

# Orchard Hills Site Establishment Construction Traffic Management Plan

Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works

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## Document approval

Rev	Date	Prepared by	Reviewed by	Approver
A.01	May 22			
B.01	June 22			
C.01	June 22			
Signature				



## Details of Revision Amendments

### Document Control

The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project Traffic Manager is responsible for updating this plan to reflect changes to construction, legal and other requirements, as required.

### Amendments

Any revisions or amendments must be approved by the Project Traffic Manager and/or client before being distributed/implemented.

### Revision Details

Revision	Details
A.01	For review
B.01	For approval
C.01	For approval





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# 1.Introduction

## 1.1. Project and location

The Project forms part of the broader Sydney Metro network. It involves the construction and operation of a 23km new metro rail line that extends from the existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaduct, bridges, surface and open-cut troughs between the two tunnel sections (Figure 1).

The Project will be delivered through a number of works packages including the Station Boxes and Tunnelling Works (SBT Works). The SBT Works includes the design and construction of:

- Two sections of twin tunnels with a total combined length of approximately 9.8km, plus associated portal structures, one from Orchard Hills to St Marys and the other under Western Sydney International (WSI) airport to the new Aerotropolis Station in New South Wales (NSW)
- Excavations at either end to enable trains to turn back and stub tunnels to enable future extensions
- Station box excavations with temporary ground support for four stations at St Marys, Orchard Hills, Airport Terminal and Aerotropolis
- Excavations for two intermediate service facilities, one in each of the tunnel sections at Claremont and Bringelly.

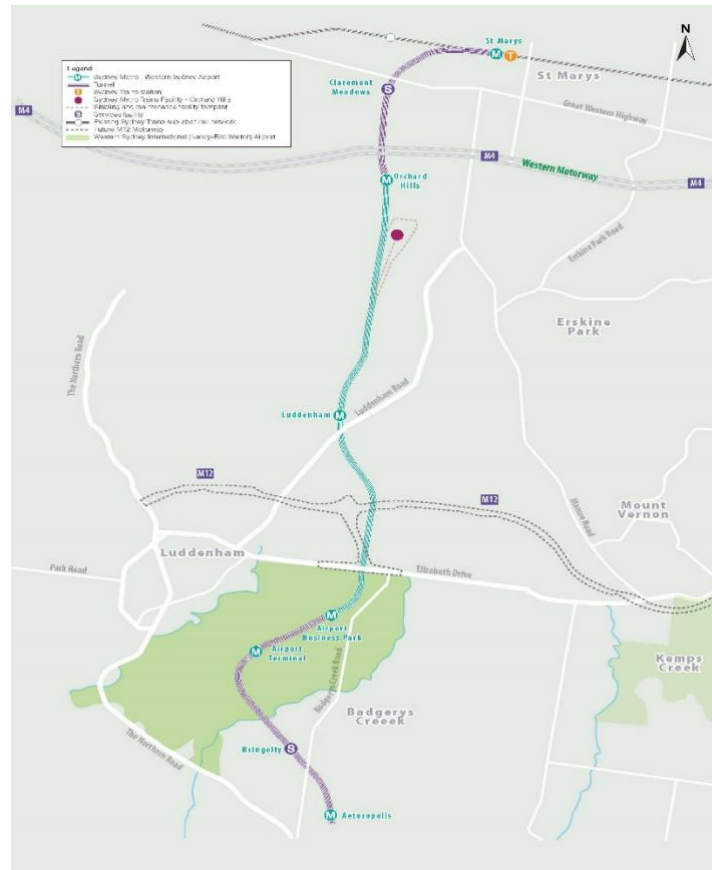


Figure 1: Project location





## 1.2. Purpose

This Orchard Hills site specific Construction Traffic Management Plan Site Establishment works (CTMP or this plan) has been developed by CPB Contractors Ghella Joint Venture (CPBG) to identify the traffic management measures at the Orchard Hills worksite for site establishment associated with the Sydney Metro Western Sydney Airport Station Boxes and Tunnelling Works (SBT Works).

This plan sets out the traffic management initiatives that will be deployed to minimise disruption and ensure the safety of the wide range of stakeholders potentially affected by the SBT works including but not limited to motorists, pedestrians, cyclists, public transport users, local residents, property owners, business owners and workers/ staff.

This plan has been prepared in accordance with SSI 10051 Planning Approval Condition E103 and will be submitted to the Planning Secretary of the NSW Department of Planning, Environment and Industry for information.





## 2. Locality and existing conditions

The site is located south of the M4 Motorway, east of Kent Road and both north and south of Lansdowne Road and west of Samuel Marsden Road and is located within the Penrith City Council Local Government Area (LGA). The site was previously zoned for semi-rural residential. The site is shown on Figure 2.



Figure 2: Site locality





## 2.1. Kent Road

Kent Road to the north of the M4 Motorway is a state road connecting Gipps Street to the north to the Motorway. South of the Motorway Kent Road is a local road which falls under the care and control of Penrith City Council as shown on Figure 3.

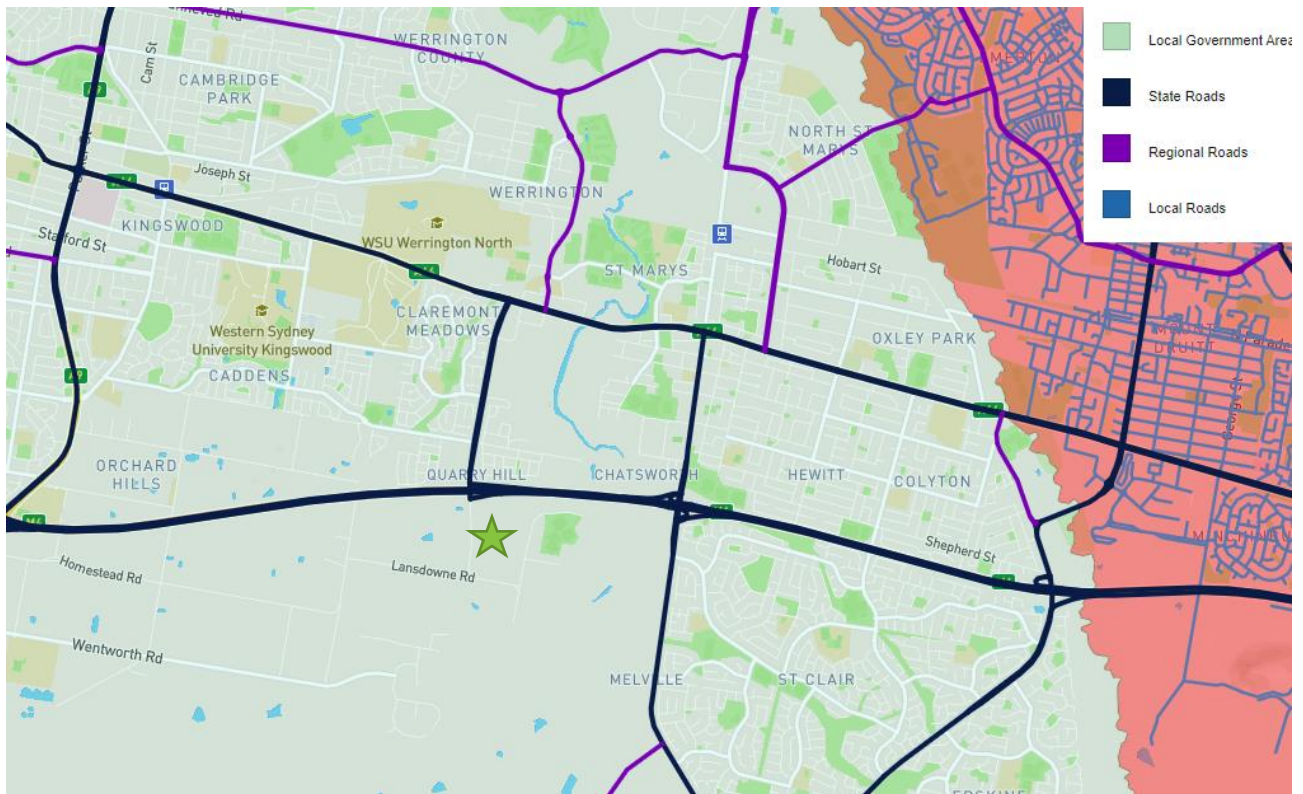


Figure 3: NSW road network classification





Kent Road commences at Gipps Street and terminates at Lansdowne Road. The current speed limit is 70km/hr. Kent Road in the local road section, contains one (1) lane in each direction and generally runs north-south, refer to Figure 4.



Figure 4: Street view of Kent Road south of the M4 Motorway





A shared path is provided on the western side of Kent Road for approximately 40m south of the Kent Road exit ramp from the M4, refer to Figure 5. This shared path allows connection to the pedestrian bridge over the M4. No other paths, either foot or shared, exist south of the Motorway.



Figure 5: Shared path on Kent Road leading to the M4 pedestrian overpass

No public transport operates along the local road section of Kent Road.

No counting stations are located along the local road section of Kent Road, however, the EIS Technical Paper 1 – Traffic and Transport notes that during the AM peak northbound has 420 pcu/hr and southbound 110 pcu/ hr<sup>1</sup> with the PM peak having 130pcu/ hr northbound and

<sup>1</sup> pcu/hr = passenger car units - One car is considered as a single unit, cycle, motorcycle is considered as half car unit. Bus, truck is considered equivalent to 3 PCU





240pcu/hr southbound. The technical paper further notes that the intersection of Kent Road/ Lansdowne Road operates at a LoS A in both peak periods.

## 2.2. Lansdowne Road

Lansdowne Road is a local road which falls under the care and control of Penrith City Council. It commences at the intersection of Samuel Marsden Road to the east and terminates to the west at Calverts Road, refer to Figure 6.



Figure 6: Lansdowne Road

The posted speed limit on Lansdowne Road is 70km/hr. there are no footpaths along Lansdowne Road and no cycle routes are found in the area, refer to Figure 7.



Figure 7: Lansdowne Road to the east of Samuel Marsden Road





### 3. Site Establishment Works

*Duration:* Approximately 4 months

*Timing* 28 June 2022

#### 3.1. Works required

The site establishment works include:

- Installation of site fencing
- Installation of environmental controls with the site including run off protection
- Service works include:
  - Telecommunications relocations
- Clearing and fencing works
- Demolition of existing structures
- New light vehicle driveways on Kent Road at existing driveway locations
- Installation of preliminary site offices
- Installation of piling pads
- Pavement construction of the internal haul roads and
- Side track construction to allow Lansdowne Road to be diverted to the south of the existing Lansdowne Road

The general arrangement of the site is shown on Figure 8

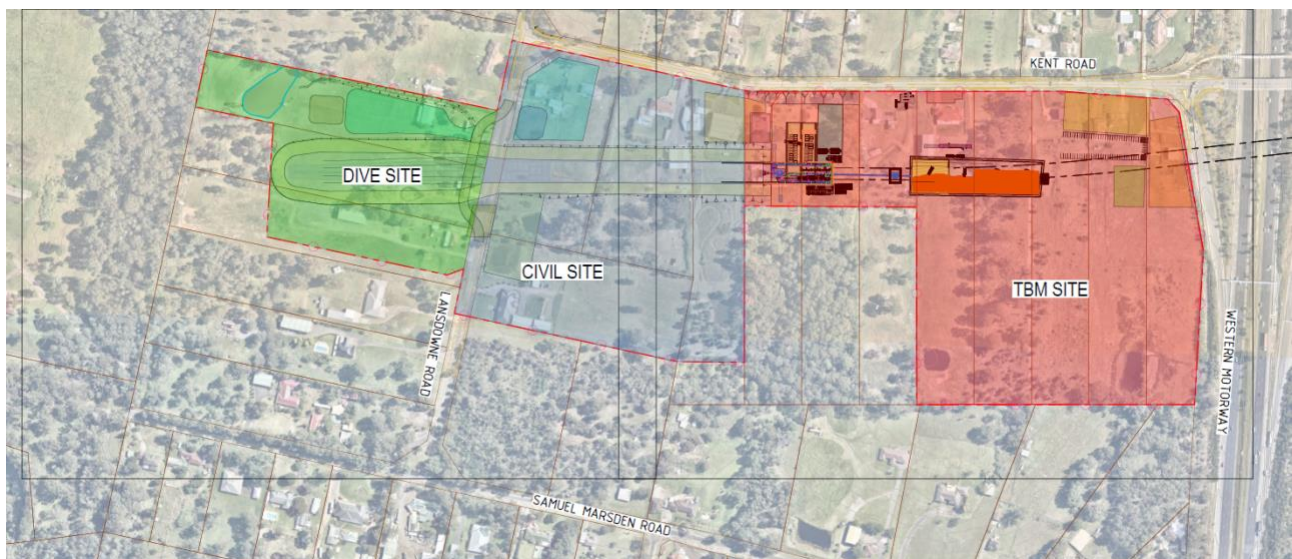


Figure 8: General arrangement of the site





The extent of the demolition works is shown on Figure 9 and Figure 10 with full drawings provided in Appendix 2.



Figure 9: Demolition works southern extent

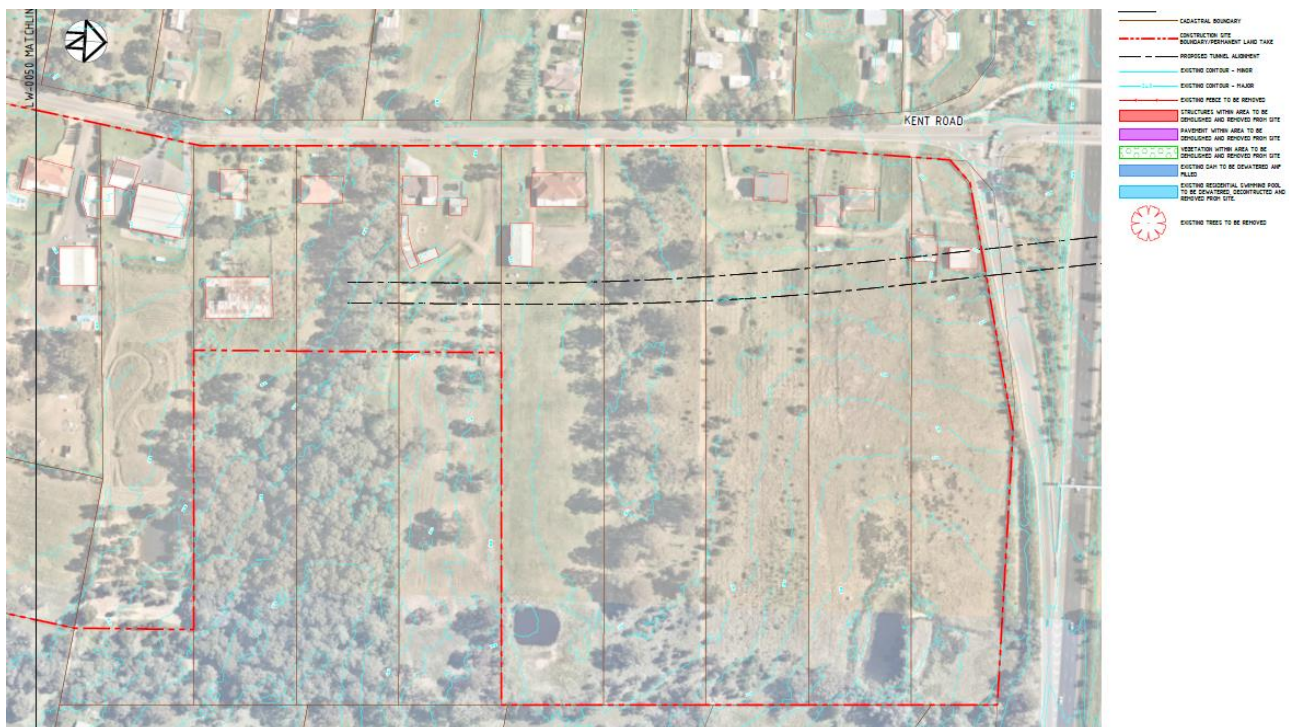


Figure 10: Demolition works northern extent





The proposed side track is shown on Figure 11 and is included in **Error! Reference source not found..** The side track design will be forwarded to the relevant parties via the Temporary Works design process.

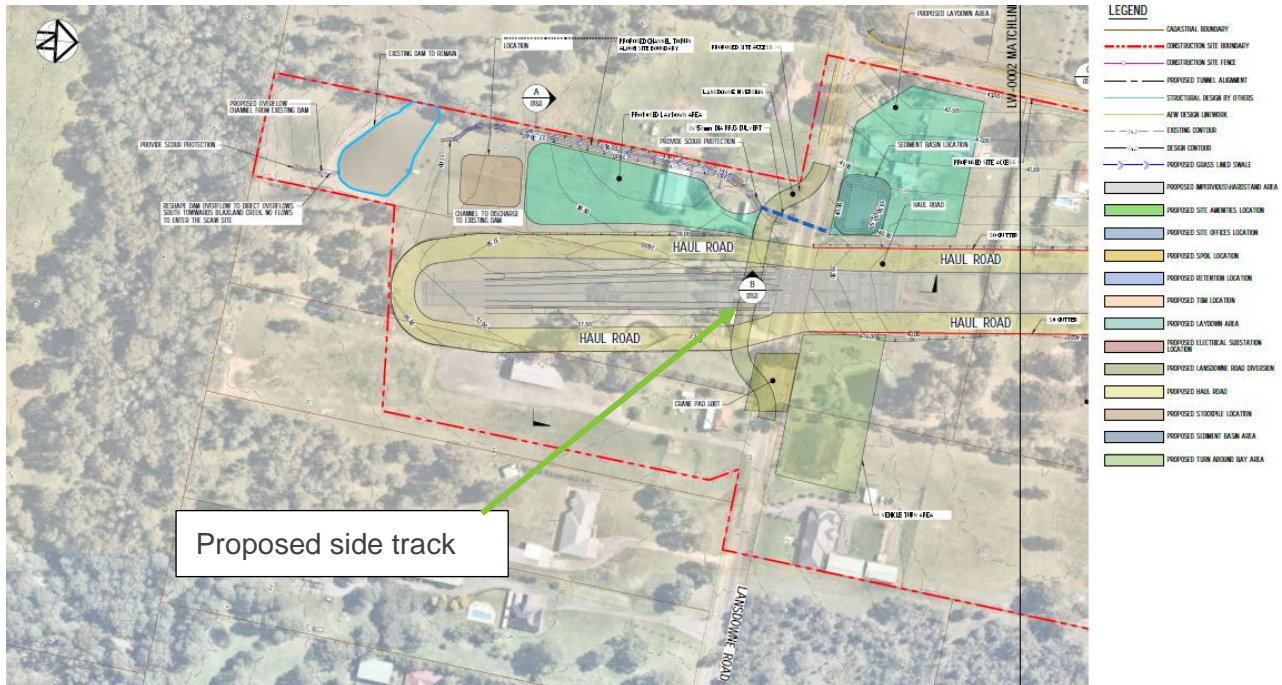


Figure 11: Lansdowne Road bridge side track

Works will generally be undertaken during standard construction hours of 7AM to 6PM Monday to Friday and 8AM to 1PM on Saturdays in accordance with SSI Planning Approval Condition E38.





