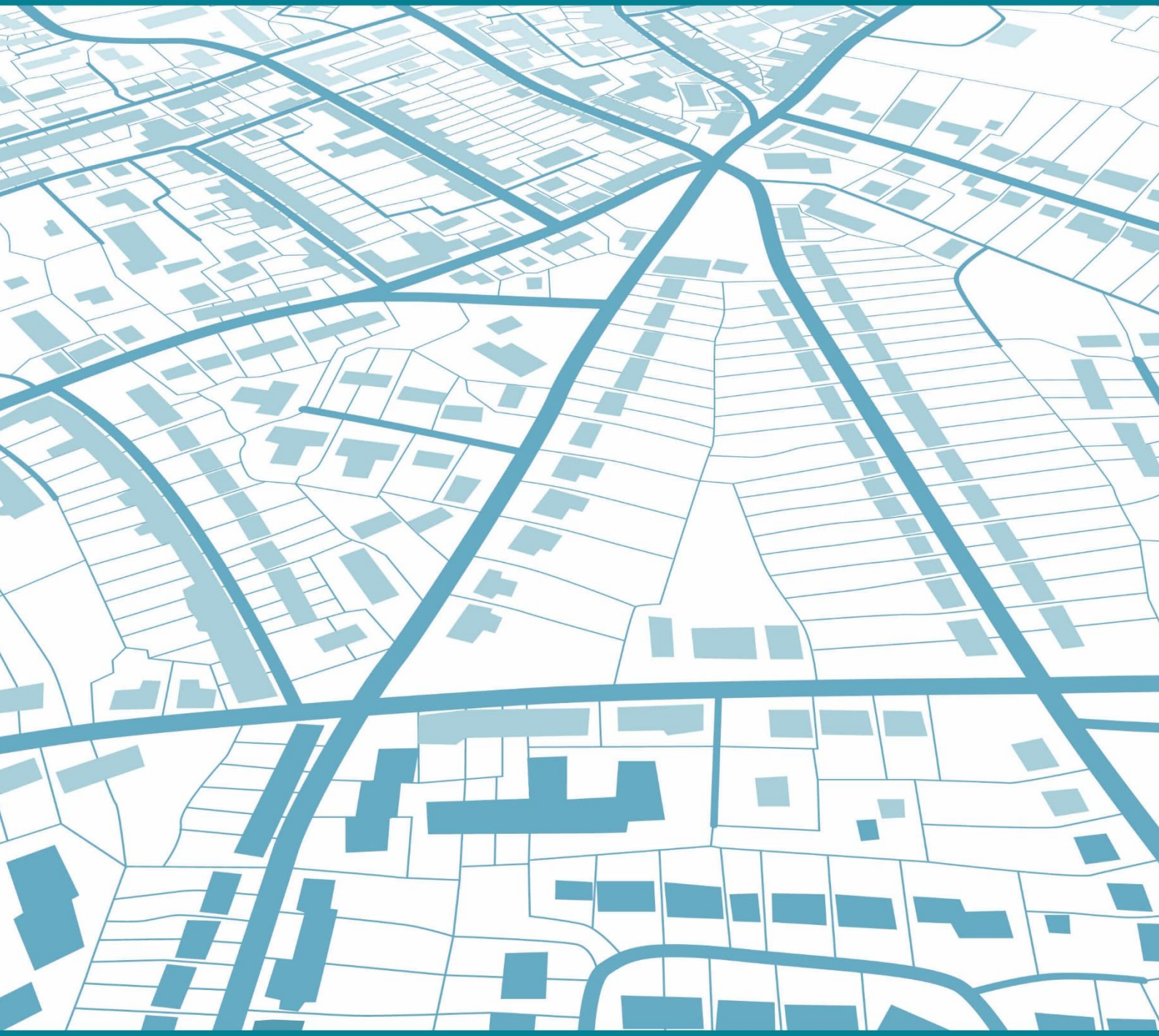
ttpa TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Established 1994

Suite 502, Level 5, 282 Victoria Avenue
Chatswood NSW 2067
T (02) 9411 5660 | F (02) 9904 6622
E info@ttpa.com.au | ttpa.com.au



Light Horse Business Hub, Eastern Creek

Bulk Earthworks and Infrastructure

Construction Traffic Management Plan

Ref: 21077 (B)
Date: March 2022
Rev: C

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1.0 Introduction

Consent (SSD-9667) has been granted for the Concept Proposal and Stage 1 Works for development of the Light Horse Interchange Business Hub (LHBH) on the site known as 165 Wallgrove Road and 475 Ferres Road, Eastern Creek (Figure 1).

This revised report has been prepared to incorporate an unforeseen change to permit temporary egress from the site along the future road alignment to Ferres Road via a temporary bridge over Eastern Creek. The vehicle movements involved would be as follows:

- 4 “floats” per week for 3 weeks
- 30 “truck & dog” movements per week

The proposal involves egress only movements with a NO RIGHT TURN restriction preventing direct egress to the south on Ferres Road (these vehicles will be able to U-turn at the Bradham Drive roundabout). Details of the proposal are shown on the final TCP contained in Appendix E.

The DPIE has issued Consent Conditions for the proposed development and these include the following in relation to Traffic, Access and Parking together with the summarised responses:

		Summary Response	CTMP Section
	Traffic and Access ***Construction Traffic Management Plan***		
B1.	*Prior to the commencement of construction, the Applicant must prepare a Construction Traffic Management Plan for the Stage 1 development to the satisfaction of the Planning Secretary. The plan must form part of the CEMP required by condition C2 and must:*		
	- *be prepared by a suitably qualified and experienced person(s);*	*This CTMP was prepared by Ross Nettle, a Director of TTPA. The TCP’s were prepared by Ronak Gandhi TCT0063633*	*N.A.*

	- *be prepared in consultation with Council and TfNSW;*	*Blacktown Council & TfNSW have endorsed the CTMP*	*Refer to Section 8.0*
	- *detail the measures that are to be implemented to ensure road safety and network efficiency during construction;*		*Refer to Section 4.2*
	- *detail heavy vehicle routes, access and parking arrangements;*	*Trucks routes have been designated and location of parking identified*	*Refer to Section 4.3 & 4.4*
	- *include a Driver Code of Conduct to:*	*Provided*	*Refer to Section 6.0*
	i. *minimise the impacts of earthworks and construction on the local and regional road networks;*	*Vehicle access and truck routes are limited to State Roads except for Ferrers Road*	*Refer to Section 4.3*
	ii. *minimise conflicts with other road users;*	*The site generated movements will be widely distributed and readily accommodated on the road system*	*Refer to Section 4.2*
	iii. *minimise road traffic noise; and*	*For others*	
	iv. *ensure truck drivers use specified routes;*	*Included*	*Refer to Section 6.2*
	- *include a program to monitor the effectiveness of these measures; and*	*Included*	*Refer to Section 7.0*
	if necessary, detail procedures for notifying residents and the community (including local schools), of any potential disruptions to routes.	*Included*	*Refer to Section 7.3*
		Summary Response	**CTMP Section**
	Environmental Management Management Plan Requirements		
C1	*Management plans required under this consent must be prepared in accordance with relevant guidelines, and include:* *(a) detailed baseline data;*	*Baseline data provided*	*Refer to Section 3.0*
	(b) details of: i. *the relevant statutory requirements (including any relevant approval, licence or lease conditions);*	*The TCP is prepared in accordance with AS1742.3*	*Refer to Section 5.0*
	ii. *any relevant limits or performance measures and criteria; and*	*Included*	*Refer to Section 7.2*
	iii. *the specific performance indicators that are proposed to be used to judge the performance of, or guide the implementation of, the development or any management measures;*	*Included*	*Refer to Section 7.2*
	(c) a description of the measures to be implemented to comply with the relevant statutory requirements, limits, or performance measures and criteria;	*Included*	*Refer to Section 7.2*
	(d) a program to monitor and report on the: i. *impacts and environmental performance of*	*The plan outlines requirements for this plan to be updated*	*Refer to Section 7.0*

	the development; and		
	ii. effectiveness of the management measures set out pursuant to paragraph (c) above;	*Included*	*Refer to Section 7.0*
(e)	*a contingency plan to manage any unpredicted impacts and their consequences and to ensure that ongoing impacts reduce to levels below relevant impact assessment criteria as quickly as possible;*	*Included*	*Refer to Section 7.2*
(f)	*a program to investigate and implement ways to improve the environmental performance of the development over time;*	*The plan outlines the requirement for this plan to be updated*	*Refer to Section 7.0*
(g)	*a protocol for managing and reporting any:* *i. incident and any non-compliance (specifically including any exceedance of the impact assessment criteria and performance criteria);*	*Management and reporting protocols are outlined in the CEMP*	*-*
	ii. compliant;	*Included*	*Refer to Section 7.0*
	iii. failure to comply with statutory requirements; and	*Included*	*Refer to Section 7.0*
(h)	*a protocol for periodic review of the plan.*	*Included*	*Refer to Section 7.0*

***Note**: The Planning Secretary may waive some of these requirements if they are unnecessary or unwarranted for particular management plans*

This Construction Traffic Management Plan has been prepared in relation to the Bulk Earthworks and Infrastructure. Separate CTMP's will be prepared for the development on individual lots.



LEGEND

N

LOCATION

FIG 1

2.0 Proposed Development Scheme

2.1 Site, Context and Existing Circumstances

The site (Figure 2) is Part Lot 10 in DP 1061237 and Part Lot 5 in DP 804051, being portion of the Western Sydney Parklands landholding at Eastern Creek. The site occupies an area of 34.4ha located on the south-east corner of the M4 Motorway and M7 Motorway intersection known as the "Light Horse Interchange".

The site is bound to the north by the M4 Motorway and to the west by the M7 Motorway while the surrounding uses comprise:

- Western Sydney Parklands and the Huntingwood/Bungarribee Industrial Estates extending to the north
- Western Sydney Parklands and the Eastern Creek Waste Management Centre extending to the south
- Sydney Motor Sport Park and International Dragway to the east
- The Interchange/Wonderland Business Parks to the west of Wallgrove Road

The site is relatively "low lying" with Eastern Creek running through the eastern part and its tributaries including Reedy Creek running through the central part.

The site is largely grassland with scattered areas of shrubs and trees with a number of dams. The demolition and site remediation processes have been completed however the only vehicle access at this time is provided by an access track connecting under the M7 to Wallgrove Road where the intersection is provided with a right turn bay for vehicles approaching from the south and a left turn deceleration lane for vehicles approaching from the north.

This access also provides for vehicles to ingress and egress a materials storage depot for the M7 Motorway which extends southerly along the narrow strip between Wallgrove Road and the M7 (see details overleaf).



LEGEND

N

SITE

FIG 2


nearmap

2.2 Concept Development

The Concept Plan approval, which was granted in August 2020, provided for:

- a total of 157,600m^2 warehouse etc. floorspace and 7,900m^2 ancillary office floorspace (total building area 165,500m^2)
- a new access intersection on Ferres Road with an emergency access (existing connection) on Wallgrove Road
- a cul-de-sac access road within the site
- a Shared Path link connecting between the site and the existing shared path along the M7 corridor
- Site works including:
  - Remediation of the site;
  - Demolition of existing structures;
  - Site preparation and bulk earthworks;
  - Installation of essential infrastructure services;
  - Flood and stormwater management infrastructure works; and
  - Subdivision of the site into 11 Torrens title lots, to provide seven future development lots and four lots comprising the stormwater detention basin, access road reserve and residual land to remain within Western Sydney Parklands.

Details of the proposed development are provided on the approved Concept Plan prepared by Nettleton Tribe Architects which is reproduced in Appendix A.

2.3 Proposed Bulk Earthworks and Infrastructure

The proposed works comprise:

- Construction of temporary egress one-way track to connect between the site and Ferres Road either along the High Pressure Gas Easement as Indicated in the Appendix B diagrams or along an alternative through the future access road corridor with left turn only to Ferres Road
- Bulk earthworks (cut/fill and import of fill)
- Construction of the new future access intersection on Ferres Road
- Construction of the new access road with a bridge crossing of Eastern Creek
- Preparation of the new lot levels
- Installation of services
- Construction of a connection from the existing M7 shared path to the site
- Basin construction
- Creek realignment works
- Other infrastructure works

The existing temporary vehicle access on Wallgrove Road (with left turn IN/OUT only for trucks) and the existing site compound will be retained.

The plans provided in Appendix B detail these works and essentially all truck access will be inwards from Wallgrove Road and egress to Ferres Road apart from trucks associated with construction of the new roundabout on Ferres Road.

3.0 Road Network and Traffic Conditions

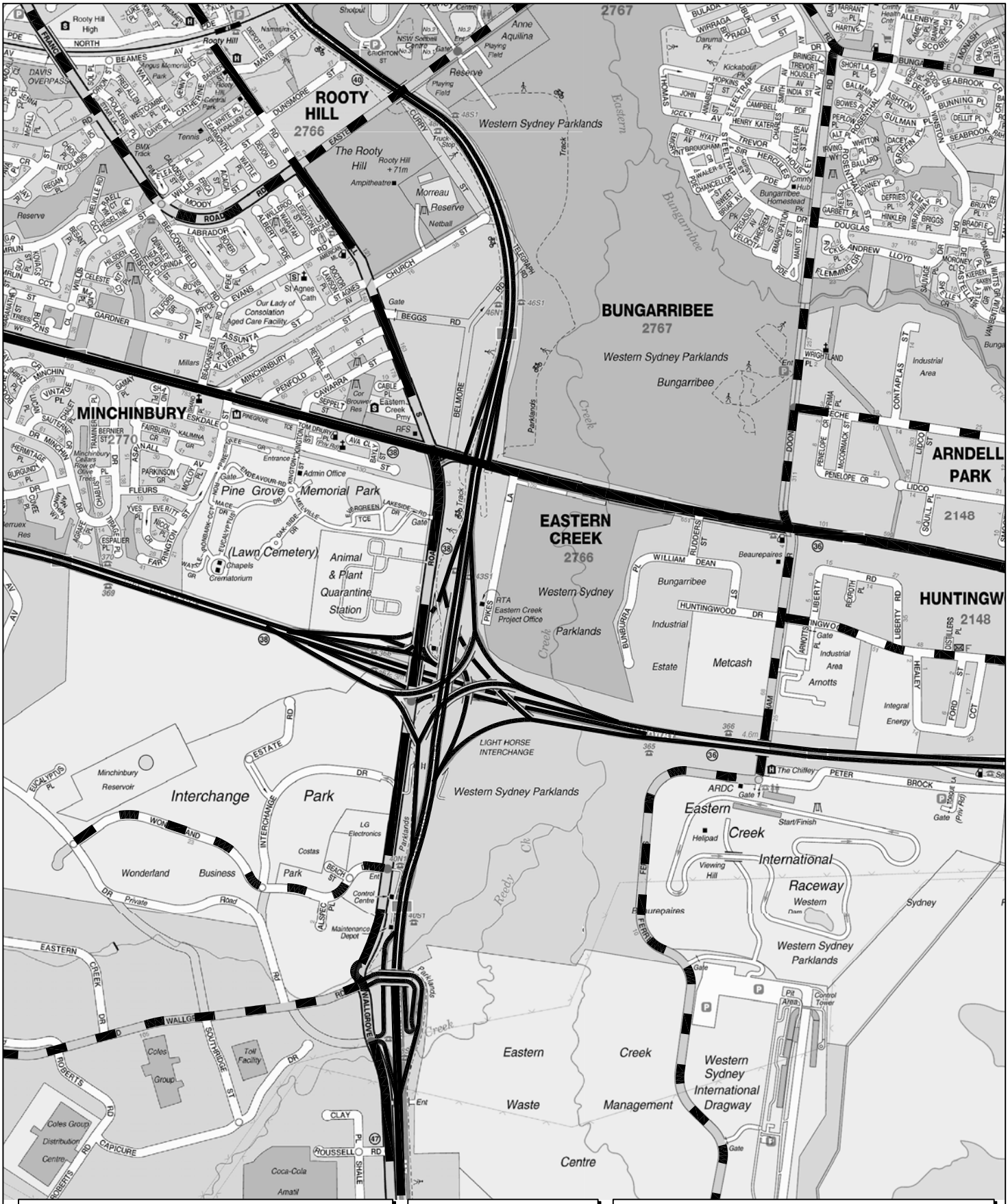
3.1 Road Network

The road network serving the site (Figure 3) comprises:

- *Westlink M7* – a State Road (private Motorway) and major arterial route connecting between the Southwest Motorway and the Hume Motorway at Prestons and the M2 Motorway at Seven Hills
- *M4 Motorway* – a State Road and major arterial route connecting between Sydney and Penrith
- *Great Western Highway* – a State Highway and arterial route connecting between Sydney, Penrith and the Blue Mountains crossing
- *Wallgrove Road* – a State Road and sub-arterial route connecting between the Great Western Highway and Elizabeth Drive
- *Ferres Road/Brabham Drive* – a collector road connecting between the Great Western Highway and The Horsley Drive

The Light Horse Interchange is formed by a complex system of ramps and connections between the M4, M7 and Wallgrove Road with further ramp connections to the south to Wallgrove Road and to Great Western Highway to the north.

Ferrers Road is relatively level with one lane in each direction and a large radius 90° bend located towards the northern end where the site access will be provided.



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR

N

ROAD NETWORK

FIG 3

3.2 Traffic Controls

The existing traffic controls on the road network in the vicinity of the site (Figure 4) comprise:

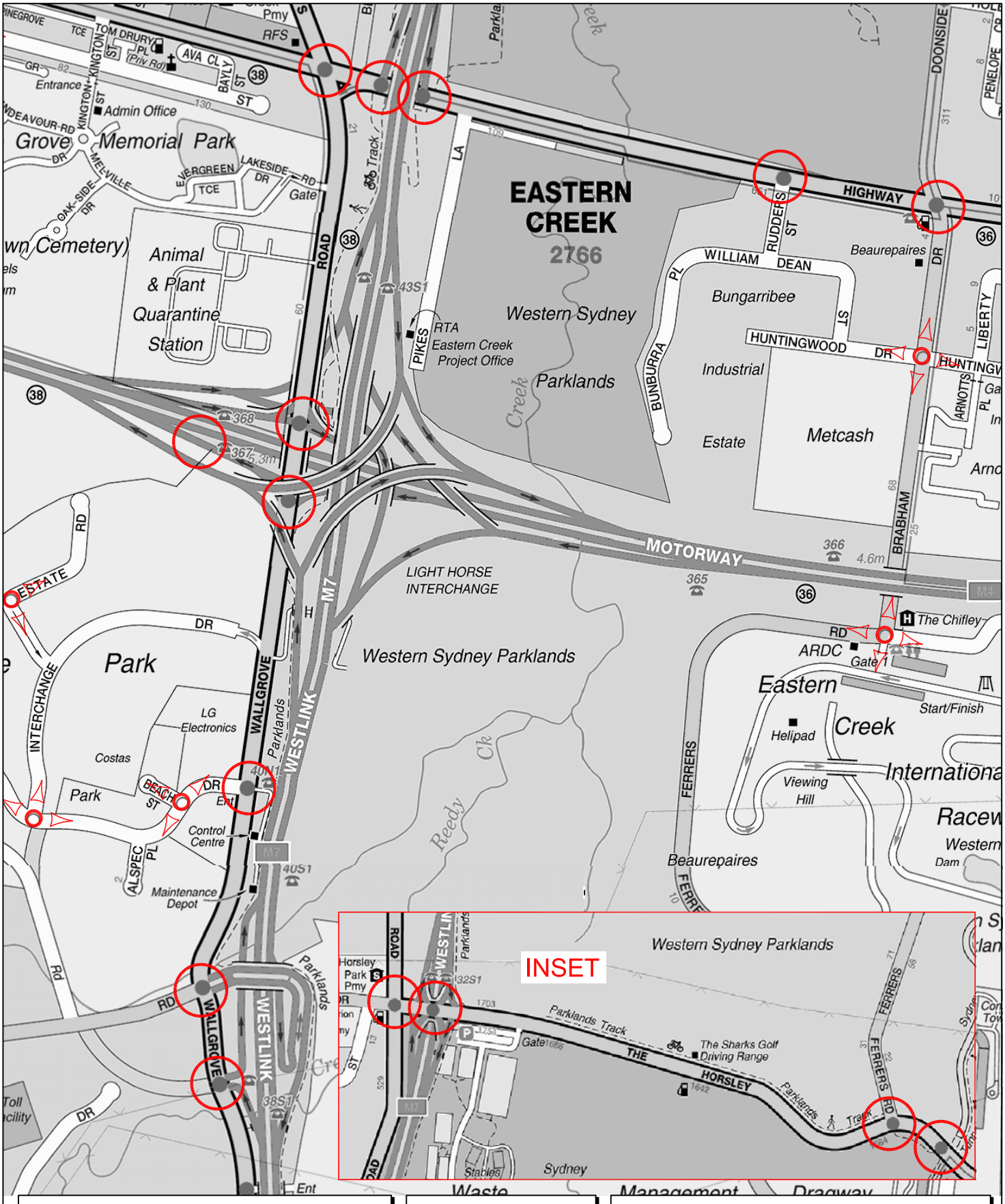
- the traffic signals at the Great Western Highway, Brabham Drive and Doonside Road intersection (see details overleaf)
- The traffic signals at the Wallgrove Road and the Great Western Highway intersection (see details overleaf)
- The traffic signals at the Wallgrove Road and M4 Ramp intersection where there are two separate intersections serving the eastbound and westbound ramps
- The traffic signals at the intersection of The Horsley Drive and Ferres Road
- The roundabouts at the intersections of Brabham Drive/Huntingwood Drive and Brabham Drive/Ferres Road
- The 70 kmph speed restriction on Wallgrove Road and 60 kmph on Ferres Road

3.3 Traffic Conditions

An indication of the traffic conditions on the road system serving the site is provided by data published by TfNSW and other available data. The data published by TfNSW is expressed in terms of Annual Average Daily Traffic (AADT) and the most recent recorded volumes are provided in the following:

	AADT
Wallgrove Road North of M4 Motorway	39,904
Great Western Highway West of Wallgrove Road	31,827

Traffic data for the morning and afternoon peak periods at intersections serving the site as provided by TfNSW and surveys undertaken for this study is summarised in Figure 5.



