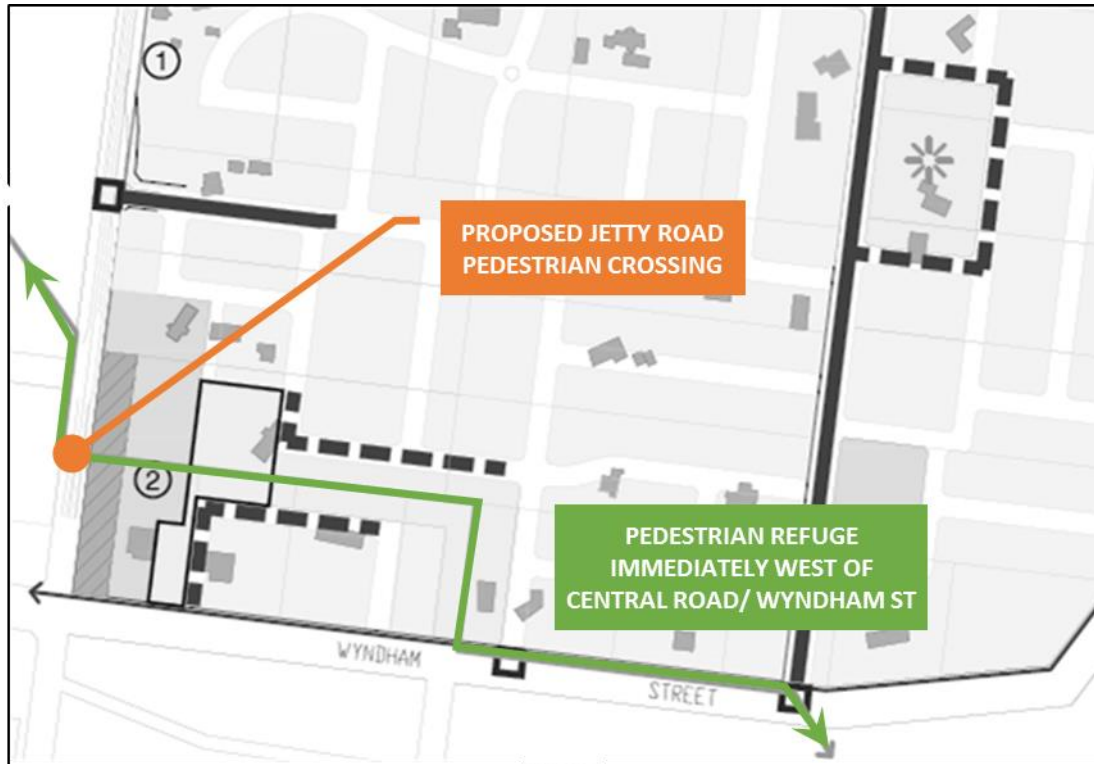
The ultimate Jetty Road cross section has been specified in the Jetty Road Urban Growth Area Infrastructure Plan (dated February 2010), as shown in Figure 3-2.

There is not proposed to be any direct lot access to Jetty Road.

The proposal includes a shared path connection between Griggs Creek and McLeods Waterhole, which will occur to south of Creekside Drive at the approximate location shown in Figure 5-1. The location of the pedestrian crossing is approximately 100 metres north of the intersection of Jetty Road / Wyndham Street, and will be installed south of the left turn deceleration lane to access Creekside Drive. The crossing is proposed to be signalised to provide optimum safety for pedestrians.

These pedestrian signals are shown within Appendix A and are proposed to be constructed at the same time as the intersection of Jetty Road / Site Access.

Figure 5-1 Proposed Jetty Road Pedestrian Crossing Location



5.2.2 Wyndham Street

The site has a frontage of approximately 800 metres to Wyndham Street, including approximately 500 metres between Jetty Road and Central Road.

It is proposed to provide kerb and channel along the northern side of Wyndham Street, in conjunction with constructing kerbside indented parking bays, similar to the cross section of Wyndham Street, west of Jetty Road. No changes are proposed to the southern carriageway of Wyndham Street.

