

Our Ref: 13S1213000

13 March 2013

Brookfield Multiplex Australasia
GPO Box 172
SYDNEY NSW 2001

Attention: Mr Mark Ciano

Dear Mark

RE: ONE CARRINGTON STREET – WYNYARD LANE TWO-WAY TRAFFIC OPERATION

As requested, we have conducted a review into the feasibility of converting Wynyard Lane to allow two-way traffic operation as part of the redevelopment of the One Carrington Street site.

The Concept Plan Approval (MP 09_0076) includes a condition requiring a section of Wynyard Lane to be closed to provide a pedestrian concourse. The condition reads as follows:

Any future application for works east of Carrington Street incorporating the use of Wynyard Lane as part of the pedestrian concourse (being offsite works) shall be provided with a Traffic Management Plan (TMP) prepared in consultation with TfNSW and the City of Sydney that addresses the closure of the section of Wynyard Lane to traffic as outlined in the PPR and shall set out alternative traffic arrangements and conditions, for approval by the relevant authority.

We prepare this letter to address the above consent condition noting that closure of Wynyard Lane was not included in the original Concept Plan application, but was included subsequently in response to a submission by the City of Sydney.

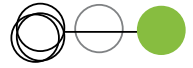
Wynyard Lane Existing Condition

Wynyard Lane between Margaret Street and Wynyard Street is a single lane laneway with one-way traffic flow from north to south. It operates with one traffic lane and one parking/loading lane with narrow kerbs on either side. Wynyard Lane provides vehicular access to properties on it.

At present, Wynyard Lane has a kerb to kerb width of approximately 5.2m with kerb widths of approximately 0.5m on the western side and 0.25m on the eastern side.

Wynyard Lane does not permit kerbside parking on the western side of it. This is signed with "No Stopping" parking restrictions. The eastern side has "No Stopping" restrictions, but with intermittent "No Parking" and "Loading" restrictions (generally near its intersections with Margaret Street and Wynyard Street).

At the northern end of Wynyard Lane (near Margaret Street) there are two separate signed on-street loading zones with each able to accommodate up to three van/utility type vehicles or one medium sized



truck plus one van/utility type vehicle (i.e. a total of six van/utility type vehicles or two medium sized truck plus two van/utility type vehicles).

The signed on-street loading zone at the southern end (near Wynyard Street) is able to accommodate three van/utility vehicles.

Wynyard Lane "Pedestrian Concourse"

If Wynyard Lane was to be closed at a central location to provide a "*pedestrian concourse*", the remaining open sections on either side of the closed section would need to operate as two-way cul-de-sacs with "No Stopping" parking restrictions on each side. These would allow vehicles travelling in each direction to pass one another with a high degree of caution. Turn around area would be required at the end of each cul-de-sac.

The effects of closing Wynyard Lane are discussed below.

Implications of Wynyard Lane Operating as a Two-way Road

As indicated above, the existing kerb to kerb width of Wynyard Lane is only 5.2m with very narrow kerbs. The Australian Standard requires minimum roadway widths of 6.5m kerb to kerb for two way truck flow. In practice two medium size trucks are able to pass each other at present under the one way flow arrangement with one parked and the other moving past very slowly. This would still be possible under two-way flow conditions with one vehicle stopped hard up against the kerb, but it would represent a very sub-standard situation.

As turning vehicles produce a wider swept path than ones travelling straight, trucks would not be able to pass if turning into or out of driveways or Margaret Street. In this regard, Figure 1 to Figure 3 below show the swept path diagrams for an 8.8m medium rigid truck and a 5.2m long vehicle conducting various different turning movements at the intersection with Margaret Street.

Figure 1 shows that the swept path of two 5.2m long vehicles would slightly overlap at the centre of Wynyard Lane. Thus there would be difficulties for two of these vehicles turning into and out of Wynyard Lane simultaneously.

Figure 2 shows that when an 8.8m long truck turns in from Margaret Street, it would occupy the entire width of Wynyard Lane. Figure 3 shows two 8.8m trucks turning to and from Margaret Street would also overlap. Additional swept path diagrams (provided as A3 plans at 1:200 scale) are contained in Attachment 1.

These swept path diagrams show conclusively that in the present condition of the lane, one vehicle would have to wait either in Margaret Street or well back in Wynyard Lane while an oncoming vehicle turned in or out.

