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DA-140/2011

Traffic and Parking Assessment for

Proposed Building Extensions and Access Improvements,
St Catherine's School
26 Albion Street, Waverley

(Ref. No. T2-450)

Prepared for St Catherine's School, Bronte

18th March 2011

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1 Introduction

1.1 Project Summary

Parking and Traffic Consultants have been engaged by St Catherine's School to prepare an assessment of the traffic and parking related considerations associated with a proposal to construct an extension to the existing Innovation Centre within the Waverley campus as well as other improvements to existing buildings and the vehicular access within the Albion Street frontage.

1.2 Purpose of this Report

This report has been prepared to accompany a Development Application to Waverley Council for the construction of a number of new elements within the existing school campus, comprising:

- An extension to the Innovation Centre, which will be accommodated within a part two and part three storey extension located in the northern part of the campus (fronting Bronte Road),
- An undercroft extension to the existing Administration Building to refurbish the entry, provide a new foyer and admin facilities to replace the existing arrangements,
- Improved access and parking arrangement within the Albion Street frontage.

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This report presents the following considerations relating to the Traffic and Parking assessment of the proposal:

Section 2 - A description of the School and the proposed project,

Section 3 - Assessment of the projected traffic activity associated with the proposal,

Section 4 - Assessment of the proposed parking provision in the context of the relevant planning control requirements,

Section 5 - Assessment of the proposed Albion Street parking, vehicular access and internal manoeuvring arrangements in relation to compliance with the relevant standards,

Section 6 - Summary

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2 Proposal

2.1 The School Site

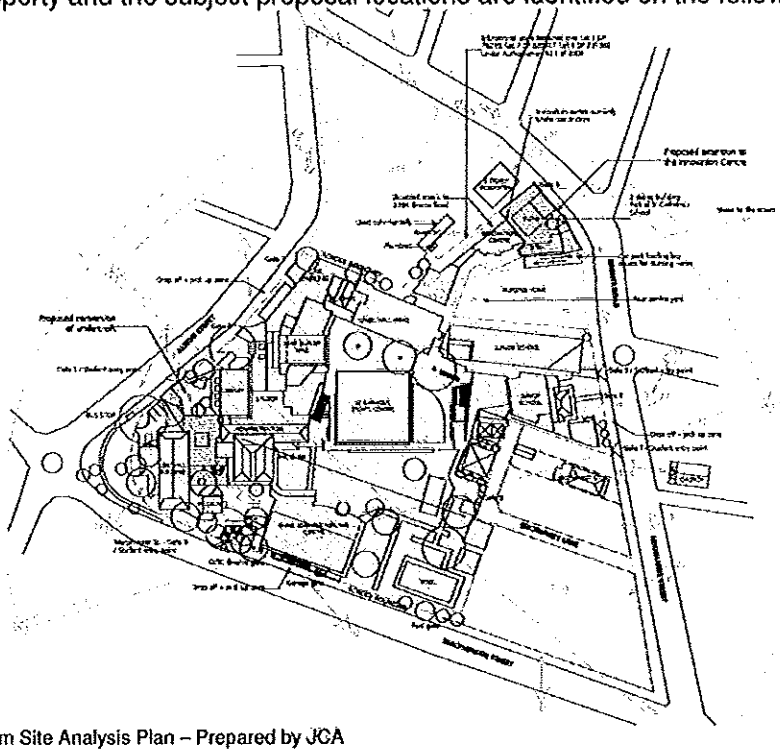
The school is located within a number of connected properties having frontages to Bronte Road, Leichhardt Street, Macpherson Street and Albion Street, although vehicle access to the school is only provided via a single driveway within the Macpherson Street frontage, and two driveways within the Albion Street frontage serving two small parking areas.

The School has a student population of 930 girls from Kindergarten to Year 12 and has been located within the site since 1859. The school has undergone a number of recent building and renovation projects in order to maintain a high standard teaching facility.

The school is located in the vicinity of the Bronte commercial strip, which runs along Bronte Road and Carrington Road to the west of the school, while the Bronte beach and related precinct are located 1 kilometre to the east. Regular public transport services are available in the vicinity of the school including the STA operated routes between the CBD and Bronte Beach.

2.2 Development Proposal

The overall property and the subject proposal locations are identified on the following drawing.



Extract from Site Analysis Plan – Prepared by JCA

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The proposed extension to the Innovation Centre will be constructed within 2 properties fronting Bronte Road (known as 317 – 319A Bronte Road) and will replace an existing dwelling and a two storey building which is currently vacant. The extension will accommodate a Music and Visual Arts wing comprising music practical areas with an instrument store in the basement and two floors for visual arts.

The undercroft infill development will expand the administration facility located in the southern part of the site. The proposed area will accommodate a new entry, a foyer/reception area and will allow the expansion of the administration/accounts office, currently located in the undercroft.

The proposed building extensions are not related to, and will not result in, any increase in the student population or staff at the school. The Music and visual Arts facilities are being relocated from elsewhere within the campus.

The proposal also includes improvements to the pedestrian and vehicle entry arrangements within the Albion Street frontage. The paved area located between the Lenthall Building and the Albion Street frontage currently provides for vehicle access served by a gated driveway within. Two pedestrian gates are located on either side of the vehicle access and this arrangement encourages pedestrian movements through the vehicle area, which results in conflicting pedestrian and vehicle movements. It is proposed to formalise the vehicle parking and manoeuvring area and to consolidate the two pedestrian gates to a single gate located to the south of the driveway, separating pedestrian and vehicle movements.

Details of the proposal are presented on the architectural drawings prepared by JCA Architects and those illustrating the parking and access arrangements are included as Attachment 1.

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3 Development Traffic Assessment

3.1 Traffic Generation

The proposed building extensions will not involve any increase in the number of students or staff attending the school. In this regard, the proposal will not result in the generation of any additional traffic movements.

The proposed amendments to the Albion Street access area will formalise this area, but will not alter the traffic activity associated with the school.

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4 Car Parking Provision

While the proposal increases the administration offices by 217m^2 and the teaching area by 579m^2, the proposal does not involve an increase in the number of students or staff within the school. In this regard, it is proposed to largely retain the current provision of off-street parking with no additional demand being created by the proposal. The improvements proposed within the Albion Street entrance area and the provision of a parking space for disabled persons may result in the loss of one parking space within this area, which is not formally line-marked at present.

However, the proposed access and parking arrangement provides benefits in relation to the provision of a disabled parking space (not currently provided) and an important improvement to the safety of pedestrians entering the school via this entrance.

With regard to the loss of a parking space, this will be somewhat off-set by an increase in on-street parking within the Bronte Road frontage. The proposal includes the removal of two driveway crossovers, which serve three garages within 317 Bronte Road and a single driveway located at 319A Bronte Road. The combination of these two driveways total an additional 13.5 metres of kerbside parking, which will result in an increase in capacity of 2 cars within this frontage.