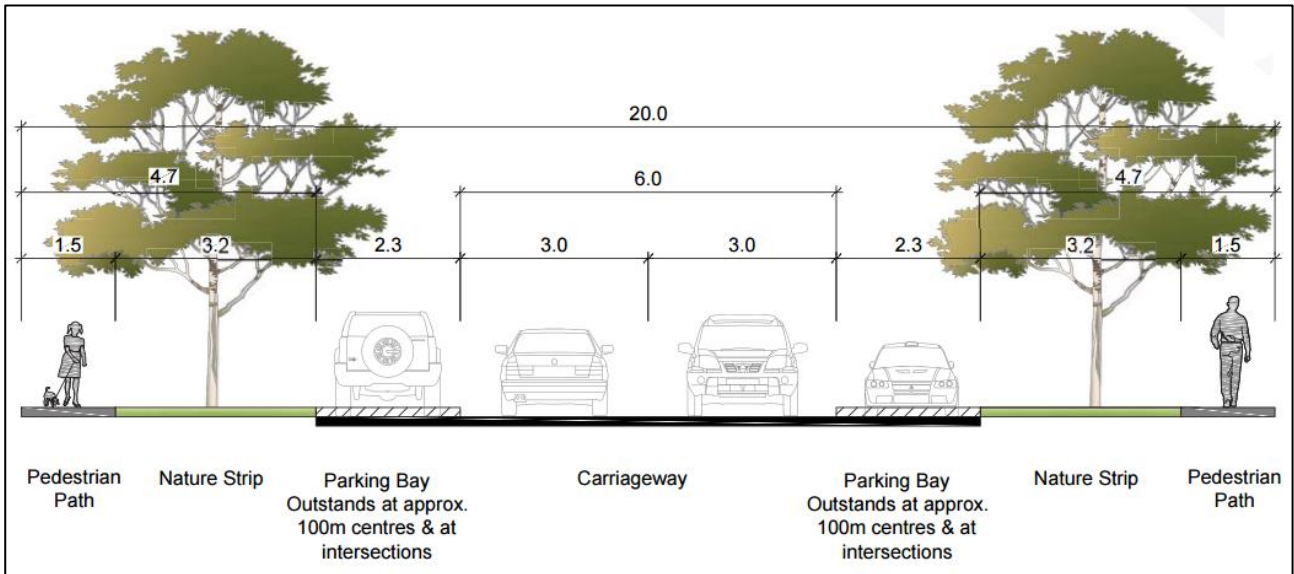
5.2.3 Central Road

Central Road is proposed to operate as a Level 2 Access Road, with a cross section as shown in Figure 5-2, justifiable based upon available reservation, and designed to match into the existing conditions.

As Central Road is an existing condition, the proposed cross section will take into account the available road reservation, and may need to be adjusted to accommodate various constraints. Plans of the road will be prepared at the time of the detailed design for the subdivision when full feature survey is available, noting any changes from the existing conditions.

It is anticipated that some lots will have direct lot access to Central Road, which is considered acceptable and appropriate given the function of the road and the existing conditions both through the subject site and also to the north through residential areas.

Figure 5-2 Proposed Access Street Level 2 Cross Section



5.2.4 Thomas Street

The existing Thomas Street road reservation is sufficient for an Access Street Level 2, even though the anticipated traffic volumes on Thomas Street are expected to be relatively low for this road cross section.

The subdivision on the north side of Thomas Street proposes formalising the termination of the eastern end of the road with a hammerhead treatment to allow vehicles to turn around adequately. It is considered that this road will operate adequately for the anticipated traffic volumes.

Direct lot access to Thomas Street is proposed, in accordance with the residential subdivision on the northern side of Thomas Street.

