LETTER

Business Group

REF: N185450
DATE: 3 April 2020

Department of Education
C/- TSA Management
Level 15, 207 Kent Street
SYDNEY NSW 2000

Attention: Mr. Jaron Hoffenberg (Project Manager)

Dear Jaron,

RE: ALEX AVENUE PUBLIC SCHOOL, SCHOFIELDS, SSD-9368, TRANSPORT ENGINEERING ASSESSMENT – RESPONSE TO SUBMISSION

GTA Consultants (NSW) Pty Ltd has been engaged by the Department of Education (DoE) to review and prepare a transport engineering assessment to accompany the response to submission, in response to Request for Further Information received from the Department of Planning, Industry and Environment (DPIE), outlined in the letter dated 30 September 2019.

Specifically, the DPIE letter required a response to the following comments. Items that form part of our traffic and transport assessment are identified in bold:

1. The temporary treatment (including levels, pathways, landscaping and fencing) proposed in the north-east corner of the site along with the access and management arrangements to:
    - Allow unfettered access along the temporary access and services easement that runs along the eastern boundary of the site.
    - Ensure the safety of school users and the wider community.
2. The proposed temporary and permanent levels along the eastern boundary and in the south- eastern corner of the site having regard to the existing and proposed levels of adjoining land.
3. The proposed use of the south-eastern corner of the site and interface with the adjoining land.
4. Garbage vehicle access arrangements.
5. Temporary and permanent drainage arrangements, including discharge, prior to and following the construction of Pelican Road.
6. Compliance of proposed access/ egress locations with relevant standards.

It is understood that DoE received further comments from DPIE, where clarifications are sought on the following items:

1. Contingency arrangements for parking, temporary car park, special needs pick up/ set down arrangement should there be a delay in completion of the Joint Use Car Park with Reserve 885, or a delay in the completion of road works associated with Pelican Road.
2. Status of footpath network within the immediate vicinity of the school, footpath connectivity and the suitability of walking/ walking school bus as part of Term 1 Day 1 operations.
3. Status of cycling facilities within the immediate vicinity of the school, connectivity to the broader precinct and the suitability of cycling as a mode of transport as part of Term 1 Day 1 operation.

GTA offers the following assessment in response to the above identified matters.

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Contingency Parking Arrangement/ Garbage Vehicle Access Arrangement

At the time of preparation of this assessment, it is understood that DoE and Blacktown City Council have entered into joint use agreement associated with the car parking area located to the north of Reserve 885. Reserve 885 caters for parking requirements associated with the school as per the Transport Impact Assessment Report.

Whilst it is understood that works associated with Reserve 885 are expected to be completed and ready for Term 1, Day 1 operations of the school, a contingency concept design has been prepared This contingency concept design is now available for implementation should there be a delay in the completion of the joint use car park. Refer to Attachment 1: Contingent Car Park Concept Design.

Car Parking Requirements for Term 1, Day 1 Operations

For Term 1, Day 1 operations, it is understood that up to 600 students will be enrolled at Alex Avenue Public School. The School Principal has confirmed that 22 staff are expected as part of Term 1, Day 1 operations.

The level of parking provided has been assessed against Table 4-11 of the *Blacktown City Council Growth Centre Precincts Development Control Plan (July 2018)* and Clause 6.3 of the Blacktown DCP 2015, which sets parking requirements for primary and secondary schools as:

- 1 space per staff member; plus
- 1 space per 100 students.

Applying the DCP rates, for Term 1, Day 1 operation requires a total of 28 parking space. A total of 31 spaces have been included in the concept temporary car park design, exceeding the minimum parking requirements outlined in the DCP.

Upon further considerations of the operational arrangement associated with special needs, the special needs component of the school has been deferred to Stage 2 works, where a separate pick-up / set- down arrangement is being prepared and will form part of the Stage 2 proposal.

Contingent Car Park Concept Design

The concept car park consists of:

- 6 metres wide access, off-set 1 metre from the temporary easement providing access to Lot 4 via Farmland Drive
- Crossover designed in accordance with Blacktown City Council's Engineering Guide for Development 2005
- 25 parking spaces for staff parking, designed in accordance with Figure 2.2 of AS/NZS29890.1:2004 for a Class 2 Parking facility
- 5 parking spaces for pick-up / set-down, designed in accordance with Figure 2.5 of AS/NZS2890.1:2004
- An accessible parking space, designed in accordance with Clause 2.2.2 of AS/NZS2890.6:2009
- Bin storage area, which will be serviced by DoE's Private Waste Collection Contractors outside school operations hours located in the south-eastern corner of the temporary car park.