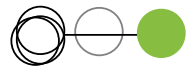


Figure 1 – Swept Path Diagram 5.2m Vehicles

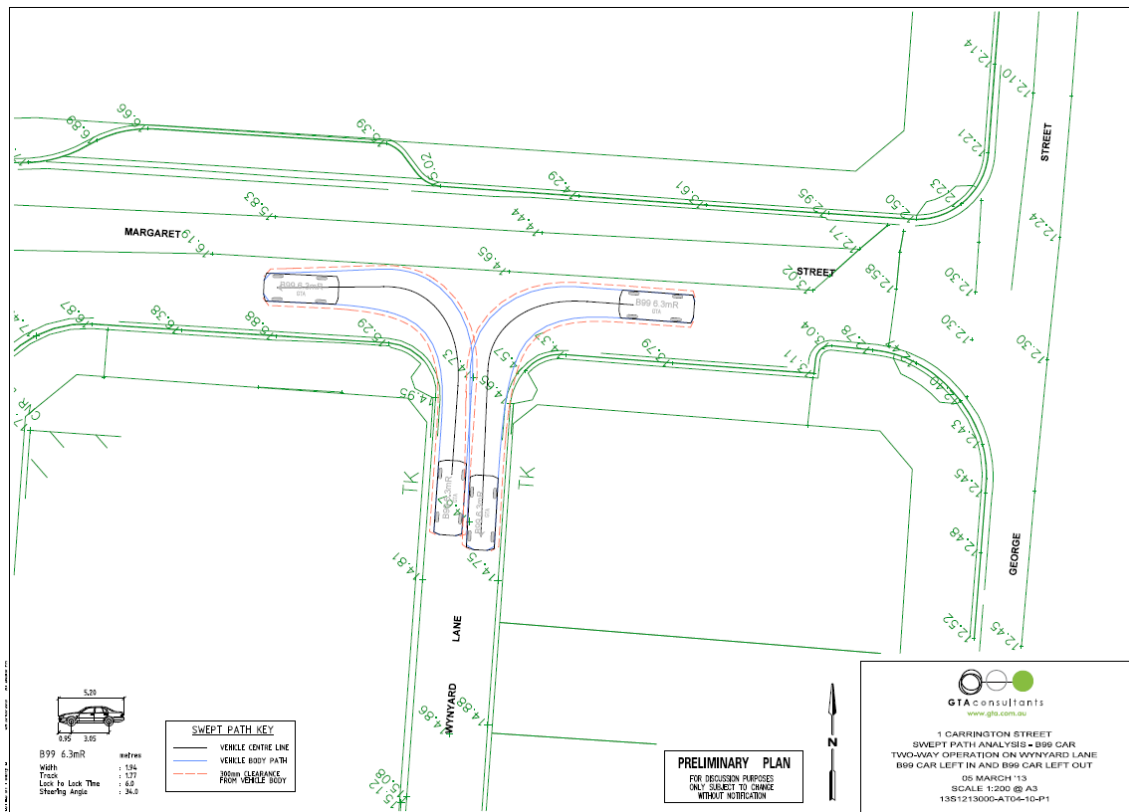
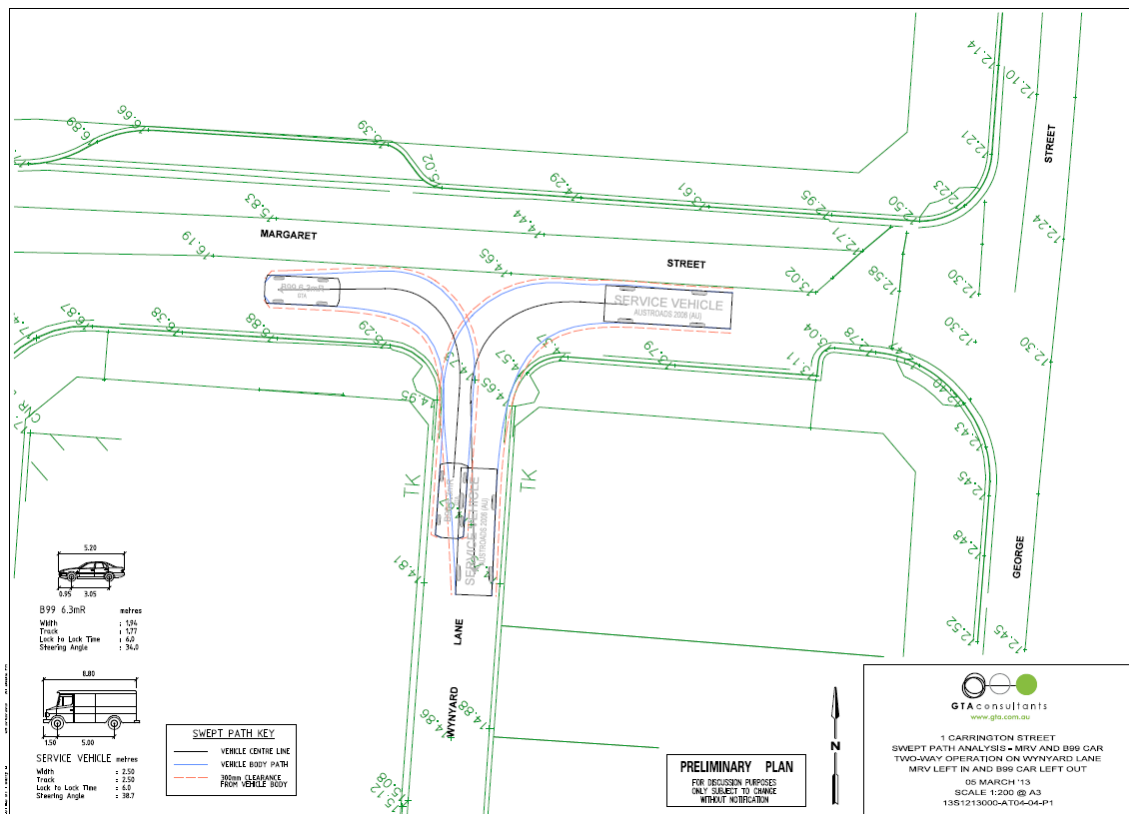


Figure 2 – Swept Path Diagram 8.8m Truck Vs 5.2m Vehicle



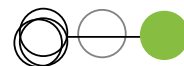
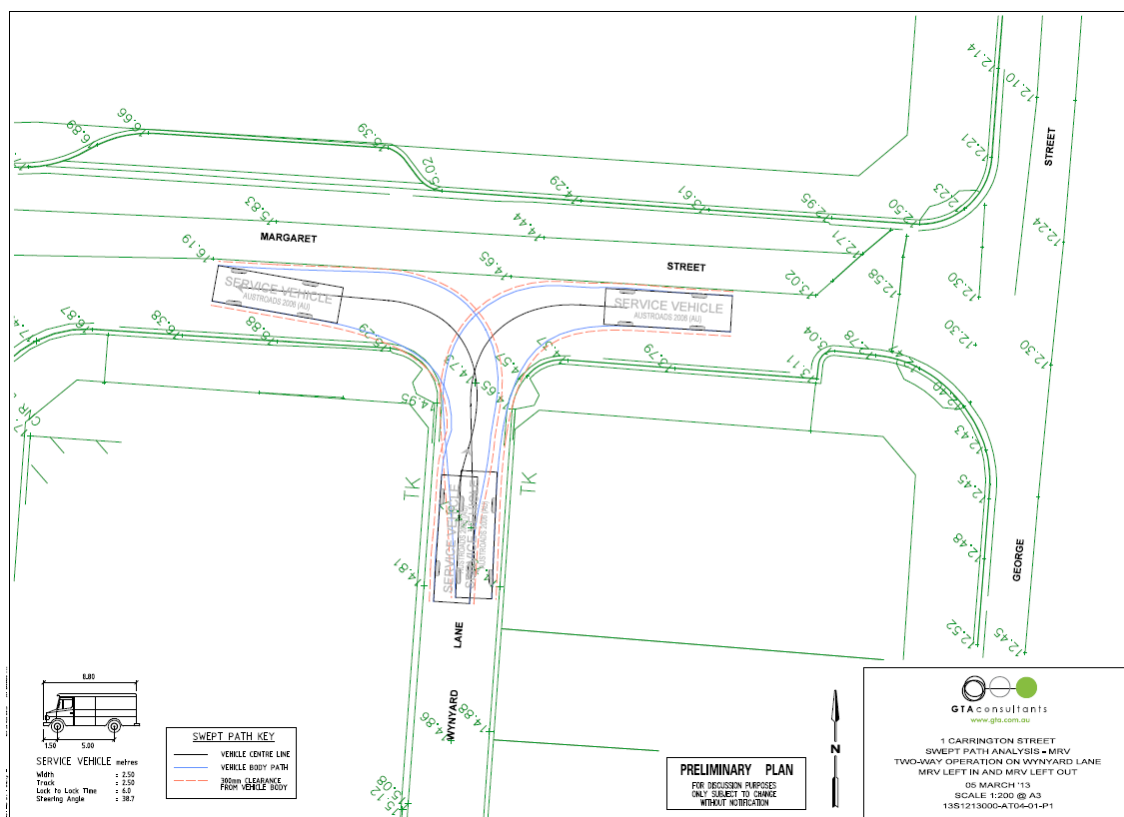


Figure 3 – Swept Path Diagram 8.8m Trucks



Therefore, from the above, in order to have two-way traffic operation on Wynyard Lane, it would be necessary to either widen Wynyard Lane at Margaret Street or control the opposing traffic streams so that they could enter or exit the lane separately. In this case it would not be possible to widen Wynyard Lane due to heritage control on Shell House.

A traffic management solution to allow two-way traffic flows on Wynyard Lane could involve the signalisation of the Wynyard Lane intersection with Margaret Street. However, this would not be possible due to the close proximity of Wynyard Lane to both George Street and Carrington Street, which are currently both signalised.

At present, queues on Margaret Street extend back from George Street and past both Wynyard Lane and Carrington Street. In peak periods, an additional set of traffic signals on Margaret Street would aggravate queuing on it with adverse effects on bus movements on Margaret Street and most likely also on York Street. This would be unacceptable in the context of the intensive operations of the Wynyard bus interchange.

In addition, providing a traffic signal at Margaret Street intersection would require any traffic leaving Wynyard Lane to be held sufficiently far away from Margaret Street so that a truck entering from Margaret Street could straighten up to pass it. This could lead to inefficient traffic signal operation and potential safety issues.

