



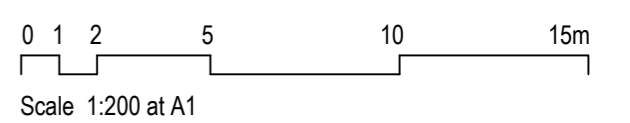


DEMOLITION PLAN

1:200 AT A1

existing building enclosed area 219sqm
existing canopy 28sqm

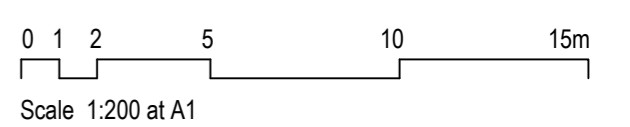
NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD





NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD



Scott Creek Rd



SITE DIMENSION PLAN

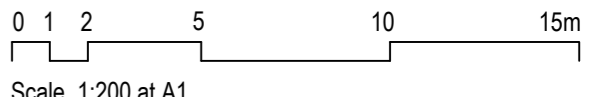
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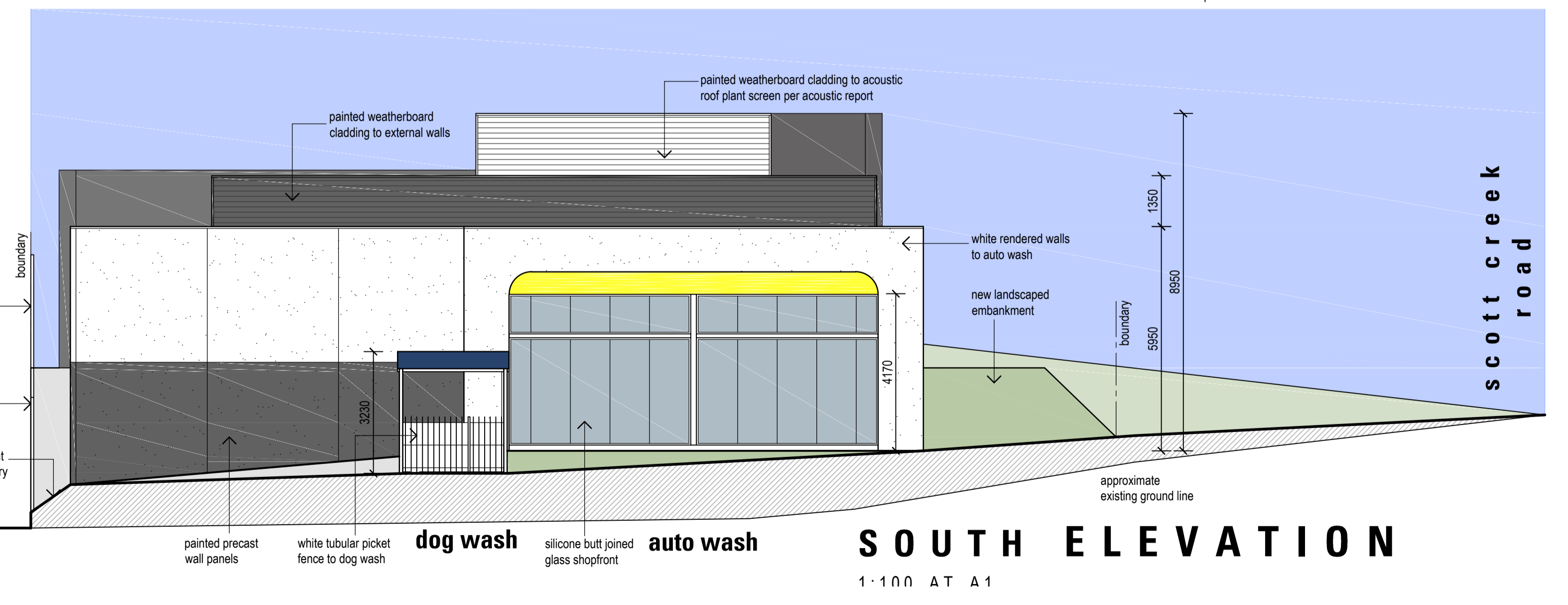
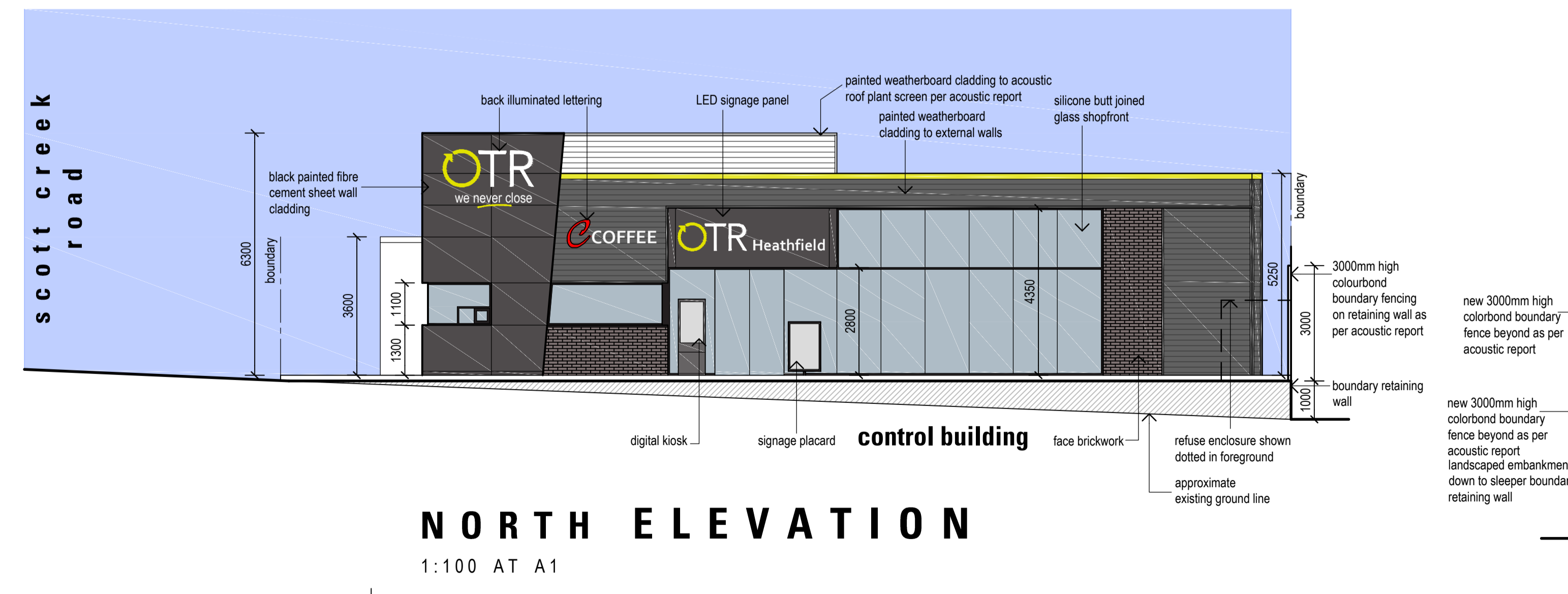
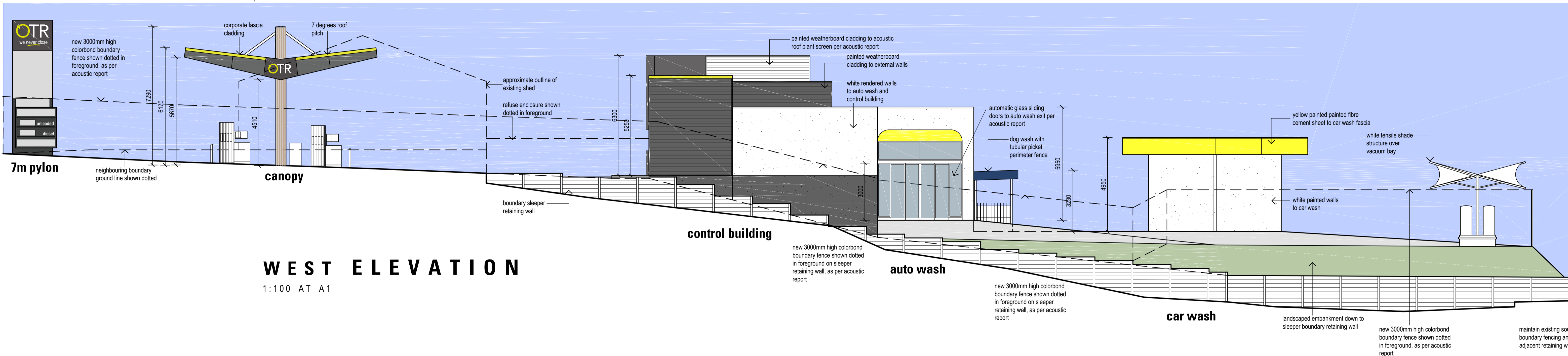
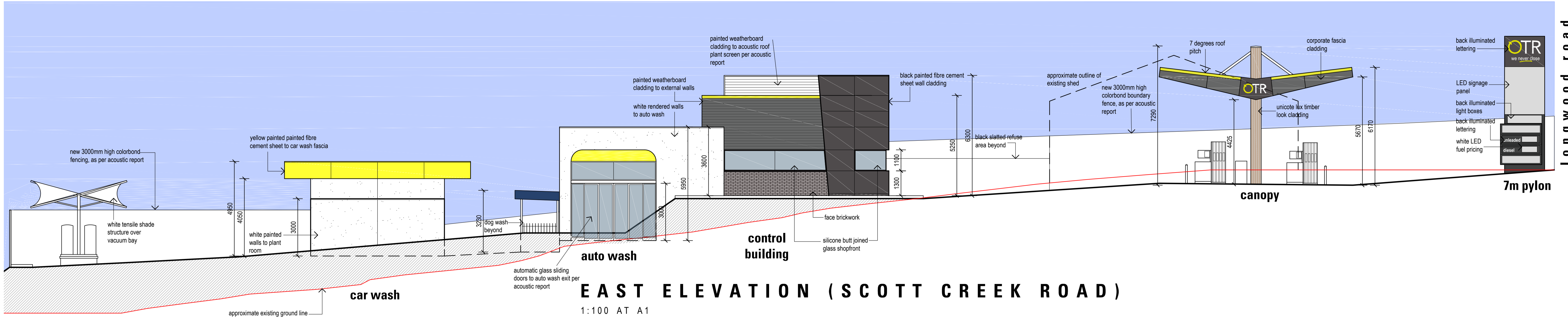
NOTE: ALL SUGGESTED SITE LEVELS ARE APPROXIMATE AND SUBJECT TO CIVIL ENGINEERING ASSESSMENT

Longwood road

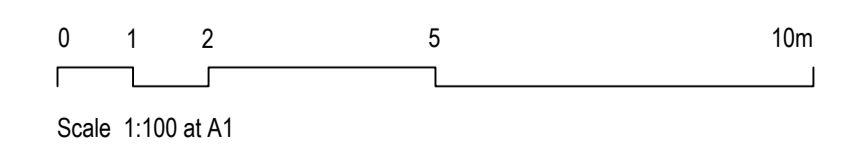
NEW SERVICE STATION COMPLEX

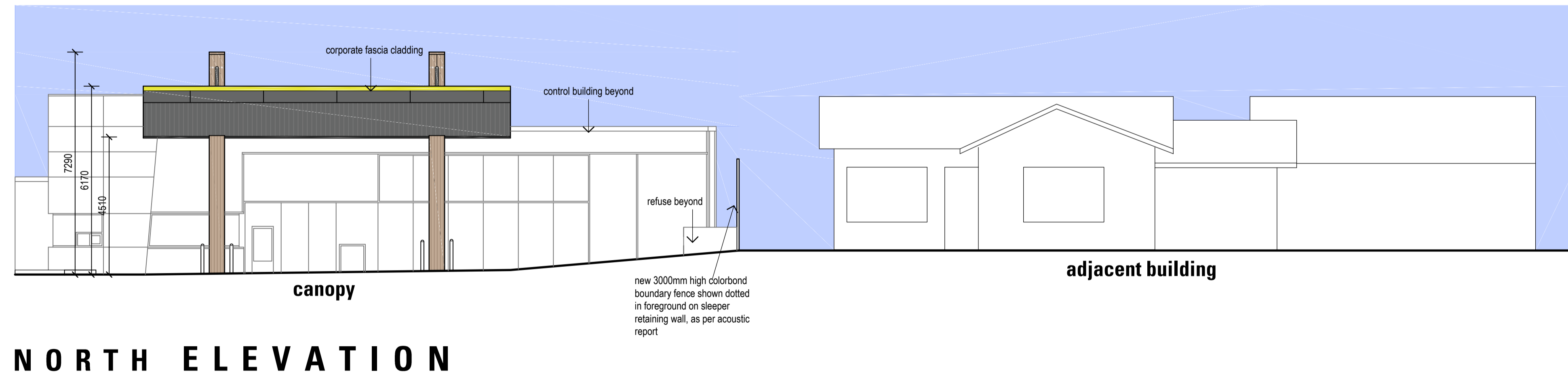
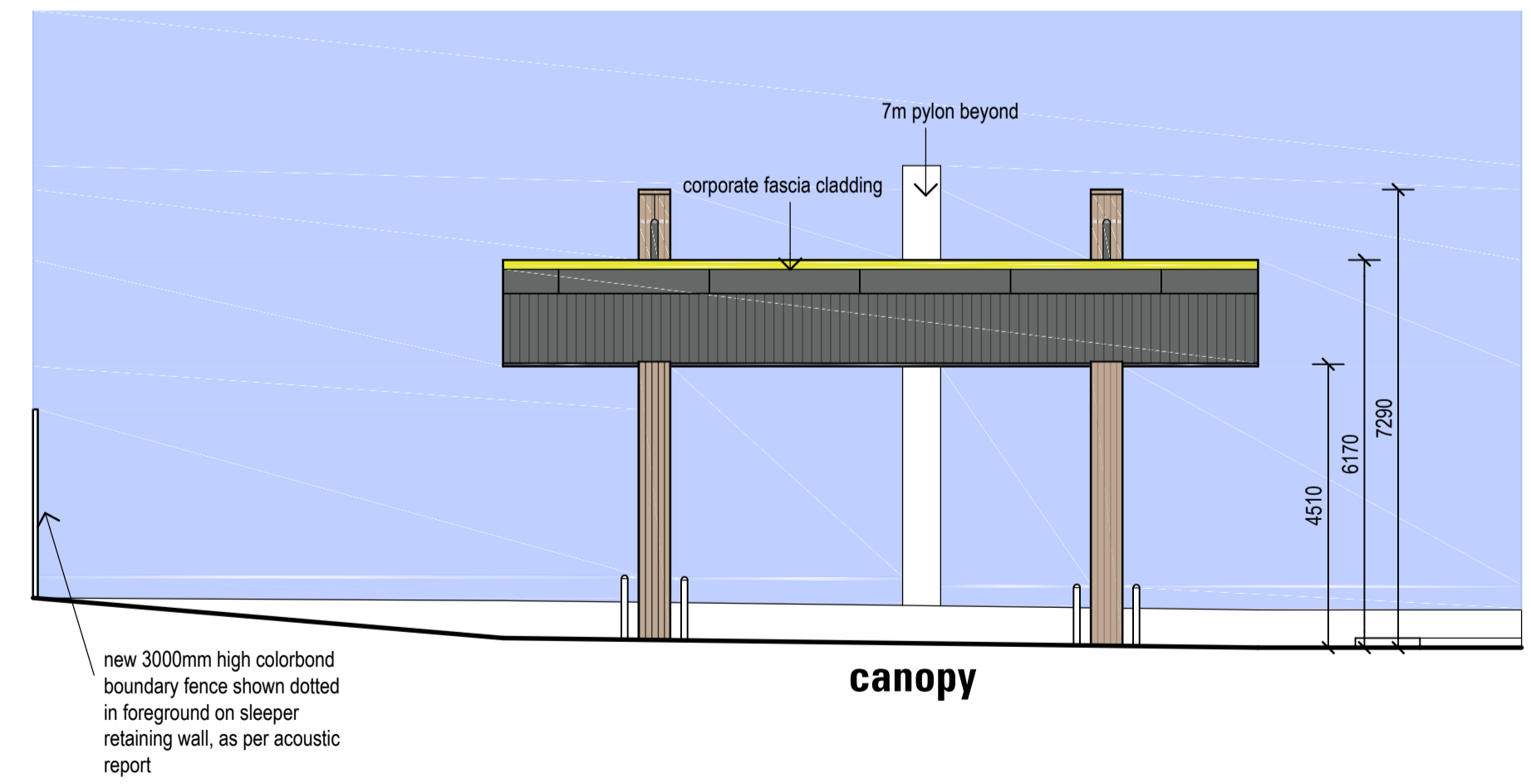
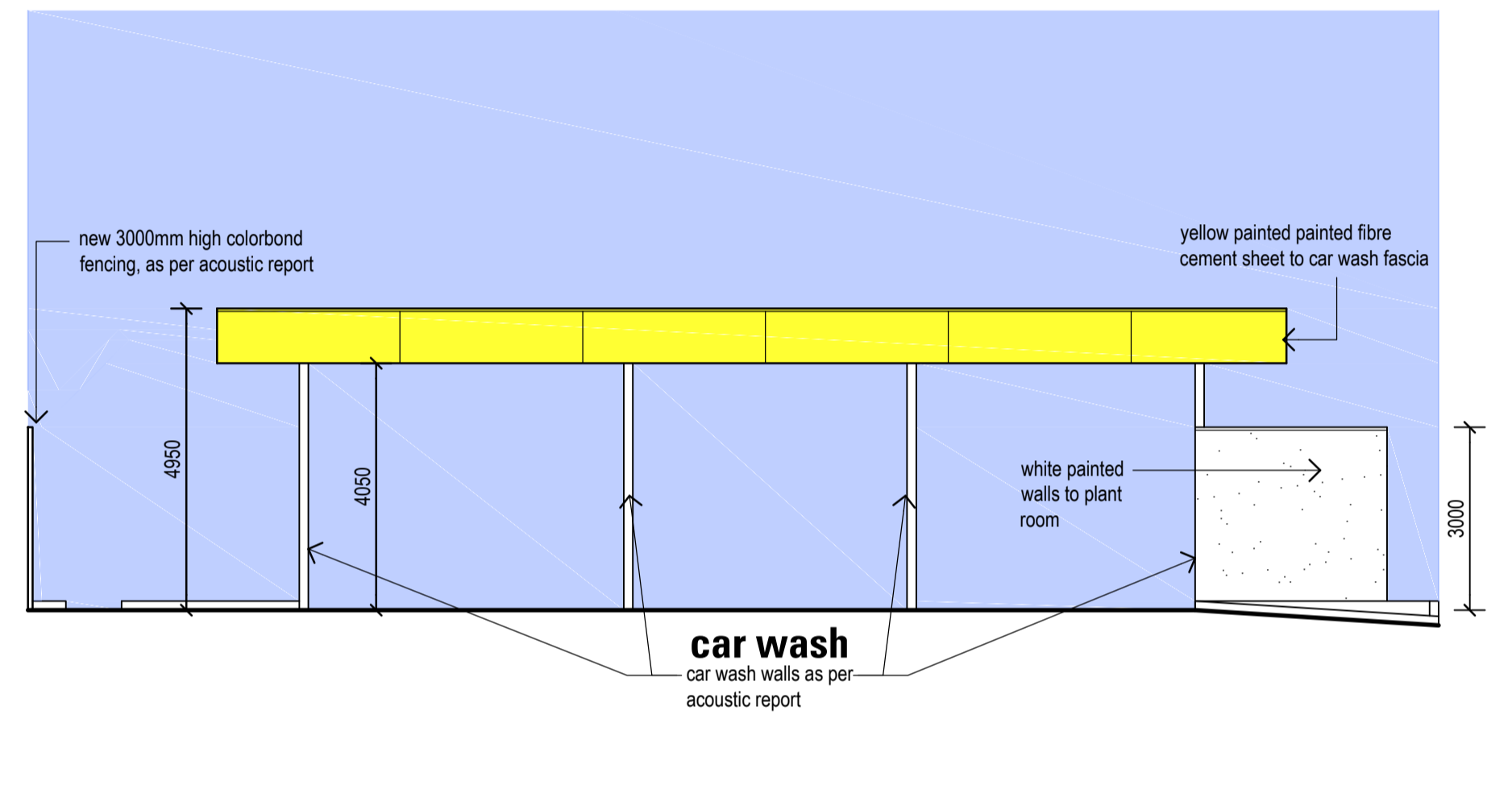
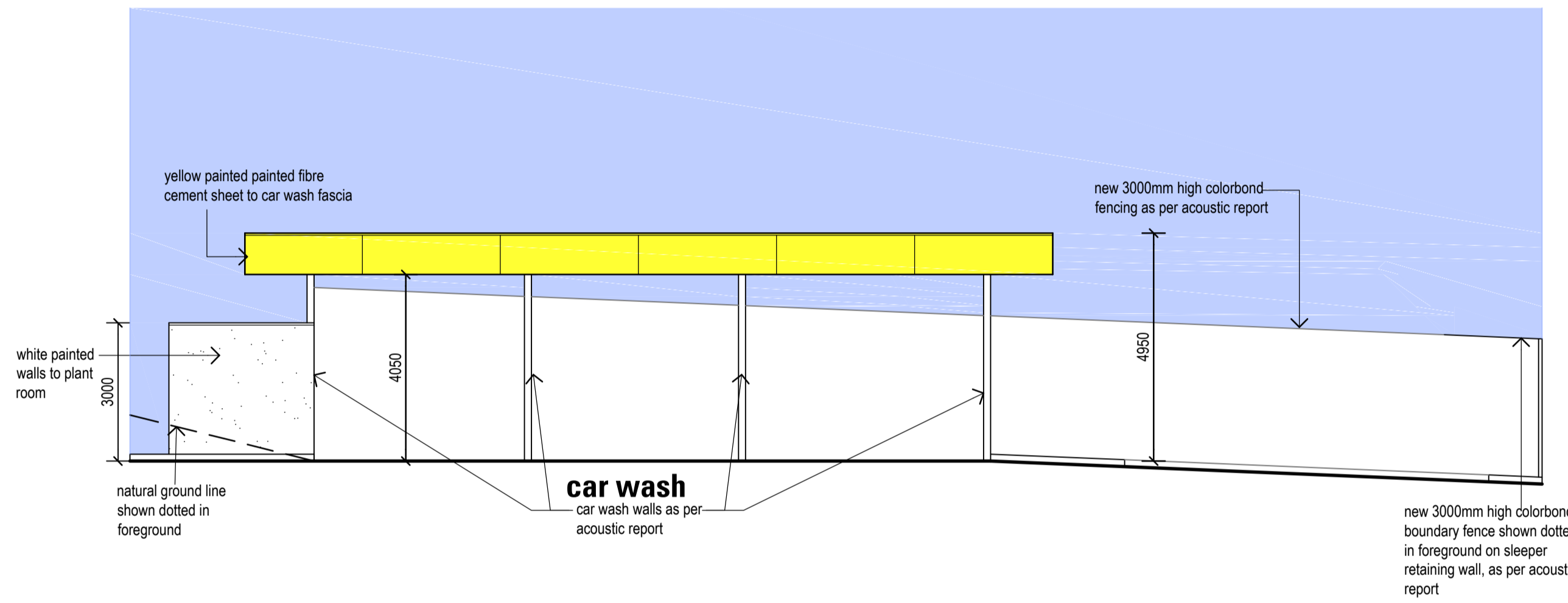
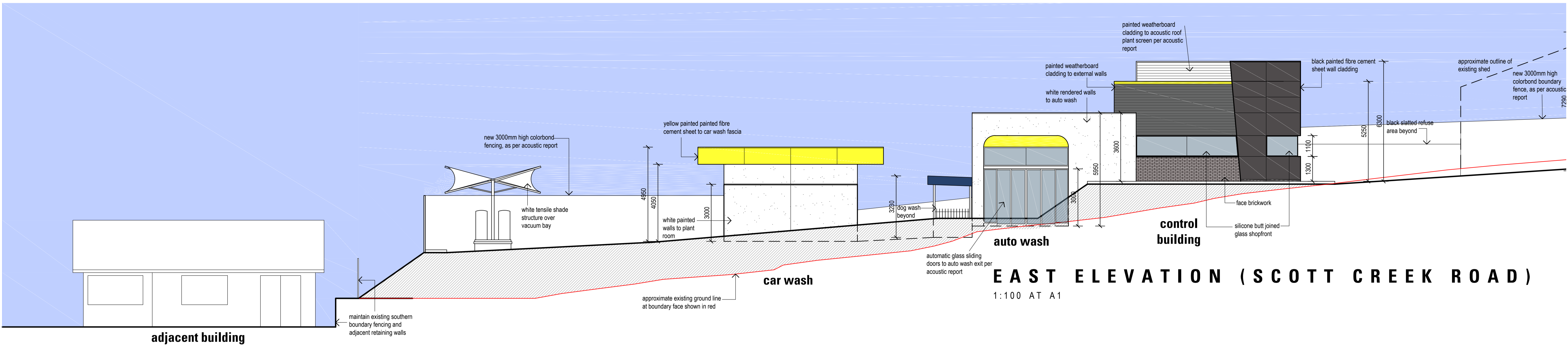
160 LONGWOOD ROAD, HEATHFIELD



