COCA-COLA AMATIL

FINAL TRAFFIC REPORT FOR PROPOSED EXPANSION TO THE COCA-COLA AMATIL FACILITY, NORTHMEAD

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EXECUTIVE SUMMARY

Coca-Cola Amatil (CCA) is preparing a Project Application to the Department of Planning to gain permission for its proposed redevelopment of the existing CCA facility on Briens Road, Northmead. The site is located on the southern side of Briens Road between Redbank Road and Darcy Road, as shown on Figure 1. While reference in this report is made to the current and future uses of 102 Briens Road it is not part of the Project Application.

The 13.5ha site at 102-128 Briens Road is the primary CCA manufacturing facility in NSW. The facility comprises existing production and warehouse facilities, equipment services, finance operations and a separate office building.

It is proposed to redevelop the existing CCA facility and reconfigure the existing site operation. The proposed development will include the construction of a new fully automated high bay bulk distribution centre co-located on the site with manufacturing operations. The existing manufacturing operation will be expanded from the current four production bottling lines, by accommodating three new lines in the existing warehouse area. The existing equipment services and finance operations will be relocated into refurbished facilities at 102 Briens Road and the existing office building at the western end of the site will be retained.

The proposed redevelopment will result in a net increase in high bay warehouse and despatch staging facilities of some 12,300m^2. On-site parking will be retained with vehicular access from Briens Road. Separate access driveways will be constructed for trucks and general traffic accessing the site, providing improved separation between trucks, cars and personnel movements.

Currently the majority of product manufactured at Northmead is transported to storage facilities external to the site (including 102 Briens Road), prior to distribution. The proposal eliminates much of the current double handling of product, eliminates product transfer between CCA warehouse locations by consolidating operations, and avoids additional transfer requirements that would otherwise be created by the expansion of manufacturing operations. As a result, the use of 102 Briens Road as a warehouse storage facility served by b-doubles will no longer be required.

In association with the consolidation of production and warehouse facilities on the site, the proposal will result in an overall net reduction in regional product transfers forecast under the current CCA network.

The North-West T-Way network is currently under construction in the vicinity of the site. The off-road bus way will ultimately link Parramatta to Rouse Hill and Blacktown to Castle Hill. It is scheduled to be completed in the latter part of 2007. A T-Way bus stop will be located on the northern side of Briens Road, with pedestrian access between the T-Way and the site provided by traffic signals on Briens Road. This will result in improved bus services through the area with good access to the site by public transport, with the development of the T-Way.

The proposed development would increase employment densities, strengthen the demand for existing and future public transport services in the area and is consistent with government policy.

CCA employee numbers are expected to increase by some 5% by 2008 and by some 15% by 2015 with the redevelopment of the site. Based on these employee increases, the proposed parking provision of some 540 spaces is considered appropriate.

Access to the proposed development will be maintained to/from Briens Road. However, the number of entrances will be rationalised to reduce the total number of access points, improve their position relative to intersections external to the site and separate the movement of heavy vehicles from passenger vehicles.

Truck movements generated by the development will be directed to/from the Cumberland Highway and M2/M4/M7 Motorways, via the use of a management plan to be developed and enforced by CCA. Semi trailers and b-doubles will be restricted from using Darcy Road to access the site.

Inside the site, the proposed loading docks, truck queuing areas and manoeuvring areas will be provided in accordance with the Australian Standard for Parking Facilities (Part 2: Off-Street Commercial Vehicle Facilities), AS2890.2-2002 to accommodate the swept paths of rigid trucks, semi trailers and b-doubles. Vehicular circulation within the expanded facility will be provided via a one-way circulation road around the perimeter of the site. This circulation road will provide access to the existing production and warehouse facilities and to the proposed new high bay warehouse and despatch staging area.

The proposed development will result in an increase in traffic generation of some 40 to 50 vehicle movements per hour two-way during both the morning and afternoon peak periods on busy days in 2015. This is equivalent to on average less than one additional vehicle per minute during peak periods. This is a minor increase in traffic and represents an increase of less than 1% compared to existing traffic flows during the morning and afternoon peak periods. This level of additional traffic will have no negative impact in traffic terms on local roads. The surrounding road network will be able to cater for the traffic generated by the proposed development.

Two sets of traffic signals on Briens Road, currently being constructed in association with the North-West T-Way will not adversely effect traffic flows on Briens Road and the intersections should operate at an acceptable level of service.

In association with the construction of the proposed development, it is proposed to expand the existing facility through the following stages:-

- *Stage 1- manufacturing expansion 1;*
- *Stage 2- construction of new high bay warehouse, despatch staging area, driveways and 102 Briens Road car park access road;*
- *Stage 3- construction of production office and amenities;*
- *Stage 4- construction of new car park, entry/exit driveways, gatehouse and truck queuing area; and*
- *Stages 5&6 - manufacturing expansion 2.*

Note, stages 2, 3 and 4 are expected to be completed simultaneously.

The staging of the redevelopment reflects CCA's aim to minimise the construction impacts on the local community and maximise the construction efficiencies with the view of reducing the construction program. This is achieved through addressing key issues such as local government and development requirements, the continued operation of the site, identification and management of local community needs and the detailed pre-planning of the construction process.

Construction traffic (including trucks and construction worker vehicles) will not have significant effects on the capacity and operation of the surrounding road network. The road network will be able to cater for the additional construction traffic generated by the proposed development.

1. INTRODUCTION

1.1 Colston Budd Hunt & Kafes Pty Ltd has been commissioned by Coca-Cola Amatil (CCA) to prepare a report examining the traffic and parking implications of the proposed expansion of the Coca-Cola Amatil facility on Briens Road, Northmead, at 104-128 Briens Road. The site is located on the southern side of Briens Road between Redbank Road and Darcy Road, as shown on Figure 1. CCA are preparing a Project Application seeking approval for this expansion.

1.2 The 13.5ha site at 102-128 Briens Road is the primary CCA manufacturing facility in NSW. The current site layout is shown on Figure 2. The facility comprises existing production and warehouse facilities, equipment services, finance operations and a separate office building. The site is divided into two main parts with the manufacturing and production facilities located on the western site (104-128 Briens Road) and a warehouse facility located on the eastern site (102 Briens Road). The existing equipment services and finance sections are located within the main western site at 104 Briens Road and the existing office building is located at 128 Briens Road. The existing warehouse at 102 Briens Road is used by CCA as a warehouse facility for the storage of product, due to insufficient storage space in the primary warehouse area within the main site (120-128 Briens Road). 102 Briens Road is also used by equipment services for receipt, set-up, testing and despatch of new marketing equipment. 102 Briens Road is the subject of a separate Development Application to Parramatta City Council for its use as offices by the finance department and for equipment services.

1.3 It is proposed to redevelop the existing CCA facility and reconfigure the existing site operation. The proposed development will include the construction of a new fully automated high bay bulk distribution centre co-located on the site with

manufacturing operations. The existing manufacturing operation will be expanded from the current four production bottling lines, by accommodating three new lines in the existing warehouse area. The existing equipment services and finance operations will be relocated into refurbished facilities at 102 Briens Road and the existing office building at the western end of the site will be maintained. The use of 102 Briens Road as a warehouse storage area will no longer be required.

1.4 The proposed redevelopment will result in a net increase in high bay warehouse and despatch staging facilities of some 12,300m^2. On-site parking will be maintained with vehicular access from Briens Road. Separate access driveways will be constructed for trucks and general traffic accessing the site, providing a safer separation between trucks, cars and personnel movements.

1.5 It is understood that the proposed development will, over time, result in an increase in employee numbers at the facility of some 15%. Our traffic report has assessed this level of increase in employee numbers for the proposed expanded facility.

1.6 This report assesses the transport implications of the proposed development through the following sections:-

- Chapter 2 – describing the existing conditions; and
- Chapter 3 – assessing the transport implications of the proposed development.

1.7 During the preparation of this report we have held discussions with the Roads and Traffic Authority. We would like to acknowledge its assistance and co-operation in this matter. Matters discussed with the RTA included the following:-

- expansion of the proposed facility;
- proposed access arrangements;
- parking provision;
- public transport and future North-West T-Way;
- existing and proposed traffic generation;
- operation of surrounding road network; and
- effects of additional traffic on surrounding network.

1.8 Whilst these matters were discussed with the RTA, and that no significant traffic issues were raised regarding the proposed development, they did indicate that a formal response will be prepared on review of the project application.

2. EXISTING CONDITIONS

2.1. The site of the existing CCA facility in Northmead is located on the southern side of Briens Road between Redbank Road and Darcy Road, as shown on Figure 1. The 13.5ha site at 102-128 Briens Road is the primary CCA manufacturing facility in NSW. The current site layout is shown on Figure 2. The facility comprises existing production and warehouse facilities, equipment services, finance operations and a separate office building.

2.2. The site measures over 640 metres by 280 metres. It is bounded by Briens Road to the north and Toongabbie Creek to the south. Land-use in the vicinity of the site is generally industrial in nature, however, west of Toongabbie Creek and north-east of Briens Road land-use comprises residential development. Westmead Hospital precinct is located south of Toongabbie Creek.

2.3. The site is divided into two main parts with manufacturing and production facilities located on the western site (104-128 Briens Road) and a warehouse facility located on the eastern site (102 Briens Road). The existing equipment services and finance sections are located within the main western site at 104 Briens Road and the existing office building is located at 128 Briens Road. The existing warehouse at 102 Briens Road is used by CCA as a warehouse facility for the storage of product, due to insufficient storage space in the primary warehouse area within the main site (120-128 Briens Road). 102 Briens Road is also used by equipment services for receipt, set-up, testing and despatch of new marketing equipment.

2.4. The existing facilities on the site comprise the following:-

- a two level office building of some 2,200m^2 located at 128 Briens Road;
- a part two level building comprising production and manufacturing facilities and the storage of raw materials, located at 128 Briens Road;
- warehouse facilities comprising some 12,850m^2 , located at 120-128 Briens Road;
- main gatehouse (security function) and various portable offices, located at 128 Briens Road;
- a building containing canteen, auditorium, training rooms and point of sale materials store of some 1,200m^2, located at 120 Briens Road;
- a packaging store of some 1900m^2, located at 120 Briens Road;
- an office building of some 1,700m^2 currently housing the finance section, located at 104 Briens Road;
- an office and workshop building currently housing equipment service (office of some 500m^2 and workshop of some 3,600m^2), located at 104 Briens Roads; and
- a warehouse and office building (warehouse of some 17,000m^2 and office of some 4,150m^2), located at 102 Briens Road, used for the storage of goods.

2.5. Access to the site is currently provided by a number of driveways located along its northern boundary, servicing the various buildings on the site. The main entrance to the manufacturing and production areas and to the existing office building located at 128 Briens Road is provided via the western gate. A manned security gatehouse at this location controls access to/from the manufacturing and production areas on the site.

