

Memorandum

To: Peter Lee, Calibre

From: Fred Gennaoui

Date: 5 June 2018

Job N°: 14372.003

Subject: Werrington Development – Response to RMS and Council’s Comments

Background

TDG prepared, in November 2017, a report titled *Hillsong Greater West Development – Transport Study*.

The DA for the above development including the Transport study report was submitted to Council in late 2017. The proposal was referred by Council to the RMS.

Council and RMS have reviewed the application. They raised several issues and offered a number of comments and suggestions.

In summary, RMS does not support the installation of traffic signals at the junctions of Great Western Highway with either Water Street or Lander Street extension due to their close proximity to the signalised intersection of Great Western Highway and Gipps Street (Werrington Arterial Stage 1).

TDG was requested to prepare a response to Council and RMS comments.

Items Which Should not be Addressed by Applicant

The following items requested by RMS should not be the responsibility of the Applicant. These matters should have been assessed by Council during the planning phase of the whole Precinct, and by RMS when planning Werrington Arterial Road:

- The traffic impact assessment should incorporate the cumulative impact of the development and future developments within the Precinct.
- impact of the development on the following signalised intersections to be assessed/modelled in addition to the intersection of Great Western Highway/Water Street:

- Great Western Highway/Werrington Road
- Great Western Highway/Gipps Street

Scope of Addendum Report

This Addendum addresses the relevant issues raised by RMS and Council which have been consolidated under the following headings:

- Proposed staging of development
- Parking requirement and layout
- Trip generation
- Stage 1 traffic impact
- Traffic impact at ultimate development
- Other traffic related matters
- Access to bus bays and service area
- Crash analysis
- Public transport
- Pedestrians and cycle facilities

Proposed Staging of Development

Hillsong Church develop the site in two stages by bringing forward the Child Care Centre to Stage 1A together with the Stage 1 400 seats auditorium. The activities and maximum patronage at peak times for Stage 1 and at ultimate development of the proposed facility are summarised in **Table 1**.

Activity	MAXIMUM NO. OF PERSONS AT END OF EACH STAGE		Peak Time of Operation
	Stage 1/1A	Stage 2	
Office	12 persons	12 persons	Weekdays 8.0 to 5.0pm
Main Auditorium	400 persons	1,350 persons	Busiest on Sundays
Child Ministry	135 children	400 children	Busiest on Sundays
City Care		15 persons per day	Monday – Friday 9.30am - 4.00pm
Youth Ministry	400 persons	500 persons	Busiest on Friday 6pm -10.30pm
Child Care Centre	89 Children + 19 staff	89 Children + 19 staff	Monday - Friday 7.00am - 6.00pm

Table 1: Activities and Attendance at Proposed Facility

Parking

Parking Requirements

The following parking rates stipulated in *Part C10 of Council's DCP* were adopted in the November 2017 TDG report for offices, a place of public worship and child care centres.

- Office
 - 1 space per 40m2 GFA; thus 3 spaces would be required for 92m2 GFA. We have however assumed one space per staff or 12 spaces
- Place of Worship:
 - 1 space per 4 seats or 1 space per 6 m2 GFA whichever is the greatest

During Stage 1, with a maximum capacity of 400 seats, some 100 spaces would be required to meet Council's requirement. At completion of Stage 2, about 340 spaces would be required to comply with Council's DCP. This activity is at its busiest on Sundays; children attending the ministry on Sundays would not generate additional parking.
- Child Care Centre:
 - 1 space per 10 children; and
 - 1 space per staff

From Monday to Friday the Child Care Centre will require some 29 spaces; 10 spaces for visitors and 19 spaces for staff.

Some 385 spaces will be provided as follows:

- Stage 1 - 157 spaces
- Stage 2 - 228 spaces

The proposed provision of 157 spaces in conjunction with Stages 1/1A will exceed the peak parking requirement of 100 spaces of the proposed development as noted in **Table 2**.

FACILITY	STAGE 1			STAGE 3		
	Monday to Friday	Friday Evening	Sundays	Monday to Friday	Friday Evening	Sundays
Office	12			12		
Main Auditorium			100			338
Child Care Centre	28			28		
Youth Ministry		75			93	
City Care				10		
Total	40	75	100	50	93	338
Parking Provision	157 spaces			385 spaces		

Table 2: Parking Requirements

The proposed provision of 385 spaces at ultimate development will also exceed the parking requirement of the proposed development as noted in **Table 2**. In addition, five (5) drop off spaces will also be provided adjacent to the Child Care Centre.

Parking Layout

The latest parking layout including dimensions of driveways, aisles, parking spaces, accessible parking, bicycle parking and footpaths are noted on plans included as **Appendix A**.

Details relating to kerb ramps on both sides of the Landers Street Extension fronting the development's principal point of pedestrian access will be provided prior to construction of the roadway

Trip Generation

Child Care Centre

The Child Care Centre would cater for 89 children and operate on weekdays from 7.00am to 6.00pm. The proposed development is expected to generate some 71, 27 and 62 vehicle trips during the morning, afternoon school and afternoon peak hours; these trips have been based on RTA 2002 Guide for Traffic Generation Development were used to estimate the number of trips likely to be generated by the proposed long day Childcare centre.

Auditorium Sunday Services

In order to minimise car trips to and from the site on Friday evenings and Sundays, Hillsong will run private buses through the greater St Marys and Mount Druitt area stopping in North St Marys, Willmot, Shalvey, Lethbridge Park, Tregear, Emerton, Blackett, Bidwell, Dharruk, Mt Druitt town centre and railway station and St Marys railway station.

A survey carried out by the Church indicates that about 25 percent of patrons will be travelling by coaches/bus to and from the service. The survey also indicated that the remaining patrons travel by car with an average of 3 persons per car.

Currently buses do not service Werrington railway station as St Marys station is more accessible. It is however envisaged this changing once the road network around Werrington develops and this becomes a natural link.

At completion of Stage 1, the Auditorium would generate on Sundays about 100 cars as noted in **Table 3**; it has been assumed that 100 cars would arrive at the commencement of a service and depart at the end of a service.

Travel Mode	Percentage	Stage 1	Stage 2
Total	100%	400	1350
By bus	25%	100	337
By car	75%	300	1013
No of cars (3 persons per car)		100	340
No of buses		3 buses	6 buses

Table 3: Trip Generation of Auditorium on Sundays

A large bus has 55 seats and can accommodates an additional 15 standing passengers.

At ultimate development, it is anticipated that 340 cars would arrive at the commencement of each service and depart at the end of the service.

In order to address RMS concern that a 30 mns turn around period between services would result in high delays and potential conflict between services; it is now proposed to have 45 mns break between services.

Youth Ministry

Youth ministry services are expected to take place every Friday evenings from 6.00 pm to 10.30 pm; a maximum of 400 and 500 persons could be in attendance at completion of Stages 1 and 2 respectively. Travel to the development is anticipated to be by car (~64%) and coaches (~36%) with a car occupancy of 3.5 persons established in section 2.2.2.2. of the November TDG report.

Thus about 75 and 93 cars have been estimated to arrive at the commencement of the evening and depart at its conclusion during Stage 1 and Stage 2 respectively as noted in **Table 4**. Three to six buses would also access the site at Stage 1 and Stage 2.

Travel Mode	Percentage	Stage 1	Stage 2
Total	100%	400	500
By bus	36%	144	180
By car	64%	256	320
No of cars (3 persons per car)		75	93
No of buses		3-4 buses	4-6 buses

Table 4: Trip Generation of Auditorium on Friday Evenings

Bus route for youth covers the same basic area but is often more focused on local stops as it's hard for teenagers to get to stations. Hillsong has the capacity to add further buses in the future as demand grows.

Overall Trip Generation by Direction

The expected trip generation of the proposed development at completion of Stage 1 and at Ultimate development is summarised in **Table 5**.

DIRECTION		AM PEAK		PM PEAK	
		Arr	Dep	Arr	Dep
Monday-Friday	Stages 1 & 2				
From east	76%	49	24	21	42
From west	24%	16	8	6	13
Total	100%	65	32	27	55
		STAGE 1		ULTIMATE	
Friday Evening	6.00 - 7.00pm	Arr	Dep	Arr	Dep
From east	76%	57	8	71	9
From west	24%	18	2	22	3
Total	100%	75	10	93	12
Sundays First Service	9.00 – 10.00am	Arr	Dep	Arr	Dep
From east	76%	76	8	257	26
From west	24%	24	2	81	8
Total	100%	100	10	338	34
Sundays Second Service	10.30 – 11.30am	Arr	Dep	Arr	Dep
From east	76%	76	76	257	257
From west	24%	24	24	81	81
Total	100%	100	100	338	338

Table 5: Trip Generation and Distribution

Stage 1 Traffic Impact

It should be noted, that in Stage 1, the Youth Ministry facility on Friday evening and the Sunday services at University of Western Sydney will be relocated to the development site with a maximum capacity of 400 persons per service.