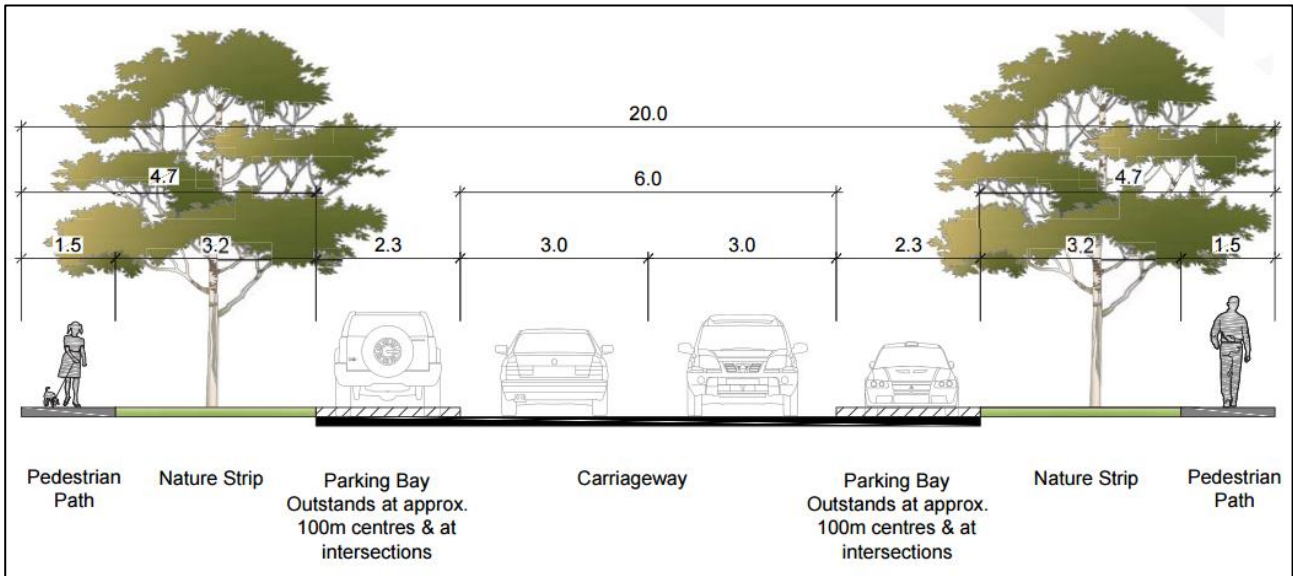
5.3 Planned Road Network

5.3.1 Access Street Level 2

Roads classified as Access Street Level 2 are anticipated to be constructed within a 20m road reservation, catering for two way traffic flow, with parking outstands, verges and footpaths on either side.

The typical cross section for an Access Street Level 2 is shown in Figure 5-3. The indicative capacity for an Access Street Level 2 is 2,000 – 3,000 vehicles per day.

Figure 5-3 Proposed Thomas Street Cross Section (Access Street Level 2)



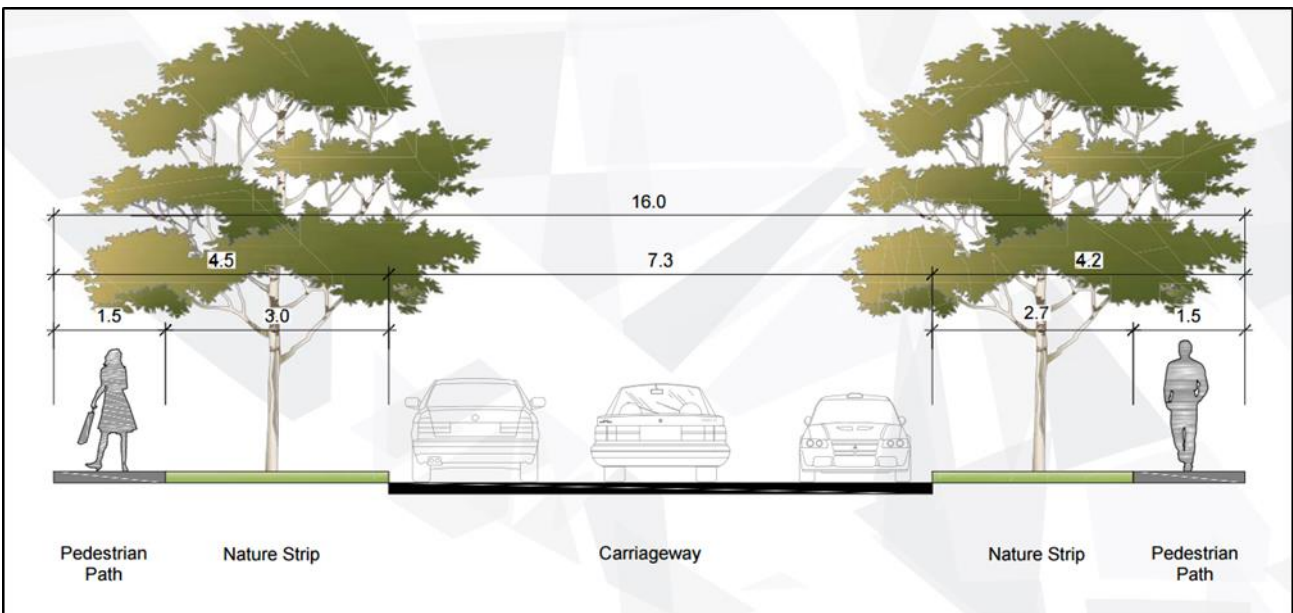
5.3.2 Access Street Level 1

The majority of roads within the subdivision will be classified as Local Access Street – Level 1.

Roads classified as Access Street Level 1 are anticipated to be constructed within a 16m road reservation. Generally catering for two-way traffic flow, with verges and footpaths on both sides, these roads will provide direct lot access. The indicative capacity for an Access Street Level 1 is 2,000 vehicles per day.

Figure 5-4 shows the proposed typical Access Street Level 1 cross section.

Figure 5-4 Access Street Level 1 Cross Section



5.3.3 Roads Adjacent to Public Open Space

Roads adjacent to proposed public open spaces are anticipated to be constructed within a 13 metre road reservation. This reflects that the side of the road abutting the public open space does not require footpath and typical services.

In these cases, all utilities will be located within the verge adjacent to the residential properties, with no services within the public open space.

5.4 Intersections, Street Lengths and Slow Points

With the exception of a single roundabout intersection, all intersections of streets classified as Access Streets or below are proposed to be configured as 'Give-way' controlled T-intersections, which will provide appropriate control for a residential development of this size. Splays of 3m x 3m will be incorporated into the design of the intersections to increase sightlines and improve safety.