2.6. A central gate on Briens Road provides access to existing equipment services and finance operations at 104 Briens Road. The eastern gate, located adjacent to the eastern boundary of the site, provides left in/left out access to the existing warehouse at 102 Briens Road.

2.7. The existing CCA facility operates 24 hours a day, 7 days per week, with two shift periods per day for manufacturing, production and warehouse. The day shift operates between 6.00am and 6.00pm. The administration and office components of the development operate 5 days per week during normal business hours. The site currently employs a total of some 700 staff over the various shifts and office hours. During a typical day time period the site currently accommodates some 500 staff comprising some 55 staff for manufacturing/production/warehouse (day shift only), some 140 office staff at 128 Briens Road and some 305 staff at 104 Briens Road.

Road Network

2.8. The road network in the vicinity of the site includes Old Windsor Road, Hart Drive, Briens Road, Redbank Road and Darcy Road. Old Windsor Road, Hart Drive and Briens Road (to the east of the site) combine to form part of the Cumberland Highway (Metroad Route 7). This arterial road forms part of the arterial by-pass of the Parramatta CBD and forms a section of the state road

network. Old Windsor Road and Briens Road intersect at a traffic signal controlled intersection, with each road generally providing a six lane divided carriageway past the site.

2.9. Briens Road is located adjacent to the northern boundary of the site and provides an east-west traffic route linking to Darcy Road to the west and forming part of the Cumberland Highway to the east. West of Old Windsor Road, Briens Road is a sub-arterial road linking to the roundabout controlled intersection with Darcy Road. Adjacent to the site, Briens Road provides a four lane undivided carriageway.

2.10. Redbank Road is east of the site and provides a north-south traffic route across Toongabbie Creek, accessing the Westmead Hospital precinct. Redbank Road generally provides an undivided carriageway with one traffic lane and one parking lane in each direction, clear of intersections. The intersection of Briens Road with Redbank Road is controlled by traffic signals. North of Briens Road, Redbank Road provides local access to residential dwellings.

2.11. Darcy Road is located south-west of the site and provides an east-west traffic route through Wentworthville and Westmead. Darcy Road intersects with the Cumberland Highway at a signalised intersection and links to Binalong Road to the west and to Hawkesbury Road to the east. It is located adjacent to the southern boundary of the Westmead Hospital precinct and in the vicinity of Briens Road generally provides an undivided carriageway with one traffic lane and one parking lane in each direction, clear of intersections.

2.12. The North-West T-Way network is currently under construction in the vicinity of the site. The off-road bus way will ultimately link Parramatta to Rouse Hill and

Blacktown to Castle Hill. It is scheduled to be completed in the latter part of 2007.

2.13. A section of the Parramatta – Rouse Hill T-Way will be along Briens Road, adjacent to the frontage of the CCA site. The existing four lane carriageway of Briens Road is being modified to two lanes with two dedicated bus lanes located on either side of the road. Two new signalised intersections are being constructed on Briens Road to facilitate access between Briens Road and the dedicated off-road bus only links. The proposed Briens Road T-Way station will be located to the north of Briens Road, approximately midway along the CCA site frontage.

Traffic Conditions

2.14. An examination of the traffic data provided by the Roads and Traffic Authority reveals that in 2002, the Annual Average Daily Traffic (AADT) on Briens Road, west of the CCA site was some 15,400 vehicles per day two-way and the AADT of Briens Road (Cumberland Highway), west of Kleins Road was some 73,000 vehicles per day two-way. Table 2.1 outlines the historical trend from 1993 to 2002 at these locations.

Table 2.1: Existing Daily Traffic Volumes (AADT)

Location	1993	1996	1999	2002
Briens Road				
- west of CCA site	15,200	15,900	16,300	15,400
- west of Kleins Road	-	-	71,300	73,000

Source: Roads and Traffic Authority, 2002

2.15. Historical data summarised in Table 2.1 suggests that traffic flows on Briens Road, west of CCA site, has been relatively stable between 1993 and 2002, with minor fluctuations between the survey periods. Briens Road, west of Kleins Road,

recorded minor growth in traffic of approximately 0.7% per annum between 1999 and 2002.

2.16. In order to establish existing traffic conditions, counts were undertaken during the weekday morning and afternoon peak periods at the following intersections:-

- Old Windsor Road/Briens Road;
- Briens Road/Redbank Road; and
- Briens Road/ Darcy Road.

2.17. The results of the surveys are shown in Figures 2 and 3, and summarised in Table 2.2.

Table 2.2: Existing Peak Hour Two-Way (Sum of Both Directions) Traffic Flows

Road/Location	Morning (vehicles/hour)	Afternoon (vehicles/hour)
Old Windsor Road		
- north of Briens Road	5,390	4,840
Briens Road		
- east of Redbank Road	5,830	5,200
- east of Old Windsor Road	5,810	5,280
- west of Old Windsor Road	890	1,020
- north of Darcy Road	970	1,110
Redbank Road		
- south of Briens Road	730	540
- north of Briens Road	300	170
Darcy Road		
- east of Briens Road	1,625	1,735
- west of Briens Road	1,305	1,155

2.18. Table 2.2 shows that Old Windsor Road carried traffic flows of some 4,800 to 5,400 vehicles per hour two-way during the morning and afternoon peak periods. Flows on Briens Road, east of Old Windsor Road, during the same peak periods, were generally higher at some 5,200 to 5,850 vehicles per hour two-way.

2.19. Traffic flows on Briens Road, between Old Windsor Road and Darcy Road were some 900 to 1,100 vehicles per hour two-way during peak hours.

2.20. Darcy Road carried some 1,150 to 1,750 vehicles per hour two-way during the morning and afternoon peak periods. Peak period flows on Darcy Road east of Briens Road were observed to be higher than those to the west.

2.21. South of Briens Road, flows on Redbank Road were some 550 to 750 vehicles per hour two-way during peak hours. North of Briens Road, flows on Redbank Road were lower at some 150 to 300 vehicles per hour two-way.

2.22. The existing site operation currently generates some 470 truck movements two-way per day. These truck movements comprise some 405 truck movements two-way per day to/from the main site (104-128 Briens Road) and some 65 truck movements two-way per day to/from 102 Briens Road. The redevelopment of the existing CCA operation will eliminate current semi-trailer and b-double truck movements to/from 102 Briens Road, associated with the storage of product, due to insufficient storage space in the primary warehouse area within the main site. It should be noted that the proposed expansion of the existing facility eliminates much of the current double handling of product, eliminates product transfer between CCA warehouse locations (including 102 Briens Road) by consolidating operations, and avoids additional transfer requirements by the expansion of manufacturing operations.

2.23. Surveys undertaken of the current site operation during the morning and afternoon peak periods indicated a traffic generation of some 190 vehicles per hour two-way during the morning peak (comprising some 35 truck movements two-way and some 155 car movements two-way). During the afternoon peak period the site was observed to generate some 180 vehicles per hour two-way

(comprising 20 truck movements two-way and 160 car movements two-way). The existing warehouse at 102 Briens Road currently generates some 2 to 3 trucks per hour two-way during the morning and afternoon peak periods on a typical day.

2.24. The busiest driveway was observed to be the western access driveway which services the main manufacturing and production facility and the existing office building. The central access driveway servicing the equipment services and finance operations, was observed to be the next busiest access driveway.

Intersection Operations

2.25. The capacity of the road network is largely determined by the capacity of its intersections to cater for peak period traffic flows. The surveyed intersections shown in Figures 3 and 4 have been analysed using the INTANAL program.

2.26. INTANAL simulates the operations of intersections to provide a number of performance measures. The most useful measure provided is average delay per vehicle expressed in seconds per vehicle. Based on average delay per vehicle, INTANAL estimates the following levels of service (LOS):-

- For traffic signals, the average delay per vehicle in seconds is calculated as delay/(all vehicles), for roundabouts the average delay per vehicle in seconds is selected for the movement with the highest average delay per vehicle, equivalent to the following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Good with minimal delays and spare capacity
29 to 42	=	"C"	Satisfactory with spare capacity

43 to 56	=	"D"	Satisfactory but operating near capacity
57 to 70	=	"E"	At capacity and incidents will cause excessive delays. Roundabouts require other control mode.
>70	=	"F"	Unsatisfactory and requires additional capacity

- For give way and stop signs, the average delay per vehicle in seconds is selected from the movement with the highest average delay per vehicle, equivalent to following LOS:-

0 to 14	=	"A"	Good
15 to 28	=	"B"	Acceptable delays and spare capacity
29 to 42	=	"C"	Satisfactory but accident study required
43 to 56	=	"D"	Near capacity and accident study required
57 to 70	=	"E"	At capacity and requires other control mode.
>70	=	"F"	Unsatisfactory and requires other control mode

2.27. It should be noted that for roundabouts, give way and stop signs, in some circumstances, simply examining the highest individual average delay can be misleading. The size of the movement with the highest average delay per vehicle should also be taken into account. Thus, for example, an intersection where all movements are operating at a level of service A, except one which is at level of service E, may not necessarily define the intersection level of service as E if that movement is very small. That is, longer delays to a small number of vehicles may not justify upgrading an intersection unless a safety issue was also involved.

2.28. The analysis found that the signalised intersections of Old Windsor Road/Briens Road and Briens Road/Redbank Road are operating with average delays of less

than 35 seconds per vehicle during the morning and afternoon peak periods. This represents a level of service C, which is a satisfactory level of intersection operation.

2.29. The roundabout controlled intersection of Briens Road and Darcy Road is operating with average delays, for the movement with the highest average delay of less than 20 seconds per vehicle during peak periods. This represents a level of service B, which is an acceptable level of intersection operation.

Parking Conditions

2.30. There are currently some 810 parking spaces provided at the CCA facility. Some 530 are located on the western part of the site (104-128 Briens Road) and the remaining some 280 spaces are located at 102 Briens Road.

2.31. As previously discussed, the majority of employees, some 445 staff, are office staff who typically work 5 days per week during normal business hours. The manufacturing/production/warehouse staff operate 24 hours a day, 7 days per week, with two shift periods typically per day. The day shift operates between 6.00am and 6.00pm, with some 55 staff present.

2.32. In order to establish parking conditions within the existing CCA facility, surveys were undertaken during a weekday period between 7.00am to 10.00am and 3.00pm to 7.00pm. The parking surveys undertaken during the afternoon period covered the afternoon shift change at the facility. The parking surveys observed the accumulation of vehicles within the existing 530 car parking spaces located within the western part of the site, at 104 to 128 Briens Road. Car parking located on 102 Briens Road, some 285 spaces, was generally observed to be unused and was therefore not included in the parking surveys.

2.33. The park surveys recorded the hourly parking demand within the western part of the site. Results of the parking survey are set out in Table 2.3.