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5 Access and Car Park Assessment

5.1 Access Arrangements

There is no proposal to amend the current Albion Street access arrangements, which will remain. These include:

- The gates are open from Monday to Friday, 6.30am to 4.45pm,
- Outside these hours the time the gates are closed,
- Access during out of hour periods is via the security system, (ie remote control to open the gates from outside, while an auto sensor system opens the gates for vehicle exit).
- The gates are used for general deliveries including kitchen deliveries, by maintenance staff + contractors as well as access for limited visitor off-street parking.

Proposed Conversion of Undercroft

The proposal includes improvements to the existing pedestrian and vehicle access located within the Albion Street frontage, adjacent to the rear entrance to the school. At present the vehicle access gate is located between two pedestrian gates, while the vehicle manoeuvring area is also used for pedestrian access. Pedestrians are able to enter the site on either side of the vehicle gate and walk through the manoeuvring area along an uncontrolled route.

It is proposed to improve this situation by retaining the existing vehicle gate, but provide a single pedestrian gate on the southern side, with a dedicated pathway leading to the entrance of the school building. While this arrangement locates the pedestrian entrance slightly further from the Bronte Road pedestrian crossing, it is considered that the safety benefits result from separating pedestrian and vehicle movements within the school outweigh the slight inconvenience of walking to the proposed gate.

The revised vehicle area will retain the existing service vehicle area, while accommodating two formally marked parking spaces.

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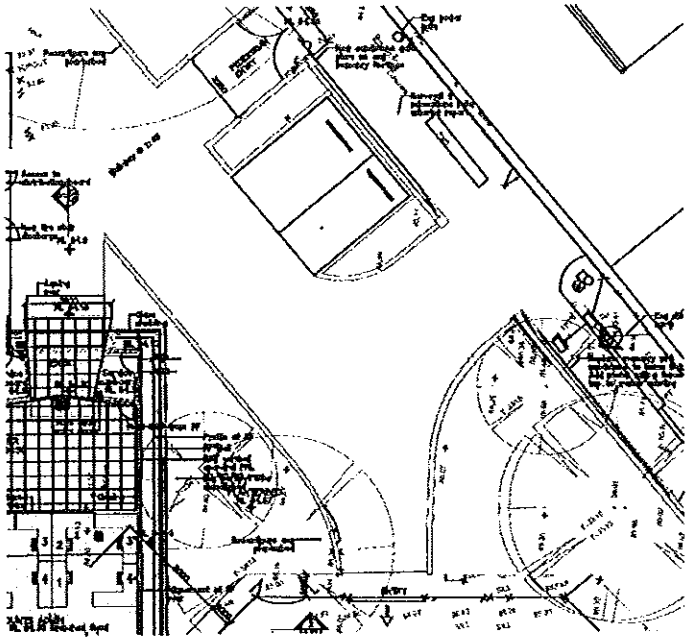

The driveway is located adjacent to a traffic signal controlled pedestrian crossing, however there is no proposal to amend the existing driveway crossover. The current driveway arrangement has operated satisfactorily for many years.

Sight Distance

The sight distance requirements are described in Section 3.2 of AS2890.1 and are prescribed on the basis of the sign posted speed limit or the 85th percentile vehicle speeds along the frontage road. Albion Street has a posted speed limit of 50kph, which requires a desirable visibility distance of 69 metres and a minimum distance of 45 metres.

The driveway is located on the outside of a slight curve in the Albion Street alignment, where suitable visibility is available.

Proposed Extension to the Innovation Centre

The proposed extension to the innovation centre does not involve any vehicle or pedestrian access from Bronte Road. The extension will be accessed by staff and students internally, via the existing Innovation Centre building, other than emergency access/egress provisions, which were required by Condition 2 of the planning approval for the Innovation Centre. There is no proposal to amend the current approval.

The proposal involves the removal of existing buildings located along this frontage, which includes the removal of 2 driveways, which is discussed further in Section 4 of this report.

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The northern boundary of 317 Bronte Road is aligned within a Right-of-Way, which benefits 313 Bronte Road and provides vehicle access to the rear of that property. The proposal retains the Right-of-Way and does not affect the location of the fence-line along the southern side of the ROW. In this regard, the proposal has not impact upon access arrangements to 313 Bronte Road.

5.2 Car Park and Servicing Arrangement

The arrangement of the two proposed parking spaces and the manoeuvring area has been designed in accordance with the requirements of Section 2 of AS2890.1.

Table 1.1 of AS2890.1 presents a number of car parking classifications which are applicable to various land-uses. According to the Table, the parking spaces will provide for three user groups (residents and retail employees and retail visitors) and the applicable classification is Class 3 as highlighted in Table 1.1 below:

Table 1.1 – Classification of Off-Street car parking facilities

User Class	Required door opening	Required aisle width	Examples of uses
1	Front door, first stop	Minimum for single manoeuvre entry and exit	Employee and commuter parking (generally, all-day parking)
1A	Front door, first stop	Three-point turn entry and exit into 90° parking spaces only, otherwise as for User Class 1	Residential, domestic and employee parking
2	Full opening, all doors	Minimum for single manoeuvre entry and exit	Long-term city and town centre parking, sports facilities, entertainment centres, hotels, motels, airport visitors (generally medium-term parking)
3	Full opening, all doors	Minimum for single manoeuvre entry and exit	Short-term city and town centre parking, parking stations, hospital and medical centres
3A	Full opening, all doors	Additional allowance above minimum single manoeuvre width to facilitate entry and exit	Short-term, high turnover parking at shopping centres
4	Size requirements are specified in AS/NZS 2890.6		Parking for people with disabilities

The parking space dimensions and associated aisle widths for each classification are presented in Table 2.2, and accordingly, a Class 3 facility requires dimensions of 2.6 x 5.4 with a 5.8 metre wide aisle.

Table 2.2 – Layouts for angle parking spaces (90° spaces)

User Class	A	B	C_1	C_2	C_3	Aisle Width
1	2.4	2.4	5.4	4.8	5.4	6.2
1A	2.4	2.4	5.4	4.8	5.4	5.8
2	2.5	2.5	5.4	4.8	5.4	5.8
3	2.6	2.6	5.4	4.8	5.4	5.8
3A	2.6	2.6	5.4	4.8	5.4	6.6
3A	2.7	2.7	5.4	4.8	5.4	6.2

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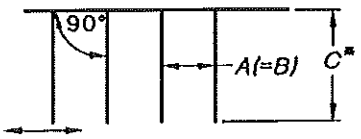

Bays at 90°

4	Size requirements are specified in AS/NZS 2890.6

The parking space for disabled persons has been designed in accordance with AS2890.1-1993 as this publication of the standard is referenced in the BCA in relation to disabled parking spaces.

In accordance with these requirements, the two proposed spaces will have widths of 2.6 metres and 3.2 metres, with both parking spaces having a length of 5.4 metres served by a 5.8 metre wide aisle.