Waste collection is expected to occur outside school hours to minimise any potential conflict with students. A swept path assessment has been completed and this demonstrates a 10.5m long garbage truck can access the waste collection point and circulate as required. Refer to Attachment 1 for details.

Gradients of roadways, accessways, crossfall form part of the Civil Design package of the project and form part of the RTS submission and is prepared by others.

Walking and Cycling Connectivity and Safety Considerations

Footpath

The school is located in a new residential subdivision that is drive currently under development. Residential lots generally located to the east and north of the school site have been substantially developed. Farmland Drive currently terminates approximately 39 metres west of Hyde Street, and construction of Pelican Road has commenced recently.

Based on our review of road design drawings for the Construction Certification provided by Toplace Group, it is understood that a network of footpath is proposed, and forms part of the subdivision works. Refer to Appendix 2 for details of proposed footpath layout.

Consultation with Blacktown City Council's Traffic Engineers has also confirmed that:

- Footpaths along the south side of Farmland Drive, between Antonia Parade and the school forms part of Reserve 885 works
- Footpath along the Farmland Drive and Pelican Road frontages of the school will form part of the works of the school
- Timing of construction of footpaths in new residential subdivisions are typically triggered when the precinct is substantially developed (around 80%)
- Footpaths in general are required on both sides of Collector Roads and as a minimum, on one side of local roads based on the table in Section 1.2 Road Hierarchy of the Blacktown City Council Path Paving Policy 2009 (Appendix to the *Blacktown City Council Engineering Guide for Development 2005*)

Upon review of the site and its surrounds, considering much of the school's catchment are located to the east of the school (refer to GTA's Green Travel Plan for further detail), and the area is substantially developed, it is expected that construction of footpaths are expected, with the timing of completion of footpaths unknown.

For Term 1, Day 1, it is expected that as a minimum, a footpath along the south side of Farmland Drive, between Antonia Parade and Pelican Road will be accessible for pedestrians.

Further investigations over the timing of footpath works along Farmland Drive and the subdivision are being undertaken at the time of preparation of this assessment. It is anticipated that whilst a complete constructed and sealed footpath network may not be available on Term 1, Day 1, there is sufficient verge that offers a relatively safe environment to enable walking as a mode of transport to / from the school, on the basis that:

- Roadways within the immediate vicinity of the school have been designed generally in accordance with the objectives of Section 3.4.1 of the Blacktown City Council's Growth Centre Precincts Development Control Plan (July 2018), where the design of the street layout embeds pedestrian connectivity and safety considerations.
- Along Farmland Drive, it is understood that a verge width of 3m has been provided along the residential frontages, with completed footpath being 1.5 metres wide.
- Local roads within the vicinity of the site have a verge provided on each side of the road.
- Considering much of the residential areas to the east of the school is constructed and occupied, the condition of verge within the immediate vicinity of the school is considered to be suitable for walking, away from vehicular traffic. We note that this is not optimal to promote active modes of travel, like walking and cycling to school.Given the low density, low speed nature of the road network, it is considered that the main difference to pedestrian safety between having a constructed and sealed footpath in comparison to walking on a grass verge is an increased risk to trip, slip and fall walking on grass verge and does not present any increased severity in crash risk to pedestrian movement. It is less attractive to local residents to walk or ride and that car usage may be a more attractive option to residents when making travel decisions.

Considering that the proposed school is a primary school where students are typically between the age of 5 and 12, the lack of constructed and connected bicycle facility at Term 1, Day 1 means that cycling as a mode of transport for students will not be attractive, or appropriate, until infrastructure works within the immediate vicinity and catchment area of the school are completed. This will be identified in the School Transport Pln, which will be developed in consultation with the School Principal, and relevant stakeholders.

Crossing Facility

Forming part of the school development is the provision of two wombat profile crossings, located on:

- Farmland Drive, west of Hyde Street to provide north – south connectivity
- Pelican Road, south of intersection with Farmland Drive to provide east – west connectivity

The proposed wombat crossings have received in principle agreement from Blacktown City Council and will be subject to a separate approval process with BCC Local Traffic Committee. This will require detailed design documentation to be submitted to BCC.