### 3.2. Operating Conditions

Vehicles would enter the site via existing driveways located on Kent Road and Lansdowne Road. The proposed site access/ egress is shown on Figure 12.

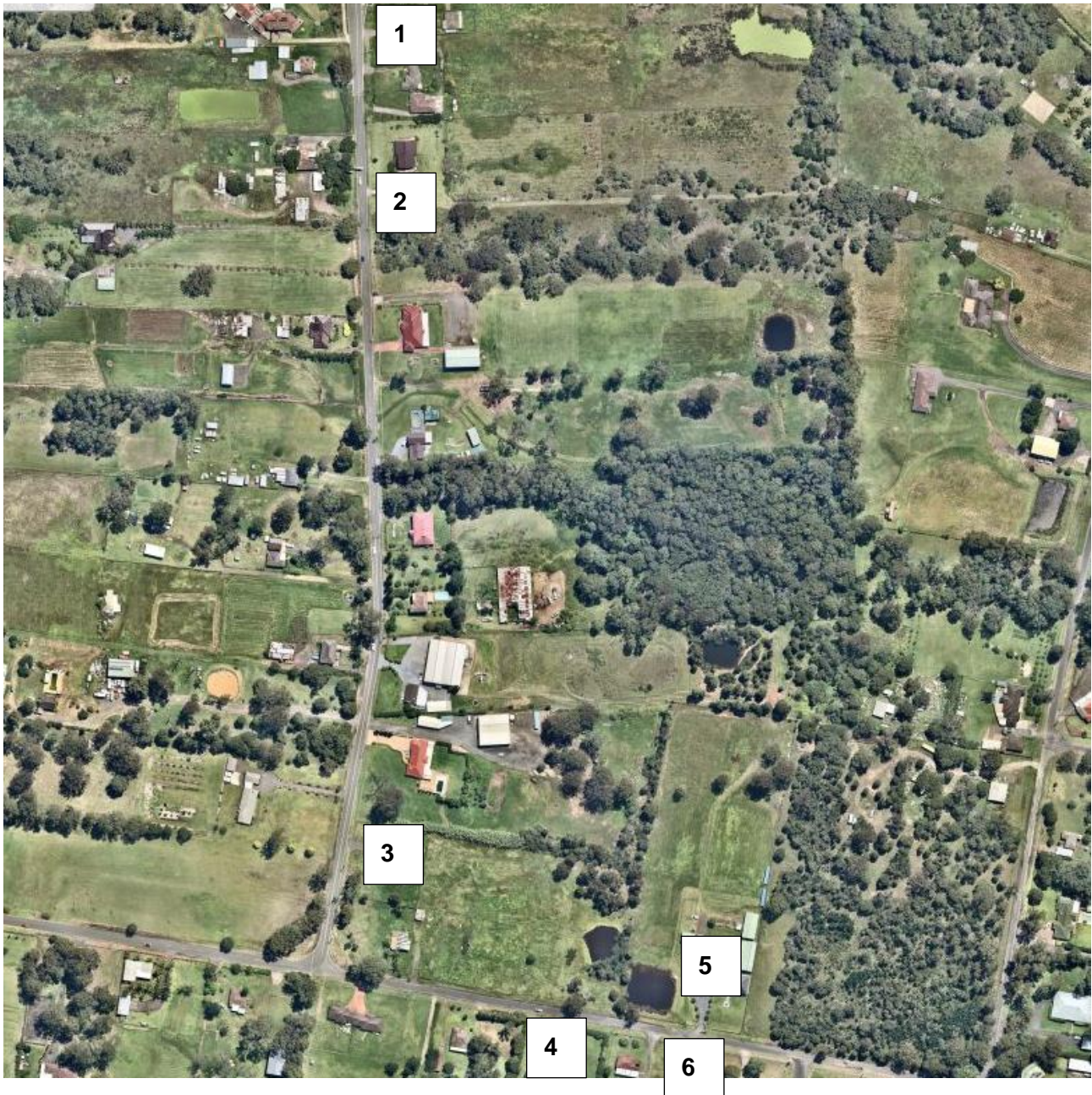


Figure 12: Proposed access points

Gate 1 and 6 are existing driveways that will be retained and used for light vehicle access/ egress whilst all other gates will cater for light and heavy vehicle movements. Gate 3 along Kent Road will service the southern end of dive site. The requirement for this additional HV gate is to facilitate a separate access for the TBM works and allow an early handover of the southern section of site to the follow-on contractor.





The existing driveways to be used (refer to Figure 13) will be upgraded at a later stage, where required, to allow two-way vehicle access, as the existing driveways are typically restricted in width. The upgrade of the driveways will be in accordance with Penrith City Council's specifications. In the interim, traffic control will be used to provide for vehicle movements.



Figure 13: Existing driveway on Kent Road

### 3.2.1. Impact on traffic flow

There will be minimal impact on traffic flows as the vehicle numbers are significantly less for the site establishment phase of works, in comparison to the site operations. A listing of the anticipated vehicle numbers associated with the site establishment phase of works is provided in Table 2.

Table 1: Indicative heavy vehicle numbers

Activity	Total Heavy Vehicles
Installation of fencing	20 over 3 weeks
Demolition of structure	60 over 4 weeks
Delivery of site amenities	10 over 2 weeks
Delivery of machinery	50 over 12 weeks
Site maintenance	3 per week
Vacuum trucks to service amenities	4 per week
Side track construction	50 over 12 weeks





The EIS indicative vehicle numbers are provided in Table 2. It is noted that the EIS does not nominate site establishment vehicle movements and only notes the peak construction numbers.

Table 2: EIS indicative vehicle numbers

Vehicle Type	Peak construction movements EIS – AM peak <sup>2</sup>			Peak construction movements EIS – PM peak <sup>3</sup>		
	IN	OUT	TOTAL	IN	OUT	TOTAL
LV Staff	178	0	178	0	178	178
LV deliveries	2	2	4	2	2	4
HV	20	20	40	20	20	40

### 3.2.2. Impact on public transport

There is no impact on public transport during these works as there are no public transport services that operate within the area.

### 3.2.3. Impact on active transport users

No footpaths or cycle routes are provided south of the M4 Motorway along Kent Road or Lansdowne Road. There is an existing on road cycle lane provided along the southern side of M4 westbound offramp connecting to an existing shared path on the western side of Kent Road, allowing cyclists to travel across M4 and continue northbound on Kent Road. Works proposed in this CTMP will not change or impact operations of the cycle path.

As noted above, there are no footpaths and cycleways along the site frontage at Kent Street and Lansdowne Road and as such, there is negligible foot traffic/ cyclists in the area. On site traffic control will assist pedestrians and pedestrians past the work site road during short term works requiring lane closures along Kent Road and Lansdowne Road.

In addition, CPBG drivers will be made aware of existing road conditions around site and instructed through site inductions and toolbox talks of site-specific traffic risks and the requirement to allow safe passage to vulnerable road users at site access/ egress locations.

### 3.2.4. Impact on property and utility access

Access to the resident-rural properties will be retained on Samuel Marsden Road and remaining Kent Road properties, during the site establishment works. Access for utility providers/ maintainers will not be impacted.

### 3.2.5. Cumulative impacts

During the site establishment works, Quickway (Sydney Metro's AEW Contractor) will be undertaking works on Kent Road to complete the permanent power supply works for Orchard Hills site. CPBG and Quickway regularly liaise to coordinate works and traffic control requirements and will continue to work with each other to ensure minimal impact on road network while works are completed along Kent Road and Lansdowne Road. Please refer to Appendix 6 for evidence of correspondence.

<sup>2</sup> The assessed peak hours in the EIS Technical Paper 1 are from 7:30 am to 8:30 am for the morning peak hour.

<sup>3</sup> The assessed peak hours in the EIS Technical Paper 1 are from 4:30 pm to 5:30 pm for the evening peak hours.





### 3.3. Staff parking and transportation to site

It is anticipated that there will be 50 personnel on site. There will be ample room on site to cater for this demand.

### 3.4. Traffic Guidance Scheme/ Road Occupancy License identified works

Works that have been identified as requiring a Traffic Guidance Scheme (TGS) are listed below:

1. Traffic control during driveway works on Kent Road
2. Traffic control during side-track tie in works on Lansdowne Road

### 3.5. Required Council approvals

Works that have been identified as requiring Council approval include:

1. Road occupancy
2. Road opening
3. Vehicle crossing installation
4. Delivery of oversize/ over mass plant/ equipment and
5. Side track design





## 4. Fleet management

Trucks to be used for the delivery of the SBT works will be compliant with NSW legislation and standards including Heavy Vehicle National Legislation (HVNLI) and Sydney Metro requirements outlined in the Principal Contractor standard. All heavy vehicle operations will be conducted in accordance with CPBG's Chain of Responsibility (CoR) Management Plan.

A combination of truck types will be used during the SBT works including single unit trucks, semi-trailers, truck and dog combinations and low loaders, for example. There is sufficient room on site to provide for all heavy vehicles required for the works, therefore, marshalling facilities are not proposed for this site. Heavy vehicles will not idle on roads surrounding the site.

### 4.1. Haulage routes

Generally, the haulage routes will be via arterial roads, freeways or tollways. The routes included in the EIS will be adopted for this site, refer to Figure 14.

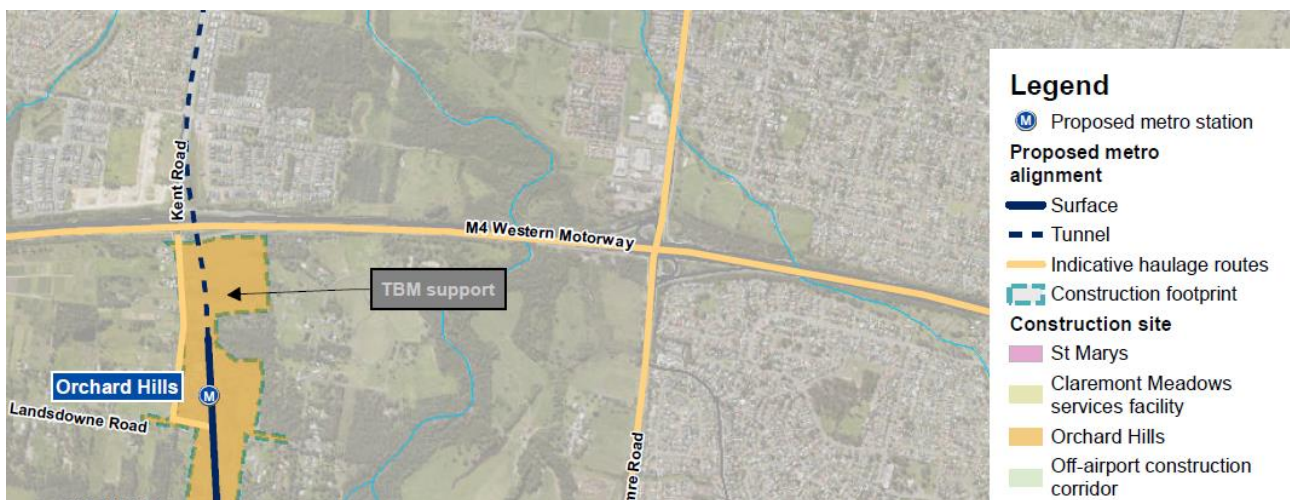


Figure 14: EIS haulage routes

### 4.2. Road dilapidation report

Before any local road, ie: Kent Road and Lansdowne Road is used by Heavy Vehicles, a Road Dilapidation Report will be prepared. A copy of that report will be provided to Penrith City Council within three (3) weeks of completion of the survey and no later than one (1) month before the road is used by Heavy Vehicles associated with the project.

If damage to roads occurs as a result of the construction of the project CPBG will either (at Penrith City Council's discretion):

- Compensate Penrith City Council for the damage so caused or
- Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report

### 4.3. Permits for Over Dimensional vehicles

Permits for vehicles greater than 4.5t are through the National Heavy Vehicle Regulator (NHVR). This applies to particular special purpose vehicles (SPV) such as mobile cranes and other oversize/ over mass (OSOM) vehicles. TfNSW is currently undertaking this permit issue.

For over dimensional vehicles, generally vehicles that are greater than 25m in length of 3.5m wide require a pilot(s). Extremely long or wide vehicles will require an escort, fee payable. Permits are applied for by the transport operator. There is a requirement for over mass/ oversize vehicles during the works identified in this CTMP.





## 5. Other matters

### 5.1. Road safety audits

Road safety audits will be undertaken during the development and implementation of the CTMP. The audits will be undertaken as noted in the section 10 of the Construction Traffic Management Framework. A copy of the road safety audit is provided in Appendix 3.

### 5.2. Communications and the community

CPBG will be responsible for the dissemination of information to the community including affected residents, relevant Councils, businesses and the public.

#### 5.2.1. Proposed communications

Typical timelines for the various notifications are:

- Community Notices (Notifications) issued at least 7 days prior to:
  - start of work
  - new work with a new activity that has the potential to impact on stakeholders and the community
  - handover of a construction site to a new contractor
  - activities requiring notification to comply with relevant Environmental Protection Licence (EPL) usually out of hours work.
- Precinct updates/e-update (Newsletters) - published 2x/year and for changes to planning approvals
- Email and internet updates – done with publication and delivery to letterboxes of Notifications and Newsletters.
- Advertisements – published in advance of significant traffic management changes, detours, traffic disruptions
- Advance warning sign – as noted in the CTMP, where required

Table 3 provides the proposed communications to be implemented for this CTMP.

Table 3: Proposed communications

Notification	Site establishment
Community Notice	Yes
Precinct update/ e-update	Yes
Email	Yes
Internet	Yes
Print advertising	No
Advance warning sign	Yes

#### 5.2.2. Travelling public

Where the SBT works will impact on the travelling public, CPBG will undertake the following communications:

- Public transport interruptions will be communicated via on site signage
- Motoring public will be forewarned of any changes including road closures, road changes and lane changes well in advance using appropriate signs including Variable Message Signs (VMS)
- Active transport users will be provided with advance warning signs.





## 5.3. Stakeholders

There are a number of stakeholders consulted during the development of this CTMP. A copy of their review comments are provided in Appendix 4. Table 4 provides an overview of the consultation undertaken for this CTMP.

Table 4: Consultation undertaken

Stakeholder	Consultation type	Date
Traffic Control Group	Presentation	12 May 2022
Traffic and Transport Liaison Group	Presentation	2 June 2022
Customer Journey Planning	Submission of CTMP	20 May 2022
Sydney Metro project team	Submission of CTMP	20 May 2022
Penrith City Council	Submission of CTMP	20 May 2022
Customer Journey Planning	Resubmission of CTMP	14 June 2022
Sydney Metro Project team	Resubmission of CTMP	14 June 2022
Penrith City Council	Resubmission of CTMP	14 June 2022

### 5.3.1. Traffic and Transport Liaison Group

The Traffic and Transport Liaison Group (TTLG) has been established by - for the project, as required under MCoA E116. The TTLG consists of members from Sydney Metro, Liverpool City Council, Penrith City Council, Customer Journey Planning, Western Sydney Airport Corporation (WSA Co), other contractors associated with the project and Emergency Services.

Further development of this CTMP will occur in consultation with this group. It is noted that the TTLG meets monthly.

Supplementary analysis and modelling as required by Sydney Metro and/ or the TTLG will be undertaken to demonstrate that construction traffic can be managed to minimise disruption to traffic network operations including changes to the management of pedestrians, cyclists and public transport networks and services. Any revised traffic management measures will be incorporated into the CTMP.

### 5.3.2. Traffic Control Group

The Traffic Control Group (TCG) has been established by Sydney Metro Western Sydney Airport for the project. The TCG consists of members from Sydney Metro, Liverpool City Council, Penrith City Council, Customer Journey Planning, Western Sydney Airport Corporation (WSA Co), other contractors associated with the project. The TCG meets fortnightly.

The purpose of the TCG is for open and honest technical discussion on contractor proposed works methodologies and traffic management plans. The TCG will:

- Provide feedback on proposals;
- Guide CTMP and other document finalisation prior to submission for review/ approval;
- Guide coordination of works and traffic management activities on and off-airport (local, regional and state roads).
- Assist in transport impact mitigation.

## 5.4. Special events





When planning the works, CPBG will identify special events which directly impact the worksites or haulage activities and will continue to interrogate event websites that provide details on forthcoming events such as:

- NSW and Sydney Events - [Destination NSW](#)
- NSW Events and Festivals - [Visit NSW](#) and
- Upcoming Events - [Penrith City Council](#)

CPBG's community team are in touch with The Colyton St Clair Chiefs Baseball Club who predominantly use Samuel Marsden Reserve for their games and practice. They have advised about their comp games every Saturday and training evenings Monday through to Friday from August through to April. There will be minimal impact of CPBG's works on their activities noting works will generally be undertaken during standard construction hours of 7AM to 6PM Monday to Friday and 8AM to 1PM on Saturdays in accordance with SSI Planning Approval Condition E38.