5.3 Servicing

The proposal includes the retention of a small loading bay area to the north of the access driveway. The loading area and revised manoeuvring area have been designed to accommodate the turning movements associated with a 6.4 metre long service vehicle (Small Rigid Vehicle) performing a three point turn in order enter and exit the site in a forward direction. This size and type of vehicle reflect the maximum size of vehicle currently able to access this area of the school.

An assessment of the servicing area and the adjacent parking spaces has been undertaken using the Autotrack vehicle modelling software and the output drawings are contained as Attachment 2.

The construction of the undercroft extension will have no impact upon servicing or vehicle activity within the site, as the retention of the existing loading area will accommodate all service related movements.

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6 Summary

In summary, the proposed extensions within the school property will not increase the student or employee population within the site and will therefore not result in any increase in the traffic and parking activity associated with the school.

The parking and vehicular access arrangements have been designed in accordance with the relevant standard, being AS2890.1, while the use of the existing access driveway will not present any traffic capacity constraints.

The amendments to the existing pedestrian access arrangement will greatly enhance the safety of pedestrians entering and exiting the site via this entrance.

There will be a net gain of two on-street parking spaces as a result of the proposed development.

Access arrangements for the extension to the Innovation Centre are consistent with the conditions of consent for the Innovation Centre development (i.e. access gained internally, except for emergency purposes).

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Attachment 1 – Architectural Drawings

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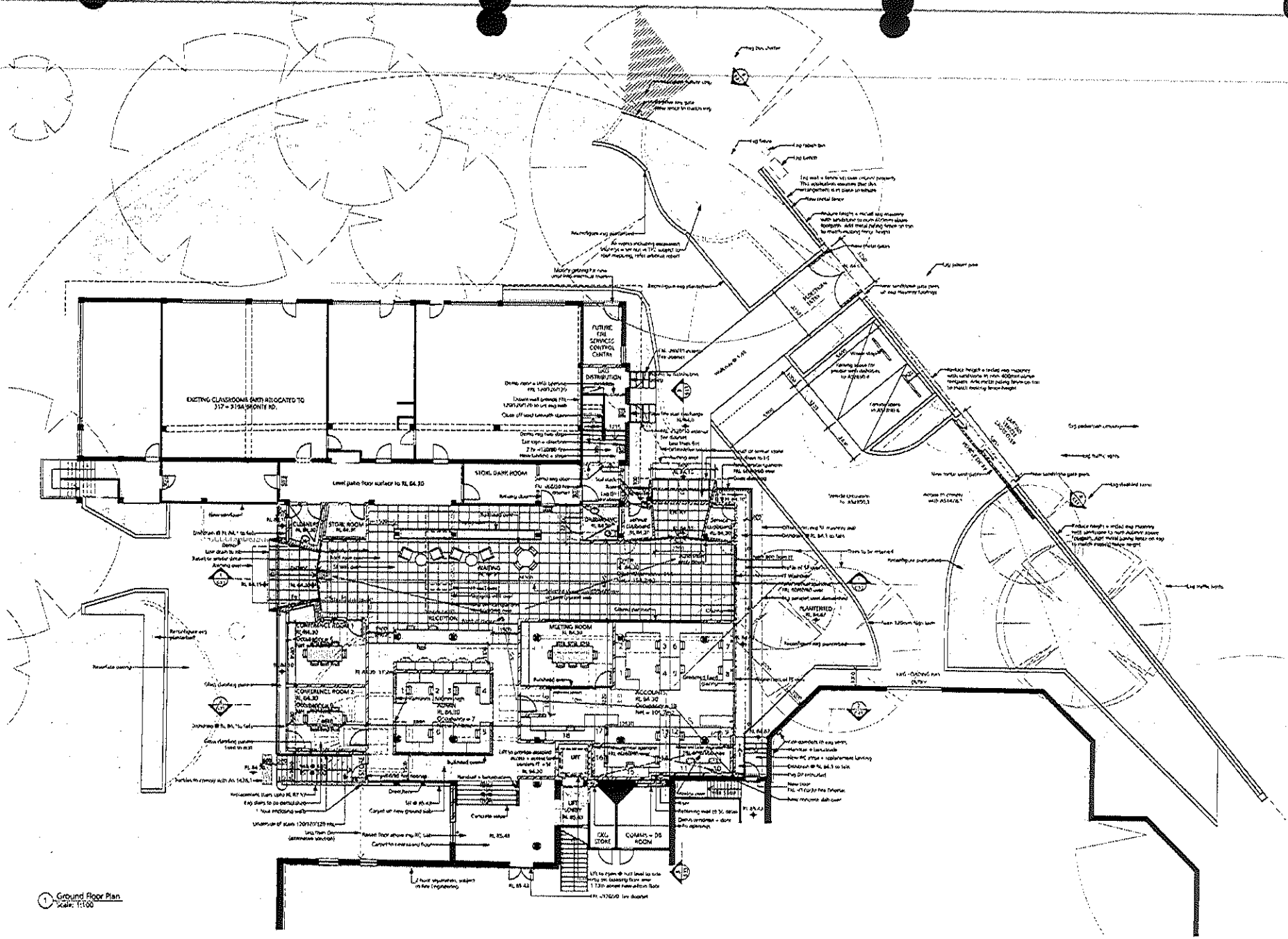
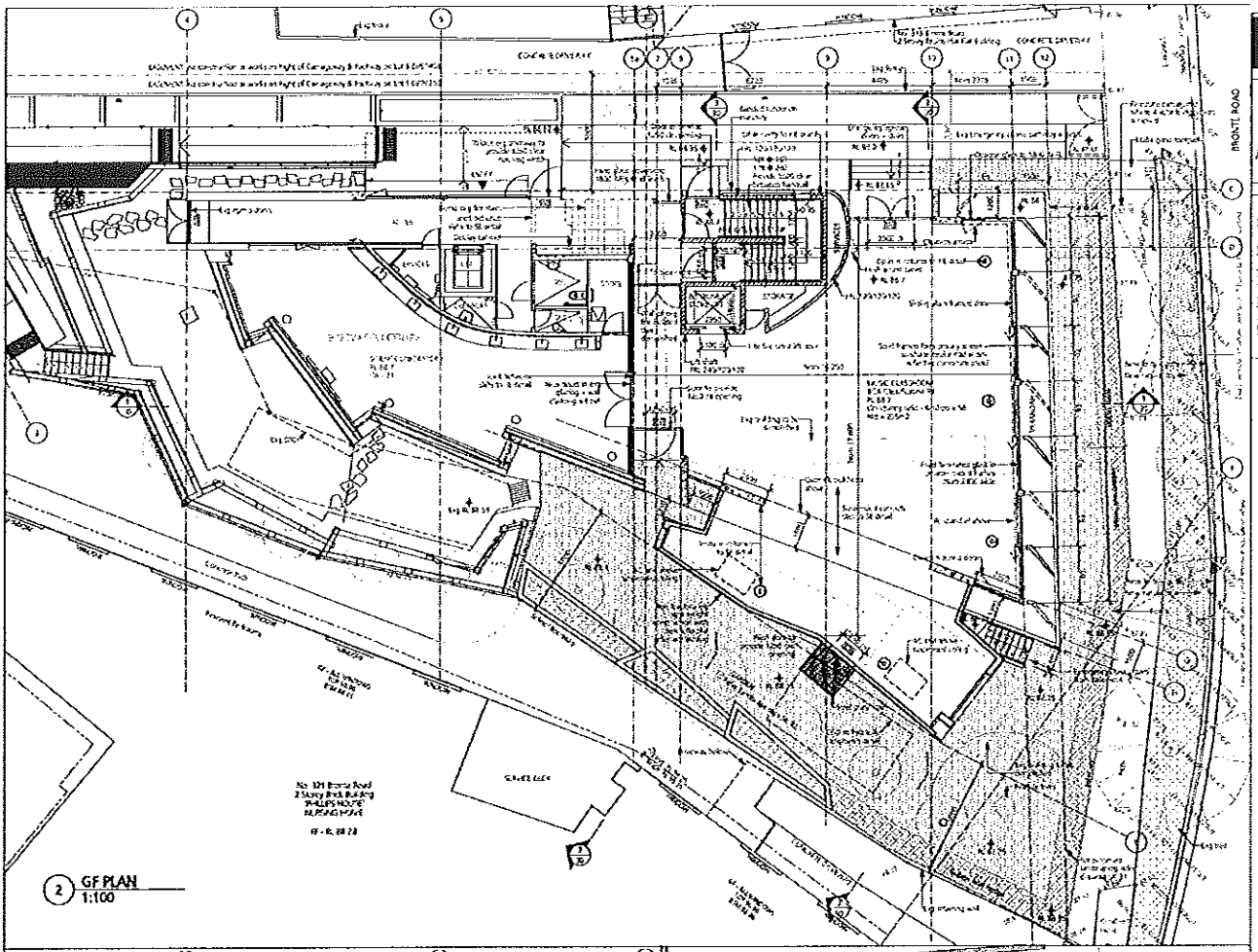

