

**PROPOSED
ALTERATIONS AND ADDITIONS
MEDOWIE CHRISTIAN SCHOOL**

WAROPARA ROAD, MEDOWIE

***Assessment of Traffic And
Parking Implications***

November 2015
(Rev E)

Reference 15191

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Transportation, Traffic and Design Consultants
Suite 502, Level 5
282 Victoria Avenue
CHATSWOOD 2067
Telephone (02) 9411 5660
Facsimile (02) 9904 6622
Email: ross@ttpa.com.au

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	PROPOSED DEVELOPMENT SCHEME.....	2
2.1	Site, Context And Existing Circumstances	2
2.2	Proposed Development.....	2
3.	ROAD NETWORK AND TRAFFIC CONDITIONS	4
3.1	Road Network.....	4
3.2	Traffic Controls	4
3.3	Traffic Conditions	5
3.4	Transport Services	5
4.	PARKING	6
5.	ACCESS, INTERNAL CIRCULATION AND SERVICING	9
6.	TRAFFIC	10
7.	CONCLUSION	12

APPENDIX A	PLANS OF EXISTING
APPENDIX B	DEVELOPMENT PLANS
APPENDIX C	PUBLIC TRANSPORT SERVICES

LIST OF ILLUSTRATIONS

FIGURE 1	LOCATION
FIGURE 2	SITE
FIGURE 3	ROAD NETWORK
FIGURE 4	TRAFFIC CONTROLS
FIGURE 5	EXISTING PEAK TRAFFIC FLOWS

1. INTRODUCTION

This report has been prepared to accompany a Staged Development Application to Port Stephens Council for proposed alterations and additions to Medowie Christian School in Waropara Road at Medowie (Figure 1).

The existing Kindergarten to Year 12 School, which currently accommodates 385 students with 44 staff, incorporates some demountable buildings. The school proposes a staged upgrade and expansion scheme involving the construction of additional teaching and administrative facilities (including replacement of the demountable buildings) to provide sufficient capacity to meet the anticipated future enrolment demands.

The Development Application comprises a Stage 1 Proposal for the new Administration Building (with no additional staff or students) as well as a Concept Proposal for the staged provision of new buildings to accommodate additional students and staff.

The purpose of this report is to:

- * describe the site, its context and the elements of proposed development scheme
- * describe the existing road system serving the site and traffic conditions on that system
- * assess the adequacy of the proposed parking provision and set down/pick up facility
- * assess the potential traffic implications
- * assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements



LEGEND



LOCATION

FIG 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING CIRCUMSTANCES

The site (Figure 2), for the purpose of the Development Application, is Lots 22 & 23 in DP 1036306 and Lot 1 in DP868525, which occupy a rectangular shaped total area of some 7.66 Ha situated to the west of Medowie Road. The existing Medowie Christian School consists of a number of blocks and demountable buildings around a large hall which is located on Lot 22. There are separate ingress and egress driveways on Waropara Road with frontage carpark and bus standing areas. The school, which accommodates 385 Kindergarten to Year 12 students with 44 staff, has 47 parking spaces and also contains a basketball court, cricket nets and vegetable gardens.

By agreement with the Church which owns Lot 1 allows the School to use part of the car park area on Lot 1 for a set down/pick up facility. There is a small Medical Centre as well as a number of Church buildings on Lot 1 with 52 parking spaces while other surrounding land uses comprise rural residential dwellings and the Medowie residential area and shops which are located further to the east.

Details of the existing school are provided on the plan prepared by Smith and Tracey Architects provided in Appendix A.

2.2 PROPOSED DEVELOPMENT

STAGE 1 PROPOSAL

It is proposed to construct a new 2 level administration building at the front of the site replacing some demountable buildings. There will be no increase in staff or student numbers while 10 additional staff parking spaces will be provided in the front of the site to accommodate some parking flexibility particularly during the building works.



LEGEND



SITE

FIG 2

CONCEPT PROPOSAL

The Concept Proposal involves accommodating pre-kinder students as well additional Kindergarten to Year 12 students and related additional staff.

The Concept Proposal seeks to utilise the large campus site in a more efficient manner with additions to the following teaching and administrative facilities:

- 1x single storey Pre-Kinder building
- 1 x double storey Discovery/Resource centre
- 2 x two double storey Learning centres

These additional facilities will also be accompanied by the provision of additional parking spaces resulting in a total of 79 car spaces being available on the school campus. The proposed works will enable the school enrolment to increase to 860 students with 63 staff.

Details of the proposed development scheme are provided on the architectural plans prepared by Smith and Tracey Architects which also accompany the Development Application and are reproduced in part in Appendix B.

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

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

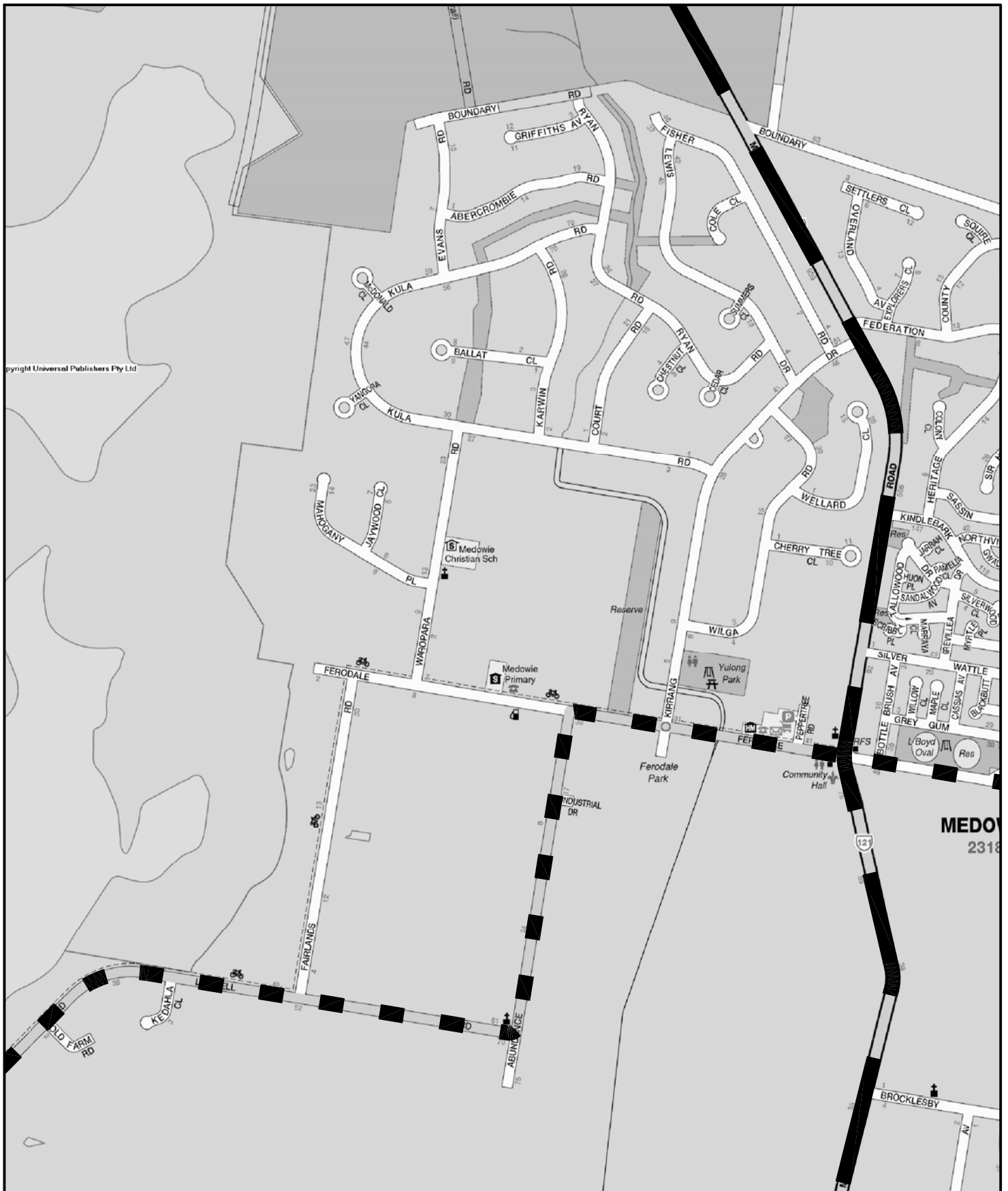
- * *Pacific Highway* - a State Road and arterial route linking between Newcastle
- * *Medowie Road* - a sub-arterial route linking between Pacific Highway and Williamtown
- * *Richardson Road/Grahamstown Road/Lisadell Road/Abundance Road - Ferodale Road* – an east-west collector road linking between Ferodale and Medowie
- * *Waropara Road* - a local access road connecting between Ferodale Road and Kula Road

Waropara Road is relatively straight and level with a 7 metre wide pavement within a 20 metre wide reserve generally with no paved footway except on the site frontage.