LEGEND

- TRAFFIC SIGNAL CONTROL
- ROUNDABOUT
- RESTRICTED TURNING MOVEMENT

TRAFFIC CONTROLS

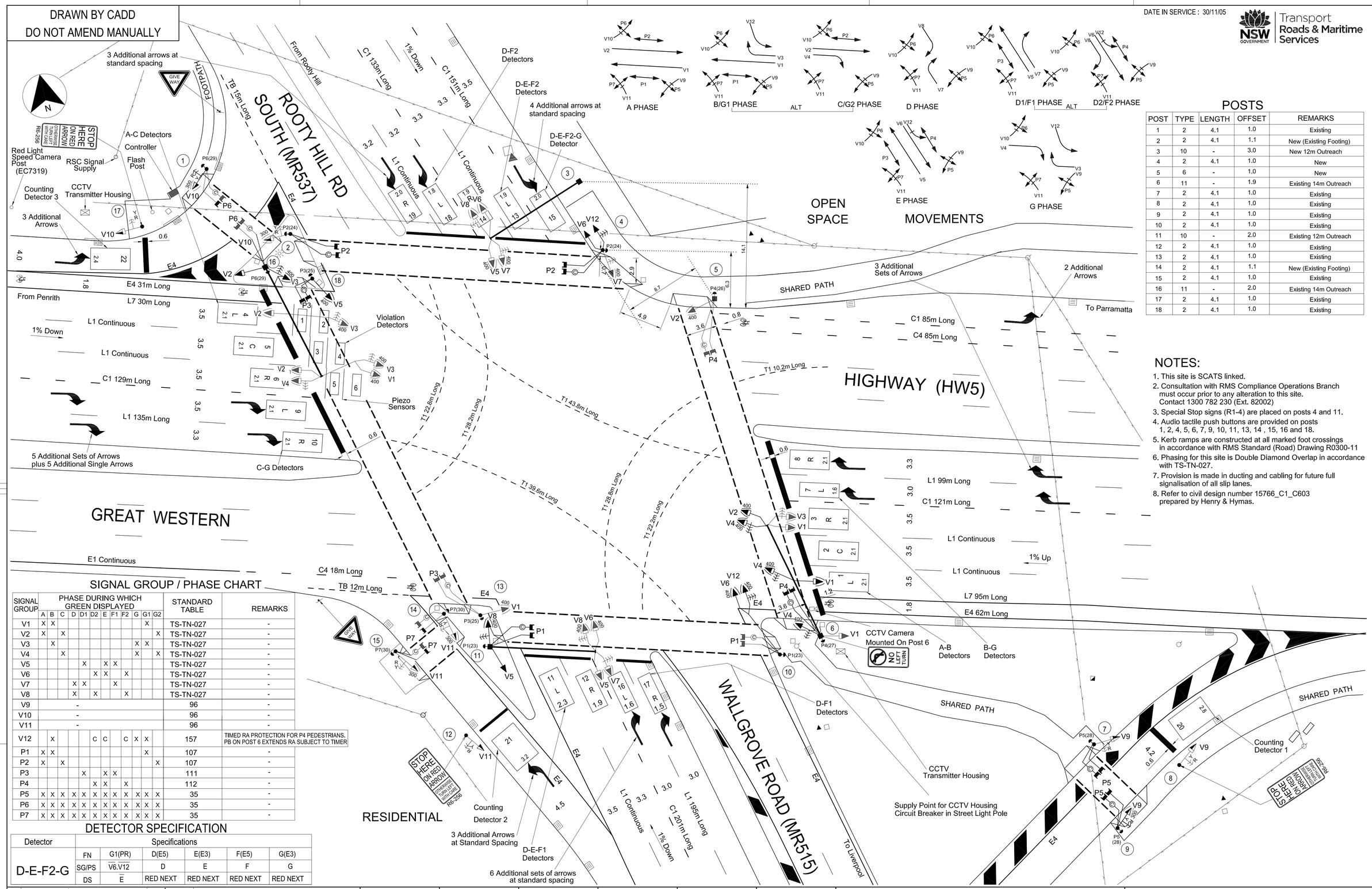
FIG 4

TCS 0779

DRAWN BY CADD
DO Nnot AMEND MANUALLY

DATE IN SERVICE : 30/11/05

NSW GOVERNMENT Transport Roads & Maritime Services



POSTS

POST	TYPE	LENGTH	OFFSET	REMARKS
1	2	4.1	1.0	Existing
2	2	4.1	1.1	New (Existing Footing)
3	10	-	3.0	New 12m Outreach
4	2	4.1	1.0	New
5	6	-	1.0	New
6	11	-	1.9	Existing 14m Outreach
7	2	4.1	1.0	Existing
8	2	4.1	1.0	Existing
9	2	4.1	1.0	Existing
10	2	4.1	1.0	Existing
11	10	-	2.0	Existing 12m Outreach
12	2	4.1	1.0	Existing
13	2	4.1	1.0	Existing
14	2	4.1	1.1	New (Existing Footing)
15	2	4.1	1.0	Existing
16	11	-	2.0	Existing 14m Outreach
17	2	4.1	1.0	Existing
18	2	4.1	1.0	Existing

NOTES:

1. This site is SCATS linked.
2. Consultation with RMS Compliance Operations Branch must occur prior to any alteration to this site. Contact 1300 782 230 (Ext. 82002)
3. Special Stop signs (R1-4) are placed on posts 4 and 11.
4. Audio tactile push buttons are provided on posts 1, 2, 4, 5, 6, 7, 9, 10, 11, 13, 14 , 15, 16 and 18.
5. Kerb ramps are constructed at all marked foot crossings in accordance with RMS Standard (Road) Drawing R0300-11
6. Phasing for this site is Double Diamond Overlap in accordance with TS-TN-027.
7. Provision is made in ducting and cabling for future full signalisation of all slip lanes.
8. Refer to civil design number 15766_C1_C603 prepared by Henry & Hymas.

SIGNAL GROUP / PHASE CHART

SIGNAL GROUP	PHASE DURING WHICH GREEN DISPLAYED												STANDARD TABLE	REMARKS
	A	B	C	D	D1	D2	E	F1	F2	G	G1	G2		
V1	X	X									X		TS-TN-027	-
V2	X		X									X	TS-TN-027	-
V3		X								X	X		TS-TN-027	-
V4			X							X		X	TS-TN-027	-
V5					X		X	X					TS-TN-027	-
V6						X	X		X				TS-TN-027	-
V7				X	X			X					TS-TN-027	-
V8				X		X			X				TS-TN-027	-
V9	-												96	-
V10	-												96	-
V11	-												96	-
V12		X				C	C		C	X	X		157	TIMED RA PROTECTION FOR P4 PEDESTRIANS. PB ON POST 6 EXTENDS RA SUBJECT TO TIMER
P1	X	X									X		107	-
P2	X		X									X	107	-
P3					X		X	X					111	-
P4						X	X		X				112	-
P5	X	X	X	X	X	X	X	X	X	X	X	X	35	-
P6	X	X	X	X	X	X	X	X	X	X	X	X	35	-
P7	X	X	X	X	X	X	X	X	X	X	X	X	35	-

DETECTOR SPECIFICATION

Detector	Specifications					
D-E-F2-G	FN	G1(PR)	D(E5)	E(E3)	F(E5)	G(E3)
	SG/PS	$\overline{V6}.V12$	D	E	F	G
	DS	$\overline{E}$	RED NEXT	RED NEXT	RED NEXT	RED NEXT

ISSUE	
A	ORIGINAL ISSUE
B	ISSUE South east island near post 10 changed to existing location and P4 crossing moved to suit. P1, P2 and P3 crossings and Stop Lines changed to PCW (per m250 and R141). Pram ramp at post 2 shown as per existing. TTPA 18.05.2020
C	ISSUE Post 3 relocated due to water main clash TTPA 07.07.2020

PUBLIC UTILITY LEGEND		REFERENCE PLANS	
HYDRANT	☐	SYMBOLS/ABRVS	VD003-6
STOP VALVE	▲	STD POSN CMPT	VD001-5
GAS VALVE	⌗	INSTL STOP DET	VC005-17
SEWER MANHOLE	Ⓢ	VEH GROUP OP	TS-TN-019
COMMS PIT	◪	DET LOGIC OP	TS-TN-020
ELECT LIGHT POLE	○	PED MVT OP	TS-TN-021
POWER POLE	○		
STAY POLE	⊘		
TELEPHONE BOX	T	SURVEYOR : LANDPARTNERS	
COMMS PILLAR	◪	DATE : 2015	

U.B.D. Ref. Map 187 G8
I.S.G. E : 286 410
CO-ORDS N : 1 259 785

DESIGNED : J. SINGH
CHECKED : C.TOMA
J.SINGH
SITE CHECKED
B. LO
RECOMMENDED

DESIGN APPROVAL
APPROVED
NAME R. NETTLE
POSITION DIRECTOR
DATE 03.07.2020
DESIGN PREPARED BY
TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

RMS RECOMMENDATION
ROAD DESIGN ENGINEERING
P. QUIGG
NAME PHILLIP QUIGG
POSITION TRAFFIC SIGNAL DESIGN MANAGER
DATE 18/03/2019
NETWORK OPERATIONS
T. DEWBERRY
NAME TIMOTHY DEWBERRY
POSITION AREA LEADER NETWORK OPERATIONS
DATE 25/03/2019

RMS ACCEPTANCE
ACCEPTED
D. LANCE
NAME DAVID LANCE
POSITION SENIOR MANAGER NETWORK & SAFETY
DATE 02/04/2019
ACCEPTED BY
NETWORK & SAFETY SERVICES NW / PRECINCT SECTION

ROADS AND MARITIME SERVICES

BLACKTOWN COUNCIL AREA
TRAFFIC SIGNALS AT GREAT WESTERN HIGHWAY (HW5), WALLGROVE ROAD (MR515) AND ROOTY HILL ROAD SOUTH (MR537)
EASTERN CREEK

DESIGN LAYOUT

EXISTING ☐ PROPOSED ☒
CADD FILE: VV0779_20C.DES.dgn
SCALE 5 0 (1:200) 5 10
FILE SF2014/009859
SUPERSEDES SHEET/ISSUE 20/B
ISSUE C
REG No. DS2014/001171
TCS No. 0779
SHEET 20

Revision 6 - July 2017

© COPYRIGHT ROADS AND MARITIME SERVICES

DRAWN BY CADD
DO NOT AMEND MANUALLY

0005.040.VV.1120

DATE IN SERVICE : 02/10/62

R T A

NOTES

1. This site is SCATS linked.
2. Special Regulatory Stop Signs (R1-4) placed on posts 2. 3. 6 and 7.
3. Audio tactile push buttons are provided on posts 4 and 6. drawing No MD.R173.B01.A.1.
4. Posts 2. 4. 6 and 8 hold directional signage.
5. For linemarking in Brabham Drive and Doonside Road. refer to concept drawing 27026_Linemarking_fig1 by Transport and Urban Planning.
6. Double Diamond Overlap phasing with filter option in accordance with TS-TN-027 Version 1.

'WESTERN SYDNEY PARKLANDS'

DOONSIDE ROAD

LEVEL

C1 77m Long

L1 51m Long

L1 Continuous

One additional set of arrows at standard spacing

D-F2 Detectors

D-E-F2-1 Detector

D-E-F2-2 Detector (Presence timed)

'A' Phase 'B' Phase 'C' Phase 'D' Phase (ALTERNATE)

'D1' Phase 'D2' Phase 'E' Phase 'F1' Phase 'F2' Phase (ALTERNATE)

MOVEMENTS

Counting Detector 2

A-C Detectors

A-C-G Detector

Four additional arrows at standard spacing

C1 104m Long

E4 41m Long

E4 42m Long

L1 99m Long

1.0% up

L1 Continuous

C1 161m Long

From PENRITH

COMMERCIAL / RETAIL

Supply

Controller

Two additional arrows at standard spacing

(HW.5) HIGHWAY

To PARRAMATTA

T1 8.7m Long

T1 7.8m Long

T1 7.8m Long

T1 7.8m Long

T1 850m - 35.2m Long

T1 R17.5m - 19.5m Long

A-B-G Detector

A-B Detectors

Four additional arrows at standard spacing

C1 141m Long

L1 Continuous

L1 111m Long

2.0% down

E4 48m Long

C1 101m Long

E4 46m Long

E1 Continuous

GREAT WESTERN

CONCRETE DRIVEWAY

BOUNDARY

Two additional arrows at standard spacing

COMMERCIAL / RETAIL

CCTV Transmitter Housing(CCTV33)

CCTV Camera

BRABHAM DRIVE

E4 14.6 Long

C1 13m Long

Counting Detector 1

Four additional arrows at standard spacing

'G' Phase 'G1' Phase 'G2' Phase (ALTERNATE)

MOVEMENTS (cont.)

D-E-F1-2 Detector (Presence timed)

D-E-F1-1 Detector

D-F1 Detector

One additional arrow at standard spacing

T1 7.8m Long

T1 7.8m Long

L1 Continuous

C1 57m Long

1.0% down

From HORSLEY PARK

SIGNAL GROUP PHASE CHART

SIGNAL GROUP	PHASE DURING WHICH GREEN DISPLAYED A	B	C	D	D1	D2	E	F1	F2	G	G1	G2	OVERLAPS PERMITTED	OVERLAP CONDITIONS	DURATION OF L.T.R.A.
V1	X	X									X		G1/A/B, B/A A/G1		
V2	X		X									X	G2/A/C C/A A/G2		
V3		X								X	X		G/G1 B/G		
V4			X							X		X	G/G2 C/G		
V5					X		X	X					D1/E/F1		
V6						X	X		X				D2/E/F2		
V7				X	X			X					D/D1		
V8				X		X			X				D/D2		
V9			X							X		X	C/C2* C/G2 C/E*	* P1 NOT DEMANDED	ARROW TIME ■
V10		X								X	X		B/G1 G/G1 B/E		
P1					X		X	X					D1/E/F1		

■ R.A. PROTECTION EXTENDED BY P.B. ON POST 6 SUBJECT TO TIMER

POSTS

POST	TYPE	LENGTH	OFFSET	REMARKS
1	2	4.1	2.0	EXISTING
2	6	–	2.0	EXISTING
3	5L	–	1.0	EXISTING
4	6	–	1.0	EXISTING
5	2	4.1	–	EXISTING
6	6	–	1.0	EXISTING
7	5L	–	1.0	EXISTING
8	6	–	1.0	EXISTING

A ORIGINAL ISSUE

B ISSUE1, J1 SM560 24/03/09
ADDED: 1 no. CCTV camera in the westbound traffic lane on the GWH, from Doonside Rd & 1 no. CCTV camera on Doonside Rd into Doonside Rd from GWH.
D.A. 05/02098

C ISSUE: 06/09
POST 1 AND 2 WERE CHANGED.
CORRIGAN 06/09

D ISSUE J1 SM605 12/10/09
ADDED: AUDIO TACTILE PBs TO POSTS 4 & 6 ONLY.
AMENDED: POST CHART. NOTES.
REMOVED: CIVIL WORKS DETAILS
D.A. 27/11/09

E ISSUE: WAE COMPLETED
T.L 24/07/2012 M.W

PUBLIC UTILITY LEGEND		REFERENCE PLANS	
HYDRANT	□	SYMBOLS/ABBS.	VD003-6
STOP VALVE	▲	STD POSIT	VD001-5
GAS VALVE	#	DET SCHED EXP	VD018-10
SEWER MANHOLE	Ⓢ	PRES. DETECT	VC005-17
TELECOM PIT	◪	SSG DIS. SEQ.	VD018-8
ELECT LIGHT POLE	☾	SDO PHASING	VD018-5
POWER POLE	○	SDO FILTER OPTION	VD018-14
STAY POLE	⊘		
TELEPHONE BOX	T	SURVEYOR : Whelans	
TELECOM PILLAR	◕	DATE : 6.3.07	

U.B.D. Ref. Map 187 P10
I.S.G. CO-ORDS E: 288 004 N: 1 259 418

DESIGNED L TULAU
CHECKED T LAWRENCE
L TULAU SITE CHECKED
T LAWRENCE RECOMMENDED

DESIGN APPROVAL
APPROVED
DATE 12.11.07
TRANSPORT & URBAN PLANNING

RTA ACCEPTANCE
RECOMMENDED
POSITION N.O.T.L.
DATE 15.04.08
ACCEPTED
POSITION A/RNM (W)
DATE 15.04.08

Roads and Traffic Authority, N.S.W

BLACKTOWN COUNCIL AREA
TRAFFIC SIGNALS AT THE INTERSECTION OF GREAT WESTERN HWY (HW.5), DOONSIDE RD AND BRABHAM DRIVE, EASTERN CREEK

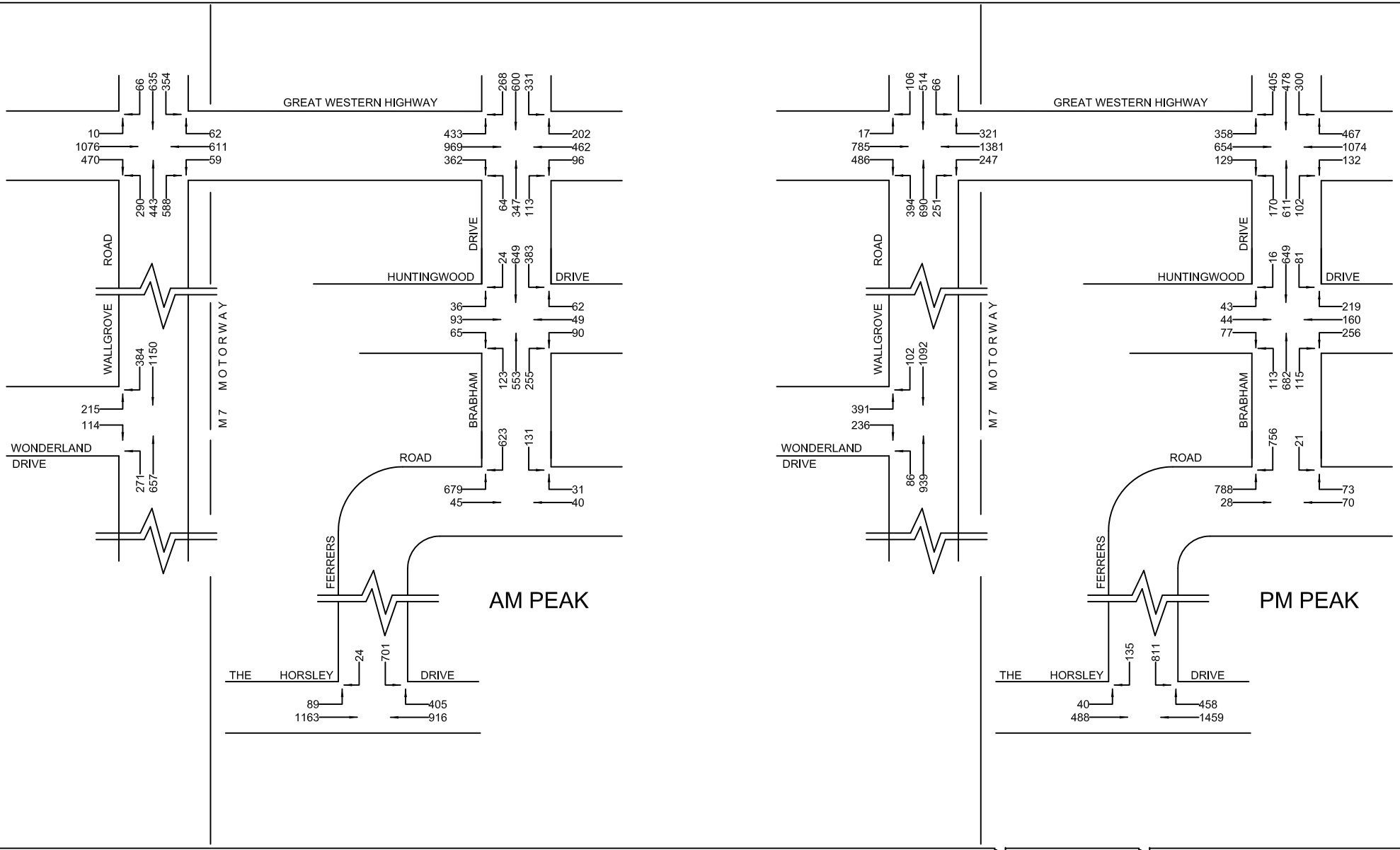
DESIGN LAYOUT TCS No 1120

EXISTING ☒ PROPOSED ☐
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REGN. 0005.040.VV.1120
SHEET 17

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LEGEND

EXISTING PEAK TRAFFIC VOLUMES

FIG 5

The operational performance of intersections has been analysed using SIDRA and the results of that assessment[1] are provided in Appendix C and summarised in the following table, while the criteria for interpreting the SIDRA output is provided overleaf.

	AM		PM	
	LOS	**AVD**	**LOS**	**AVD**
Great Western Highway/ Brabham/ Doonside	D	48.4	D	53.1
Great Western Highway/ Wallgrove/ Rooty Hill	D	50.6	D	52.7
Brabham/Huntingwood	A	6.9	A	9.1
Brabham/Ferres	A	6.4	A	7.0
The Horsley/Ferres	C	41.1	B	26.3

The results indicate that these intersections currently operate satisfactorily during the morning and afternoon peak traffic periods although the Great Western Highway intersections accommodate significant arterial flows and experience some queuing during the peak periods.

It is noted that the Great Western Highway/Brabham Road/Doonside Road intersection has recently been upgraded as part of the TfNSW "pinch point" program and that TfNSW commence work on the upgrading of The Horsley Drive, which will include the Ferres Road intersection, in 2023 with completion of the works in 2025.

3.4 Transport Services

Public transport services in the vicinity of the site are provided by the 'Busway' bus routes 723 and 738, which run along Wallgrove Road past the site and linking Mount Druitt and Rooty Hill stations. Route 724 also operates along Peter Brock Drive to the north of the site providing a link to Blacktown Railway Station.

[1] *Light Horse Interchange (SSD 9667)*
Traffic Impact Assessment
Ason Group, May 2019

Criteria for Interpreting Results of SIDRA Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good	Good
'B'	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
'C'	Satisfactory	Satisfactory but accident study required
'D'	Operating near capacity	Near capacity and Accident Study required
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
'F'	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below, which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by **traffic signals** both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

4.0 Bulk Earthworks and Infrastructure Processes

4.1 Timing

The work is programmed to commence in March 2022 after completion of the Remediation, Demolition and Clearing works (subject of previous CTMP's) and finish at the end of April 2023 (see program details in Appendix D), however depending on the circumstances encountered (e.g. availability of fill), the program could be extended.