Where internal roads have lengths exceeding approximately 150m, slow points are recommended to be incorporated into the design. To help maintain a target speed of 40km/h, as defined in Clause 56 of the Planning Scheme, slow points will be located mid-block along these streets. Typical treatments are to include threshold treatments and narrowing at open space interfaces, with the location and type to be resolved within the detailed design.

The proposed subdivision layout is considered to provide future residents good permeability and connectivity to various external nodes, and is anticipated to operate adequately for the proposed use of the site.

5.5 Garbage Collection and Emergency Vehicle Access

Garbage collection is expected to be undertaken from the kerbside areas of all Access Streets. All road carriageway widths meet or exceed the minimum Planning Scheme requirements and therefore are considered appropriate.

Provision for CFA vehicles has been allowed for with the road cross sections adopted. The minimum carriageway widths required by the CFA is exceeded for all street classifications represented.

6 Parking Considerations

6.1 Car Parking Requirements – Clause 52.06

Whilst not strictly applicable, Clause 52.06 of the Greater Geelong Planning Scheme requires one car space for each one or two bedroom dwelling, and two spaces for each three or more bedroom dwelling. Where two car spaces are provided for a dwelling, at least one space is required to be covered.

These rates are considered a valuable guide to the likely car parking demand associated with different dwelling types.

6.2 Car Parking Requirements – Clause 56

Clause 56.06-8 of the Greater Geelong Planning Scheme specifies the parking provision requirements for street classifications within developments incorporating residential subdivisions.

The on-street parking provision within the street reservation for each of the street classifications is:

- > Access Street Level 1 – 5.5m wide with one hardstand space per two lots;
- > Access Street Level 2 – 7m-7.5m carriageway with parking on both sides of the carriageway;

It is generally accepted that one visitor space per two lots is acceptable based on the Planning Scheme requirements for Access Streets.

6.3 Adequacy of Proposed Parking Provision

It is recommended that all lots are provided with parking in accordance with the Greater Geelong Planning Scheme.

Significant opportunity for kerbside visitor parking is provided throughout the site, which is expected to easily cater for peak visitor parking demands generated by the development.

7 Traffic Considerations

7.1 Traffic Generation

Traffic generation rates associated with standard density residential subdivisions are generally accepted to fall within the range 8 to 10 vehicle movements per dwelling per day. Factors affecting these rates are proximity to schools, shops, public transport nodes and other community services.

In order to provide a conservative assessment, it will be assumed that the subject site will generate in the order of 10 vehicle movements per lot per day, with approximately 10% of this occurring in each of the morning and afternoon peak periods. Furthermore, traffic distribution for residential subdivisions is typically 70% outbound in the morning peak, and 60% inbound in the afternoon peak.

Based upon these assumptions, the proposed subdivision is anticipated to generate traffic in accordance with Figure 7-2.

Table 7-1 Development Traffic Generation

Period	In	Out	Total
AM Peak	165	385	550
PM Peak	330	220	550
24 Hour	2,750	2,750	5,500

7.2 Traffic Distribution

Based upon a review of the site's proximity to local services (such as schools and shops), as well as the road network connectivity, it is anticipated that traffic associated with the site will be typically distributed as shown in Figure 7-1.

Figure 7-2 summarises the anticipated development daily traffic volumes at each of the site's access points.

Figure 7-1 Anticipated Traffic Distribution



Figure 7-2 Estimated Daily Development Traffic Volumes



7.3 Intersection Analysis

The operation of the main access intersections has been analysed utilising SIDRA Intersection. This computer package, originally developed by the Australian Road Research Board, provides information about the capacity of an intersection in terms of 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. Various values of degree of saturation and their rating are shown in Table 7-2.

Table 7-2 Rating of Degrees of Saturation

D.O.S.	Rating
Up to 0.6	Excellent
0.6 to 0.7	Very Good
0.7 to 0.8	Good
0.8 to 0.9	Fair
0.9 to 1.0	Poor
Above 1.0	Very Poor

It is considered acceptable for some critical movements in an intersection to operate in the range of 0.9 to 1.0 during the high peak periods, reflecting actual conditions in a significant proportion of suburban signalised intersections.

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

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

For the purposes of this analysis, the distribution of traffic associated with the development has been assumed to accord with the directional of traffic on the adjoining road network.

The results of the SIDRA Intersection analysis are summarised in Table 7-3 and Table 7-4.