New traffic signals at the intersection of Water Street with the Great Western Highway is not supported by RMS. The RMS has suggested that the right turning from Water Street into Great Western Highway be prohibited with all traffic exiting Water Street left turning out of the street. RMS also suggested that the central median could be partially left open to allow for the right turn into Water Street from the Great Western Highway to continue. The removal of the right turning movement from Water Street into the Great Western Highway would result in those vehicles approaching from the east turning left into Great Western Highway taking the following routes:

- Left turn into Gipps Street (part of Werrington Arterial), then right turn into Sunflower Drive to O'Connell Street before rejoining the Great Western Highway at the signals; or,
- Left turn into Gipps Street (north) to access Werrington Road then the signals at Great Western Highway.

An assessment of the intersection of Water Street with the Great Western Highway was carried out for Stage 1 using the SIDRA software. This assessment assumed the right turning movement from Water Street is prohibited. The results of this analysis are included in **Table 6**.

At the completion of Stage 1, the proposed development will have minimal impact on the operation of the intersection during the morning peak when the right turning movement into Water Street would operate at a satisfactory level of service “B”.

During the afternoon peak hour, the small number (24 cars) of right turning movement into Water Street would experience higher delays and result in a still acceptable level of service “D”; nevertheless, the queue generated by these delays will be well within the length of the exclusive right turn bay of 140m. The delays are caused by the high eastbound traffic along the highway.

On Friday evenings the Youth Ministry would have minimal impact on the intersection, both at completion of Stage 1. On Sundays, when volumes along the highway are lower than during the week, the intersection would operate at a good level of service “B”.

TIME PERIOD	LEFT TURN FROM WATER			RIGHT TURN INTO WATER			LEFT TURN FROM WATER			RIGHT TURN INTO WATER		
	Vol	Delay	LoS	Vol	Delay	LoS	Vol	Delay	LoS	Vol	Delay	LoS
Weekday	AM Peak 8.00 to 9.0am						PM Peak 4.45 to 5.45 pm					
Existing	5	7.2	A	42	22.4	B	24	8.7	A	3	41.7	C
Stage 1	47	7.3	A	84	27.3	B	84	8.9	A	24	49.7	D
Friday Evening							Friday Evening 6.00 to 7.00pm					
Existing							4	6.9	A	4	15.2	B
Stage 1							9	6.8	A	31	16.4	B
Sundays	Sunday 9.00 to 10.00am						Sunday 10.30 to 11.30 am					
Existing	1	6.7	A	8	14.2	A	2	6.6	A	8	12.3	A
Stage 1	20	6.7	A	135	19.9	B	170	6.7	A	135	16.6	B

Table 6: Stage 1 Operational Characteristic of GWH/Water St Intersection with No Right Turn from Water

Traffic Impacts at Ultimate Development

An assessment of the intersection of Water Street with the Great Western Highway was also carried out at Ultimate development using the SIDRA software. This assessment also assumed the right turning movement from Water Street is prohibited; **Table 7** includes the results of this analysis.

TIME PERIOD	LEFT TURN FROM WATER			RIGHT TURN INTO WATER			LEFT TURN FROM WATER			RIGHT TURN INTO WATER		
	Vol	Delay	LoS	Vol	Delay	LoS	Vol	Delay	LoS	Vol	Delay	LoS
Weekday	AM Peak 8.00 to 9.0am						PM Peak 4.45 to 5.45 pm					
Ultimate	47	7.3	A	84	27.3	B	84	8.9	A	24	49.7	D
Friday Evening							Friday Evening 6.00 to 7.00pm					
Ultimate							15	6.9	A	61	17.9	B
Sundays	Sunday 9.00 to 10.00am						Sunday 10.30 to 11.30 am					
Ultimate	36	6.5	A	265	96.1	F	340	6.7	A	370	>70	F

Table 7: Ultimate Operational Characteristic of GWH/Water St Intersection with No Right Turn from Water

At the completion of the whole development, the proposed development will continue to operate at the Stage 1 levels of service during the week. on Friday evenings, the Youth Ministry would have minimal impact on the intersection which would continue to operate a good level of service "B".

In order to address the RMS concern in relation to "sharp peak" of traffic volumes on Sundays between services, the predicted volumes at the intersection of Water Street with Great Western Highway were factored up from 45 mns volumes to 1 hour volumes; that is an increase of 33%. The intersection was then assessed without traffic signals and right turn movement banned from Water Street.

On Sundays the right turning movements from the Great Western Highway would operate a very poor level of service "F" with extensive average delays and the queue extending beyond the length of the exclusive right turn bay of 140m.

In the future, this problem would be resolved once the Stage 2 Werrington Arterial is completed and the connection from Lander Street to Werrington Road along a New Link Road is in place as shown in **Figure 1**. However, the completion dates of these project are not known at this stage.

When the Stage 2 Werrington Arterial is completed, traffic accessing the proposed development from the east would turn right into the Stage 2 Werrington Arterial before accessing the development.

Figure E12.14: Road Network Hierarchy

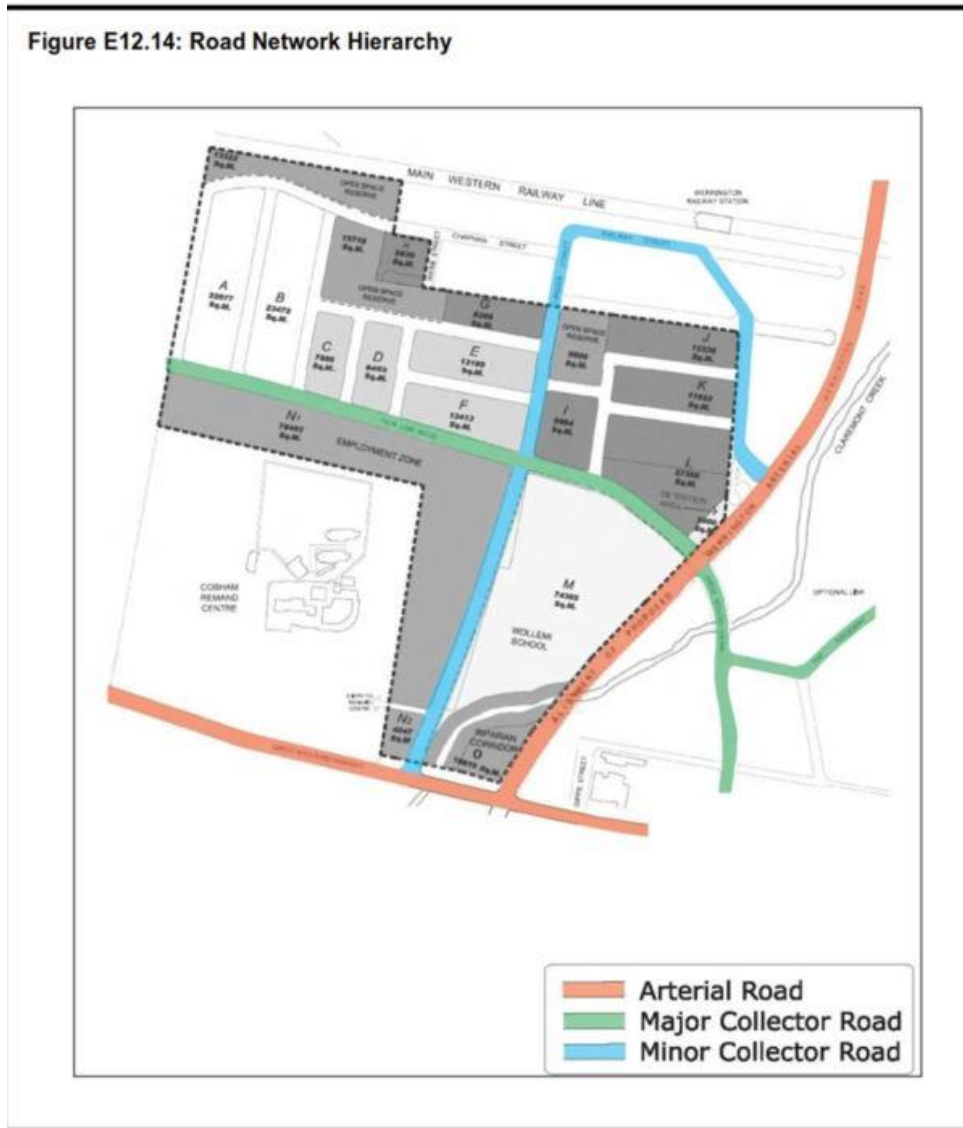


Figure 1: Proposed Council Road Hierarchy

Source South Werrington Urban Village Structure Plan

In the event the proposed development is completed before the roads shown in **Figure 1** are in place, an assessment of the intersection of Waters Street with Great Western Highway, assuming signal control, was also carried out taking into account the change-over between church services. This assessment was carried out using the SIDRA software and assumed the right turn movement from Water Street is reinstated. The traffic signals would operate at a level of service "B" with an overall average delay of 23 seconds.