EXISTING CLASSROOMS (WITH ALLOCATED TO 317 – 319A BRONTE RD.
Level patio floor surface to RL 84.30
STORE/ BANK ROOM
FUTURE FIRE SERVICES CONTROL CENTRE
MDB DISTRIBUTION
CLEANERS STORE ROOM
RECEPTION
WAITING
CONFERENCE ROOM 1
CONFERENCE ROOM 2
ADMIN
ACCOUNTS
MEETING ROOM
LIFT
LIFT OVERRUN
CKL STORE
COMMS + DB ROOM
PLANTERBED
Ground Floor Plan
Scale: 1:100
TRUE NORTH
Member
Australian Institute of Architects
Proposed Entrance + Undercroft Refurbishment, 38 Alma St, And Music + Visual Arts Wing, Extension to the Innovation Centre 317-319a Bronte Rd, Waverley
Ground Floor Plan
DA102



2 GF PLAN
1:100

1 BASEMENT PLAN
1:100

Member
Australian Institute of Architects

TRUE NORTH

PRELIMINARY

DA204

Attachment 2 – Vehicle Turning Paths

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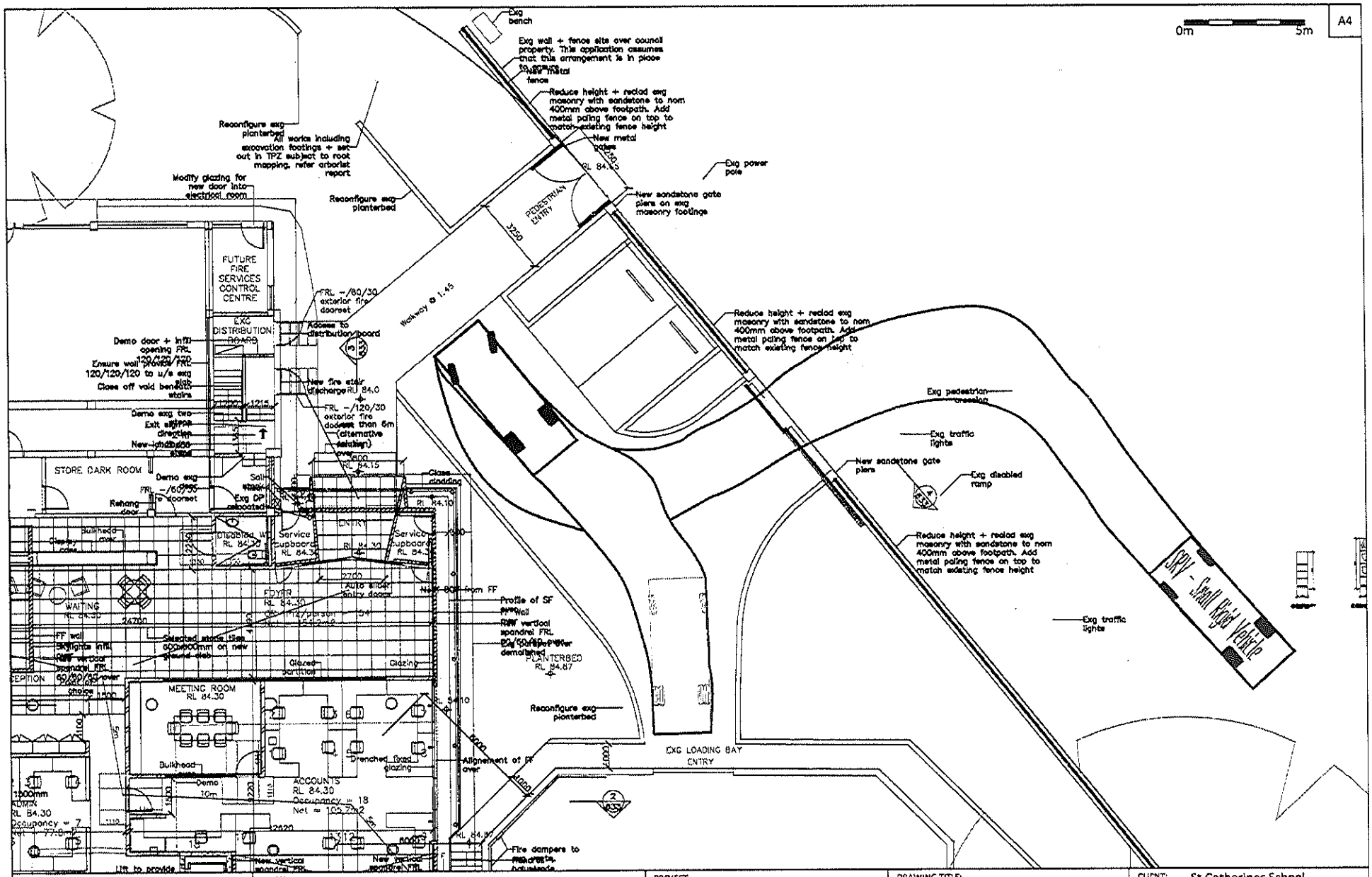