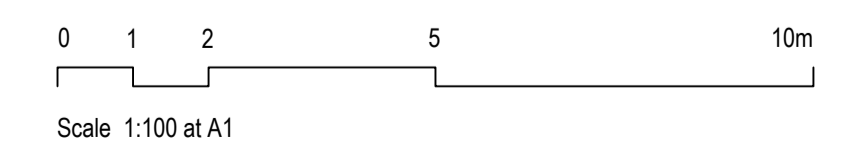


NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD

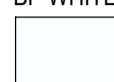

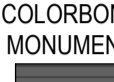
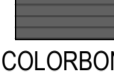
















NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD

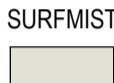




COLOURS & FINISHES SCHEDULE

CONTROL BUILDING & AUTO WASH		
LOCATION	FINISHES	COLOUR
EXTERNAL WALLS	PRECAST PAINT FINISH	BP WHITE  COLORBOND MONUMENT 
	WEATHERBOARDS JAMES HARDIE PRIMELINE PAINTED	COLORBOND MONUMENT 
	FIBRE CEMENT SHEET JAMES HARDIE EXOTEC	COLORBOND MONUMENT  BLACK 
	BRICKWORK PGH MANHATTAN	BROOKLYN & TRIBECCA MIX  
WINDOWS	ALUMINIUM POWDERCOATED FRAMES	BLACK 
	LOW E GLAZING VLT ≥ 60%	GLASS 
ROOF SCREEN	WEATHERBOARDS JAMES HARDIE PRIMELINE PAINTED	BP WHITE 
ROOF	SURFMIST (OFF WHITE) SOLAR REFLECTIVE INDEX (SRI) 82	SURFMIST 
FASCIA TO AUTO WASH	PAINT FINISH	YELLOW "HAPPY WASH" BRAND COLOUR 





COLOURS & FINISHES SCHEDULE

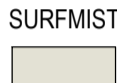
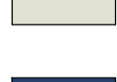

CANOPY		
LOCATION	FINISHES	COLOUR
COLUMNS	UNICOTE DECORATIVE PURPOSE FOLDED METAL SHEETING	
SOFFIT	STRAMIT MONOPANEL	COLORBOND SHALE GREY 
ROOF	ZINCALUME KLIPLOK	
FASCIA	ACM (NON PE CORE)	WHITE 16 

FENCING		
	CFC PAINTED FINISH	SURFMIST 
	COLORBOND METAL SHEETING	

REFUSE ENCLOSURE		
	ALUMINIUM SLATS	BLACK 

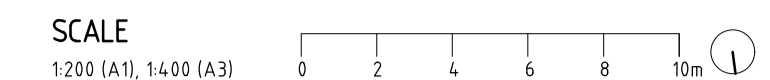
COLOURS & FINISHES SCHEDULE

CARWASH & PLANT ROOM		
LOCATION	FINISHES	COLOUR
FASCIA	PAINT FINISH	YELLOW "HAPPY WASH" BRAND COLOUR 
COLUMNS AND PRECAST WALLS	PAINT FINISH	BP WHITE 
ROOF	ZINCALUME KLIPLOK	
PLANT ROOM ROLLER DOOR	COLORBOND SURFMIST	SURFMIST 

DOG WASH		
COLUMNS	PAINT FINISH	SURFMIST 
TUBULAR PICKET FENCING	COLORBOND	
FASCIA	PAINT FINISH	DOG WASH BRAND BLUE COLOUR 

NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD

This drawing must be read in conjunction with all other contract documents including the project specifications, schedules and any instructions issued during the course of the contract. The Contractor must verify all dimensions on site and check the location of services before commencement of work. The Contractor is to notify the Superintendent of any discrepancies between the drawings or specifications. Drawings are not to be used for construction unless identified in the title block as 'for construction'. All drawings to be read at A1 unless otherwise stated. Drawings are intended for digital setup and DWG files will be issued upon request. Copyright Oxygen Pty Ltd



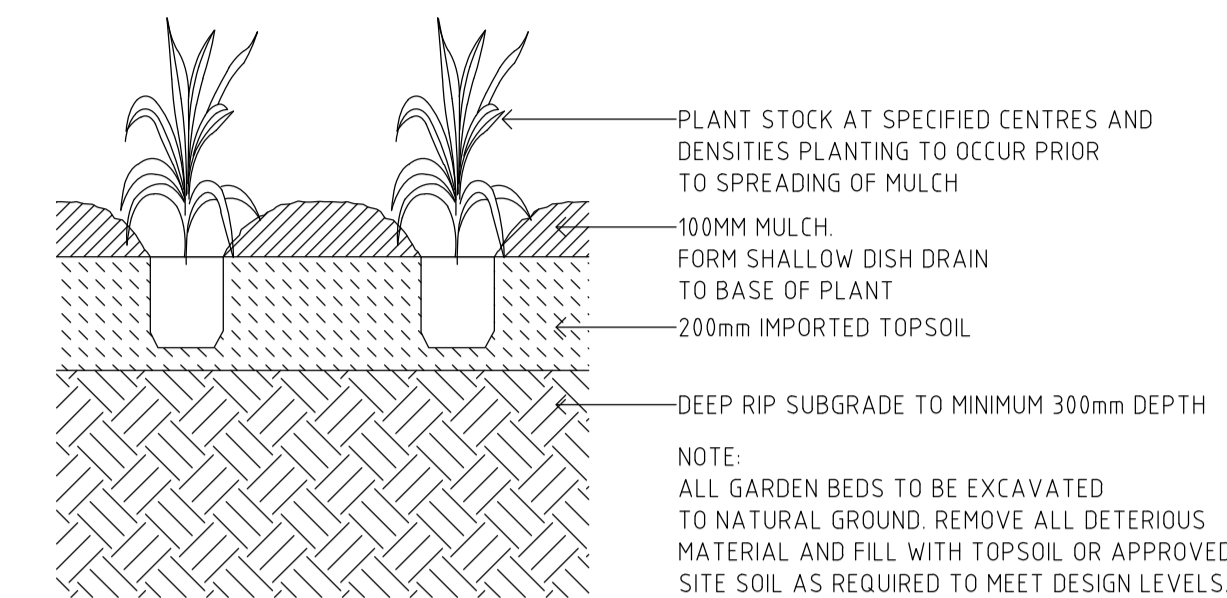
NOTES

EXISTING SERVICES
THE CONTRACTOR MUST LOCATE AND MARK ALL UNDERGROUND SERVICES BEFORE COMMENCING WORK ON SITE.

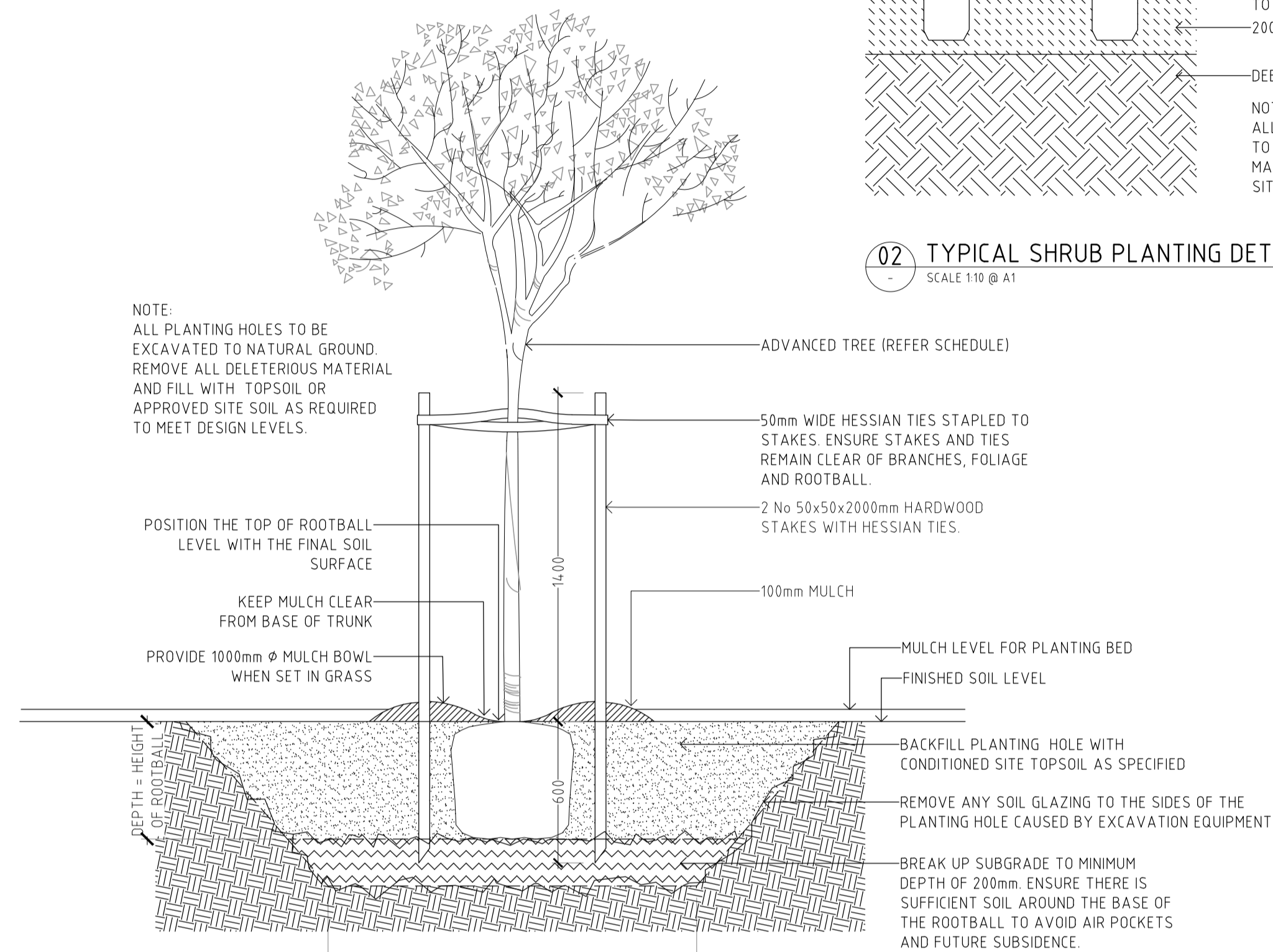
TREE PLANTING
PREPARE TREE HOLES TO A MINIMUM SIZE OF THE DEPTH OF THE ROOTBALL x 1m WIDE AND BREAK THE SUBGRADE TO A MINIMUM DEPTH OF 200MM BELOW. TAKE PARTICULAR CARE TO BREAK UP ANY GLAZING TO SIDES OF TREE HOLE. FINISH THE ROOTBALL LEVEL WITH THE FINAL SURROUNDING SOIL LEVEL AND BACKFILL THE PLANTING HOLE WITH SITE TOPSOIL BLENDED WITH 20% ORGANIC MIX. PROVIDE A 1m DIAMETER MULCHED WATERING BOWL TO THE BASE OF THE TREE. STAKE TREES WITH 2 No. 2500x50x50 HARDWOOD STAKES AND TIE WITH 50mm HESSIAN TIES SECURELY STAPLED TO THE STAKES. ENSURE STAKES AND TIES REMAIN CLEAR OF BRANCHES, FOLIAGE AND ROOTBALL.

PLANTING BEDS
CULTIVATE EXISTING GROUND TO A MINIMUM DEPTH OF 300 MM AND PLACE 300MM IMPORTED 'ORGANIC MIX'. PLACE PLANTS IN THE CENTRE OF THE PLANTING HOLE AND FINISH THE TOP OF THE ROOT BALL LEVEL WITH THE FINISHED SURFACE OF THE SURROUNDING SOIL. APPLY TERRACOTTE FERTILISER TO MANUFACTURERS RATES AT TIME OF PLANTING AND AFTER PLANTING PLACE A 100MM MINIMUM DEPTH OF COTTAGE MULCH. THOROUGHLY WATER PLANTS BEFORE AND IMMEDIATELY AFTER PLANTING, AND AS REQUIRED TO MAINTAIN HEALTH AND VIGOUR. AVERAGE 2 PLANTS/M²

IRRIGATION
PROVIDE AN AUTOMATIC IN-LINE DRIP IRRIGATION SYSTEM TO ALL PLANTING BEDS AND TREES. DRIP IRRIGATION SPECIFIED AS NETAFIM TECHLINE 16 POLY TUBE 16Lph @ 0.5M SPACINGS OR SIMILAR APPROVED. FOR ALL TREE PLANTING INSTALL AT BASE OF TREE 4No 4Lph PC DRIP EMITTERS ON 13MM POLY LOOP (OR INLINE EQUIVALENT). ALL POLY TUBING TO BE LAID ON SURFACE AND COVERED WITH MULCH. PROVIDE BACKFLOW PREVENTION, AUTOMATIC CONTROLLER AND OTHER DEVICES AS REQUIRED.



02 TYPICAL SHRUB PLANTING DETAIL
SCALE 1:10 @ A1



01 TYPICAL TREE IN MULCH DETAIL
SCALE 1:20 @ A1



LEGEND

NEW	EXISTING
NEW TREE (REFER DETAIL 01)	PROPERTY BOUNDARY
PLANTING (REFER DETAIL 02)	EXISTING TREE
GARDEN BED (MULCH AND TREES AS SHOWN)	
IRRIGATED TURF	

TREE SCHEDULE

CODE	BOTANIC NAME	SPACING	SIZE	QTY
EL	<i>Eucalyptus leucoxylon rosea</i> 'Scarlet'	AS SHOWN	45L	1
LN	<i>Lagerstroemia indica</i> 'Natchez'	AS SHOWN	45L	16
PC	<i>Pistacia chinensis</i>	AS SHOWN	45L	3

PLANT SCHEDULE

CODE	BOTANIC NAME	SPACING	SIZE	QTY
BI	<i>Banksia integrifolia</i> 'Roller Coaster'	2.0/m ²	14.0mm	63
CS	<i>Callistemon sieberi</i>	2.0/m ²	14.0mm	34
EA	<i>Eremophila maculata</i> 'Apricot Delight'	2.0/m ²	14.0mm	57
EW	<i>Eremophila maculata</i> x <i>alternifolia</i> 'Wild Berry'	2.0/m ²	14.0mm	56
PE	<i>Poa labillardieri</i> 'Eskdale'	2.0/m ²	14.0mm	72
RE	<i>Russelia equisetifolia</i> 'Dwarf Form'	2.0/m ²	14.0mm	41
SA	<i>Syzygium australe</i> 'Tiny Trev'	2.0/m ²	14.0mm	25
WM	<i>Westringia fruticosa</i> 'mundi'	2.0/m ²	14.0mm	62
WS	<i>Westringia fruticosa</i> 'Smokey'	2.0/m ²	14.0mm	49

TREES



Pistacia chinensis
Chinese Pistachio
Height: 8m
Width: 6m

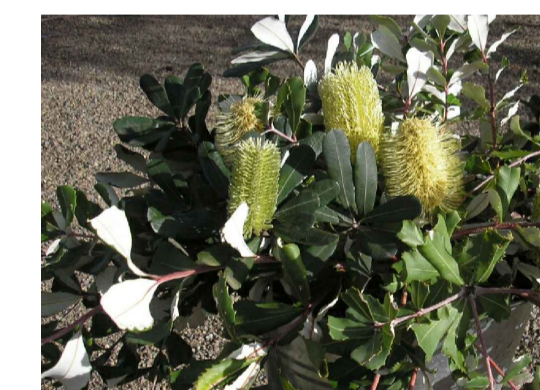


***Lagerstroemia indica* x *fauriei* 'Natchez'**
Crape Myrtle
Height: 8m
Width: 6m



***Eucalyptus leucoxylon rosea* 'Scarlet'**
Red Flowering Yellow Gum
Height: 8m
Width: 4m

PLANTS



***Banksia integrifolia* 'Roller Coaster'**
Banksia
Height: 0.1m
Width: 4m



Callistemon sieberi
River Bottlebrush
Height: 2.5-3m
Width: 1.8-2m



***Eremophila maculata* 'Apricot Delight'**
Spotted Emu Bush
Height: 0.5m
Width: 1-2m



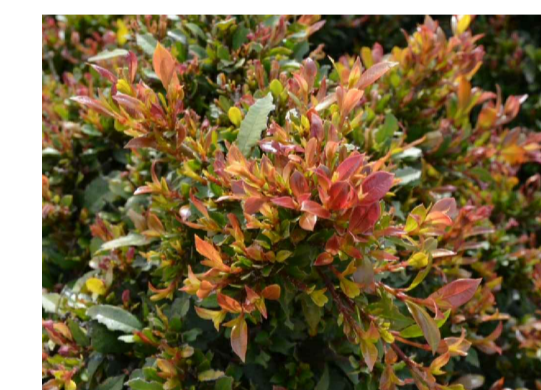
***Eremophila maculata* x *alternifolia* 'Wild Berry'**
Emu Bush
Height: 1.2m
Width: 1.5m



***Poa labillardieri* 'Eskdale'**
Tussock Grass
Height: 0.4-0.5m
Width: 0.4-0.5m



***Russelia equisetifolia* 'Dwarf Form'**
Coral Plant
Height: 1.8m
Width: 0.6m



***Syzygium australe* 'Tiny Trev'**
Lilly Pilly
Height: 0.75-1m
Width: 1m



***Westringia fruticosa* 'mundi'**
Coastal Rosemary
Height: 0.4-0.5m
Width: 1.5m



***Westringia fruticosa* 'Smokey'**
Coastal Rosemary
Height: 1.5m
Width: 1.5m

oxygen

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CLIENT: PEREGRINE CORPORATION
ARCHITECTS: ADS ARCHITECTS



PROJECT: HEATHFIELD OTR
drawing title: LANDSCAPE PLAN

15.04.7.088

ISSUE: DRAFT

ISSUE	DATE	ISSUE	DWN	CHK	APP
8	22.12.21	FOR PLANNING APPROVAL	EH	JH	JH
	05.08.22	FOR PLANNING APPROVAL	EH	JH	JH



SHADOW DIAGRAM 12.00PM
WINTER SOLSTICE 21 JUNE
 1:200 AT A1

- approximate existing shadow on the ground cast by current development
- approximate additional shadow on the ground cast by proposed development

L O N G W O O D R O A D

NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD

0 1 2 5 10 15m
 Scale 1:200 at A1



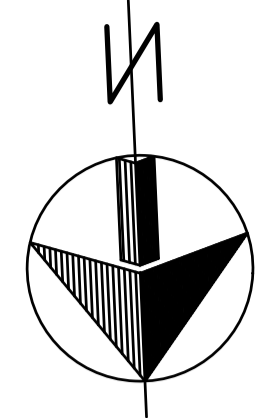
SHADOW DIAGRAM 9.00AM
WINTER SOLSTICE 21 JUNE
 1:200 AT A1

- approximate existing shadow on the ground cast by current development
- approximate additional shadow on the ground cast by proposed development

l o n g w o o d r o a d

NEW SERVICE STATION COMPLEX
160 LONGWOOD ROAD, HEATHFIELD





DISCHARGE STORMWATER INTO THE ROLL OVER KERB IN ACCORDANCE WITH COUNCIL REQUIREMENTS.

PROVIDE Ø100mm OUTLET RESTRICTOR ORIFICE TO OUTLET OF TANK TO RESTRICT FLOW TO 20.00L/SEC. STORM EVENTS GREATER THAN DESIGN OUTFLOW TO BACK UP WITHIN DETENTION SYSTEM.

BUILD UP COUNCIL VERGE TO SUIT NEW ACCESS

BUILD UP COUNCIL VERGE TO SUIT NEW ACCESS

BUILD UP COUNCIL VERGE TO SUIT NEW ACCESS

BUILD UP COUNCIL VERGE TO SUIT NEW ACCESS

PROVIDE NEW CONCRETE CROSSOVER IN ACCORDANCE WITH OPT1 AND COUNCIL SPECIFICATIONS. (TYPICAL)

BUILD UP COUNCIL VERGE TO SUIT NEW ACCESS

PROVIDE UNDERGROUND 'SPEL HYDROSYSTEM SHS.2200/9' SEPARATOR OR SIMILAR APPROVED MODEL, CAPABLE OF FULL RETENTION WITH ALARM.
IL (INLET): 475.400
IL (OUTLET): 475.350

PROVIDE UNDERGROUND 'SPEL PURACEPTOR P.040' SEPARATOR OR SIMILAR APPROVED MODEL, CAPABLE OF FULL RETENTION WITH ALARM.
IL (INLET): 475.500
IL (BOTTOM TANK): 475.450

TRW. 475.500
BRW. 472.050

600SQ. JB.
CL. 476.150
IL. 475.470

FL. 475.000

TK. 476.100
WT. 476.000

TK. 476.300
P. 476.200

FL. 474.500

TK. 475.600
WT. 475.500

600SQ. GS. (5)
CL. 475.500
IL. 474.600

TRW. 474.700
BRW. 472.450

FL. 474.700

TK. 475.800
WT. 475.700

TRW. 475.500
BRW. 473.000

TK. 476.300
P. 476.200

TK. 475.800
WT. 475.700

TRW. 475.900
BRW. 475.000

P. 476.100

P. 476.800

TRW. 479.050
BRW. 476.000

TK. 476.900
P. 476.800

TRW. 479.050
BRW. 476.000

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

TRW. 479.280
BRW. 478.750

P. 479.100

TK. 479.600
P. 479.500

TK. 479.050
WT. 478.950

LEGEND

- CONCRETE PAVEMENT
- ASPHALT PAVEMENT
- EXISTING SPOT LEVEL
- EXISTING CONTOUR
- EMBANKMENT/BATTER (GRADE BANKS 1:2 MAX. UN.O.)
- 100 HIGH CONCRETE KERB & GUTTER
- 100 HIGH CONCRETE KERB
- STORMWATER PIPE
- STORMWATER PIPE (SEALED)
- SELECTED Ø150 DOWNPIPE
- SURFACE INSPECTION OPENING
- (GS) 450SQ. GRATED SUMP (UNO)
- (JB) 450SQ. JUNCTION BOX (UNO)
- SELECTED RETAINING WALL
- 300 WIDE GRATED TRENCH DRAIN
- KERB RAMP
- DESIGN LEVEL
- T.K. TOP OF KERB
- W.T. WATER TABLE
- PAVEMENT
- T.R.W. TOP OF RETAINING WALL
- B.R.W. BOTTOM OF RETAINING WALL
- I.L. INVERT LEVEL
- C.L. COVER LEVEL
- F.F.L. FINISHED FLOOR LEVEL
- B.L. BENCH LEVEL
- N.S. NATURAL SURFACE LEVEL

NOTE:

THIS IS A PLANNING DRAWING ONLY. FURTHER ENGINEERING DESIGN INCLUDING SPECIFICATIONS, SIZING AND STORMWATER INVERTS TO BE PROVIDED PRIOR TO BUILDING RULES ASSESSMENT AND CONSTRUCTION.

THE LOCATION OF EXISTING STRUCTURES ADJACENT TO THE AREA OF CONSTRUCTION ARE TO BE CHECKED ON SITE BY THE BUILDER / CONTRACTOR. SHOULD A RISK OF POTENTIALLY UNDERMINING AN EXISTING STRUCTURE EXIST, THIS OFFICE IS TO BE NOTIFIED IMMEDIATELY.

BEWARE OF UNDERGROUND SERVICES. THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN. CONTRACTOR TO LOCATE AND CONFIRM DEPTH OF ALL EXISTING SERVICES PRIOR TO CONSTRUCTION.

