

GRACEWOOD VILLAGE
PROPOSED STAGE 3 DEVELOPMENT
MEMORIAL AVENUE, KELLYVILLE
S75W MODIFICATION
Assessment of Traffic and
Parking Implications

December 2017
(Rev D)

Reference 17116

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1. INTRODUCTION

This report has been prepared for Baptist Care (previously known as Baptist Community Services (BCS)) to accompany a S75W Modification Application to the Department of Planning and Environment for Stage 3 (Clusters 2, 3 & 4) of the Gracewood Village Complex on Memorial Avenue at Kellyville (Figure 1).

The area extending northwards from the Norwest Business Park is subject to a substantial urban development process with an evolving road network as prescribed in the Balmoral Road Development Control Plan. The large Baptist Care landholding, was subject to a Master Plan development scheme comprising:

RACF	160 beds + 6 respite beds
CVU's (ILU)	231 units
YPDOR	6 beds
Community Care & Village Club	

The original approved scheme has been modified a number of times and to date Clusters 1, 5, 6 & 7 and the RACF have been completed with the existing development on the site comprising:

- 153 ILU's
- 160 bed RACF
- Community Village
- Basement and At-grade parking

The development approval provided for 91 CVU's (ILU's) in Clusters 2, 3 and 4 and the Modification Application relates to Clusters 2, 3 and 4 and proposes:

88 CVU apartments
126 basement parking spaces

The purpose of this report is to:

- describe the site the existing/approved development and the proposed modification to the Stage 3 development scheme
- describe the road network serving the site and the prevailing traffic conditions
- describe the proposed changes to the envisaged road system
- assess the suitability of the proposed arrangements
- assess the adequacy of the proposed parking provision
- assess the potential traffic implications
- assess the suitability of the proposed internal circulation and servicing arrangements

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING DEVELOPMENT

The total site (Figure 2) is located on the southern side of Memorial Avenue just to the east of Old Windsor Road and the large rectangular shaped site is bound to the west by Free Settlers Drive, to the east by Rutherford Avenue and to the south by Hodges Road. The Stage 3 is the generally rectangular area running through the centre of the site with frontages to Free Settlers Drive and Rutherford Avenue.

The surrounding uses comprise:

- the new residential estates
- the Norwest Business Park located just to the south-east

The existing development on the Gracewood Village site comprises:

- 160 Bed RACF
- 153 CVU apartments
- Community Centre & Village
- 59 at-grade parking spaces for the RACF, Community Centre and Village
- 126 basement parking spaces for Clusters 1, 5, 6 and 7

2.2 PROPOSED STAGE 3 DEVELOPMENT

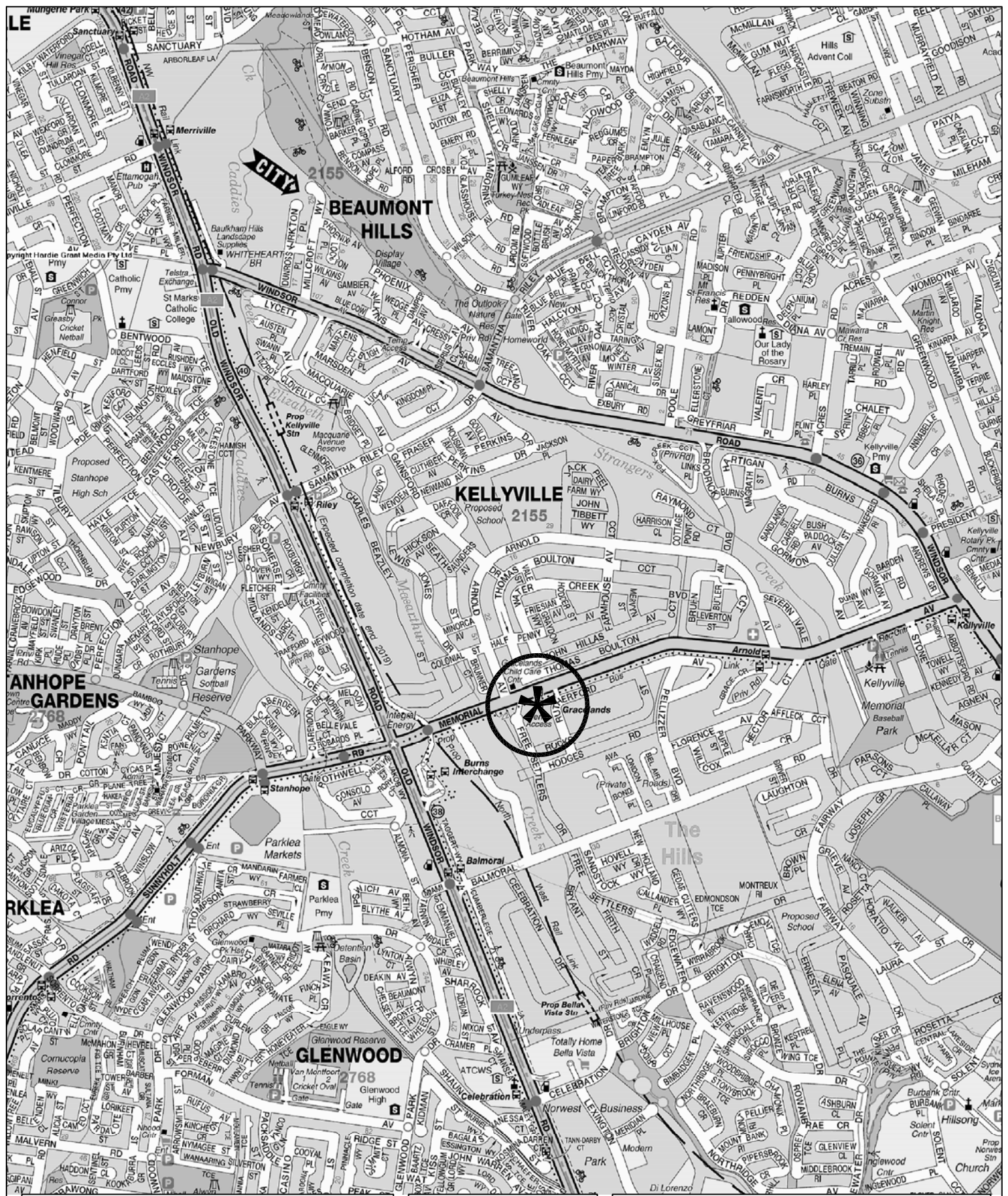
It is proposed to clear and excavate the site to provide for basement car parking and level platforms for building and hardstand areas.