Pedestrian Consideration

From the above, it is apparent that it would not be practical to convert the northern end of Wynyard Lane to two-way traffic flow. While we understand the desire to provide a traffic free pedestrian route

from George Street to Carrington Street, we note that the main pedestrian desire line is to the western side of Carrington Street to join bus services either on the western side of Carrington Street or York Street. It would be highly desirable for these pedestrians to continue travelling beneath Carrington Street to emerge on its western side adjacent to the main northbound bus stops.

It would be highly undesirable to direct bus patrons to the eastern side of Carrington Street such that they would then attempt to cross Carrington Street between parked buses. In practice, this could well lead to the need for a marked pedestrian crossing over Carrington Street. This would not only impede buses, it would necessitate the removal of at least two bus stops on the western side of Carrington Street. Given the existing shortage of kerbside bus stop locations this would be an unacceptable outcome.

Conclusion

Based on the study and analysis above we recommend Wynyard Lane be maintained as a one-way through laneway principally for the servicing of buildings to George Street and Carrington Street. A shared zone crossing on Wynyard Lane should be considered for the limited number of pedestrians that would wish to access the eastern of Carrington Street. The main pedestrian desire line to the western side of Carrington Street should continue to be catered for via a pedestrian route beneath Wynyard Lane.

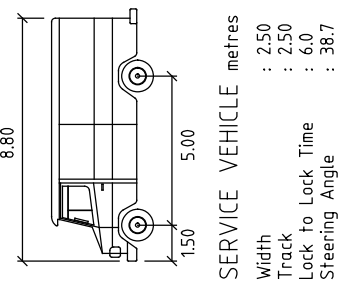
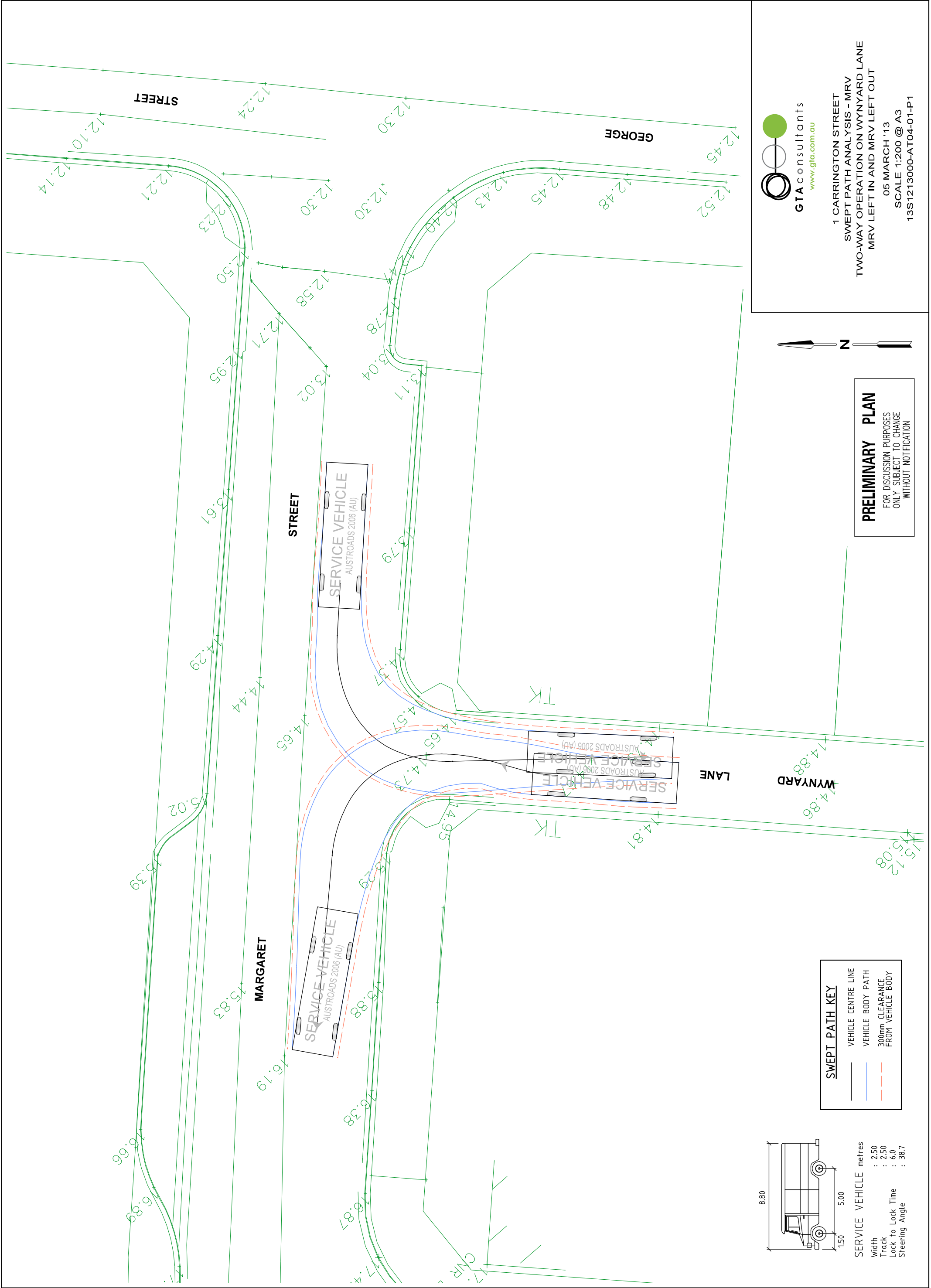
Yours sincerely