However the close proximity of signals at the Werrington Arterial would make the installation of signals at Water Street problematic.

Stage 2 of the proposed development is not anticipated to be completed within the next five years. Whilst no timetable has been set for the construction of the extension of Lander Street and the Werrington Arterial, it is anticipated that they would probably be completed before the full development is operational.

If the Werrington Arterial or an alternative internal access along Lander Street is not build in time, then the right turning movement into Water Street should be prohibited on Sundays only. In this situation traffic from the east or south would access the site by using the following route:

- Gipps Street (part of Werrington Arterial), then right turn into Sunflower Drive to O'Connell Street before re-joining the Great Western Highway at the signals where they would turn right before turning left into Water Street.

Furthermore, without the signals, traffic to the west would turn left into Great Western Highway taking the following routes:

- Right turn into Gipps Street (part of Werrington Arterial), then right turn into Sunflower Drive to O'Connell Street before rejoining the Great Western Highway at the signals; or,
- Left turn into Gipps Street (north) to access Werrington Road then the signals at Great Western Highway.

Other Traffic Related Matters

RMS Requests

RMS requested the following matters be addressed.

Capacity Analysis

RMS has advised that the midblock capacity is not an acceptable indicator of the operation of the road network on Great Western Highway as a result of the development.

Assessing mid-block capacity is a very valid and tried mean of assessing the level of service of major and local roads. Table D1 of Appendix D, in our November report, takes into account the fact that as a result of signalised intersections along the roadway, the capacity of traffic lanes is reduced to about 50%.

RMS advised that intersections along Great Western Highway should be analysed/modelled using the SIDRA software to assess the impact of the development. The intersection of Water Street with Great Western Highway was always assessed using SIDRA.

Treatment at Entrance of Cobham Justice Centre

All traffic to and from to Cobham Justice Centre is accessed via the Great Western Highway and Water Street. The existing trip generation of the Justice Centre is summarised in **Table 8**.

	Arrival		Departure	
	From East	From West	To East	To West
Weekdays				
AM Peak	44	16	5	1
PM Peak	3	1	24	5
Friday Evening	4	4	4	1
Sunday				
9.00 to 10.00am	8	3	1	1
10.30 to 11.30am	8	2	2	1

Table 8: Trip Generation of Cobham Justice Centre

On weekday, about 65 and 35 vehicles per hour are generated by the facility during the morning and afternoon peak hour. Much lesser volumes are generated during the Friday evening and on Sundays.

Based on these volumes and those anticipated by the proposed development, it is considered that the provision of a Give Way Sign at the entrance of the Cobham Justice Centre should minimise conflicts and provide a safer environment.

On-Street Parking

In order to prevent on street parking adjacent to the development, “No stopping” restrictions would be installed on both sides of Lander Street and Water Street. This will require Council approval through its Local Traffic Committee.

Council Traffic Matters

Council has requested that the intersection of Water Street with the proposed Landers Street Extension be suitable for a 19m long semi-trailer vehicles at a minimum. Swept path have been prepared to show this is the case as illustrated in **Appendix B**.

The swept path of buses accessing the site via Water Street and the extension of Lander Street are included in **Appendix C**

Access to Bus Bays and Service Area

Stage 1

In Stage 1, a maximum of four buses will be delivering and picking patrons from the auditorium on Friday evenings and Sundays. Bus bays will be provided as well as a drop off area for buses as illustrated in **Appendix A**.

Access to the site will be off Water Street via an 11.0m wide driveway. The driveway would accommodate large rigid trucks and coaches. Access to the Stage 1 parking area will be via a temporary driveway as shown in Sheet 3 of **Appendix D**.

Buses will drop off patrons then return via the temporary driveway to exit the site as shown in Sheet 4 of **Appendix D**.

Trucks servicing the loading area of the development will also use the temporary driveway before using a second temporary driveway. They would then manoeuvre as shown in **Appendix E** to exit the site in a forward direction.

Stage 2

In Stage 2, a maximum of six buses will be delivering and picking patrons from the auditorium on Friday evenings and Sundays.

As part of Stage 2 of the development, a secondary access, 6.0m in width will be also provided along the eastern boundary Lander Street. A third access will also be provided off Lander Street via a combined 8.0m wide driveway which will then be used by trucks and coaches.

Buses would enter and exit the site from the third entry to minimise travel through the car park as shown in **Appendix F**.

Trucks would also enter and exit the site from the third entry in a forward direction as noted in **Appendix G**.

Crash Analysis

Five crashes were recorded, in the five years period ending 2016, along the Great Western Highway within the near vicinity of Water Street as noted in **Figure 2** and Tabulated in **Table 9**.

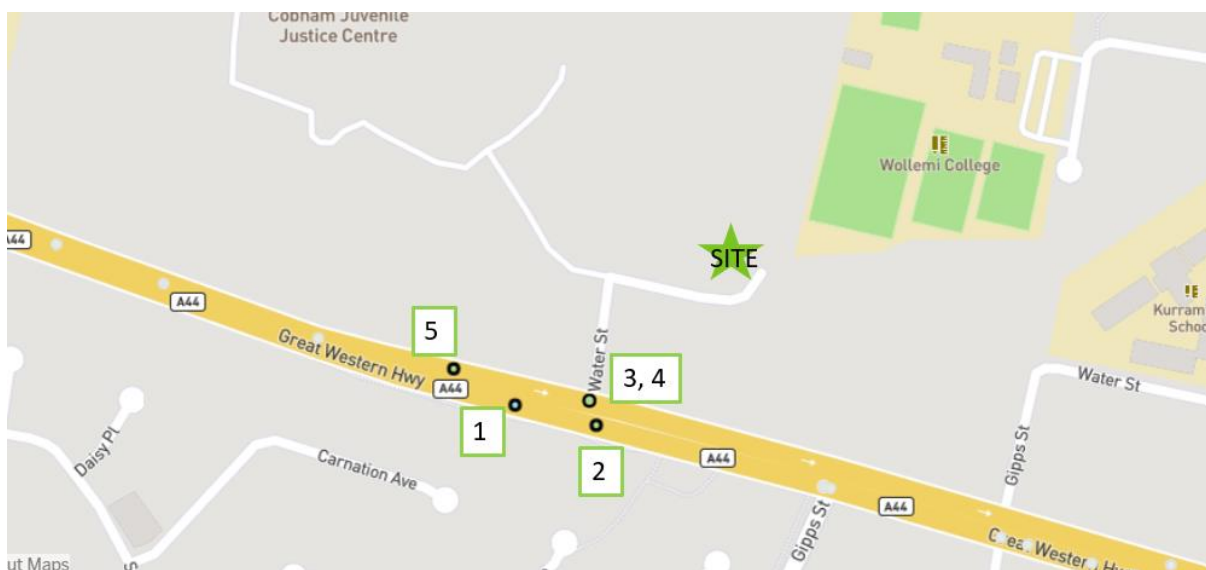


Figure 2: Location of Crashes (2012 to 2016)

Crash No.	Year of Crash	Location from Water Street	Direction	Road User Movement (RUM)	No. Injured
1	2013	80 m	West Bound	Rear-End	2
2	2013	20 m	West Bound	Lane change right	0
3	2014	0 m	East Bound	Left-Near	0
4	2014	0 m	East Bound	Rear-End	0
5	2016	110 m	East Bound	Rear-End	0

Table 9: Crash Summary

Importantly, no fatalities were recorded, and no crashes involved pedestrians or cyclists.

Public Transport

The site has limited access to the public transport network. As shown in **Figure 3**, the nearest bus stop is located on the northern side of the Great Western Highway approximately 300m away (walking distance) from the site. To access the bus stop for westbound buses on the southern side of the Great Western Highway, patrons from of the development would need to either cross a very busy road or walk to Gipps Street where a pedestrian phase is available before walking back to the bus stop; a total distance of over 650 m

As the Church will be using their own buses, it is not anticipated that the existing bus stops on the Highway would be used by patrons of the development.