Table 7-3 Jetty Road / Site Access Future Operating Conditions

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Jetty Road (south)	0.066	1.7 m	1.1 sec
	Site Access (east)	0.123	3.2 m	8.9 sec
	Jetty Road (north)	0.194	0.0 m	0.6 sec
	Intersection	0.194	3.2 m	2.4 sec
PM Peak	Jetty Road (south)	0.154	5.0 m	1.5 sec
	Site Access (east)	0.161	4.0 m	11.8 sec
	Jetty Road (north)	0.153	0.0 m	0.9 sec
	Intersection	0.161	5.0 m	2.2 sec

Table 7-4 Wyndham Street / Central Road Future Operating Conditions

	Approach	Degree of Saturation	95 th ile Queue	Average Delay
AM Peak	Wyndham Street (east)	0.151	0.4 m	0.4 sec
	Wyndham Street (west)	0.112	3.0 m	7.6 sec
	Central Road (north)	0.097	0.0 m	5.5 sec
	Intersection	0.151	3.0 m	3.3 sec
PM Peak	Wyndham Street (east)	0.143	1.2 m	1.0 sec
	Wyndham Street (west)	0.067	1.7 m	8.8 sec
	Central Road (north)	0.116	0.0 m	0.8 sec
	Intersection	0.143	1.7 m	1.5 sec

The results of the SIDRA Intersection analysis clearly show that both intersections will operate well below capacity, with minimal delays and queues on all approaches. The provision of right turn lanes on both Jetty Road and Wyndham Street will ensure that the proposed development minimises the impact on through traffic.

8 Clause 56 Assessment

Clause 56 of the Planning Scheme sets out the 'Objectives' and 'Standards' to subdivide land that provides for residential development.

Transport related objectives and standards are set out at Clause 56.06, Access and Mobility Management, which is comprised of the following Clauses:

- Clause 56.06-1: Integrated Mobility
- Clause 56.06-2: Walking and Cycling Network
- Clause 56.06-3: Public Transport Network
- Clause 56.06-4: Neighbourhood Street Network
- Clause 56.06-5: Walking and Cycling Network Detail
- Clause 56.06-6: Public Transport Network Detail
- Clause 56.06-7: Neighbourhood Street Network Detail
- Clause 56.06-8: Lot Access

An assessment of each of the relevant objectives is detailed below.

Clause 56.06-1: Integrated Mobility Objective

- > *To achieve an urban structure where compact and walkable neighbourhoods are clustered to support larger activity centres on the Principal Public Transport Network in Metropolitan Melbourne and on the regional public transport network outside Metropolitan Melbourne.*
- > *To provide for walking (including persons with impaired mobility), cycling, public transport and other motor vehicles in an integrated manner.*
- > *To contribute to reduced car dependence, improved energy efficiency, improved transport efficiency, reduced greenhouse gas emissions and reduced air pollution.*

The proposed transport network has been designed to meet the objectives of Clause 56.06-2 (Walking and cycling network), Clause 56.06-3 (Public transport network) and Clause 56.06-4 (Neighbourhood street network).

Clause 56.06-2: Walking and Cycling Network Objective

- > *To contribute to community health and well being by encouraging walking and cycling as part of the daily lives of residents, employees and visitors.*
- > *To provide safe and direct movement through and between neighbourhoods by pedestrians and cyclists.*
- > *To reduce car use, greenhouse gas emissions and air pollution.*

The proposed road network is suitably designed to cater for and encourage both pedestrian and bicycle trips within and through the subdivision area. The road network provides suitable connectivity for pedestrian and cyclists to key corridors identified by Greater Geelong Council.

Clause 56.06-3: Public Transport Network Objective

- > *To provide an arterial road and neighbourhood street network that supports a direct, efficient and safe public transport system.*
- > *To encourage maximum use of public transport.*

Jetty Road currently caters for buses along Route 61, providing convenient connectivity to Geelong and Drysdale. Central Road is parallel to Jetty Road and classified as an Access Street, which is therefore not conducive to bus movements. Wyndham Street will ultimately be classified as a collector/connector road and will therefore have the capability to facilitate a bus route, however the full upgrade of this road is outside of the scope of this subject site.

Clause 56.06-4: Neighbourhood Street Network Objective

- > *To provide for direct, safe and easy movement through and between neighbourhoods for pedestrians, cyclists, public transport and other motor vehicles using the neighbourhood street network.*

The proposed subdivision layout allows for a high level of permeability for pedestrians, cyclists and motor vehicles. The layout is enhanced by the continuation of Central Road through the site, and the upgrade of Thomas Street, which provide convenient through routes particularly for pedestrians traversing the site.

The street network will provide safe and efficient access for all vehicles, including commercial, service and emergency vehicles.

Clause 56.06-5: Walking and Cycling Network Detail Objective

- > *To design and construct footpaths, shared path and cycle path networks that are safe, comfortable, well constructed and accessible for people with disabilities.*
- > *To design footpaths to accommodate wheelchairs, prams, scooters and other footpath bound vehicles.*

Footpaths, shared paths and on-road bicycle lanes will be provided in accordance with the requirements of Clause 56 of the Greater Geelong Planning Scheme.