3.2 TRAFFIC CONTROLS

The limited existing traffic controls (Figure 4) on the road system serving the area include:

- * the roundabout controls along Ferodale Road at the intersections with Kirrang Drive and Medowie Road
- * the roundabout controls along Medowie Road at the intersections with Kirrang Drive and Federation Drive
- * the 50 kmph speed limit on the local roads with 40 kmph SCHOOL ZONE restrictions in Waropara Avenue near Medowie Christian Schools and on Ferodale Road near Medowie Primary School



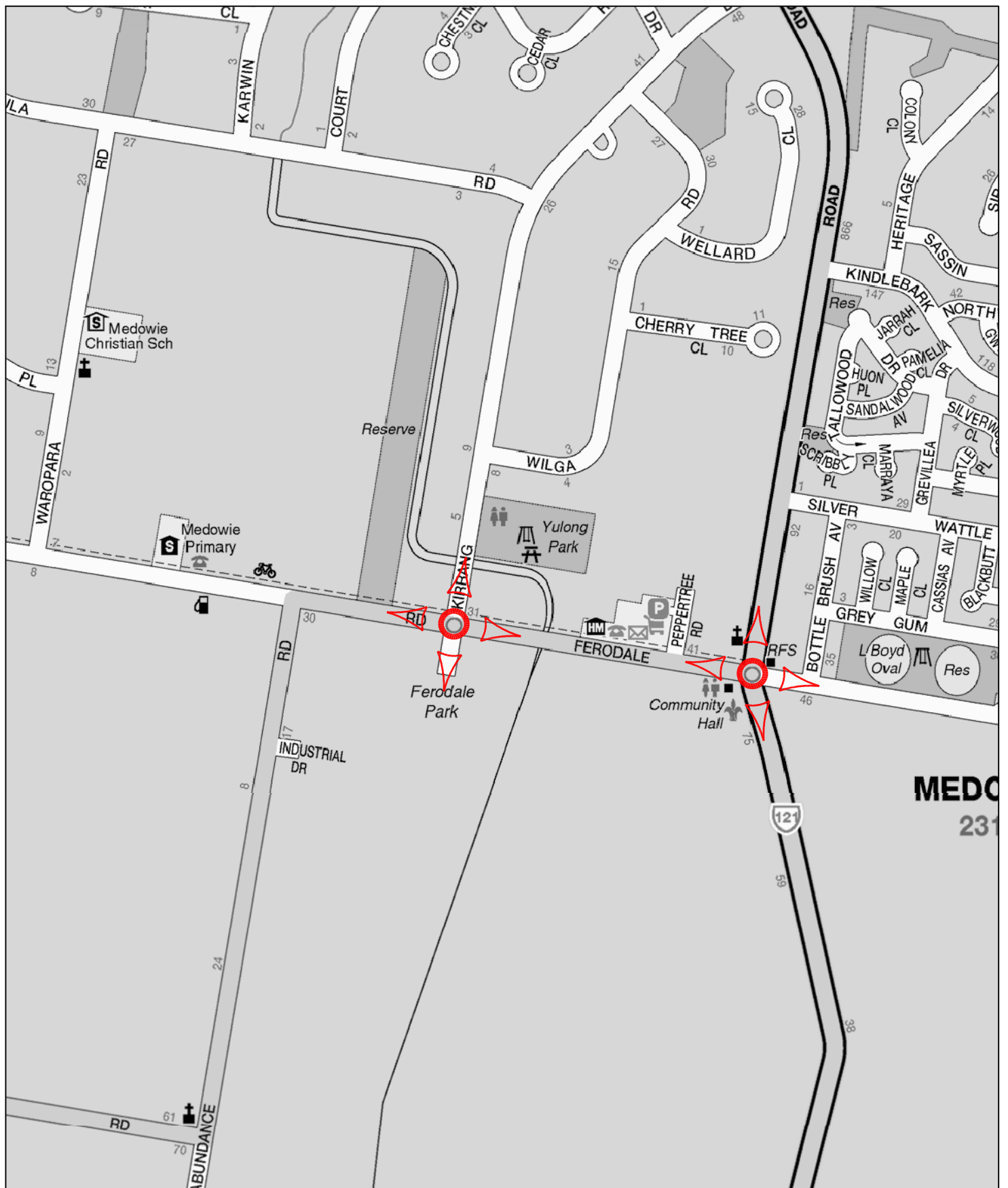
LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR



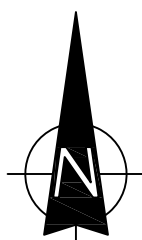
ROAD NETWORK

FIG 3



LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT



TRAFFIC CONTROLS

FIG 4

3.3 TRAFFIC CONDITIONS

Waropara Road is a local access road with traffic movements largely limited to that generated by the frontage uses and that of the immediate adjoining roads. The existing traffic movements along Waropara Road during the peak school arrival/departure times are as follows:

	AM (8.00 – 9.00)	PM (2.30 – 3.30)
Northbound	117	95
Southbound	128	109

The existing school contributes to much of these movements along with that of Medowie Primary School located on Ferodale Road. Observations reveal that drivers (including bus drivers) have no difficulty in ingressing and egressing the school site and the SD/PU facility on the adjacent site where the majority of movements occur.

There are 5 buses which access the site in the morning arrival and afternoon departure periods and approximately 57% of school children travel by bus (i.e. some 220 children or 44 per bus). There is a relatively low travel mode by bicycle at the present time (average of 5 per day) and this in part reflects the absence of paved footways (except on the school frontage) or on-road bicycle facilities.

3.4 TRANSPORT SERVICES

Public transport services in the vicinity of the site are provided by:

- * *Route 136-138* - a Hunter Valley bus service providing connection between Stockton Wharf and Raymond Terrace Transport Interchange further to the west.

Details of bus services and routes are provided on the bus route maps and timetable in Appendix C.

4. PARKING

CAR PARKING

Council's DCP 2013 Section B3 specifies parking provision in relation to Education Establishments as follows:

Staff	-	1 space per staff
Pre-Kinder	-	1 space per 4 students
Senior Students (Yr 12)	-	1 space per 8 students
Adequate Set Down and Pick Up (SD/PU) provision including Bus Bay		

Application of the above criteria to the existing school would indicate the following parking provision:

44 staff	-	44 spaces
Pre-Kinder	-	Nil
24 senior students (Yr 12)	-	3 spaces
Total	-	47 spaces

The existing school campus has 47 parking spaces plus 4 bus bays and use of a section of the car park on Lot 1 for a set down/pick up facility. It is apparent that the existing provision complies with that required by the DCP criteria and the day to day parking and set-down/pick-up needs. The parking will be increased by 10 staff spaces as part of the Stage 1 works (i.e. total of 57 spaces).

The Concept Proposal envisages a potential enrolment of up to 860 students (50 Pre-Kinder and 30 Year-12) with 63 staff. Application of the DCP criteria to this outcome would indicate the following parking requirement:

63 staff	-	63 spaces
50 pre-kinder	-	12.5 spaces
30 senior students (Year 12)	-	3.75 spaces
Total	-	79 spaces

It is proposed to increase the parking provision by a further 22 spaces (i.e. total 79 spaces) as appropriate to the stages of development as indicated on the concept plan in Appendix B to comply with the DCP's criteria. The SD/PU facility will continue to be provided in the Lot 1 car park and the bus SD/PU area will be managed to provide for the needs of this transport mode.

SET DOWN AND PICK UP (SD/PU)

The school has the use of the SD/PU facility on the adjoining Church site which extends for some 80 metres. This facility can accommodate 13–15 vehicles simultaneously in a typical school SD/PU operation with an estimated capacity of some 500 SD/PU movements per hour. It is apparent that this facility has quite adequate capacity to accommodate the demands of the envisaged additional students.

BUSES

The existing Bus Parking area extends some 60 metres along the primary internal driveway and this area can accommodate up to 4 standard buses in a typical school SD/PU operation.

The buses do not need to be all waiting at the same time as there is the ability with some staggering of bus arrival/departure to increase the number of buses servicing the school. If the enrolment increases to 860 children and some 50% travel by bus then there will need to be some 10 buses in the morning and afternoon to serve this demand.

The existing arrangements operate without any difficulty and it is assessed that sufficient capacity will be available to accommodate the envisaged growth in student population with “managed” arrival and departure times.

BICYCLES

The DCP specifies a requirement of 1 bicycle space for every 10 staff/students to encourage the uptake of non-motorised transport mode. Application of the criteria would indicate a requirement of 92 bicycle spaces within the school campus. However Waropara Road only has a rural road formation with no paved footway or on-road bicycle facility.

The existing circumstances are therefore not safe or conducive for children to travel to/from the school by bicycle in large numbers. The site has ample room to provide a significant dedicated and secure bicycle parking area in the future if and when bicycle linkages are constructed. However it is proposed to maintain the existing provision for 10 bicycles (only 5 of which are utilised on average at the present time).

5. ACCESS, INTERNAL CIRCULATION AND SERVICING

ACCESS

The existing vehicle access arrangements for the school and the Church involve 4 separate entry and exit driveways which comply with the design requirements of AS2890.1. These accesses are located where adequate sight lines are available on a relatively straight and level section of roadway.

It is proposed to retain the existing access arrangements, which accommodate all vehicles requiring access to the site, with the alterations and additions to the school.