PD	FOR PLANNING APPROVAL	BF	JB	05.05.23
PC	FOR PLANNING APPROVAL	BF	JB	30.08.22
PB	FOR PLANNING APPROVAL	BF	JB	24.01.22
PA	PRELIMINARY ISSUE	BF	JB	21.12.21
No	REVISION	DRAWN	CHE'KD	DATE

PROJECT
PROPOSED OTR SERVICE STATION
 AT: 160 LONGWOOD ROAD,
 HEATHFIELD
 FOR: PC INFRASTRUCTURE

DRAWING TITLE
CIVIL PLAN

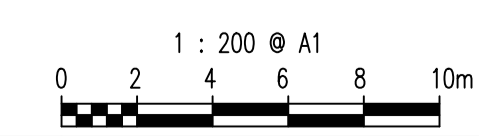
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◆ Geotechnical	◆ Hydraulics
◆ Environmental	◆ Forensic
◆ Structural	◆ Construction Assist
◆ Mechanical	◆ Vertical Transport
◆ Electrical	

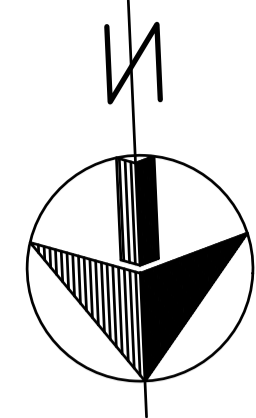
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DATE	DEC'21	2112097-C01/PD
ENGINEER	BF	
CHECKED	AG	

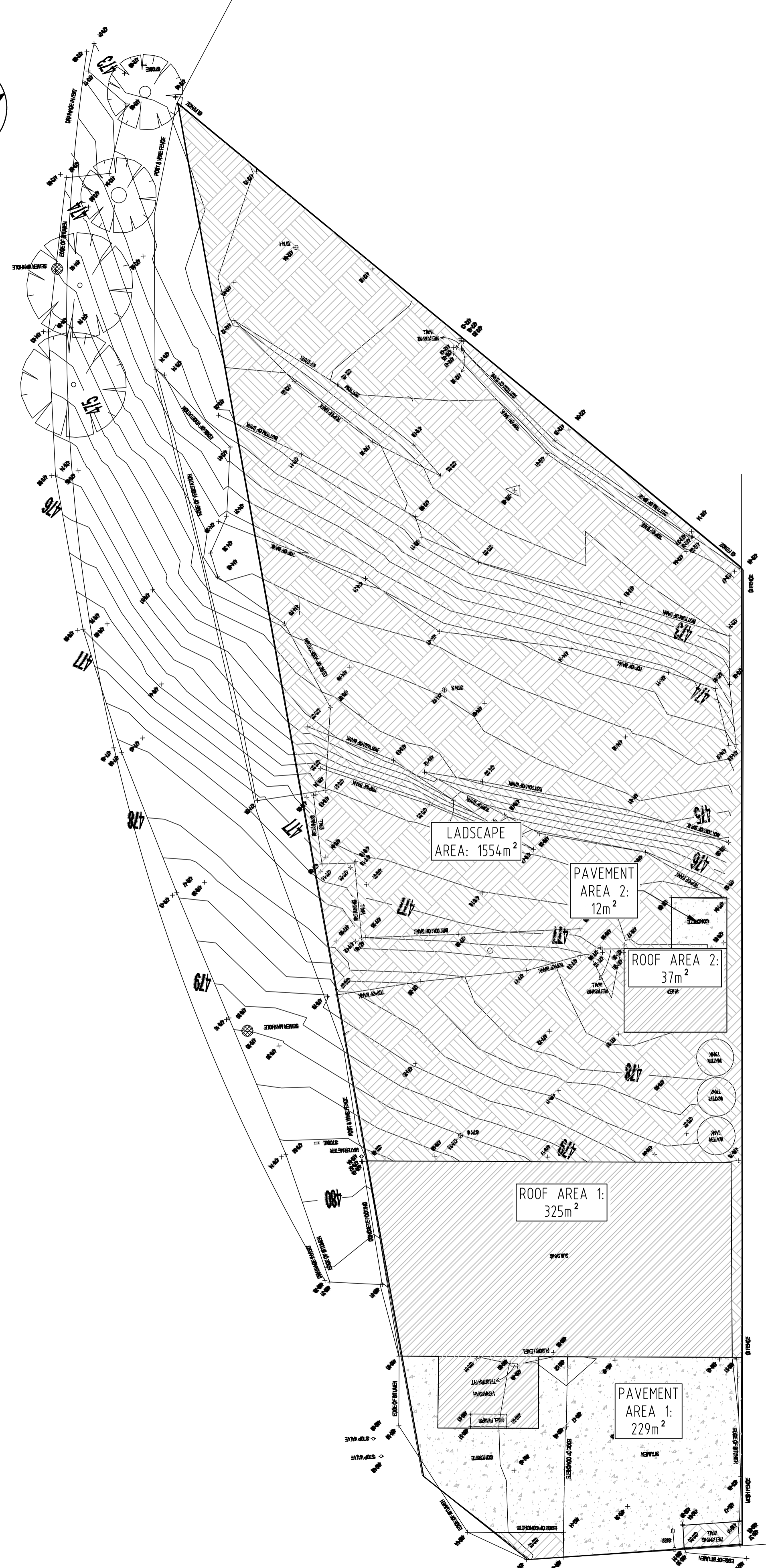
CIVIL PLAN
1:200





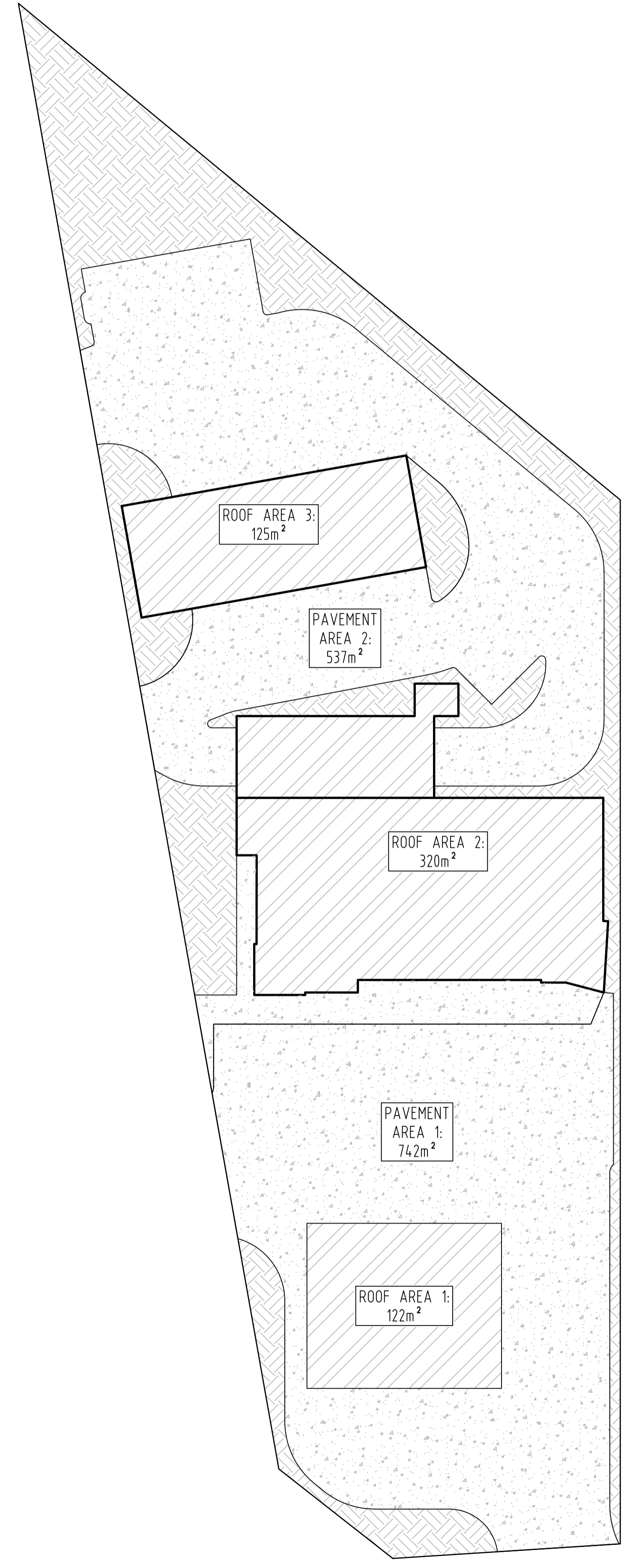
LEGEND

- LANDSCAPING
- ROOF
- PAVEMENT



PRE-DEVELOPMENT AREA CATCHMENT AREA (m ²)	
ROOF	362
PAVING	241
LANDSCAPING	1554
TOTAL:	2157

PRE-DEVELOPMENT CATCHMENT
1:200



POST-DEVELOPMENT AREA CATCHMENT AREA (m ²)	
ROOF	567
PAVING	1279
LANDSCAPING	311
TOTAL:	2157

POST-DEVELOPMENT CATCHMENT
1:200

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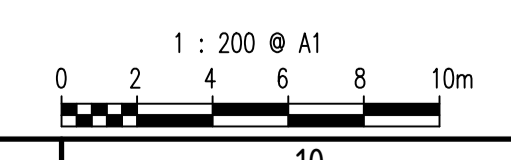
PROJECT
PROPOSED OTR SERVICE STATION
AT: 160 LONGWOOD ROAD,
HEATHFIELD
FOR: PC INFRASTRUCTURE

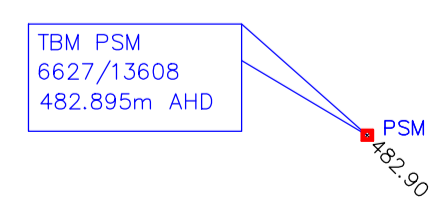
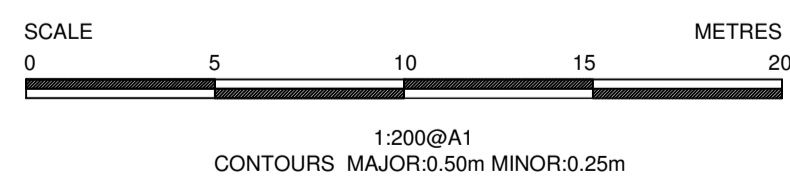
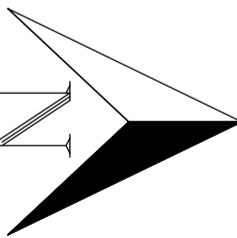
DRAWING TITLE
CATCHMENT PLAN

◆ Civil	◆ Fire
◆ Geotechnical	◆ Hydraulics
◆ Environmental	◆ Forensic
◆ Structural	◆ Construction Assist
◆ Mechanical	◆ Vertical Transport
◆ Electrical	

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PROJECT:	DETAIL SURVEY CNR LONGWOOD RD SCOTT CREEK RD, HEATHFIELD SA 5153
DRAWING TITLE:	20221005_ACS_HEATHFIELD DETAIL
DRAWING NO.:	20221005_ACS_HEATHFIELD DETAIL.dwg

SCALE 1:200 SHEET SIZE A1
DATE OF ISSUE: 05/10/2022 DRAWING REV: 0
SHEET 1 OF 1
SURVEYOR: BM
DRAWN BY: BM
APPROVED BY: JD
SURVEY REF.:
CAD REF.:
<small>HORIZONTAL DATUM: MGA2020, PSM 6627/13608, CADASTRAL DATA VERTICAL DATUM: PSM 6627/13608 482.895m AHD</small>

REAL PROPERTY ACT, 1886



The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.



Certificate of Title - Volume 6003 Folio 528

Parent Title(s) CT 5152/27
Creating Dealing(s) RTC 10829257
Title Issued 13/02/2008 Edition 3 Edition Issued 13/07/2021

Estate Type

FEE SIMPLE

Registered Proprietor

OTR 346 PTY. LTD. (ACN: 645 444 846)
OF 270 THE PARADE KENSINGTON PARK SA 5068

Description of Land

ALLOTMENT 41 DEPOSITED PLAN 73422
IN THE AREA NAMED HEATHFIELD
HUNDRED OF NOARLUNGA

Easements

NIL

Schedule of Dealings

NIL

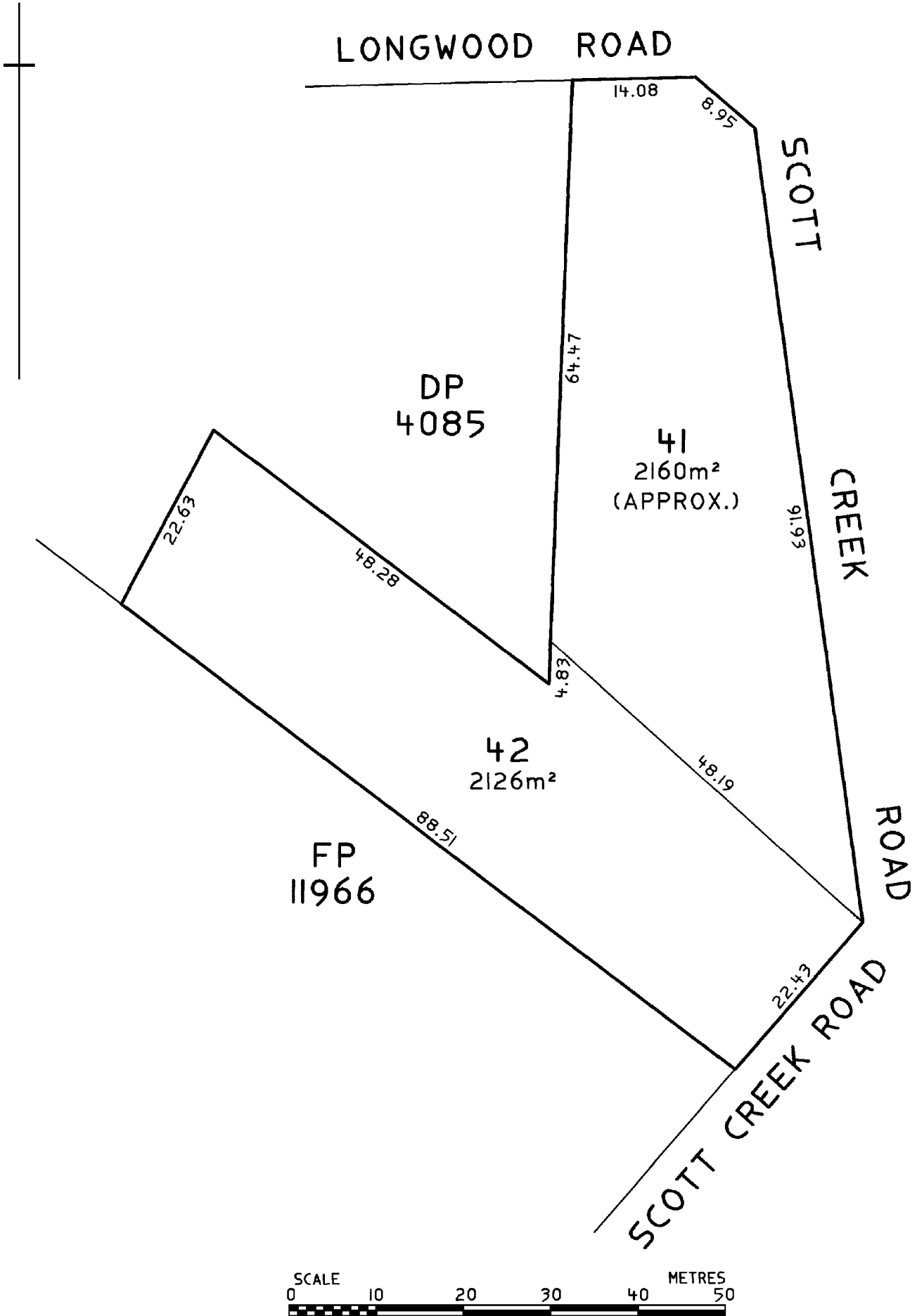
Notations

Dealings Affecting Title NIL
Priority Notices NIL
Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G113/2005

Administrative Interests NIL





4 February 2022

Ms A Styles
Strategy and Development
Adelaide Hills Council

Lodged online via SA Planning Portal

Dear Alisa,

Development Application - New OTR Retail Fuel Outlet at 160 Longwood Road, Heathfield


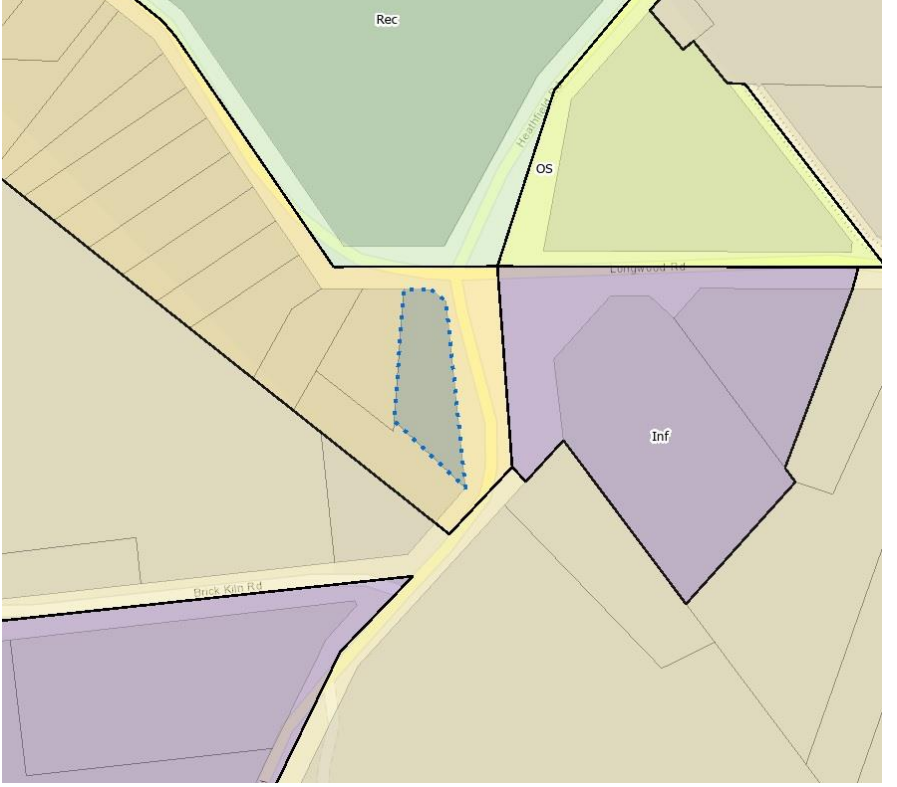
Thank you for the opportunity to discuss our proposed development on the above-mentioned land in a meeting held at Council on 5 May 2021. Preliminary feedback provided during that meeting has been considered by the applicant and forms the basis of this development application.

Accompanying this letter and comprising our development application to be lodged via the SA Planning Portal are the following documents:

- Site Plan (1 sheet), and Elevations (2 sheets) prepared by ADS Architects.
- Copy of Certificate of Title Register Book Volume 6003 Folio 528.
- Environmental Noise Assessment prepared by Sonus, dated December 2021
- Site Traffic Impact Assessment (TIA) prepared by Stantec Consultants, dated January 2022
- Civil works plans and a stormwater management plan prepared by TMK, dated January 2022
- Landscape Plan prepared by Oxigen, dated December 2021
- Native Vegetation Assessment prepared by Jeremy Tiller, Environmental Management Consultant.

I trust that the material provided with this letter is sufficient to allow Council to commence its assessment of the proposed development.

EXECUTIVE SUMMARY OF SITE

Site Address	<p>The address of the site is lot 160 Longwood Road, Heathfield.</p>  <p>The subject land is described in Certificate of Title Volume 6003 Folio 528 as being allotment 41 in Deposited Plan 73422.</p>
Local Government	<p>Adelaide Hills Council</p>
Zoning	 <p>The site is located within the Rural Neighbourhood Zone which encompasses the entirety of the subject land and prevails as a strip west of the subject land on the southern side of Longwood Road. The adjacent land on the northern side of Longwood Road is located within the</p>

	Recreation Zone, land on the eastern side of Scott Creek Road is located within the Infrastructure Zone and land south of the site is located within the Productive Rural Landscape Zone.
Sub Zone	Adelaide Hills
Local Variation (TNV)	<ul style="list-style-type: none"> • Minimum Site Area (2,000sqm)
Overlays	<ul style="list-style-type: none"> • Hazards (Bushfire – High Risk) • Hazards (Flooding – Evidence Required) • Mount Lofty Rangers Water Supply Catchment (Area 2) • Native Vegetation • Prescribed Wells Area • Regulated and significant Tree

DEVELOPMENT DESCRIPTION

The proposed development involves the establishment of a Retail Fuel Outlet.

Control Building	<p>A control building of approximately 250m² in total, including:</p> <ul style="list-style-type: none"> • retail display and sales areas. • Cool room, storeroom, freezer, preparation area and amenities.
Fuel Canopies & Refuelling	Fuelling facilities as shown on the site plan, comprising a retail fuel canopy and 2 rows of fuel pumps with 8 fuel filling positions.
Fuel Tanks	The fuel storage capacity will be 70,000 litres in 1 tank.
Automated and manual Car Wash facility	The installation of one (1) auto car wash facility and three (3) manual car wash bays with associated plant room and the installation of one (1) two bay vacuum facility and one (1) dog wash bay will be located adjacent the auto car wash. Use of the manual carwash, vacuum and dog wash facilities will be limited between the hours of 7am and 10pm in line with the recommendations in the Sonus Noise assessment.
Car Parking, refuse and landscaping	<p>The site will provide 9 shared car parking spaces; including 1 disability success park adjacent to the control building entrance.</p> <p>A designated refuse storage space is provided adjacent the western boundary of the subject land. The refuse area is proposed to be screened from sight by a 2.1 metre high black slatted fence.</p> <p>The surrounding forecourt, car wash and driveway areas will be lit and landscaping will be provided at site frontages and at appropriate locations within the site. A Landscape Plan will be provided with this application.</p>
Signage	<p>The following free-standing signage element forms part of the proposed development:</p> <ul style="list-style-type: none"> • A 7 metre OTR pylon sign, with back illumination, LED lit white fuel prices and 2.5m x 2m LED screen to be installed at the northern end of the site adjacent Longwood Road; <p>The appearance of the signage elements are depicted on the Site Plan and elevations, respectively, accompanying this application.</p>

Construction and operation of the proposed development will consider and address the following matters:

<p>Road Access</p>	<p>Site access will be provided via 4 separate vehicle crossovers to be constructed in accordance with Council standards.</p> <ul style="list-style-type: none"> • An ingress only crossover from Scott Creek Road to be provided at the southern end of the site; • An egress only crossover to Scott Creek Road to be provided centrally within the eastern site frontage; • A two-way ingress / egress crossover to and from Scott Creek Road to be provided at the northern end of the site; and • A two-way ingress / egress crossover to and from Longwood Road at the northern end of the site. <p>The road access and internal site configuration has been reviewed by Stantec Consultants for the purpose of ensuring that the site layout will allow safe and efficient access by all relevant classes of vehicle for fuel delivery, rubbish removal and customer access, as further detailed later in this letter. The Stantec Traffic Impact Assessment (TIA) accompanying this report provides a full assessment of the traffic impacts associated with the development.</p>
<p>Hours of Operation</p>	<p>Retail Fuel Outlet and auto carwash: 24 hours per day, 7 days per week. Use of the manual carwash bays, vacuum facility and dog wash will be limited between the hours of 7am and 10pm in line with the recommendations of the Sonus Noise Assessment.</p>
<p>Noise</p>	<p>In the operation of the site we will comply with the <i>Environment Protection (Noise) Policy 2007</i>. As set out later in this letter an Environmental Noise Assessment has been prepared by Sonus. The recommendations of that report have been taken into account in relation to the design and operation of the proposed development.</p>
<p>Environmental Practices</p>	<p>The proposal incorporates best environmental practices with respect to vehicle refuelling facilities.</p> <p>Fuel storage tanks will be fitted with vapour stage 1 recovery systems that ensure air quality is not compromised.</p> <p>The fuel infrastructure consists of double-walled fibreglass tanks. The underground fuel and LPG tanks are sited to comply with AS/NZ S1596 and AS1940. These tanks carry a manufacturer warranty against internal and external corrosion of 40 years.</p> <p>Fuel variances are carefully monitored for signs of leakage. We utilise automatic tank gauging (ATG) which automatically detects discrepancies in the levels in the tanks, thereby allowing the operator to respond proactively to any anomalies.</p> <p>Our fuel lines are double walled and in respect of the fuel lines from the underground storage tanks to the dispensers, these fuel lines are fitted with a mechanical pressure leakage detection mechanism. The system tests the pressure within the fuel lines when the dispensers are not in use and should the system detect pressure anomalies, it will automatically shut off the fuel pump to prevent fuel from being pumped from the tanks and minimize any potential for fuel leakage.</p> <p>The fuel line from the tanker fill box to the underground storage tank is</p>

	<p>single walled and is not fitted with pressure leakage detection. We monitor the potential for leakage and spillage through visual inspection when fuel is dispensed from the fuel delivery vehicle to the tanker loading box and by submitting our daily fuel reconciliation data for Statistical Inventory Reconciliation Analysis, which is completed by a qualified third party.</p> <p>These measures enable us to identify and manage risks of leakage.</p> <p>We understand that all equipment installed at our sites is classified as Level 1 equipment pursuant to section 3, Table 3.1 of Australia Standard 4897: 2008.</p>
Stormwater	<p>Stormwater from high-risk areas will be diverted through a Class 1 full retention system comprising a Spel Puraceptor or approved equivalent, with no bypass and alarm.</p> <p>Sludge collected by the Class 1 full retention system will be pumped out on an annual maintenance schedule and disposed of by a qualified contractor.</p> <p>Civil engineering plans and calculations have been prepared by TMK. The plans demonstrate how stormwater will be managed as part of the proposed development.</p>
Food Odour	<p>The proposal will not generate any nuisance for neighbours through food odour or other air pollution impacts of food preparation or service. The proposed development will offer groceries and prepared food but will not offer “co-branded” quick-service restaurant food such as Oporto or Hungry Jacks.</p> <p>A large number of sites are operated by Peregrine across South Australia which require the preparation of food on-site. To date we have not received any food odour complaints from the EPA. The food preparation and service elements of the proposed development are not therefore expected to give rise to any material impacts.</p> <p>The mechanical design of canopies and kitchen extraction systems will be designed by a qualified engineer and will comply with the Building Code of Australia and the Australian Standard AS 1668.2:2012 (which is a building rules certification requirement). We adopt best industry practices in this regard to maintain the integrity of our franchise brands.</p> <p>Having regard to the EPA Guidelines for Separation Distances (December 2007), we note that this proposal will not generate the volume of deep frying and other food processing activities set by the Guidelines (30kg of deep frying per hour), such that any air separation distances apply.</p>

Site and Locality

The subject land is located on the south western corner of the intersection of Longwood Road and Scott Creek Road.