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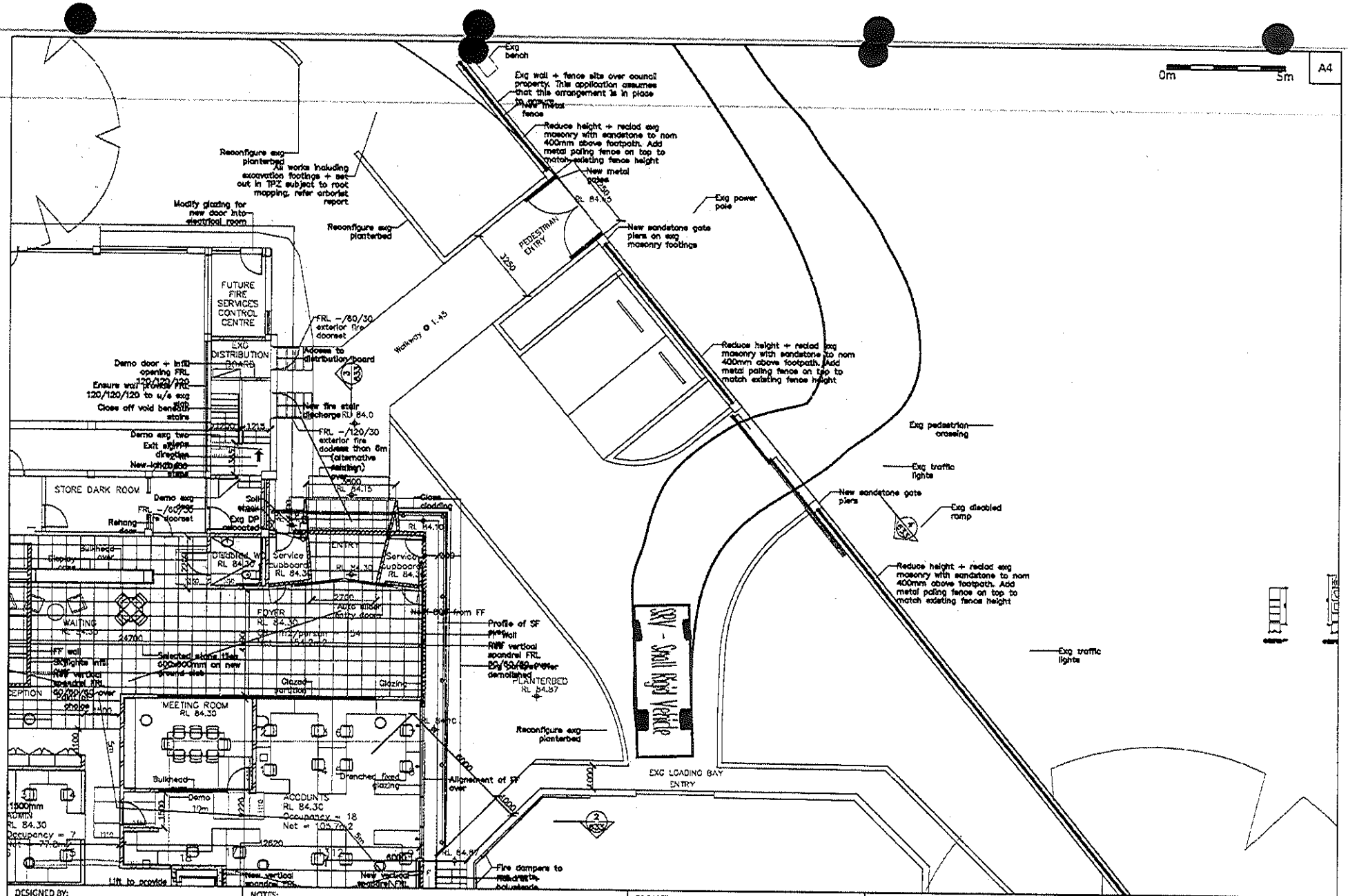
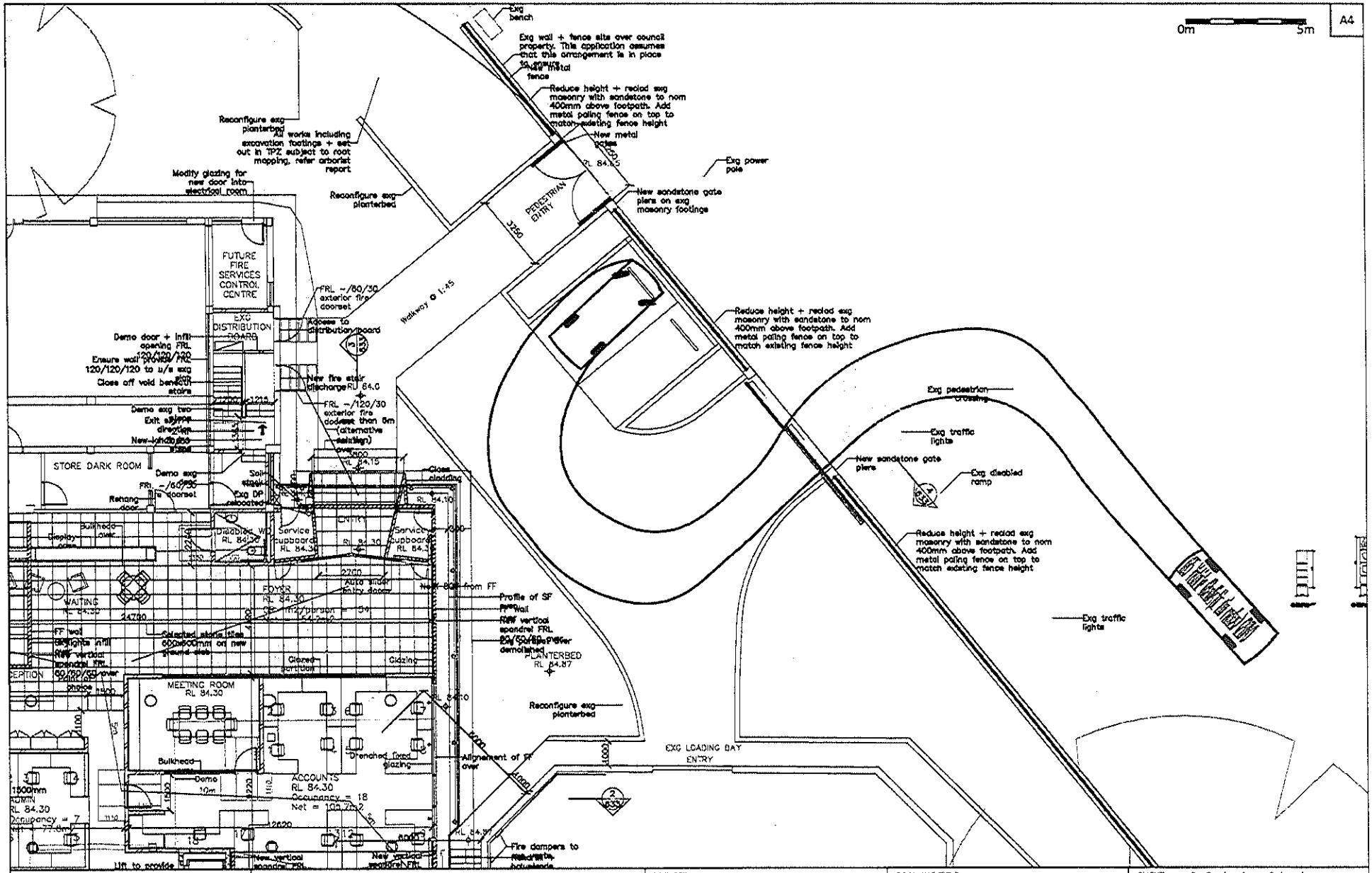
NOTES:
The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative asses[illegible] of the vehicles ability, it is not possible to account for all vehicle types/charac[illegible] or driver ability.