## 5.5. Training

CPBG will ensure that all personnel, including sub-contractors are aware of key traffic risks and specific requirements of TfNSW customers (including cyclists), general public, residents and businesses, prior to attending site through the induction process and regular updates through tool-box talks.

## 5.6. Inspections and monitoring

The site will be monitored by the site supervisor. Any changes to signs and lines that impact on the public will be recorded. Daily monitoring will be undertaken during site operating hours.

Traffic control used for pedestrian management, lane closures etc will need to provide records of the traffic control implemented. Any changes required to the traffic control set up will be authorised by a holder of a SafeWork NSW "Prepare a Work Zone Traffic Management Plan" or equivalent.

Checklists for monitoring of the implemented CTMP are provided in Appendix 5.

## 5.7. Environmental maintenance

All works will be undertaken in accordance with the SBT works NSW Site Establishment Management Plan and associated procedures and the Construction Environmental Management Plan and associated sub plans. The SBT works are regulated by the NSW Environment Protection Authority and works to be undertaken outside of standard construction hours will need to comply with the requirements of the Environmental Protection License (EPL)

## 5.8. Site contacts

Table 5 provides the contact details for the works identified in this CTMP

Table 5: Site contacts

Name	Position	Contact details
	Project Manager	
	Project Engineer	

## 5.9. References

The following documents were used in the development of this CTMP

- Construction Traffic Management Framework Sydney Metro West and Sydney Metro Western Sydney Airport Construction





- Traffic Control at Worksites Manual v6
- Relevant AustRoads Guides and TfNSW Supplements
- Sydney Metro Principal Contractor Health and Safety Standards





## Appendix 1 TGS/ VMP/ PMP

Table 6: TGS/ VMP/ PMP

Plan #	Location	Between	Between	Time of day	Works	Traffic Control	Impacts
SMWSASBT-CPG-OHE-SN150-MB-DRG-031810	Kent Road and Lansdowne Road					VMP	Site layout with site access and egress arrangements along Kent Road and Lansdowne Road
WSA-TGS-A-KEN-SB-0201	Kent Road	South of Motorway	North of Lansdowne Rd	Day	Driveway construction	Stop Slow	Minimal impacts as vehicle numbers are typically low
WSA-TGS-A-LAN-ALL-1010	Lansdowne Road	Kent Road	Samuel Marsden Road	Day	Driveway construction	Stop slow	Minimal impacts as vehicle numbers are typically low
WSA-TGS-A-LAN-ALL-1011	Lansdowne Road	Kent Road	Samuel Marsden Road	Day	Barrier installation/ removal for side-track works  Tie in side-track works on Lansdowne Road  Diversion to new side-track	Stop slow	Minimal impacts as vehicle numbers are typically low
WSASBTT-0000-023-TMP-CPBG-DE-0001	All			Day	Signposting installation/ removal	Stop Slow	Minimal impacts as vehicle numbers are typically low
WSASBTT-0000-023-TMP-CPBG-DE-0001	Lansdowne Road	Kent Road	Samuel Marsden Road	All	Side-track operation	NA	Traffic under free flow

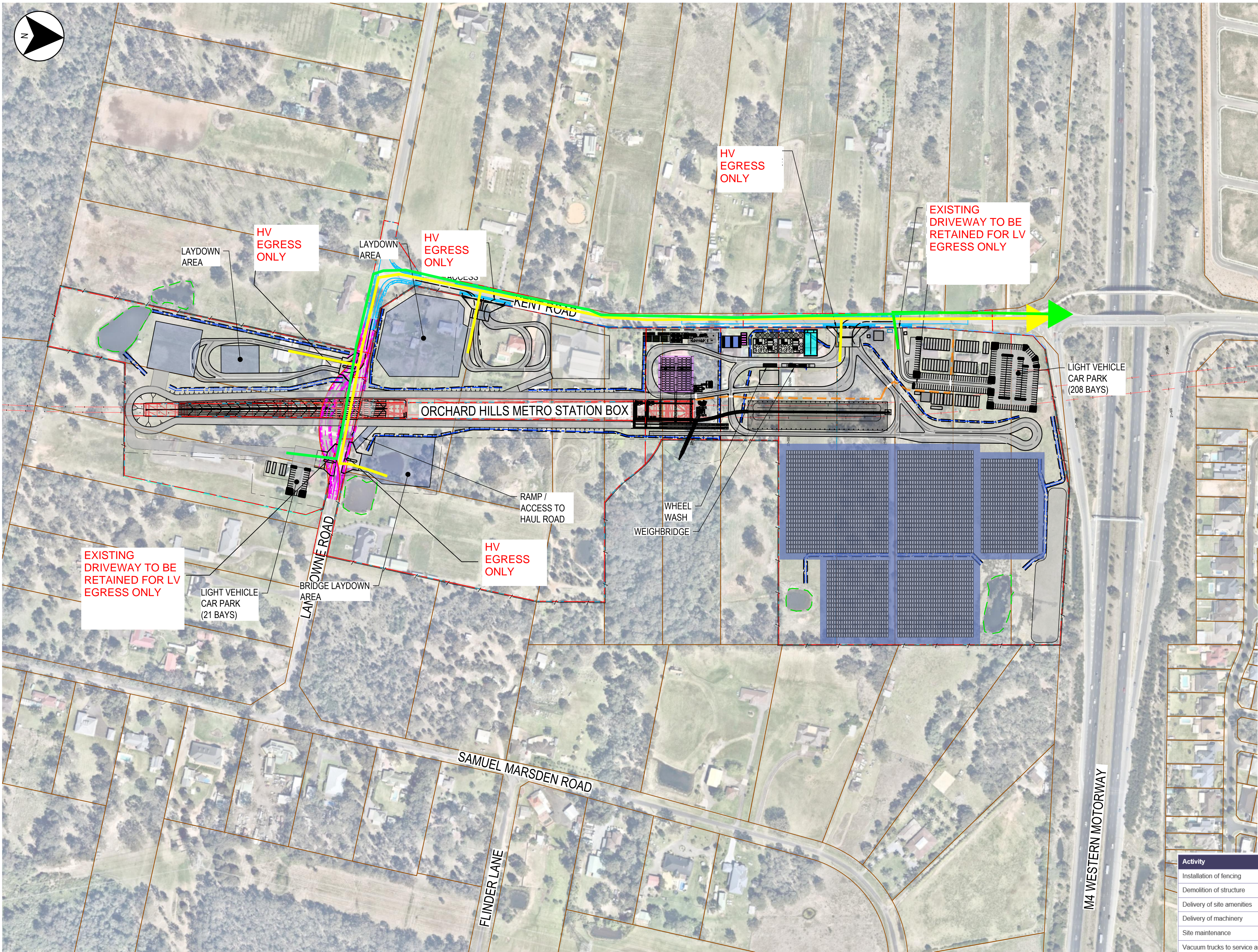








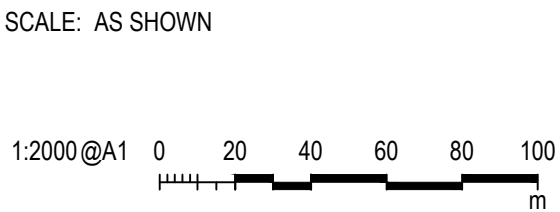
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- LEGEND**
- CONSTRUCTION SITE BOUNDARY
  - CADASTRAL BOUNDARY
  - RAIL ALIGNMENT (BY OTHERS)
  - ORCHARD HILLS LOCAL AREA WORKS (LAW) PACKAGE OHE-SN150 0324
  - ORCHARD HILLS METRO STATION BOX
  - KENT ROAD (AEW PACKAGE 4.3)
  - HARDSTAND
  - LV outbound only
  - HV/LV Outbound

Activity	Total Heavy Vehicles
Installation of fencing	20 over 3 weeks
Demolition of structure	60 over 4 weeks
Delivery of site amenities	10 over 2 weeks
Delivery of machinery	50 over 12 weeks
Site maintenance	3 per week
Vacuum trucks to service amenities	4 per week
Side track construction	50 over 12 weeks

A	STAGE 3 EXTERNAL ISSUE	BY	TT	CL	27.05.22
REV.	AMENDMENT DESCRIPTION	Design by	Verified by	Approved by	Date



A1 Original Co-ordinate System: GDA2020/MGAZone56 Height Datum: AHD This sheet may be prepared using colour and may be incomplete if copied

SAMUEL MARSDEN ROAD

FLINDER LANE

HV  
EGRESS  
ONLY

EXISTING  
DRIVEWAY TO BE  
RETAINED FOR LV  
EGRESS ONLY

ORCHARD HILLS METRO STATION BOX

RAMP /  
ACCESS TO  
HAUL ROAD

WHEEL  
WASH  
WEIGHBRIDGE

HV  
EGRESS  
ONLY

LIGHT VEHICLE  
CAR PARK  
(21 BAYS)

BRIDGE LAYDOWN  
AREA

LAYDOWN  
AREA

HV  
EGRESS  
ONLY

LAYDOWN  
AREA

HV  
EGRESS  
ONLY

M4 WESTERN MOTORWAY



LIGHT VEHICLE  
CAR PARK  
(208 BAYS)

CLIENT:

SYDNEY METRO

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SYDNEY METRO - WESTERN SYDNEY AIRPORT – STATION BOXES AND TUNNELLING WORKS

ORCHARD HILLS STATION

MOBILISATION AND SITE ESTABLISHMENT

VEHICLE MANAGEMENT PLAN OUTBOUND ROUTE

FILE No: \_\_\_\_\_ SHEET: 1 OF 1 ©

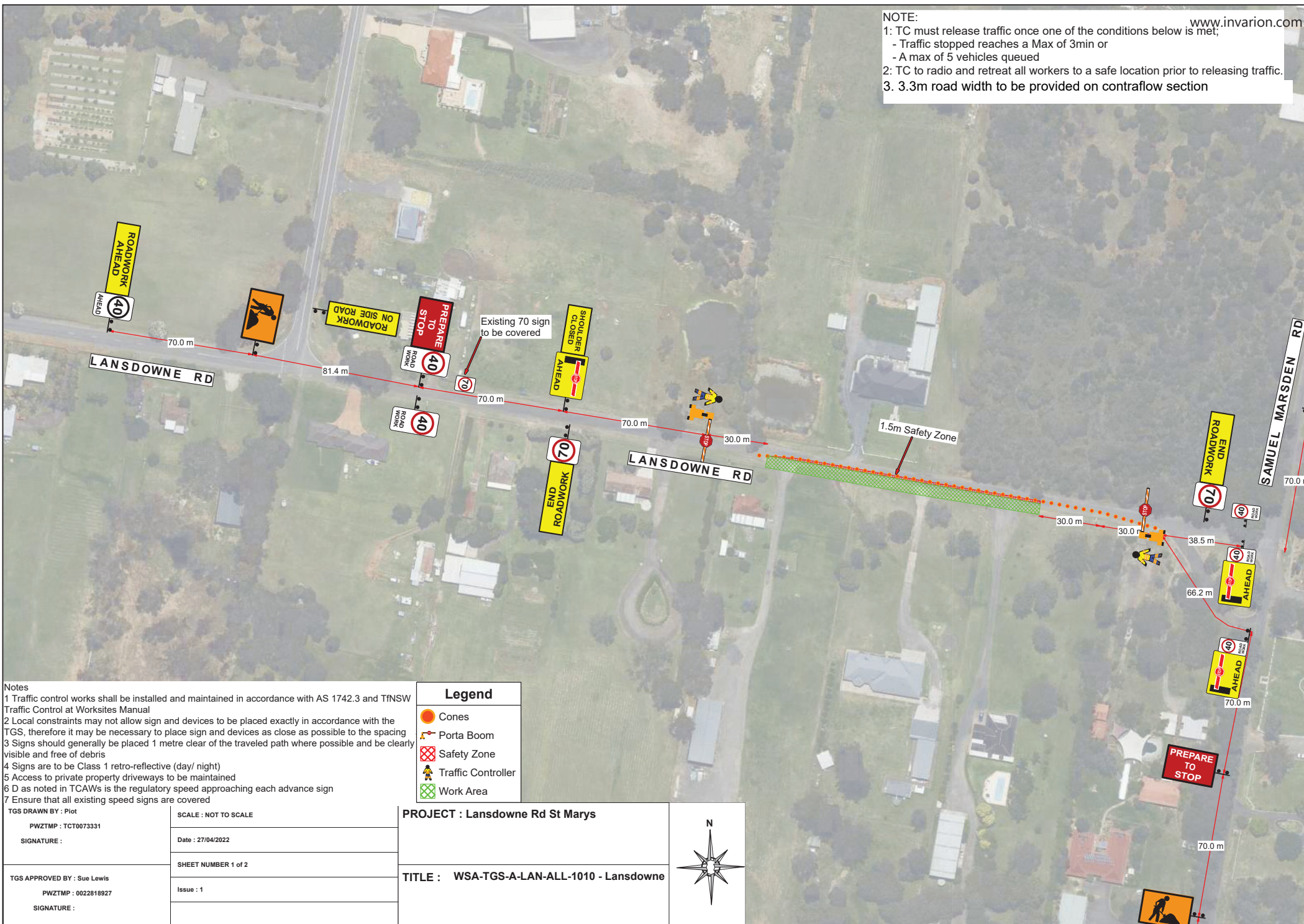
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NOTE: [www.invarion.com](http://www.invarion.com)  
1: TC must release traffic once one of the conditions below is met;  
- Traffic stopped reaches a Max of 3min or  
- A max of 5 vehicles queued  
2: TC to radio and retreat all workers to a safe location prior to releasing traffic.  
3. 3.3m road width to be provided on contraflow section



Notes  
1 Traffic control works shall be installed and maintained in accordance with AS 1742.3 and TfNSW Traffic Control at Worksites Manual  
2 Local constraints may not allow sign and devices to be placed exactly in accordance with the TGS, therefore it may be necessary to place sign and devices as close as possible to the spacing  
3 Signs should generally be placed 1 metre clear of the traveled path where possible and be clearly visible and free of debris  
4 Signs are to be Class 1 retro-reflective (day/ night)  
5 Access to private property driveways to be maintained  
6 D as noted in TCAWs is the regulatory speed approaching each advance sign  
7 Ensure that all existing speed signs are covered

Legend
Cones
Porta Boom
Safety Zone
Traffic Controller
Work Area

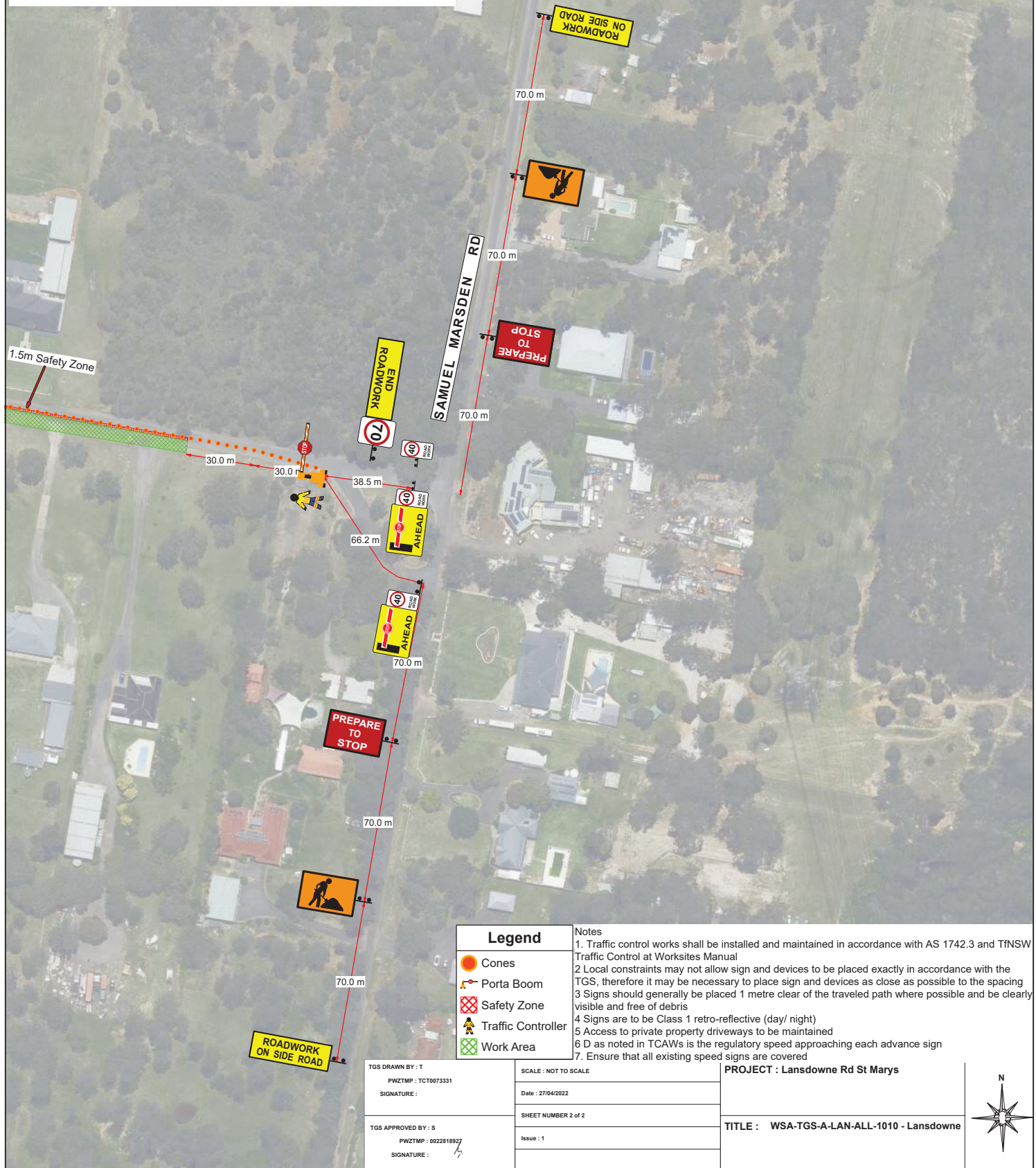
TGS DRAWN BY : Plot	SCALE : NOT TO SCALE	PROJECT : Lansdowne Rd St Marys
PWZTMP : TCT0073331	Date : 27/04/2022	
SIGNATURE :		
	SHEET NUMBER 1 of 2	
	Issue : 1	
TGS APPROVED BY : Sue Lewis		TITLE : WSA-TGS-A-LAN-ALL-1010 - Lansdowne
PWZTMP : 0022818927		
SIGNATURE :		