The site is irregular in shape with frontages to Longwood Road (23 metres) and Scott Creek Road (92 metres) and a total area of approximately 2160m². The northern portion of the site fronting Longwood Road is developed with a single storey commercial building trading as “Heathfield Motors”, a motor repair station. The motor repair station includes mechanical servicing bays, two petrol bowsers beneath a small fuel canopy, a concrete and brick paved forecourt fronting Longwood and Scott Creek Roads, a 3.3 metre freestanding pylon sign,

and on-site car parking. Other improvements on the site include a small outbuilding and several rainwater tanks. The bulk of the land south of the motor repair station is vacant and this portion of the site and the Scott Creek Road reserve is populated with trees and vegetation.

The motor repair station is serviced by two 2-way vehicle crossovers from Longwood Road and Scott Creek Road. The vacant portion of the site is serviced with two further unformed single crossovers from Scott Creek Road.

The subject land slopes down towards the southern boundary of the site from a point adjacent the rear of the motor repair station building.

The land forms part of the recently created Rural Neighbourhood Zone under the Planning and Design Code that encompasses the entirety of the subject land and prevails as a strip west of the site along the southern side of Longwood Road. As such the locality west of the subject land is characterised by low density single storey detached dwellings on medium to large, vegetated allotments.

The locality north of the subject land across Longwood Road is dominated by the Heathfield Oval, Heathfield netball courts and further to the north west the Heathfield High School. Two large water storage tanks are located on heavily a vegetated site on the southern side of Scott Creek Road. Land to the south of the site is also heavily vegetated before giving way to an industry use in the form of the Heathfield Resource Recovery Centre.



Figure 1: View of the site looking south from Longwood Road.
(Google Streetview)



Figure 2: View of the southern portion of the site looking south west from Scott Creek Road (Google Streetview)

Planning Assessment

This section assesses the proposal against relevant provisions of the Planning and Design Code under the PDI Act 2016.

Land Use

The proposal seeks to establish a Retail fuel Outlet on the subject land. A Retail Fuel Outlet is defined in the Land Use Definitions Table included in Part 7 of the Planning and Design Code as follows:

Means land use for:

- (a) The fuelling of motor vehicles involving the sale by retail of petrol, oil, liquid petroleum gas, automotive distillate and any other fuels; and*
- (b) The sale by retail of food, drinks and other convenience goods for consumption on or off the land; and*

Both are operated as and constitute one integrated facility where on-site facilities, systems and processes, car parking and access and egress are all shared.

The use may also include one or more of the following secondary activities:

- (c) The washing and cleaning of motor vehicles;*
- (d) The washing of other equipment or things including dogs and other pets;*
- (e) The provision (on a paid or free basis) of facilities for charging electric vehicles;*
- (f) The hiring of trailers;*
- (g) Selling of motor vehicles accessories and/or parts; and*
- (h) The installation of motor vehicle accessories and/or parts.*

All of the components outlined in the development description section above fit within the definition of a Retail Fuel Outlet. Furthermore, these components will be operated under a single management and as one integrated facility, with the various elements and components physically integrated so that customers can move freely between the elements. The elements share facilities such as car parking areas, vehicles circulation areas and toilets.

A Retail Fuel Outlet is not specifically listed in any of the Development Classification Tables. It is therefore a Code Assessed - Performance Assessed Development and is subject to assessment against all relevant Rural Neighbourhood Zone, Adelaide Hills Sub-Zone and General Development Policies in addition to any applicable Overlays.

The 7 metre freestanding pylon sign supports the operation of the Retail Fuel Outlet by informing passing customers of the fuel offers, products and services available from the site. The pylon sign is an advertisement and is a Code Assessed – Performance Assessment form of development.

Consideration has been given to the key aspects of the assessment below.

Rural Neighbourhood Zone

The Desired Outcome (DO 1) for the Rural Neighbourhood Zone primarily seeks the establishment of housing on large allotments in a spacious rural setting, often together with large outbuildings. Limited goods, services and facilities that enhance rather than compromise rural residential amenity are also desired.

Non-residential land uses should be complementary to residential development and compatible with a spacious and peaceful lifestyle for individual households (PO 1.1). Commercial activities should improve community access to services and be of a scale and type to maintain residential amenity (PO 1.2). Non-residential development should be sited and designed to complement the residential character and amenity of the neighbourhood (PO 1.3). Non-residential development should be located and designed to improve community accessibility to services by providing (amongst others) small scale commercial uses such as offices, shops and consulting rooms (PO 1.4).

Building height is no greater than 2 building levels and 9m with a wall height no greater than 7 metres (DTS/DPF 2.1).

Buildings should be setback from primary and secondary street, side and rear boundaries to complement the existing streetscape character and provide space for separation between buildings, landscaping and vegetation (PO 3.1 – PO 6.1).

Advertisements should identify the associated business activity and not detract from the residential character of the locality (PO 10.1).

Adelaide Hills Sub-Zone

The desired outcome for the Adelaide Hills Subzone seeks additional residential and tourist accommodation that retains and embraces the values of the established vegetation as a defining characteristic of the area (DO 1).

The proposed development will accord with the relevant policies of the zone and sub-zone in the following ways:

- By providing improved access to a range of products, services and facilities that will support the existing local community to the south of Stirling.
- The development will facilitate the replacement and rejuvenation of an existing dated non-residential land use with a new non-residential land use that will provide a service to the neighbourhood without compromising the amenity of the locality.
- The scale of the proposed development is appropriate in the context of the size of the subject land at approximately 2160m².
- The proposed control building and supporting infrastructure have been setback from the two street boundaries and have been framed by generous landscaped areas. The landscaping will assist in reducing the visual impact of the built form on the site and will complement the amenity of the surrounding locality.

- The proposed development will be a modern, contemporary facility with a high standard of architectural design. It has been specifically designed with elements to reflect the character of area, including the use of face brickwork, painted weatherboard, glazed façades, rendered concrete and timber look cladding to the fuel canopy pylons. The proposed development will make a significant and positive contribution to the locality.
- The proposed advertising signage is considered to be of an appropriate scale in the context of the size of the subject land and will be compatible with the form of development proposed. The subject land has a high degree of exposure to the public realm with two street frontages and calls for a reasonable configuration of signage. The single 7 metre freestanding pylon sign is constant with other contemporary Retail Fuel Outlets in the Adelaide Hills and is required to inform customers of the fuel offer and other products and services available at the site.
- The acoustic advice prepared by Sonus confirms that the operation of the Retail Fuel Outlet will comply with the requirements of the EPA (Noise) Policy 2007 so as mitigate any interface impacts on the adjoining dwellings to the west within the Rural Neighbourhood Zone.

Overlays

Hazards (Bushfire – High Risk) Overlay – Development should be designed and sited to minimise the threat and impact of bushfires on life and property. Development should facilitate access for emergency service vehicles to aid the protection of lives and assets from bushfire danger. The development has been designed to provide access to emergency service vehicles from two public road frontages. Furthermore, the buildings are within close proximity to both Scott Creek Road and Longwood Road and the site is serviced by mains water. The proposed development does not trigger a referral to the South Australian Country Fire Service.

Hazards (Flooding – Evidence Required) Overlay - Development is sited, designed and constructed to minimise the risk of entry of potential floodwaters where the entry of flood waters is likely to result in undue damage to or compromise ongoing activities within buildings. TMK have been engaged to prepare a stormwater management plan to ensure that any additional stormwater generated by the development is managed appropriately. Civil and stormwater details for the site have been included with this application.

Mount Lofty Rangers Water Supply Catchment (Area 2) Overlay – The development should safeguard Greater Adelaide’s public water supply by ensuring development has a neutral or beneficial effect on the quality of water harvested from secondary reservoirs or diversion weir catchments from Mount Lofty Rangers. The subject land is serviced by both sewer and water mains. As outlined above TMK were engaged to prepare a stormwater management plan to ensure that any additional stormwater generated by the development is managed appropriately. The proposed development will replace an existing land use currently offering the retail sale of fuel all be it on a reduced scale.

The proposal incorporates best environmental practices with respect to the management and operation of Retail Fuel Outlets. The Development Description section above outlines the significant measures that will be taken to ensure that there is no material adverse impact or pollution risk from the delivery, storage and dispensing of fuel on the site. These measures, developed by Peregrine and applied systematically and effectively at OTR sites across South Australia and interstate, enable the risk of any adverse environmental consequences to be identified, monitored, minimised and addressed.

The proposed development is not an activity or class of development that requires referral in this overlay. However, it is noted that Retail Fuel Outlets are referred to the EPA as a

matter of course. The applicant is committed to working with the EPA to ensure all risks to the environment are minimised and addressed.

Native Vegetation Overlay – An environmental management consultant was engaged to undertake a native vegetation assessment of the trees and vegetation both within the Scott Creek Road Reserve and within the rear block of the subject land. A copy of the native vegetation assessment has been included with this application. The assessment concluded:

- Most of the vegetation to be impacted by the proposed development consists of planted and introduced flora species.
- Planted and non-introduced species are not protected under the Native Vegetation Act 1991 and therefore approval, or compliance with the Native Vegetation Regulations 2017, is not required.
- Two individual remnant *Eucalyptus obliqua* (Messmate Stringybark) are located along the Scott Creek Road Reserve near the southern end of the subject land. These trees are naturally occurring and protected under the Native Vegetation Act 1991.
- Removal of the two Stringybark trees would require approval from the Native vegetation Council.

The applicant confirms that the two Stringybark trees located within the Scott Creek Road Reserve adjacent the southern extent of the subject land will be retained and protected as part of the development. On this basis the applicant respectfully submits that a referral to the Native Vegetation Council is not required.

Regulated and Significant Tree Overlay - No regulated or Significant Tree will be removed or impacted by the proposed development.

General Development Policies

Advertisements

The Desired Outcome for Advertisements (DO 1) seeks advertisements and advertising hoardings that are appropriate to context, efficient and effective in communicating with the public, limited in number to avoid clutter, and do not create a hazard. Advertising should be of a size and scale appropriate to the locality they are sited in (PO 1.5).

Advertisements are limited to information relating to the lawful use of land they are located on to assist is the ready identification of the activity or activities on the land and avoids unrelated content that contributes to visual clutter and untidiness (PO 3.1). Light spill from illuminated advertisement should be limited to ensure that impact to sensitive receivers is minimised (PO 4.1).

The signage is appropriate having regard to the guidance and site identification it will provide, to the size and frontages of the site and to the position of the proposed signage, which will prevent it from having any impact on nearby sensitive land uses.

All signage will be directly related to products and services available from the site, there will be no third party advertising.

The lightspill of any illuminated signage will be minimised and retained within the boundaries of the subject land through the use of directional lighting and spill guards.

Freestanding advertisements will be limited to one (1) 7 metre pylon required to inform passing customers of the fuel offer, fuel pricing and range of products and services available from the site. The proposed pylon is compatible with the scale of development and is similar in size to other contemporary Retail fuel Outlets in the Adelaide Hills.

A double sided 2.5m x 2m LED screen is proposed to be installed within the 7 metre pylon. The LED signage panels are compatible with the scale of development and range of products

and services available from the subject land. The LED panels will inform customers of specific products and services available from the subject land. The LED panels will display static advertisements that will not flash, scroll, move or contain animation. The luminance of the panels can be electronically limited to manage and mitigate any impacts on amenity through light spill on the surrounding sensitive land uses.

Design in Urban Areas

The Desired Outcome for Design in Urban Areas (DO 1) seeks a development that positively contributes to the character of the locality, is durable, integrated within the public realm and utilises sustainable techniques and materials to minimise energy consumption. Buildings reinforce corners through changes in setback, articulation, materials, colour and massing including height, width, bulk, roof form and slope (PO 1). The negative visual impacts of plant and equipment, service, loading and waste disposal areas should be screened from view to minimise their impacts (PO 1.4, 1.5).

The development should maximise the opportunities for passive surveillance by providing clear lines of site, appropriate lighting and visually permeable screening wherever practicable (PO 2.1). Soft landscaping and tree planting should be incorporated into the development to enhance the appearance of land and streetscapes (PO 3.1).

The proposed development includes a mix of contemporary architectural elements, materials, colours and finishes which, consistent with their functional purposes and operations, will add interest to the buildings and structures proposed. Differing articulation, with both vertical and horizontal components incorporated into the buildings and structures, will achieve a human scale for pedestrians while allowing drivers to easily interpret the use and address of the buildings.

The extensive landscaped areas proposed around the perimeter and within the site will soften the interface of the proposed development with surrounding areas.

The control building has been specifically designed to address both public frontages of the site. Oxigen Landscape Architects have prepared a landscape plan in support of the development. The plan included with this application provides for a variety of trees and vegetation in generous landscaped throughout the site and within the Scott Creek Road verge. Landscaping at the site will assist in softening and reducing the bulk of the development when viewed from outside of the subject land.

The 24 hour operation of the Retail Fuel Outlet will provide a well lit and inviting environment after dark as well as providing opportunities for passive surveillance which will help to discourage any instances of antisocial behaviour.

Interface Between Land Uses

The Desired Outcome for Interface Between Land Uses (DO 1) seeks development that is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses. Development adjacent to a site containing sensitive receivers should be designed to minimise adverse impacts (PO 1.2). Non-residential development should not impact adjoining sensitive receivers primarily through its hours of operation and should have regard to the nature of the development, the measures taken to mitigate off site impacts and the extent to which the use is desired in the zone (PO 2.1).

Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces and any roof top plant and equipment should be designed to reduce any unreasonable impacts on the amenity of adjoining sensitive receivers (PO 4.1, 4.2, 4.3).

Sonus acoustic engineers have been engaged to undertake an Environmental Noise Assessment of the proposed Retail Fuel Outlet to determine the extent of any noise impacts on the locality which accompanies this application.

The Environmental Noise Assessment finds that:

- The closest noise-sensitive locations are residences to the immediate south and west and on the opposite side of Scott Creek Road.
- Considering noise sources and activities at the site (including mechanical plant, vehicle movement and parking, fuel delivery and waste collection, automatic, manual wash bays, dog wash and vacuum facilities) certain measures are recommended to ensure that noise from the development does not unreasonably impact on the amenity of surrounding residences.

The following measures are recommended in the Environmental Noise Assessment:

- Construction of a 3m high fence on the southern and western boundary. The extent of the fence is shown on page 12 of the assessment and should be constructed from no less than 0.42BMT sheet steel and sealed airtight at all junctions.
- Reduce the noise from any alarms, amplified music played outside (under the canopy) as far as practical and ensure all inspection points, gated trenches etc. are correctly fixed.
- Incorporation of solid screens around the mechanical services plant and equipment area extending at least 800mm above the tallest piece of equipment, such screens to be sealed airtight along vertical joints and constructed of sheet steel or material with an equivalent or greater surface density.
- Restrict use of the manual wash bays, dog wash and vacuum facilities to the daytime period of the Policy, that is 7:00am to 10:00pm and use of specific constriction materials for the walls and roof of the auto car wash and install glass doors to the entry and exit which automatically close during operation.
- Ensure the car wash plant room is fully enclosed and the walls, ceiling and doors (when closed) are sealed airtight.
- Restrict hours of deliveries, including fuel to daytime hours under the *Environment Protection (Noise) Policy 2007*, that is 7:00am to 10:00pm.
- Restrict hours for waste collection to the hours between 9:00am and 7:00pm on a Sunday or public holiday, and 7:00am and 7:00pm on any other day.

The Environmental Noise Assessment finds that with these measures in place, the facility has been located and design to prevent adverse impact and conflict between land uses, protect desired land uses and community health and amenity, thereby achieving the relevant provisions of the Planning and Design Code related to environmental noise.

The plans accompanying this application reflect the location and insulation measures recommended under the Environmental Noise Assessment. As far as the recommendations relate to restricted hours of fuel delivery, waste collection, manual carwash, dog wash and vacuum facilities, the applicant would abide by any conditions which might be included in a Development Plan Consent for the purpose of implementing these operational restrictions.

The proposed development will be operated to ensure that there will be no detrimental impacts through food odour or other air pollution on account of food prepared and sold from within the control building. The mechanical design of canopies and extraction systems will be designed by a qualified engineer and will comply with the Building Code of Australia and the Australian Standard AS 1668.2:2012.

Transport, Access and Parking

The General Development Policies for Transport, Access and Parking seek to provide a comprehensive, integrated and connected transport system that is safe, sustainable, efficient, convenient and accessible to all users (DO 1). The development should be sited and

designed so that loading, unloading and turning of all traffic avoids interrupting the operation of and queuing on public roads and pedestrian paths (PO 1.4).

Driveways, access points and parking areas are designed and constructed to allow adequate movement and manoeuvrability having regard to the types of vehicles that are reasonably anticipated (PO 3.8). On-site vehicle parking and specifically marked accessible car parking spaces should be provided in accordance with Transport, Access and Parking Table 1 - General Off-Street Car Parking Requirements (PO 5.1).

The provision of adequately sized on-site bicycle parking facilities encourages cycling as an active transport mode (PO 9.1).

The proposed development has been designed to meet OTR's standard traffic and access operational requirements, including in relation to internal vehicle circulation, car parking provision and layout, provision of disability access spaces and location of access points.

The site has been designed to accommodate the access and circulation of fuel tankers, other delivery vehicles and waste disposal trucks without material risk of conflict with any other users.

The applicant has engaged Stantec Traffic Engineers to prepare a Traffic Impact Assessment (TIA) which analyses the impact of the proposal on the surrounding area and provides comment on the provision of 9 shared on-site car parks to be provided. The report finds that:

- The provision of 9 parking spaces meets the parking demand calculated in accordance with the OTR generic parking rates and exceeds the SA Planning and Design Code demand of 8 spaces.
- The parking spaces including the disability parking spaces and the shared spaces proposed for the site comply with the applicable Australian Standard/New Zealand Standard.
- Stantec have reviewed the access arrangements from both Longwood Road and Scott Creek road and confirmed they comply with the applicable Australian/New Zealand Standard.
- Stantec have conducted a sight distance assessment of each of the proposed access points. The assessment concludes that each of the access points will achieve appropriate sight line distances.
- The proposed fuelling layout provides sufficient queuing space to accommodate anticipated bowser usage, with additional space allowed for vehicles to pass behind queued vehicles.
- Turn paths provided with the TIA demonstrate that the site can be accessed and traversed by relevant classes of vehicle, including 16.4 metre semi trailers (for fuel delivery) and 10.0 metre waste collection vehicles and 8.8m MRVs for general deliveries.
- The expected traffic generation has been modelled on 150 trips per hour during the afternoon peak period. In reality most of the traffic to and from the site will be in the form of passing trade. Therefore the actual traffic generation will be lower than the trips estimated in the TIA.

The TIA and a copy of Stantec's (previously GTA) Generic Parking and Traffic Management Report which will form the basis of the on-site parking provision referred to in the TIA have been included with this correspondence.

Sufficient on-site bicycle parking facilities can be provided adjacent to the proposed new control building.

Conclusion

On balance and taking into consideration the site's long term existing use as a motor repair station including a retail fuel sales component and its association with surrounding land uses, the proposed development will contribute materially to the Desired Outcome and policies of the Rural Neighbourhood Zone. The proposed Retail Fuel Outlet is an appropriate scale in the context of the size of the subject land and will provide improved access to a range of products, facilities and services in a manner that supports the local community. The supporting reports from Sonus and Stantec indicate potential impacts on adjacent properties and the locality including noise generation, access and parking are capable of being addressed and will not result in any unacceptable outcomes.

The proposed development accords with the provisions of the Rural Neighbourhood Zone and with the general policy provisions of the Planning and Design Code. Therefore, we submit the proposed development merits approval.

We trust that the information provided in this letter will assist in assessment of the proposed development. If you require any further information, please do not hesitate to contact me on 0439 883 977 or by email at t.beazley@peregrine.com.au

Yours Sincerely



Tim Beazley
Town Planner
Peregrine Corporation

OTR Heathfield

Environmental Noise Assessment

S7036C1

December 2021

sonus.

Document Title : OTR Heathfield
Environmental Noise Assessment

Document Reference : S7036C1

Date : December 2021

Prepared By : Chris Turnbull, MAAS

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1 INTRODUCTION

An environmental noise assessment has been made of the proposed OTR integrated service station development at 160 Longwood Road, Heathfield.

The development comprises a service station, automatic carwash, manual wash bays, dog wash, vacuum units, and associated plant and equipment.

The closest residences to the site are located to the immediate west and south, and on the opposite side of Scott Creek Road. The arrangement is shown in Appendix A.

The assessment considers noise levels at the nearest residences from:

- On-site car park and re-fuelling activity;
- Automatic and manual car wash activity;
- Vacuum operation;
- Dog wash operation;
- Mechanical plant operation;
- Deliveries; and,
- Rubbish collection.

The assessment has been based on:

- ADS Architects drawings "CON01f" and "CON02b", dated 09 August 2021;
- Operating hours of the facility being 24 hours per day, 7 days per week;
- Previous noise measurements and manufacturer's noise data from similar sites for plant and equipment, car parking activity and petrol and diesel fuel delivery; and,
- Continuous noise logging conducted at the site between 20 and 25 August 2021.

2 CRITERIA

2.1 Planning and Design Code

The proposed site and residences immediately to the south and west are located in a *Rural Neighbourhood Zone* and *Adelaide Hills Subzone* of the Planning and Design Code, and the residences on the opposite side of Scott Creek Road are located within a *Productive Rural Landscape Zone*. The Planning and Design Code has been reviewed, and the following noise related provisions considered relevant.

Part 2- Zones and Sub Zones

Rural Neighbourhood Zone

Desired Outcome

DO 1: *Housing on large allotments in a spacious rural setting, often together with large outbuildings. Easy access and parking for cars. Considerable space for trees and other vegetation around buildings, as well as on-site wastewater treatment where necessary. Limited goods, services and facilities that enhance rather than compromise rural residential amenity.*

Part 4 - General Development Policies

Interface between Land Uses

Assessment Provisions (AP)

Desired Outcome (DO)

DO 1: *Development is located and designed to mitigate adverse effects on or from neighbouring and proximate land uses.*

Performance Outcomes (PO) and Deemed-to-Satisfy (DTS) Criteria / Designated Performance Feature (DPF)

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature										
General Land Use Compatibility											
<p>PO 1.2 <i>Development adjacent to a site containing a sensitive receiver (or lawfully approved sensitive receiver) or zone primarily intended to accommodate sensitive receivers is designed to minimise adverse impacts</i></p>	<p>DTS/DPF 1.2 <i>None are applicable</i></p>										
Hours of Operation											
<p>PO 2.1 <i>Non-residential development does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers) or an adjacent zone primarily for sensitive receivers through its hours of operation having regard to:</i></p> <ul style="list-style-type: none"> <i>a) the nature of the development</i> <i>b) measures to mitigate off-site impacts</i> <i>c) the extent to which the development is desired in the zone</i> <i>d) measures that might be taken in an adjacent zone primarily for sensitive receivers that mitigate adverse impacts without unreasonably compromising the intended use of that land</i> 	<p>DTS/DPF 2.1 <i>Development operating within the following hours:</i></p> <table border="1"> <thead> <tr> <th>Class of Development</th> <th>Hours of operation</th> </tr> </thead> <tbody> <tr> <td><i>Consulting Room</i></td> <td><i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i></td> </tr> <tr> <td><i>Office</i></td> <td><i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i></td> </tr> <tr> <td><i>Shop, other than any one or combination of the following:</i></td> <td><i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i></td> </tr> <tr> <td> <ul style="list-style-type: none"> <i>a) restaurant</i> <i>b) cellar door in the Productive Rural Landscape Zone, Rural zone or Rural Horticulture Zone.</i> </td> <td></td> </tr> </tbody> </table>	Class of Development	Hours of operation	<i>Consulting Room</i>	<i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i>	<i>Office</i>	<i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i>	<i>Shop, other than any one or combination of the following:</i>	<i>7am to 9pm, Monday to Friday 8am to 5pm, Saturday</i>	<ul style="list-style-type: none"> <i>a) restaurant</i> <i>b) cellar door in the Productive Rural Landscape Zone, Rural zone or Rural Horticulture Zone.</i> 	
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<ul style="list-style-type: none"> <i>a) restaurant</i> <i>b) cellar door in the Productive Rural Landscape Zone, Rural zone or Rural Horticulture Zone.</i> 											

Performance Outcome	Deemed-to-Satisfy Criteria / Designated Performance Feature
Activities Generating Noise or Vibration	
<p>PO 4.1 <i>Development that emits noise (other than music) does not unreasonably impact the amenity of sensitive receivers (or lawfully approved sensitive receivers).</i></p>	<p>DTS/DPF 4.1 <i>Noise that affects sensitive receivers achieves the relevant Environment Protection (Noise) Policy criteria.</i></p>
<p>PO 4.2 <i>Areas for the on-site manoeuvring of service and delivery vehicles, plant and equipment, outdoor work spaces (and the like) are designed and sited to not unreasonably impact the amenity of adjacent sensitive receivers (or lawfully approved sensitive receivers) and zones primarily intended to accommodate sensitive receivers due to noise and vibration by adopting techniques including:</i></p> <ol style="list-style-type: none"> <i>1. locating openings of buildings and associated services away from the interface with the adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers</i> <i>2. when sited outdoors, locating such areas as far as practicable from adjacent sensitive receivers and zones primarily intended to accommodate sensitive receivers</i> <i>3. housing plant and equipment within an enclosed structure or acoustic enclosure</i> <i>4. providing a suitable acoustic barrier between the plant and / or equipment and the adjacent sensitive receiver boundary or zone.</i> 	<p>DTS/DPF 4.2 <i>None are applicable</i></p>

2.2 Environment Protection (Noise) Policy 2007

The *Activities Generating Noise or Vibration* DTS/DPF 4.1 references the *Environment Protection (Noise) Policy 2007 (the Policy)*. The Policy provides goal noise levels to be achieved at residences from general activity at a site and specific provisions for other activity such as rubbish collection.

