Traffix Group

Traffic Engineering Report

Proposed Industrial Rezoning & Subdivision 25 Cressy Road, Winchelsea

Prepared for Spectrum Planning Solutions

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1. Introduction

Traffix Group has been engaged by Spectrum Planning Solutions to prepare a traffic engineering assessment for the proposed industrial rezoning and subdivision at 25 Cressy Road, Winchelsea.

This report provides our traffic engineering assessment of the traffic and access issues associated with the proposed development.

2. Proposal

The proposal is to rezone the subject site for the purposes of an industrial subdivision.

The subdivision will create 24 lots ranging in size from 1,086m² to 2,235m², including 23 industrial lots with an average lot size of 1,430m², and one lot containing an existing dwelling which will be accessed directly from Cressy Road via an existing crossover.

Access to the development is proposed as follows:

- five lots will have sole frontage to Cressy Road and are proposed to be accessed directly from Cressy Road via existing and new crossovers, including four industrial lots and the existing dwelling,
- three lots will have a frontage to Cressy Road and a secondary frontage to a new local industrial street and these lots will take access via the new industrial street,
- a new industrial street will be constructed along the western boundary of the subject site within an existing 20m wide road reservation and a number of new lots will take direct access to this street, and
- the remainder of the lots will be accessed via a new industrial access street connecting between Cressy Road and the new road along the site's western boundary.

A copy of the proposed concept plan prepared by SMEC is attached at Appendix A.



3. Existing Conditions

3.1. Subject Site

The subject site is located to the southwest side of Cressy Road, northwest of the railway line in Winchelsea as shown in the locality map at Figure 1 below.

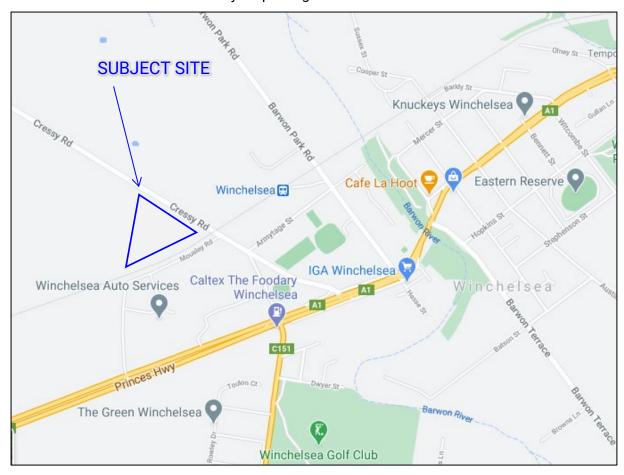


Figure 1: Locality Map

The site is triangular in shape with an overall area of 3.91 hectares and a frontage to Cressy Road of approximately 289m. The site is comprised of nine titles which form part of a historic subdivision which has not been acted upon, and the western and south-eastern boundaries of the site abut unmade government road reserves which were originally intended to provide access to the nine lots.

Access to the site is currently provided via four gravel crossovers to Cressy Road. There is also informal access across the government road reserve to the west, providing access to farming zoned land. The site and neighbouring property are currently occupied by a grain storage facility.

An aerial view of the subject site and surrounds is presented at Figure 2 and site frontage photographs showing the existing crossovers are presented at Figures 3 – 5.



Figure 2: Aerial View



Figure 3: Existing Eastern Site Access Crossover



Figure 4: Existing Central Site Access Crossovers



Figure 5: Existing Western Site Access Crossover

3.2. Land Use

The subject site is located within the Farming Zone (FZ) as shown in Figure 6 below. There are no overlays affecting the land.

Surrounding land use is:

- farming to the north, northeast and west,
- industrial to the south and southwest on the opposite side of the railway line with predominantly large industrial sites and some smaller lots located on Alsop Drive,
- standard density residential (General Residential Zone) approximately 150m east of the site, and
- Winchelsea Primary School approximately 300m east of the site.

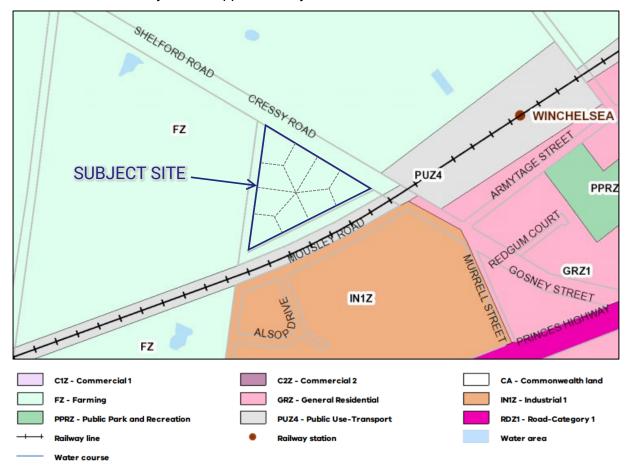


Figure 6: Land Use Zoning Map

3.3. Road Network

Cressy Road

Cressy Road is classified as a Primary Access Road under Surf Coast Shire Council's Register of Public Roads, and extends approximately 26.5km between Mousley Road, Winchelsea and Mount Hesse Road, Eurack. To the east of Mousley Road, it continues as Gosney Street through the Winchelsea township.

In the vicinity of the subject site, Cressy Road is constructed with a 6.8m wide (approx.) sealed carriageway within a 42m road reservation.

The posted speed limit across the railway line and within the existing township boundary is 50km/h, and increases to 80km/h part-way along the site frontage.