GTA CONSULTANTS



Michael Lee
Associate

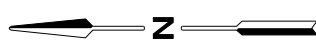
Attachment 1 – Swept Path Diagrams



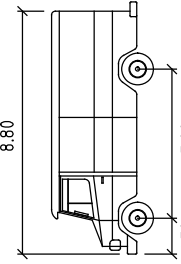
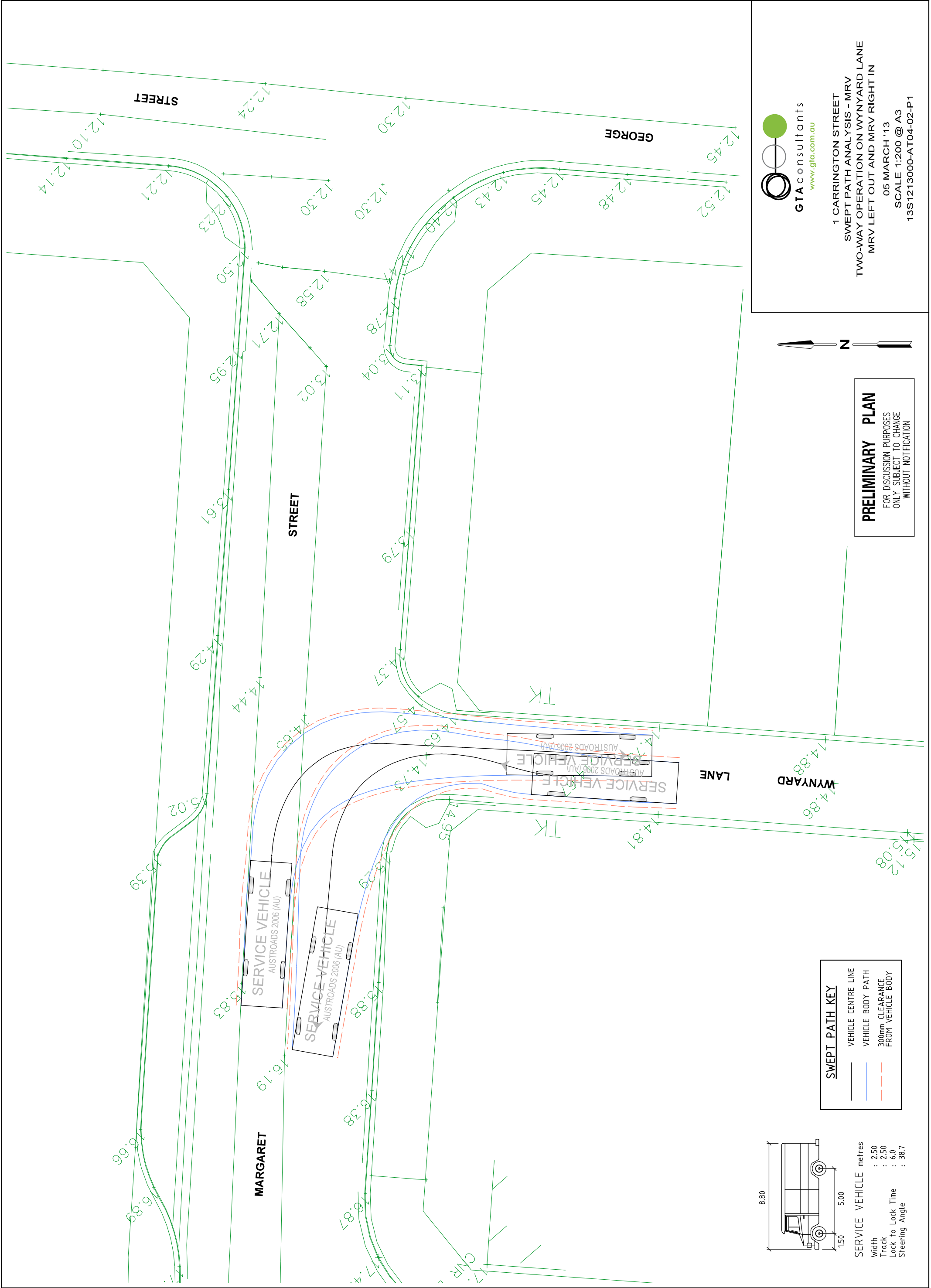
SWEPT PATH KEY

—	VEHICLE CENTRE LINE
—	VEHICLE BODY PATH
—	300mm CLEARANCE FROM VEHICLE BODY

PRELIMINARY PLAN
 FOR DISCUSSION PURPOSES
 ONLY SUBJECT TO CHANGE
 WITHOUT NOTIFICATION



1 CARRINGTON STREET
 SWEEP PATH ANALYSIS - MRV
 TWO-WAY OPERATION ON WYNYARD LANE
 MRV LEFT IN AND MRV LEFT OUT
 05 MARCH '13
 SCALE 1:200 @ A3
 13S1213000-AT04-01-P1



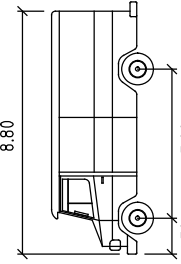
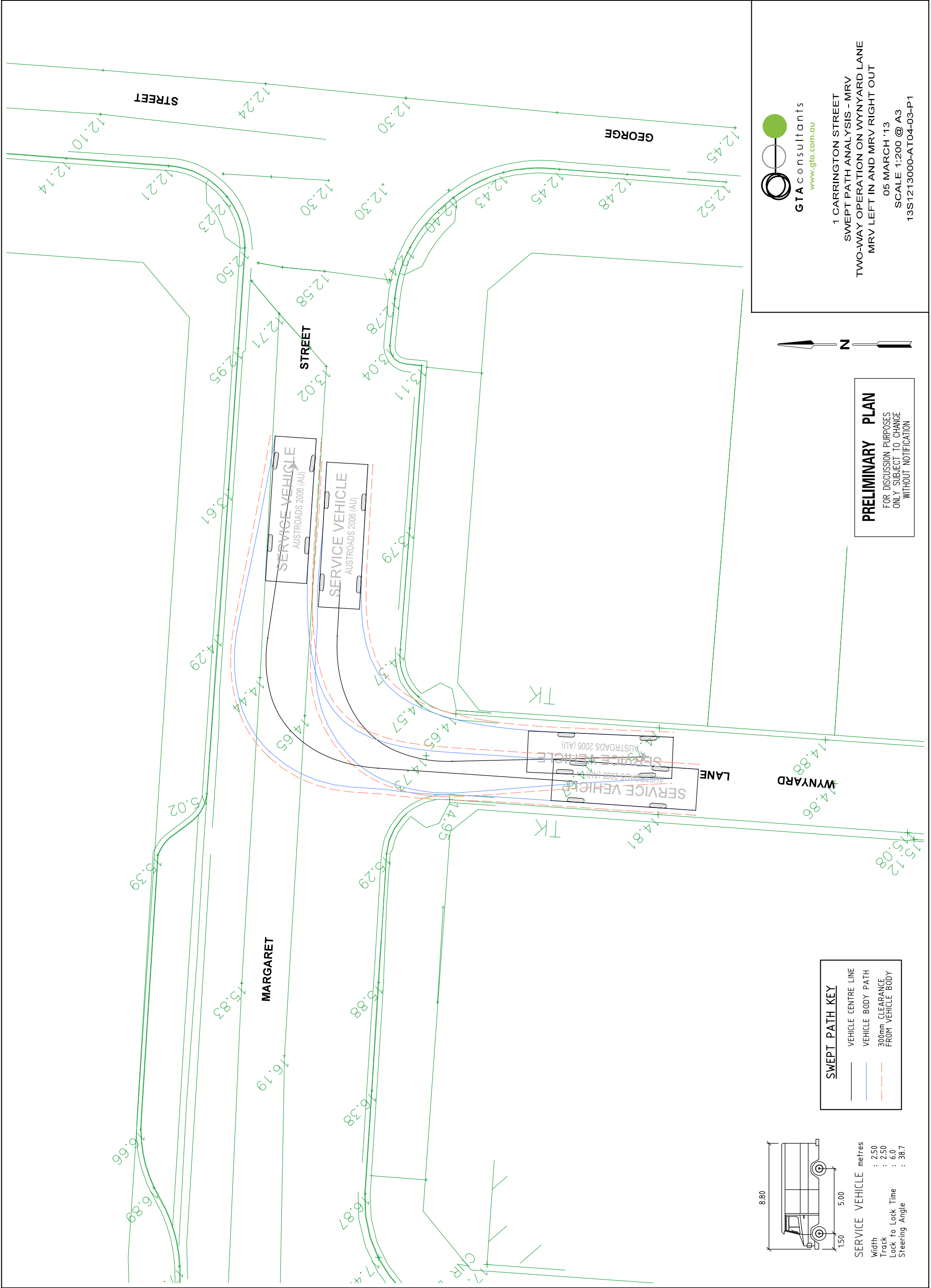
SERVICE VEHICLE		metres
Width	:	2.50
Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	38.7

SWEPT PATH KEY	
—	VEHICLE CENTRE LINE
—	VEHICLE BODY PATH
—	300mm CLEARANCE FROM VEHICLE BODY

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1 CARRINGTON STREET
SWEPT PATH ANALYSIS - MRV
TWO-WAY OPERATION ON WYNARD LANE
MRV LEFT OUT AND MRV RIGHT IN
05 MARCH '13
SCALE 1:200 @ A3
13S1213000-AT04-02-P1