The proposed crossing facilities will allow for the connection to new land lots located to the west of the school and connect to the future footpaths along Pelican Road, and intended to provide safe pedestrian connectivity within close proximity to the school's main entrances.

Pelican Road – Bus Turnaround Area

Pelican Road in its ultimate condition is a collector road that provide north-south connectivity between Schofields Road and Jerralong Drive.

The road works that form part of Toplace Group construction extend generally to the southern boundary of the DoE Lot 1 land. A bridge that connects Pelican Road and Jerralong Drive will be delivered by Blacktown City Council, with timing of works unknown.

As a contingency, a concept design has been prepared to provide a temporary bus turnaround bay at Lot 1 DoE land to allow for the operation of a school bus on Term 1, Day 1. Refer to Attachment 3 for details.

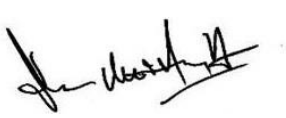
The contingency bus turnaround area has been assessed using a 14.5m Long Rigid Bus and has received in principle support from Blacktown City Council, subject to confirmation of cross-fall associated with Lot 1.

Conclusion

It is considered that transport engineering aspects of the proposed development has now been refined, with contingency measures identified to facilitate Term 1, Day 1 operations of the school.

Naturally, should you have any questions or require any further information, please do not hesitate to contact me on (02) 8448 1800.

Yours sincerely
GTA CONSULTANTS



Dora Choi
Associate Director

encl.
Attachment 1 – Contingent Car Park Concept Design
Attachment 2 – Footpath Network
Attachment 3 – Pelican Road – Bus Turnaround Area

ATTACHMENT 1 – CONTINGENT CAR PARK

LEGEND

- BOUNDARY
- FUTURE PERMANENT EASEMENT TO LOT 4
- SCHOOL CAR PARK ACCESS DRIVEWAY
- TEMPORARY EASEMENT TO LOT 4

STAGE 1 (ON-SITE PICK-UP/ SET-DOWN OPTION)
ASSUME COUNCIL CAR PARK NOT COMPLETED ON DAY 1 OF SCHOOL OPERATION

SOURCE:

SURVEY BASE IN GREY (EXTRACTED FROM CIVIL DRAWING)
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

ARCHITECTURAL BASE IN BLUE (DETAIL LIMITED TO SITE BOUNDARY)
DRAWING AA-AR-1100
REVISION 5
BY GROUP GSA
DATED 21.02.2020

BUILDING 'B4'
12 HOMEBASES
G/F FFL 41.50

COVERED STAIRS

SPORTS COURTS

+ RL 41.38

+ RL 42.51

+ RL 42.82

+ RL 42.52

25 STAFF SPACES
5 PICK-UP/ DROP-OFF SPACES
1 ACCESSIBLE PICK-UP/ DROP-OFF SPACE

2.5 TYP.
5.4 TYP
5.8
6.6
7.8
5.8
3.2
6.3
6.6
5.8
3.0 TYP
6.6 TYP.
BIN STORAGE

LINE OF 6M WIDE EASEMENT
6.0
1.0
6.0

TEMPORARY EASEMENT WIDE LOT 4

OF PROPOSED EASEMENT

PROPOSED COUNCIL EASEMENT

N

\\GTA.COM.AU\PROJECTFILES\PROJECTFILESSYD\N18500-18599\N185450 ALEX AVENUE SCHOOL - TRANSPORT A\CAD\N185450-11-P2.DWG PLOTTED BY ERIC YE ON 20/03/2020 AT 16:01

GTA consultants
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WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED	E.YE
DESIGN CHECK	D. CHOI
APPROVED BY	D. CHOI
DATE ISSUED	19.03.2020
SCALE	A3 0 1.25 2.5 5 1:250
CAD FILE NO.	N185450-11-P2.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1
ON-SITE PARKING
CONCEPT LAYOUT

DRAWING NO. N185450-11-03 SHEET 03 OF 11 ISSUE P2

LEGEND

- BOUNDARY
- FUTURE PERMANENT EASEMENT TO LOT 4
- SCHOOL CAR PARK ACCESS DRIVEWAY
- TEMPORARY EASEMENT TO LOT 4

STAGE 1 (ON-SITE PICK-UP/ SET-DOWN OPTION)
ASSUME COUNCIL CAR PARK NOT COMPLETED ON DAY 1 OF SCHOOL OPERATION

SOURCE:

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DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

CIVIL DESIGN IN GREEN
DRAWING C104.01
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BY NORTHROP
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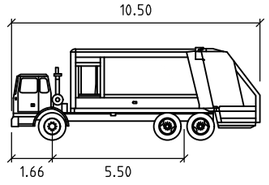
ARCHITECTURAL BASE IN BLUE (DETAIL LIMITED TO SITE BOUNDARY)
DRAWING AA-AR-1100
REVISION 5
BY GROUP GSA
DATED 21.02.2020

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- **600**mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED **5**km/h



Garbage 10.5m

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 4.0
Steering Angle	: 36.0

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SCALE A3 0 2.5 5 10 1:500

CAD FILE NO. N185450-11-P2.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1
ON-SITE PARKING
SWEPT PATH ASSESSMENT

DRAWING NO. N185450-11-04 SHEET 04 OF 11 ISSUE P2

LEGEND

- BOUNDARY
- FUTURE PERMANENT EASEMENT TO LOT 4
- SCHOOL CAR PARK ACCESS DRIVEWAY
- TEMPORARY EASEMENT TO LOT 4

STAGE 1 (ON-SITE PICK-UP/ SET-DOWN OPTION)
ASSUME COUNCIL CAR PARK NOT COMPLETED ON DAY 1 OF SCHOOL OPERATION

SOURCE:

SURVEY BASE IN GREY (EXTRACTED FROM CIVIL DRAWING)
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
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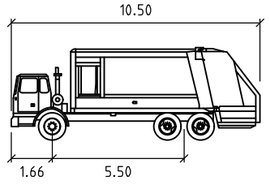
DATED 07.02.2020

ARCHITECTURAL BASE IN BLUE (DETAIL LIMITED TO SITE BOUNDARY)
DRAWING AA-AR-1100
REVISION 5
BY GROUP GSA
DATED 21.02.2020

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- **600**mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED **5**km/h



Garbage 10.5m

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 4.0
Steering Angle	: 36.0

Garbage 10.5m

+ RL 42.20
+ RL 42.40
+ RL 43.32
+ RL 42.44
+ RL 42.51
+ RL 41.88
+ RL 42.52
RL 42.42

COVERED MAIN ENTRY

BUILDING 'C'
COMMUNAL HALL
G/F FFL 42.90

COVERED STAIRS

BUILDING 'B4'
12 HOMEBASES
G/F FFL 41.50

BUILDING 'B3'
8 HOMEBASES
G/F FFL 41.50

COLA 'C'

SPORTS COURTS

BIN STORAGE

1.5m LINE OF OVERHEAD EASEMENT

TEMPORARY EASEMENT WIDE LOT 4

N

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DESIGNED	E.YE
DESIGN CHECK	D. CHOI
APPROVED BY	D. CHOI
DATE ISSUED	19.03.2020

SCALE A3 0 2.5 5 10 1:500

CAD FILE NO. N185450-11-P2.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1
ON-SITE PARKING
SWEPT PATH ASSESSMENT

DRAWING NO. N185450-11-05 SHEET 05 OF 11 ISSUE P2

LEGEND

- BOUNDARY
- FUTURE PERMANENT EASEMENT TO LOT 4
- SCHOOL CAR PARK ACCESS DRIVEWAY
- TEMPORARY EASEMENT TO LOT 4

STAGE 1 (ON-SITE PICK-UP/ SET-DOWN OPTION)
ASSUME COUNCIL CAR PARK NOT COMPLETED ON DAY 1 OF SCHOOL OPERATION

SOURCE:

SURVEY BASE IN GREY (EXTRACTED FROM CIVIL DRAWING)
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

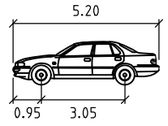
CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

ARCHITECTURAL BASE IN BLUE (DETAIL LIMITED TO SITE BOUNDARY)
DRAWING AA-AR-1100
REVISION 5
BY GROUP GSA
DATED 21.02.2020

SWEPT PATH KEY

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

ASSUMED SPEED **5**km/h



B99 6.3mR

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

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APPROVED BY	D. CHOI
DATE ISSUED	19.03.2020