Figure 7: Cressy Road Looking West Towards Subject Site



Figure 8: Cressy Road Looking East Towards Railway Level Crossing and Winchelsea Township

Unmade Government Road Reserves

There are two existing unmade government road reserves on the site's south-eastern and western boundaries, which were historically created to serve the nine-lot rural subdivision of the site which has never been acted on.

The western reserve is approximately 19.5m wide, and the south-eastern reserve has a varying width between 19.5m and 26m.

3.4. Traffic Volumes

The Department of Transport Open Data Portal provides traffic volume data for freeways and arterial roads throughout Victoria. The data provided is for the current year, with values derived from traffic surveys or estimates.

Cressy Road is a local (Council) road and accordingly there are no available traffic volumes for this route on the Department of Transport Open Data Portal.

The relevant data for key arterial roads providing access to the Winchelsea area is provided in Table 1 below.

Table 1: Arterial Road Traffic Volumes

Road Name	Location	AADT ¹	% Trucks	Annual Growth Rate
Princes Hwy	West of Anderson Street	9,100vpd	17%	2.9%
Princes Hwy	East of Anderson Street	9,100vpd	18%	2.1%
Anderson Street	South of Princes Highway	1,200vpd	7%	1.5%

3.5. Road Safety

A review of Department of Transport's Crashstats database shows there have been no recorded casualty crashes on Cressy Road within 500m of the subject site during the past five years of available data.

3.6. Public Transport

Winchelsea Railway Station is located approximately 500m east of the site and is a V/Line service providing connections to Melbourne, Geelong, Colac and Warrnambool.

There are no local bus services in Winchelsea.

¹ AADT = Average Annual Daily Traffic, which is the sum of all traffic for a year divided by 365.



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4. Traffic Impacts

4.1. Floor Area Estimates

The overall site area is 3.91 hectares, broken down as follows:

- 0.15 hectares for existing structures,
- · 0.47 hectares for roads, and
- 3.29 hectares net developable (industrial lots).

For the purpose of analysis, it is assumed that the gross floor area of buildings will be the equivalent of 50% site coverage on average, corresponding to an overall combined floor area of 16,450m² for full build-out of the 23 industrial lots. The remaining portion of the lots will be occupied by car parking, vehicle manoeuvring areas, landscaping, etc.

4.2. Traffic Generation

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates for a range of developments, based on survey data collected in New South Wales for a range of land uses. This guide is referred to in the Austroads Guide which is used by the Department of Transport (DOT) and is generally regarded as the standard for metropolitan development characteristics.

Technical Direction TDT 2013/04a provides updated traffic generation rates which supersede the RTA Guide for some land uses, based on more recent NSW surveys.

For business parks and industrial estates within regional areas, TDT 2013/04a sets out the following average rates:

AM peak hour: 0.70 vehicle trips per 100m² gross floor area
 PM peak hour: 0.78 vehicle trips per 100m² gross floor area
 Daily (24-hour): 7.83 vehicle trips per 100m² gross floor area

Based on these rates and the overall estimated floor area of 16,450m², the traffic generation is calculated in Table 2 below.

Table 2: Traffic Generation

Period	Floor Area	Rate	Traffic Generation
AM Peak Volume	16,450m²	0.70 trips per 100m ²	115 vph
PM Peak Volume		0.78 trips per 100m ²	128 vph
Daily (24-Hour) Volume		7.83 trips per 100m ²	1,288 vpd



4.3. Traffic Distribution

Having regard to the site's locality with respect to the arterial road network and key destinations, the following traffic distribution assumptions have been adopted:

- 90% in and 10% out during the AM road network peak hour,
- 10% in and 90% out during the PM road network peak hour,
- 95% to/from Princes Highway via Winchelsea and 5% to/from the east,
- all Princes Highway traffic accessing the site will do so via the Murrell Street signalised intersection having regard to the local traffic management on Gosney Street,
- at Princes Highway, 60% to/from the north-east (towards Geelong and Melbourne) and 40% to/from the south-west (towards Colac and Warrnambool), and
- 15.5% of the total site area will be accessed directly via crossovers to Cressy Road, 21.1% of the total site area will be accessed via the Government Road Reservation on the western boundary and the remaining 63.5% of the total site area will be accessed via the new internal industrial road.

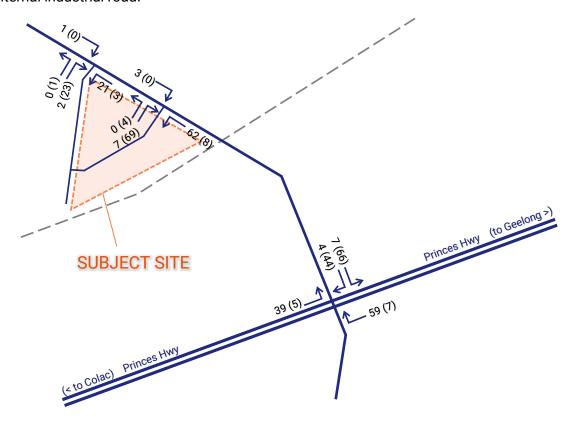


Figure 9: AM (PM) Peak Hour Traffic Distribution

4.4. Traffic Impact

The Princes Highway between Winchelsea and Colac was only recently upgraded to a duplicated four lane configuration (previously single carriageway two-lane two-way road), with the upgrade works completed in late 2019.

As part of the duplication works, the Princes Highway/Murrell Street/Anderson Street was upgraded to a signalised cross-intersection (previously un-signalised two-way stop controlled), and has ample capacity to accommodate the traffic generated by the proposed industrial subdivision.