**NOTE:**

- 1: TC must release traffic once one of the conditions below is met;
  - Traffic stopped reaches a Max of 3min or
  - A max of 5 vehicles queued
- 2: TC to radio and retreat all workers to a safe location prior to releasing traffic.
3. 3.3m road width to be provided on contraflow section

**Legend**

- Cones
- Porta Boom
- Safety Zone
- Traffic Controller
- Work Area

**Notes**

1. Traffic control works shall be installed and maintained in accordance with AS 1742.3 and TfNSW Traffic Control at Worksites Manual
- 2 Local constraints may not allow sign and devices to be placed exactly in accordance with the TGS, therefore it may be necessary to place sign and devices as close as possible to the spacing
- 3 Signs should generally be placed 1 metre clear of the traveled path where possible and be clearly visible and free of debris
- 4 Signs are to be Class 1 retro-reflective (day/ night)
- 5 Access to private property driveways to be maintained
- 6 D as noted in TCAWs is the regulatory speed approaching each advance sign
7. Ensure that all existing speed signs are covered

TGS DRAWN BY : T

PWZTMP : TCT0073331

SIGNATURE :

TGS APPROVED BY : S

PWZTMP : 0022618927

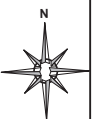
SIGNATURE :

SCALE : NOT TO SCALE

Date : 27/04/2022

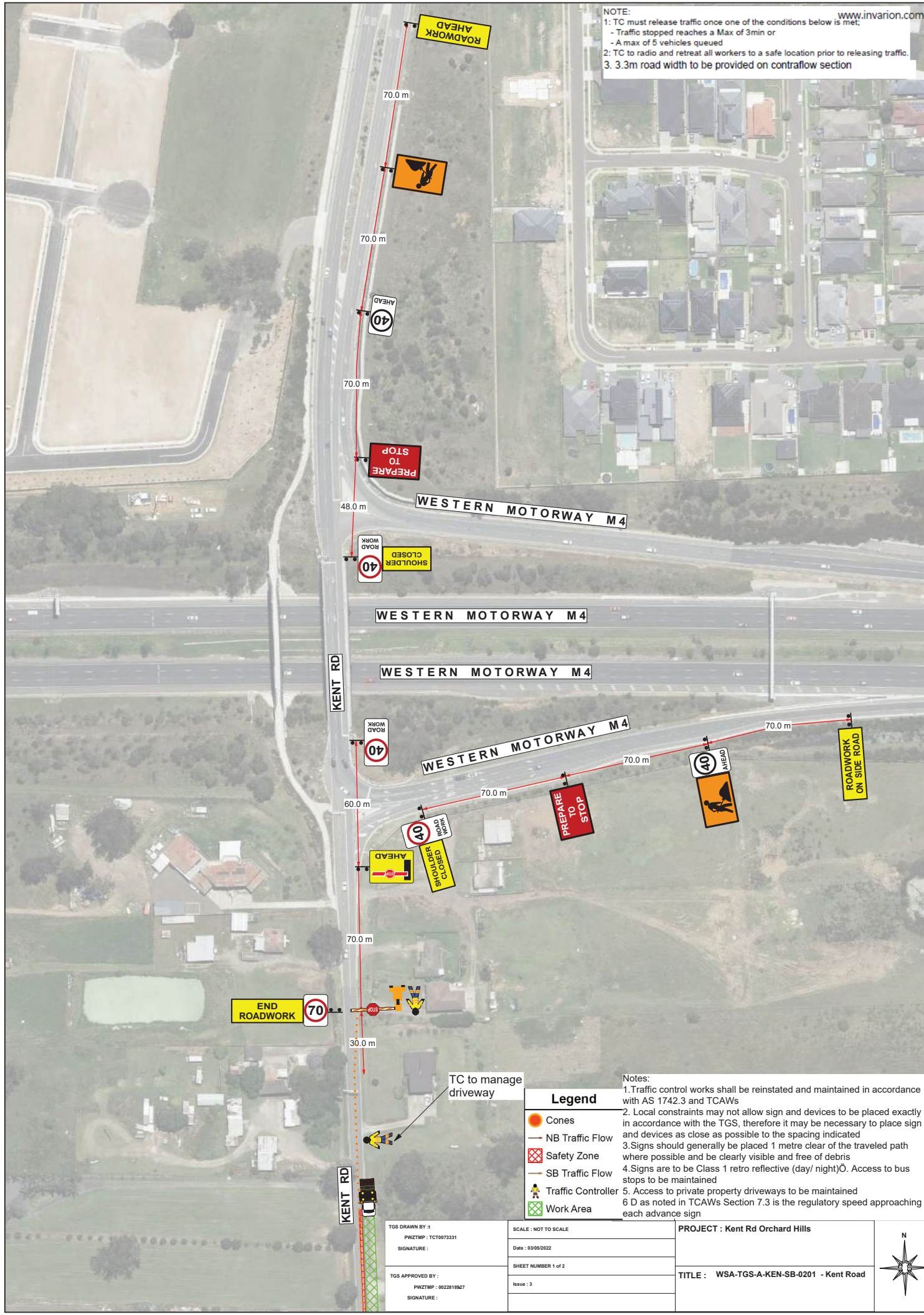
SHEET NUMBER 2 of 2

Issue : 1

**PROJECT : Lansdowne Rd St Marys****TITLE : WSA-TGS-A-LAN-ALL-1010 - Lansdowne**



- NOTE:
- 1: TC must release traffic once one of the conditions below is met;
    - Traffic stopped reaches a Max of 3min or
    - A max of 5 vehicles queued
  - 2: TC to radio and retreat all workers to a safe location prior to releasing traffic.
  3. 3.3m road width to be provided on contraflow section



### Legend

- Cones
- NB Traffic Flow
- Safety Zone
- SB Traffic Flow
- Traffic Controller
- Work Area

### Notes:

1. Traffic control works shall be reinstated and maintained in accordance with AS 1742.3 and TCAWs
2. Local constraints may not allow sign and devices to be placed exactly in accordance with the TGS, therefore it may be necessary to place sign and devices as close as possible to the spacing indicated
3. Signs should generally be placed 1 metre clear of the traveled path where possible and be clearly visible and free of debris
4. Signs are to be Class 1 retro reflective (day/ night) Ø. Access to bus stops to be maintained
5. Access to private property driveways to be maintained
- 6 D as noted in TCAWs Section 7.3 is the regulatory speed approaching each advance sign

TGS DRAWN BY :  
PWZTMP : TCT0073331  
SIGNATURE :

SCALE : NOT TO SCALE

Date : 03/05/2022

SHEET NUMBER 1 of 2

TGS APPROVED BY :  
PWZTMP : 0022818627  
SIGNATURE :

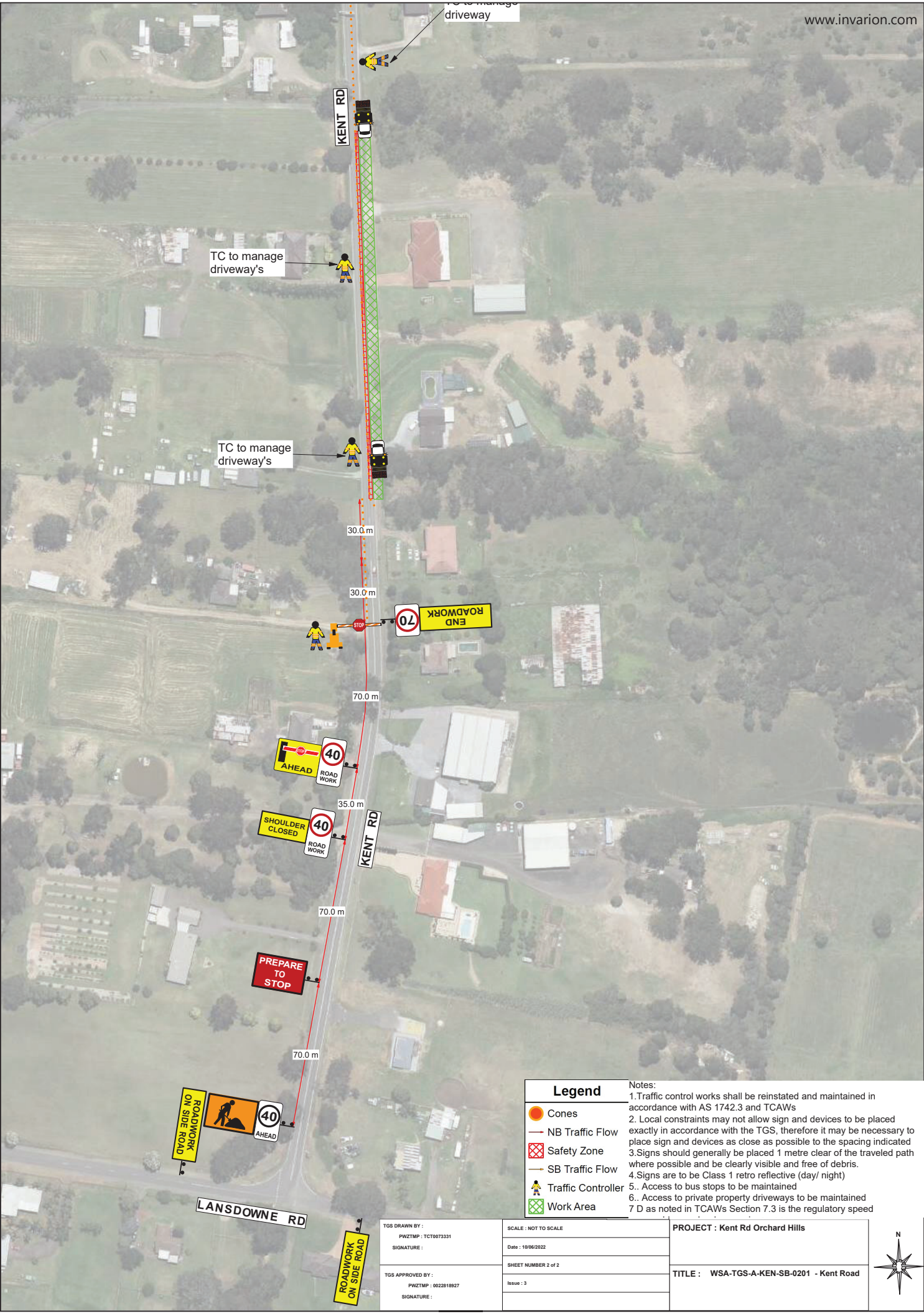
Issue : 3

PROJECT : Kent Rd Orchard Hills

TITLE : WSA-TGS-A-KEN-SB-0201 - Kent Road







**Legend**

- Cones
- NB Traffic Flow
- Safety Zone
- SB Traffic Flow
- Traffic Controller
- Work Area

- Notes:
1. Traffic control works shall be reinstated and maintained in accordance with AS 1742.3 and TCAWs
  2. Local constraints may not allow sign and devices to be placed exactly in accordance with the TGS, therefore it may be necessary to place sign and devices as close as possible to the spacing indicated
  3. Signs should generally be placed 1 metre clear of the traveled path where possible and be clearly visible and free of debris.
  4. Signs are to be Class 1 retro reflective (day/ night)
  5. Access to bus stops to be maintained
  6. Access to private property driveways to be maintained
  - 7 D as noted in TCAWs Section 7.3 is the regulatory speed

TGS DRAWN BY :  
PWZTMP : TCT0073331  
SIGNATURE :

TGS APPROVED BY :  
PWZTMP : 0022818927  
SIGNATURE :

SCALE : NOT TO SCALE

Date : 10/06/2022

SHEET NUMBER 2 of 2

Issue : 3

PROJECT : Kent Rd Orchard Hills

TITLE : WSA-TGS-A-KEN-SB-0201 - Kent Road











Notes:

1. Traffic control works shall be reinstated and maintained in accordance with AS 1742.3 and TCAWS

2. Local constraints may not allow sign and devices to be placed exactly in accordance with the TGS, therefore it may be necessary to place sign and devices as close as possible to the spacing indicated

3. Signs should generally be placed 1 metre clear of the traveled path where possible and be clearly visible and free of debris

4. Signs are to be Class 1 retro reflective (day/ night)

5. Access to private property driveways to be maintained

6 D as noted in TCAWS Section 7.3 is the regulatory speed approaching each advance sign

Legend

Cones

Porta Boom

Safety Zone

Traffic Controller

Work Area

TGS DRAWN BY :  
PWZTMP : 1CT070331  
SIGNATURE : /

TGS APPROVED B  
PWZTMP : 00281807  
SIGNATURE : /

SCALE : NOT TO SCALE

DATE : 10/06/2022

SHEET NUMBER 2 of 2

ISSUE : 2

TITLE : WSA-TGS-A-LAN-ALL-1011 - Lansdowne

3.3m road width to be provided on contraflow section



NOTE:  
This is a generic style TGS designed to be used at multiple locations on this project with the following conditions to be met.  
1: TC must release traffic once one of the conditions below is met;  
- Traffic stopped reaches a Max of 3min or  
- A max of 5 vehicles queued  
2: TC Team Leader to determine North Marker and markup on the TGS  
3: TC to radio and retreat all workers to a safe location prior to releasing traffic.  
4: All Side Roads are to be signed up in accordance with the TCAWS 6.0 and MUST be marked-up on the TGS  
5: Ensure that all existing speed signs are covered

TGS DRAWN BY :  
PWC/TMP : TCT0073351  
SIGNATURE :  
  
TGS APPROVED BY :  
PWC/TMP : 0022819327  
SIGNATURE : *L*

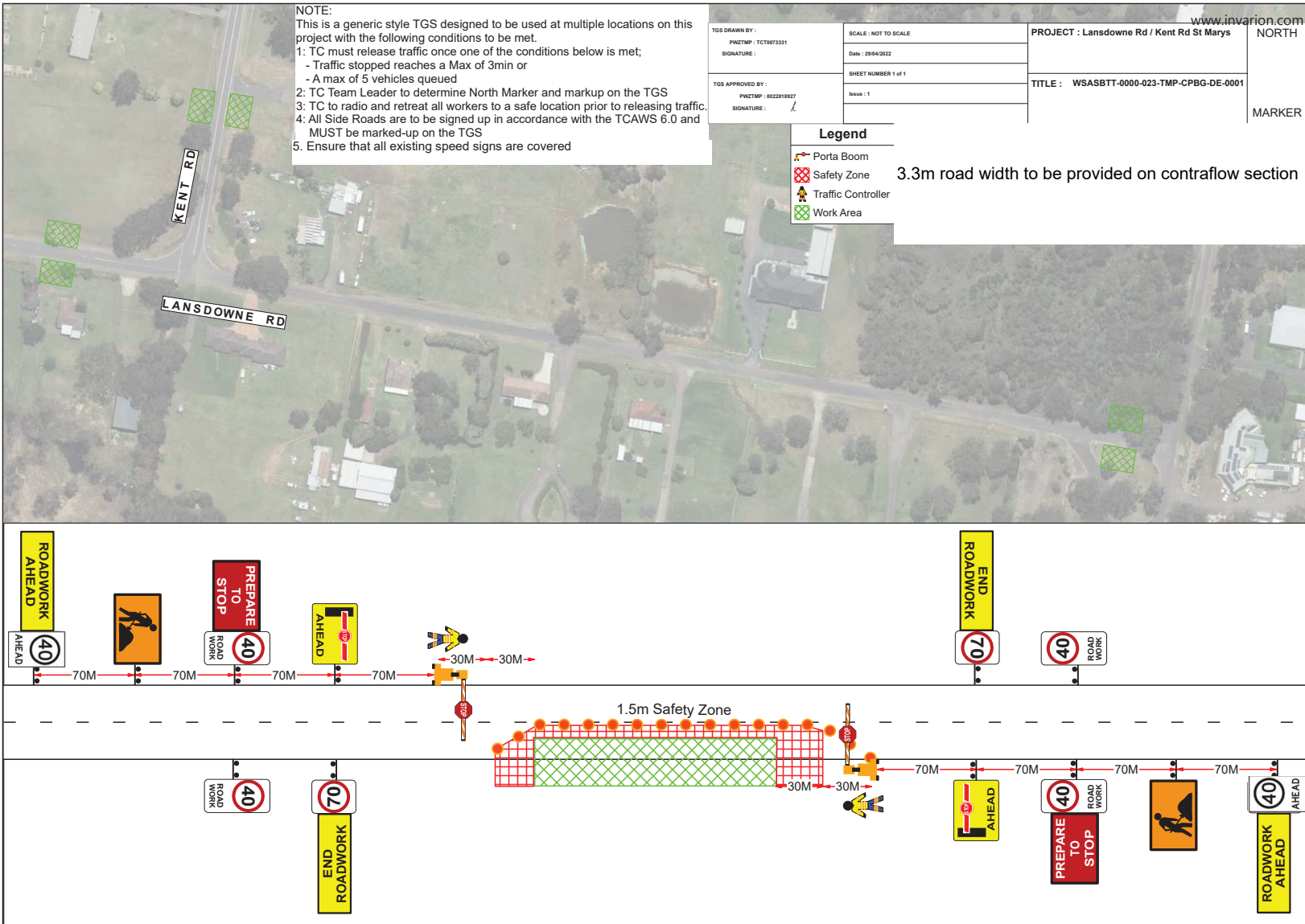
SCALE : NOT TO SCALE  
Date : 28/04/2022  
SHEET NUMBER 1 of 1  
Revis : 1