The Policy is based on the World Health Organisation Guidelines to prevent community annoyance, sleep disturbance and adverse impacts on the amenity of a locality. Therefore, compliance with the Policy is considered to be sufficient to satisfy all provisions of the Code relating to environmental noise.

Rubbish Collection

The Policy deals with rubbish collection by effectively limiting the hours to the least sensitive period of the day. Part 6 Division 3 of the Policy requires that rubbish collection only occur between the hours of 9am and 7pm on Sundays or public holidays, and between 7am and 7pm on any other day, except where it can be shown that the maximum (L_{max}) noise level from such activity is less than 60 dB(A).

General Activity

The Policy provides goal noise levels to be achieved at noise sensitive locations based on the principally promoted land uses of the Planning and Design Code in which the noise source (the development) and the noise receivers (residences) are located.

It is considered that the *Rural Neighbourhood Zone* and *Adelaide Hills Subzone* principally promote Residential land use based on the Planning and Design Code provisions and the allotment sizes, whilst the *Productive Rural Landscape Zone* principally promotes Rural Industry land use based on the Planning and Design Code provisions.

Based on the above, the Policy provides the following goal noise levels:

- For residences within the *Rural Neighbourhood Zone*:
 - An average (L_{eq}) noise level of 47 dB(A) during the daytime (7am to 10pm);
 - An average (L_{eq}) noise level of 40 dB(A) at night (10pm to 7am); and,
 - A maximum (L_{max}) noise level of 60 dB(A) at night (10pm to 7am).
- For residences within the *Productive Rural Landscape Zone*:
 - An average (L_{eq}) noise level of 50 dB(A) during the daytime (7am to 10pm); and,
 - An average (L_{eq}) noise level of 43 dB(A) at night (10pm to 7am).

When measuring or predicting noise levels for comparison with the Policy, adjustments may be made to the average goal noise levels for each “annoying” characteristic of tone, impulse, low frequency, and modulation of the noise source. The characteristic must be dominant in the existing acoustic environment and therefore the application of a penalty varies depending on the assessment location, time of day, the noise source being assessed, and the predicted noise level. The application of penalties is discussed further in the Assessment section of this report.

3 ASSESSMENT

The noise levels from the service station complex have been predicted at the nearby residences based on a range of previous noise measurements which include:

- car park activity such as people talking as they vacate or approach their vehicles, the opening and closing of vehicle doors, vehicles starting, vehicles idling, and vehicles moving into and accelerating away from their park position;
- vehicle movements on site;
- delivery truck activity;
- operation of manual and automatic car washes;
- operation of the dog wash;
- operation of vacuum bays; and,
- mechanical plant serving the control building.

3.1 Operational Assumptions

The predictions of noise from use of the facility, other than rubbish collection, have been based on the following operational assumptions for the level of activity in any 15-minute¹ period.

Day-time (7am to 10pm)

- Continuous operation of all mechanical plant serving the control building;
- 10 vehicles using the petrol filling stations and parking bays;
- A stationary vehicle idling continuously at half of the refuelling bays (while waiting to use the filling station);
- Auto wash and plant room operating for the whole of the assessment;
- A stationary vehicle idling continuously at the auto wash entry (while waiting to use the auto wash facility)
- Manual washes operating with high water pressure for 5 minutes each;
- Dog wash operating for 10 minutes;
- Continuous operation of vacuum units; and,
- A fuel or goods delivery truck attending the site.

¹ Default assessment period of the Policy.

Night-time (10pm to 7am):

The following operational assumptions for the night period correspond to the restrictions as summarised in the *Recommendations* section below.

- Continuous operation of all mechanical plant serving the control building;
- 5 vehicles using the petrol filling stations and parking bays;
- Auto wash and plant room operating for the whole of the assessment; and,
- A stationary vehicle idling continuously at half of the refuelling bays (while waiting to use the filling station).

Sound power levels for the activities and equipment described above are provided in Appendix B.

3.2 Recommendations

Based on the above level of activity, the following acoustic treatments are recommended to achieve the goal noise levels of the Policy:

Rubbish Collection

To satisfy the requirements of the Policy, it is recommended that rubbish collection from the site should only occur between the hours of 9am and 7pm on a Sunday or public holiday, and 7am and 7pm on any other day.

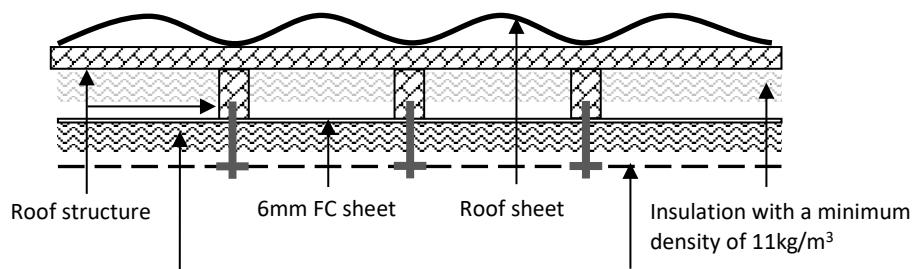
General Activity

General

- Any amplified music proposed to be played outdoors should be at a level which is inaudible at the surrounding residences;
- Alarms produced by site equipment, such as for compressed air or vacuum bays, should be at a level which is inaudible at the surrounding residences;
- Ensure there are no irregularities on the site and all inspection points, grated trenches, etc. are correctly fixed to remove the potential for impact noise being generated when driven over;
- Construct boundary fences to a minimum height of 3.0m above the site ground level for the extent shown as **ORANGE** in Figure 1;
- The fences should be constructed from sheet steel with a minimum 0.42mm base material thickness (BMT), such as “Colorbond”, or another material with the same or greater surface density;
- The fences can utilise a cantilevered construction provided the overall height above ground level is maintained; and,
- An airtight seal should be achieved at all fence junctions, including at the ground, at retaining walls, and at other fences, buildings, or structures.

Automatic Car Wash

- Ensure the car wash is fully enclosed (other than the entry and exit openings for vehicles), and the walls have a minimum surface density of at least 8kg/m^2 (such as 6mm thick compressed fibre cement sheet or 10.38mm thick laminated glass), and seal airtight at all junctions;
- Install glass doors to the entry and exit of the car wash which automatically close during operation (i.e., close before the start of the wash cycle, and do not open until the wash cycle, including any drying, has ceased). The doors should be constructed from a minimum of 10.38mm thick laminated glass (or a material with a higher surface density) and be sealed as close to airtight as possible at all junctions when closed.
- Incorporate a layer of 6mm thick fibre cement sheet (or equivalent material with a surface density of at least 8kg/m^2) to the underside of the automatic car wash roof structure and include insulation (with a density of at least 11kg/m^3) in the resulting cavity. In addition, incorporate acoustic absorption to the underside of the fibre cement sheet (such as 50mm thick insulation with a minimum density of 32kg/m^3), generally in accordance with Detail 1 below.



50mm thick acoustic insulation with a minimum density of 32kg/m^3 . The insulation should be installed to the full extent of the ceiling. Other materials such as "Pyrotek Reapor" can be used in lieu of the insulation.

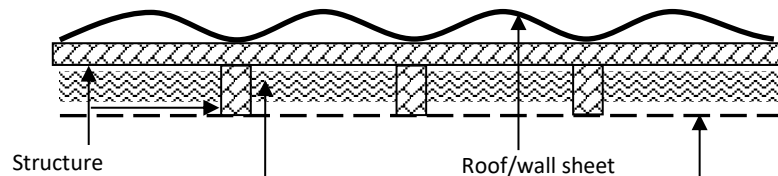
Perforated material with an open area greater than 15% spaced from the insulation as required to provide weatherproofing. Examples of the products are perforated sheet steel, slotted timber, etc.

Detail 1: Automatic Car Wash Roof/ceiling (section view).

Manual Car Wash

- Restrict the use of the manual car washes to the day-time period only (between 7:00am and 10:00pm).

- Install acoustic absorption material, such as 50mm thick insulation with a minimum density of 32kg/m^3 , to the walls of the manual wash bays (marked as PINK in Figure 1) and to the underside of the manual wash canopy. The absorption may be covered with perforated material with an open area of at least 15%.



50mm thick acoustic insulation with a minimum density of 32 kg/m^3 . The insulation should be installed to the full extent of the ceiling. Other materials such as "Pyrotek Reapor" can be used in lieu of the insulation.

Perforated material with an open area greater than 15% spaced from the insulation as required to provide weatherproofing. Examples of the products are perforated sheet steel, slotted timber, etc.

Detail 2: Manual Car Wash Absorption.

Vacuum Bays

- Restrict the use of the vacuums to the day-time period only (between 7:00am and 10:00pm).

Dog Wash

- Restrict the use of the dog wash to the day-time period only (between 7:00am and 10:00pm).

Car Wash Plant Room

- Ensure the car wash plant room is fully enclosed and the walls and ceiling have a minimum surface density of at least 8kg/m^2 (such as 6mm thick compressed fibre cement sheet) that is sealed airtight at all junctions.
- The doors should incorporate acoustic seals which seal airtight when closed.
- Ensure that any other ventilation to the plant room is located away from the residences to the west, such that there is no direct line of sight to the residences and is acoustically treated by incorporating an acoustically lined duct or proprietary attenuator.

Mechanical Plant

At the Development Application stage of a project, the mechanical plant is not typically designed or selected. Therefore, the assessment has considered typical air conditioning and refrigeration units operating at other similar facilities to provide an indicative assessment.

The predictions have been made based on the following indicative equipment, located on the roof of the control building:

- 1 x cool room condenser unit;
- 1 x evaporative unit;
- 1 x freezer condenser unit;
- 2 x air conditioning condenser units; and,
- 1 x exhaust fan.

Based on the typical mechanical plant selections, the requirements of the Policy can be achieved with the following recommendations:

- Incorporate an in-line attenuator to the discharge side of any significant exhaust fans;
- Locate the rooftop mechanical plant within the area marked as **YELLOW** in Figure 1;
- Construct a solid screen around the rooftop mechanical plant units, which extends a minimum 0.8m above the mechanical plant units, on three sides (marked as **PURPLE** in Figure 1). A suitable material is sheet steel with a minimum 0.42mm BMT ("Colorbond" or similar), or a material with the same or greater surface density. Ensure that the side facing Scott Creek Road is acoustically open with either no screening or with a standard louvre construction.
- Install acoustic absorption, such as 50mm thick insulation with a minimum density of 32kg/m³, to the full extent of the mechanical plant side of the screen. The absorption material should be installed generally in accordance with Detail 2, or an alternate product that is acoustically equivalent.

The noise level and any acoustic treatment associated with mechanical plant should be reviewed during the detailed design phase.

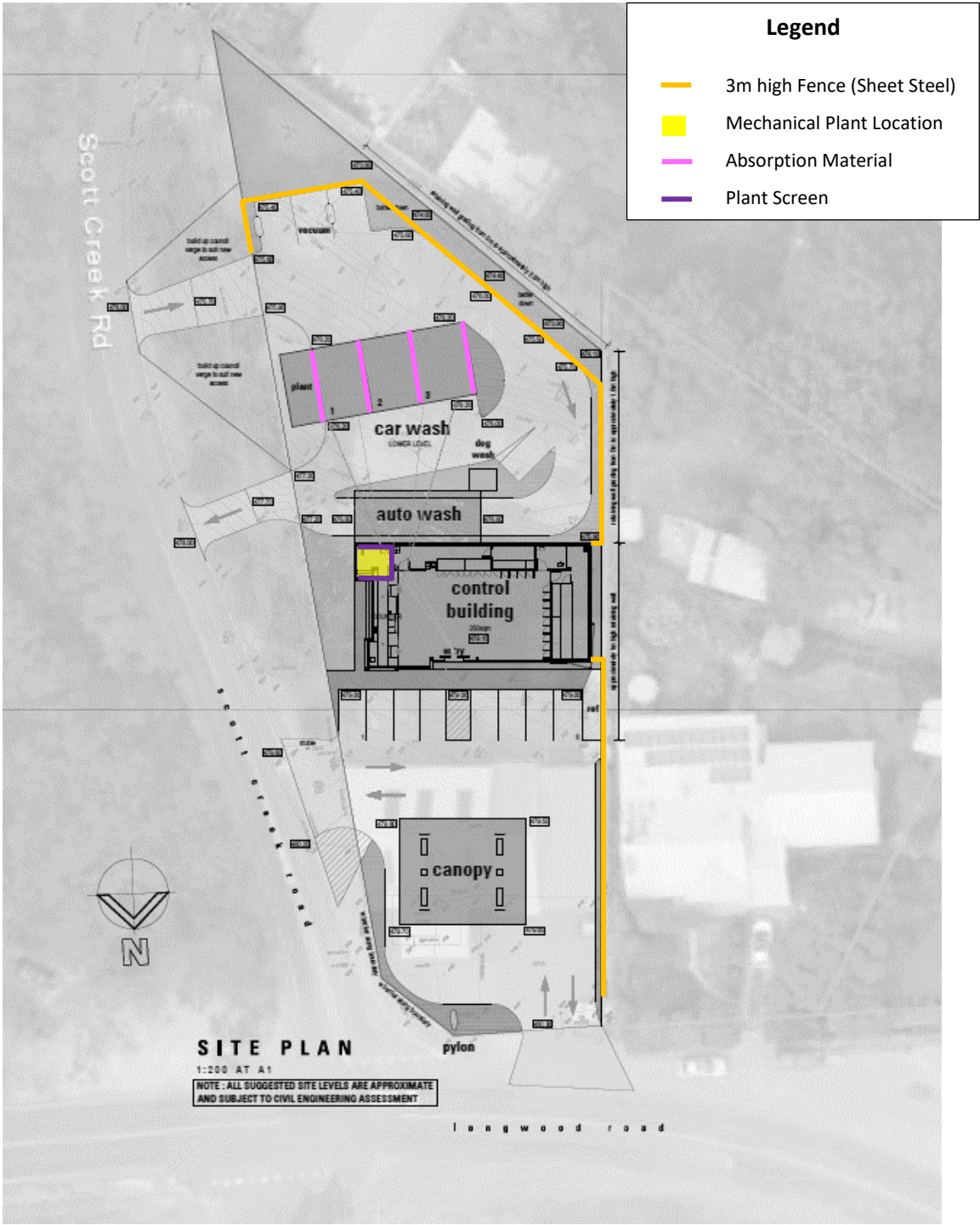


Figure 1: Acoustic Treatment Summary

3.3 Noise Predictions

Average Noise Level

The noise level at residences in the vicinity have been predicted based on the inputs and acoustic treatments detailed above. The predicted noise levels are summarised in *Table 3* below and compared against the relevant noise criteria.

Table 3: Noise Predictions

Residence	Noise Criteria (dB(A))		Highest Predicted Equivalent (L _{Aeq}) Noise Level (dB(A))		Compliance with the Policy
	Day	Night	Day	Night	
Residences in <i>Rural Neighbourhood Zone</i>	47	40	47	40	Yes
Residences in <i>Productive Rural Landscape Zone</i>	50	43	50	42	Yes

The predictions include (add) a 5 dB(A) penalty for modulation at all of the surrounding residences.

With the recommendations and restrictions detailed in this report, the highest predicted average noise levels (L_{Aeq}) at any residence achieves the relevant requirements of the Policy.

Maximum Noise Levels

The instantaneous maximum noise levels have also been predicted at all residences, based on measurements at a variety of different sites from activities such as car parking and the closing of doors. The highest predicted maximum noise level from the site for such activity is 56 dB(A). Therefore, the maximum noise level of the Policy will also be achieved at all residences.

4 CONCLUSION

An environmental noise assessment has been made of the proposed OTR integrated service station development at 160 Longwood Road, Heathfield.

The assessment considers noise at the surrounding residences from operation of the carwash facilities, vacuum operation, dog wash operation, mechanical plant operation, vehicle movements, car park activity, deliveries, and rubbish collection.

Noise criteria for the assessment of these noise sources have been derived in accordance with the *Planning and Design Code* and the *Environment Protection (Noise) Policy 2007*.

Noise levels from the site are predicted to achieve the relevant criteria at all residences in the vicinity, with the inclusion of the following treatments:

- specific fence heights and constructions;
- restricting the use of the vacuums to the day-time period;
- restricting the use of the manual car wash to the day-time period;
- restricting the use of the dog wash to the day-time period;
- restricting the times for deliveries to the day-time period;
- incorporating doors to the entry and exit of the automatic car wash;
- incorporating absorptive material and specific roof structures to the car washes;
- reducing the noise from any alarms as far as practical;
- ensuring all inspection points, grated trenches, etc. are correctly fixed;
- specific location and screening of the mechanical plant;
- absorption material to the mechanical plant screen; and,
- restricting the times for rubbish collection.

With the inclusion of the recommendations of this report, it is considered that the development will *minimise adverse impacts* and *not unreasonably impact the amenity of sensitive receivers*, thereby achieving the relevant provisions of the Planning and Design Code.

APPENDIX A – Subject Site & Noise Sensitive Locations



APPENDIX B –Noise Sources and Associated Sound Power Levels

Equipment/Activity		Sound Power Level
Car Park Activity	General activity	83 dB(A)
	Idling car	75 dB(A)
	Moving car	82 dB(A)
Mechanical Plant	Air conditioning unit	76 dB(A)
	Freezer condenser unit	75 dB(A)
	Evaporative cooler	80 dB(A)
	Cool room condenser unit	80 dB(A)
	Amenity exhaust fan	67 dB(A)
Car Wash	Auto Wash Cycle	87 dB(A)
	Auto Dry Cycle	92 dB(A)
	Manual Wash	96 dB(A)
	Plant Room	78 dB(A)
Vacuum	Loaded	82 dB(A)
	Unloaded	76 dB(A)
Dog Wash	Dryer High	84 dB(A)
	Dryer Low	80 dB(A)

Peregrine Corporation
270 The Parade
KENSINGTON PARK SA 5068

S7036C2

Attention: Tim Beazley

14 August 2022

Dear Tim,

**ON THE RUN HEATHFIELD
RESPONSE TO REQUEST FOR INFORMATION AND PEER REVIEW**

Sonus has prepared an Environmental Noise Assessment report for a proposed On The Run (OTR) to be located at 160 Longwood Road, Heathfield SA 5153, report reference S7036C1 (the **Sonus Report**). The Adelaide Hills Council engaged Resonate Consultants to review the Sonus Report and the outcomes of that review are presented in the Resonate Consultants report reference A220226LT1 dated 25 March 2022 (the **Resonate Review**).

This letter provides further information in response to the items raised in the Resonate Review.

Background Noise Monitoring

Background noise monitoring was undertaken for the assessment, however ultimately was not relied upon and as such was not presented in the Sonus Report. As requested by the Resonate Review, the background noise monitoring results have been appended to this letter.

Noise Criteria

The Sonus Report is prepared on the basis of the Planning and Design Code principally promoting a Residential land use in the specific *locality* of the proposed development. The Resonate Review suggests that this interpretation is incorrect, noting that their interpretation of the “Adelaide Hills Subzone” within the “Rural Neighbourhood Zone” being in a *locality* principally promoting is a Rural Living land use.

Under the Environment Protection (Noise) Policy 2007 (the **Noise Policy**) a *locality* is defined as:

locality means an area to which a Development Plan applies (whether described in the Plan as a locality, or as a zone or a precinct or otherwise) that is—

- (a) made subject to a set of land use rules by provisions of the Plan; and
- (b) not itself further divided by the Plan into areas that are made subject to separate sets of land use rules;

The definition of locality is also further clarified in the Guidelines for the use of the Environment Protection (Noise) Policy 2007 (the **Guidelines**) as:

‘Locality’ has a specific definition under clause 3 to ensure there is no confusion with the same term used in the planning system. In most situations, the locality will be the zone under the Development Plan in which the noise source or noise affected premises is located. The exception is where that zone is broken down into policy areas or precincts or similar, subject to a separate and specific set of land use rules, whereby the locality is defined by the policy area or similar.

Therefore, under the Noise Policy, the *locality* that is used for the assessment is not necessarily limited to a Zone or Subzone as defined in the planning system.

Under the Planning and Design Code, the Desired Outcome for the Adelaide Hills Subzone is provided below:

Adelaide Hills Subzone	
Assessment Provisions (AP)	
Desired Outcome (DO)	
Desired Outcome	
DO 1	Additional residential and <u>tourist accommodation</u> that retains and embraces the values of the established mature vegetation as a defining characteristic of the area.
DO 2	Land division is sympathetic to the allotment pattern and characteristics within the locality.

This is supported by Performance Outcome 2.1, which states:

Allotments/sites created for residential purposes are consistent with the established pattern of division surrounding the development site to maintain local character and amenity.

Desired Outcome DO2 and Performance Outcome PO2.1 are of particular importance to this assessment, as they require consideration of the specific allotment pattern in the area. That is, the same subdivision rules do not apply across the Adelaide Hills Subzone but rather the Subzone is further broken down to the particular allotment pattern of the area. Therefore, in accordance with the Policy, the *Locality* is not the Subzone but rather, it takes into account the specific allotment pattern in the area.

Upon review of the land division and allotment pattern and characteristics in the area of the subject site, it can be seen that most dwellings are located “side-by-side” and fronting Longwood Road, similar to a Residential setting, rather than a rural setting. Further, most of the allotments are smaller than 2,000m².

The allotment pattern is demonstrated by the following figure, which shows:

- The allotments along with the parcel ID and land area;
- The Adelaide Hills Subzone (purple border with light green shaded area); and
- The subject site at 160 Longwood Road (red border).



Further to this, the Guidelines provide the following definition for the Rural Living land use category:

Rural Living land use category

The land uses principally promoted by a locality assigned to a Rural Living land use category under clause 4 of the Noise Policy would typically include:

- dwellings on allotments with a minimum permitted area of 2,000 m², in a rural setting without significant farming activity
- hobby farms.

Given that the allotment patterns and characteristics, which are typically less than 2,000m² and are not hobby farms, it is considered that for this *locality*, the Rural Living land use category is not the best fit and as such a Residential land use category has been applied.

It is acknowledged that there may be other Adelaide Hills Subzones that exist where a Rural Living land use category may apply, however for the purpose of this assessment the *locality* of this Adelaide Hills Subzone better aligns with a Residential land use category.

It is also noted that the Deemed to Satisfy/Designated Performance Feature DTS/DPF2.1 provides one method of satisfying PO2.1 and ultimately DO2. That is, for a land division satisfying DTS/DPF2.1 and having a land division of greater than 2000m², PO2.1 would be satisfied. However, in the specific circumstances of the subject site, land divisions following the allotment pattern, with a site area less than 2000m², are allowed.

Prediction Methodology and Meteorological Conditions

Predictions in the Sonus Report were undertaken using International Standard ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation*. The ISO 9613-2:1996 method predicts the sound pressure level for downwind propagation, or equivalently, propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs at night.

It is noted that the separation distance to sensitive receivers is less than 100m and the Guidelines state :
Predictions of source noise levels for distances over 100 metres should be made using default weather conditions that are equivalent to Concawe meteorological category 6 at night, and Concawe meteorological category 5 for the day period.

Operational Assumptions

The Sonus Report does not include the noise from dogs barking at the dog wash. Based on numerous noise measurements of dog wash facilities undertaken by Sonus, the noise from barking dogs has not been observed. Nevertheless, one of the Sonus Report recommendations is to restrict the use of the dog wash to day time hours only, such that the noise from a dog bark, if it were to occur, would not adversely affect the L_{max} (maximum) noise predictions for the night time assessment period or the average L_{eq} day time predictions.

The sound power level of the fuel delivery truck is confirmed to be 96 dB(A).

If you have any questions or require clarification, please call me.