INTERNAL CIRCULATION

The design of the existing and proposed car parking and internal circulation arrangements accord with the criteria contained in AS2890.1, 2 & 6. The new carpark located opposite of the Bus Bay will be reserved for staff members in order to minimise potential traffic conflict during set down and pick up periods. The other carparks will be available for students and visitors (including parents) while set down and pick up activities will occur in the dedicated SD/PU facility in the Lot 1 car park.

SERVICING

The existing servicing arrangement involves a weekly skip bin collection as well as cleaning and maintenance activities which occur outside of school hours. The current arrangements are satisfactory however with the proposed school expansion the frequency of servicing activities may increase slightly to accommodate the increased population. The management of these servicing arrangements will be subject to the School Board annual review to ensure their adequacy and appropriateness of the arrangements.

6. TRAFFIC

The RMS Development Guidelines do not specify a traffic generation rate for education establishments and schools show significant differences as a result of a number of factors, namely:

- Socio-economic make up (i.e. 2nd car ownership for parent to drive children to/from school)
- Travel mode by bus
- Density of surrounding residential development (i.e. walk to/from school)
- Convenient public transport services

It has been established that some 57% of children currently travel to/from the school by “school bus” while the average child occupancy of SD/PU car is 1.8 (this occupancy rate typically increases as schools get larger due to increased sibling numbers). It is assessed that the existing school on this basis generates the following:

Bus	220 children (5 buses)	10 vt
Car (1.8 per car)	140 children (78 cars)	156 vt
Bicycle	5 children	-
Walk	20 children	-
Total	385 children	166 vt

The arrival and departure trips extend for more than 1 hour so say 140 vtph and 150 vtph in the afternoon.

Extrapolation on this basis to the envisaged potential 860 students would indicate the following:

Bus	430 children (10 buses)	20 vt
Car (2.0 per car)	390 children (195 cars)	390 vt
Bicycle	10 children	-
Walk	30 children	-
Total	860 children	410 vt

It is apparent that the traffic generation of the expanded school will increase in general proportion to the increased enrolment and although there is likely to be slightly less students travelling by bus, the occupancy of SD/PU by car will increase slightly. If it eventuates that there is some difficulty with the full capacity of the school the contingency is always available for the School Board to consider staggering the start/finish times of the Junior and Senior elements.

The arrival and departure activity will be spread over the 4 separate ingress and egress driveways although the greater proportion of movements will occur on the Church property driveways. However because there are (and will continue to be) relatively low traffic movements along Waropara Road, the sight distances available are good and vehicle speeds are restricted to 40 kmph, there will not be any unsatisfactory traffic implications for the access driveways or the intersections in the area during the school arrival and departure times.

7. CONCLUSION

The traffic, transport and parking assessment provided in this report indicates that the alterations and additions for Medowie Christian School (i.e. proposed Stage 1 and envisaged Concept Proposal) will:

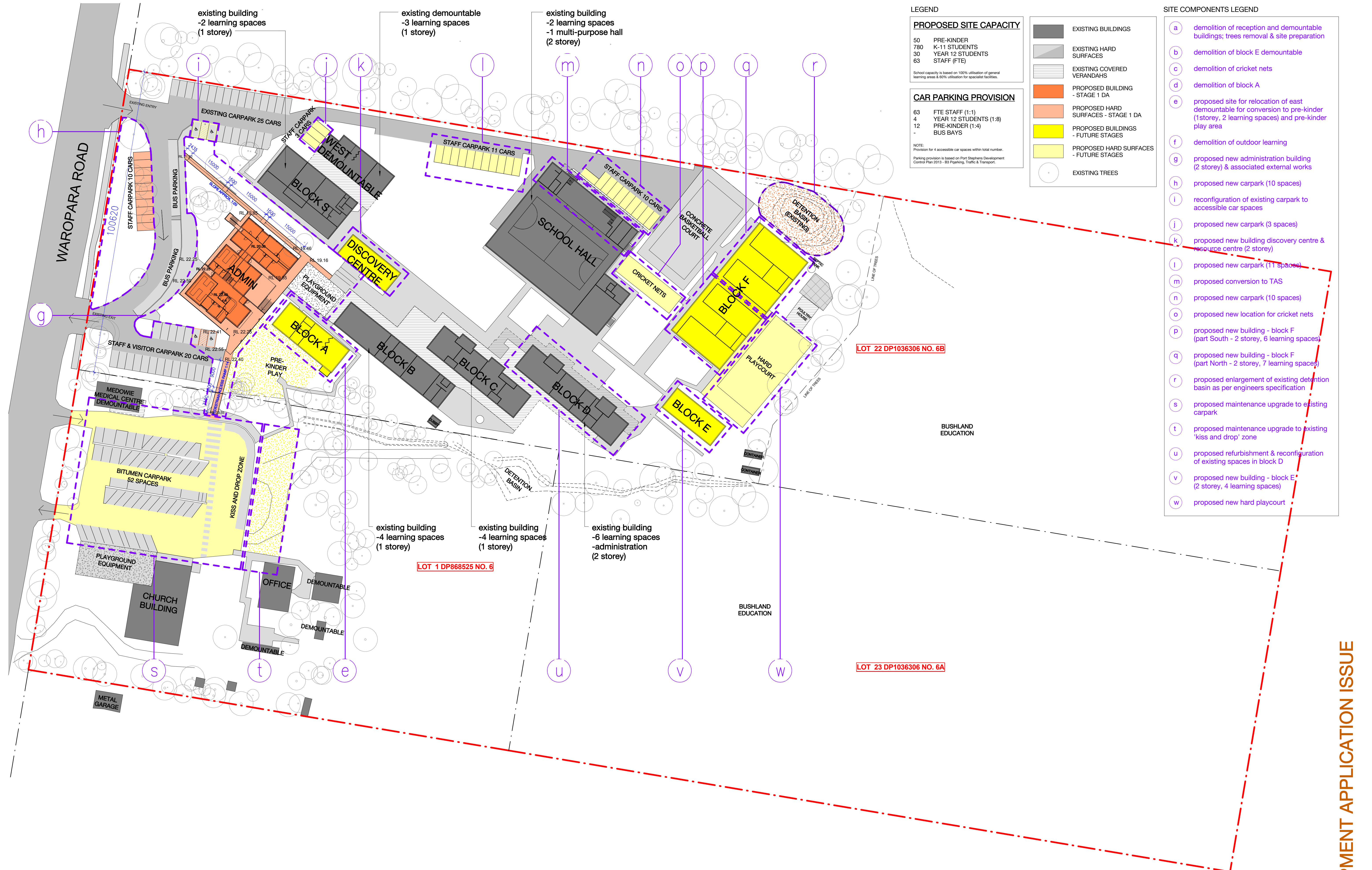
- * not present any unsatisfactory capacity, safety or environmental related traffic implications
- * incorporate a suitable and appropriate parking provision
- * incorporate suitable vehicle access, internal circulation and servicing arrangements
- * be consistent with the objectives of the Port Stephens Council DCP

APPENDIX A

PLANS OF EXISTING

APPENDIX B

DEVELOPMENT PLANS



LEGEND

PROPOSED SITE CAPACITY

50	PRE-KINDER
780	K-11 STUDENTS
30	YEAR 12 STUDENTS
63	STAFF (FTE)

School capacity is based on 100% utilisation of general learning areas & 60% utilisation for specialist facilities.

CAR PARKING PROVISION

63	FTE STAFF (1:1)
4	YEAR 12 STUDENTS (1:8)
12	PRE-KINDER (1:4)
-	BUS BAYS

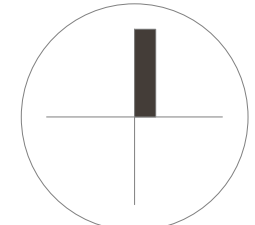
NOTE: Provision for 4 accessible car spaces within total number.