PROJECT : Lansdowne Rd / Kent Rd St Marys  
TITLE : WSASBTT-0000-023-TMP-CPBG-DE-0001

www.invarion.com  
NORTH  
MARKER

- Legend**
- Porta Boom
  - Safety Zone
  - Traffic Controller
  - Work Area

3.3m road width to be provided on contraflow section





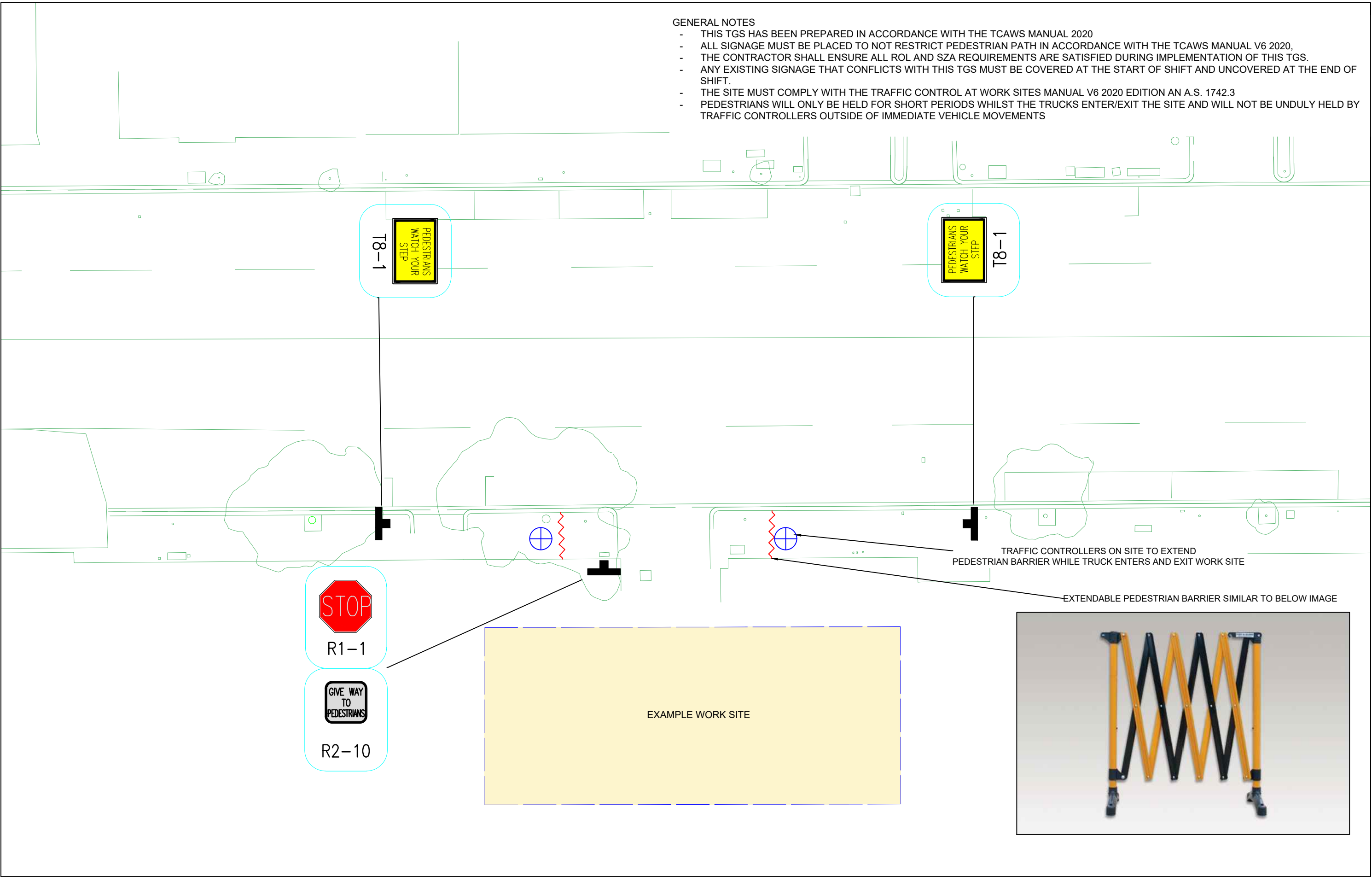




THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED  
1:50mm ON A3 SIZE ORIGINAL

GENERAL NOTES

- THIS TGS HAS BEEN PREPARED IN ACCORDANCE WITH THE TCAWS MANUAL 2020
- ALL SIGNAGE MUST BE PLACED TO NOT RESTRICT PEDESTRIAN PATH IN ACCORDANCE WITH THE TCAWS MANUAL V6 2020,
- THE CONTRACTOR SHALL ENSURE ALL ROL AND SZA REQUIREMENTS ARE SATISFIED DURING IMPLEMENTATION OF THIS TGS.
- ANY EXISTING SIGNAGE THAT CONFLICTS WITH THIS TGS MUST BE COVERED AT THE START OF SHIFT AND UNCOVERED AT THE END OF SHIFT.
- THE SITE MUST COMPLY WITH THE TRAFFIC CONTROL AT WORK SITES MANUAL V6 2020 EDITION AN A.S. 1742.3
- PEDESTRIANS WILL ONLY BE HELD FOR SHORT PERIODS WHILST THE TRUCKS ENTER/EXIT THE SITE AND WILL NOT BE UNDULY HELD BY TRAFFIC CONTROLLERS OUTSIDE OF IMMEDIATE VEHICLE MOVEMENTS



EXTERNAL REFERENCE FILES		REV	DATE	AMENDMENT / REVISION DESCRIPTION	APPROVAL	SCALES ON A3 SIZE DRAWING	DRAWINGS / DESIGN PREPARED BY	TITLE	NAME	DATE	CLIENT	M6 STAGE 1 SBT-TGS-GEN-PED-0001			A3
					SL			DRAWN			 <b>Transport for NSW</b>	DOCUMENT NUMBER NA			
								DRG CHECK				PREPARED FOR			ISSUE STATUS
								DESIGN				SHEET No. 1 of 1			REV A
								DESIGN CHECK							
								DESIGN MNGR							
						CO-ORDINATE SYSTEM MGA ZONE 56 (GDA2020) AHD		PROJECT MNGR							



## Appendix 2 Compliance Tables

Table 7: Ministerial Conditions of Approval

MCoA #	Requirement	Where addressed
E103	Construction Traffic Management Plans (CTMPs) must be prepared in accordance with the Construction Traffic Management Framework. A copy of the CTMPs must be submitted to the Planning Secretary for information before the commencement of any construction in the area identified and managed within the relevant CTMP	This plan and section 2
E105	Local roads proposed to be used by Heavy Vehicles to directly access ancillary facilities/construction sites that are not identified in the documents listed in Condition A1 must be approved by the Planning Secretary and be included in the CTMP	Not required as Heavy Vehicles will use the roads identified in Condition A1
E106	<p>All requests to the Planning Secretary for approval to use local roads under Condition E105 above must include the following:</p> <p>A swept path analysis</p> <p>Demonstration that the use of local roads by Heavy Vehicles for the CSSI will not compromise the safety of pedestrians and cyclists of the safety of two way traffic flow on two way roadways</p> <p>Details as the date of completion of the road dilapidation surveys for the subject local roads and</p> <p>Measures that will be implemented to avoid where practicable the use of local roads past schools, aged care facilities and child care facilities during their peak operation times and</p> <p>Written advice from an appropriately qualified professional on the suitability of the proposed Heavy Vehicle route which takes into consideration items a) to d) of this condition</p>	Not required as Heavy Vehicles will use the roads identified in Condition A1
E107	Before any local road is used by a Heavy Vehicle for the purposes of construction of the CSSI, a Road Dilapidation Report must be prepared for the road. A copy of the Road Dilapidation Report must be provided to the Relevant Road Authority(s) within three (3) weeks of completion of the survey and at no later than one (1) month before the road being used by Heavy Vehicles associated with the construction of the CSSI	Section 4.2
E108	<p>If damage to roads occurs as a result of the construction of the CSSI, the Proponent must either (at the Relevant Road Authority's discretion):</p> <p>Compensate the Relevant road Authority for the damage so caused or</p> <p>Rectify the damage to restore the road to at least the condition it was in pre-work as identified in the Road Dilapidation Report</p>	Section 4.2
E109	Vehicles associated with the project workforce (including light vehicles and Heavy Vehicles) must be managed to:	Sections 3.3 and 4
	a) Minimise parking on public roads	
	b) Minimise idling and queuing on state and regional roads	Section 4
	c) Not carry out marshalling of construction vehicles near sensitive land use(s)	Section 4





MCoA #	Requirement	Where addressed
E109	d) Not block or disrupt access across pedestrian or shared use paths at any time unless alternative access is provided and	Section 3.2.3
	e) Ensure spoil haulage vehicle adhere to the nominated haulage routes identified in the CTMP	Not applicable to the SE CTMP
E110	Access to all utilities and properties must be maintained during works unless otherwise agreed with the relevant utility owner, landowner or occupier	Section 3.2.4
E111	The proponent must maintain access to properties during the entirety of the works unless an alternative access is agreed in writing with the landowner(s) whose access is impacted by the CSSI works	Section 3.2.4
E112	Where construction of the CSSI restricts a property's access to a public road, the Proponent must, until their primary access is reinstated, provide the property, with temporary alternate access to an agreed road decided through construction with the landowner, at no cost to the property landowner, unless agreed with the landowner	Section 3.2.4
E113	Any property access physically affected by the CSSI must be reinstated to at least an equivalent standard, unless agreed by the landowner or occupier. Property access must be reinstated within one (1) month of the work that physically affected the access is completed or in any other timeframe agreed with the landowner or occupier	Section 3.2.4
E114	During construction, all reasonably practicable measures must be implemented to maintain pedestrian, cyclist and vehicular access to, and parking in the vicinity of businesses and affected properties. Disruptions are to be avoided, and where avoidance is not possible, minimised. Where disruption cannot be avoided, alternate pedestrian, cyclist and vehicular access, and parking arrangements must be developed in consultation with affected businesses and landowners and implemented before the disruption. Adequate signage and directions to businesses must be provided before, and for the duration of any disruption	Section 3.2.3
E115	Safe pedestrian and cyclist access must be maintained around the St Marys construction site during construction. In circumstances where pedestrian and cyclist access is restricted or removed due to construction activities, a proximate alternate route which complies with the relevant standards, must be provided and signposted before the restriction or removal of the impacted access	Section 3.2.3
E116	A Traffic and Transport Liaison Group(s) must be established in accordance with the Construction Traffic Management Framework to inform the development of the CTMP	Section 5.3.1
E117	Supplementary analysis and modelling as required by TfNSW and/ or the Traffic and Transport Liaison Group(s) must be undertaken to demonstrate that construction and operational traffic can be managed to minimise disruption to traffic network operations, including changes to and the management of pedestrian, bicycle and public transport networks, public transport services and pedestrian and cyclist movements. Revised traffic management measures must be incorporated into the CTMP	Section 5.3.1





Table 8: Revised Environmental Management Measures

REMM#	Requirement	Where addressed
T1	Construction Traffic Management Plans would be prepared in accordance with the Construction Traffic Management Framework	This Plan
T2	The Construction Traffic Management Plan for St Marys would be developed in consultation with the Traffic and Transport Liaison Group to ensure existing transport interchange infrastructure continues to operate effectively within the St Marys station precinct	Section 5.3.1
T3	Coordination with Western Sydney Airport and Transport for NSW would be undertaken through the Traffic and Transport Liaison Group to manage potential cumulative construction traffic impacts with M12 Motorway and Elizabeth Drive	Section 5.3.1
T4	Road Safety Audits would be carried out to address vehicular access and egress, and pedestrian, cyclists and public transport safety. Road Safety Audits would be carried out as per the guidelines outlined in Section 10 of the Construction Traffic Management Framework.	Section 5.1
T5	Maintain access for pedestrians and cyclists around construction sites as per the guidelines outlined in the Construction Traffic Management Framework. Appropriate signage and line marking would be provided to guide pedestrians and cyclists past construction sites and on the surrounding network to allow access be maintained	Section 3.2.3
T6	Access for construction vehicles to be planned as per the guidelines outlined in the Construction Traffic Management Framework. Construction site traffic would be managed to minimise movements during peak periods. Vehicle access to and from construction sites would be managed to maintain pedestrian, cyclists and motorist safety	Section 4
T7	Temporary relocation of bus stops and the bus layovers at the Station Street car park in St Marys would be implemented prior to the commencement of construction works that impacts on the existing bus facilities. The temporary relocation of bus stops and the bus layover at St Marys would be carried out in consultation with the Transport for NSW, Penrith City Council and bus operators. Wayfinding and customer information would guide customers to temporary bus stop locations.	Not required for this CTMP
T8	Transport for NSW would be consulted to discuss opportunities for their delivery of intersection upgrades at Mamre Road/ M4 Western Motorway on and off ramps prior to the peak year of construction	TfNSW is the responsible entity
T9	A construction worker car parking strategy for St Marys would be prepared in consultation with Penrith City Council and Transport for NSW prior to the commencement of construction. The strategy would seek to:  Minimise overall demand for construction worker car parking through initiatives such as use of other project construction worksites in combination with shuttle buses, carpooling and encouraging the use of public transport  Minimise potential use of on street car parking by construction workers  The construction worker car parking strategy would be implemented throughout construction	Not required for this CTMP





### Appendix 3 Road Safety Audit report







# Road Safety Audit Report

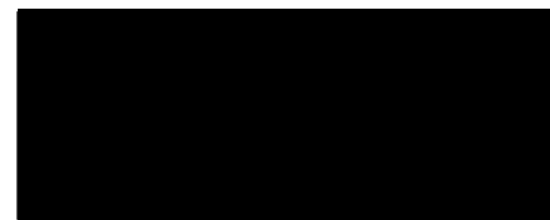
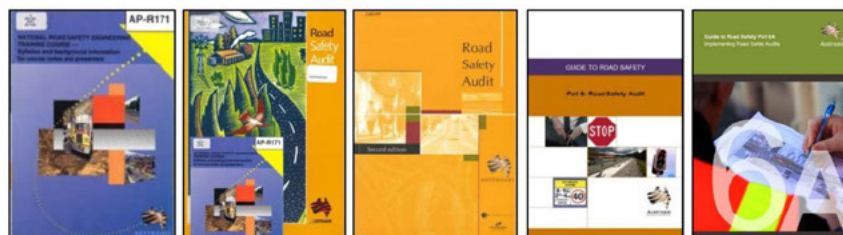
## Sydney Metro Western Sydney Airport



Practical  
Independent  
Specialised

Road/Area	Kent Road and Lansdowne Road	Road Safety Audits Reference	RSA-12521
Traffic Stage/Phase	Orchard Hills Site Establishment	Report Date	8 June 2022
Audit Stage	Desktop Traffic Guidance Scheme	Lead Auditor	[REDACTED]
		Second Auditor	[REDACTED]
Client	[REDACTED]	TMP / Drawings	Orchard Hills Site Establishment CTMP, Doc. No.:SMWSASBT-CPG-STM-SN100-TF-PLN-000001, Rev A.01; Drawing numbers WSA-TGS-A-KEN-SB-0201-KENT ROAD (2 Sheets), WSA-TGS-A-LAN-ALL-1010-LANSDOWNE (2 sheets), WSA-TGS-A-LAN-ALL-1011-LANSDOWNE (2 Sheets), WSABTT-0000-023-TMP-CPBG-DE-0001 & Traffic Staging traffic guidance scheme (1 sheet) – unnumbered.
Client Contact	[REDACTED]	Report Provider	Road Safety Audits

**Desktop TGS General Scope:** The scope of the audit is to assess the plans on their merits and in the context of the road environment, with standards and guidelines as a reference.







**Location of the subject site**






Sydney Metro Western Sydney Airport Orchard Hills Site Establishment				
	Audit Point	Treatment Option	Responder: [REDACTED]	
			Response <sup>x</sup>	Status <sup>y</sup>
General: No road safety issues are raised in relation to the proposed TGS's as part of the Orchard Hills Site Establishment. However, some minor issues are raised for specific TGS for consideration and action by the relevant parties.				
1.	<b>WSA-TGS-A-KEN-SB-0201 – Kent Road</b> It is noted that road work speed limit is proposed to be 50km/h. This speed limit is considered to be too high for the expected stop condition ahead.	Review and consider adopting a 40km/h speed limit. This measure should also incorporate 40km ahead warning signage.  Risk: Low	TGS amended	Closed

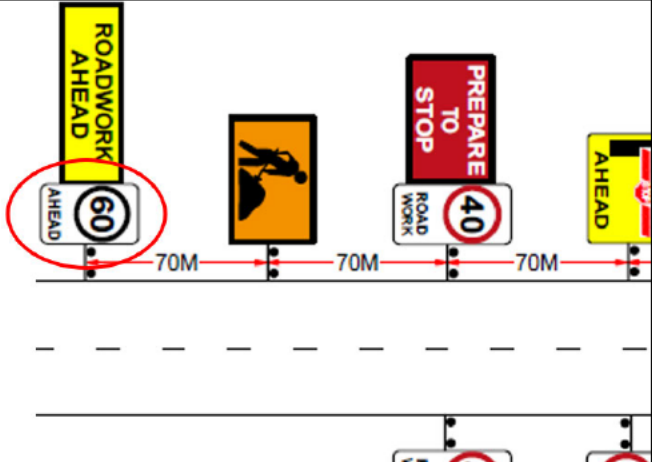


## Sydney Metro Western Sydney Airport Orchard Hills Site Establishment

	Audit Point	Treatment Option	Responder: [REDACTED]	
			Response <sup>x</sup>	Status <sup>y</sup>
2.	<b>WSA-TGS-A-KEN-SB-0201 – Kent Road</b> The proposed installation of signage along the eastern verge on the northern leg of Kent Road, can lead to drivers assuming that the works and the roadwork speed limit is applicable to the Western Motorway eastbound entry ramp. It is noted and acknowledged that it would not be possible to install the signage on the section of Kent Road immediately to the south of the subject entry ramp as there is no verge.	It is suggested that that the proposed signage set up be amended slightly to as shown in the mark-up below. The 40km/h Roadwork speed limit sign should be installed on posts behind the concrete barrier. The suggested amendments will assist in clarifying that the works and reduced speed limit are applicable to Kent Road and not the entry ramp.  Risk: Low	TGS amended to note that the sign is to be temporarily mounted on the existing ELP	Closed
				



## Sydney Metro Western Sydney Airport Orchard Hills Site Establishment

	Audit Point	Treatment Option	Responder: [REDACTED]	
			Response <sup>x</sup>	Status <sup>y</sup>
3.	<b>WSASBIT-0000-023-TMP-CPBG-DE-0001</b> There appears to be a drafting error as it shows 60km/h ahead signs on approach to a work zone where the roadwork speed limit is 40km/h.	Review and amend accordingly.  Risk: N/A	TGS amended	Closed
				





## Explanatory Notes

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**Short Format:** This 'short format' report has been pioneered by RSA (Road Safety Audits) since 2008, initiated through requests by clients to assist their processes, for ease with stakeholders, and for timeliness. It is typically confined in use to construction traffic management and typically for discrete packages of plans / areas and often for large projects with repetitious small audit sections. The use of this format assumes that the reader/s know what a road safety audit is and how to respond to it.