Yours faithfully
Sonus Pty Ltd



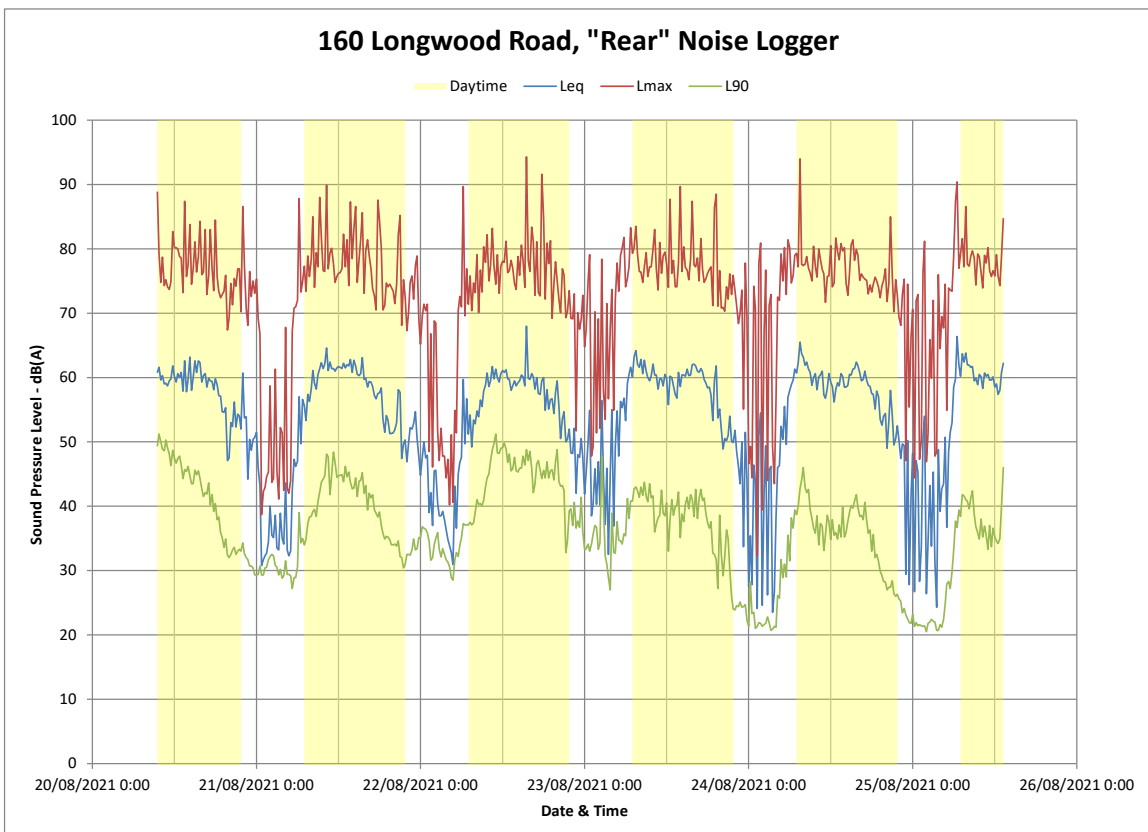
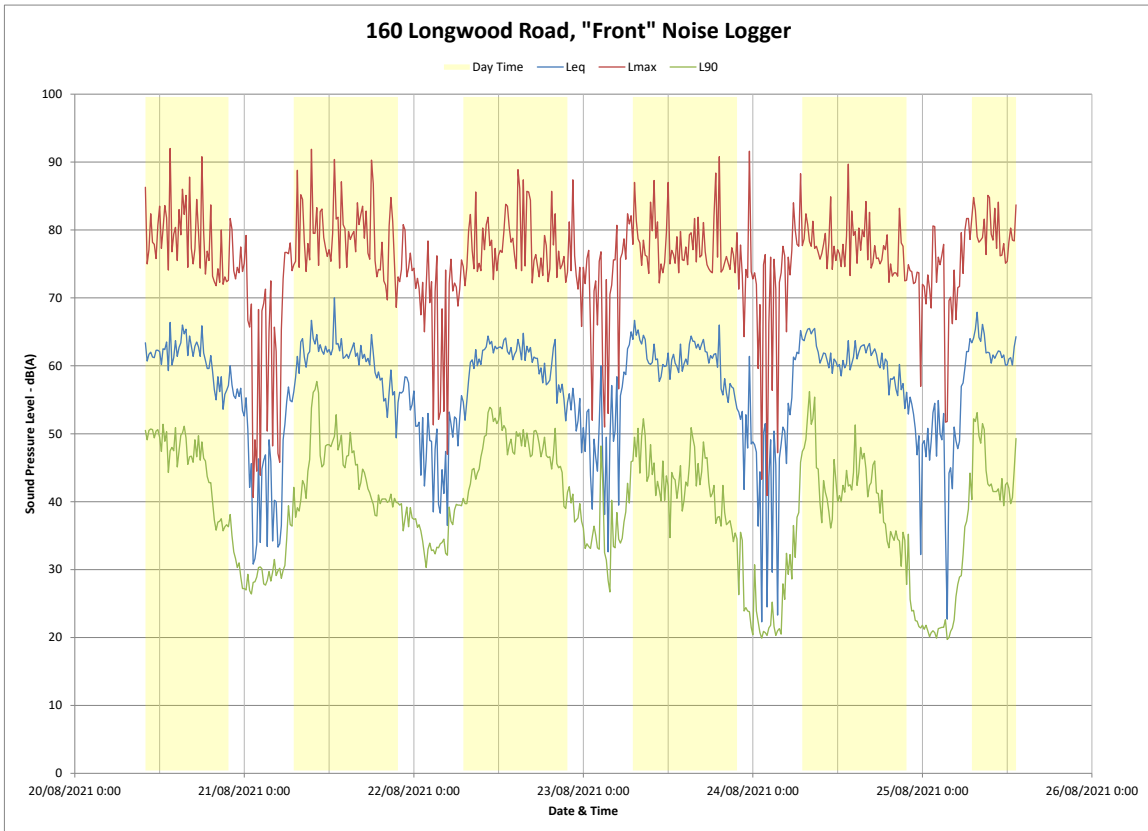
Chris Turnbull
Principal

+61 417 845 720
ct@sonus.com.au

Noise Monitoring Results



Noise Monitoring Locations



SITE TRAFFIC COMPLIANCE STATEMENT

Proposed OTR Integrated Service Station

Site: OTR Heathfield	Reference: 301401112-1040	Date Issued: 12 January 2022
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Site Layout

Location	160 Longwood Road, Heathfield
Description of Subject Site	<ul style="list-style-type: none"> • 2,160 sq.m Total Site Area (approx.) • 250 sq.m control building area • 8 fuelling points in Domino layout • Air and water facilities • Two vacuum bays • 3 manual car washes • One automatic car wash
Relevant Documents (attached)	<ul style="list-style-type: none"> • ADS Architects, drawing no 21JN1448sk01c, dated 17/12/21. • Stantec Sketch 301401112-1040-AT01 to 301401112-1040-AT04, dated 12/01/2022

Technical Layout Review

This review should be read in conjunction with the GTA 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017.

Parking Provision	Applicable Rates	Required Spaces	Provided Spaces	Complies
Proposed layout provides adequate parking in accordance with the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	2.5/100sq.m (with drive-thru facilities)	N.A.	N.A.	N.A.
	3.3/100sq.m (without drive-thru facilities)	9	9	✓

Additional Comments:	<p>It is noted the SA Planning Code outlines a provision 3 spaces per 100 sq.m GLFA, slightly less than the peak parking rates recommended to be adopted in the <i>Generic Parking and Traffic Updated Traffic Management Report</i>. Notwithstanding, the development complies with both rates.</p> <p>The provision of 9 parking spaces meets the parking demand calculated in accordance with the OTR generic parking rates and exceeds the SA Planning and Design Code demand of 8 spaces.</p>
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Parking Layout	Parking Space	Typical Dimensions	Complies
Proposed car parking layout conforms with Australian Standard/New Zealand Standard for Off Street Car parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)?	Parking	2.6m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
	Disability Parking and Shared Space	2.4m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
Additional Comments:			
Access Points	Comments		Complies
The proposed access arrangements comply with Figure 3.1 in AS/NZS2890.1:2004?	<p>New access points are located outside of the prohibited zone (6m from the projection of the road property lines/from the tangent point).</p> <p>Existing access on Longwood Road is being maintained, and positioned further west, increasing separation to the Longwood Road/Scott Creek Road/Heathfield Road intersection</p>		✓
Additional Comments:			

<p>Sight Distance Assessment The proposed layout provides appropriate sight distance from each access point.</p>	<p style="text-align: center;">Comment</p> <p><u>Longwood Road</u></p> <p>East: Given the straight road alignment and lack of obstructions the minimum SISD of 123m for design speed of 60 kilometres has been achieved at the site access point along Longwood Road (shown in attachments).</p> <p>West: Sight distance is restricted due to the existing curves within the road alignment. Due to the location within the hills EDD SISD is considered to apply to the subject site. The minimum EDD SISD of 97m for design speed 60km/h can be achieved at the site access point along Longwood Road (shown in attachments).</p> <p><u>Scott Creek Road</u></p> <p>South: Sight distance is restricted due to the existing curves within the road alignment. Due to the location within the hills EDD SISD is considered to apply to the subject site. Vehicles on Scott Creek Road are on the approach to the intersection and could be expected to be travelling in the order of 50km/h in the vicinity of the site access point. The minimum EDD SISD of 74m for design speed 50km/h and estimated 5% uphill gradient can be achieved at the site access point along Scott Creek Road with the removal/pruning of existing street trees (shown in attachments). It is understood that a majority of the vegetation is proposed to be removed as part of the development.</p> <p>North: Sight distance is unrestricted to the intersection, enabling visibility for when vehicles enter Scott Creek Road.</p>	<p style="text-align: center;">Complies</p> <p style="text-align: center;">✓</p>
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Additional Comments:	
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Queuing	Fuelling Layout	Required Queue Space	Provided Queue Space	Complies
Proposed fuelling layout provides sufficient queue spaces as per the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	Starter Gate	N.A.	N.A.	N.A.
	Domino	2	2	✓

Additional Comments:	The fuel bowsers are positioned perpendicular to Longwood Road, with approximately 12m from the closest bowser to the property boundary, allowing additional space for vehicles to pass or queue behind other bowsers. Proposed layout allows for vehicles to traverse the site without being impacted by queuing vehicles.
----------------------	---

Turn Paths Design vehicles able to traverse through the proposed layout? Swept paths of the heavy vehicles are enclosed at the end of the checklist	Vehicle	Design Vehicle	Complies	
	Fuel Delivery		13.9m OTR Tanker	N.A
			16.4m Semi Trailer	✓
			19.1m B Double	N.A
	Waste Collection		10.0m Refuse Vehicle	✓
			8.8m MRV	N.A
	Deliveries		12.5m HRV	N.A
			8.8m MRV	✓
	Drive Thru		B99 Light Vehicle	N.A
Car Wash		B99 Light Vehicle	✓	

Additional Comments:

Traffic Generation What is the expected traffic generation of the proposed development?	Traffic Generator	Applicable Rate (per hr)	Traffic Generation (trips per hr)
	Control Building/Bowsers	0.6 trips × 250 (sq.m)	150
	Total PM Peak Period		150

Additional Comments:

Traffic Impact What is the expected traffic impact that the traffic generated by the proposed development will have on the surrounding road network?	Traffic Impact
	<p>Petrol stations are typically located to capture passing trade based on a convenient location and access arrangement. Due to the location of the proposed development on the corner of the Longwood Road/Scott Creek Road, it is expected that a high proportion of the traffic generated by the subject site will be passing trade.</p> <p>Based on this and noting that there is an existing petrol station on site, the development is not anticipated to have an adverse impact on the safety or operation of the adjacent road network.</p>

Additional Comments:

Planning Code Assessment

This assessment only considers performance outcomes applicable to the relevant traffic and transport related matters that apply to the proposed development.

Part 4 General Development Policies

Transport, Access and Parking

Performance Outcome	Deemed-to-Satisfy / Designated Performance Feature	GTA now Stantec Assessment
PO 1.3	DTS/DPF 1.3	Loading / refuse collection to occur on-site and would occur outside of peak periods.
PO 1.4	DTS/DPF 1.4	Queuing can be contained within the site. Loading activities will be conducted within the site and should not have an impact on the operation and queuing on public road.
PO 2.1	DTS/DPF 2.1	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 2.2	DTS/DPF 2.2	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 3.1	DTS/DPF 3.1	New access points are proposed to be located outside of the prohibited zone. Refer to 'Access Points' section.
PO 3.2	DTS/DPF 3.2	Not applicable. No ramps proposed.
PO 3.3	DTS/DPF 3.3	Refer to 'Access Points' section of report.
PO 3.4	DTS/DPF 3.4	Refer to 'Access Points' section of report.
PO 3.5	DTS/DPF 3.5	Refer to 'Access Points' section of report.
PO 3.6	DTS/DPF 3.6	Not applicable – on-street parking not appropriate in this location
PO 3.7	DTS/DPF 3.7	Not applicable – not located near a railway crossing
PO 3.8	DTS/DPF 3.8	Refer to attached turn paths.
PO 3.9	DTS/DPF 3.9	All vehicle circulation to occur within the site.

PO 4.1	DTS/DPF 4.1	DDA compliant parking spaces will be provided.
PO 5.1	DTS/DPF 5.1	Planning Code produced a requirement of 8 spaces to be provided for a retail fuel outlet. Proposed development provides a total of 9 spaces.
PO 6.1	DTS/DPF 6.1	Satisfies the requirement. Use of public roads not required.
PO 6.4	DTS/DPF 6.4	Footpaths provided within the proposed development where practicable.
PO 6.6	DTS/DPF 6.6	Loading areas and parking spaces are located within the site.
PO 6.7	DTS/DPF 6.7	Not applicable
PO 7.1	DTS/DPF 7.1	Not applicable
PO 9.1	DTS/DPF 9.1	No bicycle parking rate explicitly stated.
PO 9.2	DTS/DPF 9.2	Refer previous response.
PO 9.3	DTS/DPF 9.3	Specific end of trip facilities have not been provided however, this could be reviewed and provided at a later date if the need arises.

DIT Comments and Response

No formal comments received

TRAFFIC COMPLIANCE STATEMENT CERTIFICATION

It is hereby certified that the proposed development described in this document and shown on the attached drawings is in accordance with the "On the Run" Service Stations Generic Parking and Traffic – Updated Traffic Management Report (updated July 2017) with regards to the parking and traffic operation specified.

The proposed development has been designed with consideration of Austroads Guidelines and Australian Standards, and Traffic Code applicable to the design of traffic management and parking in South Australia.

Stantec verifies that the detailed design will be able to meet the requirements of the relevant guidelines, standards and code.

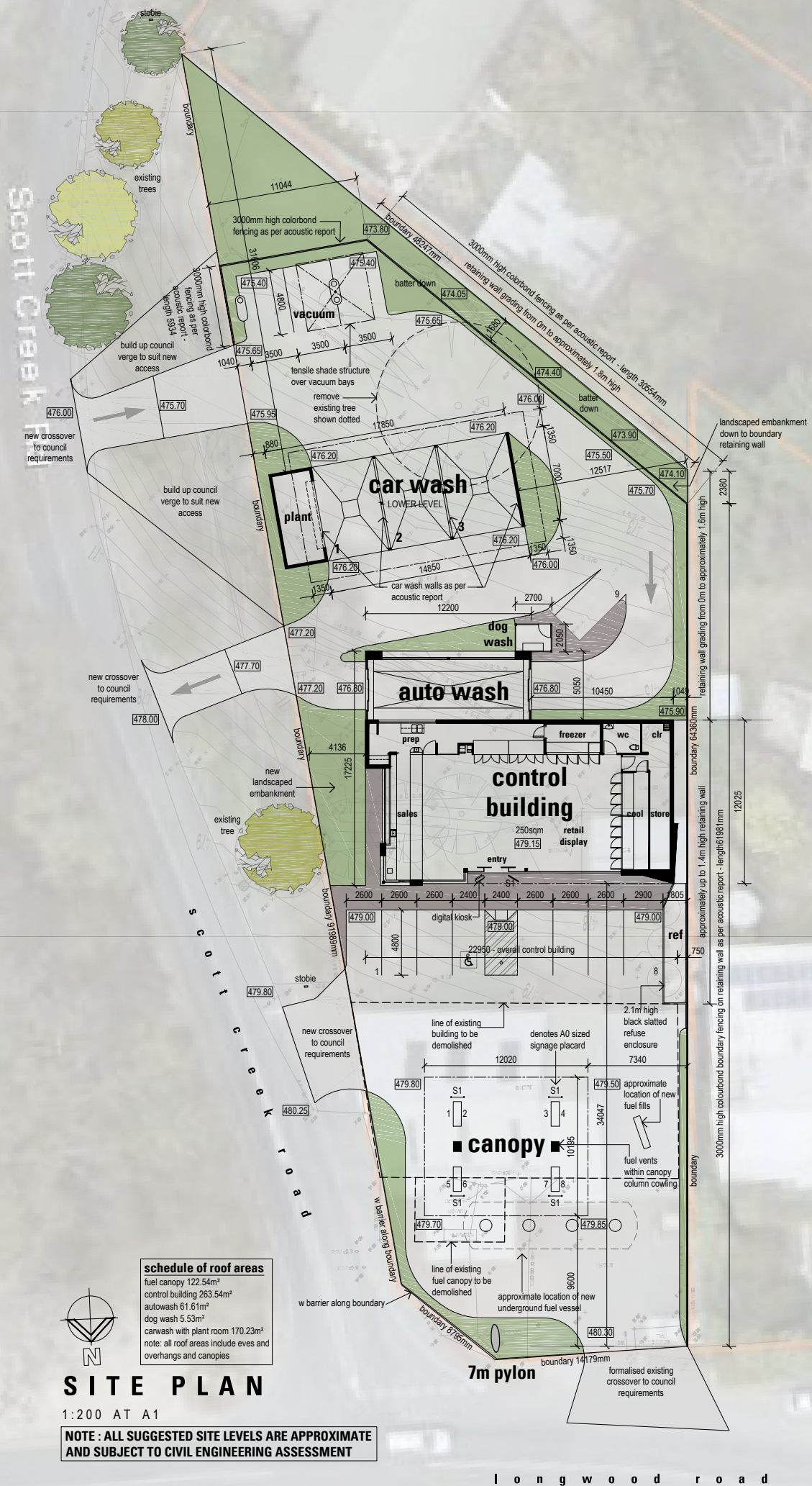
STANTEC



Ian Bishop

Senior Transportation Engineer

APPENDIX A - DRAWINGS



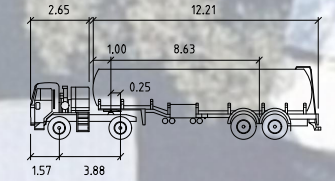
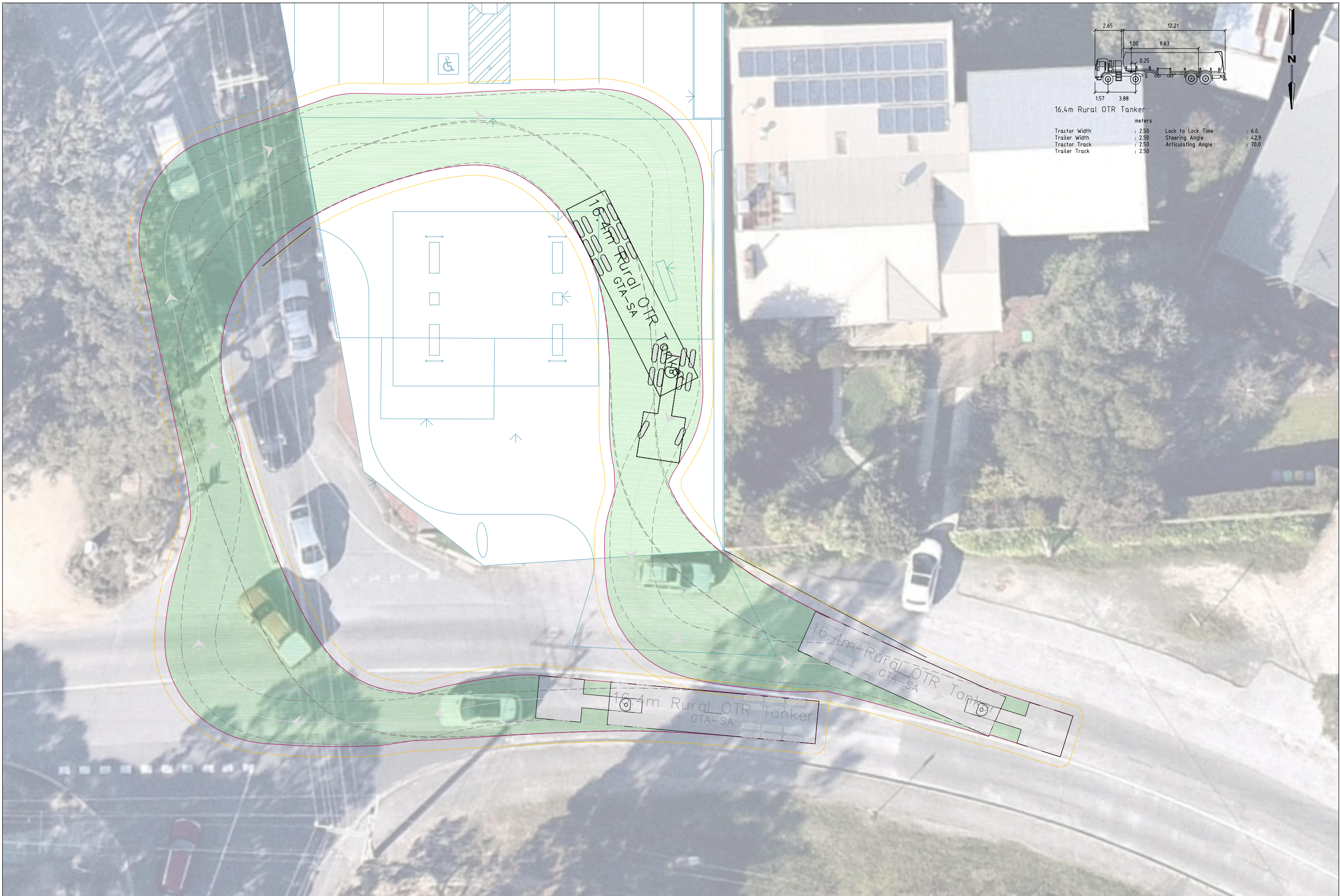
NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD

0 1 2 5 10 15m
Scale 1:200 at A1

APPENDIX B – TURN PATH ANALYSIS

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16.4m Rural OTR Tanker

meters	
Tractor Width	: 2.50
Tractor Track	: 2.50
Trailer Width	: 2.50
Trailer Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: -42.9
Articulating Angle	: 70.0



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
T.JONES

APPROVED BY
I.BISHOP

DESIGN CHECK
I.BISHOP

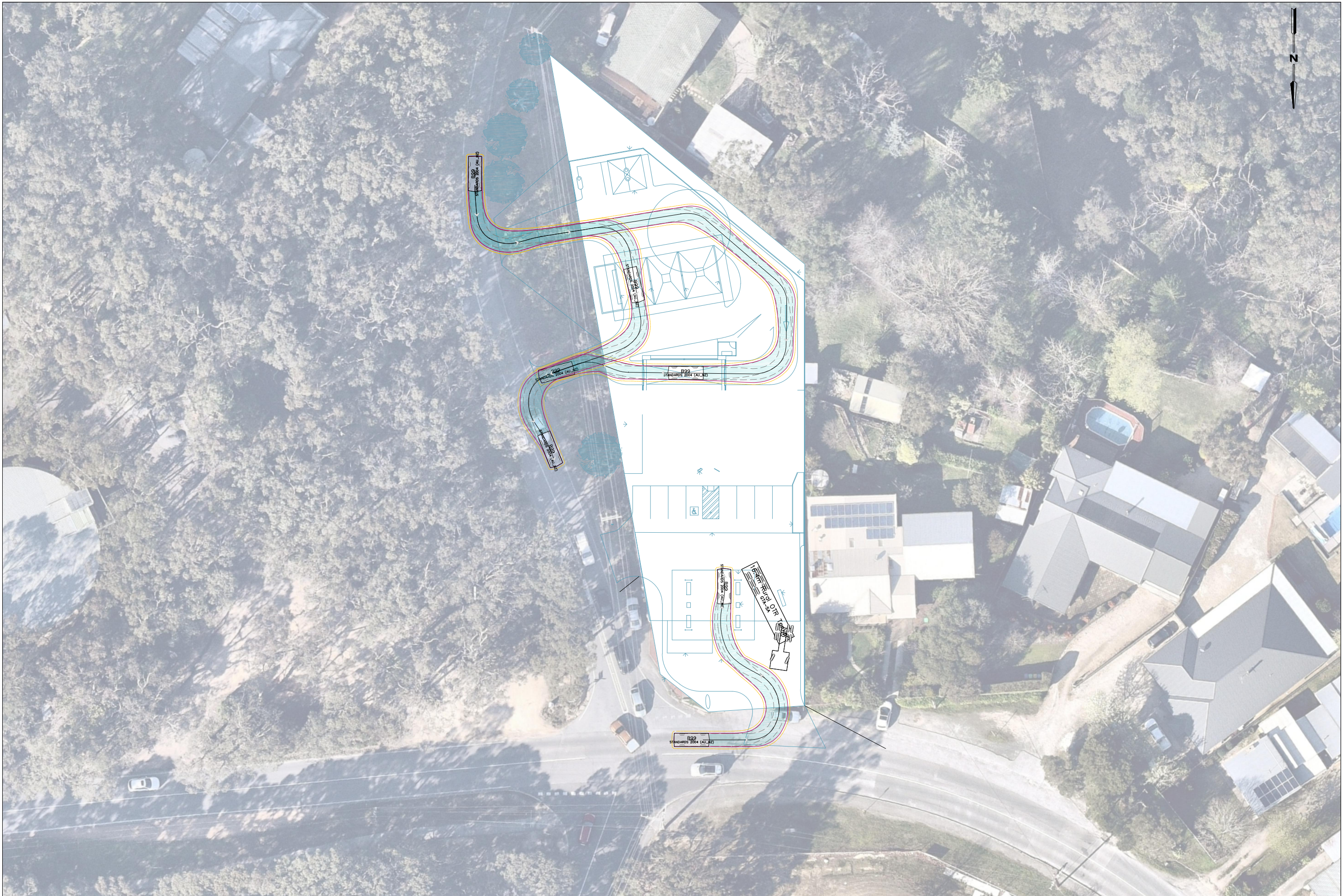
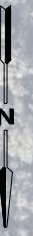
DATE ISSUED
12/01/2022