Clause 56.06-6: Public Transport Network Detail Objective

- > *To provide for the safe, efficient operation of public transport and the comfort and convenience of public transport users.*
- > *To provide public transport stops that are accessible to people with disabilities.*

As the site is not proposed to accommodate a bus route, this is not applicable. This clause is more particularly applicable in cases of larger residential subdivisions that have been identified by authorities as requiring a bus route through the neighbourhood.

Clause 56.06-7: Neighbourhood Street Network Detail Objective

- > *To design and construct street carriageways and verges so that the street geometry and traffic speeds provide an accessible and safe neighbourhood street system for all users.*

The street geometry and street blocks have been designed to provide a safe low speed environment for all road users. Road cross-sections will be provided in accordance the requirements of the Greater Geelong Planning Scheme.

Clause 56.06-8: Lot Access Objective

- > *To provide for safe vehicle access between roads and lots.*

Vehicle access is able to be provided to all residential lots in accordance with the requirements of the City of Greater Geelong.

9 Conclusions

Based on the preceding discussion it is concluded that;

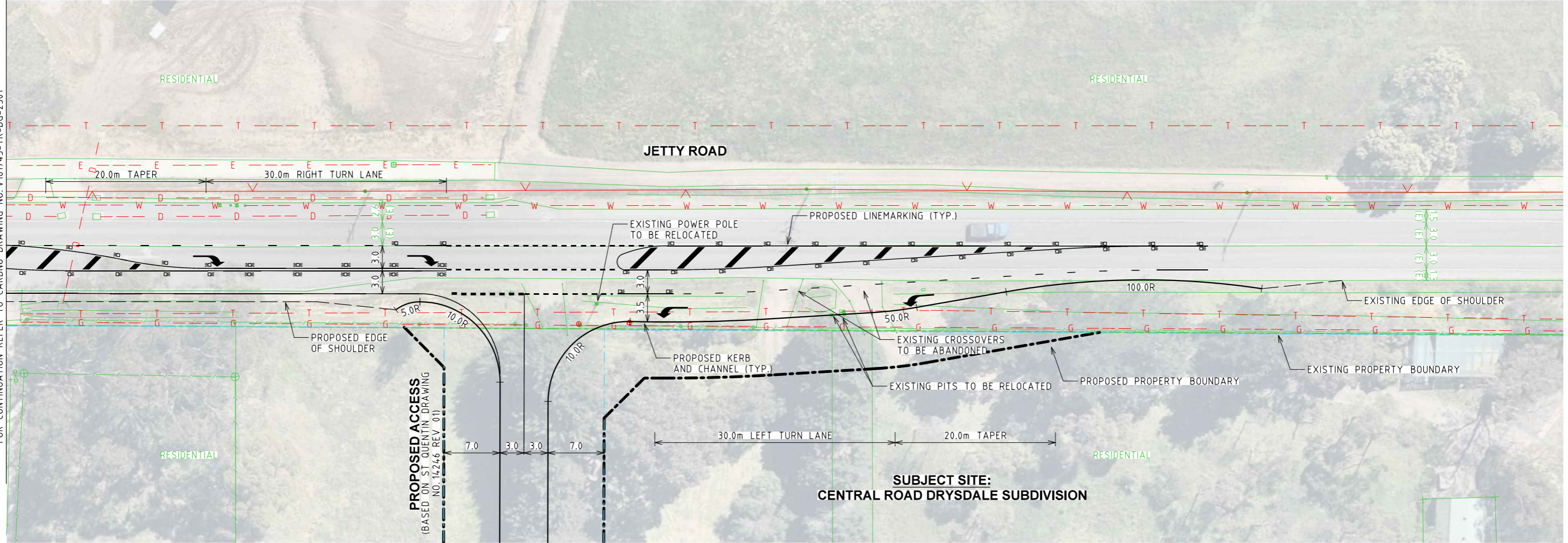
- > The proposed subdivision will include in the order of 550 residential lots.
- > Access to the estate will be from Jetty Road, Wyndham Street, Central Road and Thomas Street.
- > The proposed subdivision road layout, road hierarchy and road cross sections are generally consistent with the requirements of the Greater Geelong Planning Scheme and are considered appropriate for the development.
- > The proposed subdivision has been designed to match into the road infrastructure of the surrounding area already constructed or under construction of adjoining subdivisions.
- > The subject site is anticipated to generate in the order of 550 vehicle movements in the peak hours and 5,500 vehicle movements per day.
- > Analysis of the proposed access intersections indicates that this level of traffic can be adequately accommodated by the surrounding road network.