Table 3 below shows the two-way daily traffic volumes on key roads providing access to the site.

Table 3: Two Way Daily Traffic Volumes

Location	Existing Volume	Site-Generated Traffic	Post-Development	
New Industrial Road	-	815 vpd	815 vpd	
New Government Road	-	273 vpd	273 vpd	
Cressy Road West of Site	500 vpd ⁽¹⁾	64 vpd	564 vpd	
Cressy Road East of Site	500 vpd ⁽¹⁾	1,224 vpd	1,724 vpd	
Murrell Street	1,000 vpd ⁽¹⁾	1,224 vpd	2,224 vpd	
Princes Hwy West of Murrell St	9,100 vpd	490 vpd	9,590 vpd	
Princes Hwy East of Murrell St	9,100 vpd	734 vpd	9,834 vpd	

Note (1) – volume has been estimated.

Cressy Road is classified under Surf Coast Shire Council's Register of Public Roads as a Primary Access Road, while Murrell Street is classified as a Secondary Access Road². These classifications correspond to Level 2 and Level 1 Access Streets respectively, under the definitions at Clause 56.06-8 of the Planning Scheme.

Clause 56.06-8 provides an indicative target traffic volume range of 2,000 to 3,000 vehicles per day for a Level 2 Access Street and 1,000 to 2,000 vehicles per day for a Level 1 Access Street.

The Surf Coast Shire Council has adopted the Infrastructure Design Manual (IDM)³, which sets out road network requirements which differ from the Victorian Planning Provisions. The IDM provides an indicative traffic volume range of up to 2,500 vehicles per day for an Access Street and doesn't distinguish between a Level 1 and a Level 2.



Murrell Street's classification pre-dates the duplication of Princes Highway and upgrade of the Murrell Street/ Princes Highway intersection to a signalised configuration. Given that Murrell Street abuts industrial and the back of the primary school (with school parking located in Gosney Street) and Gosney Street is configured as the minor road with Cressy Street continuing to Murell Street, Murrell Street should be classified as a Primary Access Street under Council's Register of Public Roads to reflect its usage.

The Infrastructure Design Manual (IDM) is a joint initiative of Victorian of Victorian rural and regional Councils working together to formulate and maintain a set of consistent requirements for the design and development of Infrastructure. The current version is Version 5.30 (March 2020).

Table 3 indicates that both Cressy Road and Murrell Street will remain within the range for an Access Street as defined in the IDM (2,500vpd), and the proposed industrial subdivision will not change the classification.

Murrell Street already provides access to industrial land use, and no road upgrades are required to facilitate the proposed development.

Princes Highway is a duplicated arterial with two lanes in each direction. Austroads Guide to Traffic Generating Developments provides an indicative capacity of 36,000vpd for a four-lane two-way arterial.

The post-development volume of 9,834vpd and 9,590vpd east and west of the Murrell Street signalised intersection respectively remains well within the capacity of Princes Highway and no upgrades are triggered by the proposed development.

4.5. Internal Road Hierarchy & Cross-Sections

The concept plan attached at Appendix A shows the following new roads:

- · a new public industrial road with a road reservation of 20m, and
- a new road to be constructed within the existing 20m wide government road reserve along the western boundary of the site.

A splay is proposed at the north-western corner of the site to allow the government road to be squared up and intersect Cressy Road at 90-degrees.

Both new roads will carry less than 1,000 vehicle movements per day.

The IDM provides the following recommended road dimensions for industrial streets, regardless of the traffic volume:

- 12.5m carriageway,
- 25m road reservation,
- 6m verge width,
- footpath both sides,
- 15m radius court bowl (carriageway), and
- verge widths can be reduced to 3m where the length of the street is less than 100m or where access gates are set back from the property boundary by 3m.

The proposed 20m road reservation is sufficient to allow for a 12.5m carriageway in accordance with the IDM, with 3.75m verges on both sides.

While the verge width falls short of the IDM recommended 6m width, the IDM allows for reduced verges (down to 3m in width) if any access gates to individual lots are set back such that they are 6m from the road carriageway. In this case, access gates would need to be set back 2.25m from the property boundary to meet the IDM requirement.

It is noted that the proposed 20m industrial street reservation does not set a precedent. Alsop Drive is an existing industrial street in Winchelsea and has a road reservation width of 18m and Murrell Street provides access to industrial uses on one side and has a 20m reservation.



Elsewhere in Surf Coast Shire, a recent industrial subdivision behind Bunnings in Torquay includes a number of industrial streets which all have a 20m wide reservation, including Castles Drive, Boneyards Avenue, Haystacks Drive and Sawmill Way.

We are satisfied that the proposed road reservation width for the new industrial roads are appropriate.

It is noted that the southern end of the government road providing access to industrial lots 11 and 12 will be constructed as a dead-end without an industrial court bowl. The dead-end section is short with only Lot 11 not having a through-road frontage. It is proposed to provide a concrete bin collection pad in front of Lot 12 so that garbage collection trucks do not need to turn around at the end of the dead-end and can instead turn around within the government road/industrial road intersection which will carry very low traffic volumes.

"No Through Road" signage should be prominently displayed at the entrance to the dead-end section to discourage vehicles entering unless they are accessing lots 11 or 12. There is sufficient space at the southern end for cars to undertake a three-point turn if required.

In the longer-term, it is envisaged that the government road could extend to the southeast along the railway line to provide access to future development areas. This arrangement is indicatively notated on the plan attached at Appendix A.