4.2 Vehicle Access

Vehicle access will comprise:

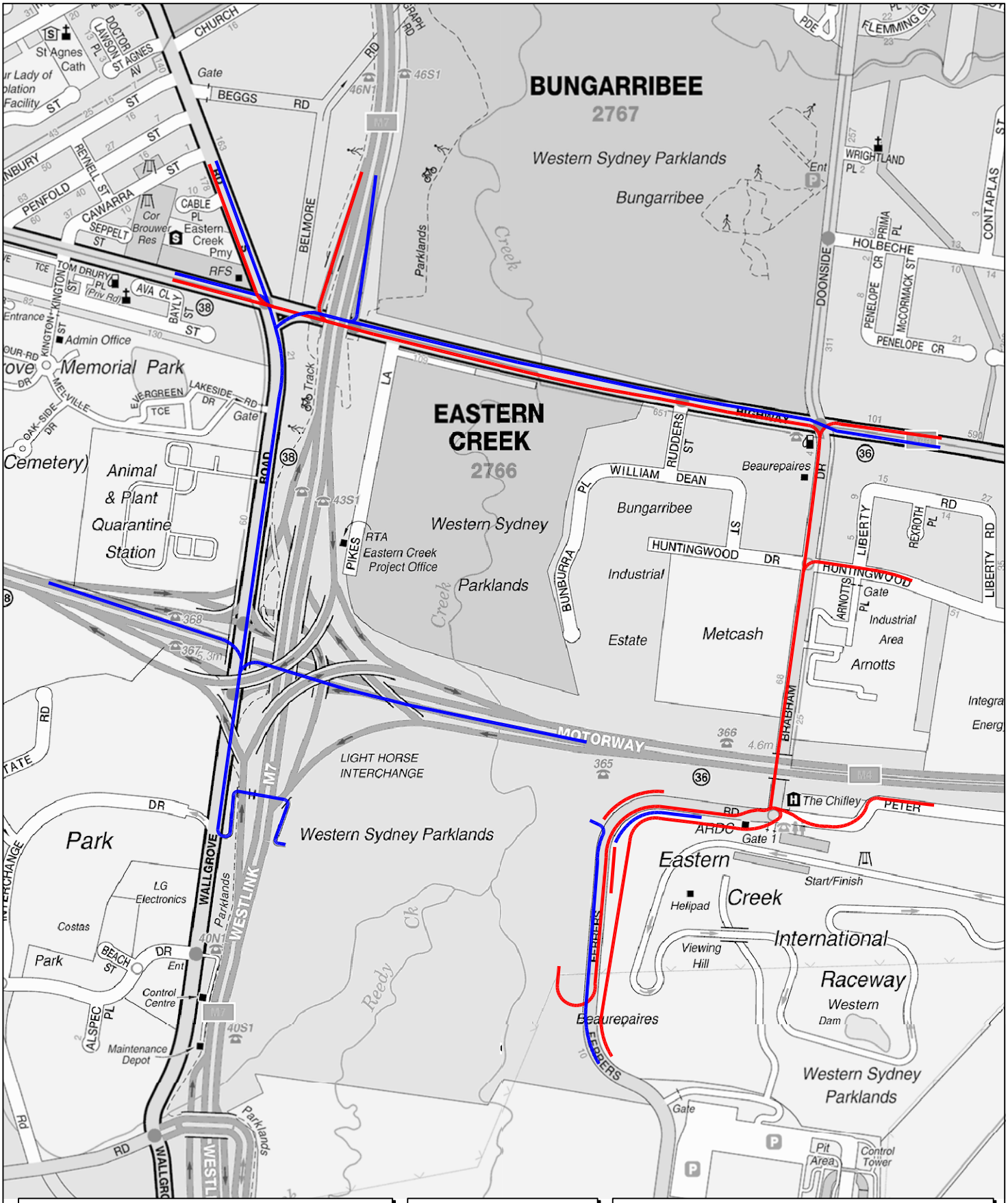
- Workers
  Ingress and egress on Wallgrove Road (as currently exists)
- Trucks
  Ingress on Wallgrove Road (left turn only)
  Egress on Ferres Road either along the HPG easement or along the future access road corridor (left turn only)
- Localised construction access in various forms through the stages of work for construction of the Ferres Road roundabout generally left turn IN/OUT only

4.3 Truck Routes

The proposed truck routes are shown on Figure 6 except for the last few weeks after the Eastern Creek bridge is completed when trucks will be able to ingress and egress at the new Ferres Road access intersection.

4.4 Parking

Parking for workers and visitors will continue to be provided in the existing Site Compound.



LEGEND

ARRIVAL

DEPARTURE

TRUCK ROUTES

FIG 6

4.5 Vehicle Movements

The envisaged vehicle visitations to the site through the various processes are shown on the Work Program in Appendix D and these movements will be entirely dominated by the truck movements associated with the import of fill over some 40 weeks. The origins of this fill are not apparent at this time, however it will not be sourced from any major infrastructure projects but will largely be sourced from excavations at individual development sites and the like.

The anticipated average of 1,800 trucks per week will fluctuate to some extent, however they will be managed and monitored to spread throughout the day in order to facilitate the on-site processing. There will be no on-street queuing, however, there will be significant queuing capacity within the site should this be necessary.

Heavy vehicle activity will very largely involve Truck&Dog units and semi-trailers with some smaller trucks for fuel and other deliveries etc. The light vehicles will essentially be workers arriving in the morning and departing in the afternoon through the Wallgrove Road access reflecting the existing satisfactory circumstances.

4.6 Clean Up

All trucks will be required to have covers over their trailers particularly when loaded. A “cattle grid” will be installed at the egress to remove spoil from wheels and tyres while the pavement of Ferres Road will be constantly monitored and any spillage will be swept up as soon as possible.

4.7 Working Hours

The permitted working hours as per Consent Conditions B17 and B18 (unless otherwise agreed in writing by the Planning Secretary) are as follows:

Monday to Friday	7.00am to 6.00pm
Saturday	8.00am to 1.00pm
Sunday and Public Holidays	No work

5.0 Traffic

5.1 Traffic Implications

The approved working hours will permit truck arrival for 60 hours per week with an average maximum of 30 trucks per hour, again this will be managed/metered to maintain consistency. The traffic signals at the intersections providing for ingress and egress operate with some 26 cycles per hour.

The Figure 6 Truck Routes diagram shows that the approaching trucks, the Wallgrove Road site access will be spread over 2 intersections as follows:

Great Western Highway/Wallgrove Road

- Westbound on the Highway including Southbound on M7
- Eastbound on the Highway
- Southbound on Rooty Hill Road

Wallgrove Road / M4 Ramps

- Eastbound on M4
- Westbound on M4
- Southbound on Wallgrove Road

Given the spread of the truck approach routes, the potential for some 30 trucks per hour (1 per traffic signal cycle) will not result in any perceptible adverse traffic implications. It is not possible nor is it necessary to undertake any traffic modelling assessment particularly when the origins of the truck movements are not known (see Figure 6).

In regard to the egress movements while these will be restricted to left turn to Ferres Road, the roundabout at the Brabham Drive intersection will enable these trucks to turn to depart south along Ferres Road and east along Peter Brook Drive (as well as north along Brabham Drive). Thus, the distribution of the projected maximum of 30 trucks per hour over the numerous available egress routes will result in a circumstance

where there will be no adverse traffic implications (it is noted that the Ferres Road/Brabham Drive/Peter Brook Drive intersection currently operates with a Level of Service A in the AM and PM peak traffic periods).

5.2 Traffic Control Plans

The Traffic Control Plans required for the Ferrers Road access intersection works are provided in Appendix E and these will be submitted for Authority approval in the normal manner.

6.0 Driver Code of Conduct

Safe Driver Policy For Light Horse Business Hub Construction Activities

6.1 Objective of the Drivers Code of Conduct

- to minimise the impact of earthworks and construction on the local and regional road network;
- Minimise conflict with other road users
- Minimise road traffic noise; and
- Ensure truck drivers only use the approved routes

6.2 Code of Conduct

The code of conduct requires that while driving any vehicle for work-related purposes, drivers are to be issued with a copy of the Drivers Code of Conduct, and must comply with all of the following:

- Demonstrate safe driving and road safety activities
- Abide by traffic, road and environmental legislations
- Follow site signage and instructions
- Drivers must only enter and exit the site via the approved entry and exit points and travel routes

The below activities in any vehicles will be considered as a breach of conduct and will result in removal from site:

- Reckless or dangerous driving causing injury or death
- Driving whilst disqualified or not correctly licensed
- Drinking or being under the influence of drugs while driving
- Failing to stop after an incident
- Loss of demerit points leading to suspension of licence
- Any actions that warrant the suspension of a licence
- Exceeding the speed limit in place on any permanent or temporary roads
- Not adhering to the prescribed restrictions on site access and truck routes

6.3 Driver Responsibility

All drivers on site must:

- Be responsible and accountable for their actions when operating a company vehicle or driving for the purposes of work
- Display the highest level of professional conduct when driving a vehicle at all times
- Ensure they have a current driver licence for the class of vehicle they are driving, and this licence is to be carried at all times
- Immediately notify their supervisor or manager if their driver's licence has been suspended, cancelled, or has had limitations applied
- Comply with all traffic regulations when driving
- Undertake daily pre-start checks of oil, tyre pressures, radiator and battery levels of company vehicles they regularly used
- Drive within the legal speed limits, including driving to the conditions
- Not drive outside of the approved heavy vehicle routes. All drivers must obey weight, length and height restrictions imposed by the National Heavy Vehicle Regulator, and other Local and State agencies
- Be cognisant of the noise and emissions requirements imposed within the EIS, and in a broader sense, the NSW / Australian Road Rules
- Do not queue on public roads unless a prior approval has been granted
- Never drive under the influence of alcohol or drugs, including prescription and over the counter medication if they cause drowsiness – to do so will merit disciplinary measures
- All drivers to report to their supervisor if they have been prescribed medication prior to the start of work
- Wear a safety seat belt at all times when in the vehicle
- Avoid distraction when driving
- Report any traffic incidents involving the vehicle
- Report any infringements to their manager at the earliest opportunity.
- Report any vehicle defects to their manager
- Follow the speed limits as imposed within the site
- Keep loads covered at all times.

6.4 Site Team Responsibilities

The Contractor is responsible to take all steps necessary to ensure company vehicles are as safe as possible and will not require staff to drive under conditions that are unsafe.

This will be achieved by undertaking the following:

- Ensuring all vehicles are well maintained and that the equipment enhances driver, operator and passenger safety by way of:
  - Pre-commencement checks for all new plant arriving on-site and prior to undertaking any work.
  - Daily prestart inspections for all plant, vehicles and equipment currently on-site.
  - All construction plant must be fitted with a flashing light, fire extinguisher and reverse alarms
  - Ensure all operators onsite have a current verification of competency (VOC) for their current driver's licence of the appropriate class.
  - Ensure maintenance requirements are met and recorded.
- Identify driver training needs and arranging appropriate training or re-training. This may include providing the below:
  - Operator VOC assessment as part of all inductions.
  - Regular Toolbox discussions on safety features, managing fatigue, approved heavy routes, driver responsibility and drink-driving
- Encouraging Safe Driving behaviour by:
  - Ensuring the subcontractor is informed if their staff become unlicensed
  - Not covering or reimbursing staff speeding or other infringement notices
  - Ensuring Legal use of mobile phones in vehicles while driving only and that illegal use does not occur.
- Encouraging better fuel efficiency by:
  - Use of other transport modes or remote conferencing, whenever practical.
  - Providing training on, and circulating information about, travel planning and efficient driving habits.

6.5 Crash or Incident Procedure

- Stop the vehicle as close to it as possible to the scene, making sure you are not hindering traffic. Ensure your own safety first, then help any injured people and seek assistance immediately if required.
- Ensure the following information is noted:
  - Details of the other vehicles and registration numbers
  - Names and addresses of the other vehicle drivers
  - Names and addresses of witnesses
  - Insurers details
- Give the following information to the involved parties:
  - Name, address and company details
- If the damaged vehicle is not occupied, provide a note with your contact details for the owner to contact the company.
- Ensure that the police are contacted should the following circumstances occur:
  - If there is a disagreement over the cause of the crash.
  - If there are injuries.
  - If you damage property other than your own.
- As soon as reasonably practical, report all details gathered to your manager.

6.6 Environmental Procedure

A range of measures – including those detailed in the Construction Environmental Management – shall be implemented to ensure the following:

- No dirt or debris from the construction vehicles is tracked on to the public road network;
- Reduce the impacts to sensitive receivers, including, where practicable, starting noisy equipment away from sensitive receivers and implementing respite periods;
- Watering of dusty activities will be undertaken, or activities temporarily halted and then resumed once weather conditions have improved;
- Containment measures for potential spillages will be provided at appropriate locations
- Keep an accurate record which includes the range of measures undertaken to reduce environmental impacts.

7.0 Monitoring, Review and Contingencies

7.1 Monitoring Program

This CTMP shall be subject to ongoing review and will be updated accordingly. Regular reviews will be undertaken by the on-site coordinator. As a minimum, review of the CTMP shall occur every 3 months. All and any reviews undertaken should be documented, however key considerations regarding the review of the CTMP shall be:

- Tracking deliveries against the volumes outlined within report. Deliveries will be tracked against approved volumes, and will keep a vehicle log - including rego & time of entry - for the purpose of assessing the effectiveness of these monitoring programs.
- To identify any shortfalls and develop an updated action plan to address issues that may arise during construction (Parking and access issues)
- To ensure TCP's are updated (if necessary) by "Prepare a Work Zone Traffic Management Plan" card holders to ensure they remain consistent with the set-up on-site.
- Regular checks undertaken to ensure all loads are entering and leaving site covered as outlined within this CTMP.
- A Dilapidation report shall be undertaken every periodically to assess the condition of the road, and note whether there has been any reduction in quality of the road as result of construction vehicles.

The development of a program to monitor the effectiveness of this CTMP shall be established by the Contractor. This process is expected to form part of the monitoring plan required to be included as part of the Construction Environmental Management Plan (CEMP), of which this CTMP forms a part.

7.2 Contingency Plan

A contingency plan shall be established by the Contractor and is to be included in the CEMP. Notwithstanding, the table overleaf outlines an indicative plan to be undertaken by the builder in the event that the monitoring program identifies the management plan is not effective in managing the construction impacts.

Contingency Plan

Rick		Condition Green	Condition Amber	Condition Red
Construction Movements	Trigger	Construction traffic volume is in accordance with permissible and programmed volume and time constraints	Construction traffic volumes exceeds programmed volume but is within permissible volume constraints	Construction traffic volumes exceeds programmed volume and time constraints
	Response	No response required Continue monitoring program	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: - Temporary halting of activities and resuming when conditions have improved - Review CTMP and update where necessary - Provide additional training	Review and investigate construction activities. Where appropriate, implement additional remediation measures such as: - Temporary halting of activities and resuming when conditions have improved - Stop all transportation into and out of the site - Review CTMP and update where necessary Provide additional training.
	Trigger	Construction traffic adheres to the nominated truck routes	Occasionally fails to Construction traffic utilise the nominated truck routes	Consistently fails to Construction traffic utilise the nominated truck routes
	Response	No response required Continue monitoring program	Review and investigate construction activities, and where appropriate, implement additional remediation measures such as: Review vehicles arriving to site and remind them of the strict exclusion time periods Provide additional training (including toolbox talks and further notification of	Review and investigate construction activities. Where appropriate, implement additional remediation measures such as: - Stop all transportation into and out of the site. - Review CTMP and update where necessary. - Provide additional

			Drivers Code of Conduct)	training (including toolbox talks and further notification of Driver Code of Conduct)
Queuing	Trigger	No queuing identified	Queuing identified within site	Queuing identified on the public road
	Response	No response required Continue monitoring program	Review the delivery schedule prepared by the builder. If drivers are not following the correct schedule, then they should be provided with additional training and an extra copy of the Driver Code of Conduct.	Review and Investigate construction activities. Where appropriate, implement additional remediation measures such as: - Temporary halting of activities and resuming when conditions have improved - Stop all transportation into and out of the site. - Review CTMP and update where necessary
Noise	Trigger	Noise levels do not exceed imposed noise constraints	Noise levels in minor excess of imposed noise constraints	Noise levels greatly in excess of imposed noise constraints
	Response	No response required Continue monitoring program	Undertake all feasible and reasonable mitigation and management measures to minimise noise impacts	Undertake all feasible and reasonable mitigation and management measures to ensure noise levels are below Highly Noise Affected criteria. If noise levels cannot be kept below applicable limits, then a different construction method or equipment must be utilised.

Traffic Control Plans	Trigger	No observable issues	Minor inconsistencies with TCP to onsite operations	Near miss or incident occurring regardless of/as a results of the TCP being implemented
	Response	No response required Continue monitoring TCPs	Traffic Controllers to amend TCP on site and to keep a log of all changes	Stop work until an investigation has been undertaken into the incident. There are to be changes made to the TCP to ensure that the safety of all workers, students and civilians are catered for.
Dust & Spoil	Trigger	No observable dust	Minor quantities of dust in the air and tracking on to the road	Large quantities of dust in the air and tracking on to the road
	Response	No response required Continue monitoring program	Review and investigate construction activities and respective control measures, where appropriate, implement additional remedial measures, such as: - Deployment of additional water sprays - Relocation or modification of dust-generating sources - Check condition of vibrating grids to ensure they are functioning correctly - Temporary halting of activities and resuming when conditions have improved	Review and investigate construction activities and respective control measures. If it is concluded that construction activities were directly responsible for the exceedance, submit an incident report to government agencies. Implement relevant responses and undertake immediate review to avoid such occurrence in future.

The contingency plan outlines the most effective methods to ensure that each item identified within the Monitoring Program is adhered to, resulting in the impacts to the wider community being minimised. It also represents the efforts undertaken to continually improve CTMP and ensure that the process being utilised are indeed best practice.

7.3 Communications Strategy

A Community Consultation Strategy (CCS) for the Project has been developed to detail how the Proponent and their contractors will engage and interact with relevant stakeholders and the community. The CCS will form part of the CEMP and will be applicable to all works undertaken on site. All communications (including notification, consultation and complaints and enquiry handling) related to construction traffic management shall be undertaken in accordance with the CCS.

Where necessary, the following procedures (consistent with the CCS) will be utilised to notify residents and the community (including local schools), of any potential disruptions to routes:

Potential Impact or Issue	**Method of Contact/Consultation**	**Timeframe**
Known Traffic Route Disruption	Email, Text Message or Letterbox drop – notifying of expected commencement, duration, affected hours and contact phone number. Variable Message Signs	No less than 24 hours prior to the activity
Emergency Event	Email, Text Message or Letterbox drop – notifying of expected commencement, duration, affected hours and contact phone number.	As soon as possible.

All communication activities will be undertaken by and the responsibility of the appointed Communications and Community Liaison Representative at the direction of the Proponent.

Ross Nettle

From: Andy Karklins <Andy.Karklins@blacktown.nsw.gov.au>
Sent: Thursday, 10 March 2022 2:29 PM
To: Ross Nettle
Cc: Nadeem Shaikh
Subject: RE: CTMP Light Hose Business Hub - Bulk Earthworks and Infrastructure (21077)

Good afternoon Ross

We have reviewed the attached Construction Traffic Management Plan for Light Horse Business Hub, Eastern Creek - TCP prepared by Transport and Traffic Planning Associates. It appears to be in order based on the information provided. It is the project managers responsibility to implement the traffic control measures as identified in the TMP.

Regards

Blacktown City Council

Andy Karklins
Traffic Management Officer

9839 6305

Andy.Karklins@blacktown.nsw.gov.au
PO Box 63 Blacktown NSW 2148
blacktown.nsw.gov.au

Follow us on social media

From: Nadeem Shaikh
Sent: Thursday, 10 March 2022 11:56 AM
To: Andy Karklins <Andy.Karklins@blacktown.nsw.gov.au>
Subject: FW: CTMP Light Hose Business Hub - Bulk Earthworks and Infrastructure (21077)

Hi Andy
Please respond to the CTMP request.
Thanks

Blacktown City Council

Nadeem Shaikh
Coordinator Traffic Management

9839 6017
0409 735 657
Nadeem.Shaikh@blacktown.nsw.gov.au
PO Box 63 Blacktown NSW 2148
blacktown.nsw.gov.au

Ross Nettle

From: Alexander Coates <Alexander.Coates@transport.nsw.gov.au>
Sent: Friday, 18 March 2022 2:38 PM
To: Ross Nettle
Subject: CTMP Bulk Earthworks & CTMP Demolition and Clearing

Transport for NSW (TfNSW), Greater Sydney Division has reviewed the CTMP (Bulk Earthworks & Demolition and Clearing) and endorse the proposed temporary construction arrangements, subject to the following conditions:

- While noted in Section 7.2, Truck and staff movements must be continually reviewed in order to ensure that there is no queuing on public roads that could cause traffic and/or safety issues. In particular the northbound right turn bay from Walgrove Rd to the site access must be monitored to ensure there is no 'spill over' queueing into the through lanes from the turning bay.

Endorsement of the CTMP is not an approval to the type of traffic management or delineation devices used, nor is it an approval to any traffic guidance schemes (TGS) depicted within the CTMP. It is assumed that the proponent has used type approved devices and has developed its TGS's in accordance with the relevant Australian Standards and Guidelines.

The Proponent must apply and obtain approval from the Transport Management Centre for a Road Occupancy Licence (ROL) for any required lane closures and/or Speed Zone Authorisations as part of the ROL that may impact the state road network or is within 100m of traffic signals, as well as any other permits that Council may require. The ROL process will review the setups and provide permits based on days and times that are appropriate for the level of impact that may be caused as a result of the TGS.

The proponent is to ensure local residents, businesses, schools and other stakeholders in the affected area as well as emergency service organisations are notified of the changes associated with the CTMP, prior to its implementation.

Please ensure this CTMP is shared and adhered to by all contractors. If the CTMP changes, please forward a copy to Developments.CJP@transport.nsw.gov.au for further review and endorsement.

Alex Coates

Operations Planning Manager

Customer Journey Planning

Greater Sydney

Transport for NSW

25 Garden Street, Eveleigh NSW 2015

OFFICIAL

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8.0 Consultation

This CTMP has been submitted for the consideration of TfNSW, Blacktown City Council and the M7 operator and their responses are provided overleaf.