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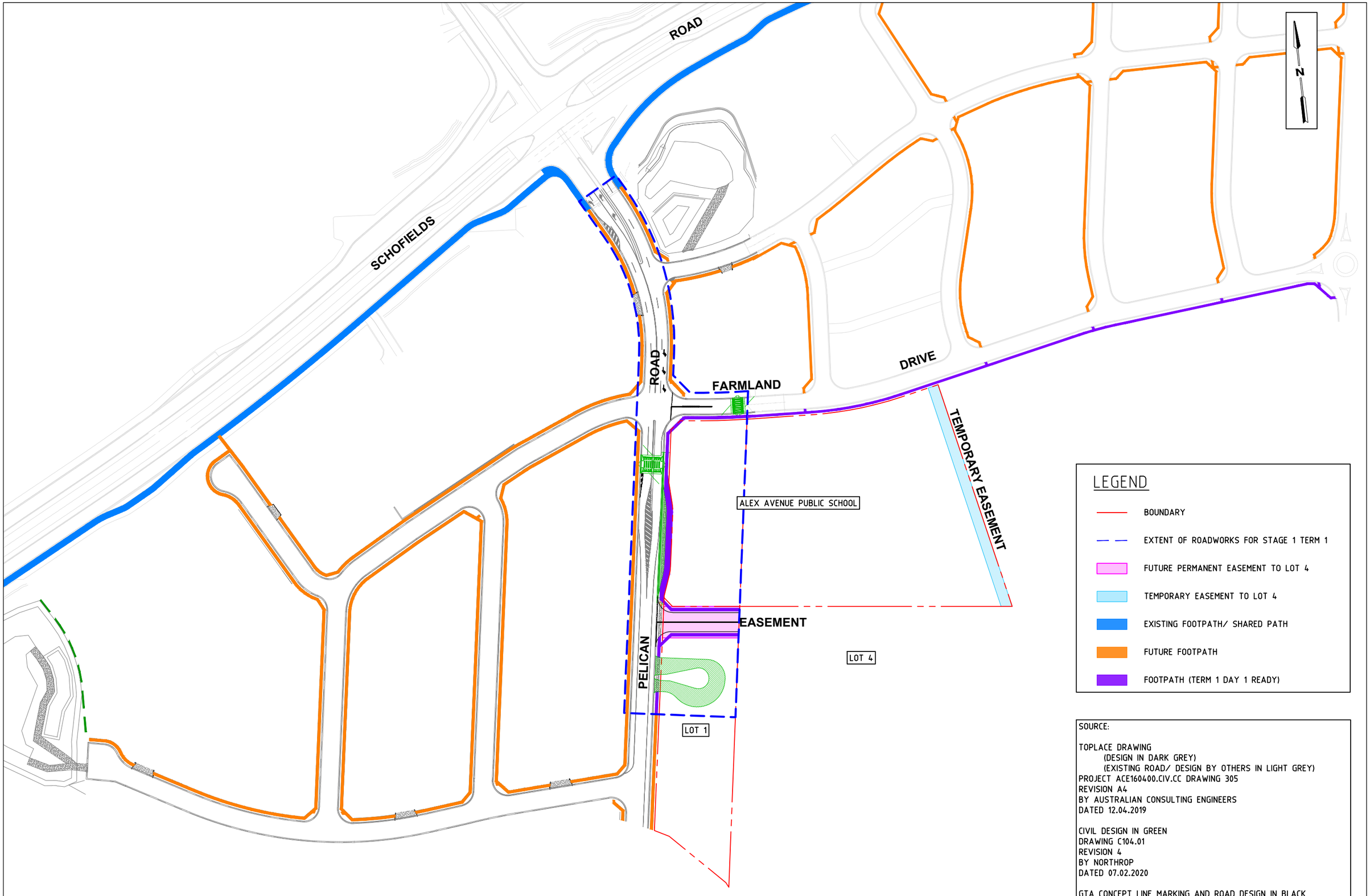
ALEX AVENUE PUBLIC SCHOOL
STAGE 1
ON-SITE PARKING
SWEPT PATH ASSESSMENT

DRAWING NO. N185450-11-06 SHEET 06 OF 11 ISSUE P2

ATTACHMENT 2 – FOOTPATH NETWORK



LEGEND

- BOUNDARY
- EXTENT OF ROADWORKS FOR STAGE 1 TERM 1
- FUTURE PERMANENT EASEMENT TO LOT 4
- TEMPORARY EASEMENT TO LOT 4
- EXISTING FOOTPATH/ SHARED PATH
- FUTURE FOOTPATH
- FOOTPATH (TERM 1 DAY 1 READY)