Table 2.3: Existing Parking Demand

Time	Parking Accumulation
7.00 am	130
8.00 am	320
9.00 am	410
10.00 am	420
3.00 pm	390
4.00 pm	340
5.00 pm	310
6.00 pm	110
7.00 pm	70
Supply	**530**

2.34. It can be seen from Table 2.3 that the peak parking demand for the existing CCA facility was observed to be some 420 vehicles at 10.00 am. This corresponds to a parking utilisation of some 80% of the existing parking supply within the western part of the site. This indicates that there are vacant parking spaces available (some 110 spaces) within the western part of the site at busy times. Thus the existing parking provision caters for the peak parking demand of the existing operation.

Public Transport

2.35. Local bus services are provided by Westbus. Bus services in the vicinity of the site operate along Briens Road to the east of Redbank Road and along Darcy Road. No regular bus services currently operate along Briens Road adjacent to the site.

2.36. The 609 service operates along Redbank Road and Briens Road, providing a loop service between Parramatta and Westmead Hospital, via Windsor Road. Services are provided on weekdays and on Saturdays. Services are generally every 40 to 60 minutes in each direction. Services are more frequent during the weekday morning and afternoon peak periods.

2.37. The 706 service operates along Darcy Road between North Kellyville and Parramatta via Bella Vista. Services are hourly in each direction on weekdays.

2.38. The 711 and 717 services operate along Darcy Road between Toongabbie and Parramatta. The 711 service operates seven days a week and the 717 service operates a limited service in the vicinity of the site on weekdays between 9.30am and 3.00pm. The 711 service generally operates on a 30 to 60 minute frequency in each direction, with more frequent services during the weekday morning and afternoon peak periods.

2.39. As previously discussed, the North-West T-Way network is currently under construction. In the vicinity of the site, the T-Way will travel along a section of Briens Road which will be modified to provide two traffic lanes and two dedicated bus lanes located on either side of the road. Two new signalised intersections are being constructed in the vicinity of the site to facilitate access between Briens Road and the dedicated off-road bus only links. A T-Way bus stop will be located to the north of Briens Road, with pedestrian access between the T-Way and the site provided by the traffic signals on Briens Road.

2.40. Overall, there are existing public transport services which operate in the area, although access to and from the site is currently limited. There will be improved bus services through the area with good access to the site by public transport with the development of the North-West T-Way.

3. IMPLICATIONS OF PROPOSED DEVELOPMENT

3.1. It is proposed to redevelop the existing CCA facility on Briens Road and reconfigure the existing site operation. The proposed development will include the construction of a new fully automated high bay bulk distribution centre co-located on the site with manufacturing operations. The existing manufacturing operation will be expanded from the current four production bottling lines up to seven production lines ultimately by 2011. The existing equipment services and finance operations will be relocated into refurbished facilities at 102 Briens Road (not the subject of the current application) and the existing office building at the western end of the site will be retained.

3.2. Currently the majority of product manufactured at Northmead is transported to storage facilities external to the site (including 102 Briens Road), prior to distribution. The proposal eliminates much of the current double handling of product, eliminates product transfer between CCA warehouse locations by consolidating operations, and avoids additional transfer requirements that would otherwise be created by the expansion of manufacturing operations. As a result, the use of 102 Briens Road as a warehouse storage facility will no longer be required.

3.3. The proposed new automated high bay storage facility, adjoining the existing manufacturing operation, will incorporate a building footprint of some 16,000m^2. The existing warehouse area will be vacated, allowing reconfiguration and expansion of the manufacturing operation, including the addition of the three new production lines in this area. The proposed redevelopment of the CCA facility is shown on plans prepared by MNI Architects and includes the following:-

- demolition of a number of existing buildings and structures;

- consolidation of warehouse operations on the site with the construction of a new fully automated high bay warehouse and associated conventional height despatch staging area;

- adaptation of an existing warehouse to accommodate three new production lines and additional manufacturing services;

- building envelope for a new building to house canteen, offices and training facilities;

- building envelope for new gatehouse and driver amenities building;

- implementation of modified access and circulation within the site, including new parking areas and new driveways.

3.4 The proposed redevelopment will result in a net increase in warehouse and despatch staging facilities of some 12,300m^2. The additions and modifications to the manufacturing area will not result in an increase in additional floor space.

3.5 This chapter assesses the implications of the proposed development through the following sections:-

- public transport;
- parking provision;
- access arrangements;
- internal circulation and layout;
- traffic effects;
- principles of construction traffic management;

- construction traffic effects; and
- summary.

Public Transport

3.6 As previously discussed, public transport service in the area will be improved with the development of the North-West T-Way, currently under construction. In the vicinity of the site the T-Way will travel along a section of Briens Road, adjacent to the northern boundary of the site. Briens Road will be modified to provide two traffic lanes and two dedicated bus lanes. Two new signalised intersections are being constructed on Briens Road to facilitate access between Briens Road and the dedicated off-road bus only links, located north and west of the site respectively. The proposed Briens Road T-Way station will be located to the north of Briens Road, approximately midway along the northern boundary of the site.

3.7 The EIS for the T-Way outlined the frequency of trunk services operating on the T-Way should be no less than every 10 minutes in peak periods and every 20 minutes in daytime off peak periods, with later evening services and weekend off-peak services operating at 30 minute intervals. Local feeder bus services might also operate on the T-Way where appropriate.

3.8 The proposed development would increase employment densities and would strengthen the demand for existing and future public transport services in the area. Appropriate parking will be provided on-site for bicycles. This is consistent with government policy of:-

(a) improving accessibility to employment and services by walking, cycling and public transport;

(b) improving the choice of transport and reducing dependence solely on cars for travel purposes;

(c) supporting the efficient and viable operation of public transport services; and

(d) moderating growth in demand for travel and the distance travelled, especially by car.

Parking Provision

3.9 Parramatta City Council's DCP 2005 specifies requirements for the provision of on-site parking for industrial and commercial developments to be as follows:-

- Industrial
  - 1 space per 70m^2 of gross floor area; and

- Commercial premises
  - 1 space per 50m^2 of gross floor area.

3.10 However, for the proposed development it is considered that adoption of Council's DCP parking rates will result in incorrect on-site parking and is therefore considered inappropriate. The Roads and Traffic Authority's "Guide to Traffic Generating Developments" states that a more accurate measure of the number of parking spaces required for the proposed development should be based on surveys of the parking demand of the existing facility and on the increase in employee numbers proposed at the expanded facility.

3.11 In association with the proposed redevelopment, the new expanded facility is anticipated to result in increased staff numbers, as shown on Table 3.1. It should

be noted that existing shift times for manufacturing, production and warehouse, will be maintained. It can be seen from Table 3.1 that staff numbers within the overall consolidated site are expected to increase by some 5% by 2008 and by some 15% by 2015. Our traffic and parking report has assumed an increase of some 15% in staff numbers.

Table 3.1: CCA Employee Numbers During Normal Office Hours (9am-5pm Monday to Friday)

	Existing	**2008**	**2015**
Office -102 Briens Road -104 to 128 Briens Road	 - 445	 315 150	 330 160
Production/Warehouse (day shift only)	55	60	80
Total	500	525	570

3.12 As discussed in Chapter 2, the peak parking demand was observed to be some 420 vehicles parked within the site. Based on the above increase in employee numbers, the proposed parking requirement for the proposed development would be some 440 vehicles at peak times by 2008 and some 485 vehicles at peak times by 2015.

3.13 The proposed parking provision of some 540 spaces satisfies this requirement. Parking will be provided at the western end of the site (some 255 spaces) located adjacent to the existing office building, and at the eastern end of the site (some 285 additional spaces) located on 102 Briens Road. It should be noted that additional informal parking will also be available on 102 Briens Road, within a designated area adjacent to Toongabbie Creek.

3.14 The parking provision for the proposed development is therefore considered appropriate.

3.15 Appropriate parking will be provided on-site for bicycles.

Access Arrangements

3.16 Access to the proposed development, as shown on Figure 5, will be retained to/from Briens Road. However, the number of entrances will be rationalised to reduce the total number of access points, improve their position relative to intersections external to the site and separate the movement of heavy vehicles from passenger vehicles.

3.17 The main site entrance to 128 Briens Road, currently shared between passenger and delivery vehicles, will be converted to provide for passenger vehicles only. The car parking area adjacent to the existing office building will be modified and expanded to consolidate the parking requirements for the combined operations of 104 – 128 Briens Road in one location, separated from the operational site.

3.18 Separate access driveways will be constructed for trucks and passenger vehicles accessing the site. This will provide a safer separation between trucks, cars and personnel movements. The main truck entry/exit driveway and new gatehouse will be located at the western end of the site, some 120 metres from the western boundary. The driveway has been designed for 19 metre semi-trailers and 25 metre b-doubles. The truck entrance has been designed to better control the entry and exit of vehicles to/from the site and to facilitate one-way traffic circulation within the site for all vehicles. A truck queuing area capable of accommodating semi-trailers and b-doubles will allow control of truck movements

around the site. A call-up system will be implemented to prevent trucks circulating to the despatch staging area before they can be processed.

3.19 Access to 102 Briens Road will be maintained via the existing left in and left out access driveway adjacent to the eastern boundary of the site. This driveway will provide access to the new refurbished facilities for the relocated equipment services and finance operations. Access will be available for the existing service vehicle facilities on the site and to some 285 additional parking spaces located within the existing at-grade car park adjacent to Briens Road and within parking facilities located beneath the southern end of the building. Access will also be available to the overspill parking area located adjacent to Toongabbie Creek.

3.20 A new secondary access driveway and service road will also be constructed adjacent to the northern boundary of the site, providing access to 102 Briens Road. The secondary access driveway will replace the existing driveway serving 104 Briens Road and will be located some 100 metres west of Old Windsor Road.

3.21 The access arrangements for the proposed development are considered appropriate and have been provided in accordance with the Australian Standard for Off-Street Car Parking Facilities (AS2890.1-2004) and for Off-Street Commercial Vehicle Facilities (AS2890.2-2002).

Internal Circulation and Layout

3.22 Inside the site, the proposed loading docks, truck queuing areas and manoeuvring areas will be provided in accordance with the Australian Standard for Parking Facilities (Part 2: Off-Street Commercial Vehicle Facilities), AS2890.2-2002 to accommodate the swept paths of rigid trucks, semi trailers and b-doubles.

3.23 On site parking areas will be reconfigured and provided at both ends of the site adjacent to the existing office building at 128 Briens Road and within 102 Briens Road. The parking areas will be accessible from Briens Road via separate access driveways.

3.24 Within parking areas, spaces will be a minimum of 2.4 metres wide by 5.4 metres long. Spaces with adjacent obstructions will be 0.3 metres wider for door opening. Visitor parking spaces will be 2.5 metres wide and disabled parking spaces will be 3.2 metres wide. Parking aisles will be a minimum of 5.8 metres wide for two-way circulation and appropriate access to and from parking spaces. Dead end aisles will have one metre extensions for appropriate access to end spaces. These dimensions are considered appropriate, being in accordance with AS2890.1-2004.