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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
16.4m OTR RURAL TANKER

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T.JONES

DESIGN CHECK
I.BISHOP

APPROVED BY
I.BISHOP

DATE ISSUED
12/01/2022

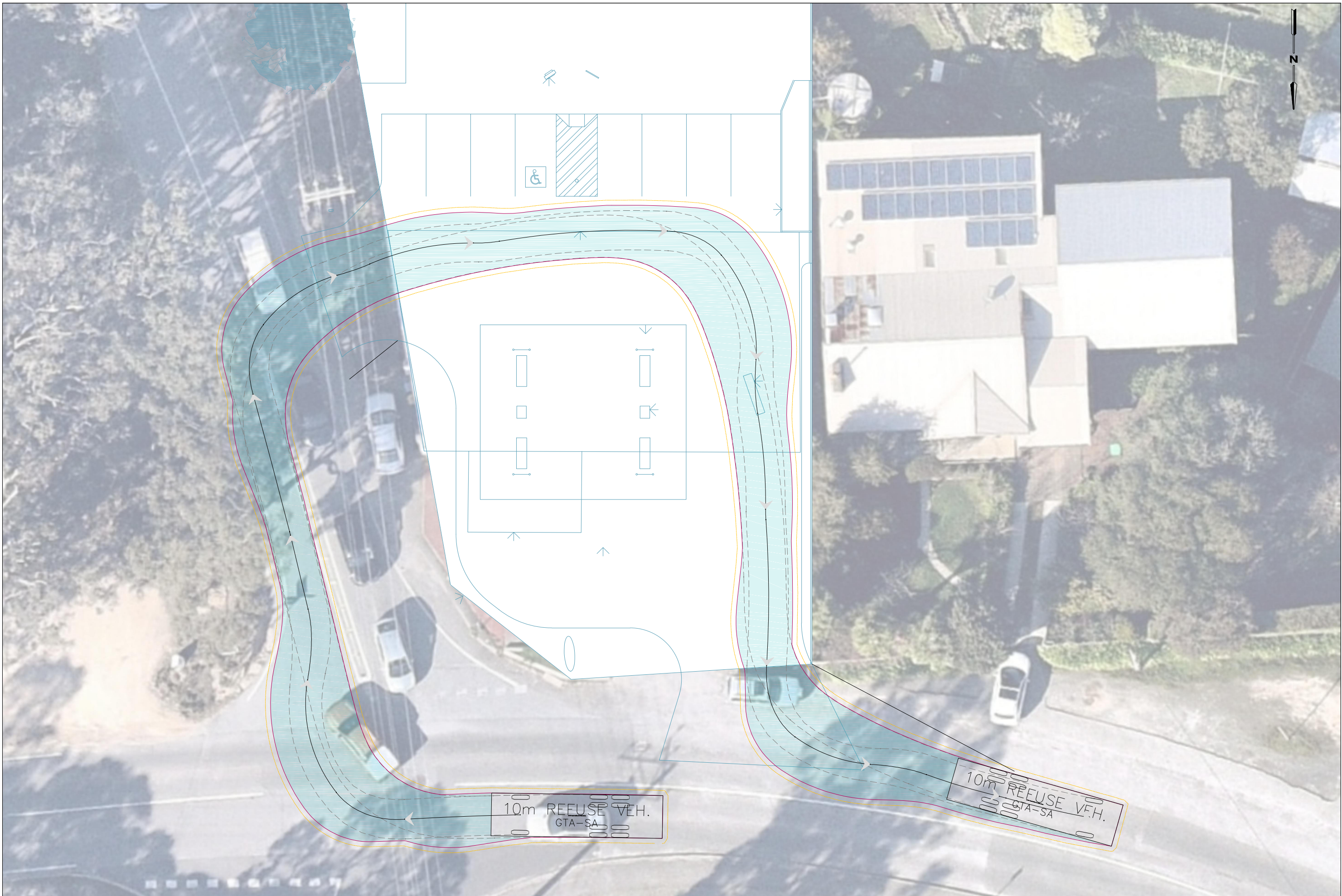
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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
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DESIGNED
T.JONES

DESIGN CHECK
I.BISHOP

APPROVED BY
I.BISHOP

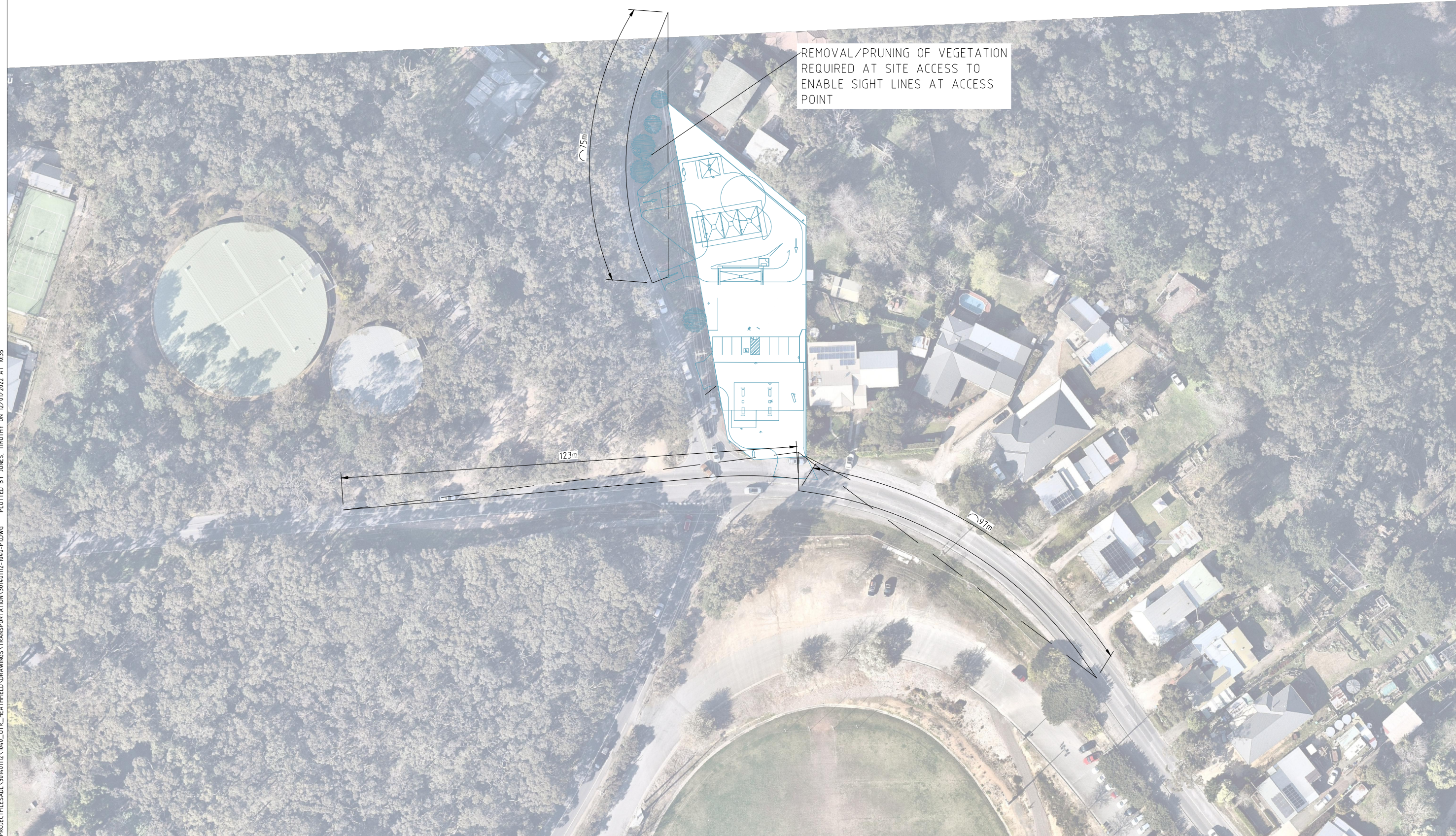
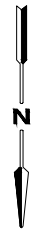
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12/01/2022

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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
B99 ACCESS

DRAWING NO. 301401112-1040-AT03 SHEET 03 OF 04 ISSUE P1



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PRELIMINARY PLAN
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DESIGNED
T.JONES

APPROVED BY
I.BISHOP

DESIGN CHECK
I.BISHOP

DATE ISSUED
12/01/2022

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CAD FILE NO.
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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
SIGHTLINE ASSESSMENT
DRAWING 301401112-1040-AT04 SHEET 04 OF 04 ISSUE P1

17 January 2023

Project/File:

Tim Beazley
270 The Parade
Kensington SA 5068

Dear Tim,

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

We are in receipt of correspondence from the Adelaide Hills Council dated 07 April 2022 for further information (RFI) in relation to the application for a 24-hour retail fuel outlet and associated facilities. Having reviewed the correspondence, the following are traffic related comments raised followed by our response. An updated TCS has also been prepared based on the updated plans and is included within this letter.

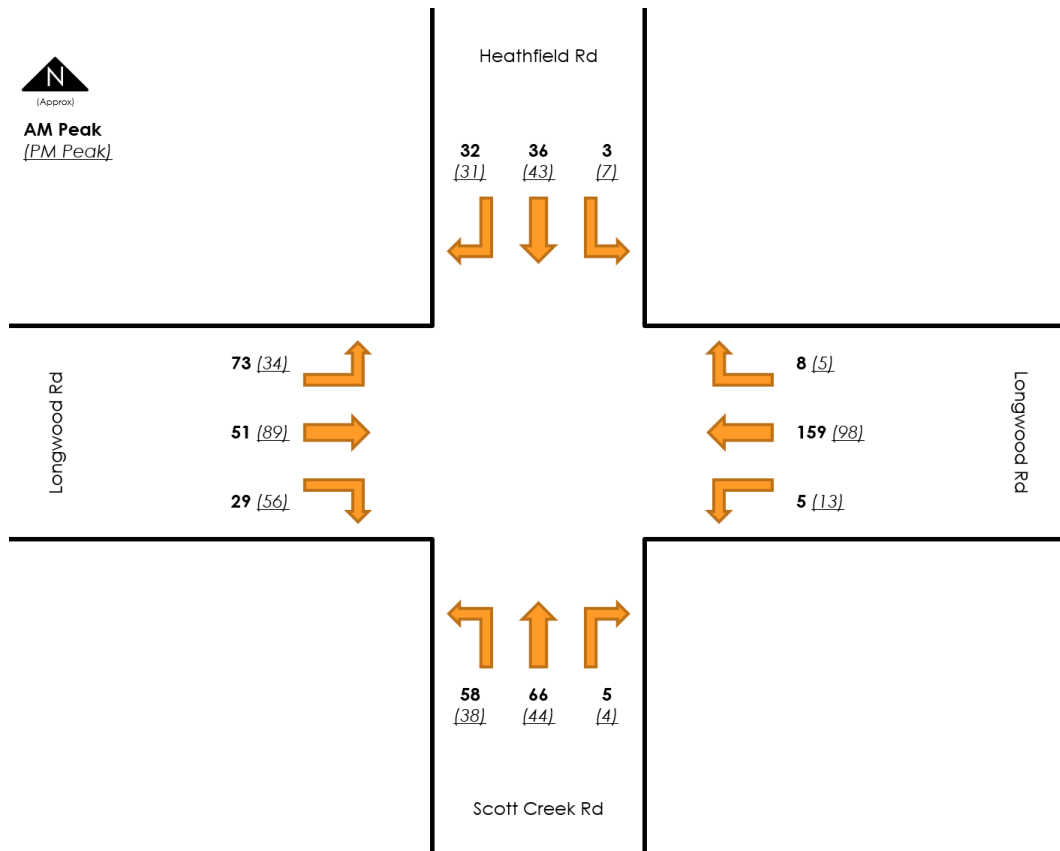
Inadequate Traffic Impact Assessment. The report states that the development will not have an adverse impact on the surrounding road network but does not provide any information around existing traffic volumes or the performance of the adjacent four-way intersection.

Existing Intersection Performance

To determine the existing traffic movements on the surrounding road network, traffic surveys were undertaken in October 2022 to determine the peak hour vehicle movements adjacent the subject site. The observed AM peak hour (8:00am to 9:00am) and PM peak hour (3:00pm to 4:00pm) traffic movements are summarised in Figure 1.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 1 – Peak Hour Movements



The above traffic volumes have been analysed utilising SIDRA Intersection 9 to gain an understanding as to the existing performance of the intersection. The intersection performance for the AM and PM peak is shown in Figure 2 and Figure 3.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 2 – AM Peak Existing Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Scott Creek Road														
1	L2	58	3	61	5.2	0.125	6.2	LOS A	0.5	3.5	0.32	0.59	0.32	53.0
2	T1	66	1	69	1.5	0.125	5.8	LOS A	0.5	3.5	0.32	0.59	0.32	49.6
3	R2	5	0	5	0.0	0.125	7.3	LOS A	0.5	3.5	0.32	0.59	0.32	52.6
Approach		129	4	136	3.1	0.125	6.0	LOS A	0.5	3.5	0.32	0.59	0.32	51.2
East: Longwood Road (E)														
4	L2	5	0	5	0.0	0.096	5.9	LOS A	0.1	0.5	0.04	0.04	0.04	57.9
5	T1	159	2	167	1.3	0.096	0.0	LOS A	0.1	0.5	0.04	0.04	0.04	59.5
6	R2	8	1	8	12.5	0.096	6.1	LOS A	0.1	0.5	0.04	0.04	0.04	52.8
Approach		172	3	181	1.7	0.096	0.5	NA	0.1	0.5	0.04	0.04	0.04	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.090	5.4	LOS A	0.3	2.3	0.36	0.60	0.36	46.7
8	T1	36	1	38	2.8	0.090	4.6	LOS A	0.3	2.3	0.36	0.60	0.36	49.1
9	R2	32	1	34	3.1	0.090	7.2	LOS A	0.3	2.3	0.36	0.60	0.36	48.6
Approach		71	4	75	5.6	0.090	5.8	LOS A	0.3	2.3	0.36	0.60	0.36	48.8
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.094	5.9	LOS A	0.3	2.0	0.15	0.35	0.15	50.6
11	T1	51	5	54	9.8	0.094	0.3	LOS A	0.3	2.0	0.15	0.35	0.15	56.1
12	R2	29	2	31	6.9	0.094	6.1	LOS A	0.3	2.0	0.15	0.35	0.15	53.7
Approach		153	18	161	11.8	0.094	4.1	NA	0.3	2.0	0.15	0.35	0.15	52.9
All Vehicles		525	29	553	5.5	0.125	3.6	NA	0.5	3.5	0.19	0.34	0.19	53.7

Figure 3 – PM Peak Existing Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Scott Creek Road														
1	L2	38	0	40	0.0	0.081	5.9	LOS A	0.3	2.2	0.25	0.56	0.25	53.4
2	T1	44	2	46	4.5	0.081	5.6	LOS A	0.3	2.2	0.25	0.56	0.25	49.8
3	R2	4	1	4	25.0	0.081	8.1	LOS A	0.3	2.2	0.25	0.56	0.25	51.7
Approach		86	3	91	3.5	0.081	5.8	LOS A	0.3	2.2	0.25	0.56	0.25	51.4
East: Longwood Road (E)														
4	L2	13	0	14	0.0	0.064	5.7	LOS A	0.0	0.3	0.03	0.09	0.03	57.4
5	T1	98	1	103	1.0	0.064	0.0	LOS A	0.0	0.3	0.03	0.09	0.03	59.0
6	R2	5	0	5	0.0	0.064	5.9	LOS A	0.0	0.3	0.03	0.09	0.03	52.7
Approach		116	1	122	0.9	0.064	0.9	NA	0.0	0.3	0.03	0.09	0.03	58.5
North: Heathfield Road														
7	L2	7	0	7	0.0	0.093	4.8	LOS A	0.3	2.4	0.34	0.57	0.34	49.3
8	T1	43	1	45	2.3	0.093	4.5	LOS A	0.3	2.4	0.34	0.57	0.34	49.4
9	R2	31	0	33	0.0	0.093	6.6	LOS A	0.3	2.4	0.34	0.57	0.34	49.0
Approach		81	1	85	1.2	0.093	5.4	LOS A	0.3	2.4	0.34	0.57	0.34	49.2
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.105	6.0	LOS A	0.4	2.9	0.17	0.28	0.17	51.2
11	T1	89	2	94	2.2	0.105	0.2	LOS A	0.4	2.9	0.17	0.28	0.17	56.8
12	R2	56	0	59	0.0	0.105	5.8	LOS A	0.4	2.9	0.17	0.28	0.17	54.8
Approach		179	7	188	3.9	0.105	3.1	NA	0.4	2.9	0.17	0.28	0.17	55.0
All Vehicles		462	12	486	2.6	0.105	3.4	NA	0.4	2.9	0.18	0.34	0.18	54.0

The SIDRA modelling indicates that the intersection currently operates with a low Degree of Saturation, and minimal queues and delays.

Post Development Intersection Performance

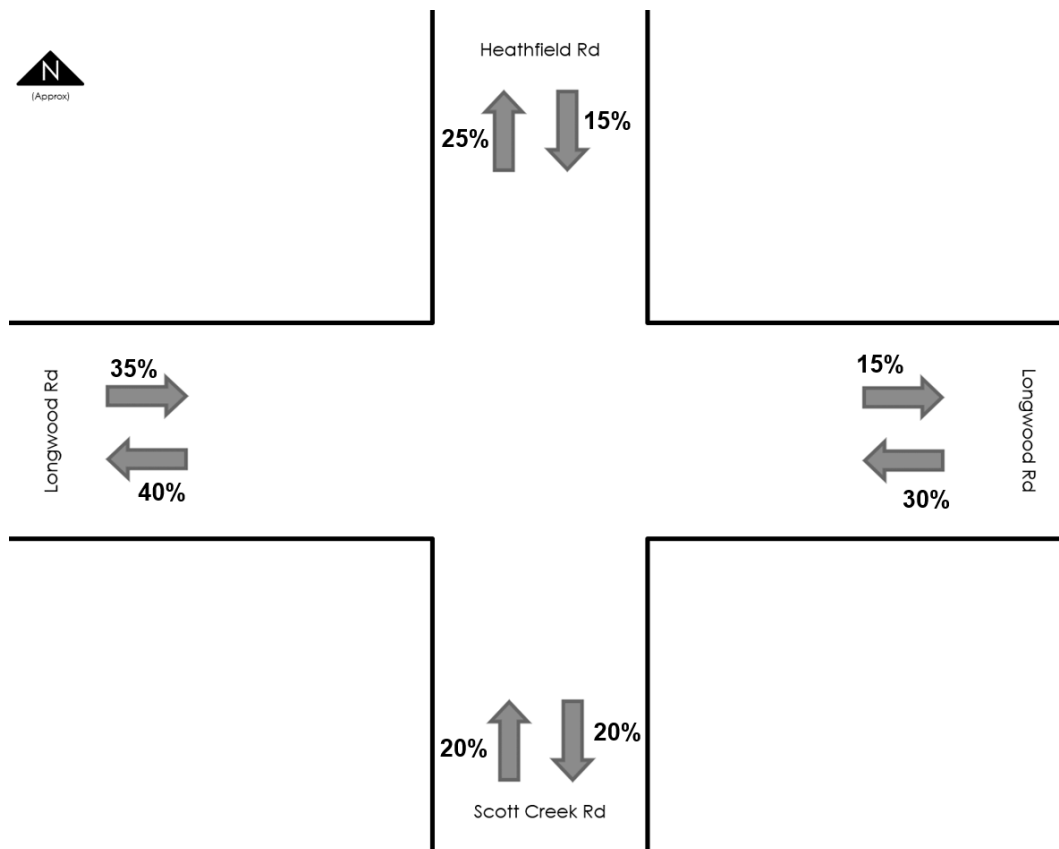
Based on a control building floor area of 250sq.m, the site is anticipated to generate in the order of 150 vehicle trips to/from the site. It is noted that arrangement of the site access points may result in some vehicles turning right into/out of the Longwood Road intersection. For the purpose of this assessment,

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

these movements have been consolidated to the Scott Creek Road intersection, as there are no dedicated right turn lanes at the intersection. This will result in a conservative assessment, in particular for right turn out movements, as the priorities at the intersection will result in additional gap acceptance parameters and turning conflicts compared to at the site access points (T-intersection).

The traffic distributions have been based on an average of the existing peak hour movements on each of the intersection legs. The anticipated inbound and outbound movements to/from the site from each of the intersection legs are shown in Figure 4.

Figure 4 – Anticipated Traffic Distributions



Based on the above, Figure 5 outlines the expected vehicle movements to/from each of the access points and Figure 6 outlines the anticipated increase in vehicle movements at the existing intersection.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 5 – Anticipated Site Access Movements

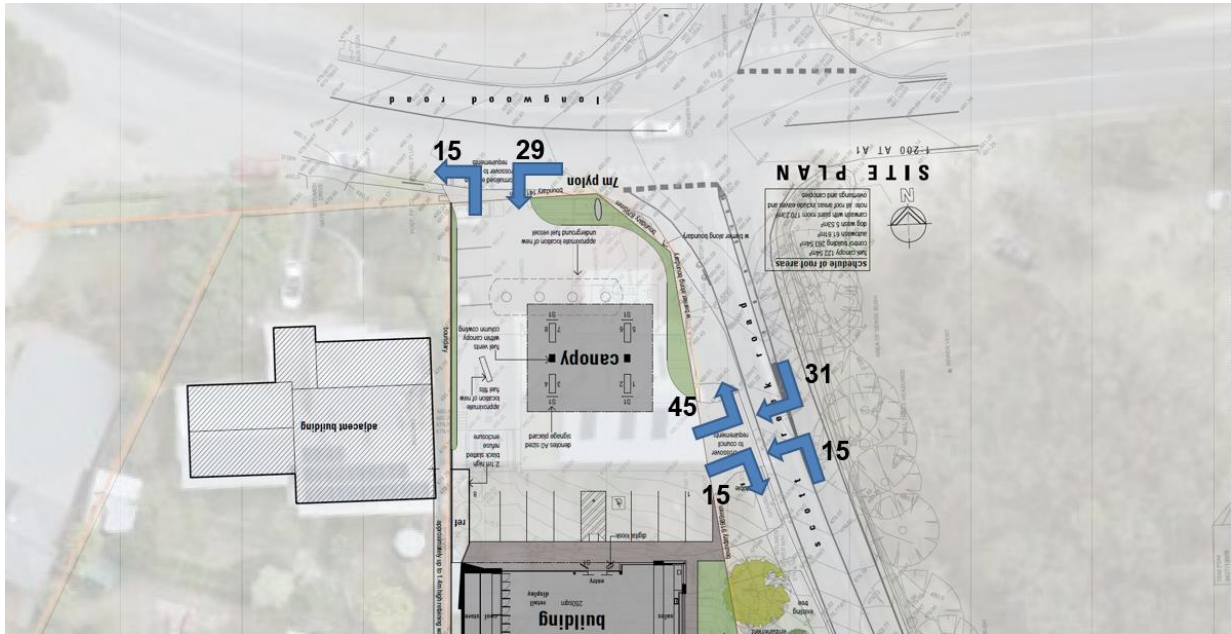
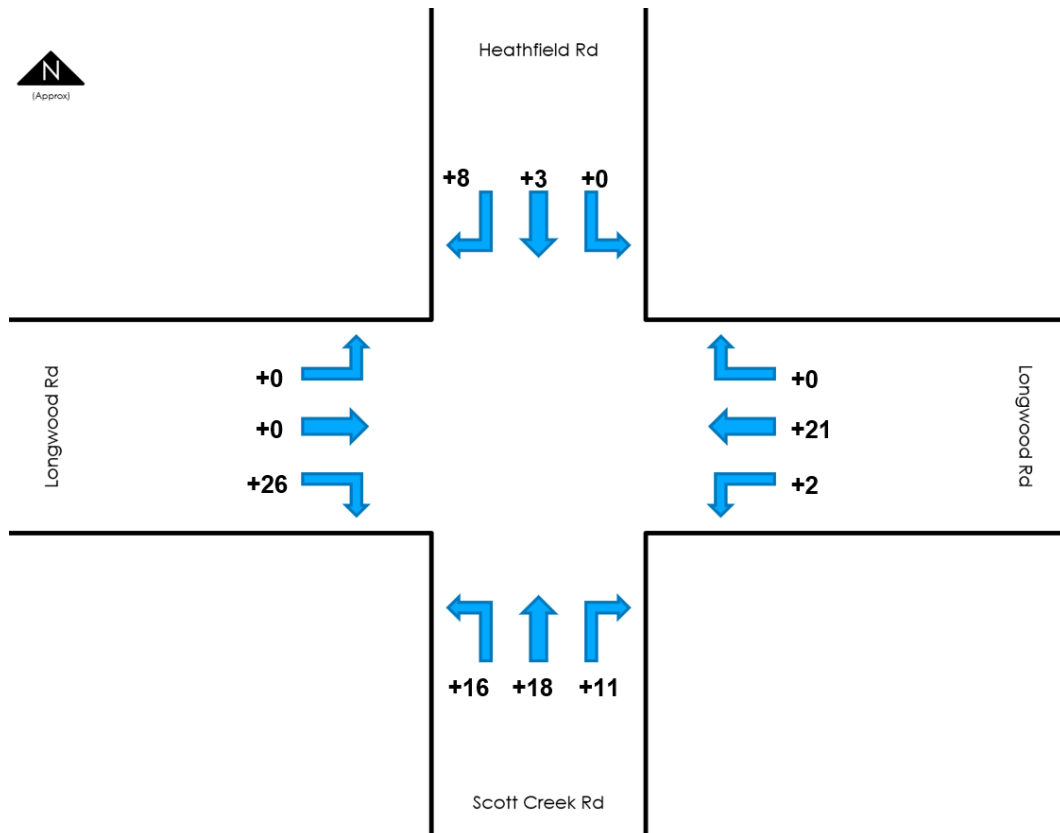