SOURCE:

TOPLACE DRAWING
(DESIGN IN DARK GREY)
(EXISTING ROAD/ DESIGN BY OTHERS IN LIGHT GREY)
PROJECT ACE160400.CIV.CC DRAWING 305
REVISION A4
BY AUSTRALIAN CONSULTING ENGINEERS
DATED 12.04.2019

CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

GTA CONCEPT LINE MARKING AND ROAD DESIGN IN BLACK

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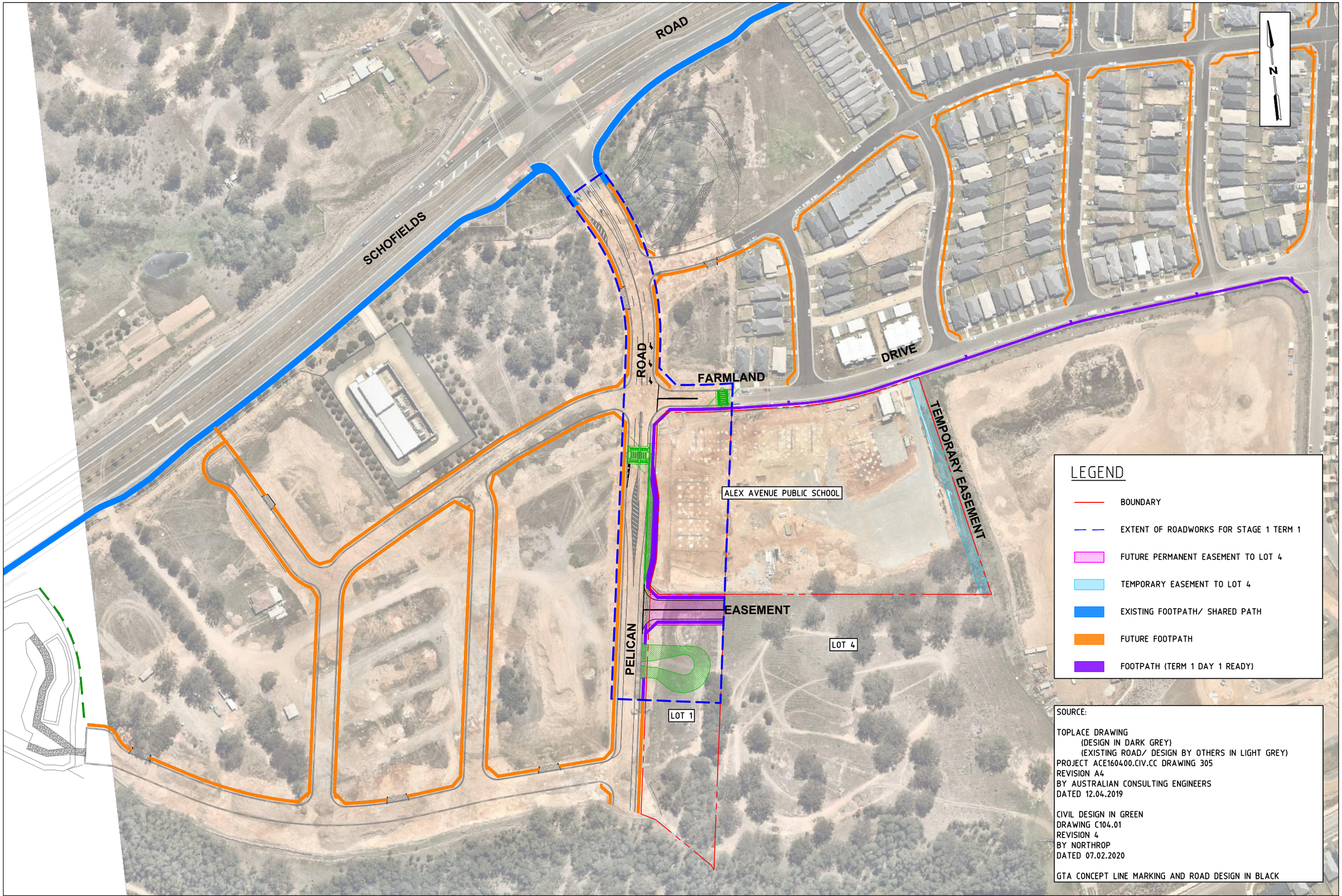
DESIGNED E.YE
DESIGN CHECK D. CHOI
APPROVED BY D. CHOI
DATE ISSUED 03.04.2020