Appendix A

Concept Plan

DEVELOPMENT DATA

OVERALL SITE AREA	344,013m²
LOT 8 (RESIDUAL) - ESTATE BIO-BASIN/OSD	21,511m²
ACCESS ROAD RESERVE (PART OF LOT 11)	22,076m²
TOTAL DEVELOPABLE AREA (LOT 1 TO 7)	300,426m²
TOTAL BUILDING AREA	165,500m²
FLOOR SPACE RATIO	55.1%

DEVELOPABLE LOT	W/H AREA	OFFICE AREA	TOTAL
LOT 1 SITE AREA (48,059m²)	19,000	1,000	20,000
LOT 2 SITE AREA (34,141m²)	16,900	800	17,700
LOT 3 SITE AREA (41,112m²)	23,200	1,200	24,400
LOT 4 SITE AREA (38,686m²)	21,400	1,000	22,400
LOT 5 SITE AREA (44,193m²)	24,700	1,300	26,000
LOT 6 SITE AREA (38,406m²)	20,000	1,000	21,000
LOT 7 SITE AREA (55,829m²)	32,400	1,600	34,000
TOTAL	157,600	7,900	165,500

CARPARK PROVISIONS

TOTAL CARPARK REQUIRED RMS - Warehouse: 1 space/300sqm Office: 1 space/40sqm	723 spaces
TOTAL CARPARK PROVIDED	782 spaces

LEGENDS

- ESTATE SITE BOUNDARY
- LIMIT OF WORKS



Client

Western Sydney Parklands Trust

Light Horse Interchange Business Hub
Eastern Creek NSW [SSD 9667]

Concept Masterplan

1:3000@ A3 or 1:1500@A1

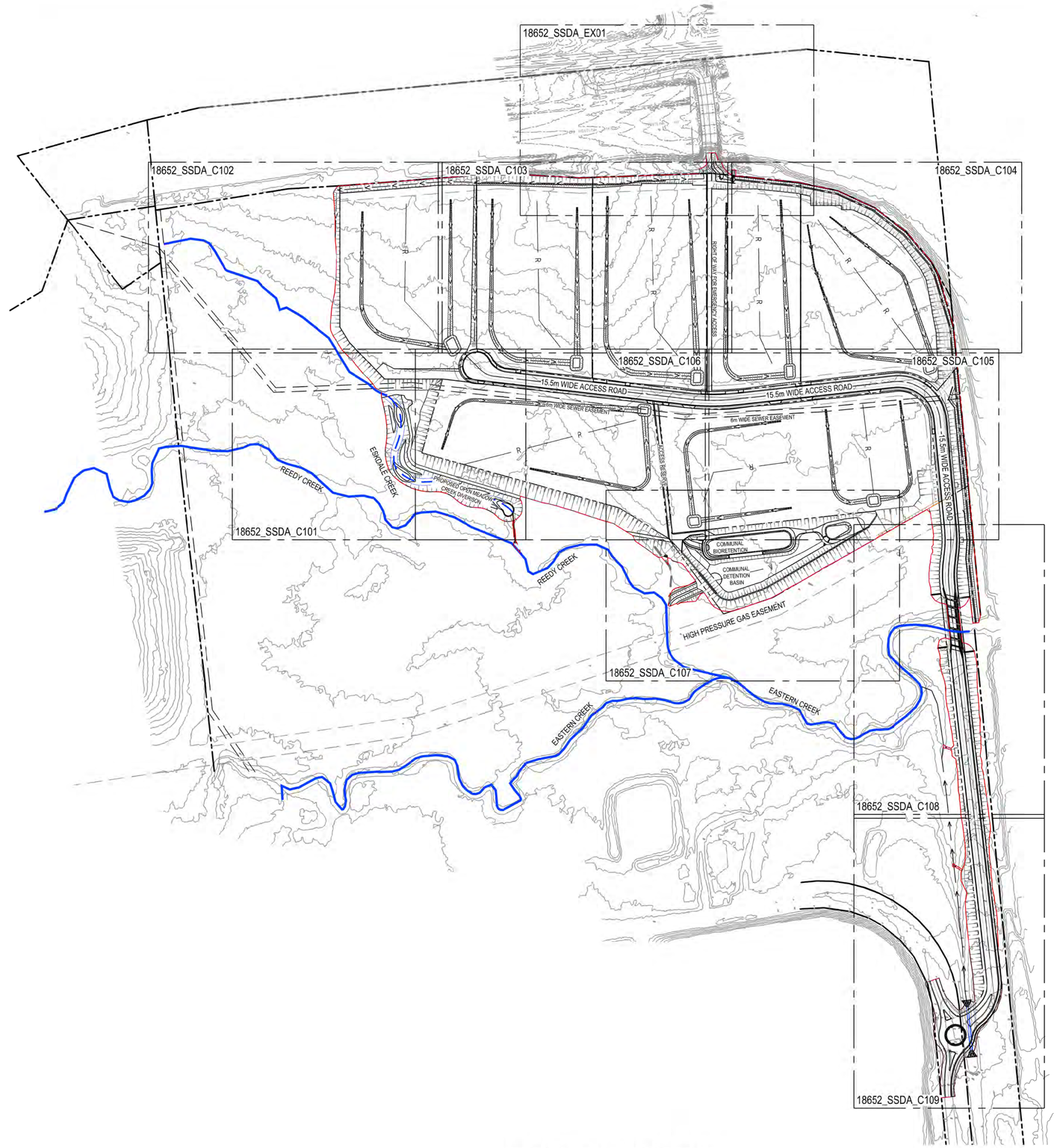
DATE May, 2020 **DRAWING NUMBER** 10935_MP100[P9]

nettletontribe

May 13, 2020 - 9:40pm N:\10935-Lighthouse Interchange\2 AutoCAD\10935_MP100 - CONCEPT MASTERPLAN.dwg

Appendix B

Road Construction Plans



LEGEND

- PROPOSED LIMIT OF WORK
- SITE/ LOT BOUNDARY
- PROPOSED RIDGE LINE
- PROPOSED VALLEY LINE
- PROPOSED SUBSOIL LINE
- PROPOSED JUNCTION PITS
- PROPOSED SURFACE INLET PITS
- PROPOSED LINTEL ONGRADE & SAG PITS
- PROPOSED PIT TAG (LINE LETTER / PIT NUMBER)
- EXISTING STORMWATER PIPE
- PROPOSED STORMWATER PIPE
- PROPOSED BATTER LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED COLLECTION LINE
- PROPOSED RETAINING WALL
- PROPOSED DESIGN SPOT LEVEL
- PROPOSED CATCH DRAIN
- PROPOSED FLUSHING POINT (FP)
- PROPOSED INTERMEDIATE RISER (IR)
- PROPOSED CULVERT
- PROPOSED PERMEABLE PIPE

0 50 100 150 200 250 300m
60 40 20
SCALE 1:3000

GENERAL ARRANGEMENT PLAN

SCALE 1:3000

ISSUED FOR APPROVAL

Western Sydney Parklands Trust

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR APPROVAL	IK	NW	21.01.2020
04	ISSUED FOR APPROVAL	IK	NW	13.12.2019
03	ISSUED FOR APPROVAL	MS	NW	09.04.2019
02	ISSUED FOR CO-ORDINATION	IK	NW	05.04.2019
01	PRELIMINARY	IK	NW	29.03.2019

Client: WESTERN SYDNEY PARKLANDS TRUST

NETTLETONTRIBE

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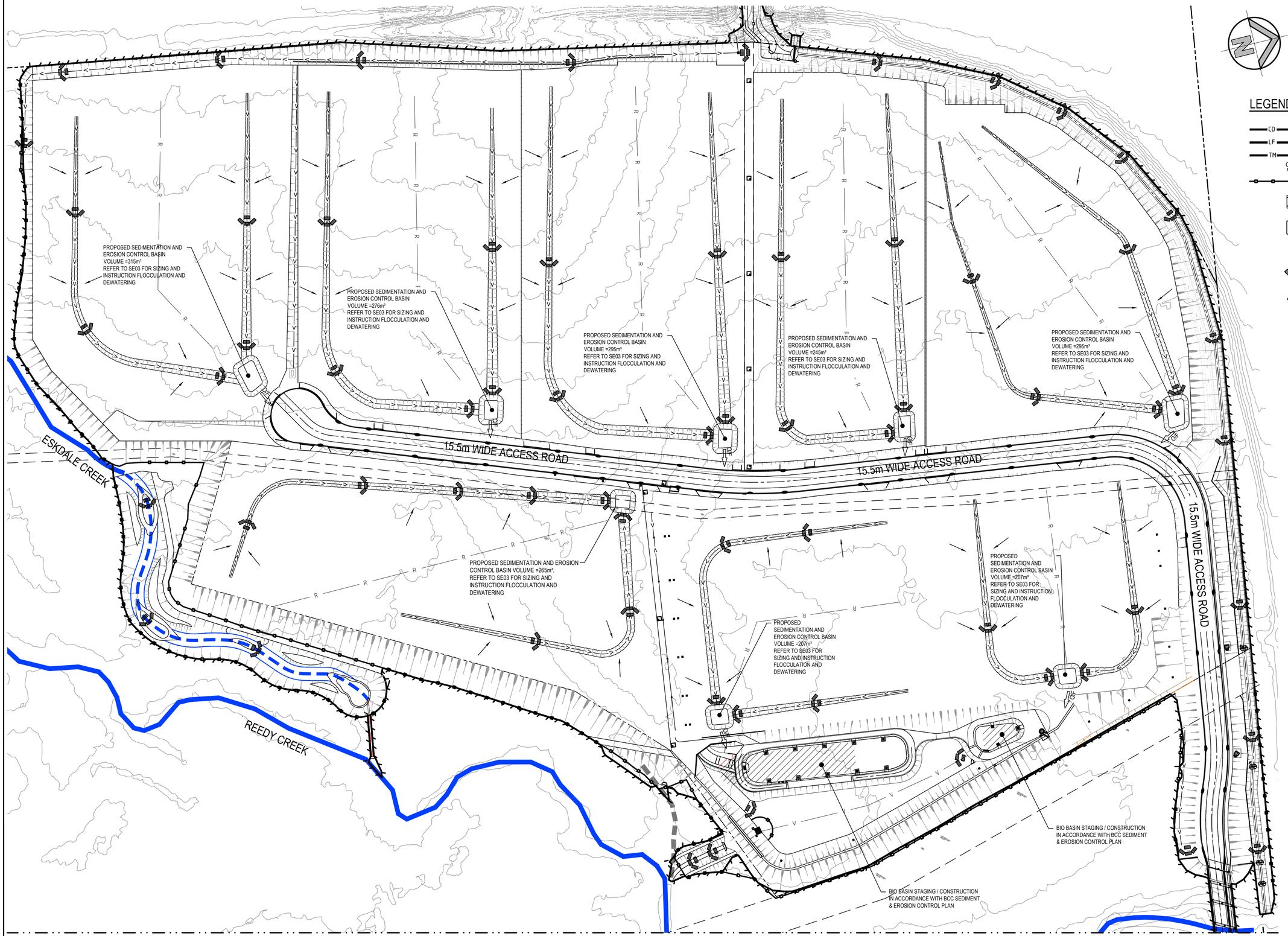
Project: LIGHT HORSE INTERCHANGE BUSINESS HUB
EASTERN CREEK, NSW (SSD9667)

Title: GENERAL ARRANGEMENT PLAN

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:3000

Drawing number: 18652_SSDA_C100

Revision: 05



LEGEND

- CD CD — CATCH DIVERSION DRAIN
- LF LF — LOW FLOW DIVERSION DRAIN
- TM TM — TRAFFIC MANOEUVRING
- OF — OVERLAND FLOW PATH
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- PROPOSED HAYBALE FILTER
- GEOTEXTILE INLET FILTER
- PROPOSED MESH & GRAVEL INLET FILTER

SEDIMENT & EROSION CONTROL NOTES

- ALL SEDIMENT CONTROL DEVICES ARE TO BE CONSTRUCTED, PLACED AND MAINTAINED IN ACCORDANCE WITH BLACKTOWN CITY COUNCIL SPECIFICATIONS AND LANDCOM'S "SOIL AND CONSTRUCTION" MANUAL.
- ALL PERIMETER & SILTATION CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN EARTH WORKS AND/OR CLEARING.
- THE SEDIMENT & EROSION CONTROL PLAN MAY REQUIRE FUTURE ADJUSTMENT TO REFLECT CONSTRUCTION STAGING. IT IS ALSO THE CONTRACTORS RESPONSIBILTY TO PREPARE THEIR OWN SEDIMENT AND EROSION CONTROL PLAN WHICH SUITS THE DESIGNED CONSTRUCTION STAGING.
- FILTRATION BUFFER ZONES ARE TO BE FENCED OFF AND ACCESS PROHIBITED TO ALL PLANT AND MACHINERY.
- ALL TEMPORARY EARTH BERMS, DIVERSIONS & SILT DAM EMBANKMENTS ARE TO BE MACHINE COMPACTED, SEEDED & MULCHED FOR TEMPORARY VEGETATION COVER AS SOON AS THEY HAVE BEEN FORMED.
- ALL SEDIMENT TRAPPING STRUCTURES AND DEVICES ARE TO BE INSPECTED AFTER STORMS FOR STRUCTURAL DAMAGE OR CLOGGING. TRAPPED MATERIAL IS TO BE REMOVED TO A SAFE LOCATION.
- ALL TOPSOIL IS TO BE STOCKPILED ON SITE FOR REUSE (AWAY FROM TREES AND DRAINAGE LINES). MEASURES SHALL BE APPLIED TO PREVENT EROSION OF THE STOCKPILES.
- ALL EARTHWORK AREAS SHALL BE ROLLED EACH EVENING TO SEAL THE EARTHWORKS.
- ALL FILLS ARE TO BE LEFT WITH A LIP AT THE TOP OF THE SLOPE AT THE END. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND STRAW MULCHED WITHIN 14 DAYS OF COMPLETION OF FORMATION U.N.O. BY LANDSCAPE ARCHITECTS.
- UPON COMPLETION OF ALL EARTHWORKS OR AS DIRECTED BY COUNCIL SOIL CONSERVATION TREATMENTS SHALL BE APPLIED SO AS TO RENDER AREAS THAT HAVE BEEN DISTURBED, EROSION PROOF WITHIN 14 DAYS.
- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.

NOTE:

- THE SEDIMENT AND EROSION MEASURES SHOWN ON THIS PLAN ARE FOR THE OVERALL SUBDIVISION EARTHWORKS STAGE AND ARE GENERAL IN NATURE. SPECIFIC DETAILS WILL NEED TO BE PROVIDED AT THE DA STAGE FOR EACH INDIVIDUAL PAD.
- ENSURE ALL GRATED PITS ARE PROTECTED WITH MESH AND GRAVEL INLET FILTERS.

0 25 50 75 100 125m
25 15 5
SCALE 1:1250

SEDIMENT AND EROSION CONTROL PLAN

SCALE 1:1250

ISSUED FOR APPROVAL

Western Sydney Parklands Trust

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR APPROVAL	IK	NW	21.01.2020
04	ISSUED FOR APPROVAL	IK	NW	13.12.2019
03	ISSUED FOR APPROVAL	MS	NW	09.04.2019
02	ISSUED FOR CO-ORDINATION	IK	NW	05.04.2019
01	ISSUED PRELIMINARY	IK	NW	29.03.2019

Client: WESTERN SYDNEY PARKLANDS TRUST

NETTLETONTRIBE

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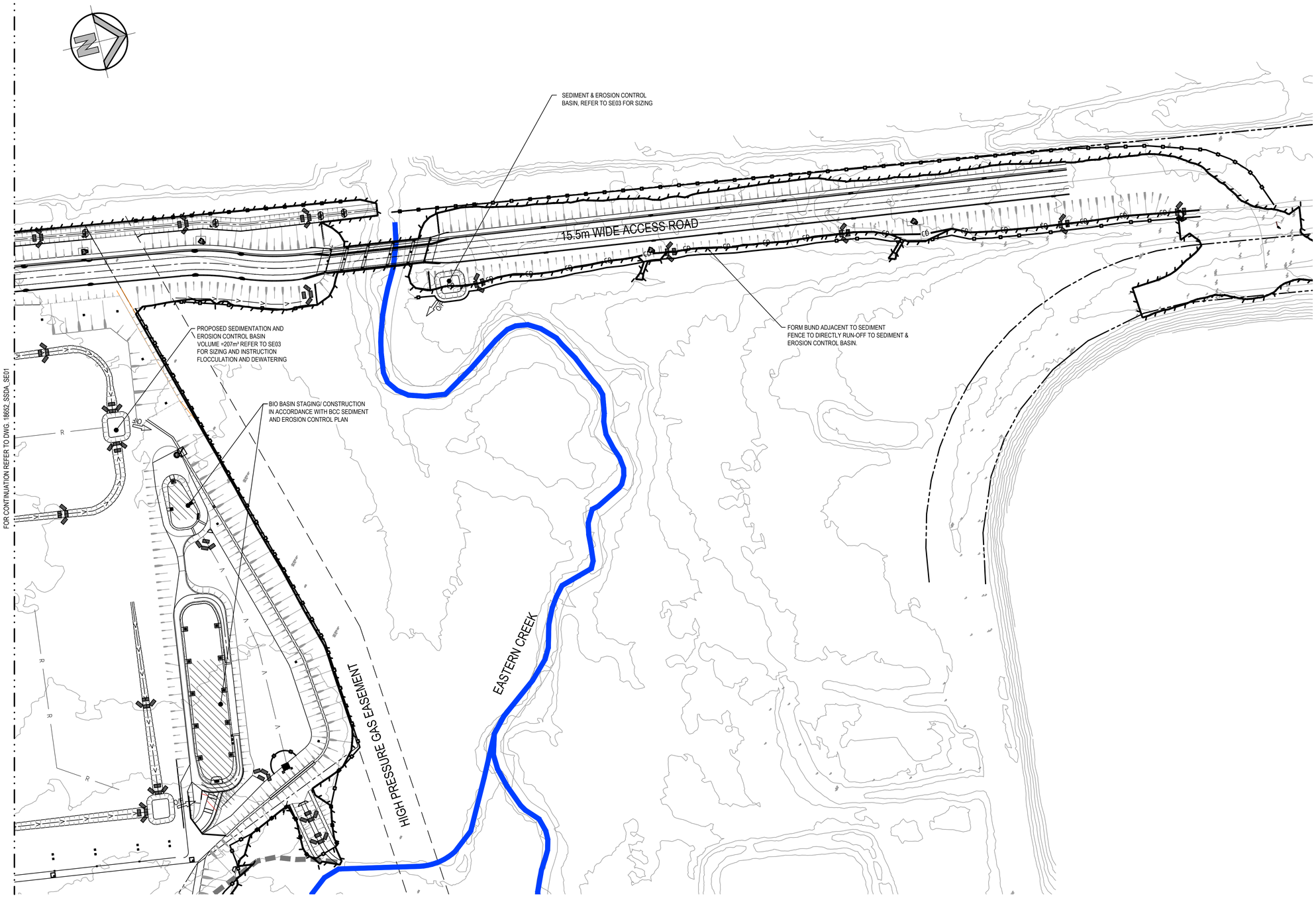
Project: LIGHT HORSE INTERCHANGE BUSINESS HUB
EASTERN CREEK, NSW (SSD9667)

Title: SEDIMENT AND EROSION CONTROL PLAN
SHEET 1 OF 2

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:1250

Drawing number: 18652_SSDA_SE01

Revision: 05



LEGEND

- CATCH DIVERSION DRAIN
- LOW FLOW DIVERSION DRAIN
- TRAFFIC MANOEUVRING
- OVERLAND FLOW PATH
- PROPOSED SEDIMENTATION FENCE
- PROPOSED VEHICLE SHAKER GRID
- PROPOSED STABILISED SITE ACCESS
- PROPOSED STOCKPILE LOCATION
- PROPOSED HAYBALE FILTER
- GEOTEXTILE INLET FILTER
- PROPOSED MESH & GRAVEL INLET FILTER

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- EROSION AND SILT PROTECTION MEASURES ARE TO BE MAINTAINED AT ALL TIMES.

NOTE:

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- ENSURE ALL GRATED PITS ARE PROTECTED WITH MESH AND GRAVEL INLET FILTERS.