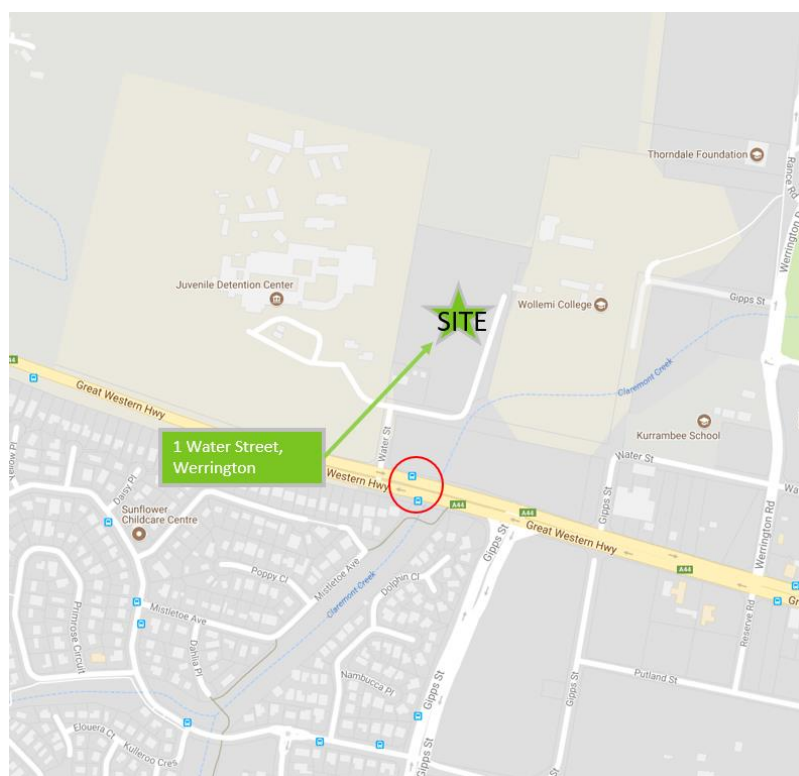


Figure 3: Existing Location of Bus stops

Table 10 shows the frequency of the different bus routes that stop at the two bus stops.

BUS ROUTE	DIRECTION	FREQUENCY		
		AM Peak	PM Peak	Off-Peak
774	East Bound	30 minutes	30 minutes	30 to 60 minutes
774	West Bound	20 minutes	20 minutes	25 to 30 minutes
775	East Bound	25 to 30 minutes	15 to 30 minutes	30 minutes
775	West Bound	20 to 30 minutes	30 to 35 minutes	20 to 30 minutes
776	East Bound	25 to 30 minutes	15 to 30 minutes	30 minutes
776	West Bound	25 to 30 minutes	25 to 30 minutes	30 minutes

Table 10: Bus Frequency

Figure 4 shows the recommended bus routes proposed in the South Werrington Urban Village Structure Plan that would operate in the vicinity of the site.

The proposed bus routes will thus provide a direct connection between the proposed development and the Werrington Railway station.

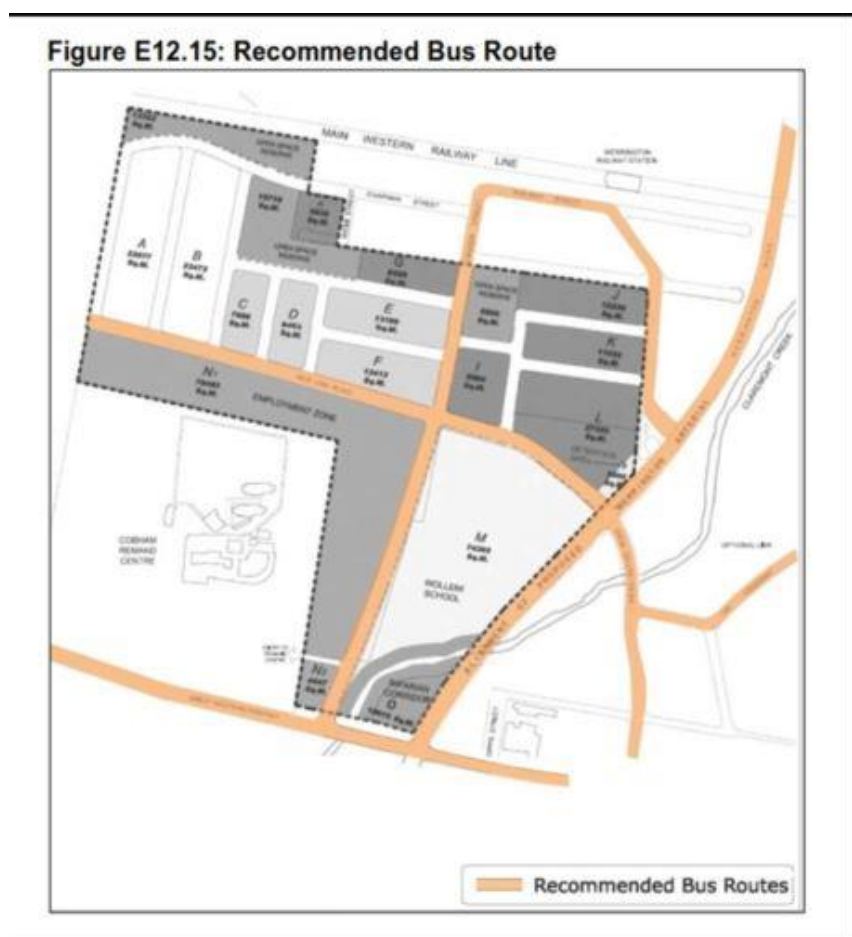


Figure 4: Proposed Bus Routes

Source South Werrington Urban Village Structure Plan

From the site, the nearest train station is Werrington Station, which is approximately 850m north of the site (walking distance via unnamed roads). The next available train station is St Marys Station which is approximately 3km north-east of the site.

Pedestrian and Cycle Facilities

The RMS cycleway finder and the associated bicycle routes are illustrated in **Figure 5**.

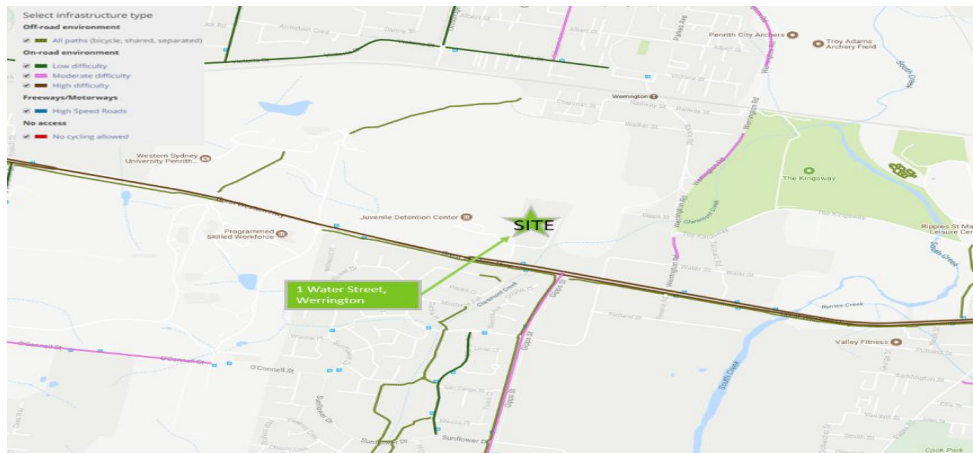


Figure 5: RMS Cycle Routes Map

The RMS strategic shared path network can be found along the southerly side of the Great Western Highway. This is a path that provides accessibility at a defined “low difficulty” level for users. It is a particularly convenient linkage with respect to the site. The shared pathway provides for strategic linking with the wider walking and cycling networks across Sydney.

The RMS has also highlighted the Great Western Highway as a very difficult to negotiate on-road bicycle facility.

This situation would be remedied when the Werrington Arterial Stage 2 and the New Link Road are completed. An off-road cycle/pedestrian share way is proposed as illustrated in **Figure 6**.

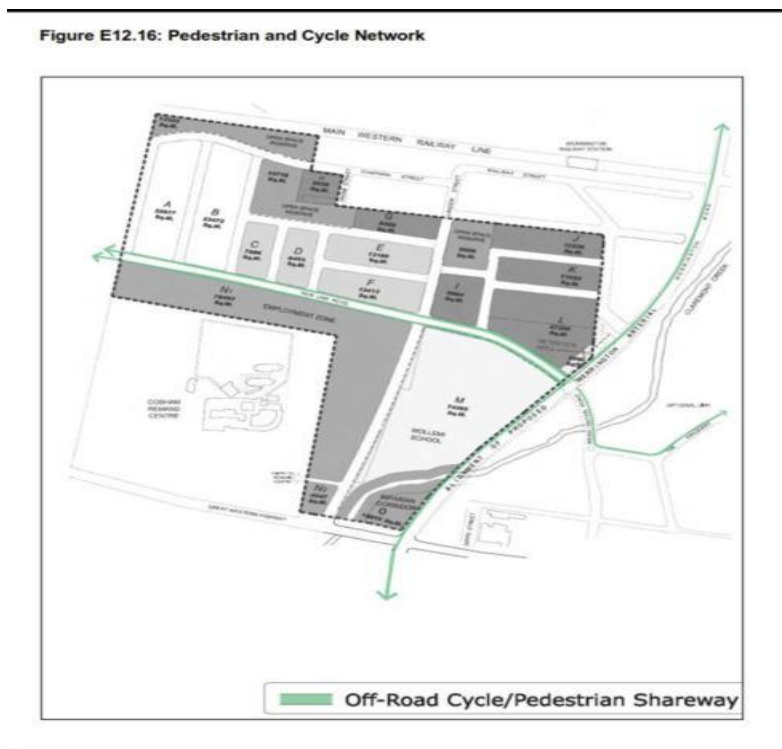


Figure 6: Proposed Off Road Cycle/Pedestrian Share Way (Source South Werrington Urban Village Structure Plan)

Conclusions

All issues raised by RMS and Council have been addressed in this Addendum report.