PROJECT:
Proposed Alterations and Additions,
St Catherines School,
Bronte

DRAWING TITLE:
Turning Path Assessment Demonstrating a Small Rigid Vehicle (SRV) Entering the Loading Area

CLIENT:	St Catherines School
DRG. #:	TP1
VERSION #: 1	SCALE: 1:200
PROJECT #: T2-450	DATE: 24/02/11


0m
5m
A4
Exg bench
Exg wall + fence sits over council property. This application assumes that this arrangement is in place
New metal fence
Reduce height + reclad exg masonry with sandstone to nom 400mm above footpath. Add metal paling fence on top to match existing fence height
New metal gates
RL 84.45
Exg power pole
Reconfigure exg planterbed
All works including excavation footings + set out in TPZ subject to root mapping, refer arborist report
Modify glazing for new door into electrical room
Reconfigure exg planterbed
PEDESTRIAN ENTRY
3250
New sandstone gate piers on exg masonry footings
FUTURE FIRE SERVICES CONTROL CENTRE
EXG DISTRIBUTION BOARD
FRL -/60/30 exterior fire doorset
Access to distribution board
Walkway @ 1:45
Reduce height + reclad exg masonry with sandstone to nom 400mm above footpath. Add metal paling fence on top to match existing fence height
Demo door + infill opening FRL 120/120/120
Ensure wall FRL 120/120/120 to u/s exg slab
Close off void beneath stairs
New fire stair discharge RL 84.0
FRL -/120/30 exterior fire doorset more than 6m (alternative existing)
Exg pedestrian crossing
Exg traffic lights
Demo exg two Exit signs
New sandstone gate piers
Exg disabled ramp
STORE DARK ROOM
Demo exg FRL -/60/30 fire doorset
Rehang door
Soil waste
Exg DP relocated
Close cladding
RL 84.15
RL 84.10
Bulkhead over
Display niche
DISABLED WC RL 84.30
Service Cupboard RL 84.30
ENTRY
Service Cupboard RL 84.30
2700
Reduce height + reclad exg masonry with sandstone to nom 400mm above footpath. Add metal paling fence on top to match existing fence height
WAITING RL 84.30
24700
FOYER RL 84.30
Auto sliding entry doors
Nosing 600 from FF
Profile of SF over
FF wall
Skylights into RWF vertical spandrel FRL
Selected stone tiles 600x600mm on new ground slab
Glazed partition
Glazing
Exg balustrade demolished
PLANTERBED RL 84.37
Exg traffic lights
RECEPTION
MEETING ROOM RL 84.30
Reconfigure exg planterbed
Bulkhead
Demo 10m
Branched fixed glazing
Alignment of FF over
EXG LOADING BAY ENTRY
1500mm ADMIN RL 84.30 Occupancy = 7
ACCOUNTS RL 84.30 Occupancy = 18 Net = 103.70m2
2620
RL 84.30
Fire dampers to
New vertical spandrel FRL
Lift to provide
DESIGNED BY:
PARKING & TRAFFIC
NOTES:
The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.
PROJECT:
Proposed Alterations and Additions, St Catherines School, Bronte
DRAWING TITLE:
Turning Path Assessment Demonstrating a Small Rigid Vehicle (SRV) Exiting the Loading Area
CLIENT: St Catherines School
DRG. #: TP2
VERSION #: 1
SCALE: 1:200
PROJECT #: T2-450
DATE: 24/02/11



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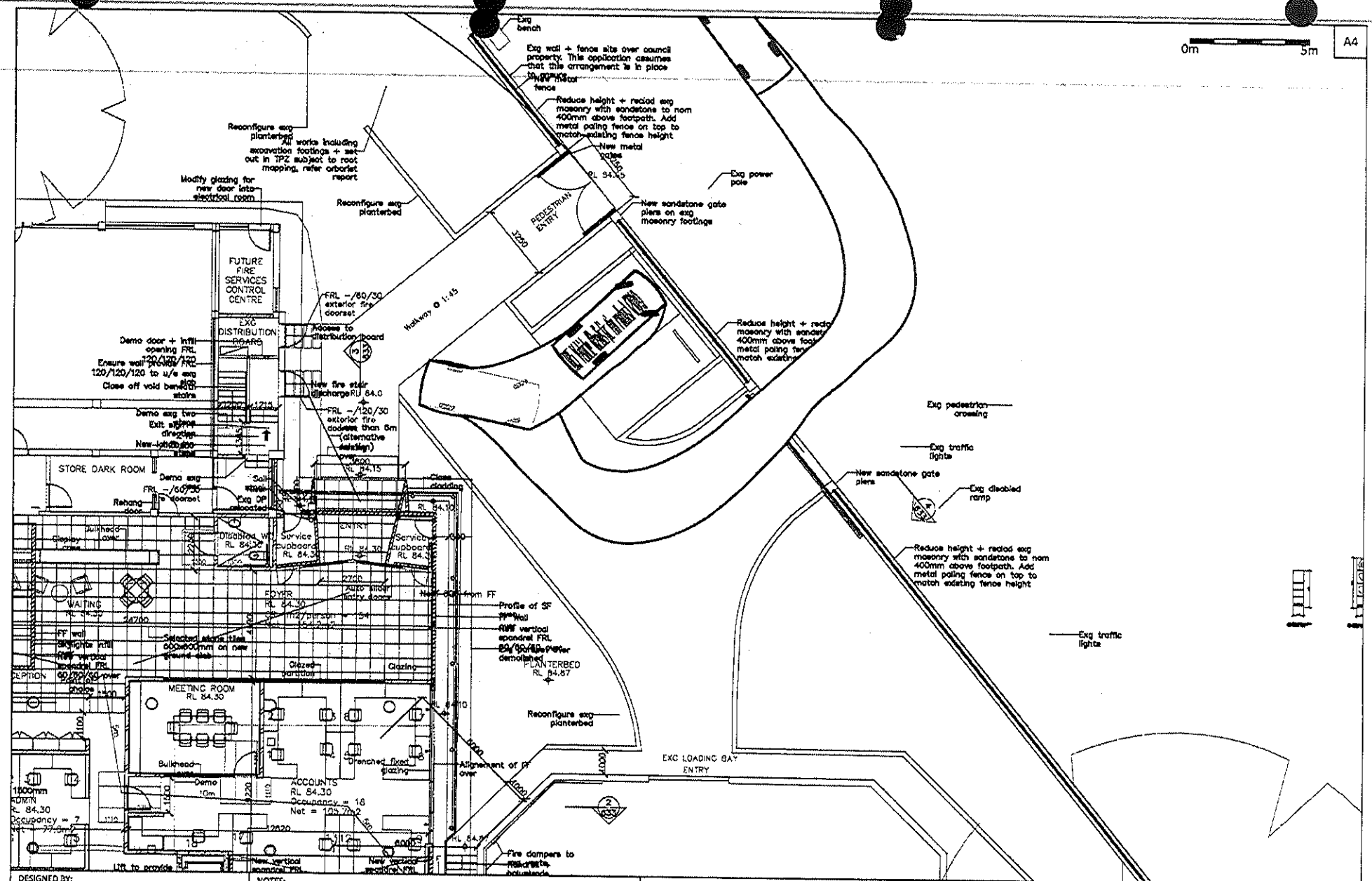
PROJECT:
Proposed Alterations and Additions,
St Catherines School,
Bronte