SEDIMENT AND EROSION CONTROL PLAN

SCALE 1:1250

0 25 50 75 100 125m

25 15 5

SCALE 1:1250

ISSUED FOR APPROVAL

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR APPROVAL	IK	NW	21.01.2020
04	ISSUED FOR APPROVAL	IK	NW	13.12.2019
03	ISSUED FOR APPROVAL	MS	NW	09.04.2019
02	ISSUED FOR CO-ORDINATION	IK	NW	05.04.2019
01	ISSUED PRELIMINARY	IK	NW	29.03.2019

Western Sydney Parklands Trust

Client: WESTERN SYDNEY PARKLANDS TRUST

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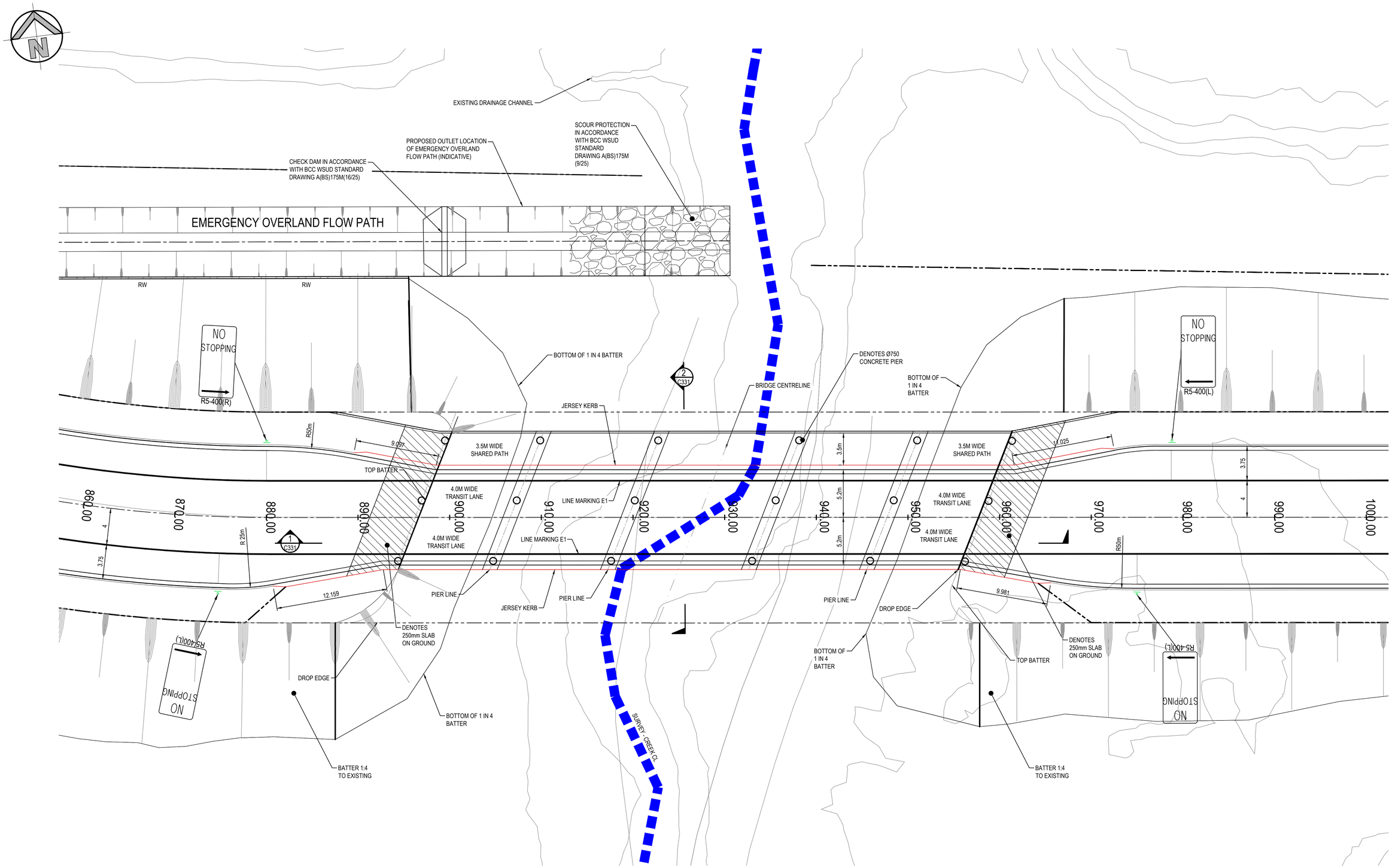
Project: LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)

Title: SEDIMENT AND EROSION CONTROL PLAN SHEET 2 OF 2

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:1250

Drawing number: 18652_SSDA_SE02

Revision: 05



BRIDGE CONCEPT PLAN

SCALE 1:200

0 4 8 12 16 20m

4 3 2 1

SCALE 1:200

ISSUED FOR APPROVAL

Western Sydney Parklands Trust

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR APPROVAL	IK	NW	21.01.2020
04	ISSUED FOR APPROVAL	IK	NW	13.12.2019
03	ISSUED FOR APPROVAL	MS	NW	09.04.2019
02	ISSUED FOR CO-ORDINATION	IK	NW	05.04.2019
01	PRELIMINARY	IK	NW	04.04.2019

Client: WESTERN SYDNEY PARKLANDS TRUST

Architect: NETTLETONTRIBE

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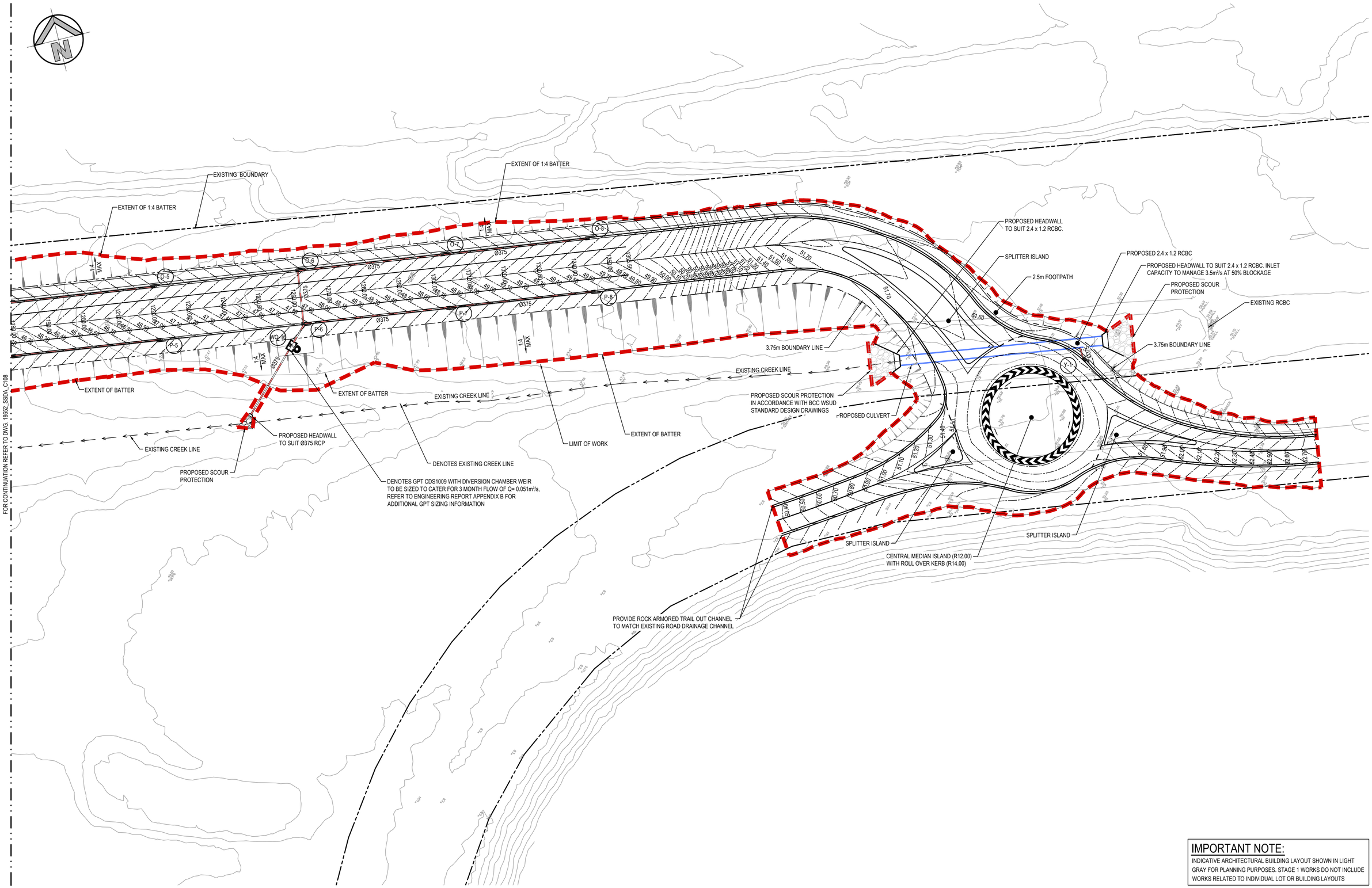
Project: LIGHT HORSE INTERCHANGE BUSINESS HUB EASTERN CREEK, NSW (SSD9667)

Title: BRIDGE CONCEPT PLAN

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:200

Drawing number: 18652_SSDA_C330

Revision: 05



0 10 20 30 40 50m

10 8 6 4 2

SCALE 1:500

DETAIL PLAN

SCALE: 1:500

IMPORTANT NOTE:

INDICATIVE ARCHITECTURAL BUILDING LAYOUT SHOWN IN LIGHT GRAY FOR PLANNING PURPOSES. STAGE 1 WORKS DO NOT INCLUDE WORKS RELATED TO INDIVIDUAL LOT OR BUILDING LAYOUTS

ISSUED FOR APPROVAL

Western Sydney Parklands Trust

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
05	ISSUED FOR APPROVAL	IK	NW	21.01.2020
04	ISSUED FOR APPROVAL	IK	NW	13.12.2019
03	ISSUED FOR APPROVAL	MS	NW	09.04.2019
02	ISSUED FOR CO-ORDINATION	IK	NW	05.04.2019
01	PRELIMINARY	IK	NW	29.03.2019

Client: WESTERN SYDNEY PARKLANDS TRUST

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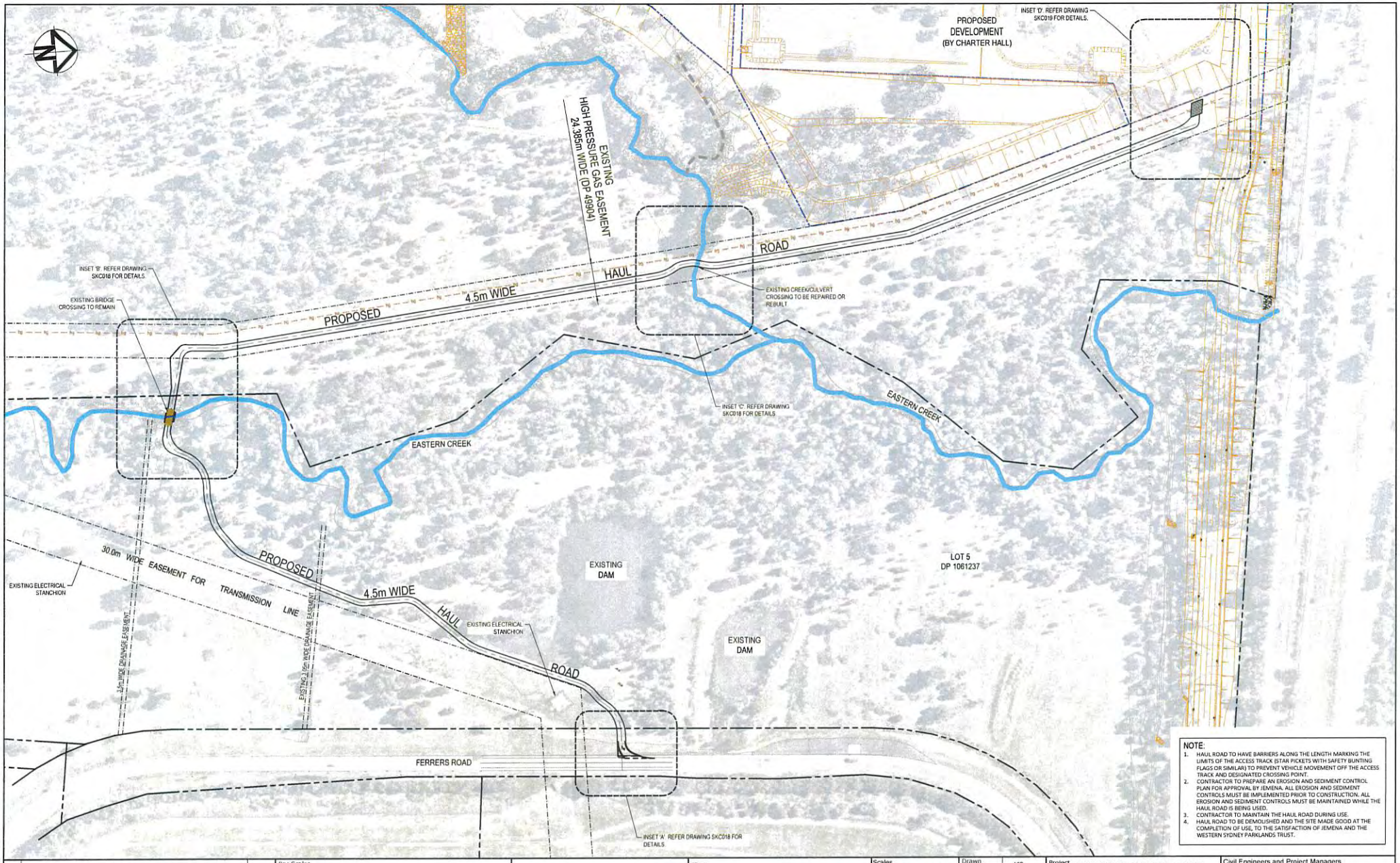
Project: LIGHT HORSE INTERCHANGE BUSINESS HUB
EASTERN CREEK, NSW (SSD9667)

Title: DETAIL PLAN
SHEET 9 OF 9

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	1:500

Drawing number: 18652_SSDA_C109

Revision: 05



NOTE:
1. HAUL ROAD TO HAVE BARRIERS ALONG THE LENGTH MARKING THE LIMITS OF THE ACCESS TRACK (STAR PICKETS WITH SAFETY BUNTING FLAGS OR SIMILAR) TO PREVENT VEHICLE MOVEMENT OFF THE ACCESS TRACK AND DESIGNATED CROSSING POINT.
2. CONTRACTOR TO PREPARE AN EROSION AND SEDIMENT CONTROL PLAN FOR APPROVAL BY JEMENA. ALL EROSION AND SEDIMENT CONTROLS MUST BE IMPLEMENTED PRIOR TO CONSTRUCTION. ALL EROSION AND SEDIMENT CONTROLS MUST BE MAINTAINED WHILE THE HAUL ROAD IS BEING USED.
3. CONTRACTOR TO MAINTAIN THE HAUL ROAD DURING USE.
4. HAUL ROAD TO BE DEMOLISHED AND THE SITE MADE GOOD AT THE COMPLETION OF USE, TO THE SATISFACTION OF JEMENA AND THE WESTERN SYDNEY PARKLANDS TRUST.

Issue	Description	Date
P2	ISSUED FOR INFORMATION	27-01-22
P1	ISSUED FOR INFORMATION	20-01-22

Bar Scales

0 25 50 75 100 125m

1 : 1250 @ A1 1 : 2500 @ A3

100mm on Original

Client: Charter Hall

Scales	1 : 1250 @ A1	Drawn	ASD
		Designed	ASD
Grid	MGA2020	Checked	DS
Height Datum	AHD	Approved	

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Project: LIGHTHORSE INTERCHANGE BUSINESS HUB EASTERN CREEK

Title: PROPOSED HAUL ROAD PLAN

Civil Engineers and Project Managers
at&l
Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9923 1055
www.atl.net.au
info@atl.net.au

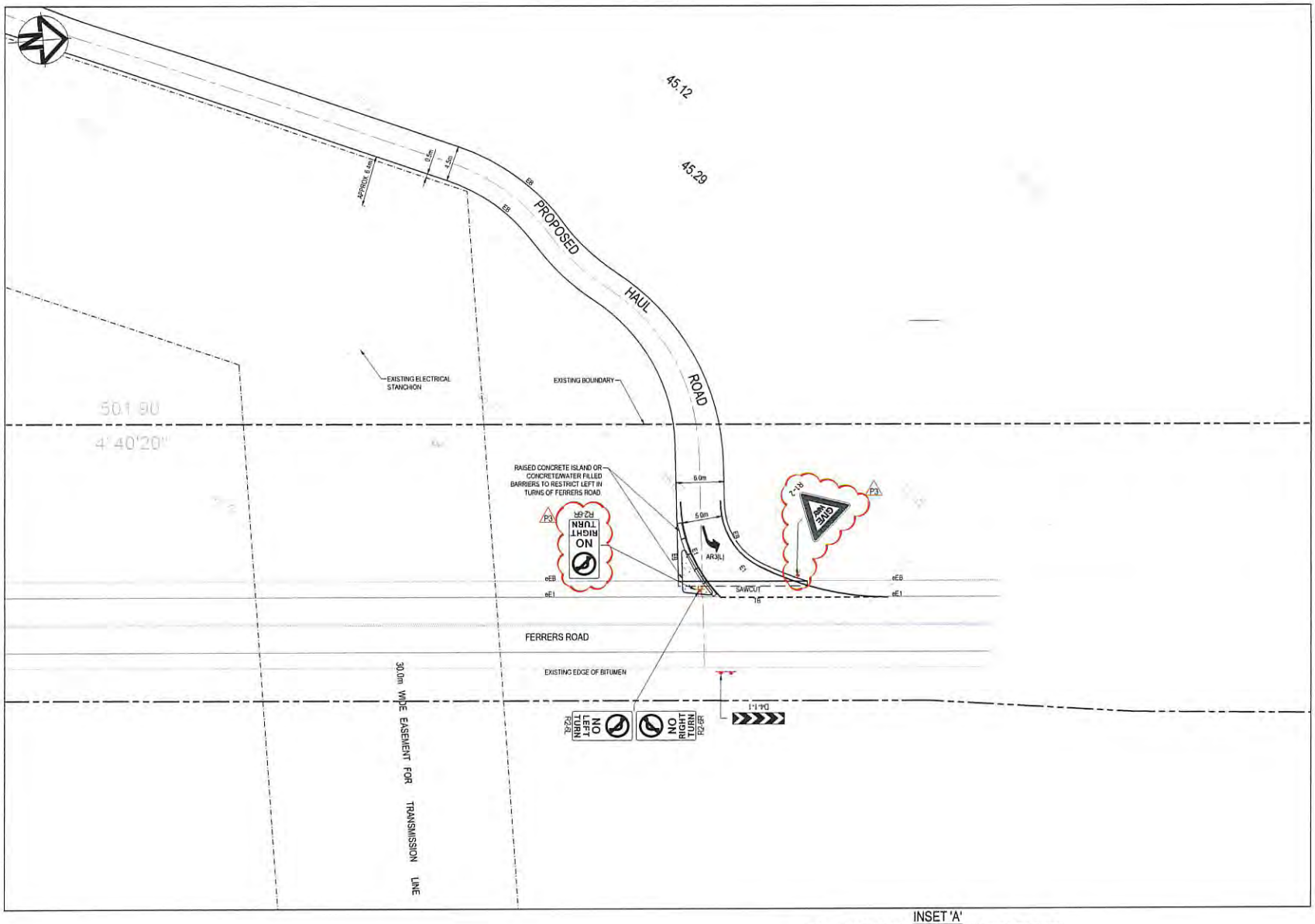
Status: FOR INFORMATION ONLY NOT FOR CONSTRUCTION

A1

Project - Drawing No.: 20-795-SKC018

Issue: P2

F:\20-795 Lighthorse\6.0 Drgs\Civil\Sketches\20-795-SKC018-PROPOSED HAUL ROAD PLAN.dwg



INSET 'A'
(SYD MOTORSPORT PARK LAYOUT REMOVED)
SCALE 1:250

LEGEND

- EXISTING BOUNDARY
- EXISTING EASEMENT
- SC — PAVEMENT SAWCUT
- EB — EDGE OF BITUMEN
- eEB — EXISTING EDGE OF BITUMEN
- PROPOSED SIGN POST LOCATION
- E1 — LINEMARKING - EDGE LINE
- eE1 — LINEMARKING - EXISTING EDGE LINE
- TB — LINEMARKING - GIVE WAY LINE
- AR3(L) — LINEMARKING - PAVEMENT ARROW

NOTE:
REFER TO DRAWING SKC017 FOR OVERALL HAUL ROAD LAYOUT

Issue	Description	Date
P3	ISSUED FOR INFORMATION	02-02-22
P2	ISSUED FOR INFORMATION	27-01-22
P1	ISSUED FOR INFORMATION	20-01-22

100mm on Original

Bar Scales
0 5 10 15 20 25m
1 : 250 @ A1 1 : 500 @ A3

Client: Charter Hall

Scales	1 : 250 @ A1	Drawn	ASD
		Designed	ASD
Grid	MGA2020	Checked	DS
Height Datum	AHD	Approved	

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Project: LIGHTHORSE INTERCHANGE BUSINESS HUB EASTERN CREEK

Title: PROPOSED HAUL ROAD INSET PLAN

Civil Engineers and Project Managers
at&l
Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel 02 9439 1777
Fax 02 9923 1055
www.atl.net.au
info@atl.net.au

Status: FOR INFORMATION ONLY NOT FOR CONSTRUCTION
A1

Project - Drawing No.: 20-795-SKC019
Issue: P3

F:\20-795 Lighthorse\6.0 Drgs\Civil\Sketches\20-795-SKC020-PROPOSED HAUL ROAD INSET PLAN.dwg

RETAIN EXISTING SHOULDER FOR LARGER EMERGENCY VEHICLE TURNING MANEUVERS

LINE MARKING FOR 3.5m SHARED PATH

EXISTING EDGE OF BITUMEN

EXISTING EDGE OF BITUMEN

EXISTING BRIDGE

3.5m

EXISTING EDGE OF BITUMEN

RETAIN EXISTING FENCES AND GATE

3.5m

TRANSITION TO EXISTING PAVEMENT TO FUTURE DETAILS

EXISTING BRIDGE 4.8m CLEARANCE APPROXIMATELY

CONNECT PROPOSED SHARED PATH TO EXISTING CYCLEWAY.

FENCE SECTION ALTERED TO ALLOW ACCESS TO AND FROM M7 CYCLEWAY, REFER INSET

LINE MARKING FOR 3.5m SHARED PATH

EXISTING BRIDGE 4.8m CLEARANCE APPROXIMATELY

3.5m

EXISTING BRIDGE 4.8m CLEARANCE APPROXIMATELY

EXISTING BRIDGE

LIMITS OF WORK

EXTEND EXISTING ACCESS WAY TO INTERNAL RIGHT OF WAY

TRANSITION TO EXISTING PAVEMENT TO FUTURE DETAILS

TRANSITION SHARED PATH TO SOUTH SIDE OF EXISTING ACCESS WAY EXTENSION

INSTALL LOW HEIGHT CONVENTIONAL GATE FOR ACCESS BY M7 SERVICE VEHICLE ONLY.

MINOR RETAINING WALL TO ACCESS WAY AND SHARED PATH, REFER TO DETAIL

CONNECT 3.5M SHARED PATH TO INTERNAL SHARED PATH PROVIDE BOLLARD TREATMENT TO PREVENT VEHICLE ACCESS.