SCALE A3 0 10 20 40 1:2000
CAD FILE NO. N185450-12-P4.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1

FOOTPATHS

DRAWING NO. N185450-12-06 SHEET 06 OF 07 ISSUE P4



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APPROVED BY	D. CHOI
DATE ISSUED	03.04.2020
SCALE	A3 0 10 20 40 1:2000
CAD FILE NO.	N185450-12-P4.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1

FOOTPATHS

DRAWING NO. N185450-12-07 SHEET 07 OF 07 ISSUE P4

ATTACHMENT 3 – PELICAN ROAD - BUS TURNAROUND AREA

LEGEND

- BOUNDARY
- EXTENT OF ROADWORKS FOR STAGE 1 TERM 1
- FUTURE PERMANENT EASEMENT TO LOT 4
- TEMPORARY EASEMENT TO LOT 4

SOURCE:

TOPLACE DRAWING
(DESIGN IN DARK GREY)
(EXISTING ROAD/ DESIGN BY OTHERS IN LIGHT GREY)
PROJECT ACE160400.CIV.CC DRAWING 305
REVISION A4
BY AUSTRALIAN CONSULTING ENGINEERS
DATED 12.04.2019

CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

GTA CONCEPT LINE MARKING AND ROAD DESIGN IN BLACK

SCHOFIELDS ROAD

ROAD

FARMLAND

DRIVE

TEMPORARY EASEMENT

ALEX AVENUE PUBLIC SCHOOL

1.5

3.5

3.0

R8.5

1.5

11.0

18.0

R8.5

1.5

6.0

EASEMENT

LOT 4

LOT 1

PELICAN

N

\\GTA.COM.AU\PROJECTFILES\PROJECTFILESSYD\N18500-18599\N185450 ALEX AVENUE SCHOOL - TRANSPORT A\CAD\N185450-12-P4.DWG PLOTTED BY ERIC YE ON 03/04/2020 AT 10:18

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DATE ISSUED	03.04.2020

SCALE A3 0 5 10 20 1:1000

CAD FILE NO. N185450-12-P4.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1

STAGE 1 TERM 1 ROADWORKS

DRAWING NO. N185450-12-03 SHEET 03 OF 07 ISSUE P4

LEGEND

- BOUNDARY
- EXTENT OF ROADWORKS FOR STAGE 1 TERM 1
- FUTURE PERMANENT EASEMENT TO LOT 4
- TEMPORARY EASEMENT TO LOT 4

SOURCE:

TOPLACE DRAWING
(DESIGN IN DARK GREY)
(EXISTING ROAD/ DESIGN BY OTHERS IN LIGHT GREY)
PROJECT ACE160400.CIV.CC DRAWING 305
REVISION A4
BY AUSTRALIAN CONSULTING ENGINEERS
DATED 12.04.2019

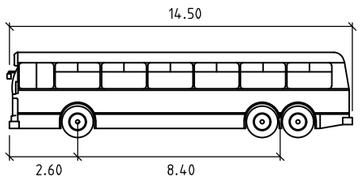
CIVIL DESIGN IN GREEN
DRAWING C104.01
REVISION 4
BY NORTHROP
DATED 07.02.2020

GTA CONCEPT LINE MARKING AND ROAD DESIGN IN BLACK

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- **500**mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED **10**km/h



LONG RIGID BUS

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 46.4

SCHOFIELDS ROAD

ROAD

FARMLAND

DRIVE

TEMPORARY EASEMENT

6.0

ALEX AVENUE PUBLIC SCHOOL

EASEMENT

LOT 4

LOT 1

PELICAN

N

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Brisbane	07 3113 5000
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Perth	08 6169 1000

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

DESIGNED	E.YE
DESIGN CHECK	D. CHOI
APPROVED BY	D. CHOI
DATE ISSUED	03.04.2020
SCALE	A3 0 5 10 20 1:1000
CAD FILE NO.	N185450-12-P4.DWG

ALEX AVENUE PUBLIC SCHOOL
STAGE 1

SWEPT PATH ASSESSMENT

DRAWING NO. N185450-12-04 SHEET 04 OF 07 ISSUE P4