At the completion of Stage 1, including the prohibition of the right turn movement from Water Street, its intersection with Great Western Highway would operate satisfactorily.

At the completion of Stage 2, the right turning movements from the Great Western Highway would operate at a very poor level of service "F" on Sundays with extensive delays and the queue extending beyond the length of the exclusive right turn bay of 140m. In the future, this problem would be resolved once the Stage 2 Werrington Arterial is completed and the connection from Lander Street to Werrington Road along a New Link Road is in place as shown in **Figure 1**.

If the Werrington Arterial or an alternative internal access along Lander Street is not build in time, the installation of traffic signals at Water Street could resolve the problem; however, their close proximity to the signals at the Werrington Arterial would make their installation at Water Street problematic. Furthermore, the RMS main concern is the installation of traffic signals at the intersection of Water Street with the Great Western Highway to which they have strongly objected.

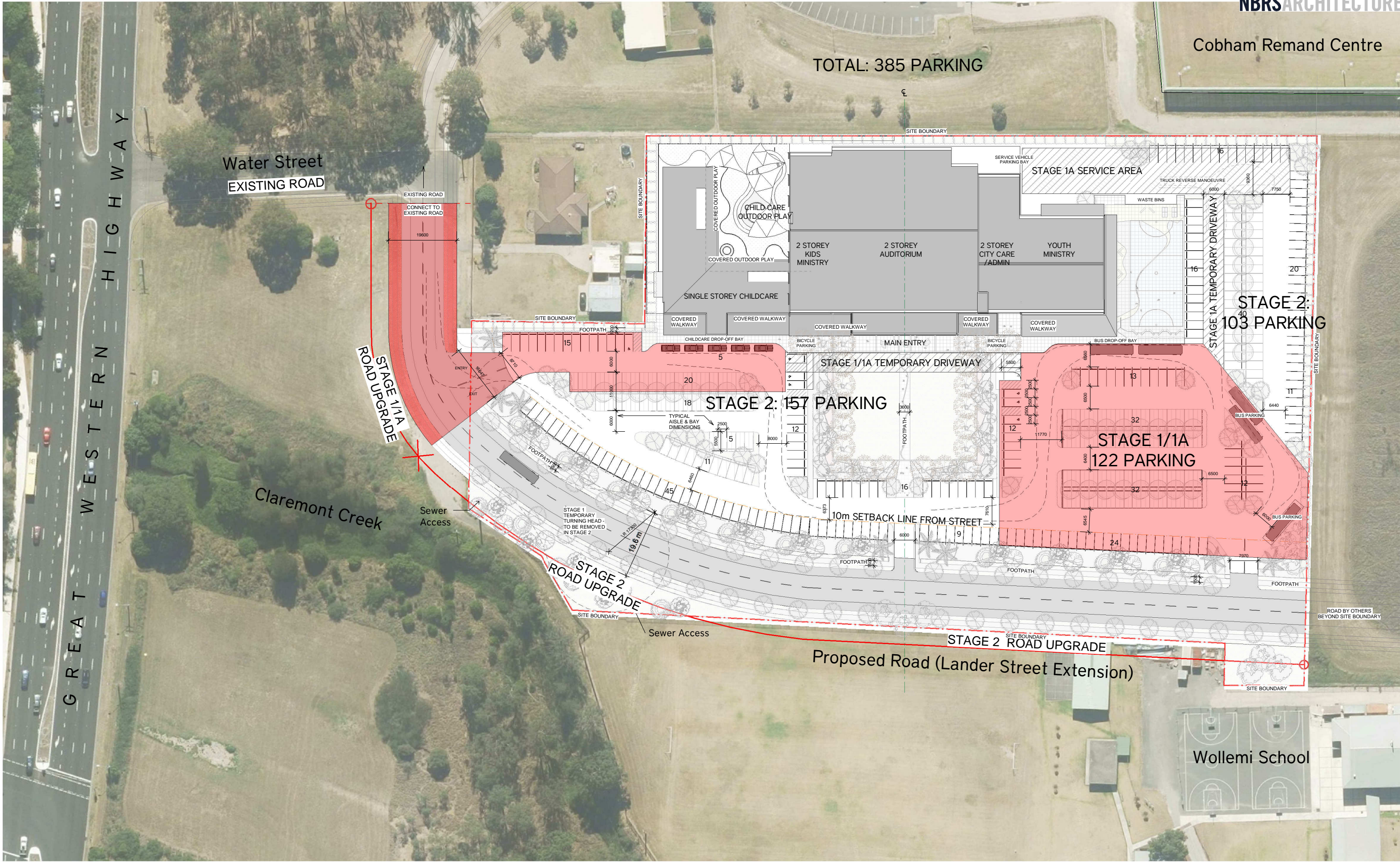
An interim solution, would be to banning of the right turning movement into Water Street from the Great Western Highway on Sundays only.



Fred Gennaoui
Senior Principal Consultant
TDG NSW (now Part of Stantec)

APPENDIX A

Proposed Parking Layout



Issue No.	Date	Description	Chkd
1	03/05/2017	Draft Development Application	AD
2	22/09/2017	For Client Review	AD
3	27/10/2017	Site Plan Consultant Issue	AD
4	31/10/2017	Development Application	AD
5	24/4/2018	Development Application	BF



Vehicle Access

Pedestrian Access

Site Boundary

Site Setback

Extent of Carpark & Road Stages

Stage 1/1A Road & Parking

Stage 1 temporary vehicular access

Building

Drawing Title
Proposed Site Plan

Project & Client
Hillsong Greater West Development
at
1 WATER STREET, WERRINGTON, 2747