4.6. Speed Limits

Currently a 50km/h speed limit applies within the Winchelsea township, including on Murrell Street and other industrial roads as well as on Cressy Road to the east of the site.

The speed limit increases to 80km/h near the site's eastern boundary, with the 80km/h speed limit applying along most of the site's Cressy Road frontage.

The proposal will expand the current extent of the Winchelsea "township" area. Accordingly, it is recommended that the 80km/h speed zone be moved westward, to the western boundary of the site.

This will ensure that the new Cressy Road/Industrial Road intersection and the new Cressy Road/Government Road intersection will operate safely without the need for separate channelised turning lanes. Notably, in an 80km/h rural speed zone, channelised turning lanes are typically required to ensure that high speed through traffic can overtake vehicles propped to turn at intersections. Cressy Road is a local street (not in a Transport Zone) and in a built-up urban environment with a 50km/h speed limit, separate turning lanes are not required from either a safety or road network capacity perspective.

A 50km/h speed limit is also appropriate in the context of the proposed lots fronting directly onto Cressy Road, which will require individual driveway access. Having regard to the volumes and classification of Cressy Road, direct property access as proposed is appropriate subject to the recommended speed limit change.

The default urban 50km/h speed limit will also apply to the new industrial street within the site and the new government road along the western boundary of the site.



4.7. Intersection Design

The proposed Cressy Road/Industrial Road intersection, the proposed Cressy Road/Government Road intersection and the proposed Industrial Road/Government Road intersection have been designed in accordance with IDM requirements for a 19m design vehicles and 26m check vehicle.

A concept intersection plan and swept path plans showing these manoeuvres is attached at Appendix B. The intersection plan also shows the proposed speed limit signage relocation.

The intersection plans show 10.6m wide carriageways, which are adequate to accommodate the design and check vehicle requirements.

5. Conclusions

Having undertaken traffic engineering assessments of the proposed industrial subdivision at 25 Cressy Road, Winchelsea, we are of the opinion that:

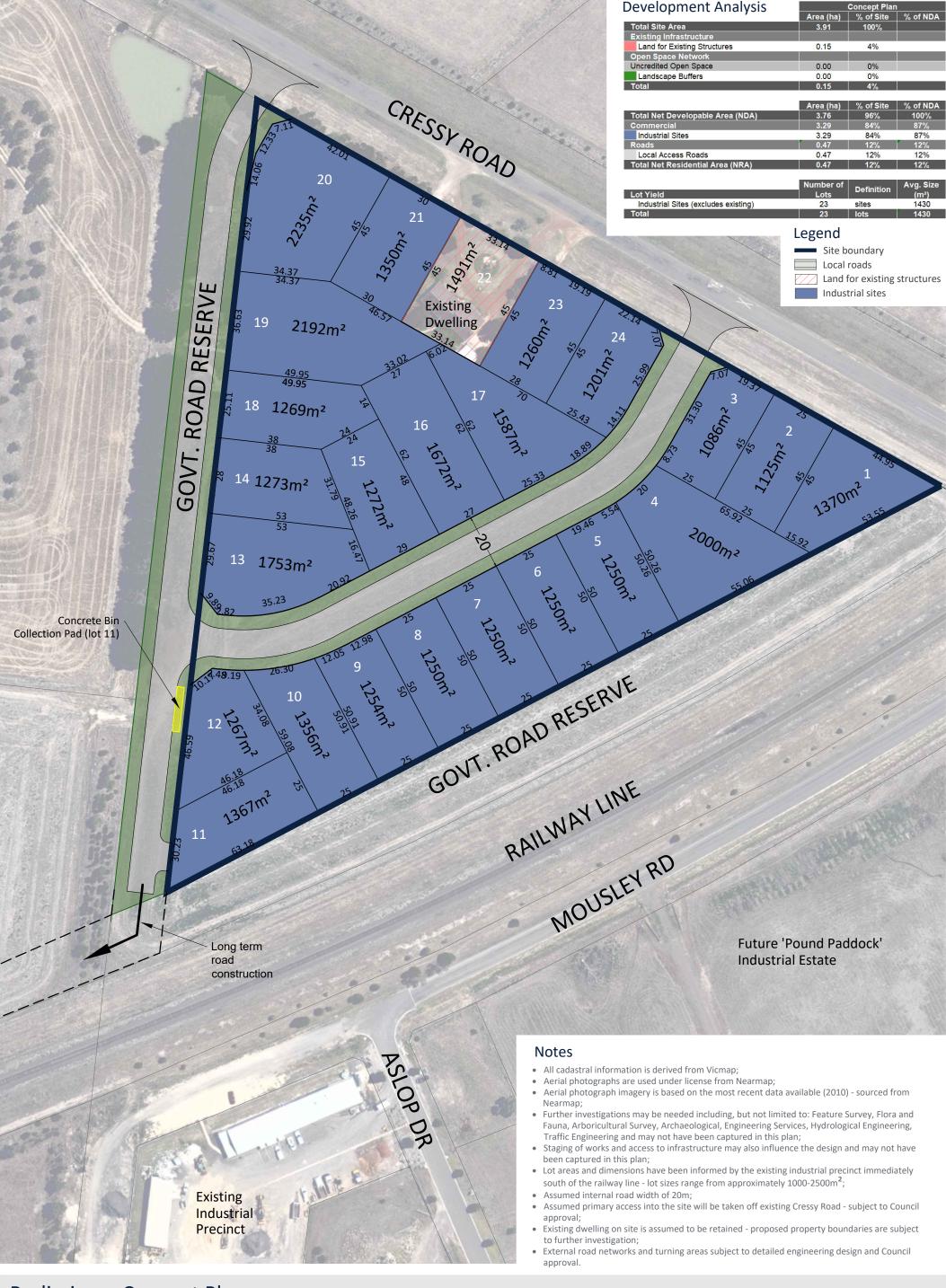
- a) access to the proposed subdivision will predominantly be via Murrell Street to Princes Highway,
- b) there is ample capacity with the recent duplication of Princes Highway and signalisation of the Princes Highway/Murrell Street intersection to accommodate traffic generated by the proposed subdivision and Murrell Street already accommodates industrial traffic,
- c) the proposed 20m road reservations are consistent with other industrial road reservations within Winchelsea and Surf Coast Shire and are appropriate,
- d) the existing 50km/h speed limit on Cressy Road should be extended to include the site frontage,
- e) subject to a reduced speed limit of 50km/h on the site frontage, the proposed site access arrangements (including the proposed industrial road intersection, the proposed government road intersection and the direct property access to some lots) is appropriate having regard to the classification and traffic volumes on Cressy Road,
- the level of traffic generated by the proposed subdivision can be accommodated on the surrounding road network and intersections and apart from the speed limit change no further mitigating works are required,
- g) adequate provision is made for the expected vehicle sizes, including a 19m design vehicle and 26m check vehicle, and
- h) there are no traffic engineering reasons why the subject site located at 25 Cressy Road, Winchelsea should not be rezoned to facilitate an industrial subdivision generally as proposed in the concept plan at Appendix A.