SERVICE VEHICLE		metres
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Track	:	2.50
Lock to Lock Time	:	6.0
Steering Angle	:	38.7

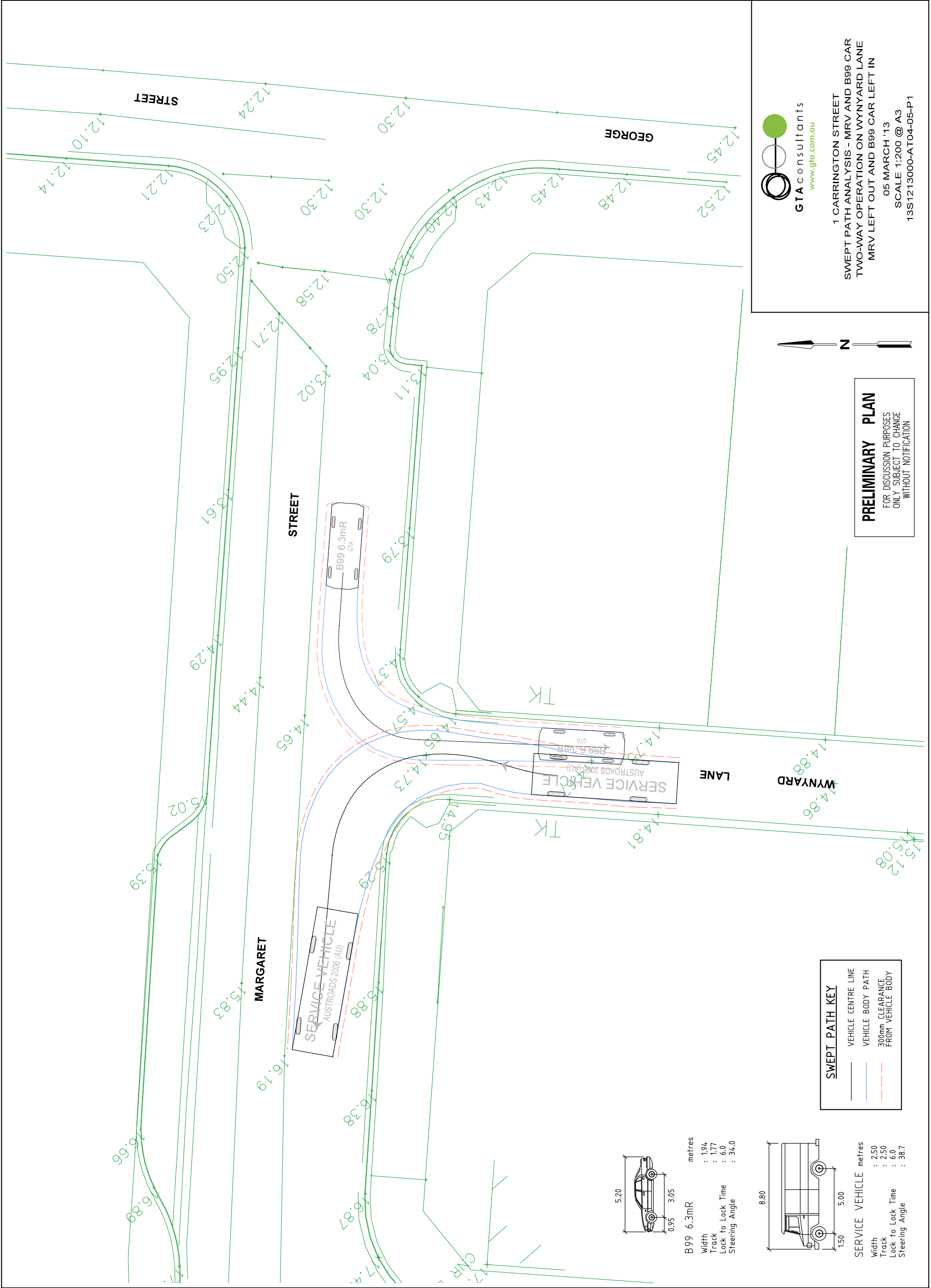
SWEPT PATH KEY	
—	VEHICLE CENTRE LINE
—	VEHICLE BODY PATH
---	300mm CLEARANCE FROM VEHICLE BODY



PRELIMINARY PLAN
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1 CARRINGTON STREET
 SWEEP PATH ANALYSIS - MRV
 TWO-WAY OPERATION ON WYNARD LANE
 MRV LEFT IN AND MRV RIGHT OUT
 05 MARCH '13
 SCALE 1:200 @ A3
 13S1213000-AT04-03-P1



1 CARRINGTON STREET
SWEPT PATH ANALYSIS - MRV AND B99 CAR
TWO-WAY OPERATION ON WYNYARD LANE
MRV LEFT OUT AND B99 CAR LEFT IN
05 MARCH '13
SCALE 1:200 @ A3
13S1213000-AT04-05-P1

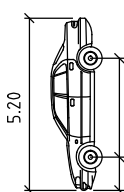
PRELIMINARY PLAN
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SWEPT PATH KEY