The proposed modified Stage 3 development will comprise 3 clusters of CVU's as follows:

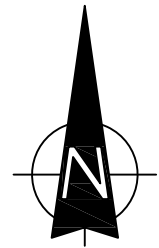
43 x two-bedroom

45 x three-bedroom

Total 88 units



LEGEND



LOCATION

FIG 1

It is proposed to provide a total of 126 parking spaces in the basement level of Clusters 2, 3 and 4 with the following provisions in relation to accessible parking spaces:

- 5% of spaces to be provided as accessible spaces 3.8m wide with the other spaces being a minimum of 2.7m wide
- ability to create an additional 15 accessible spaces (as per AS2890.6 format) if required by adjustment of the other parking spaces

The proposed vehicle access provisions comprise:

- combined ingress/egress driveway on Rutherford Avenue for the basement car park
- combined ingress/egress driveway on Free Settlers Drive for service vehicles to access to loading area.

Architectural details of the proposed development are provided on the plans prepared by DKO Architects which accompany the Development Application and are reproduced in part in Appendix A.



LEGEND



SITE

FIG 2

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

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

- *Old Windsor Road* – a State Road and arterial route which links between Parramatta and Windsor through the developing north-west sector
- *M7 Motorway* – a privately owned arterial route which connects between the M2 Motorway and the South Western Freeway being part of the Sydney Orbital Route
- *Windsor Road* – a State Road and sub-arterial route which connects between Kellyville and Parramatta
- *Norwest Boulevard* – an important collector road route running through the Norwest Business Park connecting between Old Windsor Road and Windsor Road
- *Memorial Avenue* – a State Road and sub-arterial route linking between Old Windsor Road and Windsor Road
- the system of collector road routes including:
 - Balmoral Road
 - Arnold Avenue
 - Samantha Riley Drive
 - Fairway Drive
- *Free Settlers Drive, Rutherford Avenue and Hodges Road* – local access roads

Memorial Avenue along the site frontage is currently one lane in each direction with additional lanes provided in the vicinity of the Old Windsor Road intersection.

3.2 TRAFFIC CONTROLS

The existing traffic controls which have been applied to the roads in the vicinity of the site (Figure 4) include:

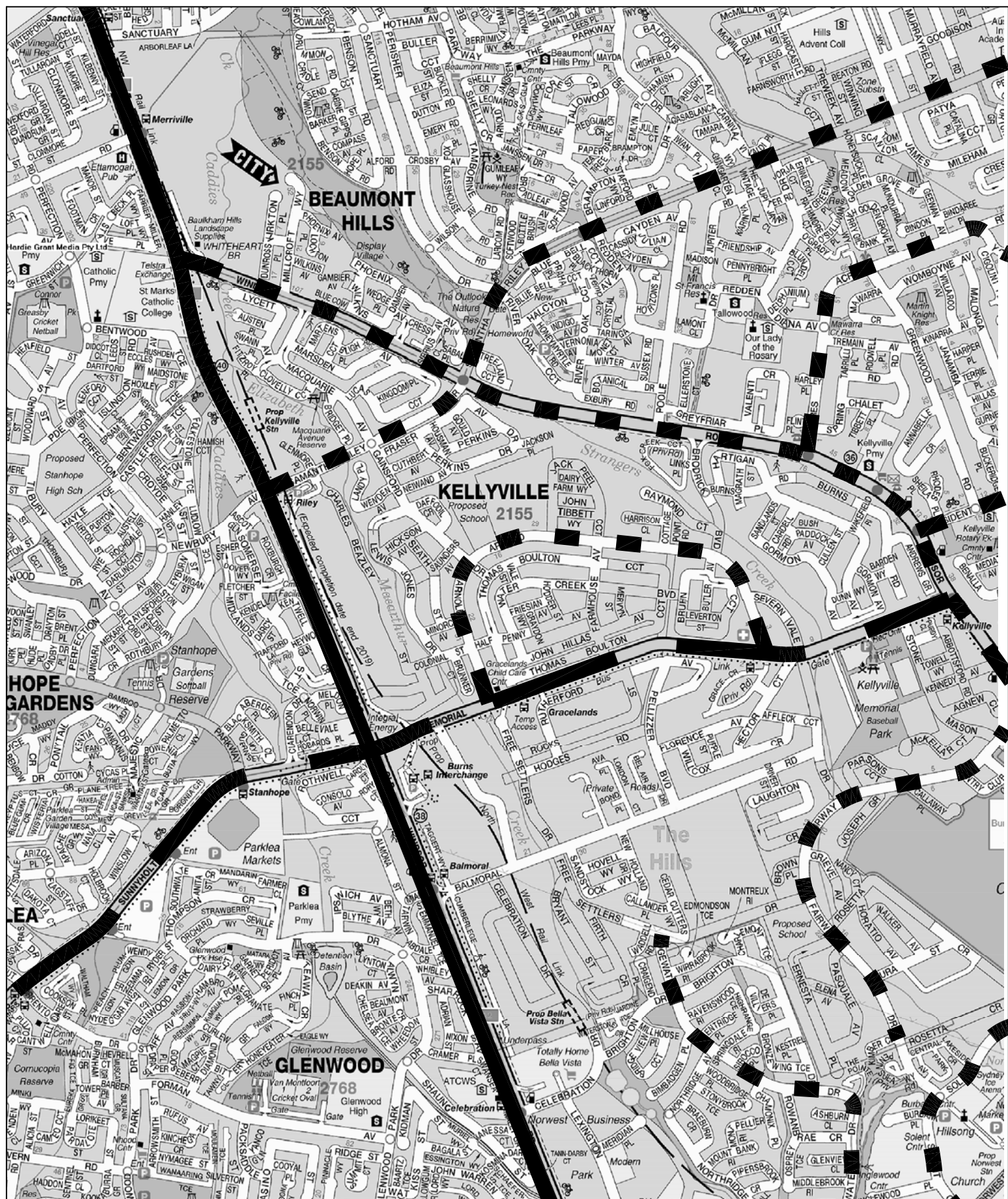
- the traffic control signals at the Old Windsor Road, Sunnyholt Road and Memorial Avenue intersection.
- the traffic control signals at the Old Windsor Road and Samantha Riley Drive intersection
- the traffic signals at the Windsor Road and Memorial Avenue intersection
- the traffic signals on Memorial Avenue at the Busway crossing

3.3 TRAFFIC CONDITIONS

An indication of the current traffic conditions on the road system serving the site is provided by data published by the RMS. This data is expressed in terms of Annual Average Daily Traffic (AADT) and that data is provided in the following:

	AADT
Windsor Road north of Showground Road	38,200
Memorial Avenue west of Windsor Road	25,000 est.