Appendix A

Concept Subdivision Plan



Preliminary Concept Plan

25 Cressy Road, Winchelsea

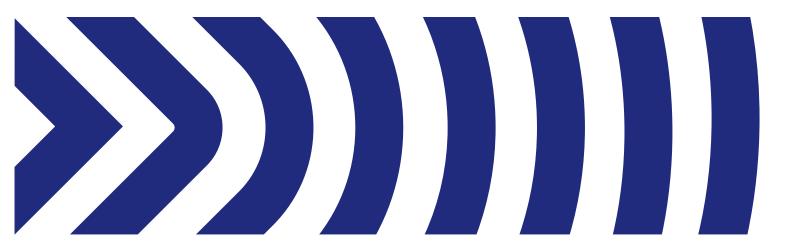
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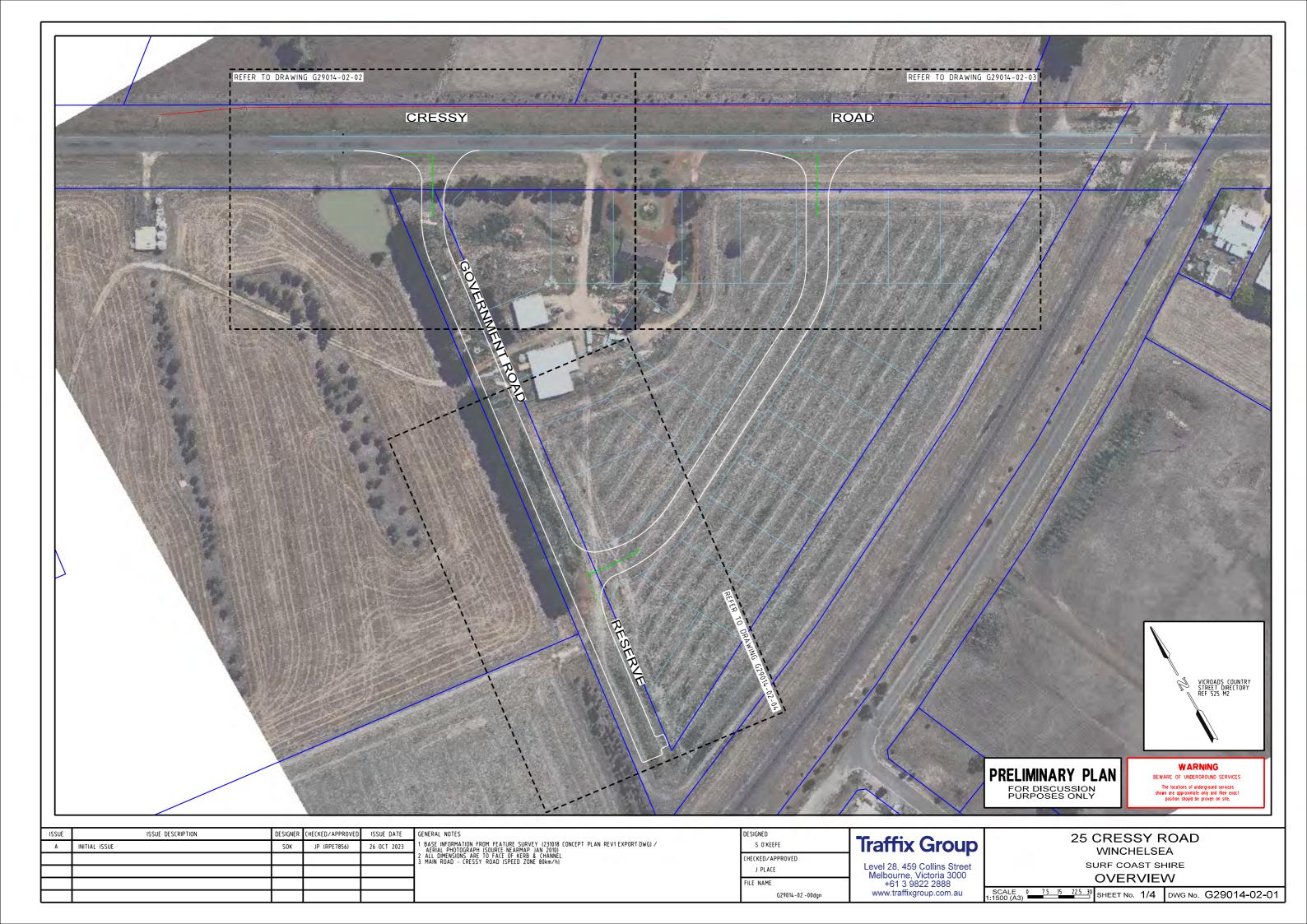
Urban Communities