3.25 Service vehicles transporting materials and product to and from the facility will range from rigid trucks to 19 metre semi trailers and 25 metre B-doubles. The existing access and gatehouse arrangements will be modified and an on-site truck queuing area will be provided for the new facility.

3.26 Trucks entering the site will be instructed at the gatehouse to either proceed directly to production areas or to park in the truck queuing area awaiting access to the despatch staging docks.

3.27 Vehicular circulation within the expanded facility will be provided via a one-way circulation road around the perimeter of the site. This circulation road will provide access to the existing production and warehouse facilities and to the proposed new high bay warehouse and despatch staging area. Truck access and circulation within the site has been assessed for 19 metre semi trailers and 25 metre B-doubles.

3.28 The proposed parking arrangements and internal circulation within the site is considered appropriate and will provide convenient access to docks and truck parking areas within the site.

Traffic Effects

3.29 Traffic generated by the proposed development will have its greatest effects during the morning and afternoon peak periods when it combines with commuter traffic.

3.30 Based on the existing and forecast truck numbers as set out in Tables 3.2 and 3.3, the proposed development will generate some 35 trucks per hour two-way during the morning and some 20 trucks per hour two-way during the afternoon peak periods by 2008. Truck movements will increase to some 40 and 20 trucks per hour two-way for the morning and afternoon peak periods respectively, by 2015. This represents a minor increase in truck movements during the morning peak period and no increase during the afternoon peak period.

Table 3.2: Existing and Forecast Daily Two-Way (Sum of Both Directions) Truck Movements on a Typical Day

	104-128 Briens Road	102 Briens Road	Total
Existing	405(1)	65	470
2008	420	30(2)	450
2015	460	40(2)	500

(1) Includes rigid truck movements to be transferred to 102 Briens Road.

(2) Primarily rigid trucks associated with production/equipment services.

Table 3.3: Existing and Forecast Peak Hour Two-Way (Sum of Both Directions) Truck Movements on a Busy Day						
	104-128 Briens Road		**102 Briens Road**		**Total**	
	Morning Peak	**Afternoon Peak**	**Morning Peak**	**Afternoon Peak**	**Morning Peak**	**Afternoon Peak**
Existing	30	15	5	5	35	20
2008	35	15	5(1)	5(1)	40	20
2015	40	15	5(1)	5(1)	45	20

(1) Primarily rigid trucks associated with production/equipment services.

3.31 It can be seen that CCA anticipates that with the expanded facility (taking into consideration a reduction in truck numbers transferring product between existing CCA warehouse facilities), truck movements accessing the site will only marginally increase with the growth in production. Such minor increases in truck movements will not result in any significant impact on the operation of the surrounding road network.

3.32 As for the existing flows, the majority of the peak period traffic generated by the development will be employee movements to/from the site. Based on the anticipated growth in employee numbers, the proposed expanded facility is anticipated to generate some 230 to 240 vehicles per hour two-way during the afternoon peak periods. This traffic generation includes truck movements, employee vehicles and an allowance for visitors movements during the morning and afternoon peak periods.

3.33 The forecast traffic generation is equivalent to an increase in traffic of some 40 to 50 vehicles per hour two-way during both the morning and afternoon peak periods. The majority of this additional traffic will be cars generated by the increase in future employee numbers. During the morning peak hour period, the proposed expanded facility will generate some 5 additional truck movements

two-way by 2008 and 10 additional truck movements two-way by 2015. The expanded facility will not generate an increase in truck movements during the afternoon peak hour period. We have adopted an additional 50 vehicles per hour two-way (comprising 40 cars and 10 trucks during the morning and 50 cars and 0 trucks during the afternoon by 2015), for the traffic assessment to be conservative.

3.34 The additional traffic has been assigned to the road network. Existing peak hour traffic flows plus development traffic are shown in Figures 3 and 4 and summarised in Table 3.4.

Table 3.4: Existing Peak Hour Two-Way (Sum of Both Directions) Traffic Flows Plus Development Traffic

Road/Location	Morning (vehicles/hour)		Afternoon (vehicles/hour)	
	Existing	Plus Development	Existing	Plus Development
Old Windsor Road				
- north of Briens Road	5,390	+20	4,840	+20
Briens Road				
- east of Redbank Road	5,830	+20	5,200	+20
- east of Old Windsor Road	5,810	+20	5,280	+20
- west of Old Windsor Road	890	+40	1,020	+40
- north of Darcy Road	970	+10	1,110	+10
Redbank Road				
- south of Briens Road	730	-	540	-
- north of Briens Road	300	-	170	-
Darcy Road				
- east of Briens Road	1,625	-	1,735	-
- west of Briens Road	1,305	+10	1,155	+10

3.35 Table 3.4 shows that traffic increase on Old Windsor Road and Briens Road would be some 20 to 40 vehicles per hour two-way at peak times. Corresponding increases on Darcy Road west of Briens Road, during the morning and afternoon peak periods would be some 10 staff/worker vehicles per hour. These are minor increases in traffic flow, of less than one vehicle per 1 to 6 minutes during peak periods. This represents an increase of less than 1% compared to existing traffic

flows during the morning and afternoon peak periods. This level of additional traffic will have no negative impact in traffic terms on local roads.

3.36 It should be noted that truck movements generated by the development will be directed to/from the Cumberland Highway and M2/M4/M7 Motorways. Semi trailer and b-double movements are currently restricted from using Darcy Road for access to and from the site. It is understood, however, that some truck drivers currently ignore this restriction. A more rigorous management plan will therefore be developed and enforced by CCA, to prevent heavy vehicles approaching or departing the site via Darcy Road. It is understood CCA have written to the RTA and Parramatta Traffic Committee to support resident demands for a weight limit to be introduced in the vicinity of Darcy Road. Increase in traffic flow on Darcy Road associated with the expanded facility will be staff/worker vehicles only. Increases will be some 10 additional vehicles per hour during the morning and afternoon peak periods. This represents an increase of less than 1% compared to existing traffic flows.

3.37 The intersections previously analysed in Chapter 2 have been reanalysed with INTANAL for the additional development traffic flows in Figures 3 and 4. The analysis found that the intersections of Old Windsor Road/Briens Road and Briens Road/Redbank Road would continue to operate with average delays of less than 35 seconds per vehicle during the morning and afternoon peak periods. This represents a level of service C, a satisfactory level of service the same as today.

3.38 The roundabout controlled intersection of Briens Road and Darcy Road would continue to operate at an acceptable level of service at peak times, with average delays for all movements of less than 20 seconds per vehicle. This represents a level of service B, the same as today.

3.39 The two sets of traffic signals on Briens Road, currently being constructed in association with the North-West T-Way, will incorporate bus priority and will be activated on demand. As previously discussed, bus services along the T-Way will operate every 10 minutes in each direction during peak periods and every 20 minutes during the daytime off peak period. Such a low and intermittent operation should not adversely affect traffic flows on Briens Road and the intersections should operate at an acceptable level of service.

Principles of Construction Traffic Management

3.40 At this stage a builder has not been appointed for the construction of the development and hence the overall construction methodology, process and final staging has not been defined. The builder will be responsible for the preparation of the traffic management plan, which will be lodged with the relevant authorities for approval prior to the commencement of construction.

3.41 It is anticipated that, construction of the proposed development will be carried out through the following stages as identified in Figures 6 and 7:-

- Stage 1 - manufacturing expansion 1;
- Stage 2 - construction of new high bay warehouse, despatch staging area, driveways and 102 Briens Road car park access road;
- Stage 3 - construction of production office and amenities;
- Stage 4 - construction of new car park, entry/exit driveways, gatehouse and truck queuing area; and
- Stage 5&6 - manufacturing expansion 2.

3.42 Note, stages 2, 3 and 4 are expected to be completed simultaneously.

3.43 The staging of the redevelopment reflects CCA's aim to minimise the construction impacts on the local community and maximise the construction efficiencies with the view of reducing the construction program. This is achieved through addressing key issues such as local government and development requirements, the continued operation of the site, identification and management of local community needs and detailed pre-planning of the construction process.

3.44 Construction of the proposed development will commence with the expansion of production/manufacturing with the development of a new product line. This will occur within the existing warehouse located adjacent to the southern boundary of site. Expansion of production/manufacturing for the additional two product lines will occur at a later stage.

3.45 Construction of the new high bay warehouse will involve the demolition of existing buildings, clearing of the site, excavation and construction of the main structure. Construction access will be provided to/from Briens Road via a separate construction access driveway. Trucks will enter and exit the site in a forward direction.

3.46 Construction vehicles transporting material and unwanted spoil from the site, will be loaded via the use of excavators. In order to minimise construction traffic on residential streets to the west of the site, trucks will be required to approach and depart the site, to/from the Cumberland Highway, via a designated construction route approved by Council and the RTA.

3.47 During construction of the development all loading/unloading of construction materials from trucks, associated with the overall construction activity, will be

carried out on-site within designated construction work zones. Construction material will be stored on-site within identified materials handling areas. The construction zones within the overall site, during the various stages, will be clearly segregated from the continued site operation.

3.48 Pedestrian activity along Briens Road and adjacent to the on-site construction zones will be protected with the provision of a Class A construction fence erected around the perimeter of the site. Scaffolding and overhead protection will be provided, where required.

3.49 Openings in the construction fencing at the construction access driveways will be managed and controlled by qualified site personnel. Pedestrian warning signs will be erected adjacent to the driveways. The movement of trucks entering and exiting the site and the movement of pedestrians across the driveways will be managed and controlled by qualified site personnel.

3.50 Truck drivers will be advised of the presence of the traffic controllers and that they must observe his or her directions. Trucks will not be able to park on-street in Briens Road nor within adjacent residential streets. Trucks will be required to park on-site at all times.

3.51 The overall principles for traffic management during construction of the development are:-

- provide a convenient and appropriate environment for pedestrians;
- minimise effects on pedestrian movements and amenity;

- provide appropriate safety fencing around the perimeter of the construction zones;
- manage and control vehicular movements to and from the site;
- maintain traffic capacity at intersections and mid-block in the vicinity of the site;
- maintain access to properties adjacent to the site;
- restrict construction vehicle activity to designated truck routes through the area (to be identified by the appointed builder);
- construction vehicles to enter and exit the site in a forward direction;
- construction vehicles will not be permitted to queue on-street in the vicinity of the site;
- all construction activity, including the loading and unloading of trucks, to be provided for on-site within the designated construction zone;
- construction work will be restricted to the approved hours of construction;
- the movement of trucks on and off the site to be managed and controlled by appropriately qualified site personnel;
- maintain safety for workers;

- pedestrian activity across the site access driveways will be managed and controlled by qualified site personnel;

- pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;

- the preparation of the construction traffic management plan, signage detail, traffic management and the control of pedestrians and construction vehicles in the vicinity of the site will be the responsibility of the appointed contractor.