There has been a very significant growth in traffic volumes on Old Windsor Road, Windsor Road and Memorial Avenue consequential to urban development and road upgrading. The traffic flows along Memorial Avenue are only moderate at the present time, however this situation will change as a consequence of further urban development. The operational performance of the road system in the area is relatively satisfactory apart from circumstances at times along the Old Windsor Road route during the commuter peak periods.

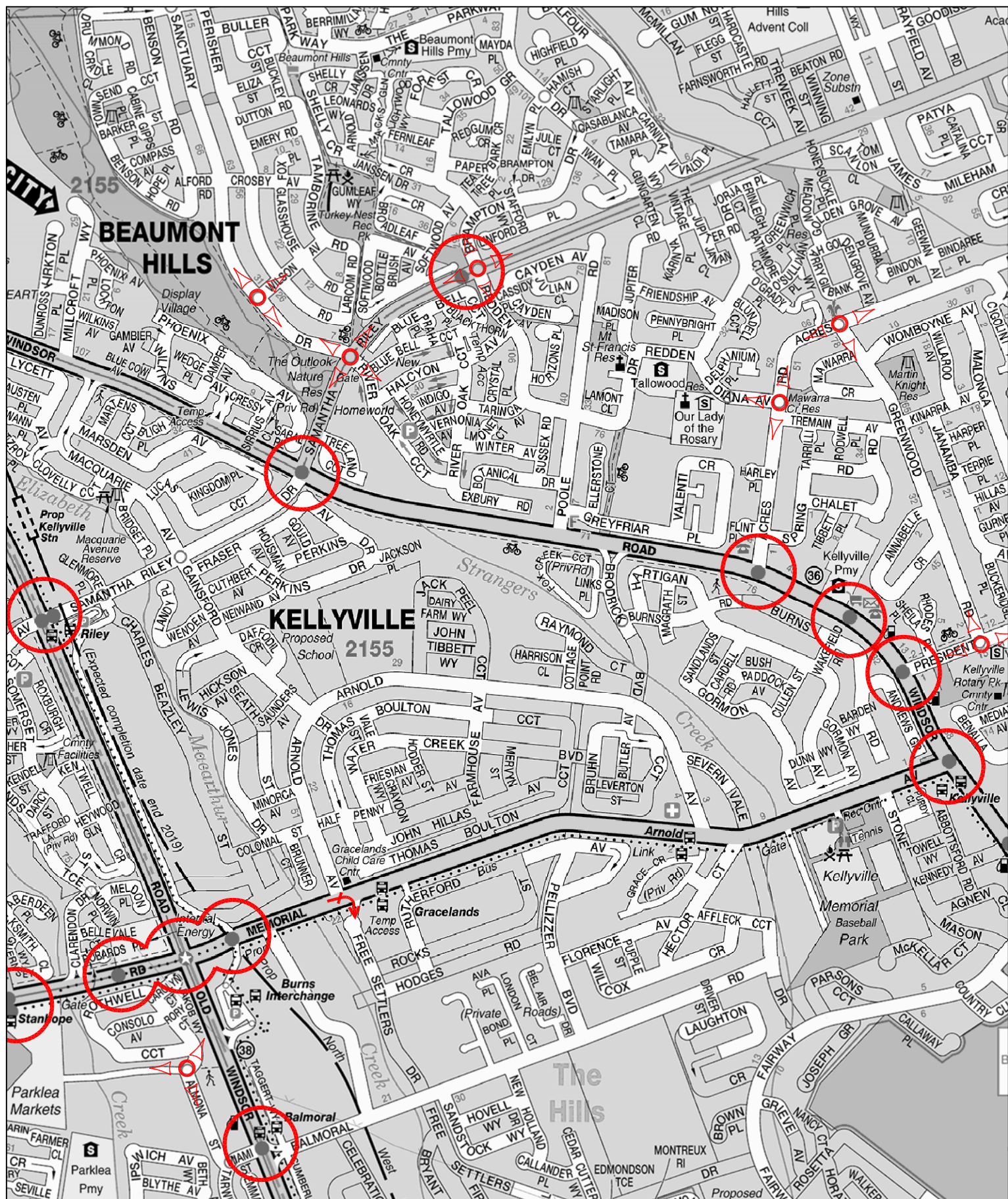


3.4 TRANSPORT SERVICES

The existing public transport services in the vicinity of the development site (see overleaf) comprise:

- Route 617 service along Memorial Avenue
- the 'line haul' bus services on the Norwest Transitway along Old Windsor Road to Rouse Hill and Parramatta
- the proposed North West Rail Line currently under construction at the Burns Road Station located just to the west of the site

Baptist Care also operate a mini bus service out of the site for residents.



4. PARKING

SEPP (Housing for Seniors or People with Disability) specifies the following parking provisions for Independent Living Units:

- 0.5 spaces per bedroom
- 1.0 space per 5 dwellings if a Social Housing Provider

Baptist Care is a social housing provider (SHP) and therefore if parking at a rate of one (1) space per 5 dwellings is provided, pursuant to Clause 50(h) of the SEPP, the application cannot be refused on the grounds of parking provision. The 88 self-contained dwellings within Clusters 2, 3 and 4 would therefore only require 18 spaces to comply with Clause 50(h). It is proposed to provide a total of 126 spaces within the basements of these buildings as part of this modification.

Overall, in accordance with MOD 6 (which related to the redesign of Clusters 1 and 5), a total of 258 basement car parking spaces are required to be provided on site.

There are currently 129 basement car parking spaces provided for Clusters 1, 5, 6 and 7. Therefore, a total of 126 spaces would be required to be provided for Clusters 2, 3 and 4 in order to comply with Condition F10 of the approval (as modified).