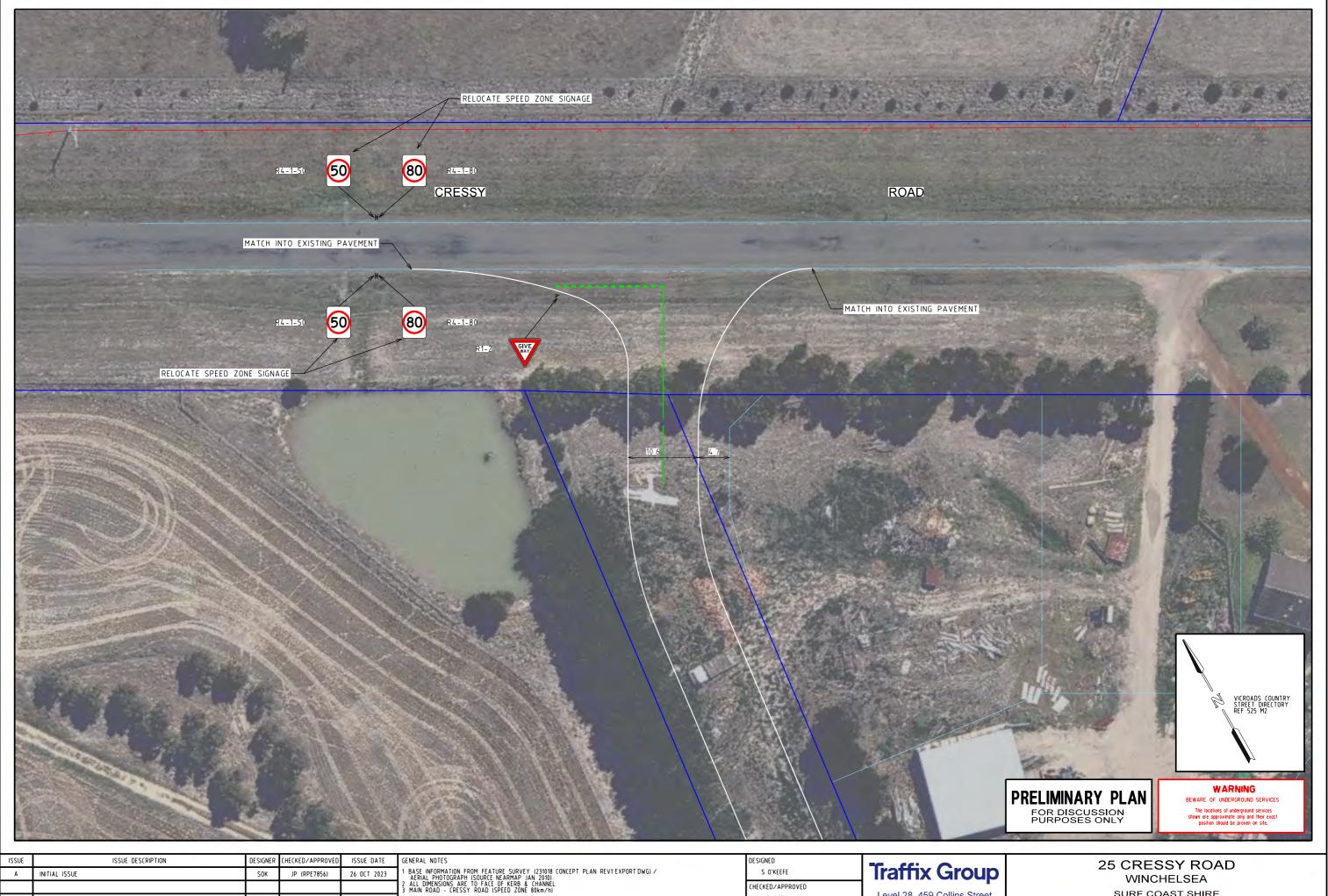




Appendix B

Concept Intersection Plan & Swept Path Diagrams





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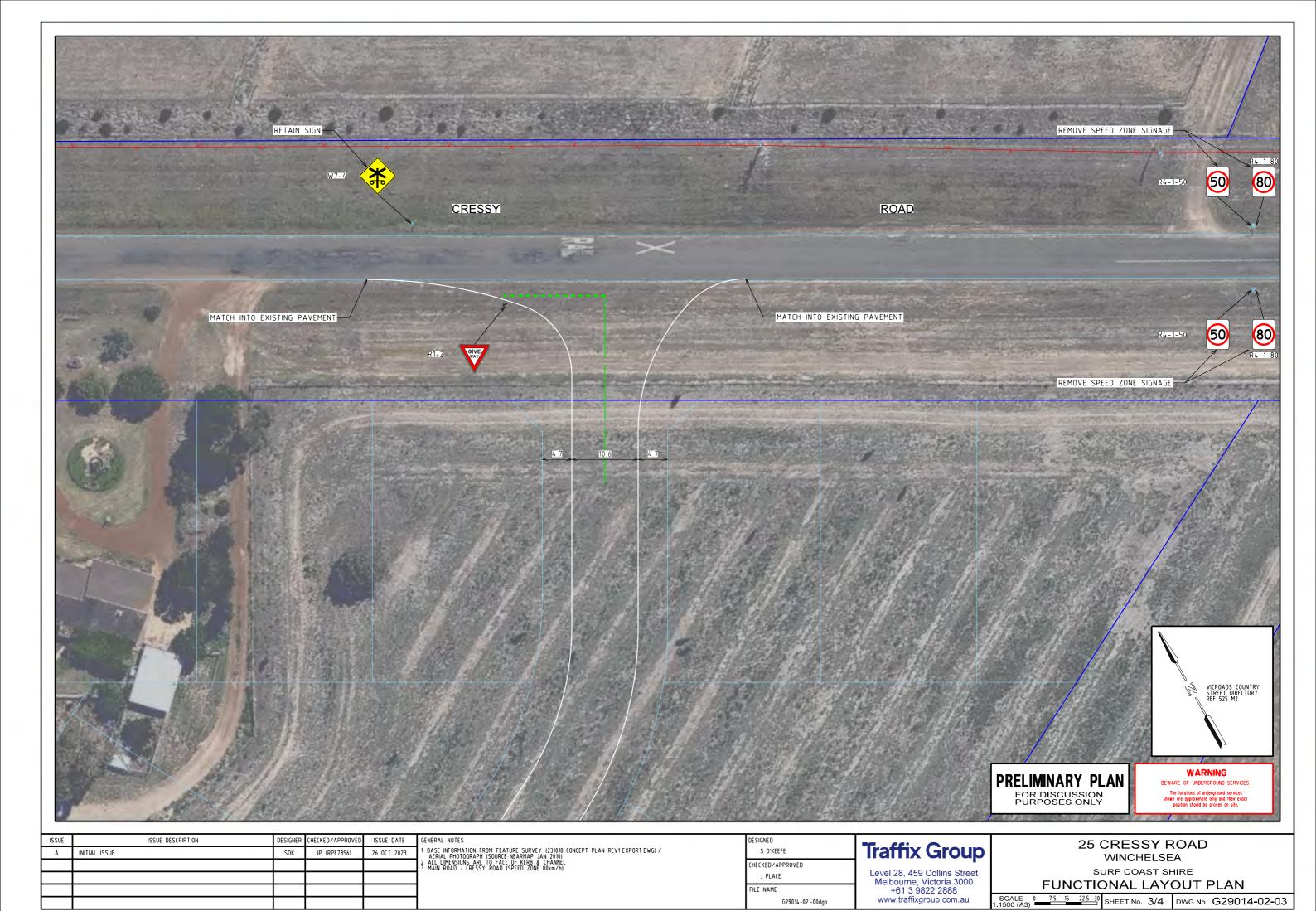
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SURF COAST SHIRE

FUNCTIONAL LAYOUT PLAN

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1 BASE INFORMATION FROM FEATURE SURVEY (231018 CONCEPT PLAN REV1 EXPORT DWG) / ARRIAL PHOTOGRAPH (SOURCE NEARMAP JAN 2010) 2 ALL DIMENSIONS ARE TO FACE OF KERB & (HANNEL 3 MAIN ROAD - CRESSY ROAD (SPEED ZONE 80km/h)