**Projects:** Audit points are often raised in projects in relation to: 1. specific themes (e.g. the use of a safety barrier type), or 2. the treatment of particular locations. Once key issues have been initially raised, they will not necessarily be re-raised in future audits. This will depend on the issue, the RSA's perception of the client's assessment and understanding of the issue, and other factors. Therefore, discrete audits as part of a project should be read and actioned by a **project representative who is familiar with the audit history**.

**Responding:** Although the client receiving the report does not have to agree to the audit findings/suggestions, the issues and associated risks should be carefully considered. A written response should be made to all of the audit findings raised, then signed off by the responsible person from the project team.

**\*Response:** The responder should focus on and consider the **audit point**, regardless of whether the audit team's suggested treatment option is feasible / appropriate / agreed to.

**\*Status:** The status of the issue as it sits with the Project. i.e. 'actioned', 'closed', 'pending information / further guidance'.

### Language:

Austroroads Road Safety Audit Part 6 suggests that the organisation responding to the audit provides a risk assessment. However, RSA will at times offer a guide of 'high' 'medium' and 'low' risk, which is based on a professional appraisal of the risk ('severity' and 'frequency') for the responder to use as a guide. Other language commonly used and its intent is as follows:

- o 'Urgent': Needs immediate attention / changes as per RSA suggestion or similar.
- o 'Recommend' / 'Serious' / 'Important': Must be robustly reviewed. Most likely requires a change to avoid a high-risk road environment for one or more user groups.
- o 'Should' / 'Suggest' / 'Significant': Based on the view of the RSA team the suggestion should be done but it concedes that there could be reasons why inaction or alternative action may be preferred. Must be robustly reviewed by contractor and where relevant with key traffic engineering project stakeholders.
- o 'Review' / 'Consider': RSA is raising an observation but has no strong opinion on the outcome and need for changes. Project should review because it's not an immediate and high risk and may not be immediately obvious to RSA the reasons for the practice / setup / behaviour. May need monitoring.
- o 'Minor': Typically a low road-safety consequence / compliance issues (to guidelines or plans) / administrative controls. Unlikely to increase risk of crash.
- o 'Note': Little or no road safety significance. Typically added to give a complete picture of the design site context analysis auditors understanding.

**Intent of Issues Listing Order:** Audit points might be clustered according to location, theme, or time. When this is not done and the audit comprises an uncategorised list of points, the key issues are often discussed first. However, there is no official ordering of points, and they should all be read on their merits and on the basis of the language guide above.

**References:** 1. Austroroads Guide to Road Safety – Road Safety Audit – (2019) 6 and 6A; 2. AS 1742.3 – 2019; 3. State specific codes and guidelines re: Traffic Control at Work Sites; and 4. Design: 1. Austroroads guidelines and 2. state-specific supplements and technical publications as relevant.

**Safe System:** Austroroads GRS-RSA6A encourages practitioners to adopt safe system principles within the road safety audit. Safe system (roads) calls for a design to not allow serious injury and fatalities to occur for the expected road users and the typical crash types expected for that design type. This design-objective is considered within this road safety audit as a good practice objective. However, in practice, safe system-based analysis of risks and treatment options is typically not adopted for traffic management stage audits in the same way as it is in design stage audits.

**Process and Quality:** RSA's quality assurance process is based on its senior auditors having a rich experience base, but also utilises customised checklists designed for niche areas in traffic engineering/road design (e.g. safety barriers, pavement shaping, CBD traffic management), in conjunction with a four-layer audit process: 1. on-site inspection; 2. media and data capture and review; 3. specialist / second auditor input; and (where warranted) 4. secondary blinded reviews.

**Audit Coverage:** The audit has attempted to balance the safety needs of all road users. As per Austroroads guidelines, the suggestions provided have attempted to be realistic/feasible and commensurate with the actual risk posed. Suggestions are made from a safety perspective only, and are made in the absence of full project knowledge and design constraints. RSA can provide a detailed risk assessment / issue evaluation report upon request. The audit raises potential safety risks noted / observed / anticipated by the audit team, and in particular the higher-risk issues. However, a road safety audit is undertaken by people, highly influenced by the experience, views and limitations of the individual team members. It is expected that the project team has competence to identify safety issues itself as the project progresses, and to ask the audit team further questions where necessary.



## Appendix 4    Review comments





## Appendix 5 Inspection checklists





## E.4 Shift / Daily TTM inspection checklist

Shift Inspections must be undertaken by a person holding the PWZTMP or ITCP qualification when a TGS is installed, changed or updated, to ensure the TGS is implemented as designed. This includes at a minimum, twice per shift (recommended every 2 hours). This form can also be used for inspecting 'Aftercare' arrangements.

Completed by:						
Name:			Signature:			
TMP Reference:			TGS Reference:			
Date:			Time/s	Inspection 1	Inspection 2	Inspection 3
				00-00	00-00	00-00
<b>Drive through TGS inspection</b>				<i>Inspection 1</i>	<i>Inspection 2</i>	<i>Inspection 3</i>
<b>Have any adjustments been made to the approved TGS?</b>				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, provide details:	Are changes within tolerances?			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<i>If no, TGS must be reviewed by a PWZTMP</i>					
	Have changes been approved?			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
	<i>If no, TGS must be approved</i>					
Comments or details of action taken:						
<b>Have all signs and devices been installed in accordance with approved TGS?</b>				<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, provide detail of action taken</i>						
Comments or details of action taken:						



Drive through TGS inspection		Inspection 1	Inspection 2	Inspection 3
<b>Are PTCD positioned as prescribed in TGS?</b> <i>If no, provide detail of action taken</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				
<b>Are manual traffic controllers clear of travel lane, have suitable escape route?</b> <i>If no, provide detail and reposition manual traffic controllers</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				
<b>Are sign and devices in good condition, clearly visible to road users?</b> <i>If no, provide detail of action taken</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No
Comments or details of action taken:				
<b>Are all signs mounted level and suitably clear of travel lanes?</b> <i>If no, provide detail of action taken</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No
Comments or details of action taken:				
<b>Are conflicting or non-applicable signs covered or removed?</b> <i>If no, provide detail and remove or cover signs</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				



Drive through TGS inspection		Inspection 1	Inspection 2	Inspection 3
<b>Is temporary delineation installed as prescribed i.e. straight line forming taper?</b> <i>If no provide details and rectify delineation</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No
Comments or details of action taken:				
<b>Have site conditions changed due to shade, park vehicles, glare etc.</b> <i>If yes provide details and note if action is required</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No	<input type="checkbox"/> Yes  <input type="checkbox"/> No
Comments or details of action taken:				
<b>Are registered trailers i.e. VMS / light towers; suitably clear of travel lanes and delineated?</b> <i>If no provide details and rectify location</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				
<b>Are temporary speed zones operating as prescribed?</b> <i>If no provide details and discuss with work supervisor</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				
<b>Are workers on foot / plant clearances been applied / observed?</b> <i>If no provide details and implement controls to rectify</i>		<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A	<input type="checkbox"/> Yes  <input type="checkbox"/> No  <input type="checkbox"/> N/A
Comments or details of action taken:				



Post drive through confirmation		Inspection 1	Inspection 2	Inspection 3
<b>Is TGS valid for the site activity and operating safely as intended?</b> <i>If no provide details and implement controls to rectify</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:				
<b>Is TGS is appropriate for the current traffic conditions?</b> <i>If no provide details and implement controls to rectify</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:				
<b>Have potential hazards identified in TGS been addressed? i.e. end-of-queue management</b> <i>If no provide details of additional hazards and controls required</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:				

Additional comments:



## E.5 Post completion inspection checklist

<b>Completed by:</b>			
Name:		Road name/Staging Plan number:	
Signature:		Date / time:	
ITCP or PWZTMP card number			
<b>Drive through post completed inspection</b>			
<b>Item</b>		<b>Comments / Action</b>	
Have all work activities been completed?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Has all plant and equipment been removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Have all TTM signs and devices been removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Has all TTM linemarking been obliterated?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Have existing permanent speed limits been reinstated?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Have all TTM site hazards been removed?	<input type="checkbox"/> Yes <input type="checkbox"/> No		
Other	<input type="checkbox"/> Yes <input type="checkbox"/> No		



Desktop post completion inspection		
Have all TGSs for completed tasks been retained?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Have all TMP required documents been placed in relevant folders?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Has TMP/TGS designer requested addition information post TTM removal?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Is the road safe for opening to road users?	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Additional comments:



### E.3 Weekly TTM inspection checklist

Weekly inspections must only be carried out by a PWZTMP qualified person. Weekly inspections must be carried out when a site is first open and at least once every week thereafter.

Completed by:			
Name:		Signature:	
TMP Reference:		TGS Reference:	
Date:		Inspection type	<input type="checkbox"/> Pre-opening <input type="checkbox"/> Weekly
Desktop review			
Is a copy of the location TMP and relevant TGS available?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no inspection must not be undertaken until documents are obtained</i>			
Details of TMP and TGS:			
Are the location TMP and relevant TGS approved?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no, work must be stopped until documents are approved</i>			
Comments or details of action taken:			
Site Inspection			
Inspection completed:	<input type="checkbox"/> During the day <input type="checkbox"/> During the night		
Signs and devices positioned as prescribed and commanding attention?			<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If no provide details and rectify signs</i>			
Comments or details of action taken:			



Site Inspection		
Sign sizes as prescribed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details and rectify signs</i>
Comments or details of action taken:		
Signs are mounted level and suitably clear of travel lanes?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details and rectify signs</i>
Comments or details of action taken:		
Has temporary delineation been applied as prescribed, with permanent markings obliterated?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details of action required to rectify delineation</i>
Comments or details of action taken:		
Are registered trailers i.e. VMS / light towers; suitably clear of travel lanes and delineated?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details and rectify location</i>
Comments or details of action taken:		
Are temporary speed zones operating as prescribed?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details and discuss with work supervisor</i>
Comments or details of action taken:		
Are PTCD positioned as prescribed in TGS?		<input type="checkbox"/> Yes <input type="checkbox"/> No <i>If no provide details of action required to rectify</i>
Comments or details of action taken:		



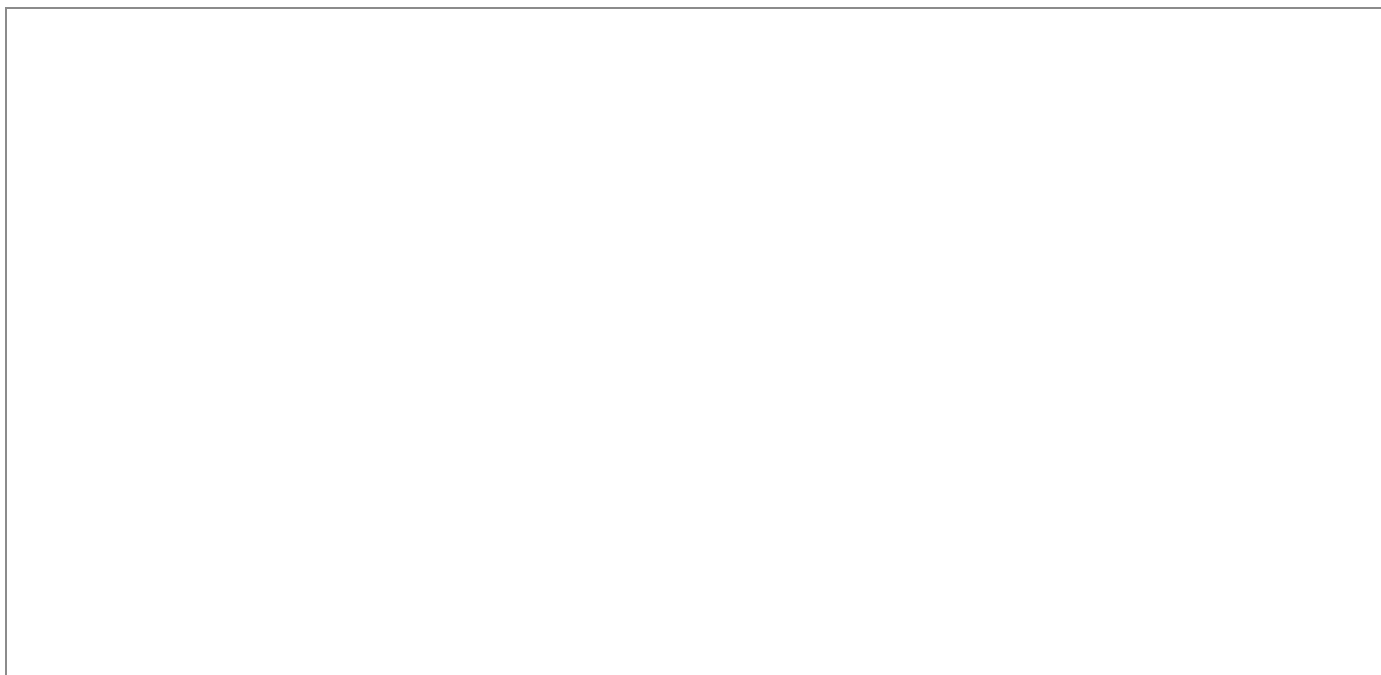
Site Inspection		
<b>Are manual traffic controllers clear of travel lane, have suitable escape route?</b> <i>If no provide details of action required to rectify</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:		
<b>Are site accesses and egresses well defined and safe for work vehicles?</b> <i>If no provide details of action required to rectify</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:		
<b>Termination signs are suitably located? i.e. D downstream of last activity.</b> <i>If no provide details of action required to rectify</i>		<input type="checkbox"/> Yes <input type="checkbox"/> No
Comments or details of action taken:		



Post site inspection confirmation	
<b>Is worksite layout operating safely as intended?</b> <i>If no provide details and implement controls to rectify</i>	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments or details of action taken:	
<b>Has TMP identified and addressed key TTM risks?</b> <i>If no provide details and implement controls to rectify</i>	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments or details of action taken:	
<b>Have key TTM risks been addressed on site?</b> <i>If no provide details of additional hazards and controls required</i>	
<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments or details of action taken:	
<b>Have copies of Shift Inspections been sighted as completed as required?</b> <i>If no provide details and discuss with nominated rep completing Shift Inspections</i>	
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Comments or details of action taken:	

Additional comments:







## Appendix 6 Correspondence





[REDACTED]

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**From:** [REDACTED]  
**Sent:** Wednesday, 8 June 2022 3:27 PM  
**To:** [REDACTED]  
**Subject:** RE: Orchard Hills - AEW Contractor Works  
**Attachments:** P3 - Orchard Hills works overview.pdf; P3 - TGS 24 - Kent Rd - Shoulder works only - 40km-h SZA.pdf; P3 - TGS 22-R1 - Kent Rd - Shuttle flow.pdf; P3 - TGS 21-R1 - Kent Rd - Shuttle flow.pdf

**CAUTION:** This email originated from outside of the Organisation.

[REDACTED]

As discussed this morning attached and below is our Portion 3 – Orchard Hills works overview information for us to better understand the cumulative impacts of our works in the Orchard Hills locality. The following is some information with regards to our current works progress which may prove useful;

- **Portion 3 – Orchard Hills**

1. The image below gives an indicative overview of where we are currently sitting from a construction perspective.
2. All conduit proving and conduit installation has been completed on Sunflower Drive. Cable hauling has commenced and works remaining are cable jointing, backfilling open points and permanent restoration works. Refer to the green section, along Sunflower Drive, in the below image below.
3. Existing conduits along the eastern side of Gipps Street, between Fowler Street and 20m north of Caddens Road, have been proved. The remaining works at these locations will be cable hauling, cable jointing, backfilling open points and permanent restoration works. Refer to the green section, along Gipps Street, in the below image below.
4. We have two HDD under bores, **yet to be completed**, one under Caddens Road and one under Kent Road (north of M4) as indicated in the below images highlighted in red. The are expected to be completed by the end of the first week in July, weather and site conditions permitting.
5. The M4 Western Motorway underbore has been completed and, as previously discussed, the 360m lengths of conduits were installed yesterday 07/06. Thank you for your assistance with the coordination of that activity it was greatly appreciated.
6. Our remaining works scope on Kent Road, south of M4, is minimal and consists of a bed bore under Kent Road, for which the entry and exit pits have already been excavated.
7. Our scheduled outage date for this Portion of works is **11th & 12th August 2022**. By this date all civil works, cable hauling and cable jointing will be completed.
8. After August 12th 2022 our presence on site will be minimal, if any, to complete any remaining restoration works.