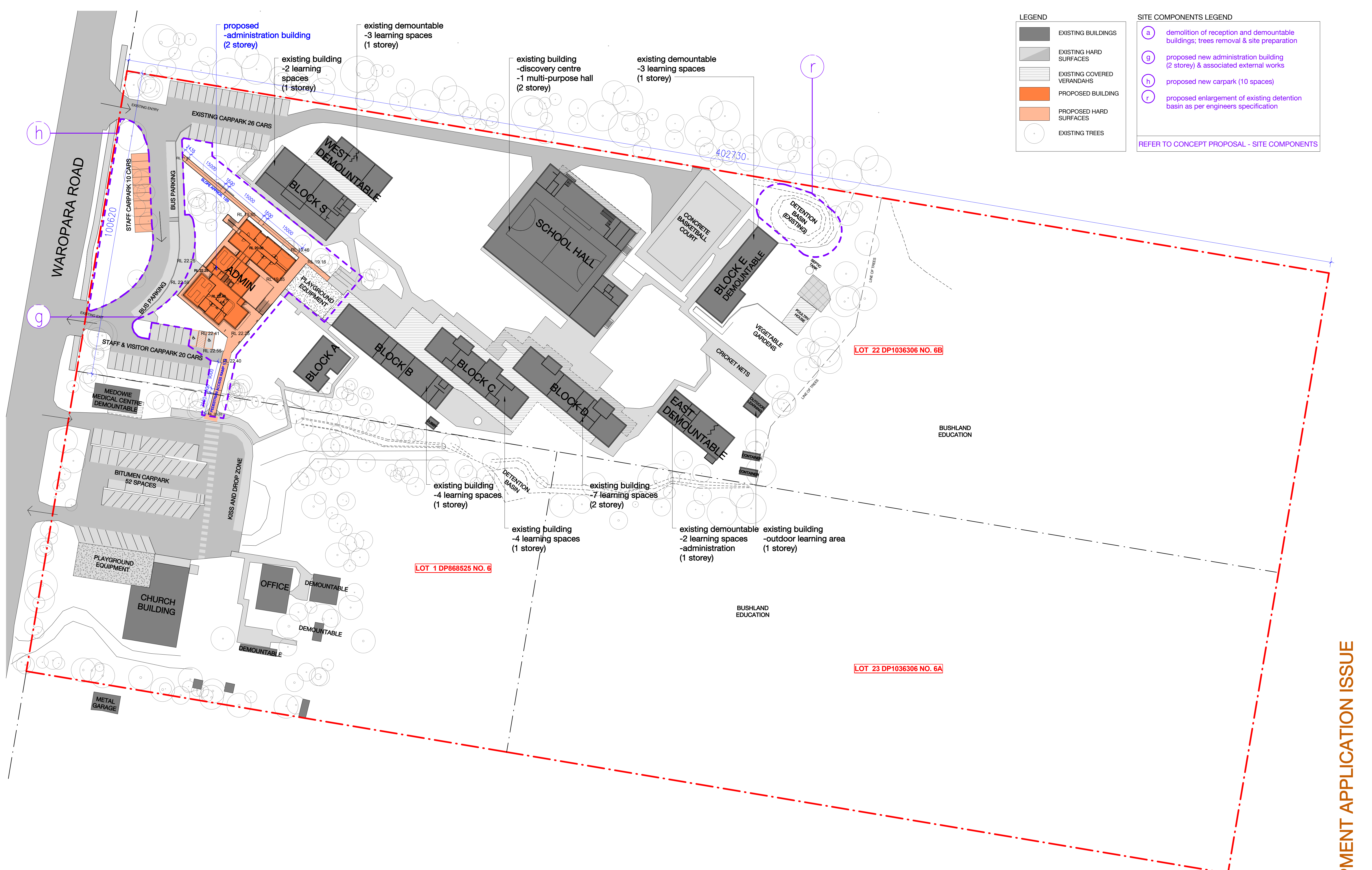
Parking provision is based on Port Stephens Development Control Plan 2013 - 83 Parking, Traffic & Transport.

	EXISTING BUILDINGS
	EXISTING HARD SURFACES
	EXISTING COVERED VERANDAHS
	PROPOSED BUILDING - STAGE 1 DA
	PROPOSED HARD SURFACES - STAGE 1 DA
	PROPOSED BUILDINGS - FUTURE STAGES
	PROPOSED HARD SURFACES - FUTURE STAGES
	EXISTING TREES

SITE COMPONENTS LEGEND

- a demolition of reception and demountable buildings; trees removal & site preparation
- b demolition of block E demountable
- c demolition of cricket nets
- d demolition of block A
- e proposed site for relocation of east demountable for conversion to pre-kinder (1 storey, 2 learning spaces) and pre-kinder play area
- f demolition of outdoor learning
- g proposed new administration building (2 storey) & associated external works
- h proposed new carpark (10 spaces)
- i reconfiguration of existing carpark to accessible car spaces
- j proposed new carpark (3 spaces)
- k proposed new building discovery centre & resource centre (2 storey)
- l proposed new carpark (11 spaces)
- m proposed conversion to TAS
- n proposed new carpark (10 spaces)
- o proposed new location for cricket nets
- p proposed new building - block F (part South - 2 storey, 6 learning spaces)
- q proposed new building - block F (part North - 2 storey, 7 learning spaces)
- r proposed enlargement of existing detention basin as per engineers specification
- s proposed maintenance upgrade to existing carpark
- t proposed maintenance upgrade to existing 'kiss and drop' zone
- u proposed refurbishment & reconfiguration of existing spaces in block D
- v proposed new building - block E (2 storey, 4 learning spaces)
- w proposed new hard playcourt