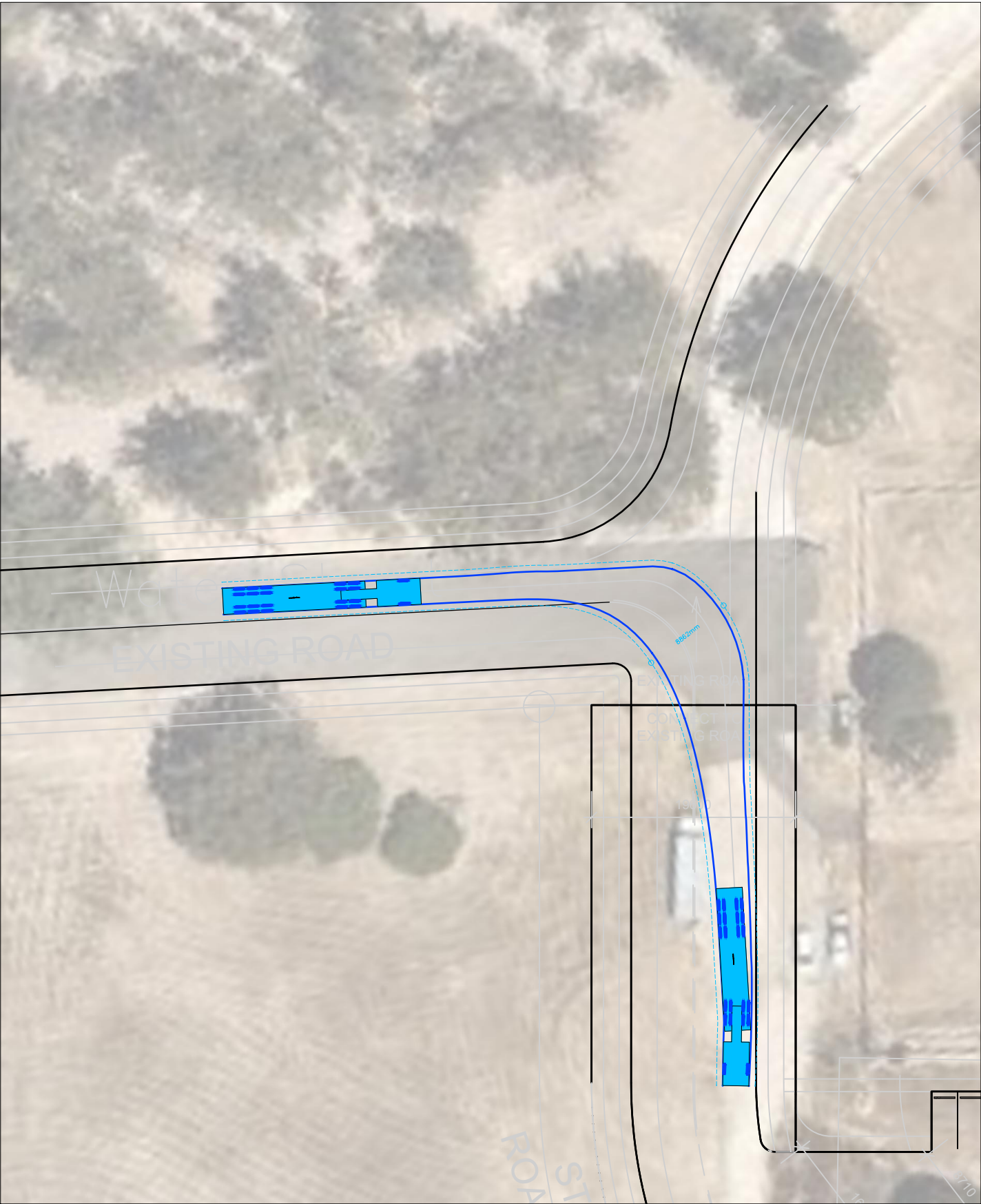
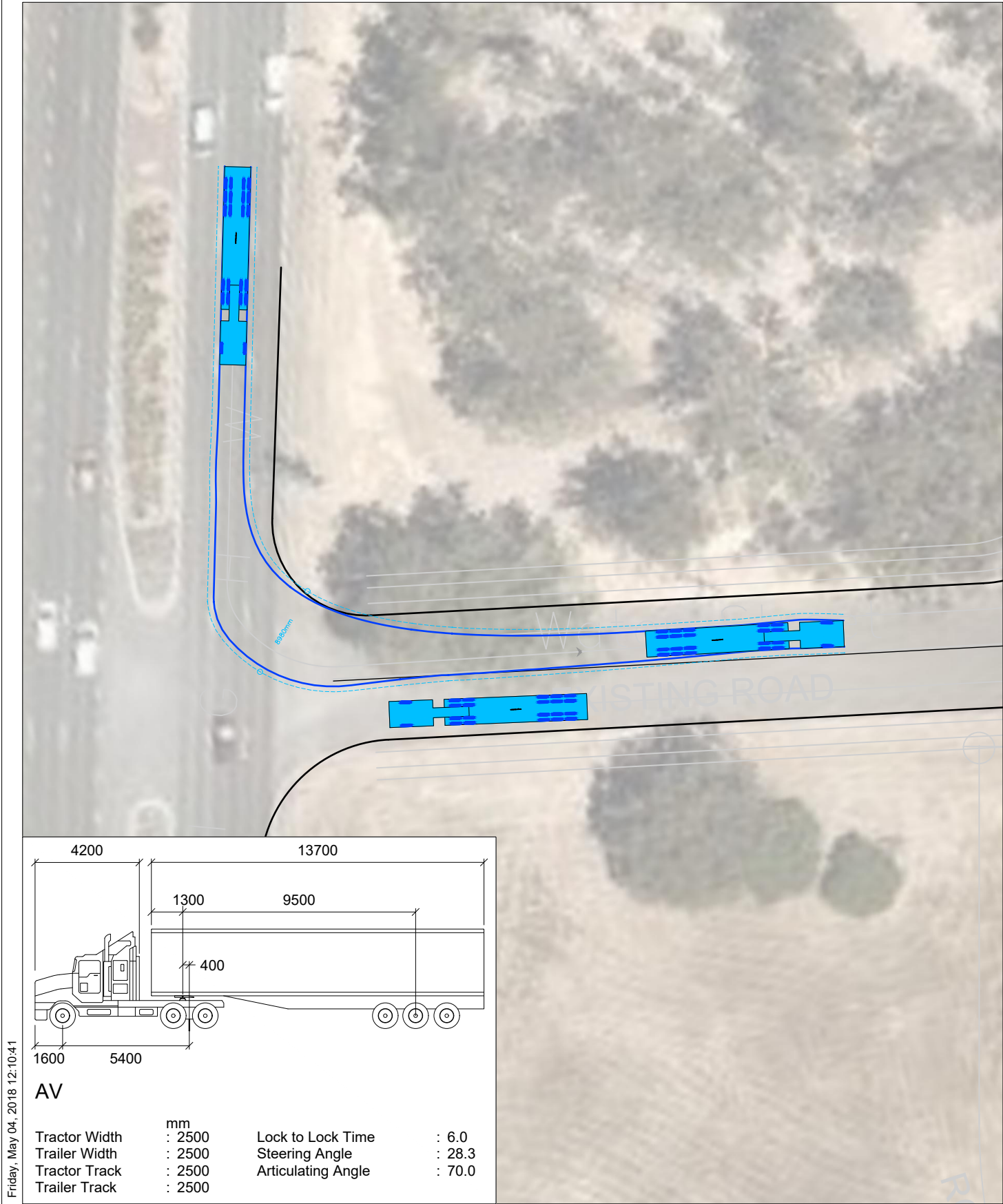
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ABN 16 002 247 565
Nominated Architects: Geoffrey Deane 3766; Andrew Duffin 5602; Garry Hoddinett 5286

Date 03-May-18 12:33:46 PM
Scale: 500@A1 or 1000@A3
0 5m 10m 15m 20m 25m 30m
Drawing Reference
15467 - 101
Revision
5