Central Road, Drysdale Subdivision

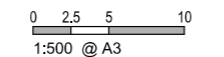
APPENDIX

A

CONCEPT LAYOUT PLANS



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2. ALL DIMENSIONS TO FACE OF KERB AND CHANNEL U.N.O
3. LOCAL ROAD - JETTY ROAD (SPEED ZONE 60KM/H) - PROPOSED ACCESS (SPEED ZONE 50KM/H)
4. LINEMARK IN ACCORDANCE WITH AUSTRROADS GUIDE TO TRAFFIC MANAGEMENT VOLUME 10, AS1742 AND RELEVANT VICROADS SUPPLEMENTS.
5. INSTALL RRP'S AND REMOVE ANY REDUNDANT MARKERS.

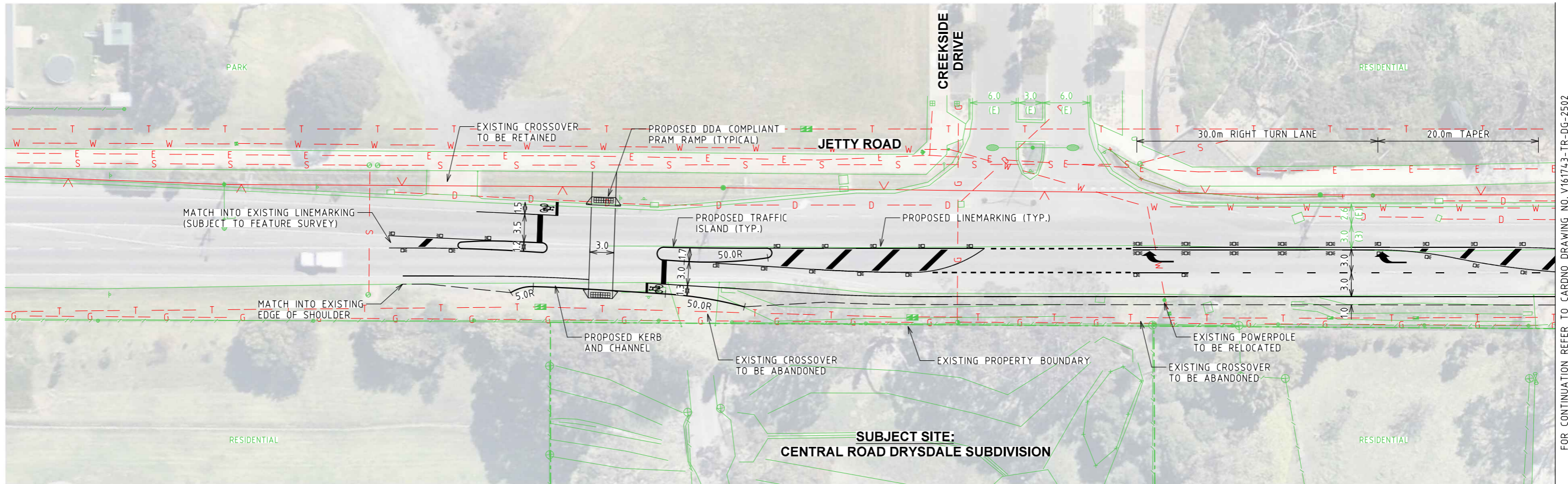
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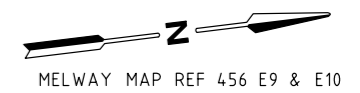
Client	MCLEODS DEVELOPMENTS PTY LTD
Project	CENTRAL ROAD DRYSDALE SUBDIVISION CENTRAL ROAD, DRYSDALE CITY OF GREATER GEELONG
Title	CHR TREATMENT FUNCTIONAL LAYOUT PLAN

Status	PRELIMINARY NOT TO BE USED FOR CONSTRUCTION PURPOSES		
Date	06.03.2018	Scale	1:500
Size	A3	Revision	2
Drawing Number	V161743-TR-DG-2502		