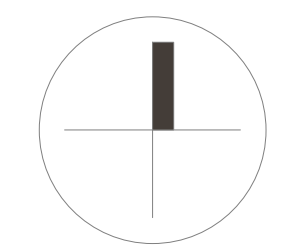
LEGEND

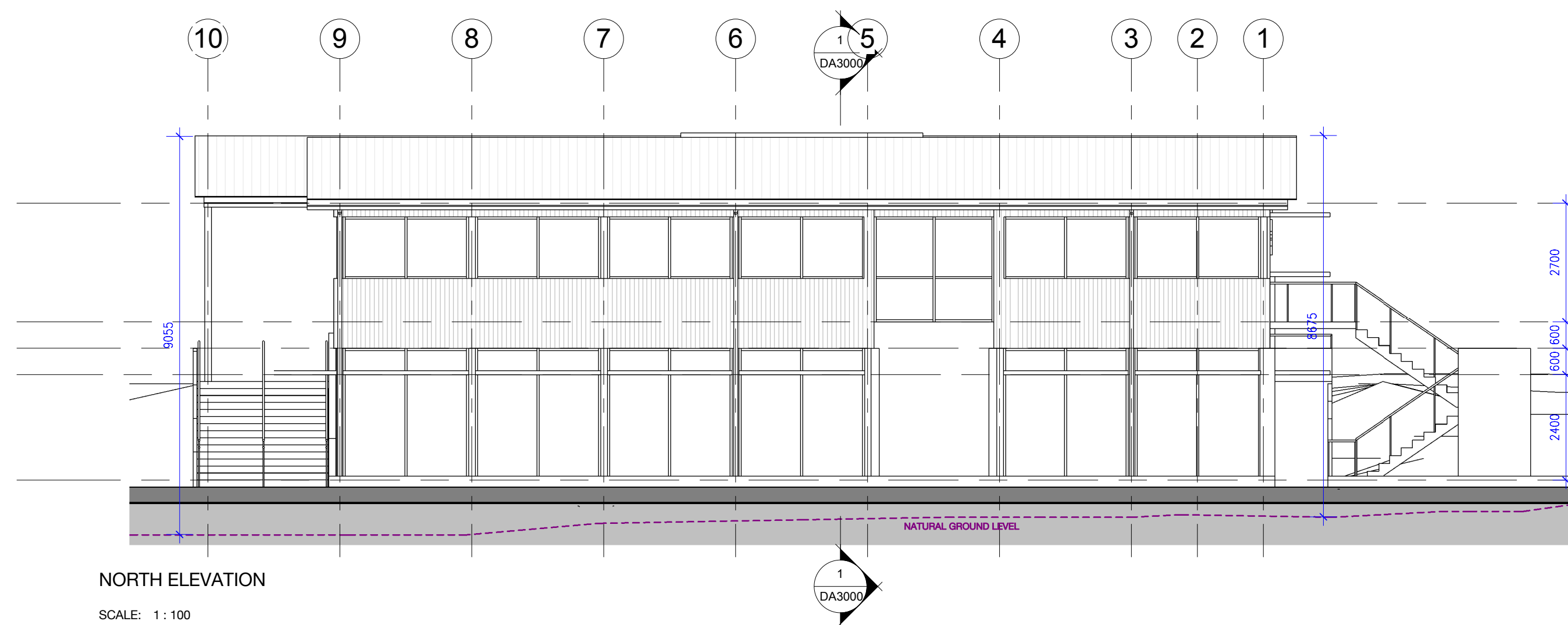
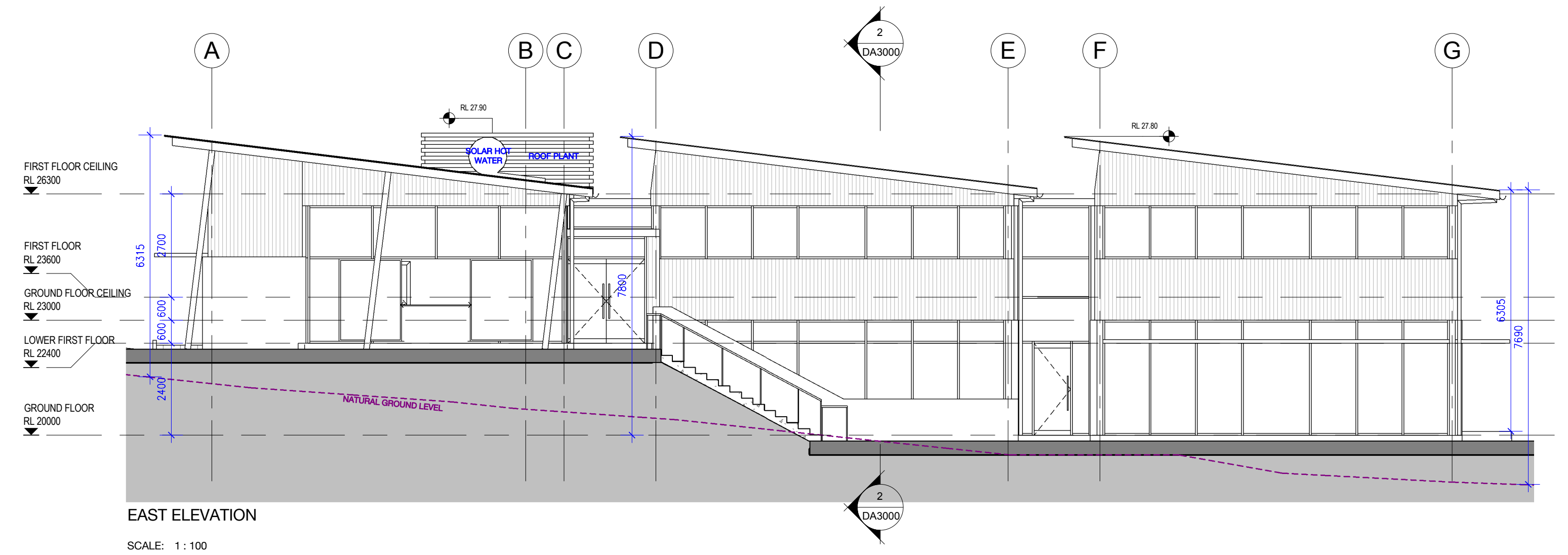
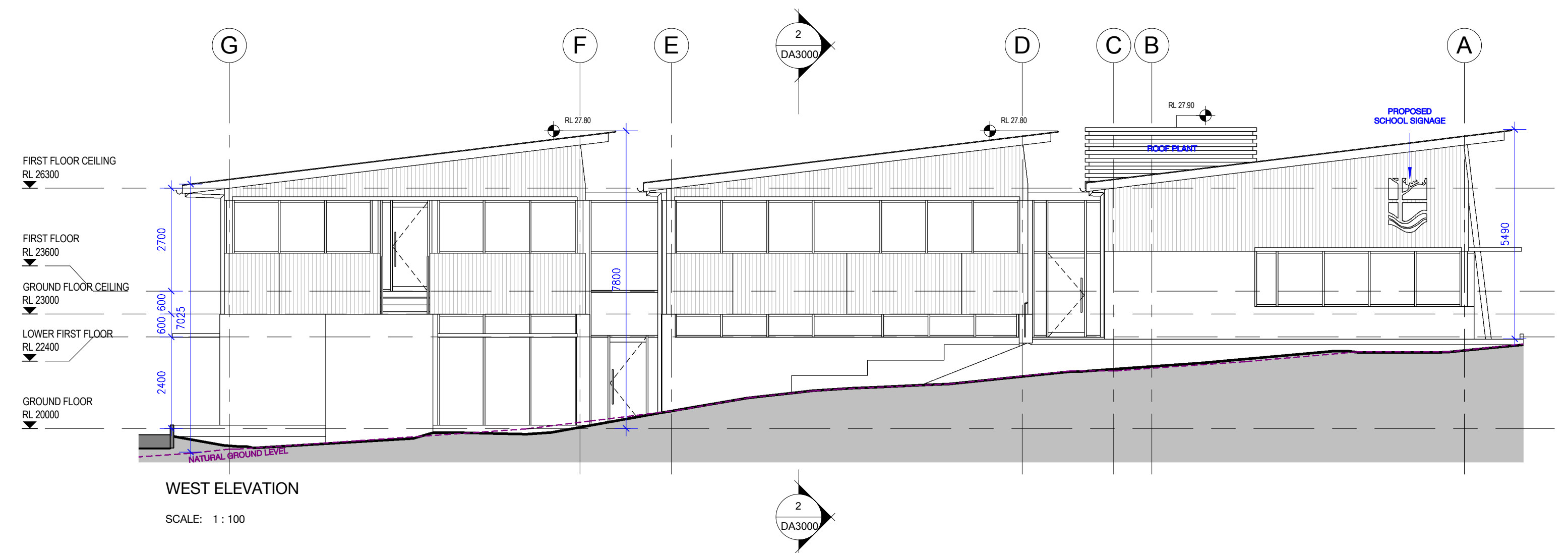
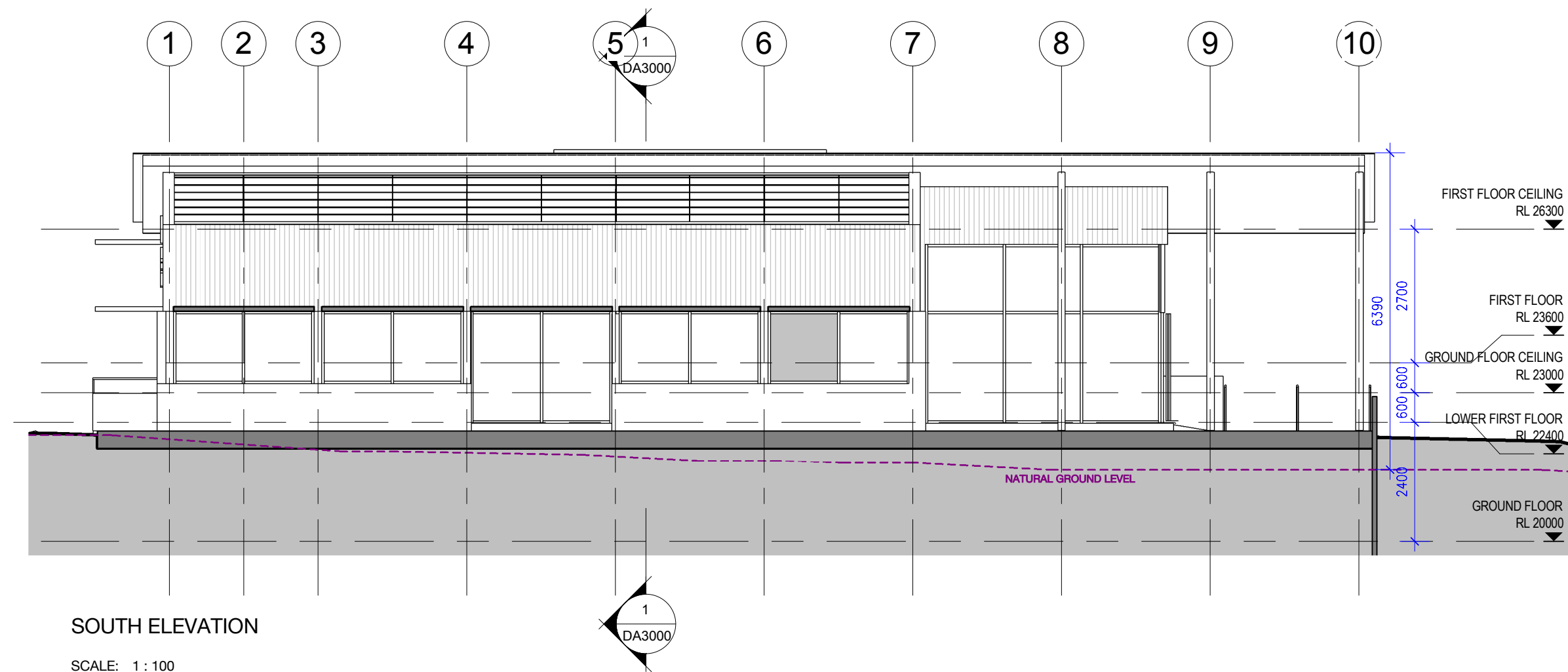
- EXISTING BUILDINGS
- EXISTING HARD SURFACES
- EXISTING COVERED VERANDAHS
- PROPOSED BUILDING
- PROPOSED HARD SURFACES
- EXISTING TREES

SITE COMPONENTS LEGEND

- a demolition of reception and demountable buildings; trees removal & site preparation
- g proposed new administration building (2 storey) & associated external works
- h proposed new carpark (10 spaces)
- r proposed enlargement of existing detention basin as per engineers specification