NEW "NO ACCESS" & "AUTHORISED VEHICLES EXCEPTED" SIGNPOSTING

LINE DENOTES HANDRAIL TO ARCHITECT'S SPECIFICATIONS

7.6m WIER WITH CONCRETE CUT OF WALL. WEIR LEVEL TBC

PROPOSED TRAPEZOIDAL CHANNEL
BASE WIDTH = 2m
BATTERS = 1 IN 4 MAX.
TOP WIDTH = 7.6m
DEPTH = 0.7m
MIN. SLOPE = 0.5%

NEW "CAUTION, SHARED ZONE" SIGN

LOCKABLE GATE

NEW "CAUTION, SHARED ZONE" SIGN

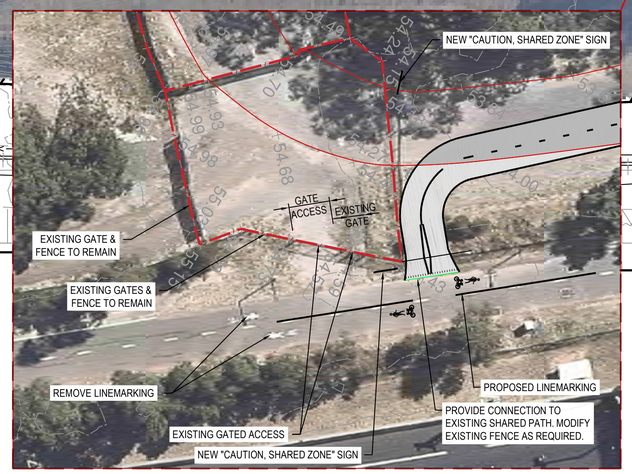
6m WIDE RIGHT OF WAY

FOR CONTINUATION REFER TO DWG. 18652_SSDA_C103

FOR CONTINUATION REFER TO DWG. 18652_SSDA_C104

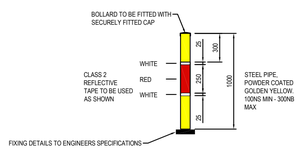
EXTERNAL WORKS PLAN

SCALE: 1:500



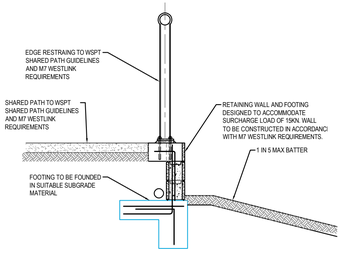
INSET

SCALE: 1:250



BOLLARD MARKING DETAIL

SCALE: 1:20



RETAINED EDGE - SHARED PATH

SCALE: 1:20

SCALE 1:250

SCALE 1:500

ISSUED FOR APPROVAL

REVISION	AMENDMENT	DRAWN	DESIGNED	DATE
07	ISSUED FOR APPROVAL	IK	NW	22.04.2020
06	ISSUED FOR APPROVAL	IK	NW	21.01.2020
05	ISSUED FOR APPROVAL	IK	NW	13.12.2019
04	ISSUED FOR APPROVAL	MS	NW	15.11.2019
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01	PRELIMINARY	IK	NW	29.03.2019

Western Sydney Parklands Trust

Client: WESTERN SYDNEY PARKLANDS TRUST

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henry&hymas

Project: LIGHT HORSE INTERCHANGE BUSINESS HUB
EASTERN CREEK, NSW (SSD9667)

Title: EXTERNAL WORKS PLAN
WALLGROVE ROAD

Drawn	Designed	Date
M.Stimova	L.Caha	FEB 2019
Checked	Approved	Scale @A1
N.Wetzlar	A.Francis	AS NOTED

Drawing number: 18652_SSDA_EX01

Revision: 07

Appendix C

SIDRA Results

MOVEMENT SUMMARY

Site: 2 [Brabham Dr & GWH AM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Brabham Drive														
1	L2	64	36.1	67	36.1	0.340	39.7	LOS C	10.2	82.9	0.77	0.69	0.77	32.2
2	T1	347	9.9	365	9.9	0.340	34.5	LOS C	11.0	83.4	0.77	0.67	0.77	39.3
3	R2	113	12.0	119	12.0	* 0.695	75.1	LOS F	8.3	64.0	1.00	0.84	1.08	25.5
Approach		524	13.6	552	13.6	0.695	43.9	LOS D	11.0	83.4	0.82	0.71	0.84	34.5
East: Great Western Highway														
4	L2	96	11.3	101	11.3	0.100	16.4	LOS B	2.4	18.6	0.42	0.70	0.42	50.8
5	T1	462	11.9	486	11.9	* 0.697	65.5	LOS E	11.0	85.0	1.00	0.84	1.05	30.8
6	R2	202	8.2	213	8.2	0.707	78.9	LOS F	7.5	56.3	1.00	0.83	1.11	28.1
Approach		760	10.8	800	10.8	0.707	62.8	LOS E	11.0	85.0	0.93	0.82	0.99	31.4
North: Doonside Road														
7	L2	331	6.5	348	6.5	0.716	44.9	LOS D	29.0	213.9	0.90	0.85	0.90	38.2
8	T1	600	6.1	632	6.1	* 0.716	33.8	LOS C	29.0	213.9	0.83	0.77	0.83	38.9
9	R2	268	19.3	282	19.3	0.527	62.3	LOS E	8.7	71.0	0.94	0.80	0.94	29.4
Approach		1199	9.2	1262	9.2	0.716	43.2	LOS D	29.0	213.9	0.87	0.80	0.87	36.2
West: Great Western Highway														
10	L2	433	9.1	456	9.1	0.391	11.5	LOS A	8.3	62.6	0.35	0.71	0.35	54.8
11	T1	696	6.2	733	6.2	0.726	57.0	LOS E	17.8	131.2	0.98	0.84	1.00	33.6
12	R2	362	8.5	381	8.5	* 0.692	69.3	LOS E	12.7	95.3	1.00	0.84	1.03	25.3
Approach		1491	7.6	1569	7.6	0.726	46.8	LOS D	17.8	131.2	0.80	0.80	0.82	35.2
All Vehicles		3974	9.5	4183	9.5	0.726	48.4	LOS D	29.0	213.9	0.85	0.79	0.87	34.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brabham Drive												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.7	219.0	0.94
North: Doonside Road												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	235.3	222.3	0.94
West: Great Western Highway												

P4	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	245.7	235.9	0.96
All Pedestrians		150	158	64.3	LOS F	0.2	0.2	0.96	0.96	237.9	225.7	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 2 [Brabham Dr & GWH PM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Brabham Drive														
1	L2	170	9.4	179	9.4	0.818	58.4	LOS E	29.6	216.9	0.99	0.92	1.06	27.9
2	T1	611	2.6	643	2.6	* 0.818	52.7	LOS D	29.6	216.9	0.97	0.91	1.05	32.2
3	R2	102	5.8	107	5.8	0.702	77.0	LOS F	7.6	55.6	1.00	0.84	1.10	25.5
Approach		883	4.3	929	4.3	0.818	56.6	LOS E	29.6	216.9	0.98	0.90	1.06	30.5
East: Great Western Highway														
4	L2	132	9.6	139	9.6	0.130	12.6	LOS A	2.5	19.3	0.33	0.68	0.33	54.1
5	T1	1074	5.2	1131	5.2	0.736	50.2	LOS D	23.5	172.0	0.97	0.85	0.98	36.0
6	R2	467	2.9	492	2.9	* 0.822	74.5	LOS F	17.5	125.7	1.00	0.90	1.16	29.4
Approach		1673	4.9	1761	4.9	0.822	54.0	LOS D	23.5	172.0	0.93	0.85	0.98	34.5
North: Doonside Road														
7	L2	300	7.2	316	7.2	0.697	49.7	LOS D	24.5	181.7	0.93	0.85	0.93	36.2
8	T1	478	5.6	503	5.6	0.697	35.7	LOS C	24.5	181.7	0.82	0.76	0.82	38.1
9	R2	405	8.3	426	8.3	* 0.798	65.7	LOS E	14.1	105.5	0.95	0.88	1.10	29.2
Approach		1183	6.9	1245	6.9	0.798	49.5	LOS D	24.5	181.7	0.89	0.82	0.94	34.1
West: Great Western Highway														
10	L2	358	11.6	377	11.6	0.362	19.9	LOS B	12.1	93.0	0.55	0.75	0.55	47.6
11	T1	654	3.4	688	3.4	* 0.816	64.6	LOS E	18.1	130.2	0.99	0.88	1.10	31.2
12	R2	129	20.7	136	20.7	0.734	84.4	LOS F	5.0	41.1	1.00	0.83	1.20	22.2
Approach		1141	7.9	1201	7.9	0.816	52.8	LOS D	18.1	130.2	0.85	0.84	0.94	33.6
All Vehicles		4880	6.0	5137	6.0	0.822	53.1	LOS D	29.6	216.9	0.91	0.85	0.97	33.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Brabham Drive												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.7	219.0	0.94
North: Doonside Road												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	235.3	222.3	0.94
West: Great Western Highway												

P4	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	245.7	235.9	0.96
All Pedestrians		150	158	64.3	LOS F	0.2	0.2	0.96	0.96	237.9	225.7	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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MOVEMENT SUMMARY

Site: 1 [Wallgrove Rd & GWH AM

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wallgrove Road														
1	L2	290	30.0	305	30.0	0.269	10.8	LOS A	4.8	42.4	0.30	0.67	0.30	61.4
2	T1	443	5.0	466	5.0	0.422	44.0	LOS D	12.8	93.2	0.86	0.75	0.86	36.7
3	R2	488	5.0	514	5.0	* 0.836	74.3	LOS F	18.5	135.0	1.00	0.92	1.17	24.2
Approach		1221	10.9	1285	10.9	0.836	48.2	LOS D	18.5	135.0	0.78	0.80	0.85	35.9
East: Great Western Highway														
4	L2	59	5.0	62	5.0	0.059	16.2	LOS B	1.5	10.6	0.41	0.68	0.41	48.4
5	T1	611	5.0	643	5.0	0.554	52.9	LOS D	13.7	100.2	0.94	0.78	0.94	40.4
6	R2	62	5.0	65	5.0	0.182	71.0	LOS F	2.1	15.3	0.95	0.73	0.95	24.4
Approach		732	5.0	771	5.0	0.554	51.5	LOS D	13.7	100.2	0.90	0.77	0.90	39.3
North: Rooty Hills Road South														
7	L2	354	15.0	373	15.0	0.642	46.5	LOS D	21.2	167.4	0.89	0.84	0.89	29.4
8	T1	635	2.5	668	2.5	* 0.841	63.9	LOS E	23.7	169.6	1.00	0.96	1.14	31.0
9	R2	66	2.5	69	2.5	0.444	73.6	LOS F	4.7	33.5	0.99	0.77	0.99	34.8
Approach		1055	6.7	1111	6.7	0.841	58.7	LOS E	23.7	169.6	0.96	0.91	1.05	30.8
West: Great Western Highway														
10	L2	10	5.0	11	5.0	0.008	9.4	LOS A	0.1	0.8	0.21	0.63	0.21	62.7
11	T1	1076	2.5	1133	2.5	* 0.846	49.8	LOS D	38.0	271.4	0.99	0.94	1.06	41.6
12	R2	470	5.0	495	5.0	* 0.715	40.0	LOS C	10.6	77.2	0.99	0.84	1.02	46.8
Approach		1556	3.3	1638	3.3	0.846	46.6	LOS D	38.0	271.4	0.99	0.91	1.04	43.3
All Vehicles		4564	6.4	4804	6.4	0.846	50.6	LOS D	38.0	271.4	0.91	0.86	0.97	37.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wallgrove Road												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.8	224.3	0.95
P1B	Slip/ Bypass	50	53	37.6	LOS D	0.1	0.1	0.92	0.92	194.8	204.3	1.05

East: Great Western Highway												
P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	241.1	229.9	0.95
P2B	Slip/ Bypass	50	53	37.6	LOS D	0.1	0.1	0.92	0.92	194.8	204.3	1.05
North: Rooty Hills Road South												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.0	223.3	0.95
West: Great Western Highway												
P4	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	239.3	227.5	0.95
P4B	Slip/ Bypass	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	221.4	204.3	0.92
All Pedestrians		350	368	56.6	LOS E	0.2	0.2	0.95	0.95	223.5	216.8	0.97

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 1 [Wallgrove Rd & GWH PM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Wallgrove Road														
1	L2	394	10.0	415	10.0	0.423	25.5	LOS B	14.9	113.2	0.61	0.78	0.61	55.2
2	T1	690	5.0	726	5.0	* 0.841	63.2	LOS E	25.6	187.0	1.00	0.95	1.13	30.8
3	R2	251	5.0	264	5.0	* 0.859	84.8	LOS F	9.9	72.6	1.00	0.94	1.32	22.2
Approach		1335	6.5	1405	6.5	0.859	56.1	LOS D	25.6	187.0	0.89	0.90	1.01	35.0
East: Great Western Highway														
4	L2	247	10.0	260	10.0	0.243	17.2	LOS B	7.0	53.3	0.46	0.72	0.46	46.5
5	T1	1381	5.0	1454	5.0	* 0.839	50.2	LOS D	34.9	255.0	0.97	0.90	1.03	41.9
6	R2	321	5.0	338	5.0	0.507	63.1	LOS E	10.5	76.5	0.95	0.81	0.95	26.2
Approach		1949	5.6	2052	5.6	0.839	48.1	LOS D	34.9	255.0	0.90	0.86	0.94	39.4
North: Rooty Hills Road South														
7	L2	66	5.0	69	5.0	0.085	28.2	LOS B	2.6	19.1	0.59	0.70	0.59	37.1
8	T1	514	5.0	541	5.0	0.627	52.5	LOS D	16.7	121.9	0.96	0.81	0.96	34.2
9	R2	106	5.0	112	5.0	0.726	77.5	LOS F	7.9	57.8	1.00	0.85	1.12	33.9
Approach		686	5.0	722	5.0	0.726	54.0	LOS D	16.7	121.9	0.93	0.81	0.95	34.3
West: Great Western Highway														
10	L2	17	10.0	18	10.0	0.017	14.8	LOS B	0.4	2.9	0.37	0.65	0.37	58.7
11	T1	785	5.0	826	5.0	0.666	43.2	LOS D	24.1	176.0	0.92	0.81	0.92	44.4
12	R2	486	20.0	512	20.0	* 0.847	76.0	LOS F	18.7	153.5	1.00	0.92	1.20	34.4
Approach		1288	10.7	1356	10.7	0.847	55.2	LOS D	24.1	176.0	0.94	0.85	1.02	39.7
All Vehicles		5258	7.0	5535	7.0	0.859	52.7	LOS D	34.9	255.0	0.91	0.86	0.98	37.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Wallgrove Road												
P1	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.8	224.3	0.95
P1B	Slip/ Bypass	50	53	31.6	LOS D	0.1	0.1	0.92	0.92	188.8	204.3	1.08
East: Great Western Highway												

P2	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	241.1	229.9	0.95
P2B	Slip/ Bypass	50	53	31.6	LOS D	0.1	0.1	0.92	0.92	188.8	204.3	1.08
North: Rooty Hills Road South												
P3	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	236.0	223.3	0.95
West: Great Western Highway												
P4	Full	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	239.3	227.5	0.95
P4B	Slip/ Bypass	50	53	64.3	LOS F	0.2	0.2	0.96	0.96	221.4	204.3	0.92
All Pedestrians		350	368	54.9	LOS E	0.2	0.2	0.95	0.95	221.7	216.8	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 3 [Brabham Dr & Huntingwood Dr AM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Brabham Drive														
1	L2	123	18.7	129	18.7	0.355	4.6	LOS A	2.6	20.0	0.42	0.44	0.42	54.2
2	T1	553	8.7	582	8.7	0.355	4.4	LOS A	2.6	20.0	0.43	0.48	0.43	55.5
3	R2	255	9.0	268	9.0	0.355	10.2	LOS A	2.5	19.0	0.45	0.57	0.45	54.8
Approach		931	10.1	980	10.1	0.355	6.0	LOS A	2.6	20.0	0.43	0.50	0.43	55.1
East: Huntingwood Drive														
4	L2	90	18.9	95	18.9	0.339	7.2	LOS A	1.7	14.6	0.70	0.83	0.71	52.9
5	T1	49	34.7	52	34.7	0.339	7.9	LOS A	1.7	14.6	0.70	0.83	0.71	52.6
6	R2	62	40.3	65	40.3	0.339	13.9	LOS A	1.7	14.6	0.70	0.83	0.71	52.0
Approach		201	29.4	212	29.4	0.339	9.5	LOS A	1.7	14.6	0.70	0.83	0.71	52.6
North: Brabham Drive														
7	L2	383	10.4	403	10.4	0.487	6.2	LOS A	3.8	28.2	0.69	0.65	0.69	52.4
8	T1	649	5.1	683	5.1	0.487	6.6	LOS A	3.8	28.2	0.71	0.68	0.72	54.8
9	R2	24	16.7	25	16.7	0.487	12.9	LOS A	3.6	26.5	0.72	0.69	0.73	52.6
Approach		1056	7.3	1112	7.3	0.487	6.6	LOS A	3.8	28.2	0.70	0.67	0.71	53.9
West: Huntingwood Drive														
10	L2	36	52.8	38	52.8	0.324	8.9	LOS A	1.4	12.4	0.67	0.82	0.70	48.5
11	T1	93	19.4	98	19.4	0.324	7.5	LOS A	1.4	12.4	0.67	0.82	0.70	52.3
12	R2	65	24.6	68	24.6	0.324	13.5	LOS A	1.4	12.4	0.67	0.82	0.70	53.1
Approach		194	27.3	204	27.3	0.324	9.8	LOS A	1.4	12.4	0.67	0.82	0.70	52.0
All Vehicles		2382	11.9	2507	11.9	0.487	6.9	LOS A	3.8	28.2	0.59	0.63	0.60	54.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [Brabham Dr & Huntingwood Dr PM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Brabham Drive														
1	L2	113	21.2	119	21.2	0.443	6.1	LOS A	3.7	28.0	0.74	0.58	0.74	52.6
2	T1	682	4.4	718	4.4	0.443	5.9	LOS A	3.7	28.0	0.74	0.62	0.74	54.3
3	R2	115	12.2	121	12.2	0.443	12.2	LOS A	3.4	25.3	0.75	0.67	0.75	54.4
Approach		910	7.5	958	7.5	0.443	6.7	LOS A	3.7	28.0	0.74	0.62	0.74	54.1
East: Huntingwood Drive														
4	L2	256	4.7	269	4.7	0.865	15.1	LOS B	10.2	75.6	0.92	1.24	1.70	48.4
5	T1	160	6.3	168	6.3	0.865	15.3	LOS B	10.2	75.6	0.92	1.24	1.70	47.0
6	R2	219	9.1	231	9.1	0.865	21.1	LOS B	10.2	75.6	0.92	1.24	1.70	47.1
Approach		635	6.6	668	6.6	0.865	17.2	LOS B	10.2	75.6	0.92	1.24	1.70	47.7
North: Brabham Drive														
7	L2	81	28.4	85	28.4	0.304	5.1	LOS A	2.0	15.3	0.47	0.47	0.47	52.7
8	T1	649	6.0	683	6.0	0.304	4.8	LOS A	2.0	15.3	0.49	0.49	0.49	55.8
9	R2	16	25.0	17	25.0	0.304	11.1	LOS A	1.9	14.3	0.50	0.50	0.50	53.7
Approach		746	8.8	785	8.8	0.304	5.0	LOS A	2.0	15.3	0.49	0.48	0.49	55.5
West: Huntingwood Drive														
10	L2	43	23.3	45	23.3	0.294	8.0	LOS A	1.4	11.0	0.73	0.85	0.73	48.6
11	T1	44	11.4	46	11.4	0.294	7.6	LOS A	1.4	11.0	0.73	0.85	0.73	51.8
12	R2	77	11.7	81	11.7	0.294	13.3	LOS A	1.4	11.0	0.73	0.85	0.73	53.0
Approach		164	14.7	173	14.7	0.294	10.4	LOS A	1.4	11.0	0.73	0.85	0.73	51.7
All Vehicles		2455	8.1	2584	8.1	0.865	9.1	LOS A	10.2	75.6	0.71	0.76	0.91	52.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Brabham Dr & Ferrers Rd AM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Peter Brock Drive														
5	T1	40	19.4	42	19.4	0.106	7.5	LOS A	0.5	4.2	0.61	0.72	0.61	52.3
6	R2	31	22.4	33	22.4	0.106	13.3	LOS A	0.5	4.2	0.61	0.72	0.61	53.8
Approach		71	20.7	75	20.7	0.106	10.0	LOS A	0.5	4.2	0.61	0.72	0.61	53.0
North: Brabham Drive														
7	L2	131	23.9	138	23.9	0.123	4.2	LOS A	0.6	5.3	0.19	0.42	0.19	55.7
9	R2	623	7.7	656	7.7	0.380	9.5	LOS A	2.6	19.5	0.20	0.59	0.20	53.5
Approach		754	10.5	794	10.5	0.380	8.6	LOS A	2.6	19.5	0.20	0.56	0.20	53.9
West: Ferrers Road														
10	L2	679	8.0	715	8.0	0.259	3.8	LOS A	1.5	11.4	0.16	0.41	0.16	55.8
11	T1	45	8.3	47	8.3	0.259	3.7	LOS A	1.5	11.2	0.16	0.41	0.16	57.3
Approach		724	8.0	762	8.0	0.259	3.8	LOS A	1.5	11.4	0.16	0.41	0.16	55.8
All Vehicles		1549	9.8	1631	9.8	0.380	6.4	LOS A	2.6	19.5	0.20	0.50	0.20	54.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 4 [Brabham Dr & Ferrers Rd PM (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Peter Brock Drive														
5	T1	70	6.8	74	6.8	0.223	8.7	LOS A	1.2	9.3	0.71	0.82	0.71	51.2
6	R2	73	15.6	77	15.6	0.223	14.8	LOS B	1.2	9.3	0.71	0.82	0.71	52.9
Approach		143	11.3	151	11.3	0.223	11.8	LOS A	1.2	9.3	0.71	0.82	0.71	52.1
North: Brabham Drive														
7	L2	21	7.9	22	7.9	0.018	3.9	LOS A	0.1	0.7	0.14	0.41	0.14	56.3
9	R2	756	6.0	796	6.0	0.447	9.4	LOS A	3.5	25.9	0.17	0.59	0.17	53.7
Approach		777	6.1	818	6.1	0.447	9.2	LOS A	3.5	25.9	0.17	0.58	0.17	53.7
West: Ferrers Road														
10	L2	788	6.0	829	6.0	0.309	4.0	LOS A	1.9	14.3	0.27	0.44	0.27	55.4
11	T1	28	14.3	29	14.3	0.309	4.0	LOS A	1.9	14.0	0.27	0.44	0.27	56.6
Approach		816	6.3	859	6.3	0.309	4.0	LOS A	1.9	14.3	0.27	0.44	0.27	55.4
All Vehicles		1736	6.6	1827	6.6	0.447	7.0	LOS A	3.5	25.9	0.26	0.54	0.26	54.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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MOVEMENT SUMMARY