As previously noted, this modification makes provision for 126 basement car parking spaces to service Clusters 2, 3 and 4. Notwithstanding that this is 3 spaces less than that required by Condition F10, the car parking provided on the site for the self-contained seniors dwellings is far in excess of that required by Clause 50(h) of the SEPP and this minor reduction in car parking provision is supported.

Of these 126 spaces, 7 spaces are proposed to be provided as accessible spaces, which represents 5% of the total car parking provision for Clusters 2, 3 and 4. These spaces will be 3.8m wide. Point 5 of Schedule 3 to SEPP (Housing for Seniors or People with Disability) requires 5% of private car parking (for self-contained seniors

dwelling) to be 3.8m wide and therefore the proposed modification complies with this requirement.

Point 5 of Schedule 3 also requires the remaining spaces to comply with the requirements for parking for persons with a disability set out in AS 2890. AS 2890 required parking for persons with a disability to be a minimum of 3.2m in width. However, the accessible car parking standards in AS 2890 have been superseded by AS2890.6 – 2009 which requires accessible car parking spaces to have a minimum width of 2.4m with a 2.4m shared area adjacent.

The proposed modification provides 119 spaces with a width of 2.7m. Notwithstanding that the proposed modification does not provide these spaces in accordance with AS2890 (as per Point 5 of Schedule 3 of the SEPP), it is considered that the width of spaces provided is appropriate based on current standards.

DKO Architects has prepared an alternative car parking layout which indicates that a total of 120 spaces, 22 of which are accessible parking spaces (in accordance with AS2890.6-2009¹).

In this regard, condition A1 of the approval issued for the development (as modified by MOD 6) requires 34 accessible spaces to be provided in Clusters 2, 3, 4, 5 and 6. 12 accessible spaces have been provided in Clusters 6 and 7 (at 3.8m width) and therefore, in theory, 22 accessible car parking spaces should be provided for Clusters 2, 3 and 4 in order to comply with condition A1.

There are 13 accessible spaces provided in Clusters 1 and 5. These spaces have been provided in accordance with Point 5 of Schedule 3 (i.e. a minimum width of 3.8m). Therefore, there is currently 25 accessible car parking spaces provided on site in accordance with Point 5 of Schedule 3 of the SEPP.

¹ The spaces shown as 3.8m wide on the alternative basement car park layout plan can be provided as 2.4m wide spaces with a 2.4m shared area adjacent and therefore would be capable of complying with AS2890.6 – 2009.

In accordance with Clause 50(h) of the SEPP, Baptist Care is only required to provide a total of 49 car parking spaces for the existing and proposed self-contained dwellings in the development and of these, only 5% (or 3 spaces) are required to be 3.8m wide.

Given that the current provision of car parking on site is well in excess of that required by Clause 50(h) of the SEPP (for a Social Housing Provider) and more than 5% of the required spaces have been provided as 3.8m wide spaces, the provision of 7 spaces within Clusters 2, 3 and 4 as 3.8m wide spaces is supported, particularly as it can be demonstrated that additional accessible parking (in accordance with AS2890.6-2009) is able to be provided.

We understand that Baptist Care will be responsible for the allocation of car parking to dwellings and if required by future residents, the car parking provision can be modified to provide the additional accessible car parking spaces.

5. TRAFFIC

The RMS Development Guidelines provide traffic generation criteria in relation to normal residential dwellings, medium and high density residential uses but not for contemporary SEPP Seniors Housing (ILU's). The RMS criteria (TDT 2013-4b) in relation to Seniors Housing aggregates the results of surveys for a range of different aged persons accommodation types and therefore does not reflect ILU developments with multiple bedrooms etc.

TTPA have undertaken survey and assessment of numerous Independent Living Unit developments particularly for major developers including Baptist Care and Anglicare.

The results of recent comprehensive surveys undertaken by TTPA indicate the following generation rates:

	AM	PM
ILU's	0.25 vtph/unit	0.20 vtph/unit

Application of this criteria to these proposed Clusters 2, 3 and 4 development scheme elements would indicate the following:

	AM	PM
88 units	22 vtph	18 vtph

Because the proposed number of CVU's for Stage 3 is reduced from the 91 which were assessed for the Masterplan the traffic generation outcome, which was assessed to have to be satisfactory, will be slightly lower.

6. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

The proposed vehicle access arrangements will comprise:

- a combined ingress / egress driveway on Rutherford Avenue for the car park
- a combined ingress / egress driveway on Free Settlers Drive for the loading dock

The design of the access driveways will comply with the AS 2890.1 and 2 criteria and will accommodate all vehicles requiring to gain access. The driveways will be located well removed from intersections (and each other) where suitable sight distances will be available.

INTERNAL CIRCULATION

The design of the carpark areas including ramps, grades, aisles etc will accord with the AS 2890.1 & 6 criteria. The geometry of internal roadways will not present any unsatisfactory vehicle conflict circumstances or any constraint on vehicle accessibility.

The carparking areas have also been designed to accord with the SEPP resident parking bays are generally 2.7 metres wide and 5.4 metres long (except for accessible spaces which are 3.8 metres wide) and the aisles are 5.8 metres wide.

The simple two-way arrangements within the basement carpark will provide a very flexible and accessible outcome.

SERVICING

Refuse will be removed from the loading dock area by contract services and this will also accommodate maintenance and furniture vans etc.

Service personnel and small delivery vehicles will be able to utilise the visitor bays.

Details of turning path assessments for service vehicle access are provided in Appendix B.

7. TRANSPORT SERVICES, PEDESTRIANS AND CYCLISTS

TRANSPORT SERVICES

Public transport serving the site is currently provided by the bus service along Old Windsor Road and Memorial Avenue. In the near future, the proposed North West Rail Line will be provided with access at the Burns Road Station located just to the west. Also, Baptist Care operate a mini bus service out of the site for residents.

PEDESTRIANS AND CYCLISTS

A comprehensive provision of pathways will be provided within the sit and some provision for bicycle standing will be made at the Community Facility and in the basement. Provision for pedestrians to cross Free Settlers Drive to/from the west will be facilitated by the splitter island at Hodges Road roundabout which will act as a pedestrian refuge.