APPENDIX B

Swept Path 19m Articulated Vehicle



REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	----	----
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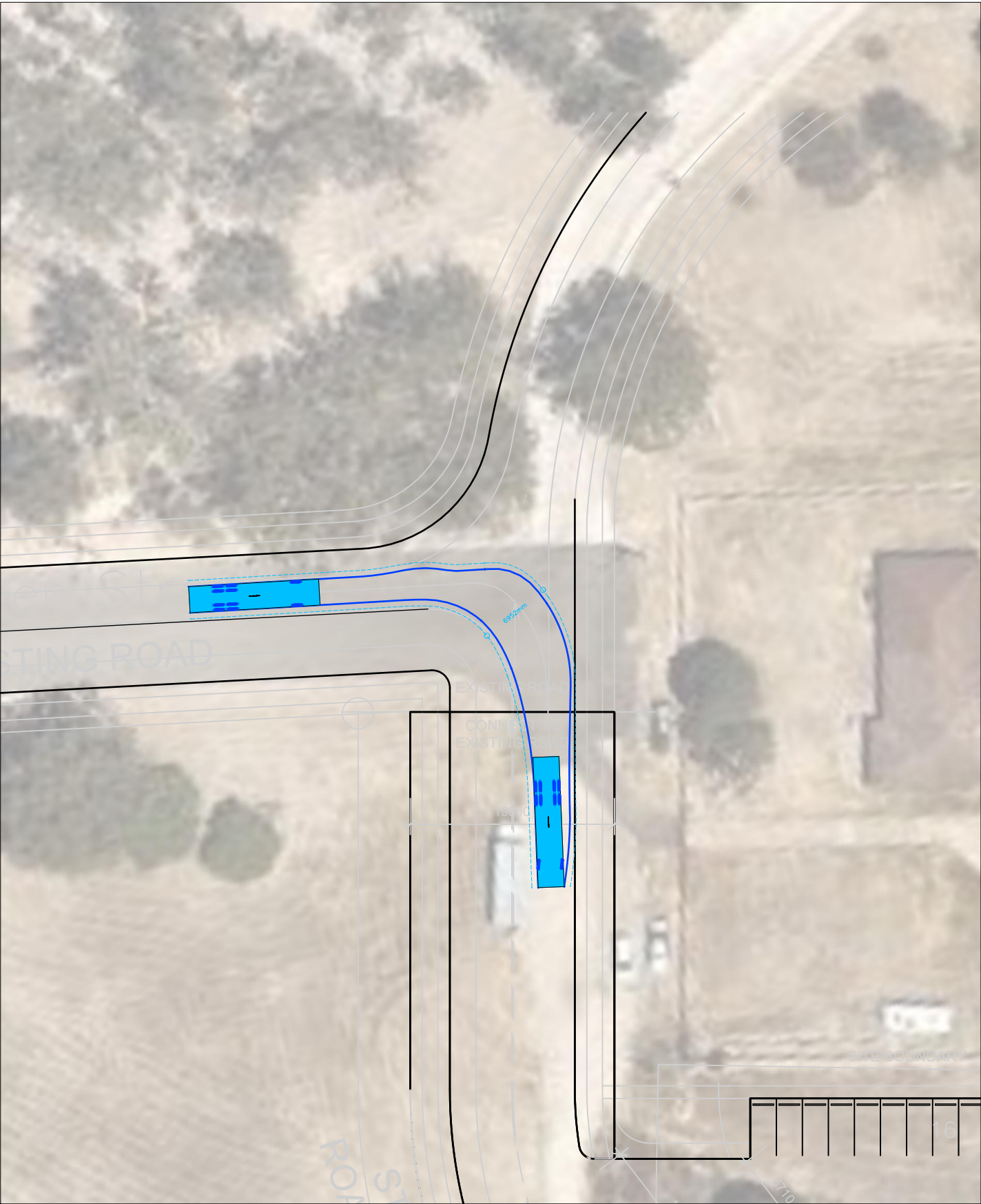
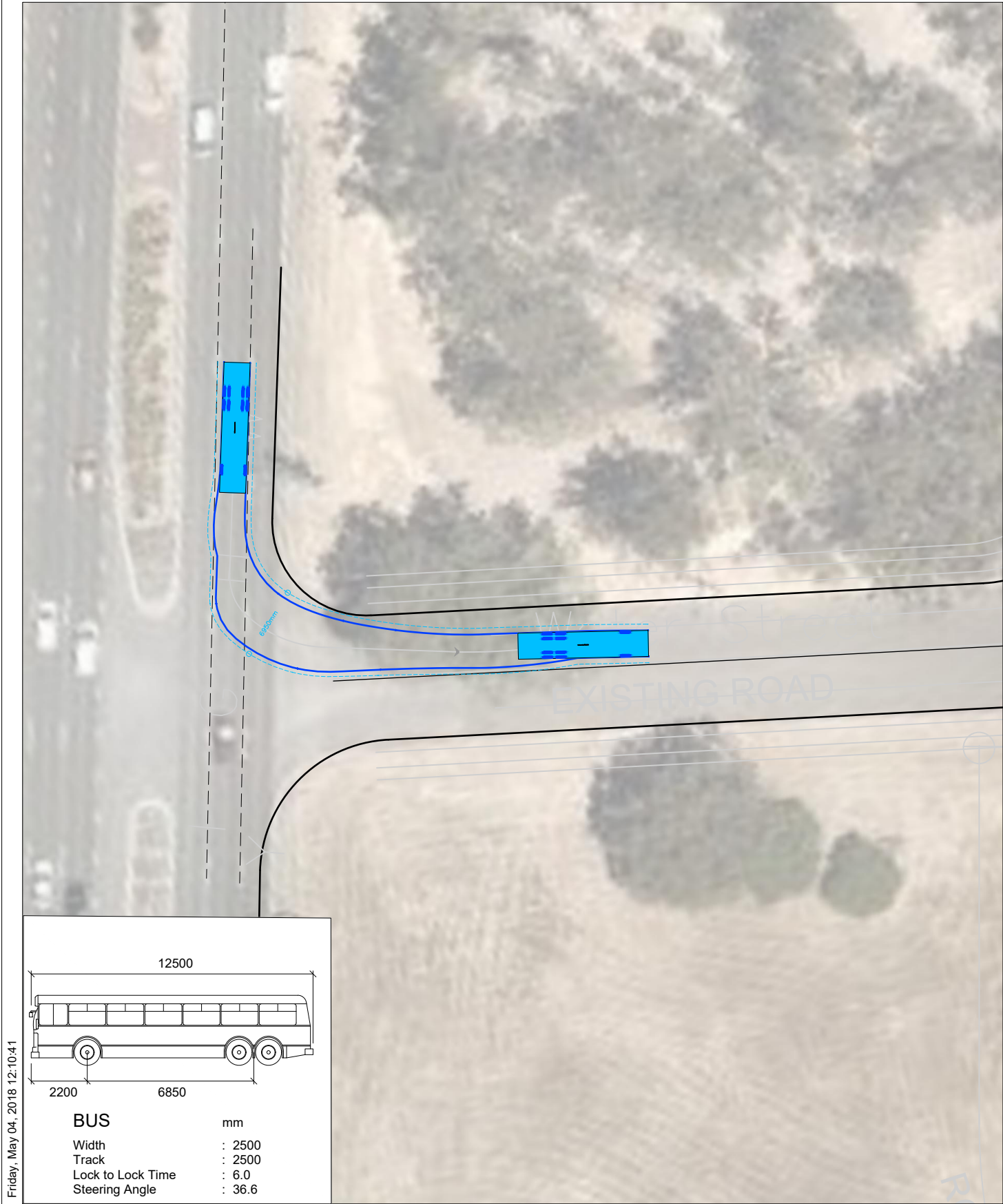
Hillsong Church Auditorium, Werrington
Swept Path Assessment
19 metres AV - Water Street - Entry

DRAWN: DA	---	---
DATE: 03-05-18	STATUS: ---	
SCALE: 1:500 @ A3		
DWG NO:14372-0S1B		



APPENDIX C

Swept Path for Buses at Intersection of Water Street with Great Western Highway and Lander St Extension



REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	----	----
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Hillsong Church Auditorium, Werrington

Swept Path Assessment

12.5 metres Bus - Water Street - Entry

DRAWN: DA --- ---

DATE: 03-05-18 STATUS: ---

SCALE: 1:500 @ A3

DWG NO:14372-0S1B



APPENDIX D

Swept Path for Buses in Stage 1



Friday, May 04, 2018 12:10:41

REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	----	----
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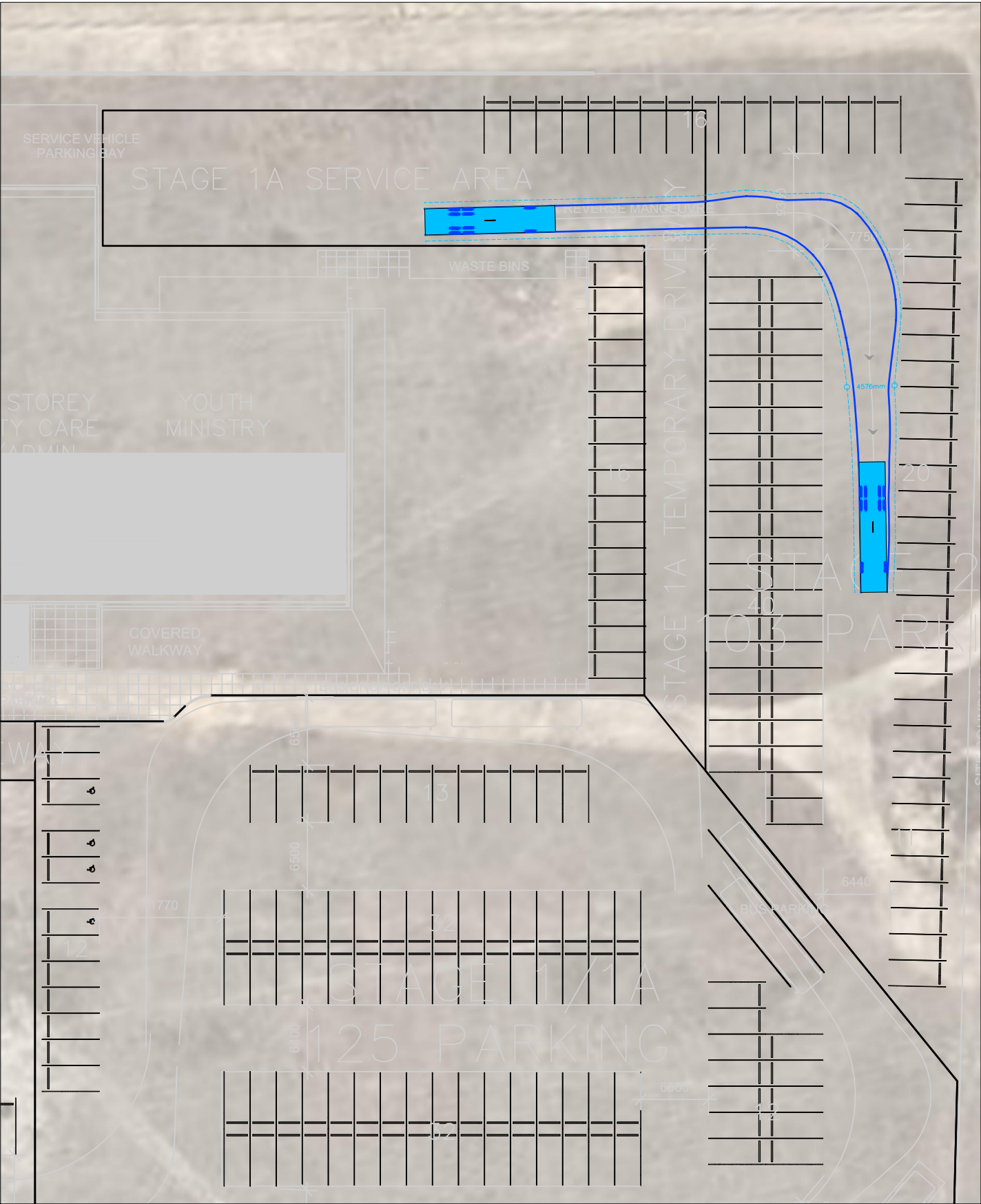
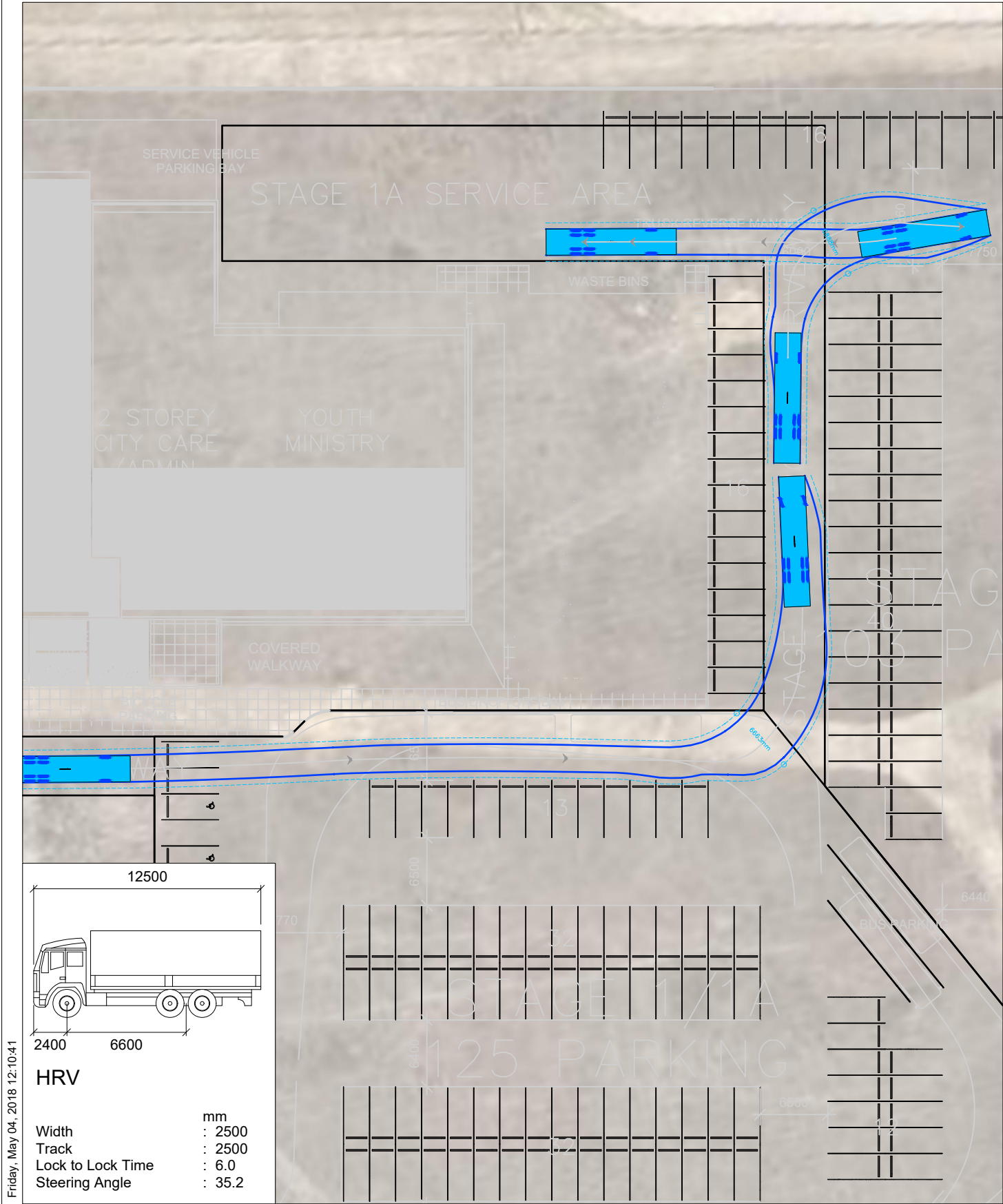
Hillsong Church Auditorium, Werrington
Swept Path Assessment
Stage 1 - 12.5 metres Bus - Exit