—	VEHICLE CENTRE LINE
—	VEHICLE BODY PATH
—	300mm CLEARANCE FROM VEHICLE BODY

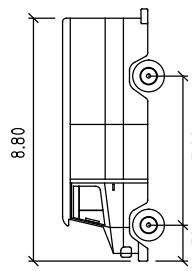
B99 6.3mR

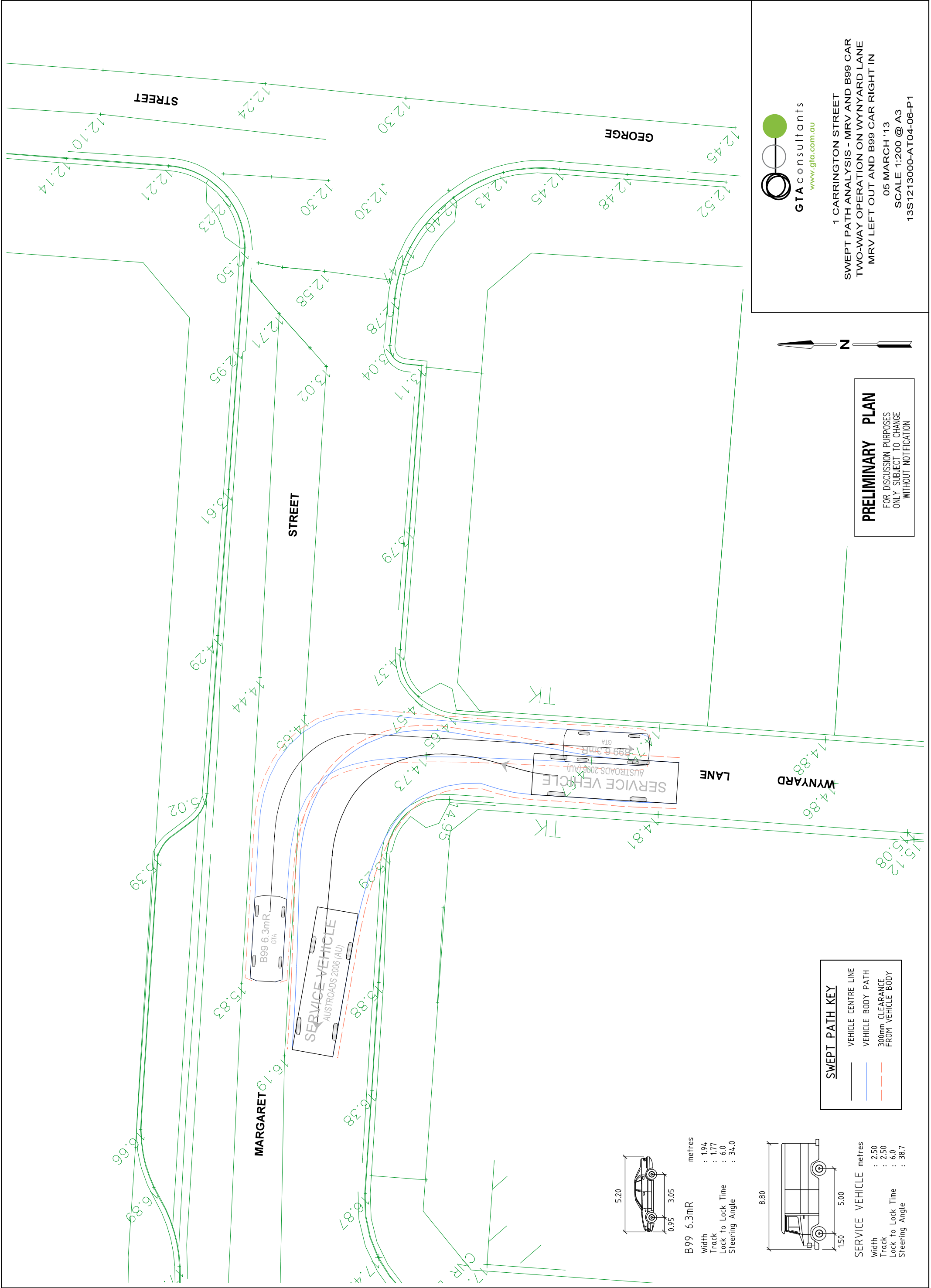
Width	: 1.94
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.0



SERVICE VEHICLE

Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7







GTA consultants
www.gta.com.au

1 CARRINGTON STREET

SWEPT PATH ANALYSIS - MRV AND B99 CAR

TWO-WAY OPERATION ON WYNYARD LANE

MRV LEFT OUT AND B99 CAR RIGHT IN

05 MARCH '13

SCALE 1:200 @ A3

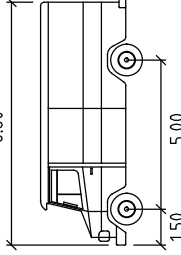
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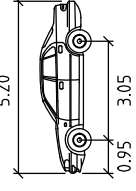


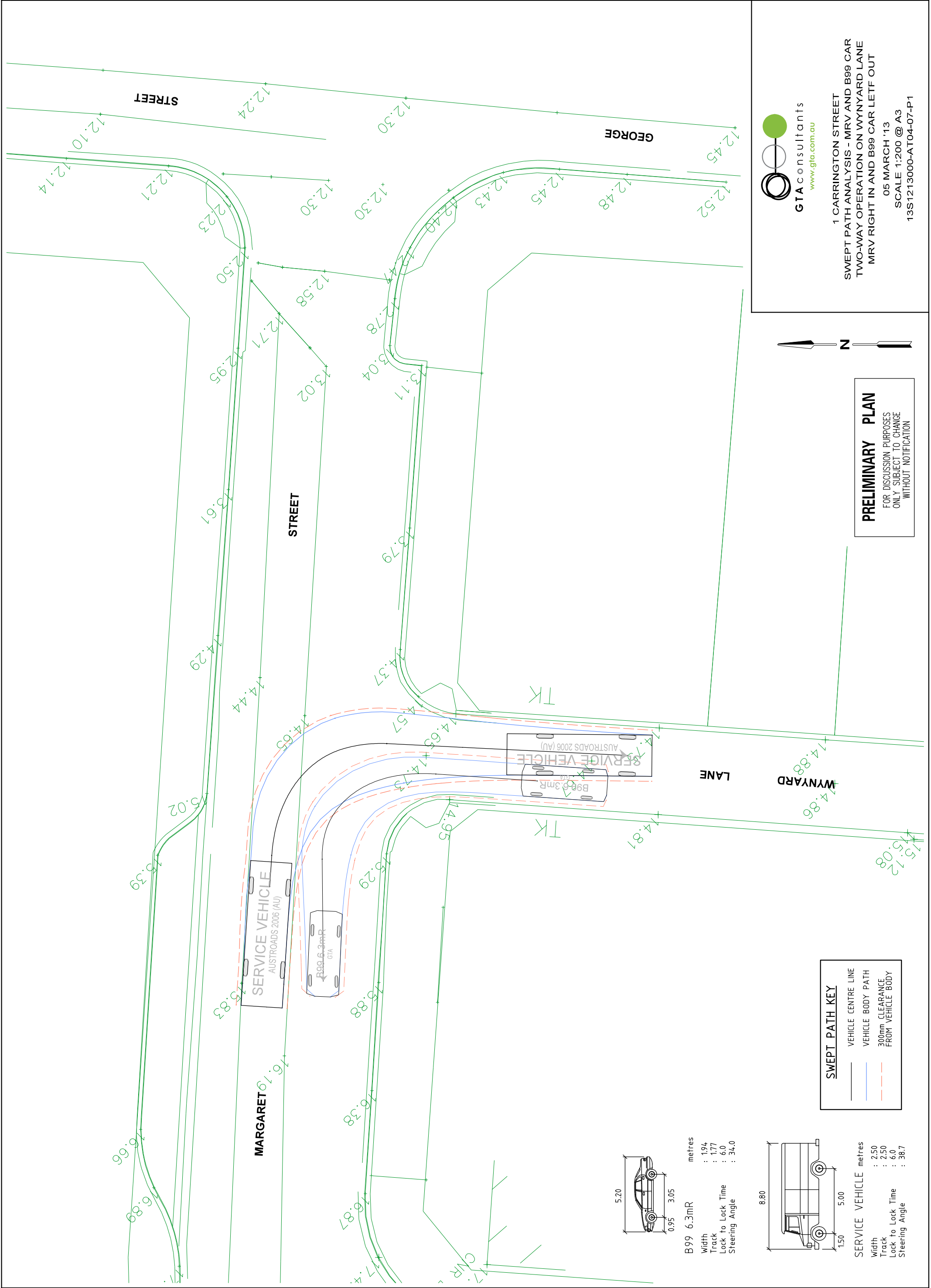
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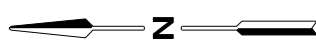
SWEPT PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE BODY PATH
	300mm CLEARANCE FROM VEHICLE BODY

SERVICE VEHICLE	
	metres
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7

B99 6.3mR	
	metres
Width	: 1.94
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.0



1 CARRINGTON STREET
SWEEP PATH ANALYSIS - MRV AND B99 CAR
TWO-WAY OPERATION ON WYNYARD LANE
MRV RIGHT IN AND B99 CAR LETF OUT
05 MARCH '13
SCALE 1:200 @ A3
13S1213000-AT04-07-P1