8. CONCLUSION

The proposed Greenwood Village Stage 3 development will provide for the seniors population in the Norwest and Kellyville areas. Assessment of the potential vehicle access, parking, traffic and transport implications of the S75W modification scheme has concluded that:

- there will be no adverse or unsatisfactory traffic implications
- the proposed parking provision will be adequate and appropriate
- the provision and accessibility of public transport services will be suitable
- the proposed vehicle access, internal circulation and servicing provisions will be quite satisfactory

APPENDIX A

DEVELOPMENT PLANS

PRELIMINARY



Rev.	Date	By	Ckd	Description
P5	27/09/2017	PP	MR	Issue for Review - 88 Unit Scheme
P6	20/10/2017	PP	MR	Revised Floor Plans & Basement
P7	24/10/2017	PP	MR	Client Meeting
P8	27/10/2017	PP	MR	Client Meeting
P9	16/11/2017	PP/IL	IL	Issue for Review
P10	24/11/2017	PP/IL/ MR	IL/MR	Issue for Coordination

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NSW: Nominated Architects
Kees de Krijger 37071 David Randerson 8542

Project Name
Project Address

Gracewood Village Stg 3
2-8 Free Settlers Drive,
Kellyville, NSW 2155

Project Number
Drawing Name
Scale
Date

11527
Site Plan Basement
1:400@ A1,
27/11/2017

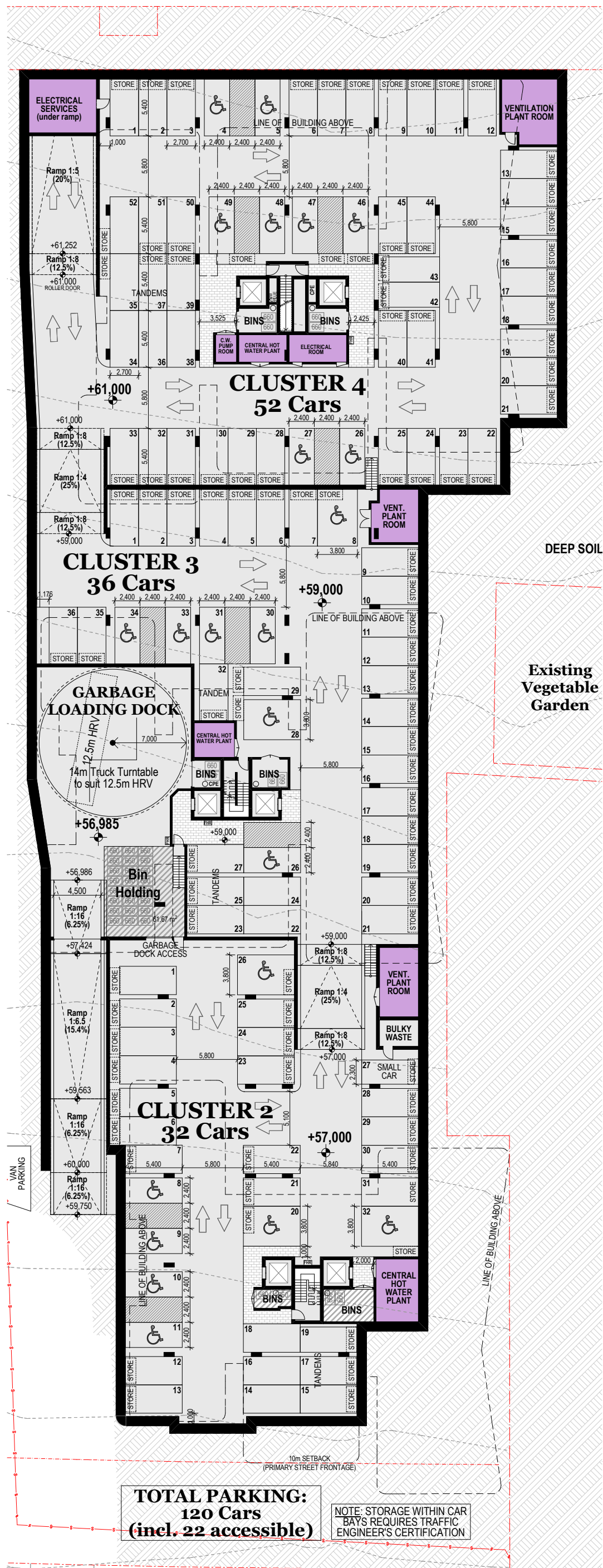
Client

BaptistCare NSW

Drawing Number
Revision

DA214
P10

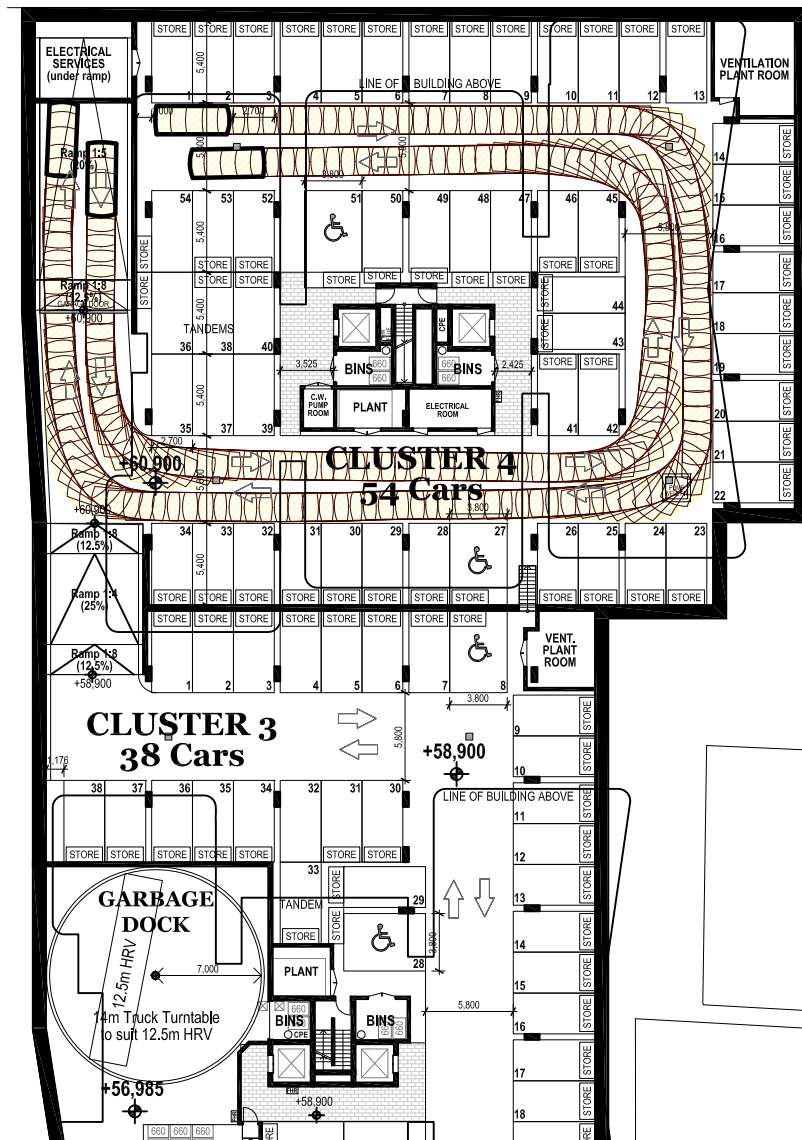
120 CARS TOTAL
22 ACCESSIBLE



APPENDIX B

TURNING PATH ASSESSMENT

RUTHERFORD AVENUE



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



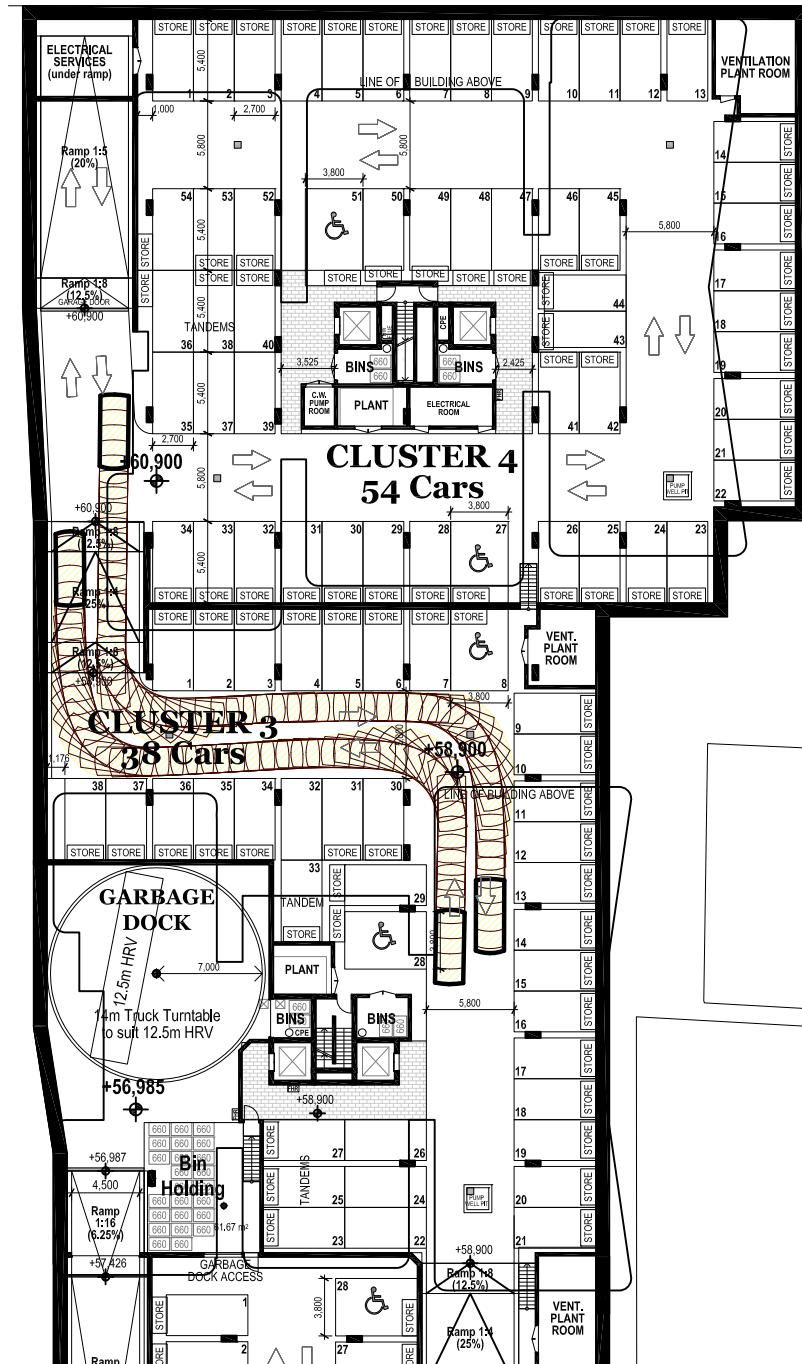
**SWEPT PATH ANALYSIS
OF A 85th PERCENTILE
VEHICLES PASSING**