I note from our previous correspondence and meetings that SBT have four site access gates located along Kent Road, south of the M4, which will be utilised for site establishment and ongoing construction works. These are located at;

- 44 Kent Road (minor SMWSA work scope remaining at this location with approximate completion by end June 2022)
- 58 Kent Road (minor SMWSA work scope remaining at this location with approximate completion by end June 2022)
- 88 Kent Road (no impact from SMWSA AEW at this location)
- 100 Kent Road (no impact from SMWSA AEW at this location)

I have attached our remaining works TGS's, for Kent Road south of M4, which will give you an understanding of our works scope at this location for the next 2-3 weeks.

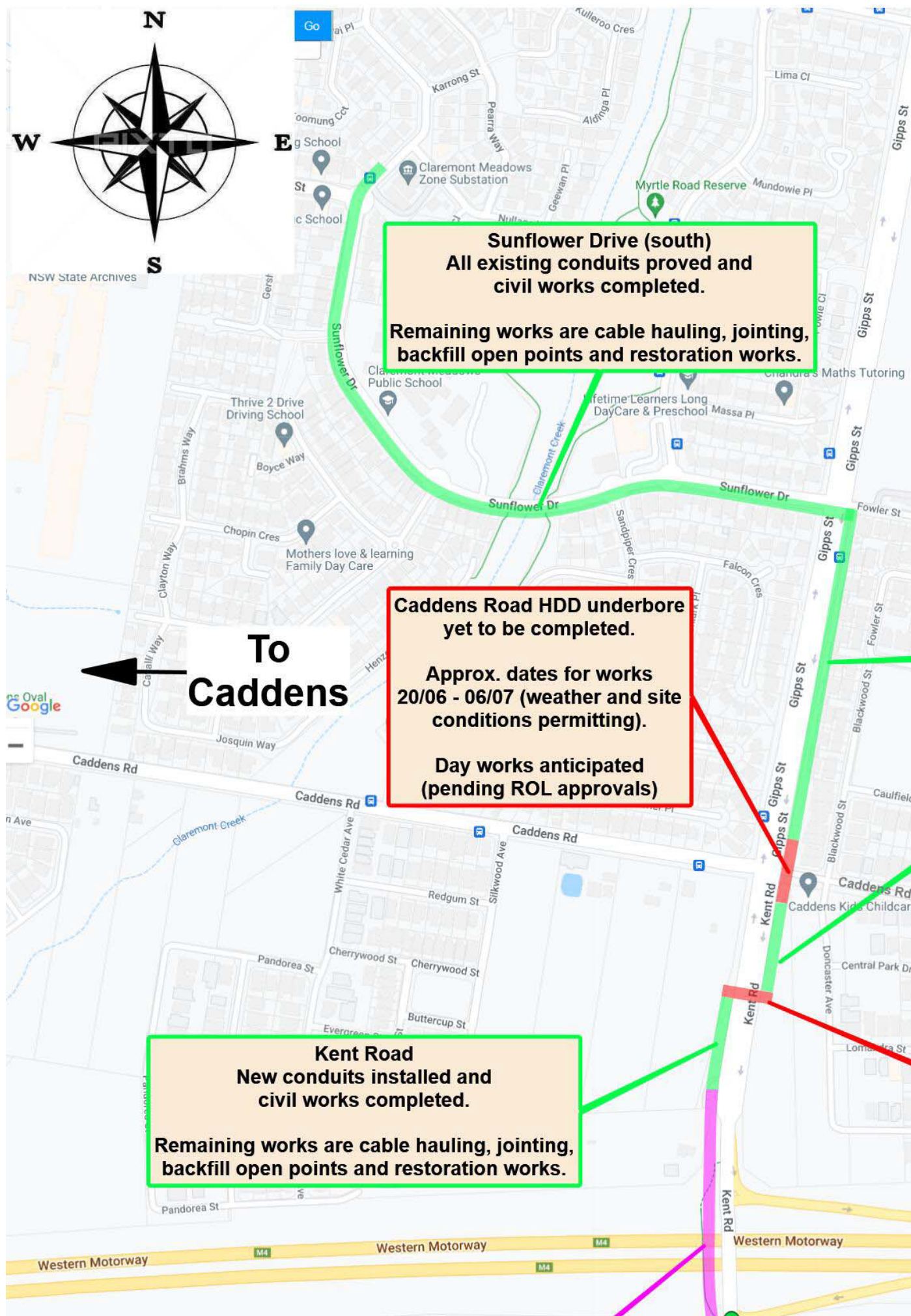


We will ensure that access and egress is maintained at all times, unless otherwise agreed by both parties, to your access gates at 44 and 58 Kent Road.

Given that you are in the CTMP development phase I am confident that the majority of our major scope of works should be completed at this location prior to your construction commencement. We will continue our meetings and correspondence, as we have been doing, to ensure the cumulative impacts of our works occurring concurrently will not have any additional impacts to the road network and local residents.

If you need any additional information just let me know and I will endeavour to get it back to you as soon as possible.







Kind Regards,

[REDACTED]



[REDACTED]

[REDACTED]

[www.quickway.com.au](http://www.quickway.com.au)



**Private and Confidential**

Privileged/Confidential Information may be contained in this message. If you are not the addressee indicated in this message (or responsible for delivery of the message to such a person), you may not copy or deliver this message to anyone. In such case, you should destroy this message and kindly notify the sender by Reply e-mail.

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**From:** Khan, Abdullah <Abdullah.Khan@cpbg-sbt.com.au>

**Sent:** Wednesday, 8 June 2022 7:52 AM

**To:** Louise Casey <louisec@quickway.com.au>

**Subject:** Orchard Hills - AEW Contractor Works

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

[REDACTED]

Called you to understand Quickway's scope at Orchard Hills. Can you please let me know outstanding scope items for Quickway along Kent Road and Lansdowne Road. I am working on updating our CTMP for Orchard Hills and wanted to check if we will have any interface with your team other than works planned for WC 6/6/22.

Feel free to call if you want to discuss.

Regards,

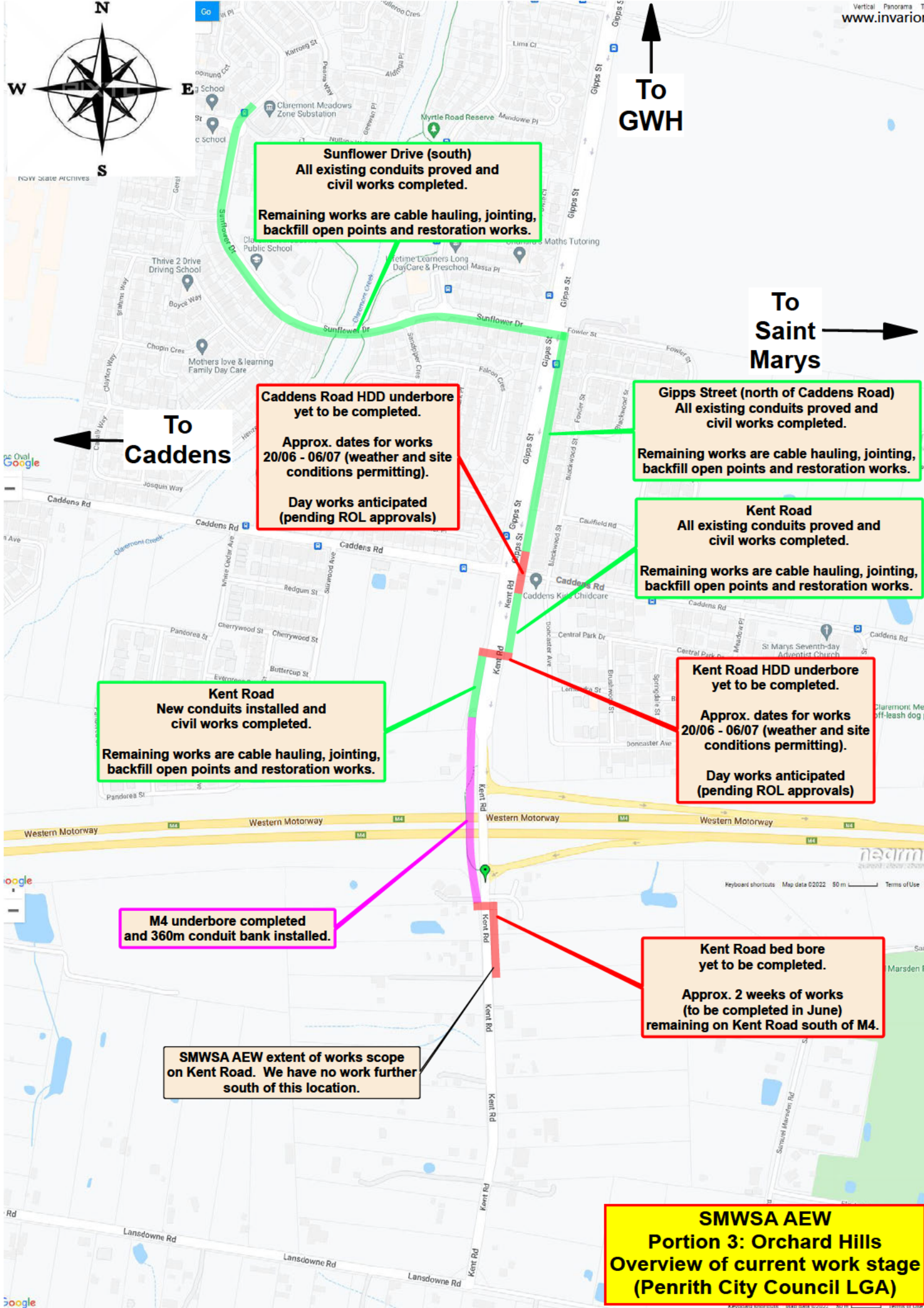
[REDACTED]

**Sydney Metro Western Sydney Airport  
Station Boxes and Tunnelling Works**



[REDACTED]







**GENERAL NOTES:**

1. THIS TRAFFIC GUIDANCE SCHEME IS TO BE READ IN CONJUNCTION WITH AS1742.3 2019 & TCAWS 2020.
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ CONJUNCTION WITH THE AS1742.3 2019 & TCAWS 2020.
3. NON-APPLICABLE EXISTING SIGNAGE SHALL BE COVERED E.G. SPEEDS SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 2019 & TCAWS 2020.
5. IN ACCORDANCE WITH TCAWS 2020 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. INSTALLATION OF TERMINATION SIGNS AND SIDE STREET TO BE COMPLETED FIRST FOLLOWED BY NON WORKING LANE AND LASTLY INSTALL THE WORKING LANE.
8. REMOVAL OF TRAFFIC CONTROL SIGNS AND DEVICES SHOULD BE UNDERTAKEN IN THE REVERSE ORDER OF ERECTION, PROGRESSING FROM THE WORK AREA OUT TOWARD THE APPROACHES.

**CONES AND BOLLARD SPACING**

PURPOSE AND USAGE	SPEED ZONE IN KM/H	MAXIMUM SPACING (M)
On approach to TC position (centreline or edge line)	All cases	4
Merge tapers	55 to 75	9
	greater than 76	12
Lateral shift taper	55 to 75	12
	greater than 76	18
Protecting freshly painted lines	55 to 75	24
	greater than 76	60
All other purposes	< or = to 55	4
	55 to 75	12
	greater than 76	18

**RECOMMENDED TAPER LENGTH**

APPROXIMATE SPEED OF TRAFFIC KM/H	TRAFFIC CONTROL AT BEGINNING OF TAPER	LATERAL SHIFT TAPER	MERGE TAPER
45 OR LESS	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

**DIMENSION "D"**

DIMENSION D IS CALCULATED BY EXPRESSING THE SPEED IN METRES FOR THE ZONE PRECEDING TO WHERE THE DIMENSION D WILL BE APPLIED, THIS MAY BE EITHER THE EXISTING SPEED OR A REDUCED ROADWORKS SPEED LIMIT. REFER TO TCAWS VERSION 6 2020, SECTION 7.3 AND ALSO FIGURE 7-1 AND TABLE 7-2.

**TOLERANCES**

POSITIONING OF SIGNS  
 M N MUM 10% LESS THAN  
 THE DISTANCE OR LENGTHS GIVEN  
 MAX MUM 25% MORE THAN  
 THE DISTANCE OR LENGTHS GIVEN  
 SPAC NG OF DEL NEATING DEVICES  
 MAX MUM 10% MORE THAN THE  
 SPAC NG GIVEN  
 NO MINIMUM

**LANE WIDTHS**

SPEED OF TRAFFIC KM/H	MINIMUM LANE WIDTH (M)
LESS THAN 65 KM/H	3.0 M
GREATER THAN 65 KM/H	3.5 M
CURVE WITH RADIUS LESS THAN 250 M	CURVE WIDENING OF 0.5M PER LANE
SHUTTLE FLOW WITH ACTIVE CONTROL	3.5

**QUEUE MANAGEMENT PLAN**

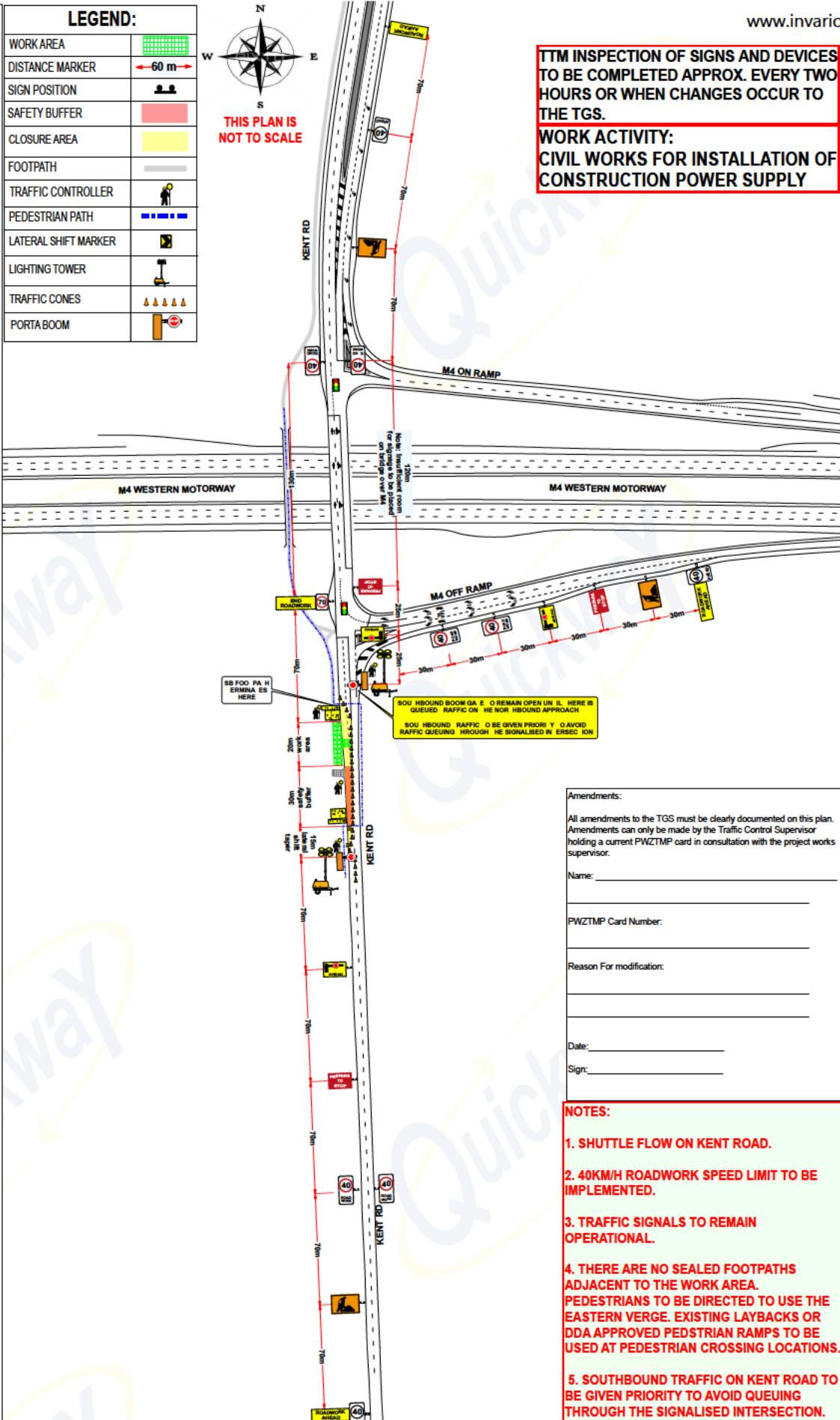
AT ALL TIMES DURING THE COURSE OF THE WORK TRAFFIC QUEUES SHALL BE MONITORED TO ENSURE THAT TRAFFIC DOES NOT EXCEED BEYOND THE LIMITS OF ADVANCED WARNING SIGNS

**VEHICLE MOVEMENT PLAN**

ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL

**LEGEND:**

WORK AREA	
DISTANCE MARKER	
SIGN POSITION	
SAFETY BUFFER	
CLOSURE AREA	
FOOTPATH	
TRAFFIC CONTROLLER	
PEDESTRIAN PATH	
LATERAL SHIFT MARKER	
LIGHTING TOWER	
TRAFFIC CONES	
PORTA BOOM	



**TTM INSPECTION OF SIGNS AND DEVICES TO BE COMPLETED APPROX. EVERY TWO HOURS OR WHEN CHANGES OCCUR TO THE TGS.**

**WORK ACTIVITY:  
CIVIL WORKS FOR INSTALLATION OF  
CONSTRUCTION POWER SUPPLY**

**Amendments:**

All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the project works supervisor.