DRAWN: DA	---	---
DATE: 03-05-18	STATUS: ---	
SCALE: 1:500 @ A3		
DWG NO:14372-0S1B		



APPENDIX E

Swept Path for HRV in Stage 1



REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	---	---

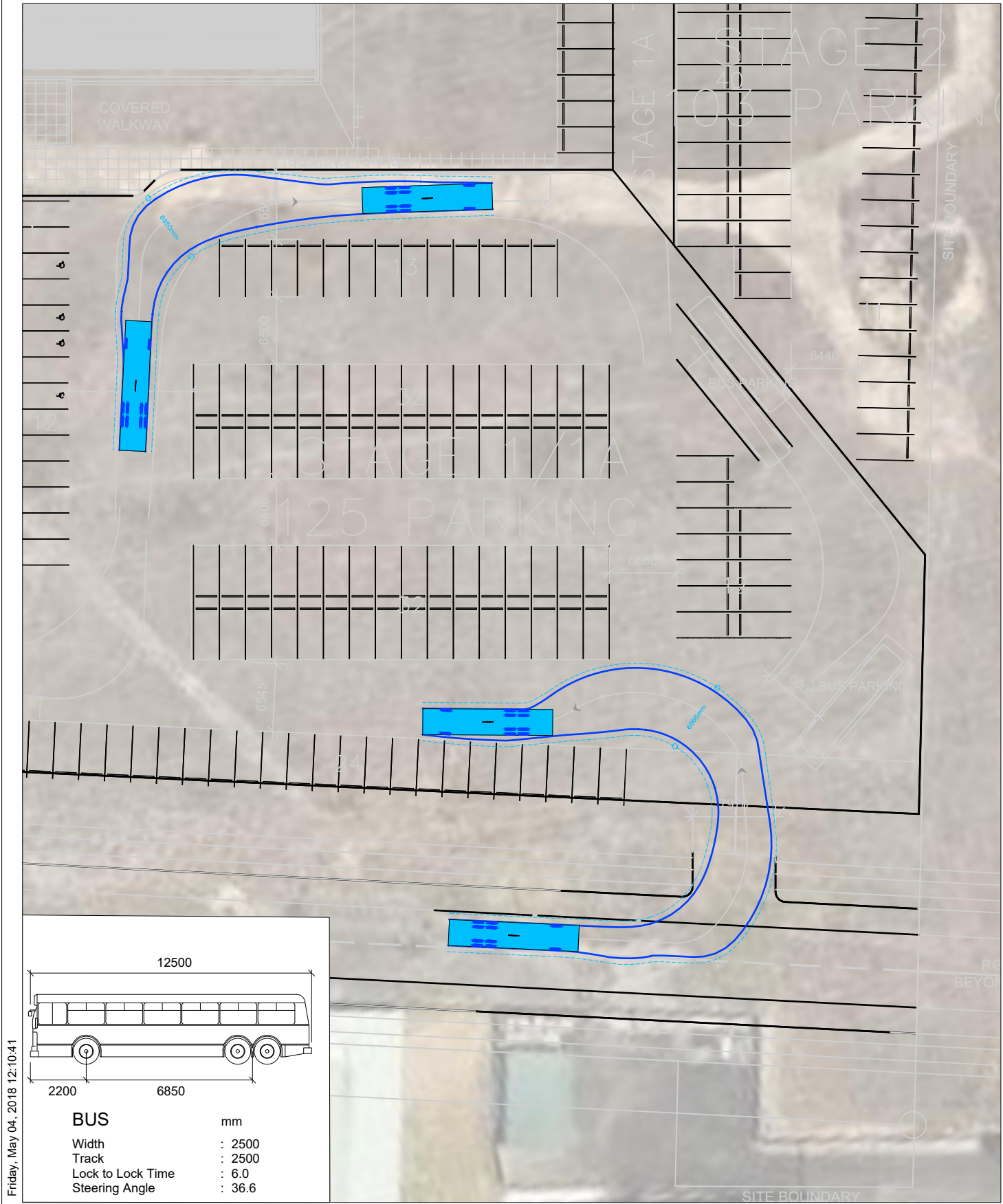
Hillsong Church Auditorium, Werrington
Swept Path Assessment
Stage 1 - 12.5 metres HRV- Entry / Exit

DRAWN: DA	---	---
DATE: 03-05-18	STATUS: ---	---
SCALE: 1:500 @ A3	---	---
DWG NO:14372-0S1B	---	---



APPENDIX F

Swept Path for Buses in Stage 2



REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	---	---
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Hillsong Church Auditorium, Werrington
Swept Path Assessment
Stage 2 - 12.5 metres Bus - Entry / Exit

DRAWN: DA	---	---
DATE: 03-05-18	STATUS: ---	---
SCALE: 1:500 @ A3	---	---
DWG NO:14372-0S1B	---	---



APPENDIX G

Swept Path for HRV in Stage 2



REV	DATE	DRN	CHK	DESCRIPTION
00	04/05/18	TJG	---	---
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Hillsong Church Auditorium, Werrington
Swept Path Assessment
Stage 2 - 12.5 metres HRV - Entry / Exit

DRAWN: DA	---	---
DATE: 03-05-18	STATUS: ---	---
SCALE: 1:500 @ A3	---	---
DWG NO:14372-0S1B	---	---