SP 1

RUTHERFORD AVENUE

+65,051

SUB
STATION



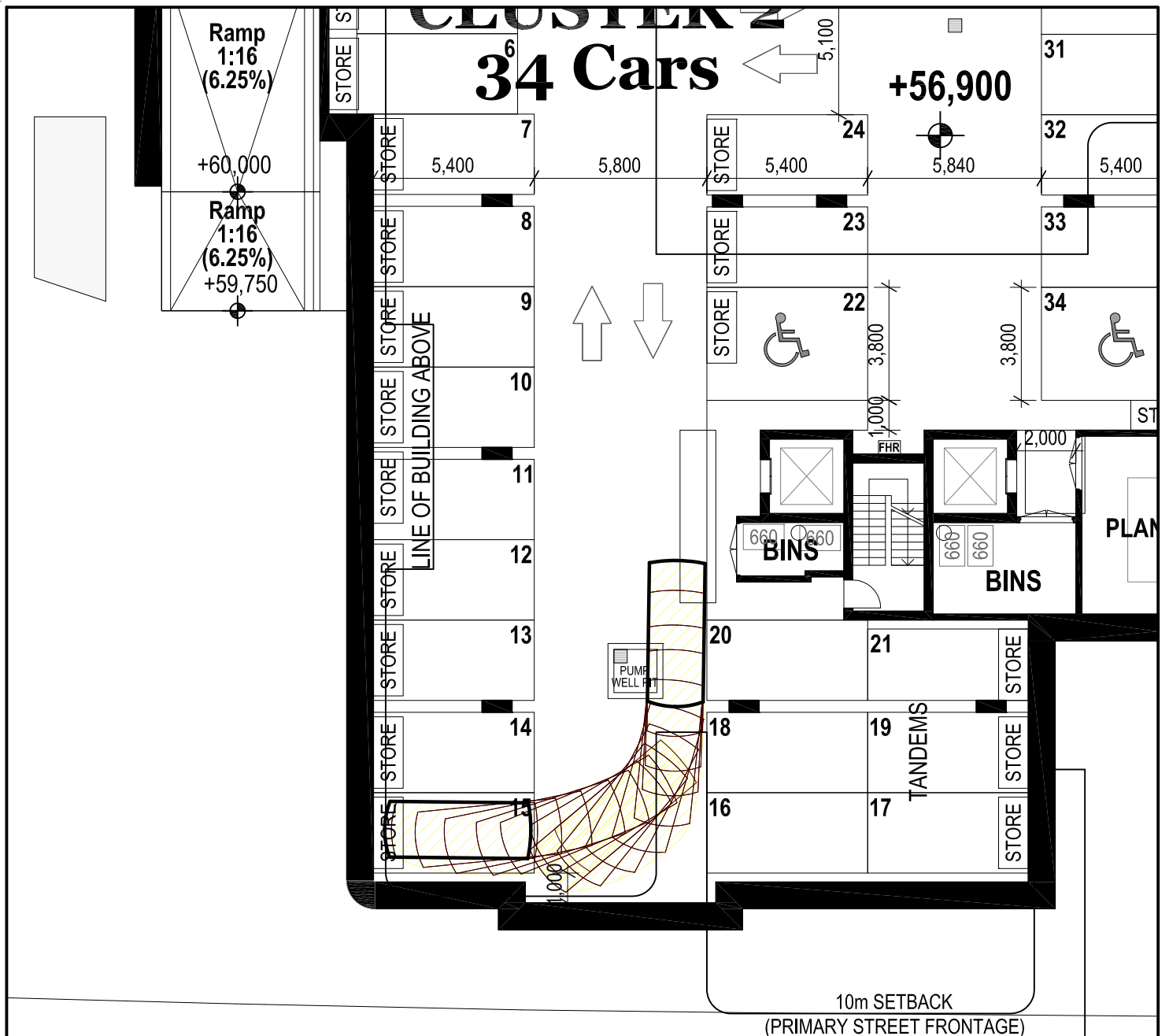
LEGEND

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**SWEPT PATH ANALYSIS
OF A 85th PERCENTILE
VEHICLES PASSING**

SP 2



TOTAL PARKING:
126 Cars
(incl. 7 accessible)

NOTE: STORAGE
 BAYS REQUIRE
 ENGINEER'S C

LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
 OF AN 85th PERCENTILE
 VEHICLE ENTERING THE SITE**

SP 3

CLUSTER 2

34 Cars

+56,900

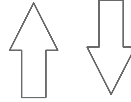
Ramp
1:16
(6.25%)

+60,000

Ramp
1:16
(6.25%)

+59,750

LINE OF BUILDING ABOVE



660

660

660

660

BINS

BINS

PLANT

PUMP
WELL PIT

10m SETBACK

(PRIMARY STREET FRONTAGE)

TOTAL PARKING:
126 Cars
(incl. 7 accessible)

NOTE: STORAGE W
BAYS REQUIRES
ENGINEER'S CERT

LEGEND

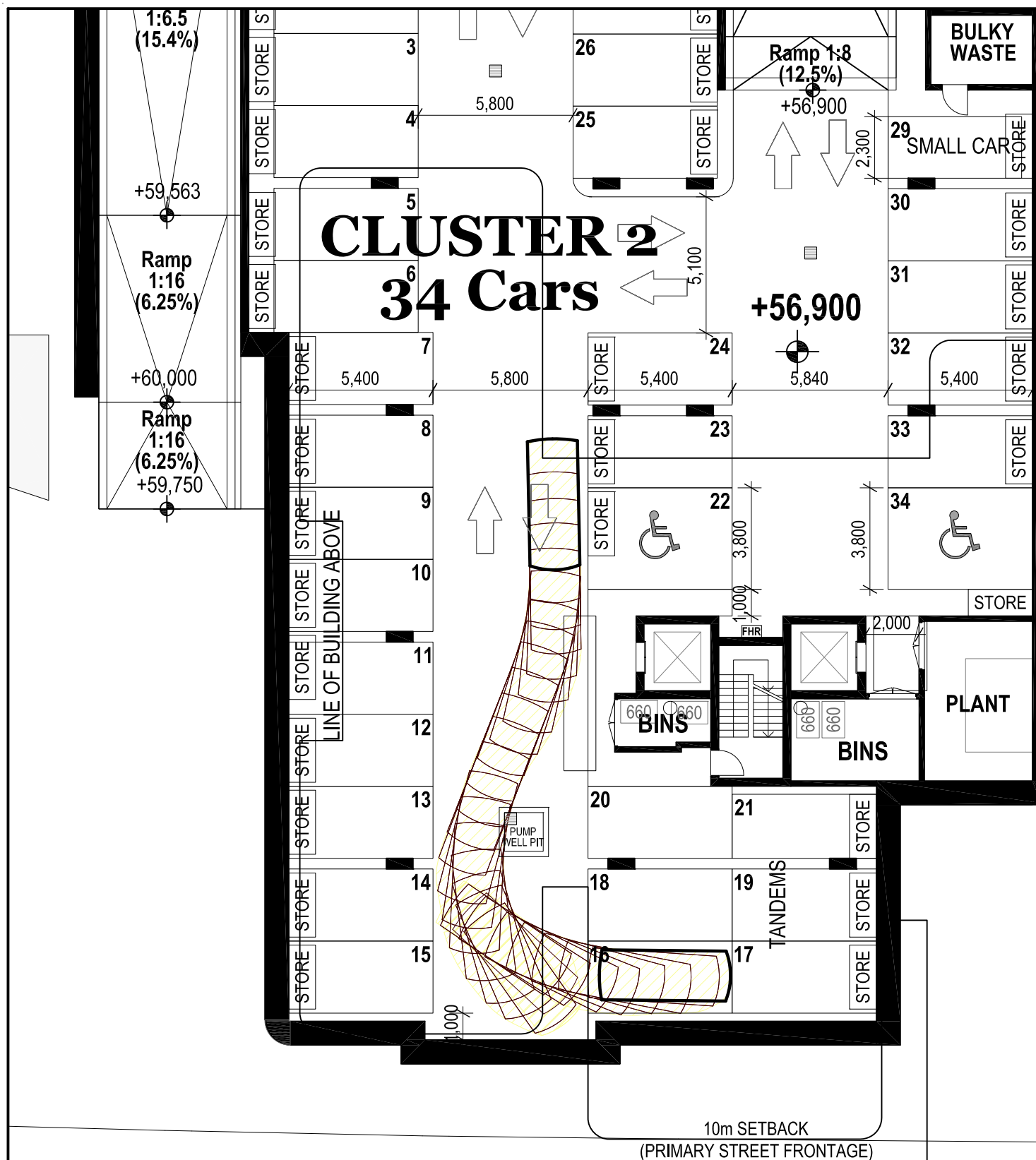
This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF AN 85th PERCENTILE
VEHICLE EXITING THE SITE**