REFER TO CONCEPT PROPOSAL - SITE COMPONENTS





NOTE:
REFER EXTERNAL MATERIALS
BOARD DRAWING NO: DA4000

0m	5m	10m
SCALE:	1:100	A1
	1:200	A3
JOB NO:	15012	
DATE:	2015.11.13	
DWG NO:	DA2000	/F

smith+tracey architects

PROPOSED ADMINISTRATION BUILDING ELEVATIONS - STAGE 1 DA

MEDOWIE CHRISTIAN SCHOOL

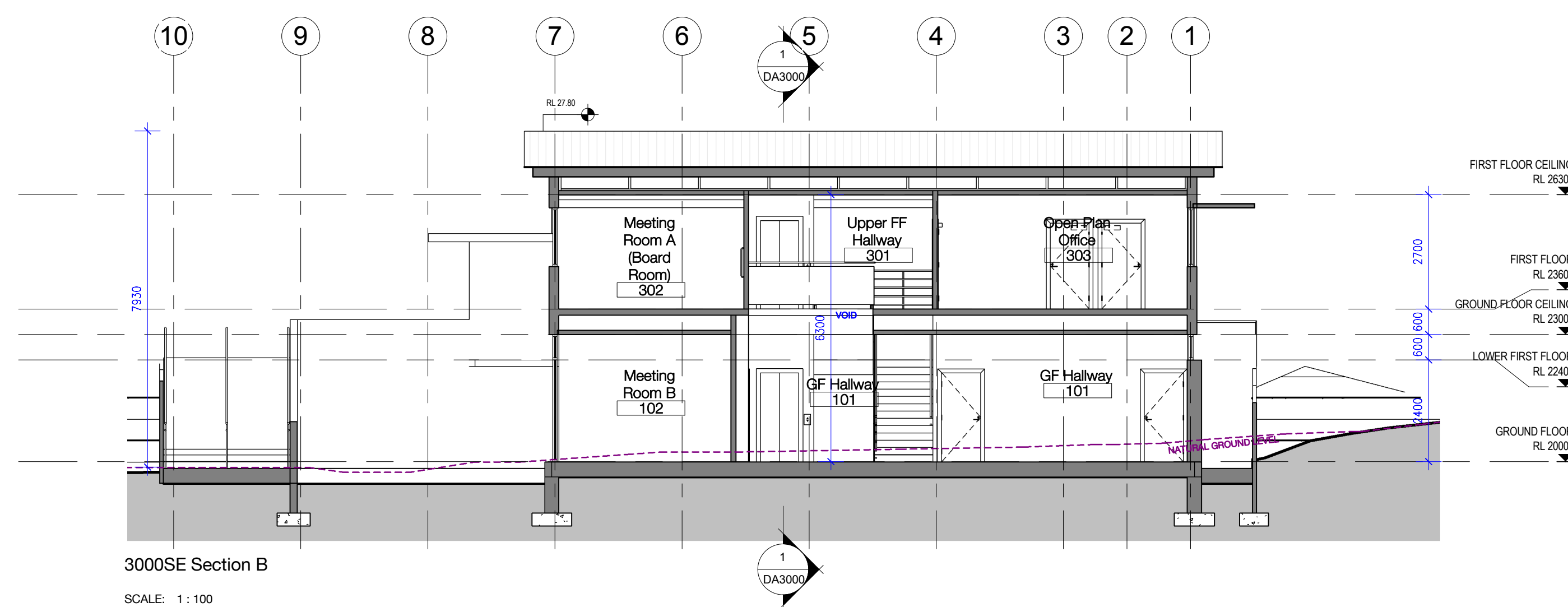
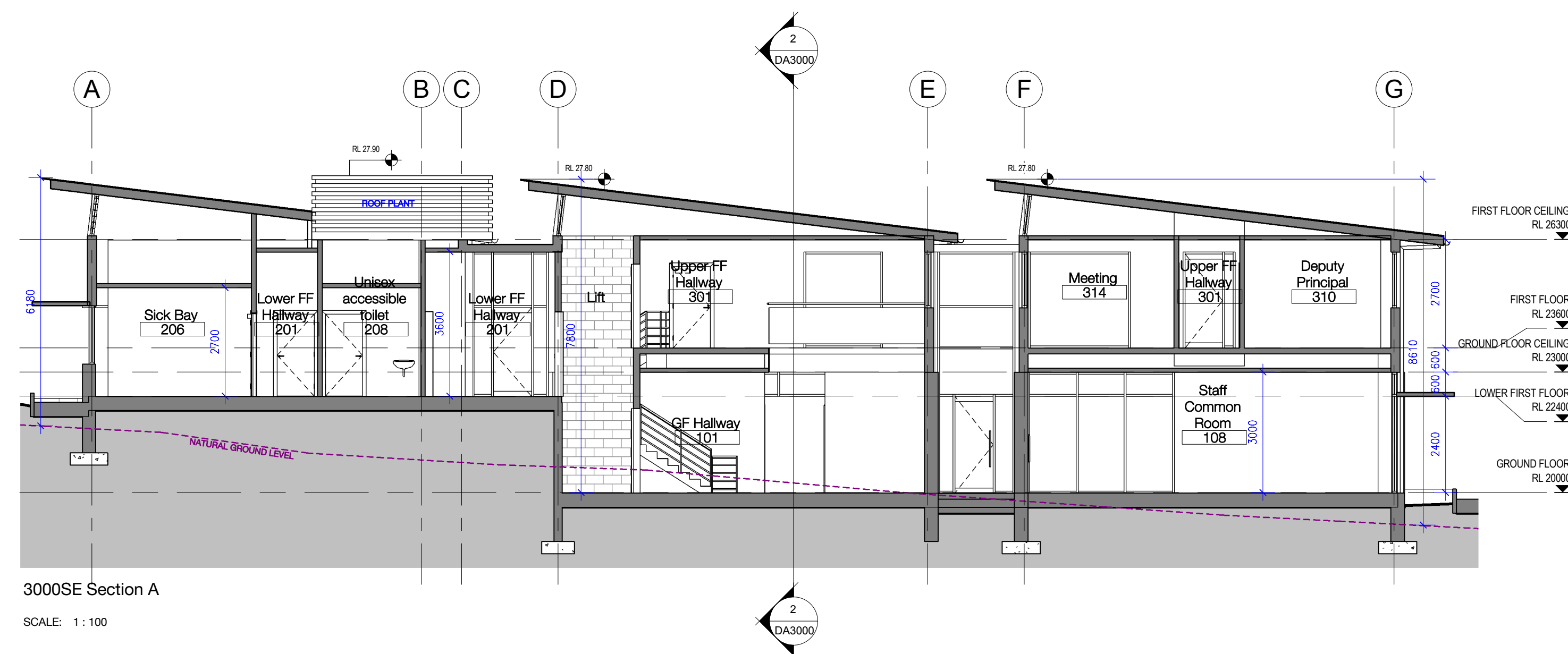
Lot 1 DP868525 Lot 22 & 23 DP1036306 No. 6, 6A and 6B Waropara Road, Medowie