Site: 5 [Ferrers Rd & The Horsley Dr AM - Vol Red (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: The Horsley Drive														
5	T1	916	25.6	964	25.6	0.376	4.8	LOS A	9.1	77.4	0.35	0.32	0.35	56.3
6	R2	405	9.7	426	9.7	* 0.920	62.1	LOS E	21.7	164.4	1.00	1.10	1.32	32.2
Approach		1321	20.7	1391	20.7	0.920	22.4	LOS B	21.7	164.4	0.55	0.56	0.65	45.8
North: Ferres Road														
7	L2	701	8.9	738	8.9	0.836	34.7	LOS C	28.9	218.0	0.92	1.02	0.97	40.5
9	R2	24	47.1	25	47.1	0.136	56.9	LOS E	1.3	13.2	0.92	0.72	0.92	30.1
Approach		725	10.2	763	10.2	0.836	35.4	LOS C	28.9	218.0	0.92	1.01	0.97	40.1
West: The Horsley Drive														
10	L2	89	19.1	94	19.1	* 0.943	70.3	LOS E	48.4	390.8	1.00	1.15	1.30	28.3
11	T1	1163	17.7	1224	17.7	* 0.943	63.7	LOS E	48.6	392.1	1.00	1.15	1.30	32.1
Approach		1252	17.8	1318	17.8	0.943	64.1	LOS E	48.6	392.1	1.00	1.15	1.30	31.9
All Vehicles		3298	17.3	3472	17.3	0.943	41.1	LOS C	48.6	392.1	0.80	0.88	0.97	38.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Horsley Drive												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.9	220.5	0.98
North: Ferres Road												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	216.3	210.6	0.97
All Pedestrians		100	105	54.3	LOS E	0.2	0.2	0.95	0.95	220.1	215.6	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 5 [Ferrers Rd & The Horsley Dr PM - Vol Red (Site Folder: General)]

165 Wallgrove Road & 475 Ferres Road, Eastern Creek
Site Category: Light Horse Business Hub
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: The Horsley Drive														
5	T1	1459	6.5	1536	6.5	0.680	8.5	LOS A	28.7	212.4	0.53	0.49	0.53	53.8
6	R2	458	38.9	482	38.9	*0.962	63.7	LOS E	25.4	236.7	0.92	1.04	1.38	31.5
Approach		1917	14.2	2018	14.2	0.962	21.7	LOS B	28.7	236.7	0.62	0.62	0.73	46.0
North: Ferres Road														
7	L2	811	14.1	854	14.1	0.743	12.7	LOS A	25.6	200.5	0.65	0.78	0.65	50.3
9	R2	135	43.2	142	43.2	0.572	56.4	LOS D	7.9	75.5	0.97	0.81	0.97	30.3
Approach		946	18.3	996	18.3	0.743	18.9	LOS B	25.6	200.5	0.70	0.78	0.70	46.6
West: The Horsley Drive														
10	L2	30	55.0	32	55.0	*0.804	64.3	LOS E	16.2	137.6	1.00	0.98	1.15	29.4
11	T1	488	21.3	514	21.3	*0.804	56.3	LOS D	16.7	138.0	1.00	0.96	1.14	34.0
Approach		518	23.3	545	23.3	0.804	56.7	LOS E	16.7	138.0	1.00	0.96	1.14	33.7
All Vehicles		3381	16.7	3559	16.7	0.962	26.3	LOS B	28.7	236.7	0.70	0.72	0.79	43.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
East: The Horsley Drive												
P2	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	223.9	220.5	0.98
North: Ferres Road												
P3	Full	50	53	54.3	LOS E	0.2	0.2	0.95	0.95	216.3	210.6	0.97
All Pedestrians		100	105	54.3	LOS E	0.2	0.2	0.95	0.95	220.1	215.6	0.98

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Appendix D

Work Program

LIGHT VEHICLE MOVEMENTS		2021														
		DEC				JAN				FEB				MAR		
Task / Milestone	Stage	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
Remediaition	Stage 1	4	4	4	10	10	10	10	10	10	10	10	10			
Demo/Clearing														10	12	12
Bulk Earthworks																
Bridge Construction																
Acess Switch	Stage 2															
External Road																
Internal Road Inc Services																
Bio Basin																
TOTAL PER WEEK		4	4	4	10	10	10	10	10	10	10	10	10	10	12	12
TOTAL IN & OUT PER WEEK		8	8	8	20	20	20	20	20	20	20	20	20	20	24	24

HEAVY VEHICLE MOVEMENTS		2021														
		DEC				JAN				FEB				MAR		
Task / Milestone	Stage	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
Remediaition	Stage 1	6	6	2	2	2	2	2	2	15	10	10	2			
Demo/Clearing														5	10	10
Bulk Earthworks																
Bridge Construction																
Acess Switch	Stage 2															
External Road																
Internal Road Inc Services																
Bio Basin																
TOTAL PER WEEK		6	6	2	2	2	2	2	2	15	10	10	2	5	10	10
TOTAL IN & OUT PER WEEK		12	12	4	4	4	4	4	4	30	20	20	4	10	20	20

							2022											
	APR				MAY				JUN				JUL				AU	
4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
10																		
	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	6	6	6	6	8	8	12	12	12	12	12	12	12	12	12	12	10	10
					5	5	5	5	5	5	10	10	10	10	10	10	10	10
10	12	12	12	12	19	19	23	23	23	23	28	28	28	28	28	28	26	26
20	24	24	24	24	38	38	46	46	46	46	56	56	56	56	56	56	52	52

							2022											
	APR				MAY				JUN				JUL				AU	
4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2
10																		
	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
	4	4	4	4	4	4	4	8	8	8	12	12	12	12	12	12	12	12
					0	0	5	5	20	20	20	20	20	20	20	20	25	25
10	1804	1804	1804	1804	1804	1804	1809	1813	1828	1828	1832	1832	1832	1832	1832	1832	1837	1837
20	3608	3608	3608	3608	3608	3608	3618	3626	3656	3656	3664	3664	3664	3664	3664	3664	3674	3674

JG		SEP				OCT				NOV				DEC				
3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1
6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
8	8	8	8	8	8	10	10	10	10	8	8	8	8	6	6	6	6	
10	10	10	10	10	10	10	8	8	8	8	8	5	5	5	5	5	5	
						5	5	5	5	5	5	10	10	10	10	10	10	10
														5	5	5	5	5
24	24	24	24	24	24	31	29	29	29	27	27	29	29	32	32	32	32	21
48	48	48	48	48	48	62	58	58	58	54	54	58	58	64	64	64	64	42

JG		SEP				OCT				NOV				DEC				
3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1
1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
12	12	10	4	4	4	2	2	2	2	2	2	2	2	2	2	2	2	
25	25	25	20	20	20	20	20	10	10	10	10	5	5	10	10	10	10	
						0	0	5	10	10	10	20	20	20	25	25	30	30
														0	0	0	0	10
1837	1837	1835	1824	1824	1824	1822	1822	1817	1822	1822	1822	1827	1827	1832	1837	1837	1842	1840
3674	3674	3670	3648	3648	3648	3644	3644	3634	3644	3644	3644	3654	3654	3664	3674	3674	3684	3680

2023															
JAN			FEB				MAR				APR				
2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
6	6	6													
10	10	10	10	10	10	10	10	8	8	8	8	8	5	5	
5	10	10	10	10	10	10	10	5	5	5					
21	26	26	20	20	20	20	20	13	13	13	8	8	5	5	
42	52	52	40	40	40	40	40	26	26	26	16	16	10	10	

2023															
JAN			FEB				MAR				APR				
2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1800	1800	1800													
30	30	25	25	25	20	20	20	20	10	10	10	5	5	5	
10	10	10	20	20	20	10	10	10	5	5					
1840	1840	1835	45	45	40	30	30	30	15	15	10	5	5	5	
3680	3680	3670	90	90	80	60	60	60	30	30	20	10	10	10	

Appendix E

Traffic Control Plans



Compliance Notes:

1. Plans Scale 1:500
2. A or B size signs are to be used
3. 700mm cones are required with retroreflective bands
4. Cone spacing is in accordance with AGTTM-19
5. Appropriate PPE is to be worn for the conditions
6. Traffic Controllers to use radios when verbal communication is required
7. Any site specific conditions to be noted
8. All signs subject to +25%, -10% tolerances
9. Sign checks are required every hour
10. Any active Traffic Controllers to have escape route and 1.5 D sight site distance at their location
11. Drawn IAW AS 1742.3 2009, TCAWS V5 2018 & AGTTM-19

Designed by: Ronak Gandhi

License No: TCT 0063633

Signature:

Date: 23/09/2021

Legend

- Vehicle Egress
- Vehicle Ingress
- Work Area

ALLROAD GROUP

Client: AWJ

Site Specific Notes:

Long Term Works
Heavy Vehicles

Modifications are to be marked on the plan. Only current Work Zone Traffic Management card holders can amend TGSs

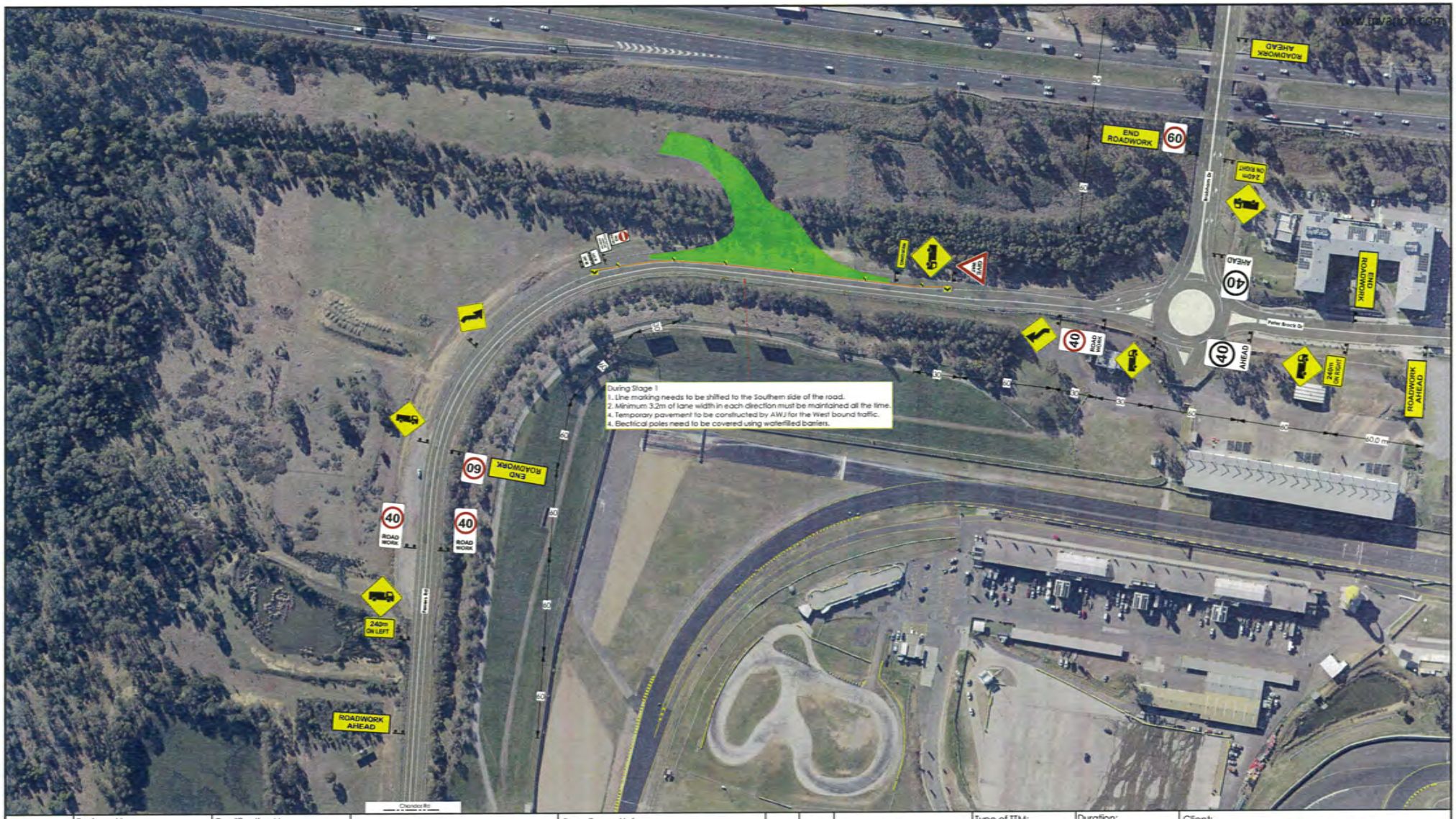
Project: **Walgrove Road**

Work Location: 165 Wallgrove Rd, Eastern Creek, NSW 2766

Drawing No: ARG 21-1142 TGS

Page: 01 of 01

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Alfroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature:	
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- Barrier End Treatments
- Concrete Barriers
- Water Filled Barrier
- Work Area

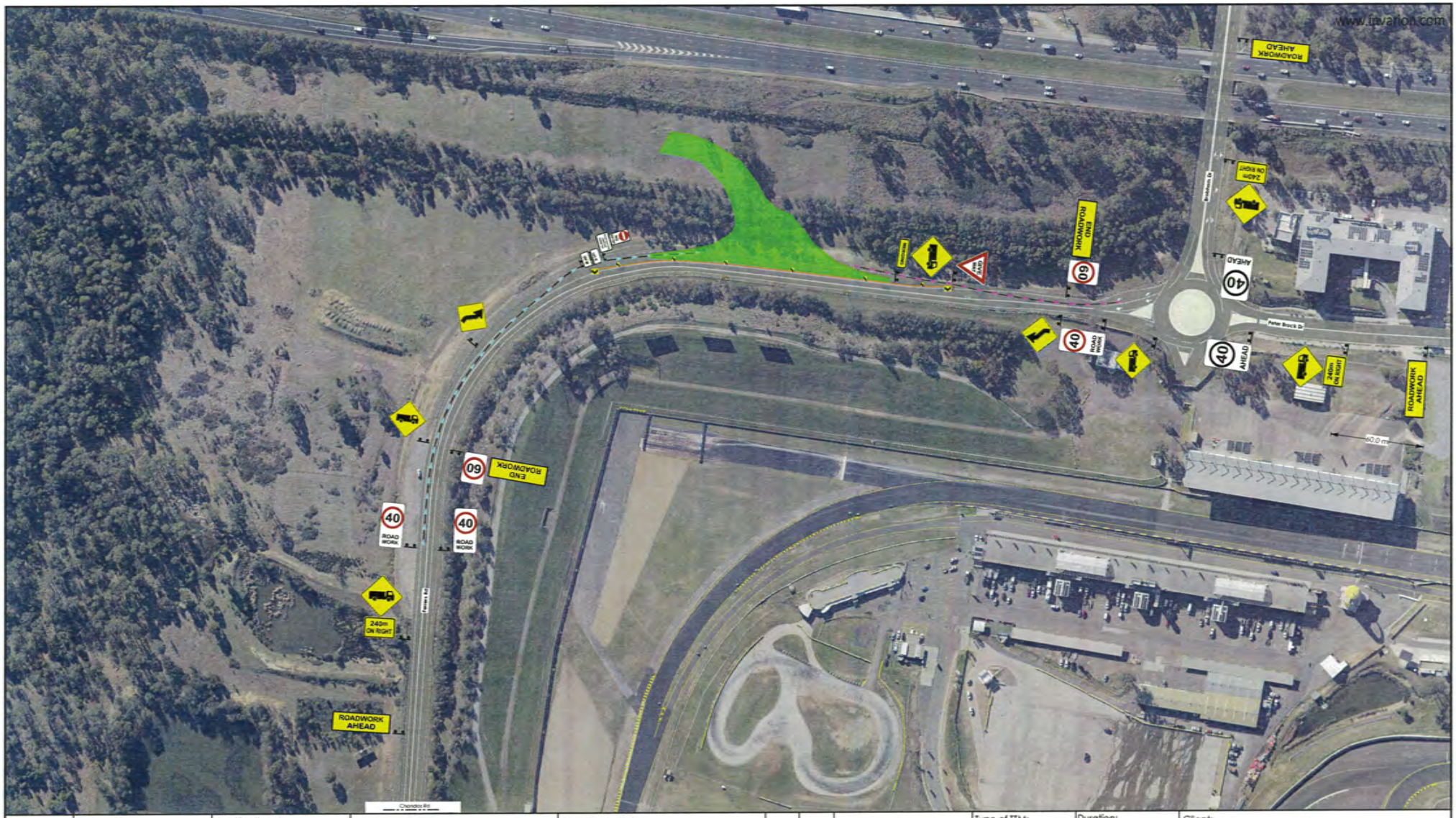
Compliance Notes:

1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION	REV	Description
	00	sent to client
	01	Rev. 2

Review Date:	07/03/2022
ROL No:	Not Applied
Sign Type:	Permanent
Type of TTM:	Static Works
Duration:	Long Term
TTM Set-up:	Lateral Shift
Shift TTM Inspections:	after installation -> everyday
Speed Limit:	60km/h &
Traffic Volume: 724 AM Peak 816 PM Peak	Est. Queue Length: N/A
Map Reference: SIX Maps	Scale: 1:500

Client:	AWJ
Project Description:	Light Horse Business Hub Stage 1
Work Location:	475 Ferrers Rd, Eastern Creek, NSW 2766
Drawing No: ARG 21-1757 TGS	Issue Date: 07/02/2022



Designed by: Ronak Gandhi	Qualification No: TCT 0063633	**Legend:** Barrier End Treatment; Concrete Barriers; Vehicle Egress; Vehicle Ingress; Water Filled Barrier; Work Area	**Compliance Notes:** 1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019 2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3 3. Sign Spacing Austroads TTM, Part 3: Table 2.2 4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3 5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13 6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4 7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2	REVISION	REV: 00 — Description: sent to client; REV: 01 — Description: Rev. 2	Type of TTM: Static Works; Duration: Long Term; TTM Set-up: Vehicle Movement Plan; Shift TTM Inspections: after installation -> everyday
Role: Traffic Planner				Review Date: 07/03/2022; Speed Limit: 60km/h &	
Signature:				ROL No: Not Applied; Traffic Volume: 724 AM Peak 816 PM Peak; Est. Queue Length: N/A	
Implementer Name:	Implementer Qualification No: TCT.....			Sign Type: Permanent; Map Reference: SIX Maps; Scale: 1:500	

Altroad Group Pty Ltd

Client: AWJ

Project Description: Light Horse Business Hub Stage 1

Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766

Drawing No: ARG 21-1758 TGS

Issue Date: 07/02/2022



Allroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature:	
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- Barrier End Treatments
- Concrete Barriers
- Work Area

Compliance Notes:

1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION	REV	Description
	00	sent to client
	01	Rev. 2

Review Date:	07/03/2022
ROL No:	Not Applied
Sign Type:	Permanent
Type of TTM:	Static Works
Duration:	Long Term
TTM Set-up:	Lateral Shift
Shift TTM Inspections:	after installation -> everyday
Speed Limit:	60km/h &
Traffic Volume: 724 AM Peak 816 PM Peak	Est. Queue Length: N/A
Map Reference:	SIX Maps
Scale:	1:500

Client: AWJ

Project Description: Light Horse Business Hub Stage 2

Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766

Drawing No:	Issue Date:
ARG 21-1759 TGS	07/02/2022



Designed by: Ronak Gandhi
Qualification No: TCT 0063633
Role: Traffic Planner
Signature:
Implementer Name: .....
Implementer Qualification No: TCT.....

Allroad Group Pty Ltd

Legend:

- Barrier End Treatments
- Concrete Barriers
- Vehicle Egress
- Vehicle Ingress
- Work Area

Compliance Notes:

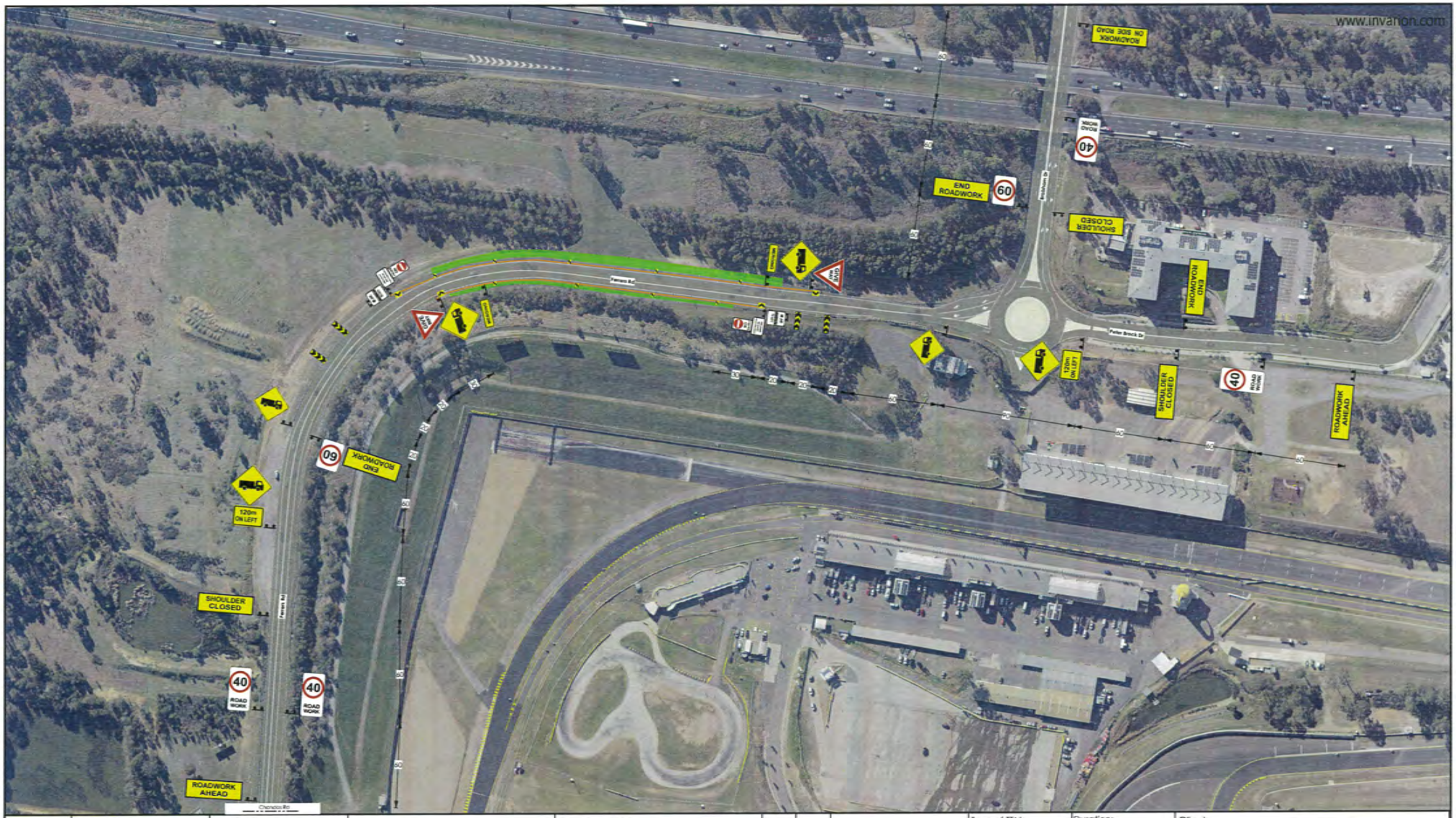
1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION	REV	Description
	00	sent to client
	01	Rev. 2