Construction Traffic Effects

3.52 Construction traffic movements have been provided by Burns Bridge. The major traffic generating activities during the period of construction are anticipated to be the demolition and excavation phases and concrete pours. It has estimated that during the demolition phase there will be a total of some 20 to 30 trucks per day taking demolition material from the site. During the excavation phase truck numbers will increase to some 50 to 60 trucks per day removing spoil. This translates to an average of some 5 to 6 truck loads of material per hour or one truck every 10 to 12 minutes over the day.

3.53 Concrete pours will be controlled from the on-site materials handling area, with pours occurring on average once or twice a week. The estimated number of concrete trucks generated during a concrete pour will range from some 20 to 30 trucks per day for moderate sized pours and some 60 to 80 trucks per day for large pours. This translates to an average of some 6 to 8 truck loads of concrete per hour or one truck load every 8 to 10 minutes, for large pours.

3.54 At other times during the construction of the development, the number of trucks associated with the delivery of reinforcement, formwork and other construction material, the preparation of pavements within the site and the removal of waste bins will be lower at some 40 to 50 trucks per day.

3.55 In addition to construction traffic generated by the proposed development, the number of construction workers, associated with each construction phase, have been estimated. Based on this information it is anticipated that number of construction workers will range from some 20 to 30 workers during the demolition and excavation phases, some 60 to 80 workers during the early stages of construction and some 100 to 130 workers during the peak construction period. Based on 60% to 70% of workers travelling during the morning and afternoon peak hour periods the construction activity would generate some 60 to 90 construction worker vehicles during peak periods.

3.56 For the purpose of assessing the impact of construction traffic on existing traffic flows we have assessed a traffic generation of a major concrete pour plus some additional 20 truck movements per day to allow for some overlap of construction activity between the various construction phases. This generation has been combined with the additional traffic generation of some 60 to 90 construction worker vehicles during peak periods.

3.57 The estimated construction traffic has been assigned to the surrounding road network. The resulting traffic flows are shown on Figures 8 and 9 and summarised in Table 3.5.

Table 3.5: Existing Peak Hour Two-Way (Sum of Both Directions) Traffic Flows Plus Construction Traffic

Road/Location	Morning (vehicles/hour)		Afternoon (vehicles/hour)	
	Existing	Plus Construction Traffic	Existing	Plus Construction Traffic
Old Windsor Road				
- north of Briens Road	5,390	+40	4,840	+40
Briens Road				
- east of Redbank Road	5,830	+40	5,200	+40
- east of Old Windsor Road	5,810	+40	5,280	+40
- west of Old Windsor Road	890	+80	1,020	+80
- north of Darcy Road	970	+30	1,110	+30
Redbank Road				
- south of Briens Road	730	-	540	-
- north of Briens Road	300	-	170	-
Darcy Road				
- east of Briens Road	1,625	+15[(1)]	1,735	+15[(1)]
- west of Briens Road	1,305	+15[(1)]	1,155	+15[(1)]

[(1)] Additional car traffic only

3.58 The intersections shown on Figures 8 and 9 have been re-analysed using the INTANAL computer program with the additional construction traffic in place. The analysis found that the intersections of Old Windsor Road/Briens Road and Briens Road/Redbank Road would continue to operate with average delays of less than 35 seconds per vehicle during the morning and afternoon peak periods. This represents a level of service C, a satisfactory level of intersection operation.

3.59 The roundabout controlled intersection of Briens Road and Darcy Road would continue to operate at an acceptable level of service at peak times. Average delays for the movement with the highest average delay will be less than 20 seconds per vehicle during peak periods. This represents a level of service B, the same as today.

3.60 Thus the additional construction traffic (including trucks and construction worker vehicles) will not have significant effects on the capacity and operation of the surrounding road network.

Summary

3.61 In summary, the main points relating to the transport implications of the proposed development are as follows:-

i) the proposed development will include the construction of a new fully automated high bay bulk distribution centre co-ordinated on the site with CCA manufacturing operations. The existing manufacturing operation will be expanded by an additional 3 production lines. The existing equipment services and finance operations will be relocated into refurbished facilities at 102 Briens Road and the existing office building at the western end of the site will be retained. The use of 102 Briens Road as a warehouse storage area will no longer be required;

ii) the proposed development eliminates product transfer between CCA warehouse locations by consolidating operations on the site;

iii) the development would strengthen the demand for public transport services and is consistent with government policies;

iv) the proposed parking provision is considered appropriate;

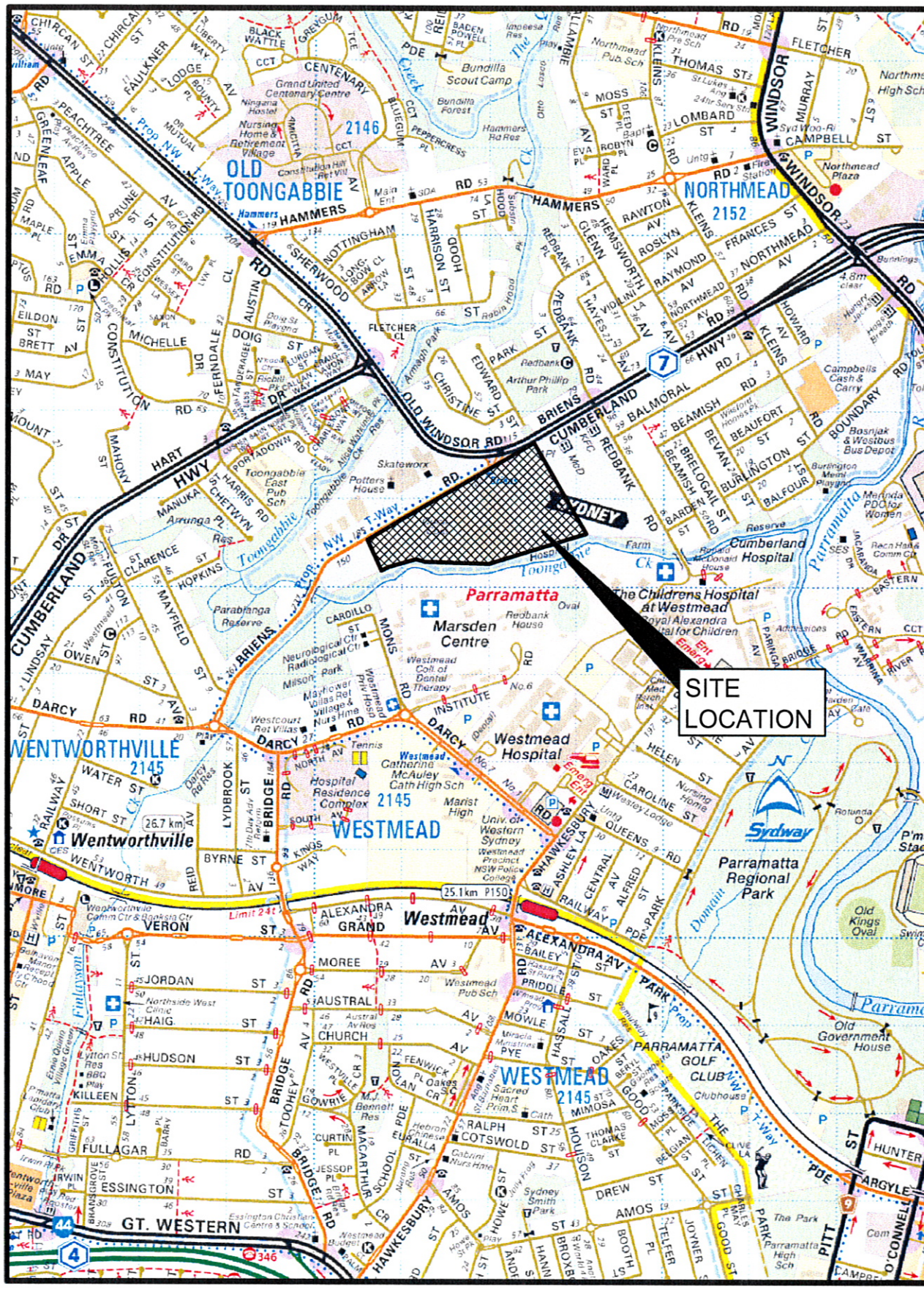
v) access, servicing and internal layout arrangements will be provided in accordance with AS2890.1-2004 and AS2890.2-2002;

vi) semi trailers and b-doubles will be restricted from using Darcy Road to access the site, via the development of a truck management plan to be enforced by CCA;

vii) the road network will be able to cater for the traffic generated by the proposed development;

viii) the two sets of traffic signals on Briens Road, currently being constructed in association with the North-West T-Way, will not adversely effect traffic flows on Briens Road and the intersections should operate at an acceptable level of service; and

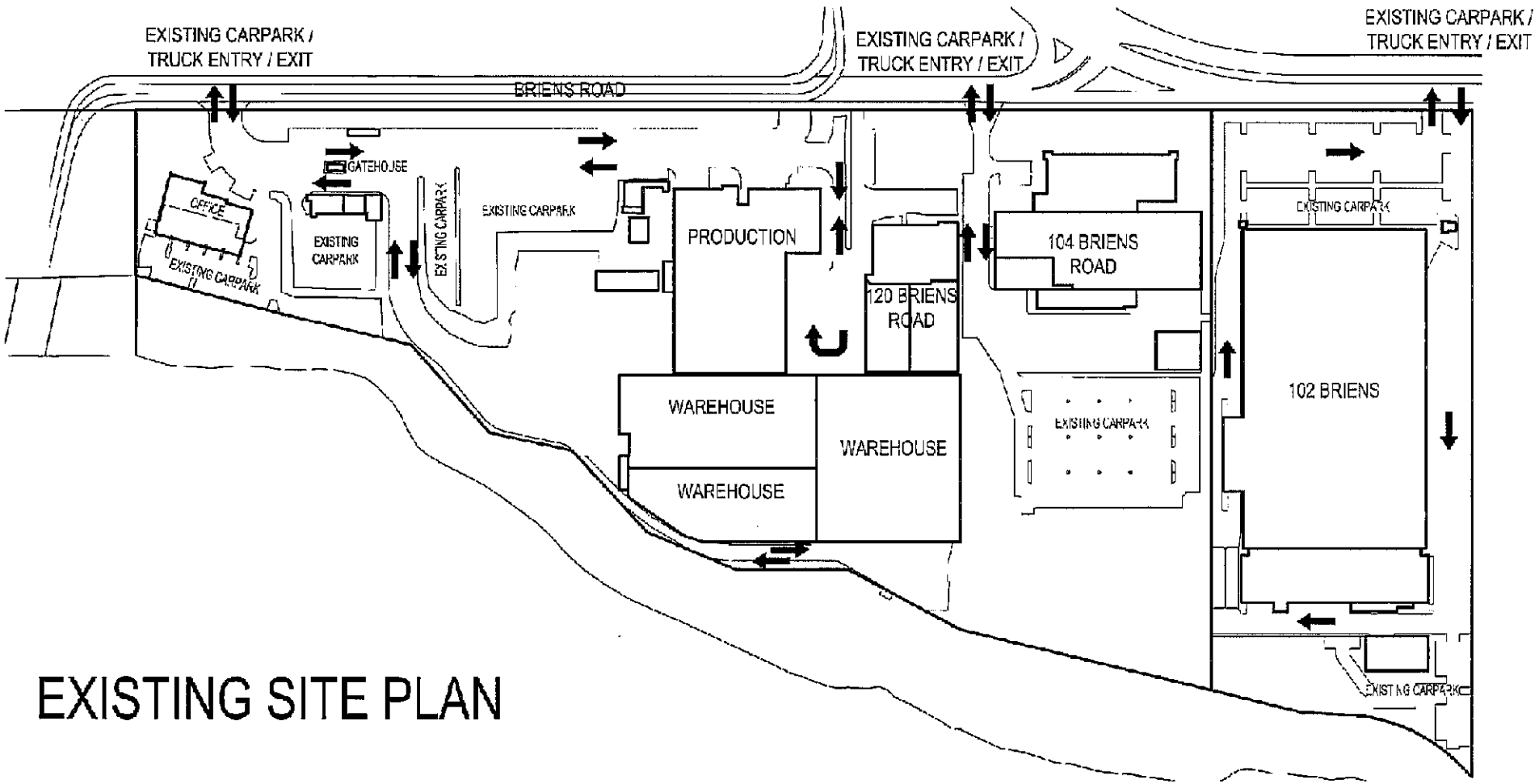
ix) construction traffic (including trucks and construction worker vehicles) will not have significant effects on the capacity and operation of the surrounding road network. The road network will be able to cater for the additional construction traffic generated by the proposed development.