PROPOSED SECTIONS - STAGE 1 DA

MEDOWIE CHRISTIAN SCHOOL

Lot 1 DP868525 Lot 22 & 23 DP1036306 No. 6, 6A and 6B Waropara Road, Medowie

SCALE: 1 : 100 A1
1:200 A3
JOB NO: 15012
DATE: 2015.11.13
DWG NO: DA3000 /D

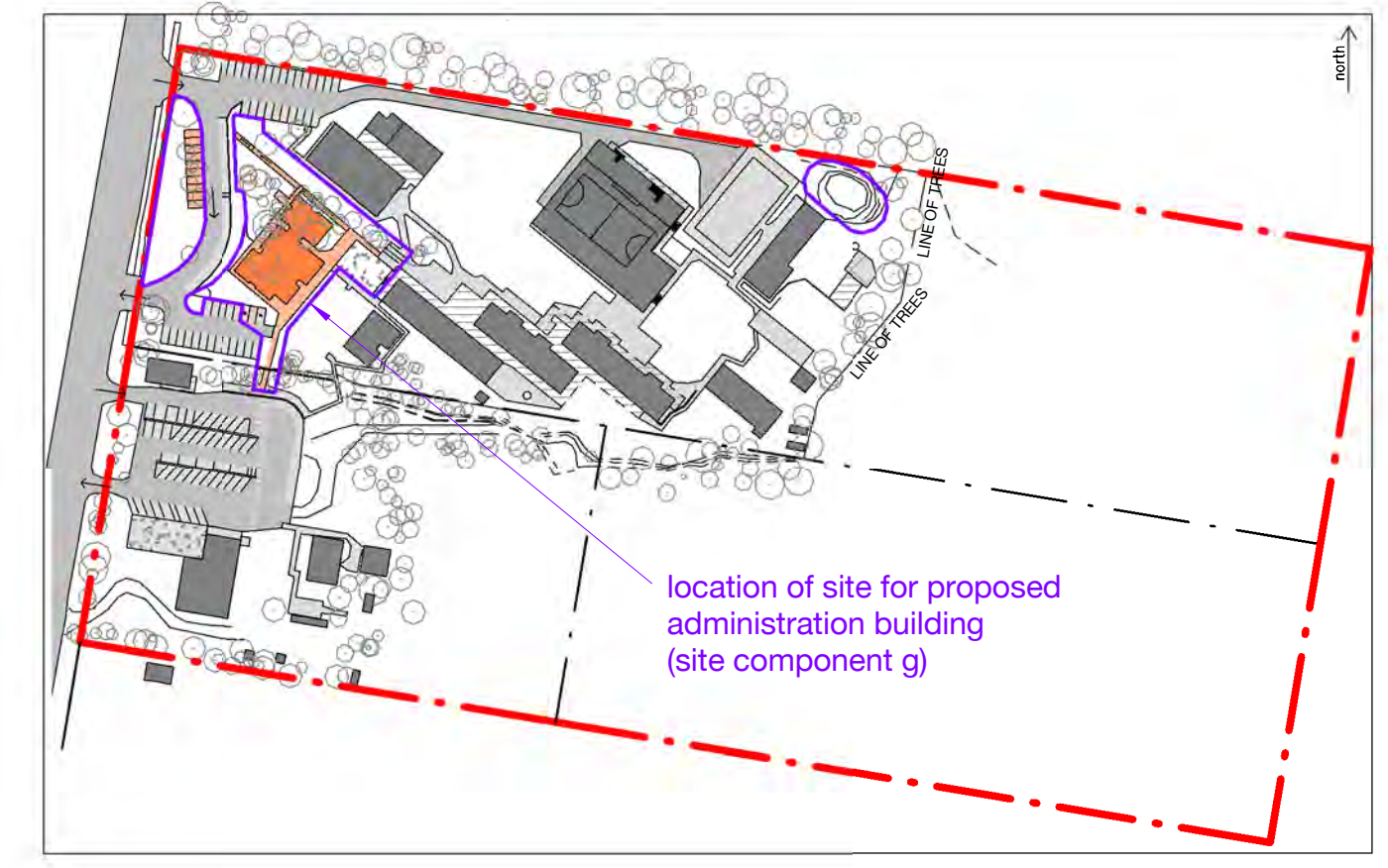




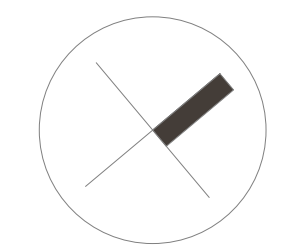
EXTERNAL WORKS PLAN
SCALE: 1: 200

PROPOSED ADMINISTRATION BUILDING
EXTERNAL WORKS - STAGE 1 DA
MEDOWIE CHRISTIAN SCHOOL

Lot 1 DP868525 Lot 22 & 23 DP1036306 No. 6, 6A and 6B Waropara Road, Medowie



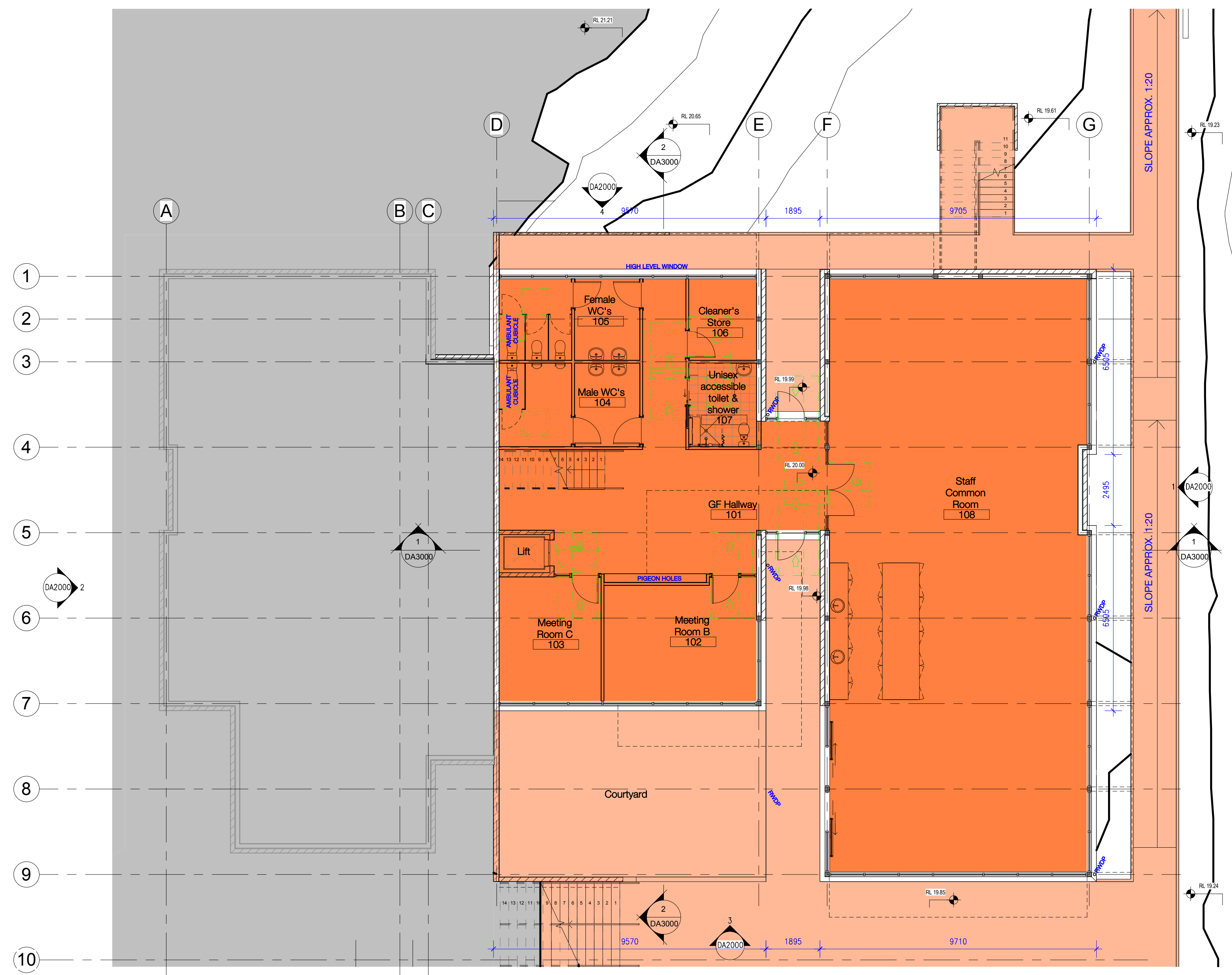
0m	5m	10m
SCALE:	1:200	A1
	1:400	A3
JOB NO:	15012	
DATE:	2015.11.13	
DWG NO:	DA1100	/B



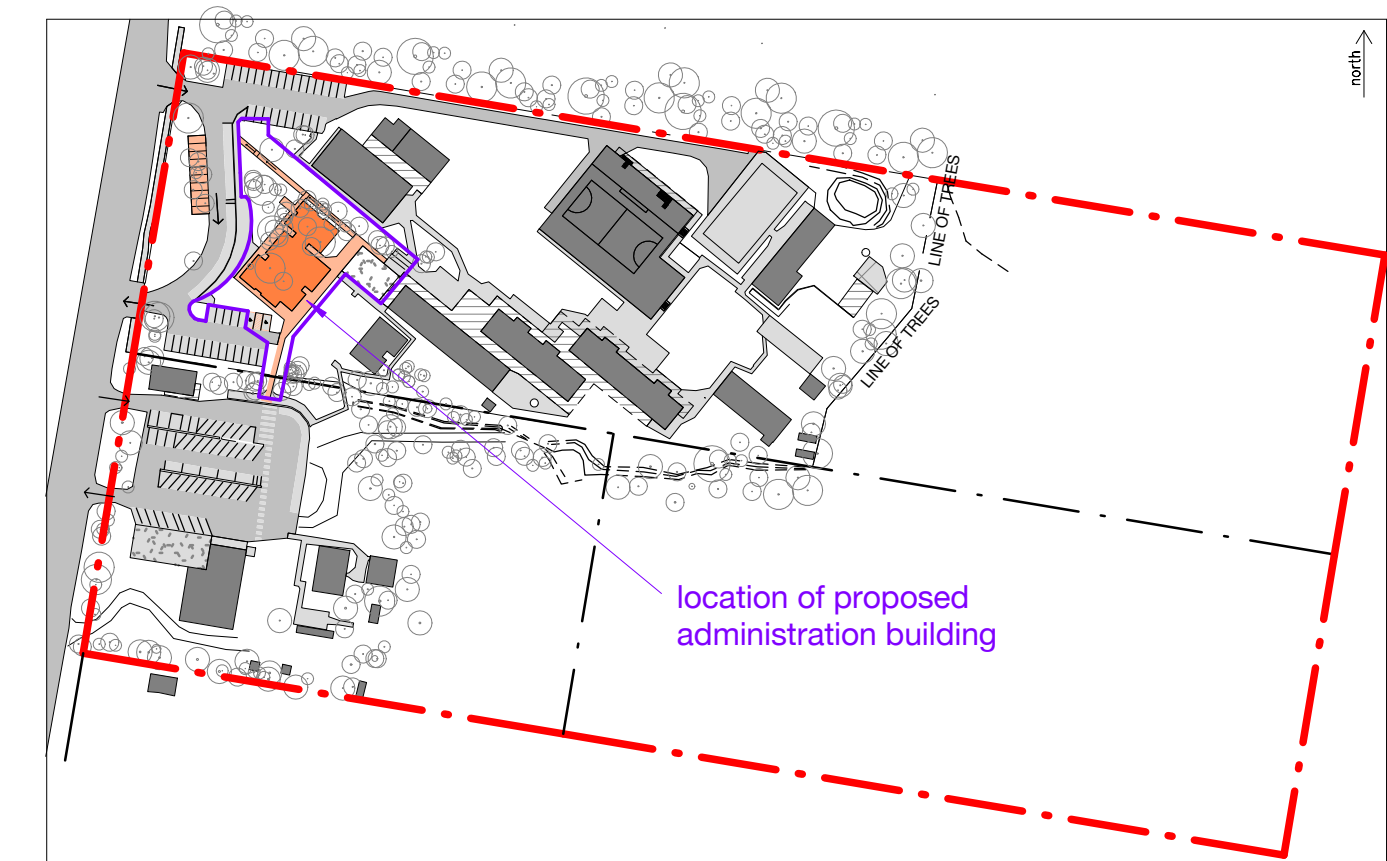
PROPOSED ADMINISTRATION BUILDING GROUND FLOOR - STAGE 1 DA

MEDOWIE CHRISTIAN SCHOOL

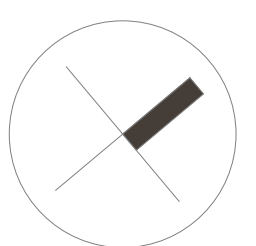
Lot 1 DP868525 Lot 22 & 23 DP1036306 No. 6, 6A and 6B Waropara Road, Medowie