Review Date: 07/03/2022
ROL No: Not Applied
Sign Type: Permanent

Type of TTM: Static Works
Duration: Long Term
TTM Set-up: Vehicle Movement Plan
Shift TTM Inspections: after installation -> everyday
Speed Limit: 60km/h &
Traffic Volume: 724 AM Peak, 816 PM Peak
Est. Queue Length: N/A
Map Reference: SIX Maps
Scale: 1:500

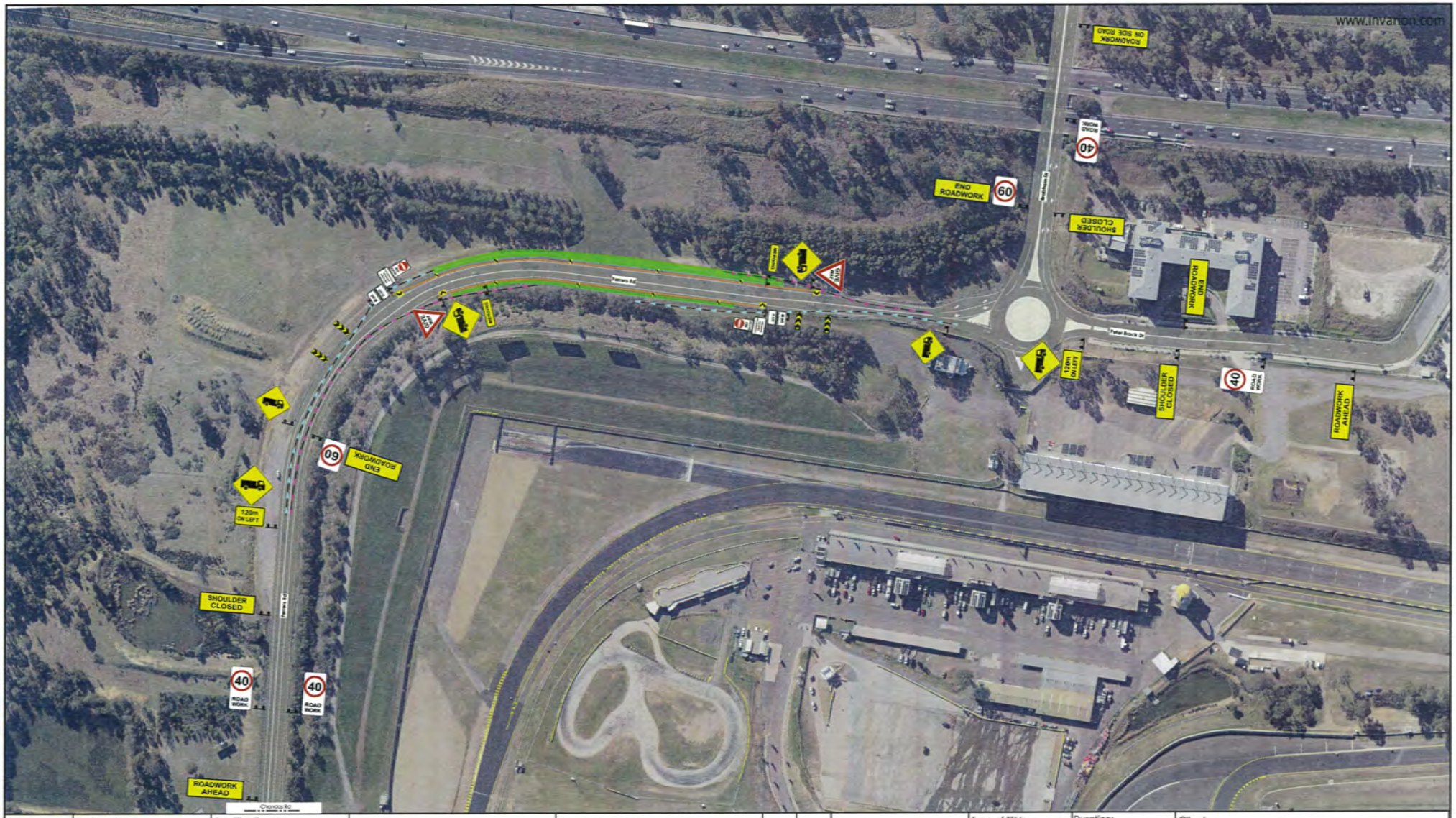
Client: AWJ
Project Description: Light Horse Business Hub Stage 2
Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766
Drawing No: ARG 21-1760 TGS
Issue Date: 07/02/2022



Designed by: Ronak Gandhi	Qualification No: TCT 0063633	**Legend:** Concrete Barriers; Work Area	**Compliance Notes:** 1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019 2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3 3. Sign Spacing Austroads TTM, Part 3: Table 2.2 4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3 5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13 6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4 7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2	REVISION	REV: 00 sent to client; 01 Rev. 2	Type of TTM: Static Works	Duration: Long Term
Role: Traffic Planner				TTM Set-up: Shoulder Closure	
Signature:				Shift TTM Inspections: after installation -> everyday	
				Review Date: 07/03/2022	Speed Limit: 60km/h &
Implementer Name:	Implementer Qualification No: TCT.....			ROL No: Not Applied	Traffic Volume: 724 AM Peak, 816 PM Peak — Est. Queue Length: N/A
				Sign Type: Permanent	Map Reference: SIX Maps — Scale: 1:500

Allroad Group Pty Ltd

Client: AWJ	
Project Description: Light Horse Business Hub Stage 3	
Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766	
Drawing No: ARG 21-1761 TGS	Issue Date: 07/02/2022



Allroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature:	
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- Concrete Barriers
- Vehicle Egress
- Vehicle Ingress
- Work Area

Compliance Notes:

1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION	REV	Description
	00	sent to client
	01	Rev. 2

Review Date:	07/03/2022
ROL No:	Not Applied
Sign Type:	Permanent

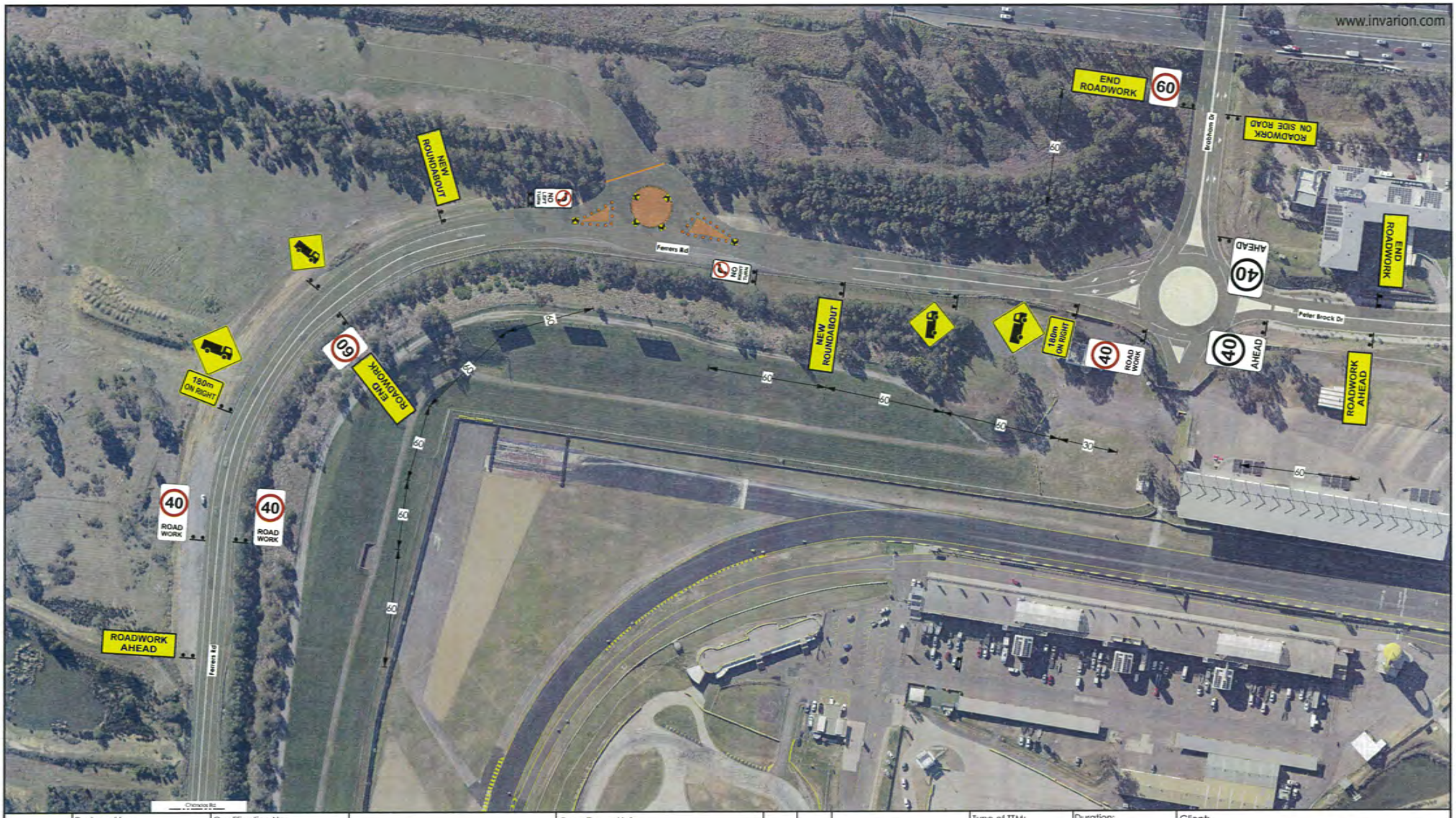
Type of TTM: Static Works	Duration: Long Term	
TTM Set-up: Vehicle Movement Plan		
Shift TTM Inspections: after installation -> everyday		
Speed Limit: 60km/h &		
Traffic Volume: 724 AM Peak, 816 PM Peak	Est. Queue Length: N/A	
Map Reference: SIX Maps	Scale: 1:500	

Client: AWJ

Project Description: Light Horse Business Hub Stage 3

Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766

Drawing No:	Issue Date:
ARG 21-1762 TGS	07/02/2022



Designed by: Ronak Gandhi	Qualification No: TCT 0063633	**Legend:**	**Compliance Notes:**	**REVISION**	
Role: Traffic Planner		● Bollard ▬ Concrete Barriers ● T - Top Bollard ▭ Water Filled Barrier ▭ Work Area	1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019 2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3 3. Sign Spacing Austroads TTM, Part 3: Table 2.2 4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3 5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13 6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4 7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2	REV: 00 — Description: sent to client REV: 01 — Description: Rev. 2	Type of TTM: Static Works Duration: Long Term TTM Set-up: Outside Work Hours Shift TTM Inspections: after installation -> everyday
Signature:				Review Date: 07/03/2022	Speed Limit: 60km/h &
Implementer Name:	Implementer Qualification No: TCT.....			ROL No: Not Applied	Traffic Volume: 724 AM Peak 816 PM Peak Est. Queue Length: N/A
				Sign Type: Permanent	Map Reference: SIX Maps Scale: 1:500

Allroad Group Pty Ltd

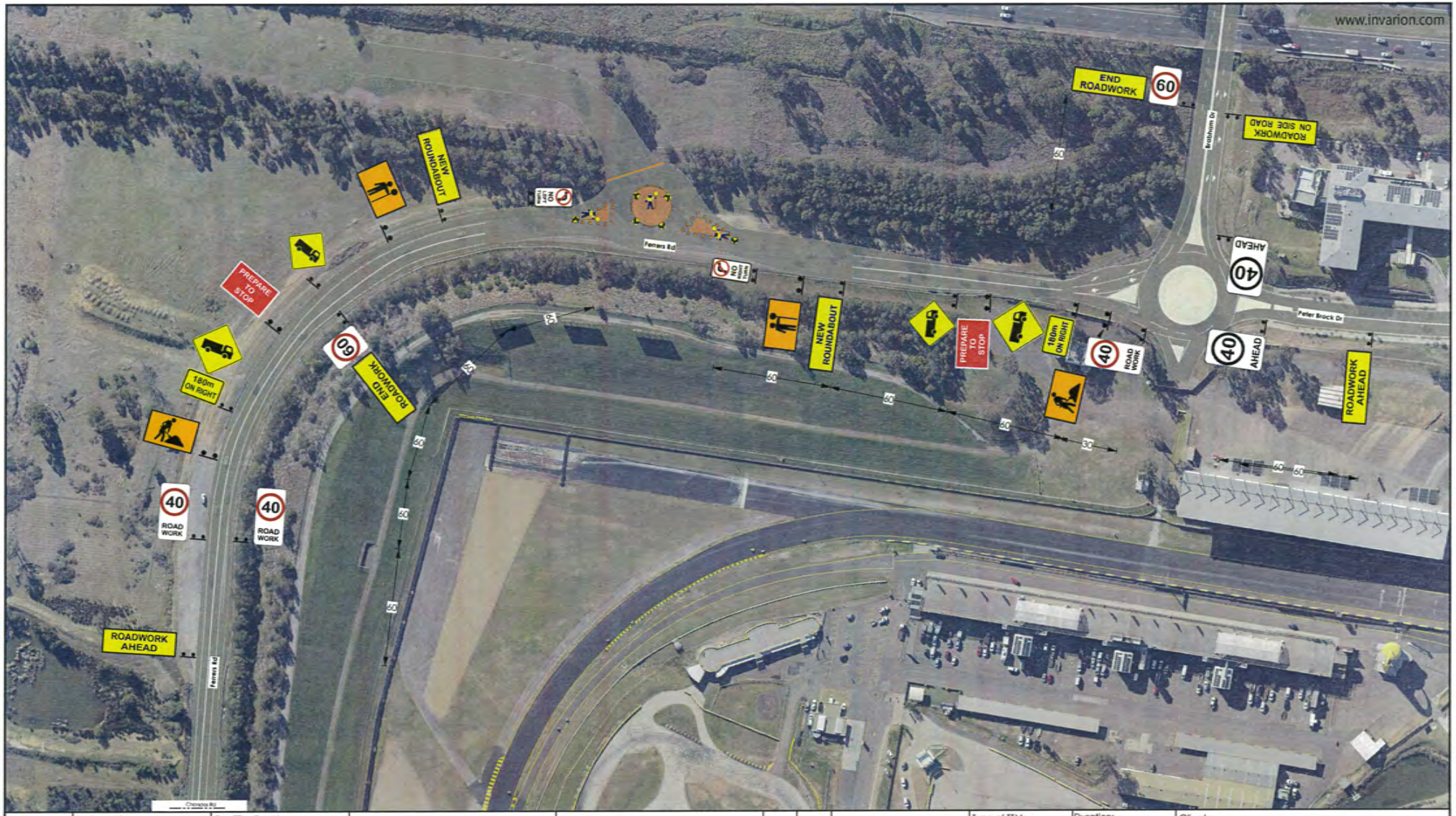
Client: AWJ

Project Description: Light Horse Business Hub Stage 4 (Outside Work Hours)

Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766

Drawing No: ARG 21-1763 TGS

Issue Date: 07/02/2022



Allroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature:	
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- 3x Traffic Controllers
- Bollard
- Concrete Barriers
- T - Top Bollard
- Water Filled Barrier
- Work Area

Compliance Notes:

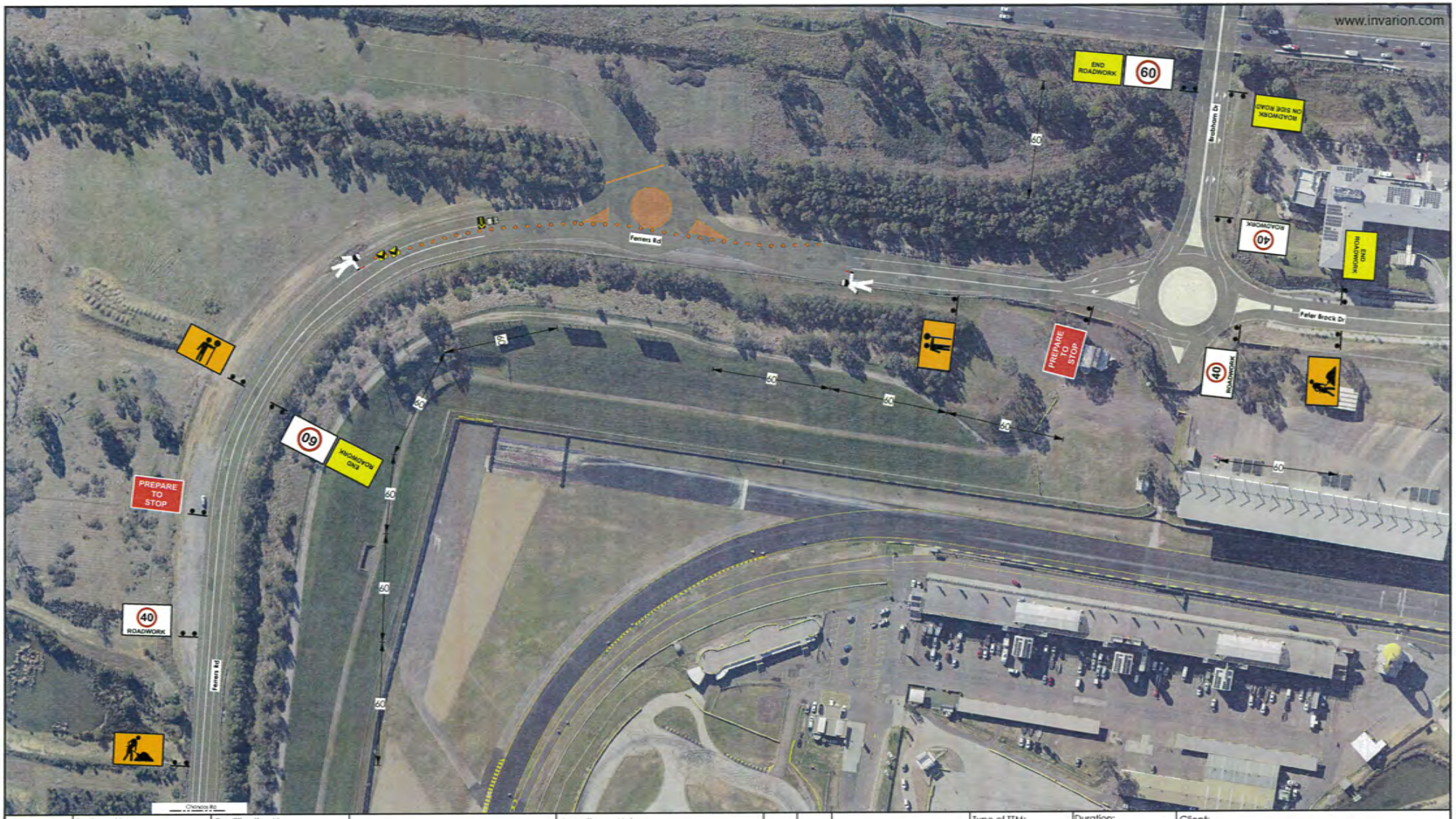
1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION

REV	Description
00	sent to client
01	Rev. 2

Review Date:	07/03/2022
ROL No:	Not Applied
Sign Type:	Permanent
Type of TTM:	Static Works
Duration:	Long Term
TTM Set-up:	Within Work Hours
Shift TTM Inspections:	after installation -> everyday
Speed Limit:	60km/h &
Traffic Volume: (724 AM Peak, 816 PM Peak)	
Est. Queue Length:	N/A
Map Reference:	SIX Maps
Scale:	1:500

Client:	AWJ
Project Description:	Light Horse Business Hub Stage 4 (Within Work Hours)
Work Location:	475 Ferrers Rd, Eastern Creek, NSW 2766
Drawing No:	ARG 21-1767 TGS
Issue Date:	07/02/2022



Allroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature:	
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- Concrete Barriers
- Cones
- Work Area

Compliance Notes:

1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION	REV	Description
	00	sent to client
	01	Rev. 2

Review Date:	07/03/2022
ROL No:	Not Applied
Sign Type:	Permanent

Type of TTM: Static Works	Duration: Long Term	
TTM Set-up: Stop/ Slow Control		
Shift TTM Inspections: after installation -> everyday		
Speed Limit: 60km/h &		
Traffic Volume: 724 AM Peak 816 PM Peak	Est. Queue Length: N/A	
Map Reference: SIX Maps	Scale: 1:500	

Client: AWJ	
Project Description: Light Horse Business Hub Stage 5	
Work Location: 475 Ferrers Rd, Eastern Creek, NSW 2766	
Drawing No: ARG 21-1767 TGS	Issue Date: 07/02/2022



Allroad Group Pty Ltd

Designed by: Ronak Gandhi	Qualification No: TCT 0063633
Role: Traffic Planner	
Signature: R.H.Gandhi	N
Implementer Name:	Implementer Qualification No: TCT.....

Legend:

- Vehicle Egress

Compliance Notes:

1. All TGSs in accordance with TM - TCWS V6.0 & Austroads Guide to Temporary Traffic Management 2019
2. Recommended Taper Lengths TM - TCWS V6.0, Table 7-3
3. Sign Spacing Austroads TTM, Part 3: Table 2.2
4. Recommended Sight Distances to Devices Austroads TTM, Part 3: Table 2.3
5. Traffic Controller min. Sight Distance TM - TCWS V6.0, Table 5-13
6. Estimated Queue Length & Sign Spacing Austroads TTM, Part 3: Table 4.3 & 4.4
7. Cone and Bollard spacing TM - TCWS V6.0, Table 6-2

REVISION

REV	Description
00	sent to client
01	

Review Date:	03/04/2022
ROL No:	N/A
Sign Type:	Permanent
Type of TTM:	Static Works
Duration:	Long Term
TTM Set-up:	Heavy Vehicle Movements
Shift TTM Inspections:	after installation -> everyday
Speed Limit:	60km/h
Traffic Volume: 724 AM Peak 816 PM Peak	
Est. Queue Length:	N/A
Map Reference:	SIX Maps
Scale:	1:500

Client:	AWJ
Project Description:	LHBH
Work Location:	475 Ferrers Rd, Eastern Creek, NSW 2766
Drawing No:	ARG 22-314 TGS
Issue Date:	03/03/2022