LOCATION PLAN

1

DRAWN BY CBHK Pty Ltd Ref: 6122/2 28 JULY 2006



EXISTING SITE PLAN

EXISTING SITE PLAN

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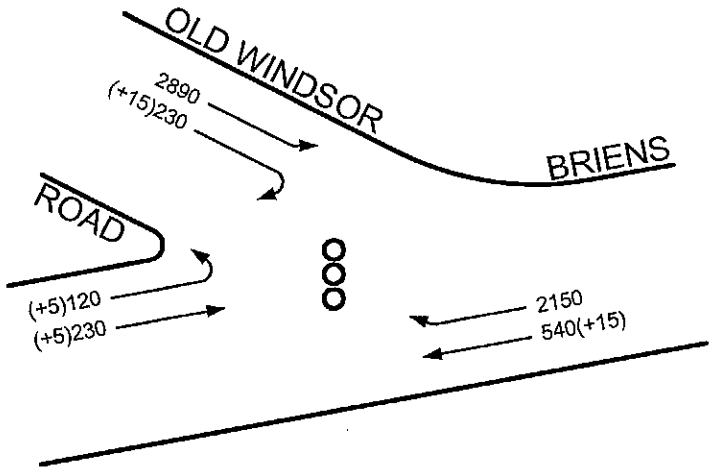
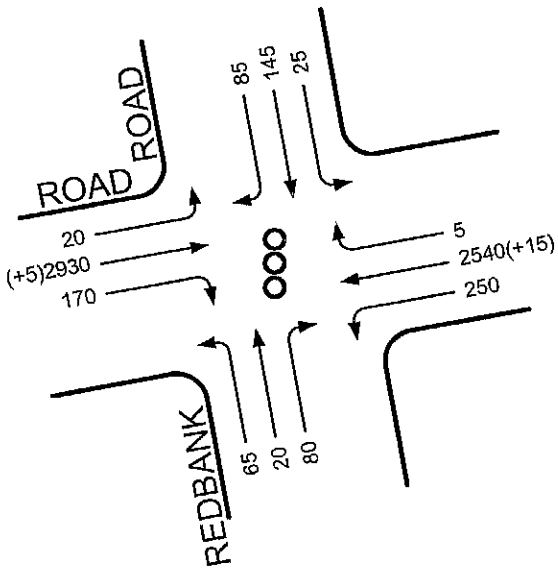
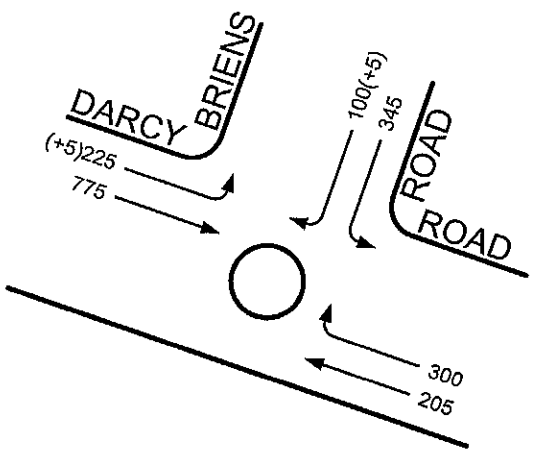






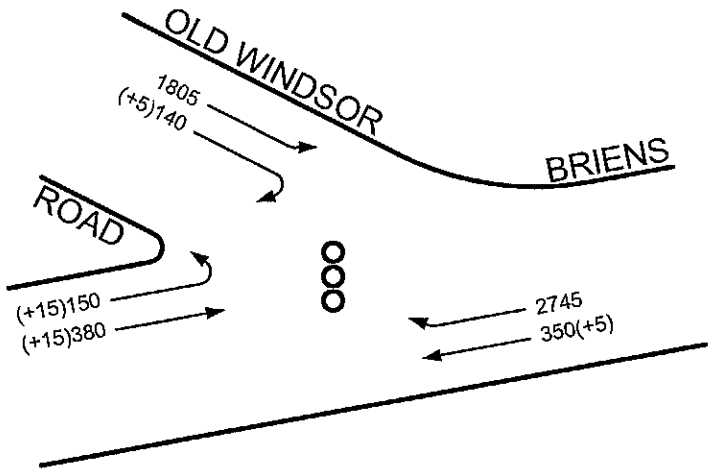
LEGEND

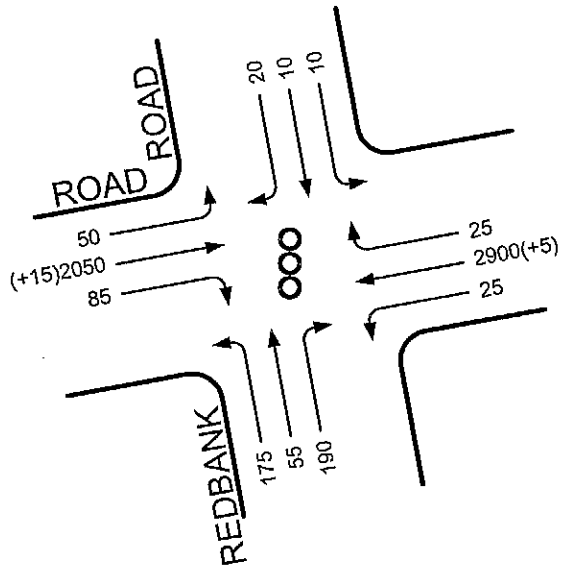
100 - Existing Peak Hour Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

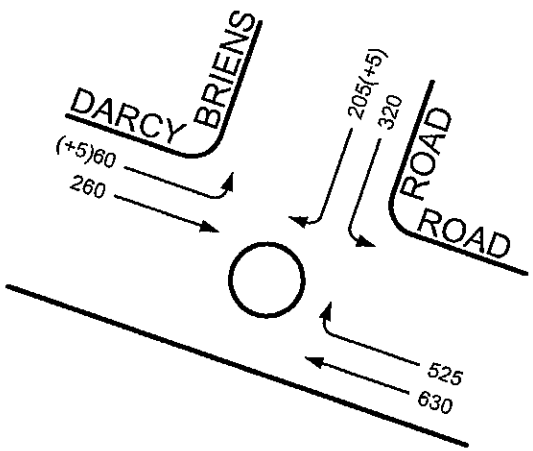
EXISTING MORNING PEAK HOUR TRAFFIC FLOWS PLUS DEVELOPMENT TRAFFIC

DRAWN BY CBHK Pty Ltd Ref: 5122/2 28 JULY 2006

3







LEGEND

100 - Existing Peak Hour Flows
(+10) - Additional Development Traffic
- Traffic Signals
- Roundabout