Name: \_\_\_\_\_

PWZTMP Card Number: \_\_\_\_\_

Reason For modification: \_\_\_\_\_

Date: \_\_\_\_\_

Sign: \_\_\_\_\_

**NOTES:**

1. SHUTTLE FLOW ON KENT ROAD.
2. 40KM/H ROADWORK SPEED LIMIT TO BE IMPLEMENTED.
3. TRAFFIC SIGNALS TO REMAIN OPERATIONAL.
4. THERE ARE NO SEALED FOOTPATHS ADJACENT TO THE WORK AREA. PEDESTRIANS TO BE DIRECTED TO USE THE EASTERN VERGE. EXISTING LAYBACKS OR DDA APPROVED PEDESTRIAN RAMPS TO BE USED AT PEDESTRIAN CROSSING LOCATIONS.
5. SOUTHBOUND TRAFFIC ON KENT ROAD TO BE GIVEN PRIORITY TO AVOID QUEUING THROUGH THE SIGNALISED INTERSECTION.

Client:	QUICKWAY	Term:	SHORT	ROL Required:	YES	DATE PREPARED:	02/12/2021	DESIGNED BY:	INSPECTED BY:
Road Name:	KENT ROAD	Road Type:	MULTI LANE UNDIVIDED	Road Classification:	LOCAL	DATE REVISED:	24/01/2022	07/08/22	TCT0002661 - DATE OF ISSUE 19/10/18
Suburb:	ORCHARD HILLS	Speed Limit:	70 KM/H	Speed Reduction:	40 KM/H ROADWORK	TCAWS REFERENCE:			PREPARE WORKZONE TMP
T/Cs Required:	4 TC'S	Travelled Path:	PAST	N,C,S:	M4 WESTERN MOTORWAY	APPROVED			
Vehicles Required:	1 CONE TRUCK & 1 UTE	Operation:	SHUTTLE FLOW	Signage:	CLASS 1 RETRO-REFLECTIVE	DATE APPROVED:	24/01/2022	PLAN REF NO:	P3 - TGS 21-R1



**GENERAL NOTES**

1. THIS TRAFFIC GUIDANCE SCHEME IS TO BE READ IN CONJUNCTION WITH AS1742.3 2019 & TCAWS 2022.
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ CONJUNCTION WITH THE AS1742.3 2019 & TCAWS 2022.
3. NON-APPLICABLE EXISTING SIGNAGE SHALL BE COVERED E.G., SPEEDS SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 2019 & TCAWS 2022.
5. IN ACCORDANCE WITH TCAWS 2022 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. INSTALLATION OF TERMINATION SIGNS AND SIDE STREET TO BE COMPLETED FIRST FOLLOWED BY NON WORKING LANE AND LASTLY INSTALL THE WORKING LANE.
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THIS PLAN IS  
NOT TO SCALE**CONES AND BOLLARD SPACING**

PURPOSE AND USAGE	SPEED ZONE IN KM/H	MAXIMUM SPACING (M)
On approach to TC position (centreline or edge line)	All cases	4
Merge tapers	55 to 75	9
	greater than 76	12
Lateral shift taper	55 to 75	12
	greater than 76	18
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	greater than 76	60
	< or = to 55	4
All other purposes	55 to 75	12
	greater than 76	18

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45 OR LESS	15	15	15
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96 - 105	N/A	100	160
> 105	N/A	110	180

**DIMENSION "D"**

DIMENSION D IS CALCULATED BY EXPRESSING THE SPEED IN METRES FOR THE ZONE PRECEDING TO WHERE THE DIMENSION D WILL BE APPLIED, THIS MAY BE EITHER THE EXISTING SPEED OR A REDUCED ROADWORKS SPEED LIMIT. REFER TO TCAWS VERSION 6.1 2022, SECTION 7.3 AND ALSO FIGURE 7-1 AND TABLE 7-2.

**TOLERANCES**

POSITIONING OF SIGNS  
M N MUM 10% LESS THAN  
THE DISTANCE OR LENGTHS GIVEN  
MAX MUM 25% MORE THAN  
THE DISTANCE OR LENGTHS GIVEN  
SPAC NG OF DELINEATING DEVICES  
MAX MUM 10% MORE THAN THE  
SPAC NG GIVEN  
NO MINIMUM

**LANE WIDTHS**

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LESS THAN 65 KM/H	3.0 M
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**VEHICLE MOVEMENT PLAN**

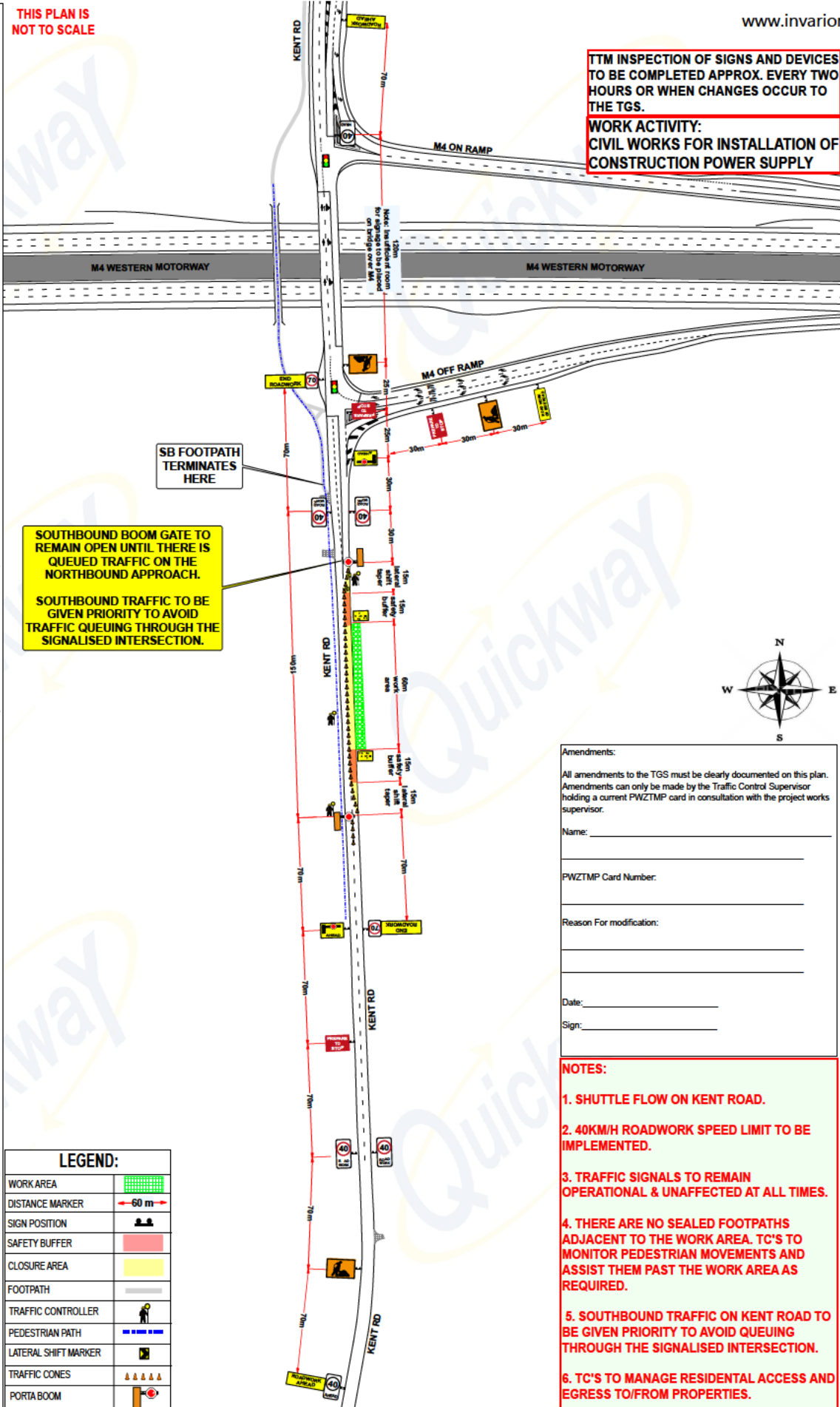
ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL

**LEGEND:**

WORK AREA	
DISTANCE MARKER	
SIGN POSITION	
SAFETY BUFFER	
CLOSURE AREA	
FOOTPATH	
TRAFFIC CONTROLLER	
PEDESTRIAN PATH	
LATERAL SHIFT MARKER	
TRAFFIC CONES	
PORTA BOOM	

TTM INSPECTION OF SIGNS AND DEVICES TO BE COMPLETED APPROX. EVERY TWO HOURS OR WHEN CHANGES OCCUR TO THE TGS.

WORK ACTIVITY:  
CIVIL WORKS FOR INSTALLATION OF CONSTRUCTION POWER SUPPLY

**Amendments:**

All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the project works supervisor.

Name: \_\_\_\_\_

PWZTMP Card Number: \_\_\_\_\_

Reason For modification: \_\_\_\_\_

Date: \_\_\_\_\_

Sign: \_\_\_\_\_

**NOTES:**

1. SHUTTLE FLOW ON KENT ROAD.
2. 40KM/H ROADWORK SPEED LIMIT TO BE IMPLEMENTED.
3. TRAFFIC SIGNALS TO REMAIN OPERATIONAL & UNAFFECTED AT ALL TIMES.
4. THERE ARE NO SEALED FOOTPATHS ADJACENT TO THE WORK AREA. TC'S TO MONITOR PEDESTRIAN MOVEMENTS AND ASSIST THEM PAST THE WORK AREA AS REQUIRED.
5. SOUTHBOUND TRAFFIC ON KENT ROAD TO BE GIVEN PRIORITY TO AVOID QUEUING THROUGH THE SIGNALISED INTERSECTION.
6. TC'S TO MANAGE RESIDENTIAL ACCESS AND EGRESS TO/FROM PROPERTIES.

Client:	QUICKWAY	Term:	SHORT	ROL Required:	YES	DATE PREPARED:	02/12/2021	DESIGNED BY:		SPECTED BY:	
Road Name:	KENT ROAD	Road Type:	2 LANE 2 WAY	Road Classification:	LOCAL	DATE REVISED:	28/03/2022	0052100789 EXP 07/08/22	TC0002661 - DATE OF ISSUE 19/10/18		
Suburb:	ORCHARD HILLS	Speed Limit:	70 KM/H	Speed Reduction:	40 KM/H ROADWORK	TCAWS REFERENCE:	PREPARE WORKZONE TMP	PREPARE WORKZONE TMP			
T/Cs Required:	3 TC'S	Travelled Path:	PAST	N.C.S:	M4 WESTERN MOTORWAY	APPROVED					
Vehicles Required:	2 UTES	Operation:	SHUTTLE FLOW	Signage:	CLASS 1 RETRO-REFLECTIVE	DATE APPROVED:	28/03/2022	PLAN REF NO:	P3 - TGS 22-R1		



## GENERAL NOTES

1. THIS TRAFFIC GUIDANCE SCHEME IS TO BE READ IN CONJUNCTION WITH AS1742.3 2019 & TCAWS 2022.
2. ALL TRAFFIC CONTROL DIAGRAMS TO BE READ CONJUNCTION WITH THE AS1742.3 2019 & TCAWS 2022.
3. NON- APPLICABLE EXISTING SIGNAGE SHALL BE COVERED E.G., SPEEDS SIGNS DUE TO THE TEMPORARY SPEED ZONE.
4. ALL SIGNAGE DISTANCE SHALL COMPLY WITH AS 1742.3 2019 & TCAWS 2022.
5. IN ACCORDANCE WITH TCAWS 2022 TRAFFIC CONTROLLERS TO ASSIST PEDESTRIANS WITH MOVEMENT THROUGH & AROUND THE WORKSITE.
6. SIGNAGE SHALL BE PLACED ON THE SIDE OF THE ROAD ADJACENT TO THE TRAFFIC FLOW.
7. INSTALLATION OF TERMINATION SIGNS AND SIDE STREET TO BE COMPLETED FIRST FOLLOWED BY NON WORKING LANE AND LASTLY INSTALL THE WORKING LANE.
8. REMOVAL OF TRAFFIC CONTROL SIGNS AND DEVICES SHOULD BE UNDERTAKEN IN THE REVERSE ORDER OF ERECTION, PROGRESSING FROM THE WORK AREA OUT TOWARD THE APPROACHES.

ITEM INSPECTION OF SIGNS AND DEVICES TO BE COMPLETED APPROX. EVERY TWO HOURS OR WHEN CHANGES OCCUR TO THE TGS.

**WORK ACTIVITY:**  
**CIVIL WORKS FOR INSTALLATION OF CONSTRUCTION POWER SUPPLY**

**THIS PLAN IS NOT TO SCALE**

## CONES AND BOLLARD SPACING

PURPOSE AND USAGE	SPEED ZONE IN KM/H	MAXIMUM SPACING (M)
On approach to TC position (centreline or edge line)	All cases	4
Merge tapers	55 to 75	9
	greater than 76	12
Lateral shift taper	55 to 75	12
	greater than 76	18
Protecting freshly painted lines	55 to 75	24
	greater than 76	60
	< or = to 55	4
All other purposes	55 to 75	12
	greater than 76	18

## RECOMMENDED TAPER LENGTH

APPROXIMATE SPEED OF TRAFFIC KM/H	TRAFFIC CONTROL AT BEGINNING OF TAPER	LATERAL SHIFT TAPER	MERGE TAPER
45 OR LESS	15	15	15
46 - 55	15	15	30
56 - 65	30	30	60
66 - 75	N/A	70	115
76 - 85	N/A	80	130
86 - 95	N/A	90	145
96 - 105	N/A	100	160
> 105	N/A	110	180

## DIMENSION "D"

DIMENSION D IS CALCULATED BY EXPRESSING THE SPEED IN METRES FOR THE ZONE PRECEDING TO WHERE THE DIMENSION D WILL BE APPLIED, THIS MAY BE EITHER THE EXISTING SPEED OR A REDUCED ROADWORKS SPEED LIMIT. REFER TO TCAWS VERSION 6.1 2022, SECTION 7.3 AND ALSO FIGURE 7-1 AND TABLE 7-2.

## TOLERANCES

POSITION NG OF SIGNS  
MINIMUM 10% LESS THAN THE DISTANCE OR LENGTHS GIVEN  
MAXIMUM 25% MORE THAN THE DISTANCE OR LENGTHS GIVEN  
SPACING OF DELINEAT NG DEVICES  
MAXIMUM 10% MORE THAN THE SPACING GIVEN  
NO M N MUM

## LANE WIDTHS

SPEED OF TRAFFIC KM/H	MINIMUM LANE WIDTH (M)
LESS THAN 85 KM/H	3.0 M
GREATER THAN 85 KM/H	3.5 M
CURVE WITH RADIUS LESS THAN 250 M	CURVE WIDENING OF 0.5M PER LANE
SHUTTLE FLOW WITH ACTIVE CONTROL	3.5

## QUEUE MANAGEMENT PLAN

AT ALL TIMES DURING THE COURSE OF THE WORK TRAFFIC QUEUES SHALL BE MONITORED TO ENSURE THAT TRAFFIC DOES NOT EXCEED BEYOND THE LIMITS OF ADVANCED WARNING SIGNS

## VEHICLE MOVEMENT PLAN

ALL WORK VEHICLES TO ENTER AND EXIT WORKSITE UNDER THE DIRECTION OF TRAFFIC CONTROLLER WITH THE TRAFFIC FLOW ON DESIGNATED UHF CHANNEL

## LEGEND:

WORK AREA	
DISTANCE MARKER	
SIGN POSITION	
FOOTPATH	
TRAFFIC CONTROLLER	
PEDESTRIAN PATH	
TRAFFIC CONES	
PROPERTY BOUNDARY	

NORMAL TRAFFIC FLOW MAINTAINED ON KENT ROAD PAST THE WORK AREA.

WORKS ON GRASS VERGE ON THE EASTERN AND WESTERN SIDE OF KENT ROAD.

TC'S TO ESCORT PEDESTRIANS, WHEN SAFE TO DO SO, PAST THE WORK AREA.

SB FOOTPATH TERMINATES HERE

Note: Insufficient room for signage to be placed on bridge over M4



## Amendments:

All amendments to the TGS must be clearly documented on this plan. Amendments can only be made by the Traffic Control Supervisor holding a current PWZTMP card in consultation with the project works supervisor.

Name: \_\_\_\_\_

PWZTMP Card Number: \_\_\_\_\_

Reason For modification: \_\_\_\_\_

Date: \_\_\_\_\_

Sign: \_\_\_\_\_

## NOTES:

1. WORKS ON GRASS VERGE ON EASTERN & WESTERN SIDE OF KENT ROAD.
2. NORMAL TRAFFIC FLOW MAINTAINED ON KENT ROAD.
3. WOF <1.5M TO LIVE TRAFFIC. 40KM/H ROADWORK SPEED LIMIT TO BE IMPLEMENTED.
4. TRAFFIC SIGNALS TO REMAIN OPERATIONAL AND UNAFFECTED AT ALL TIMES.
5. THERE ARE NO SEALED FOOTPATHS ADJACENT TO THE WORK AREA. TC'S TO MONITOR PEDESTRIAN MOVEMENTS AND ASSIST THEM PAST THE WORK AREA AS REQUIRED.
6. TC'S TO MANAGE RESIDENTIAL ACCESS AND EGRESS TO/FROM PROPERTIES.

Client:	QUICKWAY	Term:	SHORT	ROL Required:	YES	DATE PREPARED:	28/03/2022	DESIGNED BY:	INSPECTED BY:
Road Name:	KENT ROAD	Road Type:	2 LANE 2 WAY	Road Classification:	LOCAL	DATE REVISED:	0052100789 EXP 07/08/22	TCT0002681 - DATE OF ISSUE:	19/10/18
Suburb:	ORCHARD HILLS	Speed Limit:	70 KM/H	Speed Reduction:	40 KM/H ROADWORK	TCAWS REFERENCE:	PREPARE WORKZONE TMP	PREPARE WORKZONE TMP	
T/Cs Required:	3 TC'S	Travelled Path:	PAST	N.C.S:	M4 WESTERN MOTORWAY	APPROVED			
Vehicles Required:	2 UTES	Operation:	WORKS ON GRASS VERGE	Signage:	CLASS 1 RETRO-REFLECTIVE	DATE APPROVED:	28/03/2022	PLAN REF NO:	P3 - TGS 24