DRAWING TITLE:
Turning Path Assessment Demonstrating an 85th Percentile Vehicle (Ford Falcon) Entering the Car Park

CLIENT:	St Catherines School		
DRG. #:	TP3		
VERSION #:	1	SCALE:	1:200
PROJECT #:	T2-450	DATE:	24/02/11



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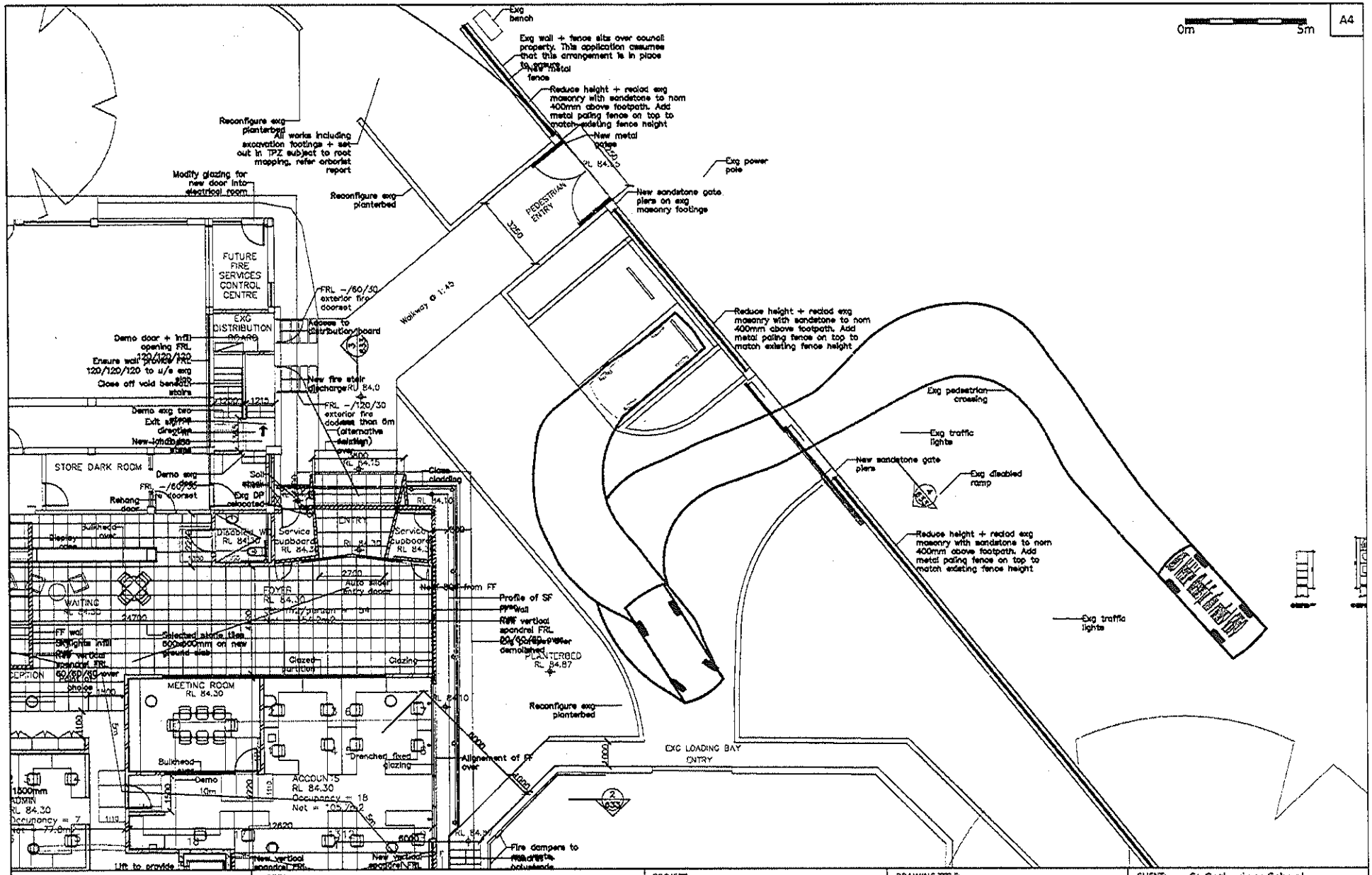
PROJECT:
Proposed Alterations and Additions,
St Catherines School,
Bronte

DRAWING TITLE:
Turning Path Assessment Demonstrating an 85th Percentile Vehicle (Ford Falcon) Exiting the Car Park

CLIENT:	St Catherines School		
DRG. #:	TP4		
VERSION #:	1	SCALE:	1:200
PROJECT #:	T2-450	DATE:	24/02/11