EXISTING AFTERNOON PEAK HOUR TRAFFIC FLOWS PLUS DEVELOPMENT TRAFFIC

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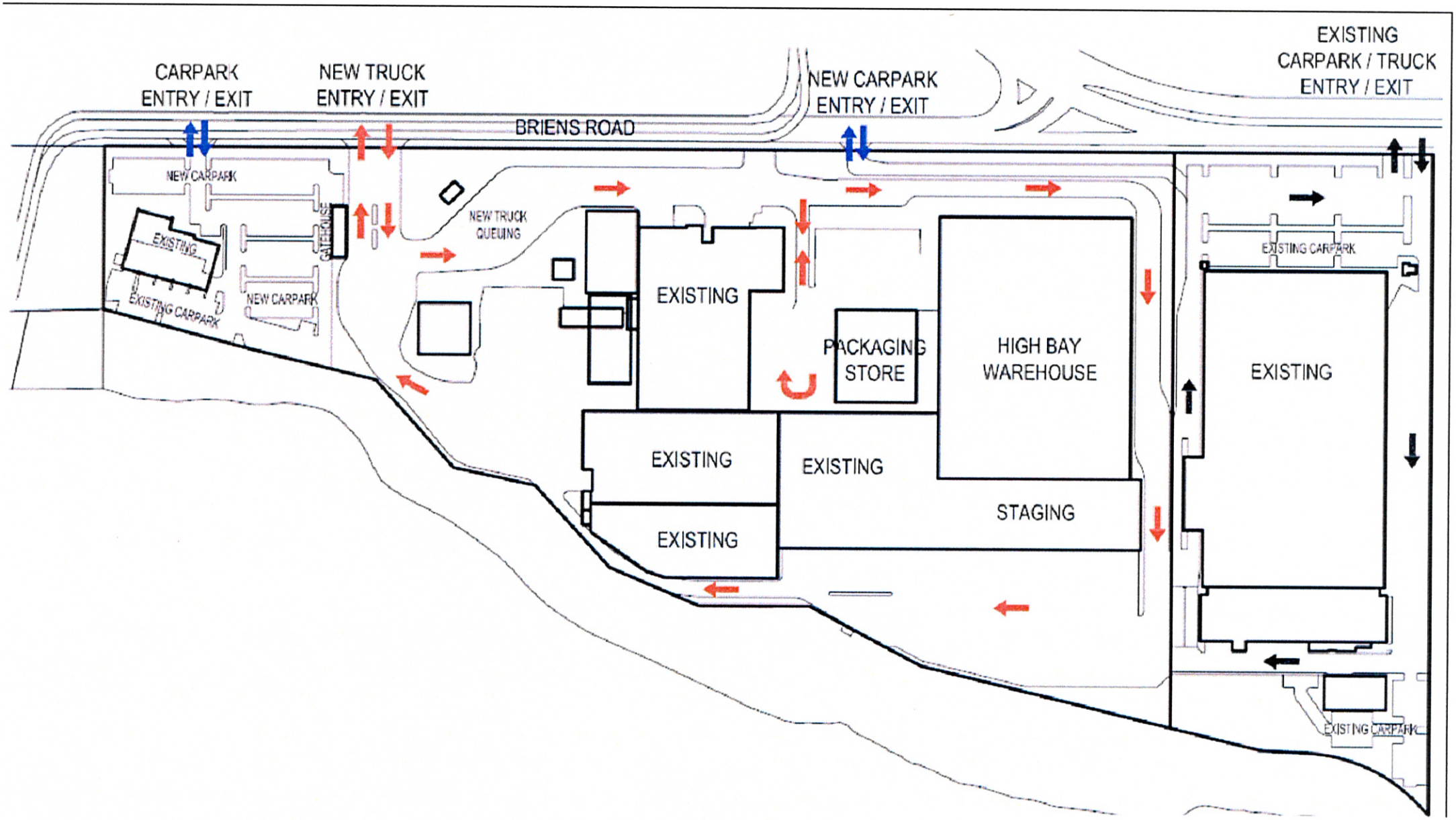
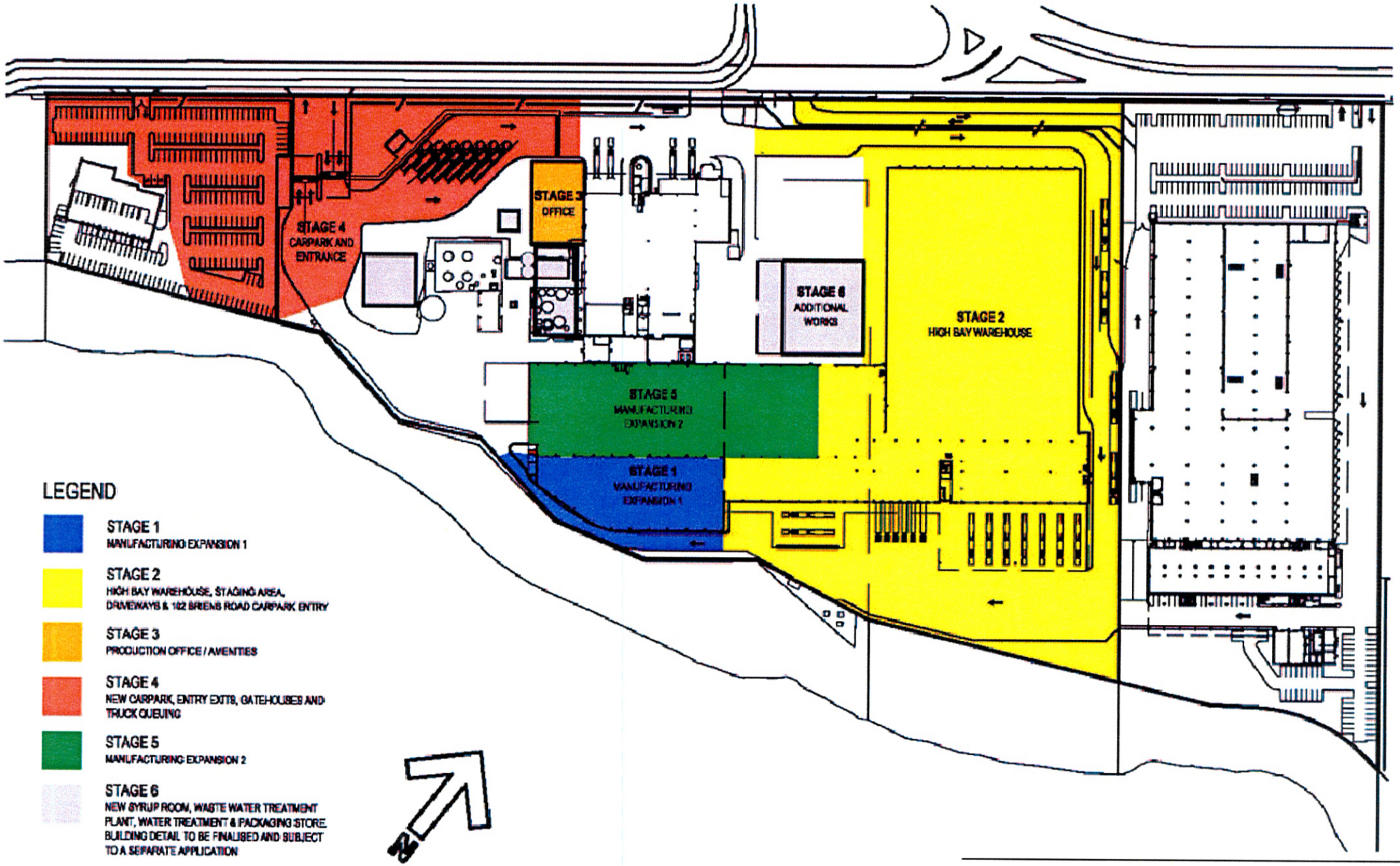
4



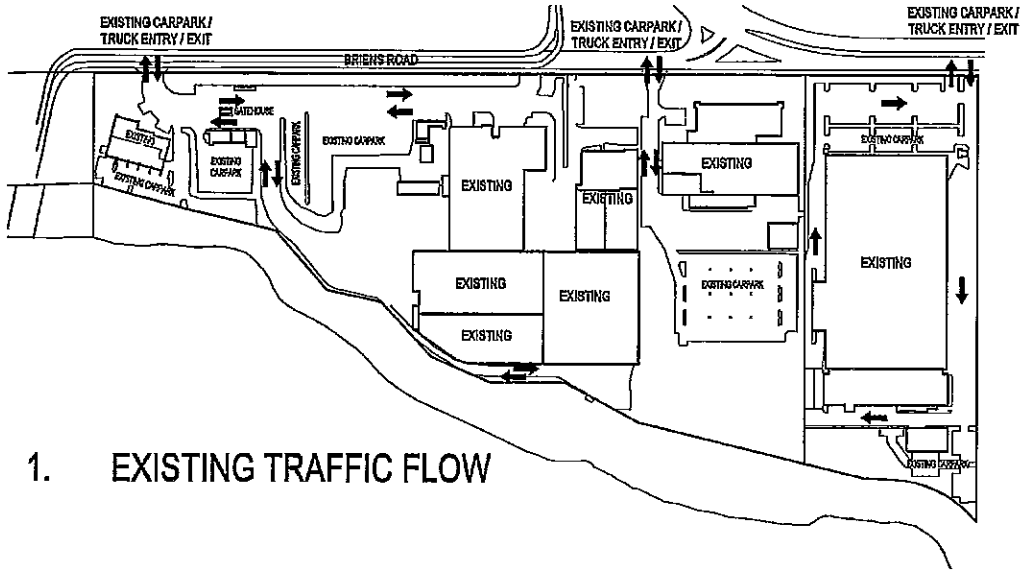
PROPOSED SITE PLAN

DRAWN BY CBHK Pty Ltd Ref: 6122/2 28 JULY 2006

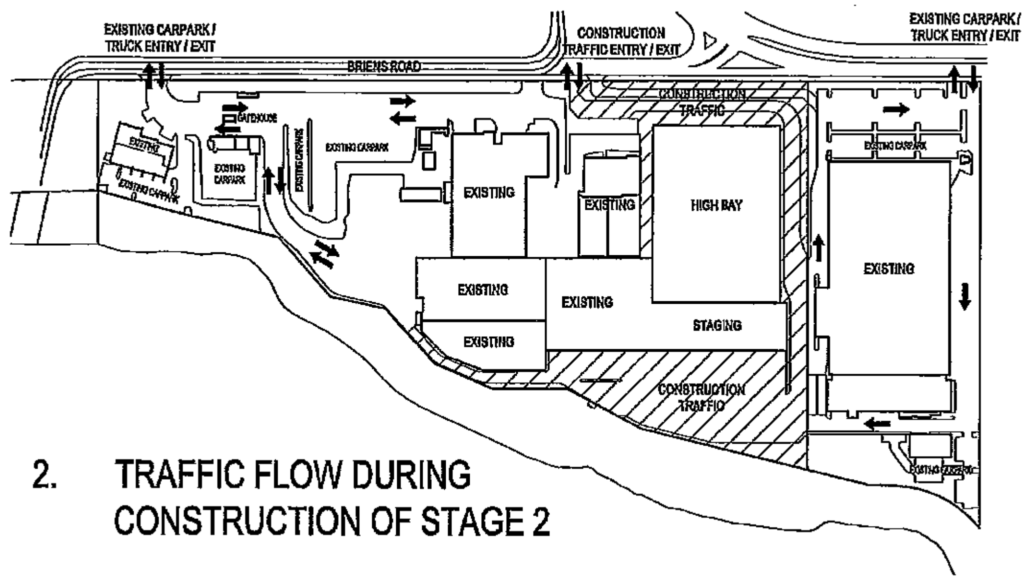


STAGING PLAN

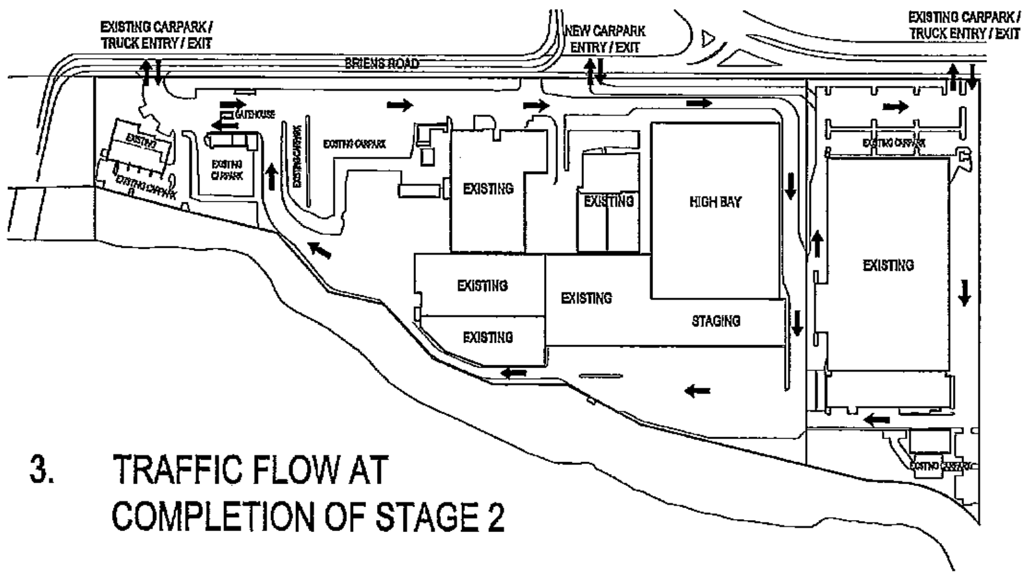
DRAWN BY CBHK Pty Ltd Ref: 6122/2 28 JULY 2006