SP 4

CLUSTER 2 34 Cars



TOTAL PARKING:

LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF AN 85th PERCENTILE
VEHICLE ENTERING THE SITE**

SP 5

CLUSTER 2

34 Cars

+56,900

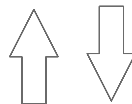
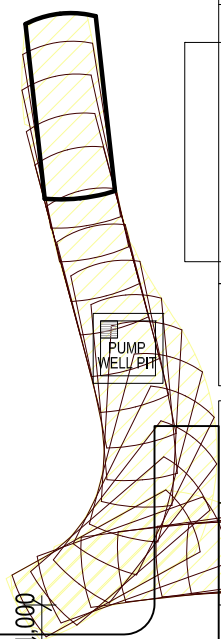
Ramp
1:16
(6.25%)

+60,000

Ramp
1:16
(6.25%)

+59,750

LINE OF BUILDING ABOVE



BINS

BINS

PLANT

PUMP
WELL / PFI

10m SETBACK
(PRIMARY STREET FRONTAGE)

TOTAL PARKING:
126 Cars
(incl. 7 accessible)

NOTE: STORAGE W/ BAYS REQUIRES T
ENGINEER'S CERTI

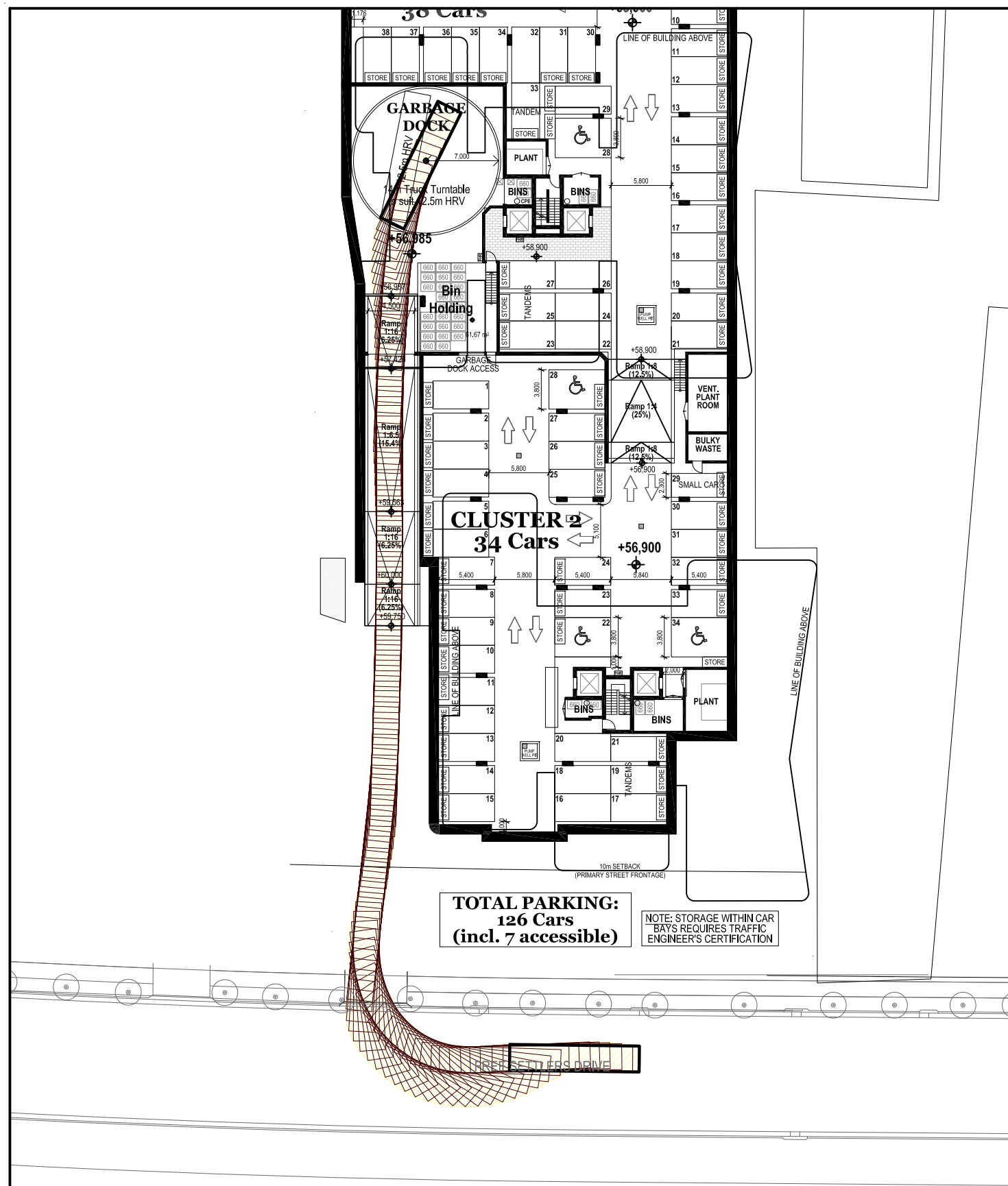
LEGEND

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**SWEPT PATH ANALYSIS
OF AN 85th PERCENTILE
VEHICLE EXITING THE SITE**

SP 6



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2013. The vehicle used is based upon vehicle data provided by Austroads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



**SWEPT PATH ANALYSIS
OF A 12.5m RIGID VEHICLE
EXITING THE LOADING DOCK**

SP 8