Rev	Date	Description	Drawn	Appr.
1	06.03.18	ISSUED FOR INFORMATION	CS	MH



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2	08.03.18	CLIENT COMMENTS	CS	MH
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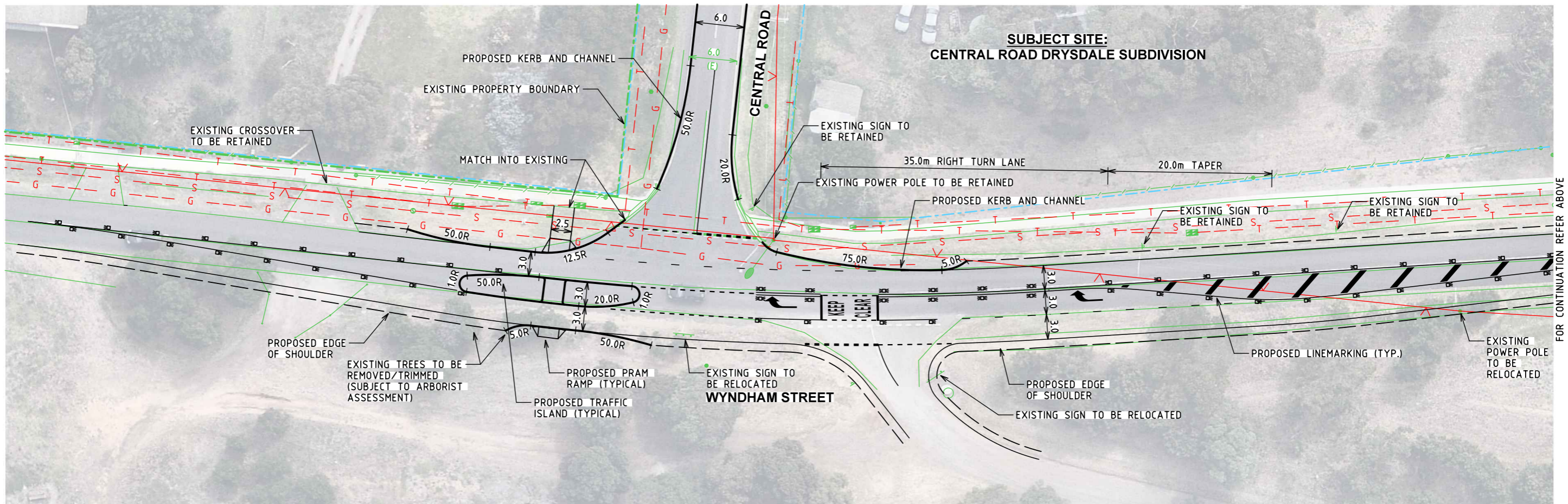
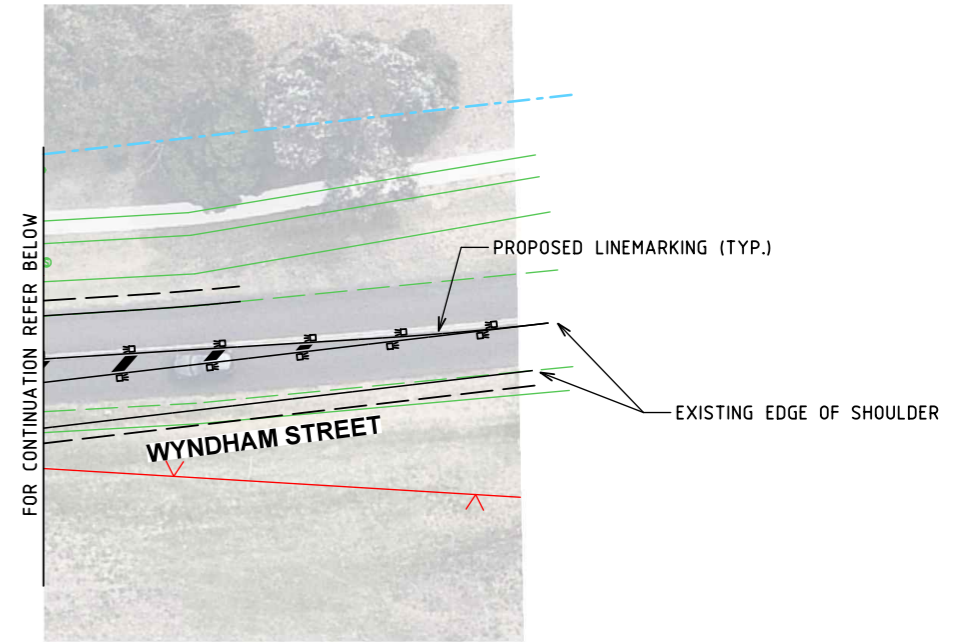
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3. LOCAL ROAD - JETTY ROAD (SPEED ZONE 60KM/H) - CREEKSIDE DRIVE (SPEED ZONE 50KM/H)
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Authorised	M.HAWKINS

Client	MCLEODS DEVELOPMENTS PTY LTD
Project	CENTRAL ROAD DRYSDALE SUBDIVISION CENTRAL ROAD, DRYSDALE CITY OF GREATER GEELONG
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Size	A3		Revision
Drawing Number	V161743-TR-DG-2501		2



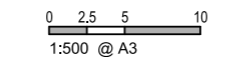
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MELWAY MAP REF 456 F10

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1	06.03.18	ISSUED FOR INFORMATION	CS	MH

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Project	CENTRAL ROAD DRYSDALE SUBDIVISION CENTRAL ROAD, DRYSDALE CITY OF GREATER GEELONG
Title	CHANNELISED RIGHT TURN TREATMENT FUNCTIONAL LAYOUT PLAN

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