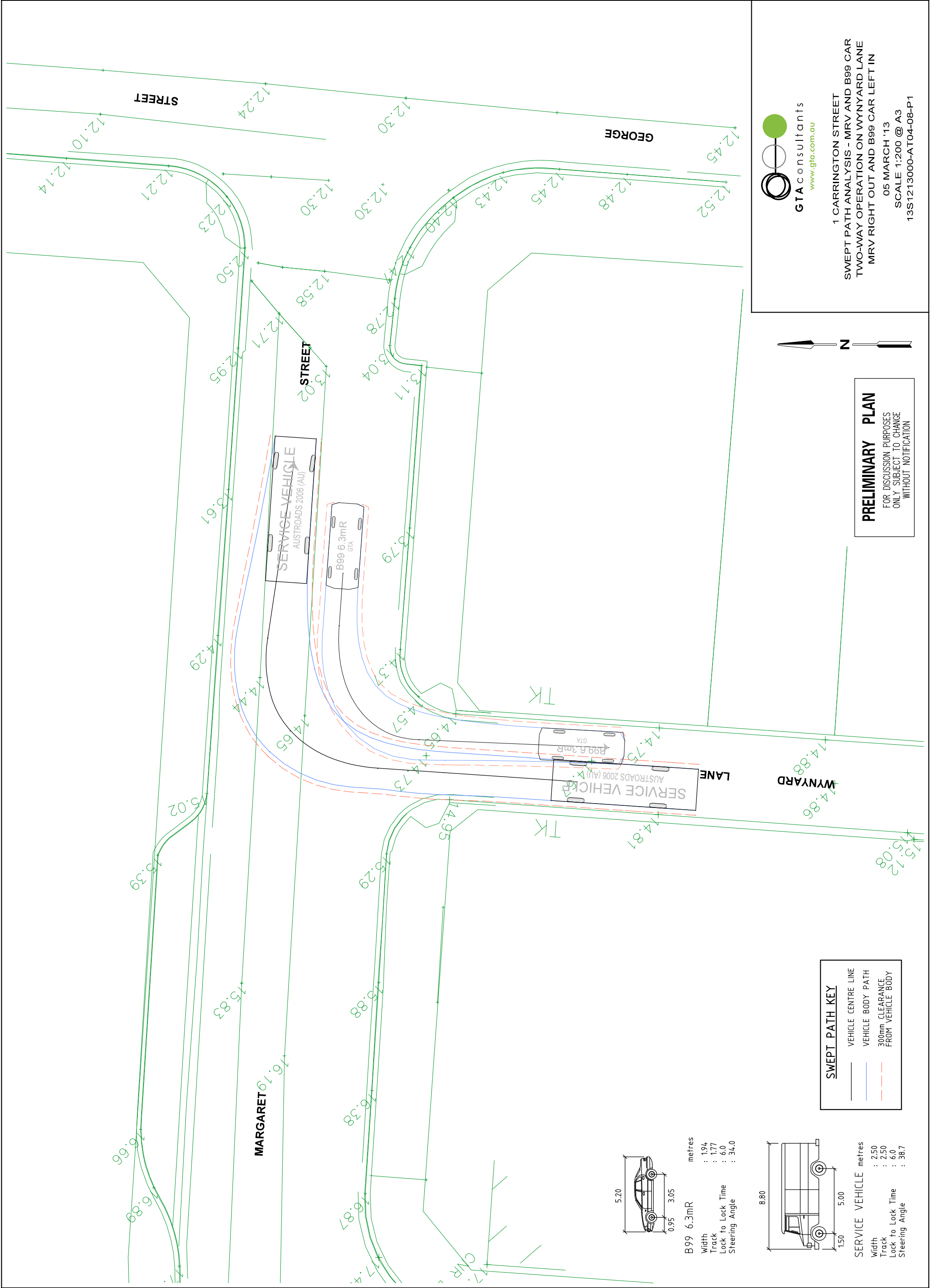


PRELIMINARY PLAN
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SWEEP PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE BODY PATH
	300mm CLEARANCE FROM VEHICLE BODY

B99 6.3mR	metres
Width	: 1.94
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

SERVICE VEHICLE	metres
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 38.7





GTA consultants
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1 CARRINGTON STREET

SWEPT PATH ANALYSIS - MRV AND B99 CAR

TWO-WAY OPERATION ON WYNYARD LANE

MRV RIGHT OUT AND B99 CAR LEFT IN

05 MARCH '13

SCALE 1:200 @ A3

13S1213000-AT04-08-P1

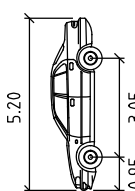


PRELIMINARY PLAN

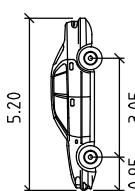
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SWEPT PATH KEY

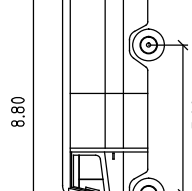
	VEHICLE CENTRE LINE
	VEHICLE BODY PATH
	300mm CLEARANCE FROM VEHICLE BODY



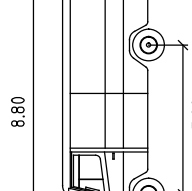
B99 6.3mR
 Width : 1.94
 Track : 1.77
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



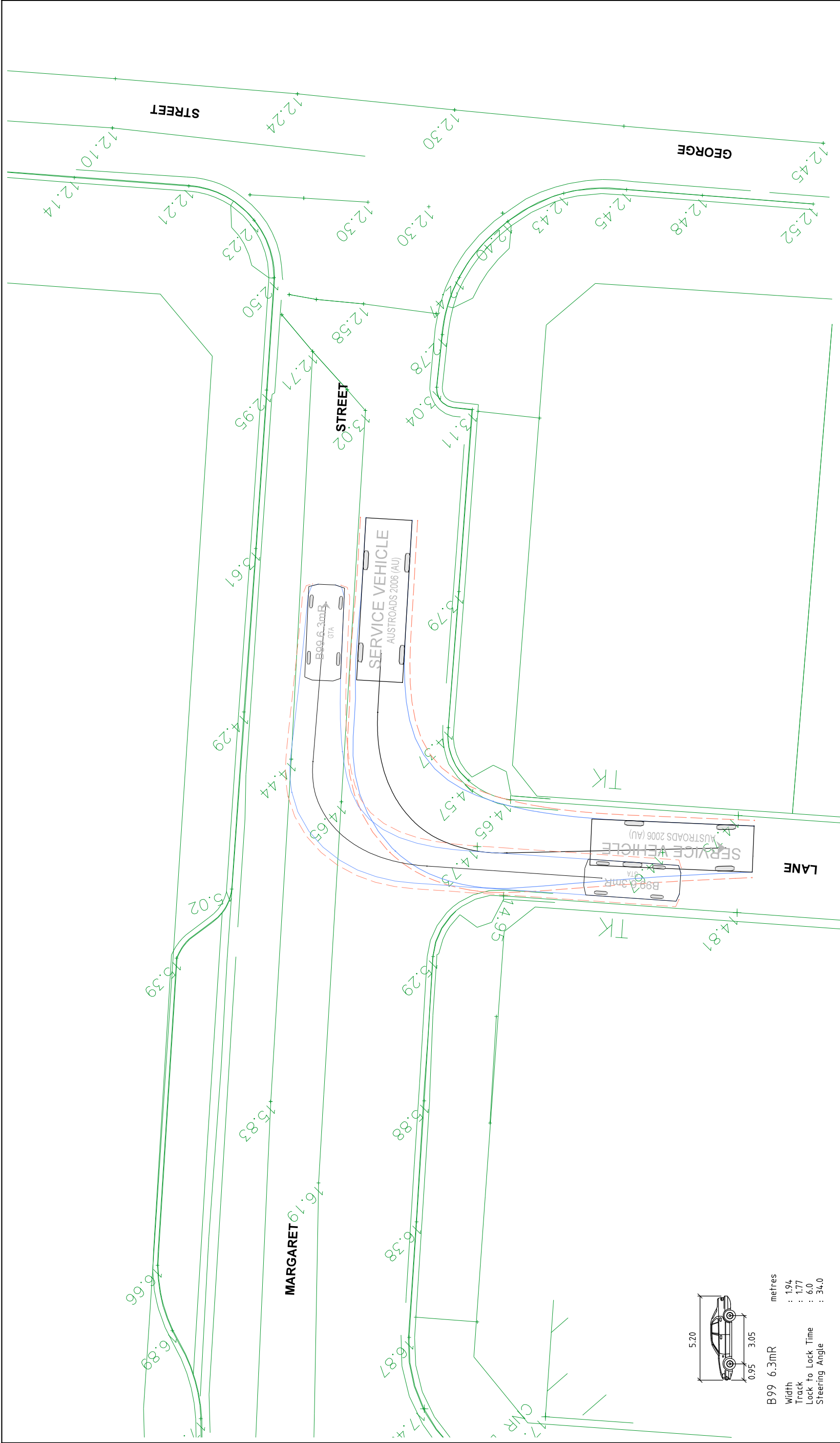
B99 6.3mR
 Width : 1.94
 Track : 1.77
 Lock to Lock Time : 6.0
 Steering Angle : 34.0