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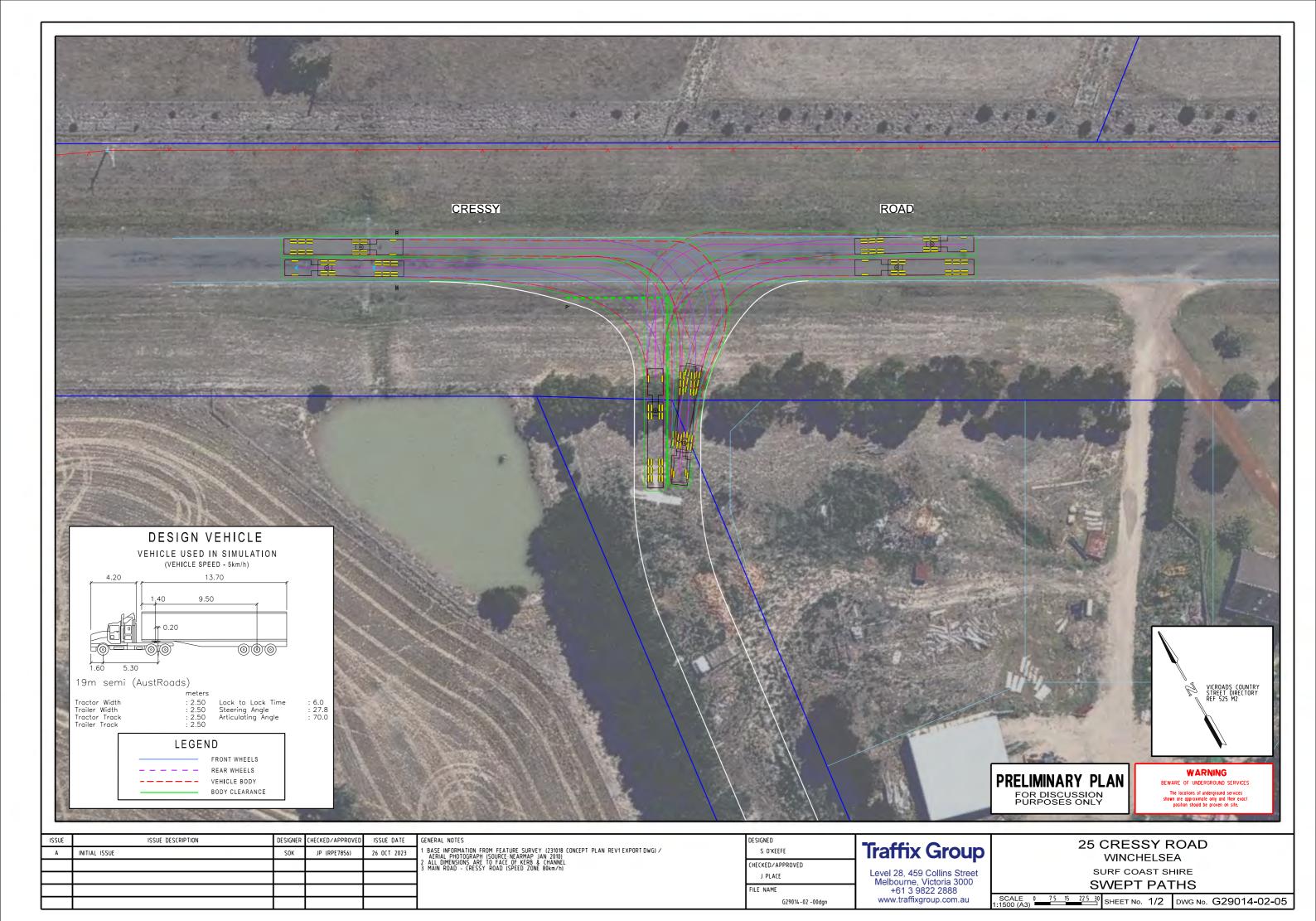
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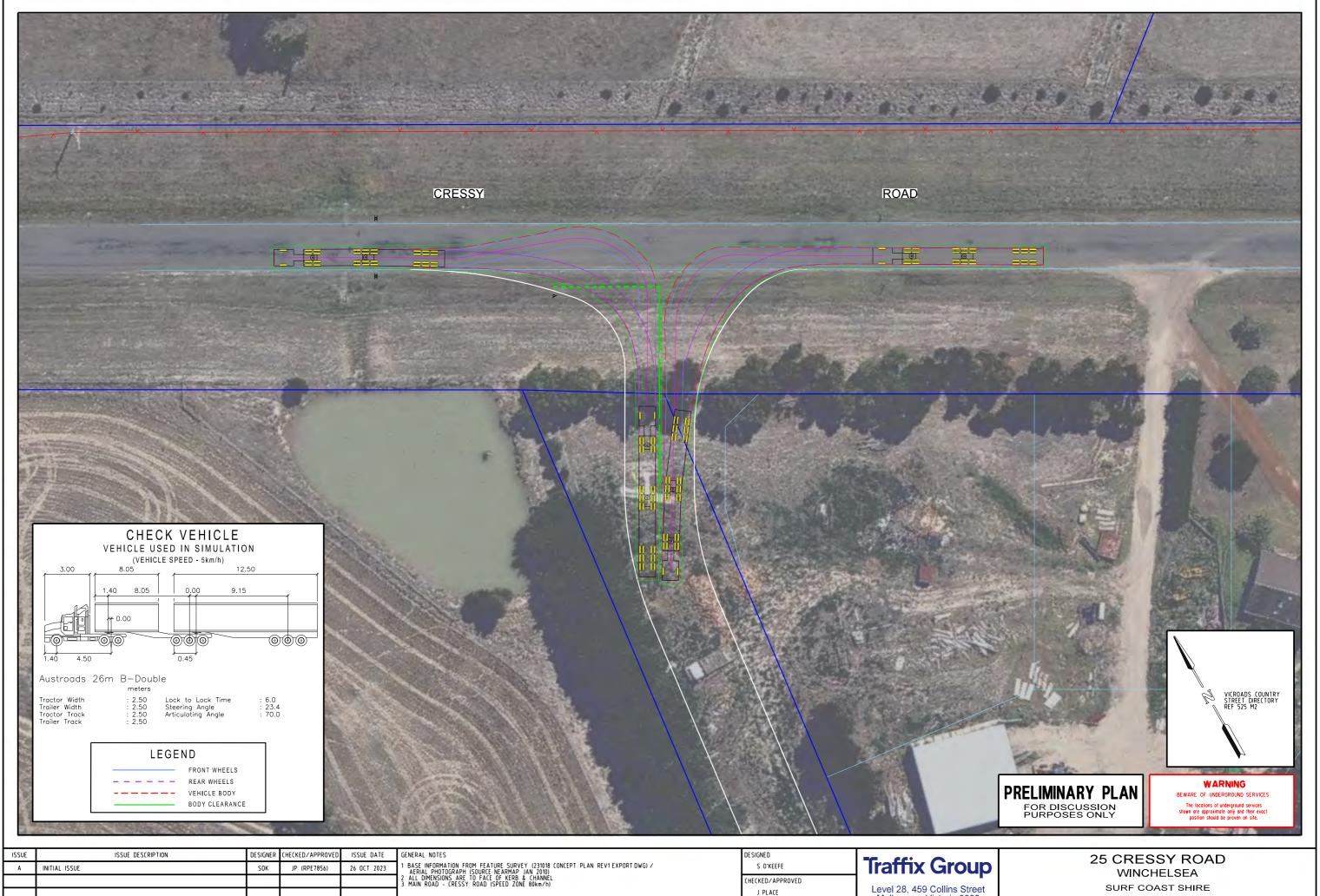
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