0m
5m
A4
Exg bench
Exg wall + fence sits over council property. This application assumes that this arrangement is in place to remain
New metal fence
Reduce height + reclad exg masonry with sandstone to nom 400mm above footpath. Add metal paling fence on top to match existing fence height
New metal gate
RL 84.0
Exg power pole
Reconfigure exg planterbed
All works including excavation footings + set out in TPZ subject to root mapping, refer arborist report
Modify glazing for new door into electrical room
Reconfigure exg planterbed
PEDESTRIAN ENTRY
3250
New sandstone gate piers on exg masonry footings
FUTURE FIRE SERVICES CONTROL CENTRE
EXG DISTRIBUTION BOARD
Access to distribution board
FRL -/60/30 exterior fire doorset
Walkway @ 1:45
Reduce height + reclad exg masonry with sandstone to nom 400mm above footpath. Add metal paling fence on top to match existing fence height
Exg pedestrian crossing
Exg traffic lights
New sandstone gate piers
Exg disabled ramp
Demo door + infill opening FRL 120/120/120
Ensure wall FRL 120/120/120 to u/s exg slab
Close off void beneath stairs
New fire stair discharge RL 84.0
FRL -/120/30 exterior fire doorset (alternative existing)
Demo exg two Exit signage directions
New Unisign exit signage
STORE DARK ROOM
Demo exg FRL -/60/30 to doorset
Rehang door
Solid core
Exg DP relocated
Close cladding
RL 84.10
ENTRY
Bulkhead over
Display W RL 84.30
Service cupboard RL 84.30
Service cupboard RL 84.30
Display case over
WAITING RL 84.30
FOYER RL 84.30
Auto slide entry doors
New door from FF
Profile of SF over wall
RFF vertical spandrel FRL 60/60/60 over
Selected skirting tiles 600x600mm on new ground slab
FF wall SK lights infill
RFF vertical spandrel FRL 60/60/60 over
Glazed partition
Glazing
PLANTERBED RL 84.87
MEETING ROOM RL 84.30
Reconfigure exg planterbed
Bulkhead over
Demo 10m
Drenched fixed glazing
Alignment of FF over
EXG LOADING BAY ENTRY
ACCOUNTS RL 84.30 Occupancy = 18 Net = 105.7m2
ADMIN RL 84.30 Occupancy = 7 Net = 77.6m2
1800mm
Lift to provide
New vertical spandrel FRL
Fire dampers to
DESIGNED BY:
PARKING & TRAFFIC
NOTES:
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PROJECT:
Proposed Alterations and Additions,
St Catherines School,
Bronte
DRAWING TITLE:
Turning Path Assessment Demonstrating an 85th Percentile Vehicle (Ford Falcon) Entering the Car Park
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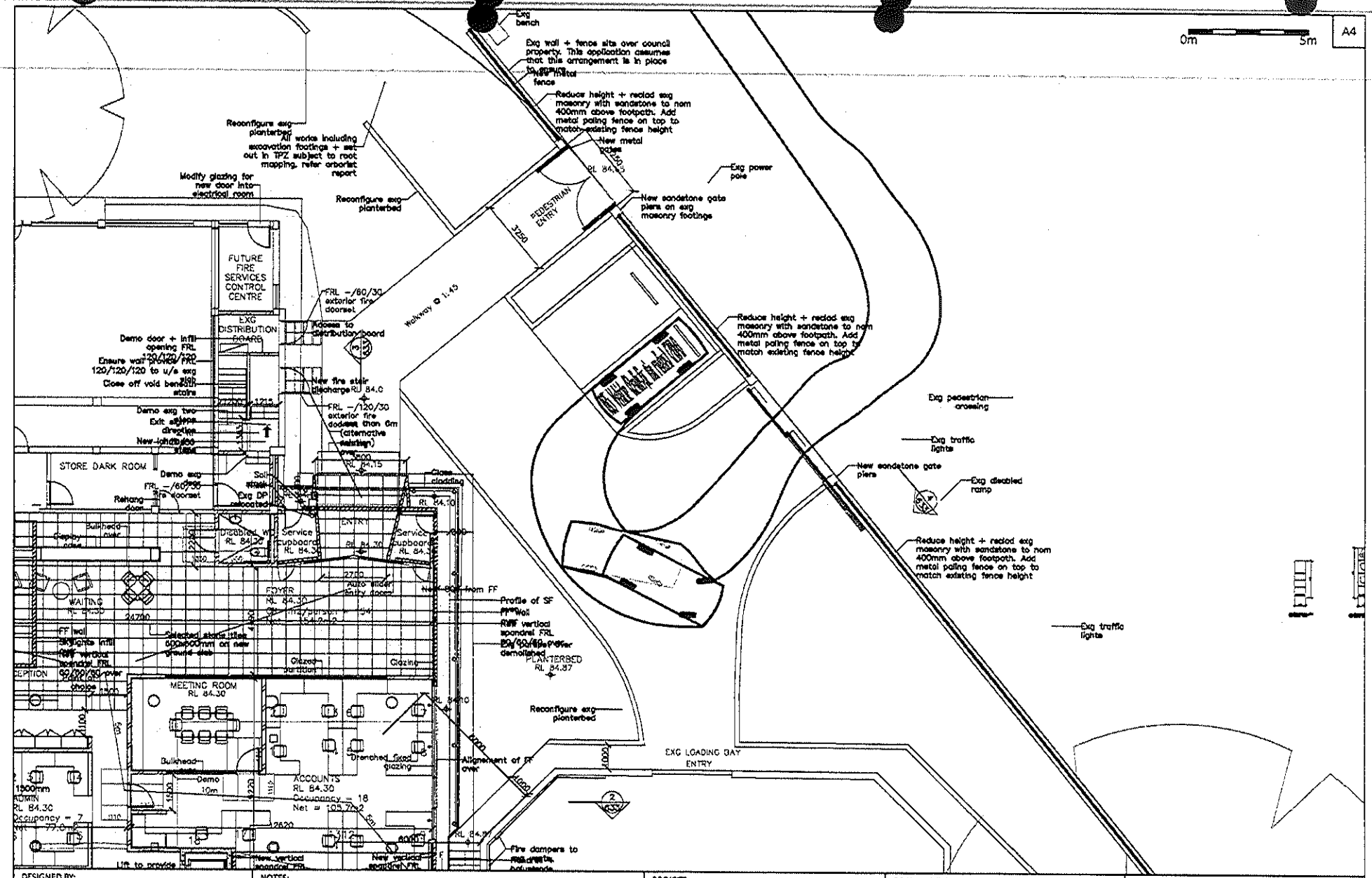
DRG. #: TP5
VERSION #: 1
SCALE: 1:200
PROJECT #: T2-450
DATE: 24/02/11



DESIGNED BY:

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PROJECT:
Proposed Alterations and Additions,
St Catherines School,
Bronte

DRAWING TITLE:
Turning Path Assessment Demonstrating an 85th Percentile Vehicle (Ford Falcon) Exiting the Car Park

CLIENT:	St Catherines School		
DRG. #:	TP6		
VERSION #:	1	SCALE:	1:200
PROJECT #:	T2-450	DATE:	24/02/11