GROUND FLOOR PLAN
SCALE: 1:100



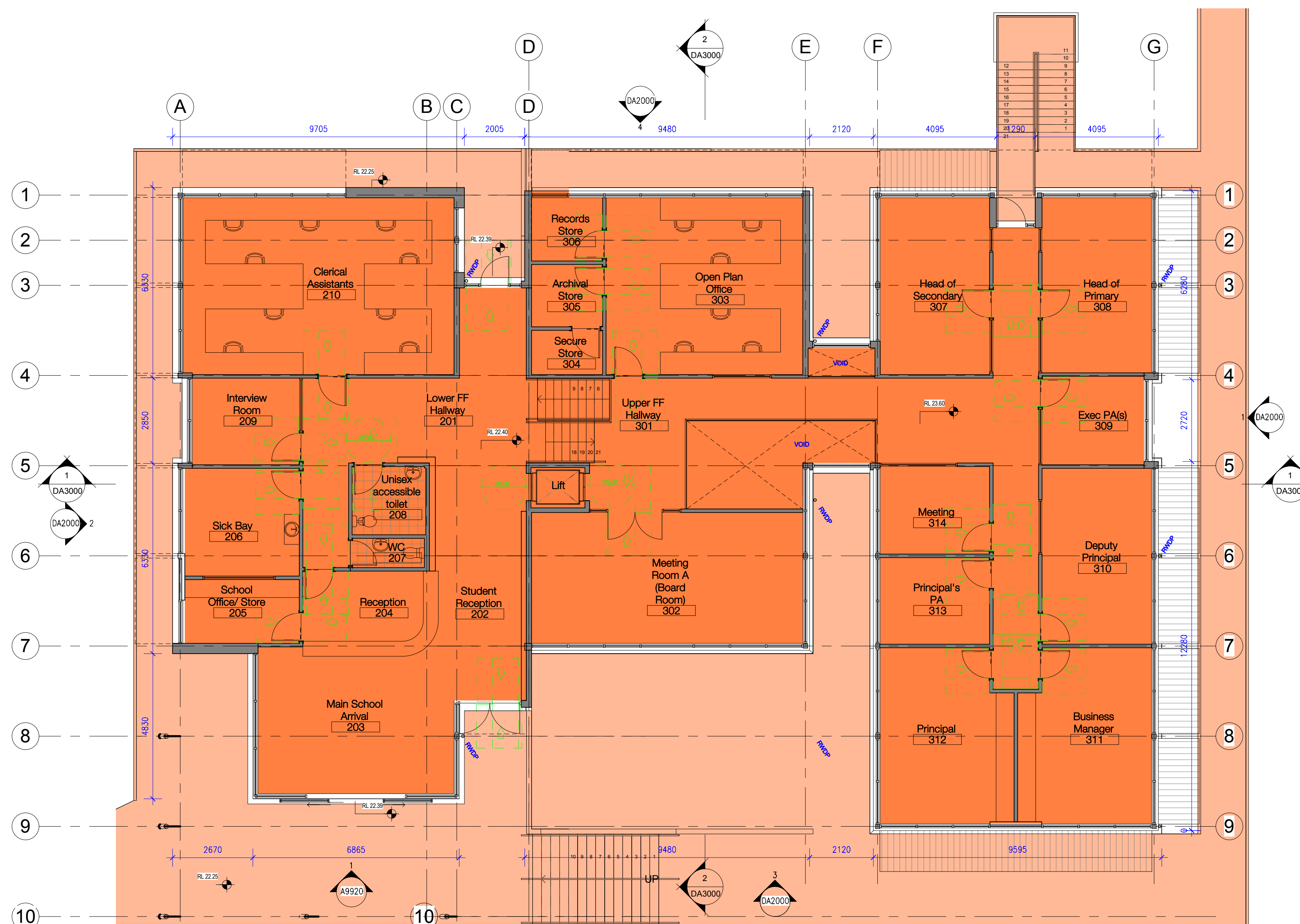
SCALE:	1:100	A1
	1:200	A3
JOB NO:	15012	
DATE:	2015.11.13	
DWG NO:	DA1101	/J



PROPOSED ADMINISTRATION BUILDING FIRST FLOOR - STAGE 1 DA

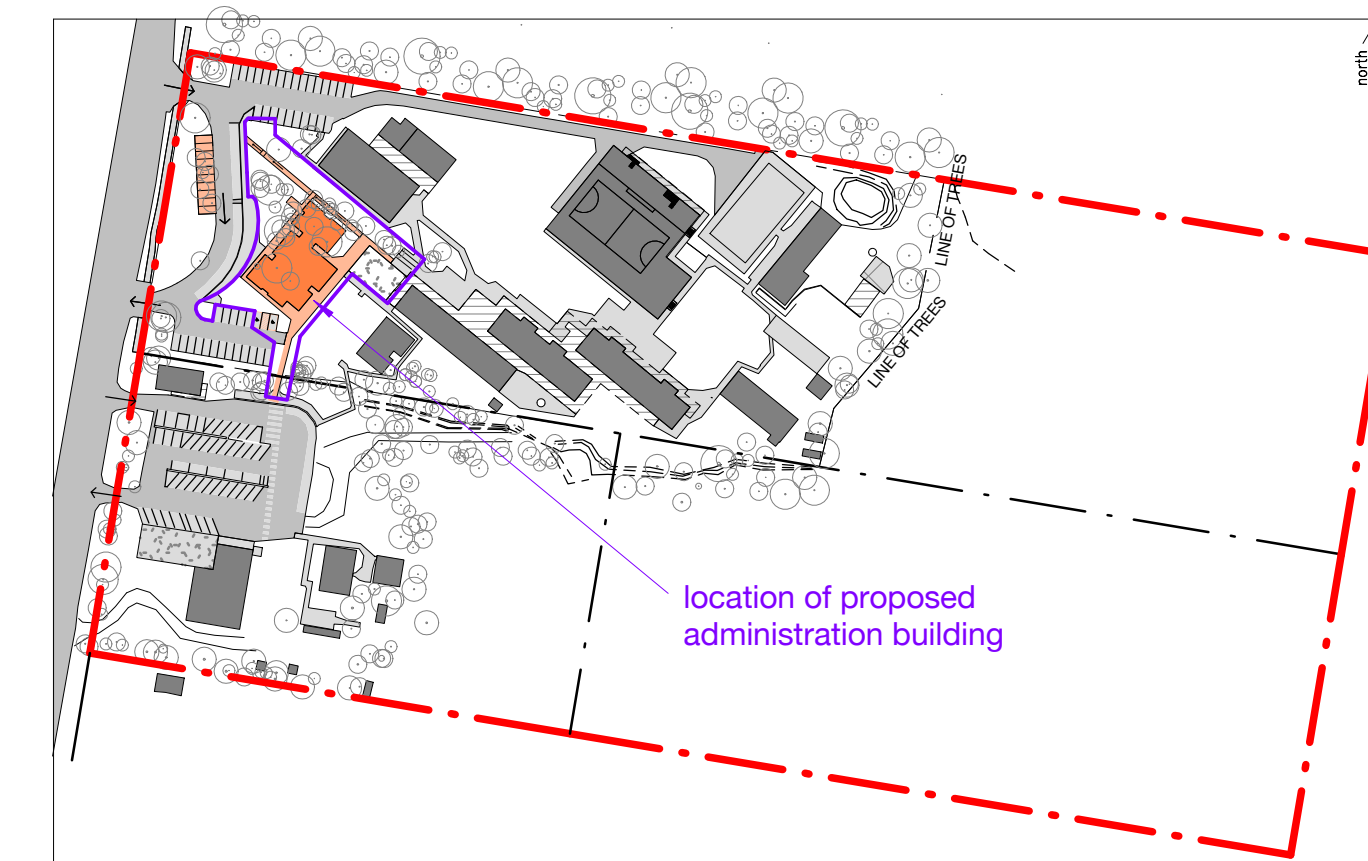
MEDOWIE CHRISTIAN SCHOOL

Lot 1 DP868525 Lot 22 & 23 DP1036306 No. 6, 6A and 6B Waropara Road, Medowie



1000FP FIRST FLOOR PROPOSED

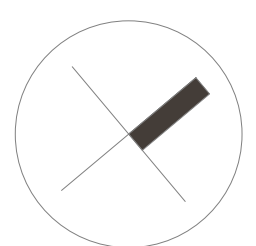
SCALE: 1:100



location of proposed
administration building



SCALE:	1:100	A1
	1:200	A3
JOB NO:	15012	
DATE:	2015.11.13	
DWG NO:	DA1102	/K



APPENDIX C

PUBLIC TRANSPORT SERVICES