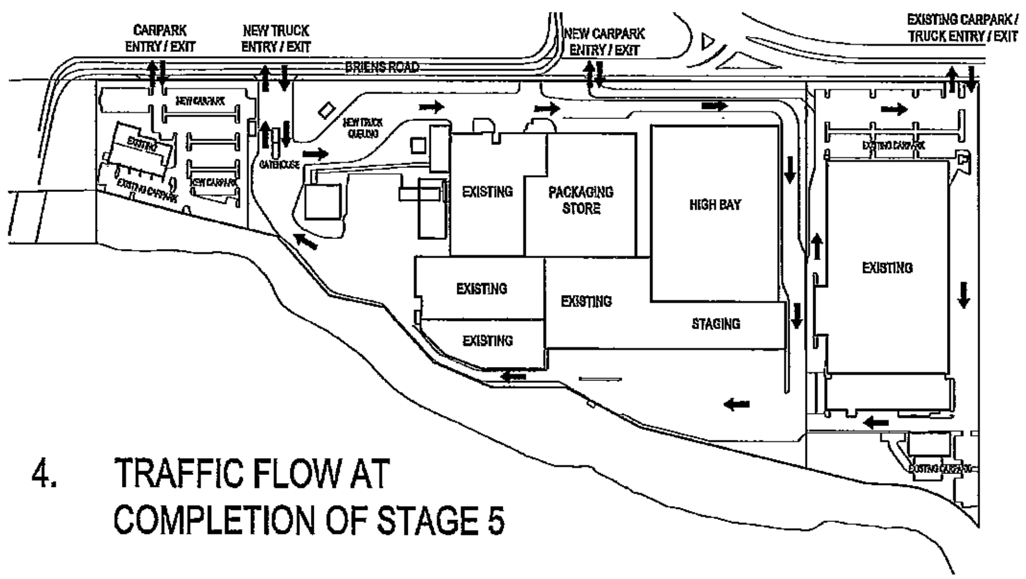
1. EXISTING TRAFFIC FLOW



2. TRAFFIC FLOW DURING CONSTRUCTION OF STAGE 2



3. TRAFFIC FLOW AT COMPLETION OF STAGE 2



4. TRAFFIC FLOW AT COMPLETION OF STAGE 5

KEY PLAN

REV.	DATE	AMENDMENT	SIGNED
A	30-08-06	NEW DRAWING	JTC

CLIENT

Coca-Cola Amatil

Coca-Cola Amatil (Aust) Pty Ltd
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PROJECT

CCA
BRIENS ROAD
NORTHMEAD NSW

ARCHITECT

MNSA ARCHITECTS

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ROBERT BIRD GROUP
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ELECTRICAL & MECHANICAL ENGINEERS
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FIRE ENGINEERS
BASSETT
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HYDRAULIC ENGINEERS
WYER DONNELLY & PARTNERS
Suite 1, 789 Pacific Highway Chatswood NSW 2067

COST MANAGER
RIDER HUNT
Level 5, 41 McLaren Street North Sydney NSW 2060

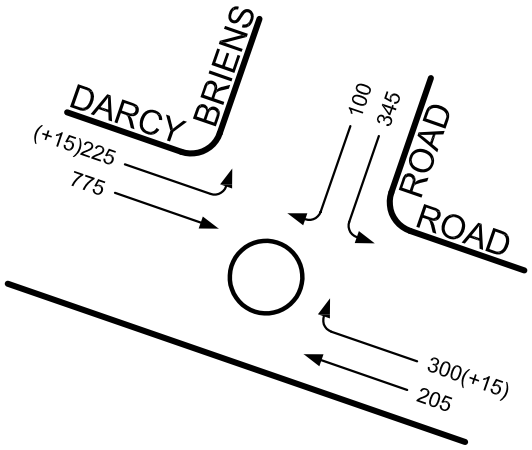
TITLE

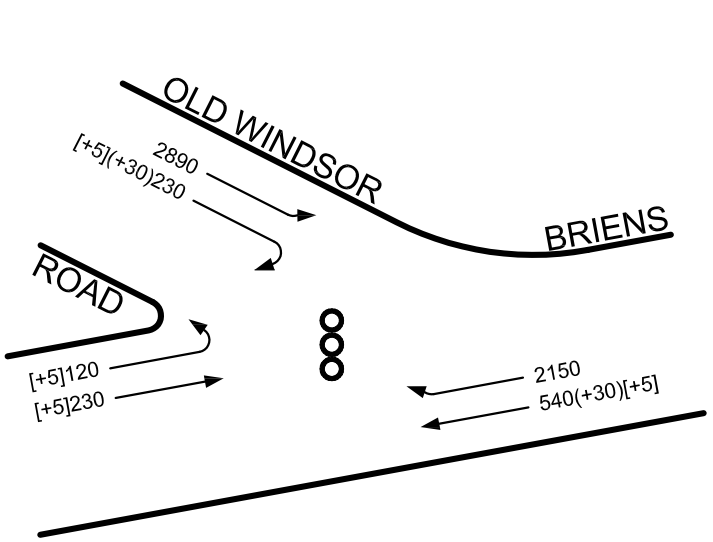
CONSTRUCTION TRAFFIC PLANS

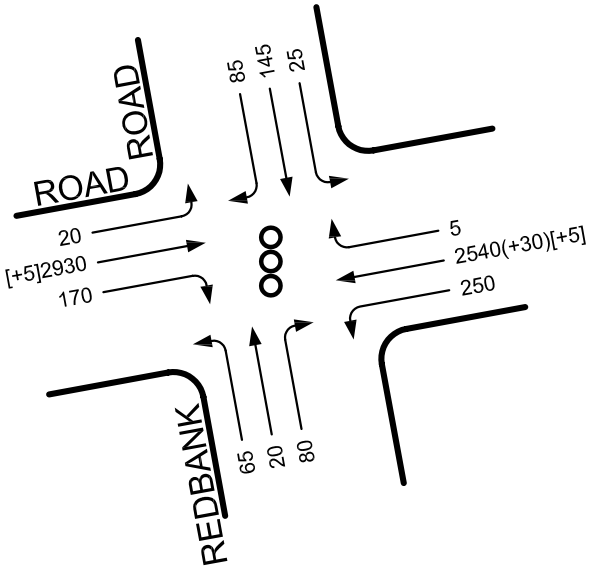
DATE	28-08-06	PROJECT No. 0538	DWG AR/SK
SCALE	1:2000 (B1)		
DRAWN	JTC		

PROJECT NORTH / TRUE NORTH

CONSTRUCTION TRAFFIC PLAN







LEGEND

100 - Existing Peak Hour Flows
(+10) - Additional Construction Worker Traffic
[+5] - Additional Construction Truck Traffic
- Traffic Signals
- Roundabout

EXISTING MORNING PEAK HOUR TRAFFIC FLOWS PLUS CONSTRUCTION TRAFFIC

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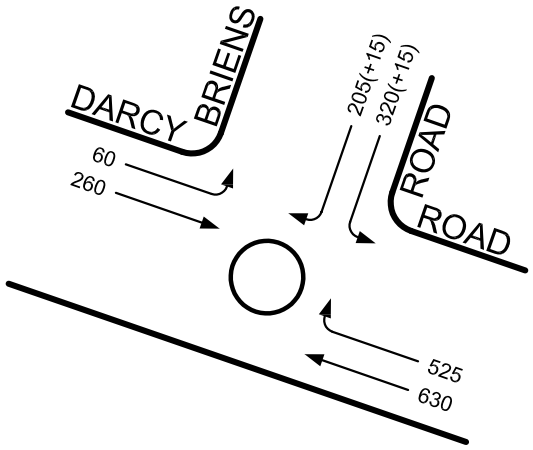

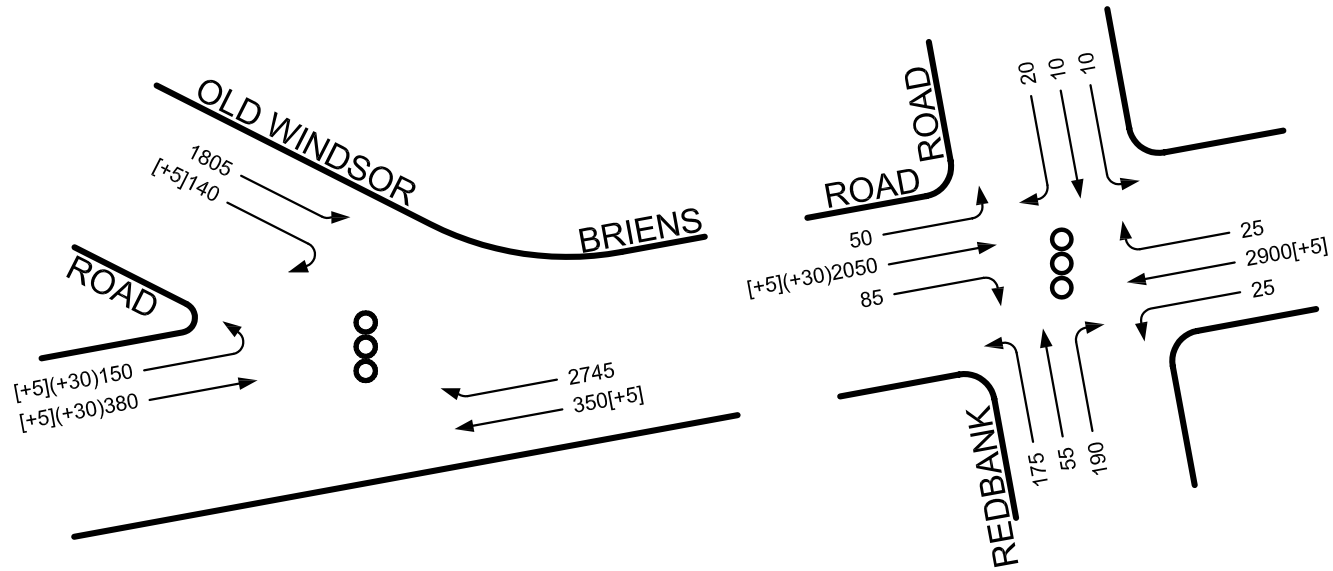

LEGEND

100 - Existing Peak Hour Flows
(+10) - Additional Construction Worker Traffic
[+5] - Additional Construction Truck Traffic
- Traffic Signals
- Roundabout

EXISTING AFTERNOON PEAK HOUR TRAFFIC FLOWS PLUS CONSTRUCTION TRAFFIC

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