SERVICE VEHICLE
 Width : 2.50
 Track : 2.50
 Lock to Lock Time : 6.0
 Steering Angle : 38.7



SERVICE VEHICLE
 Width : 2.50
 Track : 2.50
 Lock to Lock Time : 6.0
 Steering Angle : 38.7



13S1213000-AT04-09-P1

05 MARCH '13

SCALE 1:200 @ A3

MRV LEFT IN AND B99 CAR RIGHT OUT

TWO-WAY OPERATION ON WYNYARD LANE

MRV AND B99 CAR

SWEPT PATH ANALYSIS -

1 CARRINGTON STREET

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PRELIMINARY PLAN

FOR DISCUSSION PURPOSES

ONLY SUBJECT TO CHANGE

WITHOUT NOTIFICATION

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

Service Vehicle

AUSTROADS 2006 (AU)

Width : 1.94 metres

Track : 1.77

Lock to Lock Time : 6.0

Steering Angle : 34.0

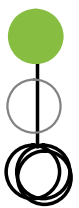
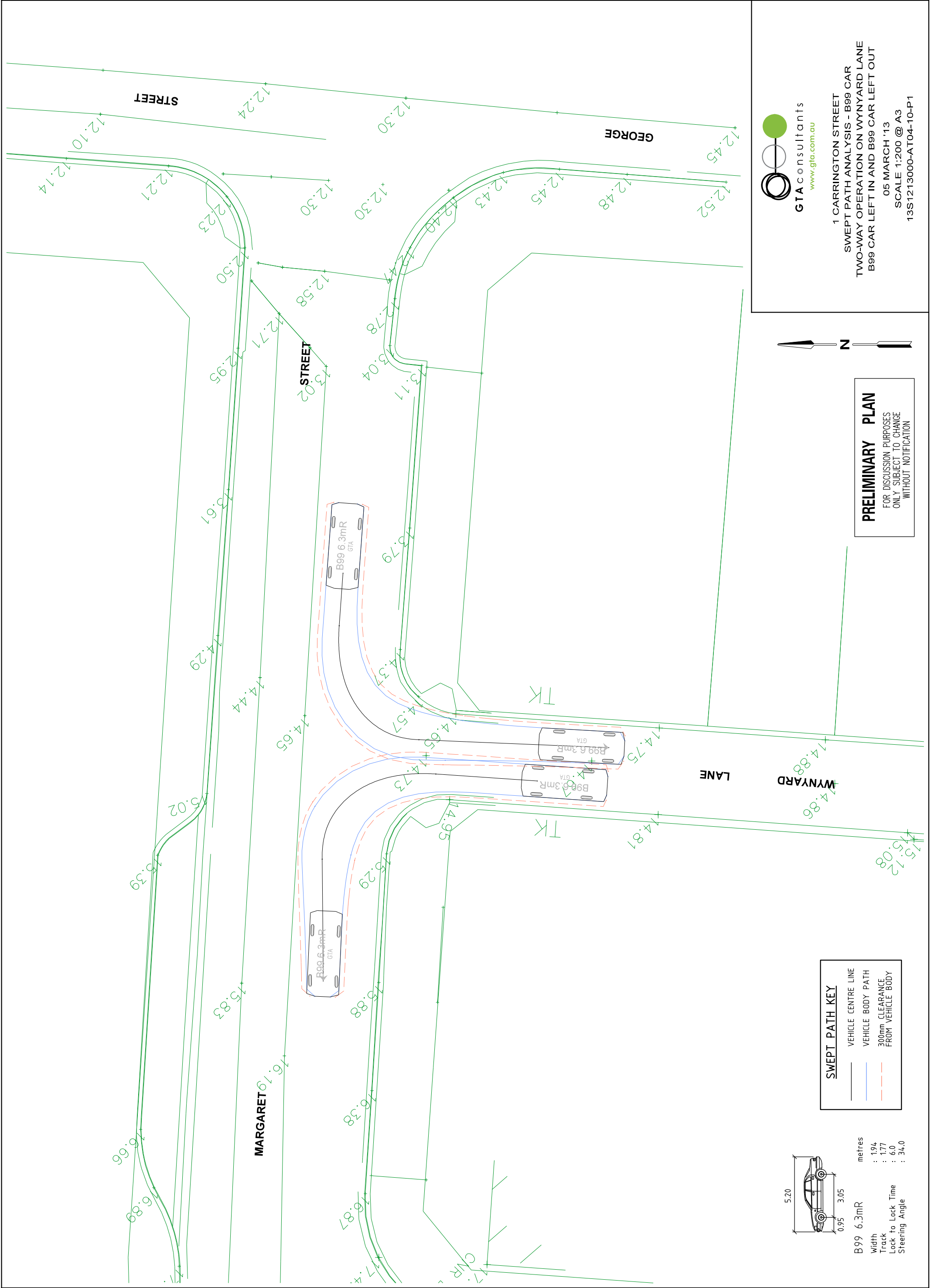
B99 6.3mR

Width : 1.94 metres

Track : 1.77

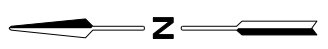
Lock to Lock Time : 6.0

Steering Angle : 34.0



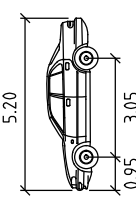
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1 CARRINGTON STREET
SWEEP PATH ANALYSIS - B99 CAR
TWO-WAY OPERATION ON WYNYARD LANE
B99 CAR LEFT IN AND B99 CAR LEFT OUT
05 MARCH '13
SCALE 1:200 @ A3
13S1213000-AT04-10-P1



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SWEEP PATH KEY	
	VEHICLE CENTRE LINE
	VEHICLE BODY PATH
	300mm CLEARANCE FROM VEHICLE BODY



B99 6.3mR metres
Width : 3.05
Track : 0.95
Lock to Lock Time : 6.0
Steering Angle : 34.0