Figure 6 – Anticipated Additional Intersection Movements

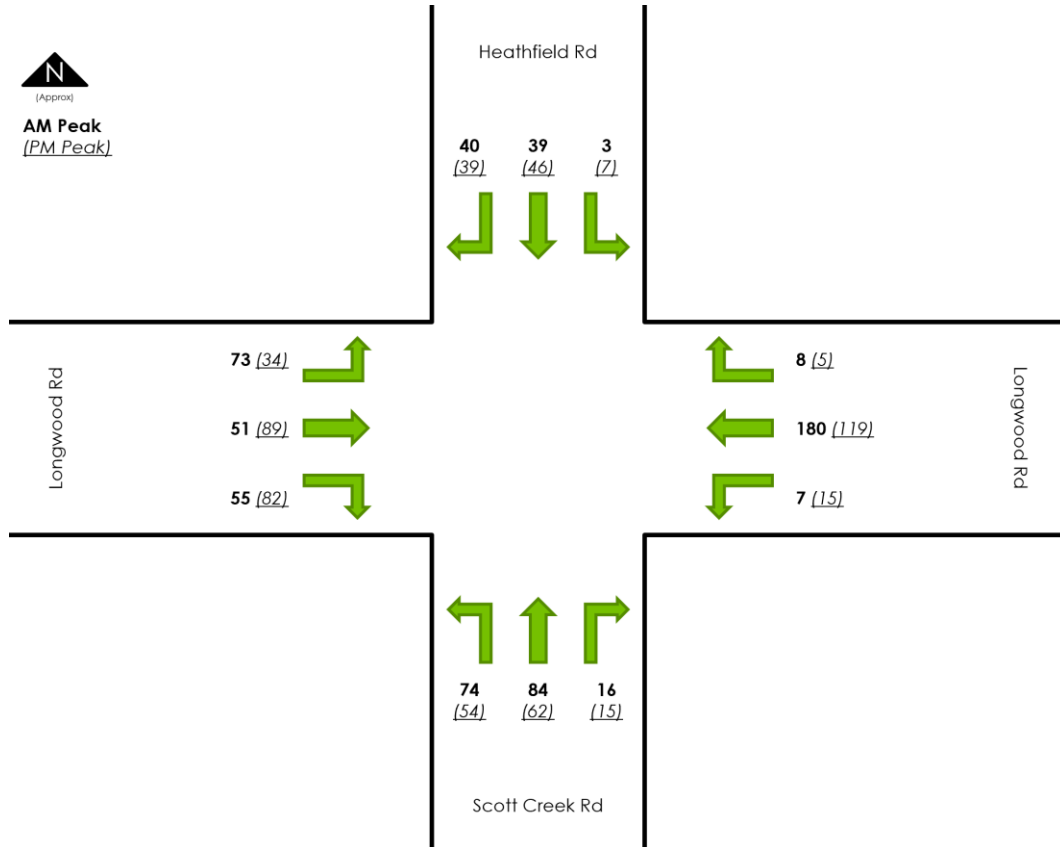


Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

It is noted that retail fuel outlets generally have a portion of passing trade that are already present on the road network. For the purpose of this assessment, no passing trade discounts have been applied to the site generated traffic volumes.

The post development intersection traffic volumes in the AM and PM peak hours are outlined in Figure 7.

Figure 7 – Post Development Intersection Traffic Movements



The post development traffic volumes have been analysed utilising SIDRA Intersection, with the forecast intersection performance for the AM and PM peak is shown in Figure 8 and Figure 9.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 8 – Post Development AM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	[Dist] m				km/h
South: Scott Creek Road														
1	L2	74	3	78	4.1	0.178	6.3	LOS A	0.7	5.1	0.37	0.62	0.37	52.8
2	T1	84	1	88	1.2	0.178	6.2	LOS A	0.7	5.1	0.37	0.62	0.37	49.4
3	R2	16	0	17	0.0	0.178	7.8	LOS A	0.7	5.1	0.37	0.62	0.37	52.4
Approach		174	4	183	2.3	0.178	6.4	LOS A	0.7	5.1	0.37	0.62	0.37	51.1
East: Longwood Road (E)														
4	L2	7	0	7	0.0	0.108	5.8	LOS A	0.1	0.6	0.03	0.05	0.03	57.9
5	T1	180	2	189	1.1	0.108	0.0	LOS A	0.1	0.6	0.03	0.05	0.03	59.5
6	R2	8	1	8	12.5	0.108	6.1	LOS A	0.1	0.6	0.03	0.05	0.03	52.8
Approach		195	3	205	1.5	0.108	0.5	NA	0.1	0.6	0.03	0.05	0.03	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.114	5.4	LOS A	0.4	2.9	0.40	0.64	0.40	46.4
8	T1	39	1	41	2.6	0.114	4.9	LOS A	0.4	2.9	0.40	0.64	0.40	48.7
9	R2	40	1	42	2.5	0.114	7.9	LOS A	0.4	2.9	0.40	0.64	0.40	48.2
Approach		82	4	86	4.9	0.114	6.4	LOS A	0.4	2.9	0.40	0.64	0.40	48.4
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.112	6.1	LOS A	0.4	3.4	0.24	0.37	0.24	50.1
11	T1	51	5	54	9.8	0.112	0.5	LOS A	0.4	3.4	0.24	0.37	0.24	55.6
12	R2	55	2	58	3.5	0.112	6.2	LOS A	0.4	3.4	0.24	0.37	0.24	53.4
Approach		179	18	188	10.1	0.112	4.5	NA	0.4	3.4	0.24	0.37	0.24	52.6
All Vehicles		630	29	663	4.6	0.178	4.0	NA	0.7	5.1	0.23	0.37	0.23	53.4

Figure 9 – Post Development PM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	[Dist] m				km/h
South: Scott Creek Road														
1	L2	54	0	57	0.0	0.131	5.9	LOS A	0.5	3.6	0.29	0.59	0.29	53.1
2	T1	62	2	65	3.2	0.131	6.0	LOS A	0.5	3.6	0.29	0.59	0.29	49.6
3	R2	15	1	16	6.7	0.131	8.0	LOS A	0.5	3.6	0.29	0.59	0.29	52.2
Approach		131	3	138	2.3	0.131	6.2	LOS A	0.5	3.6	0.29	0.59	0.29	51.3
East: Longwood Road (E)														
4	L2	15	0	15	0.0	0.076	5.6	LOS A	0.0	0.3	0.03	0.08	0.03	57.5
5	T1	119	1	125	0.8	0.076	0.0	LOS A	0.0	0.3	0.03	0.08	0.03	59.1
6	R2	5	0	5	0.0	0.076	5.9	LOS A	0.0	0.3	0.03	0.08	0.03	52.8
Approach		139	1	146	0.7	0.076	0.8	NA	0.0	0.3	0.03	0.08	0.03	58.7
North: Heathfield Road														
7	L2	7	0	7	0.0	0.115	4.8	LOS A	0.4	2.9	0.38	0.61	0.38	48.9
8	T1	46	1	48	2.2	0.115	4.8	LOS A	0.4	2.9	0.38	0.61	0.38	49.0
9	R2	39	0	41	0.0	0.115	7.3	LOS A	0.4	2.9	0.38	0.61	0.38	48.6
Approach		92	1	97	1.1	0.115	5.9	LOS A	0.4	2.9	0.38	0.61	0.38	48.9
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.123	6.1	LOS A	0.5	4.0	0.22	0.31	0.22	50.8
11	T1	89	2	94	2.2	0.123	0.3	LOS A	0.5	4.0	0.22	0.31	0.22	56.3
12	R2	82	0	86	0.0	0.123	5.9	LOS A	0.5	4.0	0.22	0.31	0.22	54.3
Approach		205	7	216	3.4	0.123	3.5	NA	0.5	4.0	0.22	0.31	0.22	54.5
All Vehicles		567	12	597	2.1	0.131	3.9	NA	0.5	4.0	0.22	0.37	0.22	53.7

Based on the SIDRA modelling, the intersection is anticipated to continue to operate with a low Degree of Saturation of 0.192 in the AM peak period. This is well below the DIT accepted maximum Degree of Saturation of 0.8 for an unsignalised intersection. The queues and delays at the intersection remain low, with 95th percentile queues of less than 1 vehicle and average delays of any turning movement being less than 8 seconds.

Additionally, a theoretical sensitivity analysis has been undertaken of the intersection under the basis of the site generating 300 vehicle trips (double the anticipated vehicle movements which will not occur in reality). The analysis outlined in Figure 10 and Figure 11 indicates that the intersection would continue to operate with a low Degree of Saturation, as well as low queues and delays.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 10 – Sensitivity Analysis AM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV [veh/h]	[Total veh/h]	HV [%]	vic	sec		[Veh. veh]	[Dist. m]				km/h
South: Scott Creek Road														
1	L2	90	3	95	3.3	0.238	6.4	LOS A	1.0	7.0	0.41	0.66	0.41	52.5
2	T1	102	1	107	1.0	0.238	6.7	LOS A	1.0	7.0	0.41	0.66	0.41	49.2
3	R2	28	0	29	0.0	0.238	8.4	LOS A	1.0	7.0	0.41	0.66	0.41	52.1
Approach		220	4	232	1.8	0.238	6.8	LOS A	1.0	7.0	0.41	0.66	0.41	50.9
East: Longwood Road (E)														
4	L2	10	0	11	0.0	0.121	5.8	LOS A	0.1	0.6	0.03	0.05	0.03	57.8
5	T1	200	2	211	1.0	0.121	0.0	LOS A	0.1	0.6	0.03	0.05	0.03	59.4
6	R2	8	1	8	12.5	0.121	6.1	LOS A	0.1	0.6	0.03	0.05	0.03	52.8
Approach		218	3	229	1.4	0.121	0.5	NA	0.1	0.6	0.03	0.05	0.03	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.143	5.5	LOS A	0.5	3.7	0.44	0.69	0.44	46.0
8	T1	42	1	44	2.4	0.143	5.3	LOS A	0.5	3.7	0.44	0.69	0.44	48.3
9	R2	49	1	52	2.0	0.143	8.8	LOS A	0.5	3.7	0.44	0.69	0.44	47.8
Approach		94	4	99	4.3	0.143	7.1	LOS A	0.5	3.7	0.44	0.69	0.44	48.0
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.132	6.3	LOS A	0.6	4.6	0.30	0.39	0.30	49.8
11	T1	51	5	54	9.8	0.132	0.6	LOS A	0.6	4.6	0.30	0.39	0.30	55.2
12	R2	82	2	86	2.4	0.132	6.3	LOS A	0.6	4.6	0.30	0.39	0.30	53.1
Approach		206	18	217	8.7	0.132	4.9	NA	0.6	4.6	0.30	0.39	0.30	52.4
All Vehicles		738	29	777	3.9	0.238	4.4	NA	1.0	7.0	0.27	0.41	0.27	53.1

Figure 11 – Sensitivity Analysis PM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV [veh/h]	[Total veh/h]	HV [%]	vic	sec		[Veh. veh]	[Dist. m]				km/h
South: Scott Creek Road														
1	L2	70	0	74	0.0	0.188	6.0	LOS A	0.7	5.3	0.34	0.62	0.34	52.8
2	T1	80	2	84	2.5	0.188	6.4	LOS A	0.7	5.3	0.34	0.62	0.34	49.3
3	R2	27	1	28	3.7	0.188	8.5	LOS A	0.7	5.3	0.34	0.62	0.34	52.1
Approach		177	3	186	1.7	0.188	6.6	LOS A	0.7	5.3	0.34	0.62	0.34	51.1
East: Longwood Road (E)														
4	L2	18	0	19	0.0	0.089	5.6	LOS A	0.0	0.3	0.02	0.08	0.02	57.5
5	T1	139	1	146	0.7	0.089	0.0	LOS A	0.0	0.3	0.02	0.08	0.02	59.1
6	R2	5	0	5	0.0	0.089	5.9	LOS A	0.0	0.3	0.02	0.08	0.02	52.8
Approach		162	1	171	0.6	0.089	0.8	NA	0.0	0.3	0.02	0.08	0.02	58.7
North: Heathfield Road														
7	L2	7	0	7	0.0	0.143	4.9	LOS A	0.5	3.6	0.42	0.65	0.42	48.5
8	T1	49	1	50	2.0	0.143	5.2	LOS A	0.5	3.6	0.42	0.65	0.42	48.6
9	R2	48	0	51	0.0	0.143	8.1	LOS A	0.5	3.6	0.42	0.65	0.42	48.2
Approach		104	1	109	1.0	0.143	6.5	LOS A	0.5	3.6	0.42	0.65	0.42	48.4
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.143	6.2	LOS A	0.7	5.0	0.27	0.34	0.27	50.5
11	T1	89	2	94	2.2	0.143	0.4	LOS A	0.7	5.0	0.27	0.34	0.27	55.9
12	R2	109	0	115	0.0	0.143	6.0	LOS A	0.7	5.0	0.27	0.34	0.27	53.9
Approach		232	7	244	3.0	0.143	3.9	NA	0.7	5.0	0.27	0.34	0.27	54.1
All Vehicles		675	12	711	1.8	0.188	4.3	NA	0.7	5.3	0.25	0.40	0.25	53.3

The report offers the site's existing use as evidence in support of their claim that the proposal will have minimal traffic impact – this is not acceptable as the scale of the development is not comparable to the existing use.

While it is noted that the nature of the proposed development is different to that of the previous land use, the previous use would have generated vehicle movements to/from the site. The assessment outlined above has not considered any discounts/provisions for the previous land use or considered any passing trade that may be a result of the nature of proposed development. Therefore, the proposed development is not anticipated to adversely impact on the safety or function of the road network.

Turn path for tanker is in adequate, being laid over aerial imagery, and appearing to impact the centreline of the intersection. The turn path must be run over detailed engineering survey, inclusive of all present road assets, and assets proposed by the development, before an assessment can be made as to whether the fuel tanker can adequately access the site.

The swept path assessment has been updated on an engineering feature survey provided by the applicant. The swept path assessment demonstrates the ability for the anticipated 16.4m delivery vehicle to access the site without crossing the centre line of Scott Creek Road and Longwood Road. It

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

is noted that the largest anticipated vehicle to access the site is categorised as a general access vehicle and has legal access via Scott Creek Road to/from either Longwood Road or Heathfield Road.

Only modified sight distances are achieved, which may not be acceptable, suggesting the site may not be suitable for a development of this scale.

Vegetation removal is required to achieve stated sight distances, and it is not clear if approval has or will be granted for the removal.

The TCS assessed the sight access points based on EDD Safe Intersection Sight Distance which is generally applicable to public road intersections and can be applied to site access points in a similar manner. SISD is generally assessed in the first instance and is more conservative than other sight line requirements outlined within Austroads. Other methods such as Minimum Gap Sight Distance (MGSD) from Austroads or the method from Australian Standards AS/NZS 2890.1:2004 can be more applicable to the minimum sight lines that are required at site access points.

It is noted that the principle of the Australian Standards method is similar to that of the Minimum Gap Sight Distance (MGSD) outlined within Austroads, corresponding to the distances corresponding to the critical acceptance gap that drivers are prepared to accept when undertaking a crossing or turning manoeuvre at intersections.

On site speed measurements along Longwood Road and Scott Creek Road indicate that the site has an observed 85th percentile speed of 60km/h, with an average speed of 54km/h. Therefore, the posted speed limit of 60km/h is applicable to the assessment. As a result, based on a critical gap of 5 seconds to undertake a right turn out of the site, a sight distance of 83m is required for a 60km/h posted speed limit to meet both Austroads and Australian Standards requirements.

The access points on Longwood Road provide in excess of 83m as outlined within the TCS, meeting the requirements of Austroads and the Australian Standards.

The speed measurements on Scott Creek Road were conducted at the bend, and it was observed that drivers were slowing down as they approached the intersection. The proposed egress access is located approximately 50m from the intersection, where vehicles were observed to be slowing on the approach to the intersection to give way to drivers approaching from Longwood Road. It is anticipated that vehicles at this location could be travelling in the order of 50km/h or less to stop and give way at the intersection (based on minimum Safe Stopping Distance for 50km/h of 45m).

Based on a critical gap of 5 seconds to undertake a right turn out of the site and an opposing vehicle speed of 50km/h adjacent the access point, a sight distance of 69m is required to meet both Austroads and Australian Standards requirements. The Scott Creek Road car wash access can provide approximately 75m of sight distance to the south, meeting the requirements of Austroads and the Australian Standards.

It is noted that to achieve sight lines at the Scott Creek Road access, vegetation removal/pruning is required. The extent of the impacts to address vehicle sight lines may be able to be accommodated with a combination of pruning and vegetation removal. It is understood that the applicant is willing to discuss these requirements with Council.

Based on the above, the sight lines at the access points are considered to be appropriate.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

There is no commentary on pedestrian impacts.

Pedestrian surveys were undertaken to determine the pedestrian movements that occur directly in front of the subject site. The surveys indicated along Scott Creek Road within the 3 hour survey periods, a total of 6 pedestrians were observed to utilise Scott Creek Road in the AM period, and a total of 1 pedestrian observed in the PM period. The typical pedestrian movements in the area were observed to be east-west movements along Longwood Road. As part of the proposal, no changes are proposed to impact the existing pedestrian footpath network, and therefore is not anticipated to impact on pedestrian movements through the area.

Regards,

STANTEC AUSTRALIA PTY LTD



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Attachment: TCS

SITE TRAFFIC COMPLIANCE STATEMENT

Proposed OTR Integrated Service Station

Site: OTR Heathfield	Reference: 301401112-1040	Date Issued: 17 January 2023
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Site Layout

Location	160 Longwood Road, Heathfield
Description of Subject Site	<ul style="list-style-type: none"> • 2,160 sq.m Total Site Area (approx.) • 250 sq.m control building area • 8 fuelling points in Domino layout • Air and water facilities • Two vacuum bays • 3 manual car washes • One automatic car wash
Relevant Documents (attached)	<ul style="list-style-type: none"> • ADS Architects, drawing no 21JN1448sk01e, dated 23/11/22. • Stantec Sketch 301401112-1040-AT01 to 301401112-1040-AT04, dated 22/12/2022

Technical Layout Review

This review should be read in conjunction with the Stantec 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017.

Parking Provision	Applicable Rates	Required Spaces	Provided Spaces	Complies
Proposed layout provides adequate parking in accordance with the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	2.5/100sq.m (with drive-thru facilities)	N.A.	N.A.	N.A.
	3.3/100sq.m (without drive-thru facilities)	9	9	✓

Additional Comments:	<p>It is noted the SA Planning Code outlines a provision 3 spaces per 100 sq.m GLFA, slightly less than the peak parking rates recommended to be adopted in the <i>Generic Parking and Traffic Updated Traffic Management Report</i>. Notwithstanding, the development complies with both rates.</p> <p>The provision of 9 parking spaces meets the parking demand calculated in accordance with the OTR generic parking rates and exceeds the SA Planning and Design Code demand of 8 spaces.</p>
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Parking Layout	Parking Space	Typical Dimensions	Complies
Proposed car parking layout conforms with Australian Standard/New Zealand Standard for Off Street Car parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)?	Parking	2.6m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
	Disability Parking and Shared Space	2.4m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
Additional Comments:			
Access Points	Comments		Complies
The proposed access arrangements comply with Figure 3.1 in AS/NZS2890.1:2004?	<p>New access points are located outside of the prohibited zone (6m from the projection of the road property lines/from the tangent point).</p> <p>Existing access on Longwood Road is being maintained, and positioned further west, increasing separation to the Longwood Road/Scott Creek Road/Heathfield Road intersection</p>		✓
Additional Comments:			

Sight Distance Assessment	Comment	Complies
<p>The proposed layout provides appropriate sight distance from each access point.</p>	<p>It is noted that Safe Intersection Sight Distance (SISD) is generally applicable to public road intersections and can be applied to site access points in a similar manner. SISD is generally assessed in the first instance and is more conservative than other sight line requirements outlined within Austroads.</p> <p>Other methods such as Minimum Gap Sight Distance (MGSD) from Austroads or the method from the Australian Standards can be more applicable to the minimum sight lines that are required at site access points.</p> <p><u>Longwood Road</u></p> <p>East: Given the straight road alignment and lack of obstructions the minimum SISD of 123m for design speed of 60 kilometres has been achieved at the site access point along Longwood Road (shown in attachments).</p> <p>West: Sight distance is restricted due to the existing curves within the road alignment. Due to the location within the hills EDD SISD is considered to apply to the subject site. The minimum EDD SISD of 97m for design speed 60km/h can be achieved at the site access point along Longwood Road (shown in attachments). The sight distance exceeds the MGSD for a 60km/h speed and a critical gap of 5 seconds (right turn out movement) requirement of 83m.</p> <p><u>Scott Creek Road</u></p> <p>South: Sight distance is restricted due to the existing curves within the road alignment. On-site investigations indicate that 85thile vehicle speeds around the existing bend are in the 60km/h. It is noted that vehicles will be slowing after the bend on the approach to the intersection. It is likely that vehicle speeds adjacent the site access will be in the order of 50km/h. The minimum EDD SISD of 74m for design speed 50km/h and estimated 5% uphill gradient can be achieved at the site access point along Scott Creek Road with the removal/pruning of existing street trees (shown in attachments). It is understood that a majority of the vegetation is proposed to be removed as part of the development. The sight distance exceeds the MGSD for a 50km/h speed and a critical gap of 5 seconds (right turn out movement) requirement of 69m.</p> <p>North: Sight distance is unrestricted to the intersection, enabling visibility for when vehicles enter Scott Creek Road.</p>	<p style="text-align: center;">✓</p>

Additional Comments:				
Queuing Proposed fuelling layout provides sufficient queue spaces as per the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	Fuelling Layout	Required Queue Space	Provided Queue Space	Complies
	Starter Gate	N.A.	N.A.	N.A.
	Domino	2	2	✓
Additional Comments:	The fuel bowzers are positioned perpendicular to Longwood Road, with approximately 12m from the closest bowser to the property boundary, allowing additional space for vehicles to pass or queue behind other bowzers. Proposed layout allows for vehicles to traverse the site without being impacted by queuing vehicles.			
Turn Paths Design vehicles able to traverse through the proposed layout? Swept paths of the heavy vehicles are enclosed at the end of the checklist	Vehicle	Design Vehicle		Complies
	Fuel Delivery	13.9m OTR Tanker		N.A.
		16.4m Semi Trailer		✓
		19.1m B Double		N.A.
	Waste Collection	10.0m Refuse Vehicle		✓
		8.8m MRV		N.A.
	Deliveries	12.5m HRV		N.A.
		8.8m MRV		✓
	Drive Thru	B99 Light Vehicle		N.A.
Car Wash	B99 Light Vehicle		✓	
Additional Comments:				
Traffic Generation What is the expected traffic generation of the proposed development?	Traffic Generator	Applicable Rate (per hr)	Traffic Generation (trips per hr)	
	Control Building/Bowzers	0.6 trips × 250 (sq.m)	150	
	Total PM Peak Period			150
Additional Comments:				

Traffic Impact	Traffic Impact
<p>What is the expected traffic impact that the traffic generated by the proposed development will have on the surrounding road network?</p>	<p>Petrol stations are typically located to capture passing trade based on a convenient location and access arrangement. Due to the location of the proposed development on the corner of the Longwood Road/Scott Creek Road, it is expected that a high proportion of the traffic generated by the subject site will be passing trade.</p> <p>Based on this and noting that there has existing petrol station on site, the development is not anticipated to have an adverse impact on the safety or operation of the adjacent road network.</p>
<p>Additional Comments:</p>	

Planning Code Assessment

This assessment only considers performance outcomes applicable to the relevant traffic and transport related matters that apply to the proposed development.

Part 4 General Development Policies

Transport, Access and Parking

Performance Outcome	Deemed-to-Satisfy / Designated Performance Feature	Stantec Assessment
PO 1.3	DTS/DPF 1.3	Loading / refuse collection to occur on-site and would occur outside of peak periods.
PO 1.4	DTS/DPF 1.4	Queuing can be contained within the site. Loading activities will be conducted within the site and should not have an impact on the operation and queuing on public road.
PO 2.1	DTS/DPF 2.1	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 2.2	DTS/DPF 2.2	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 3.1	DTS/DPF 3.1	New access points are proposed to be located outside of the prohibited zone. Refer to 'Access Points' section.
PO 3.2	DTS/DPF 3.2	Not applicable. No ramps proposed.
PO 3.3	DTS/DPF 3.3	Refer to 'Access Points' section of report.
PO 3.4	DTS/DPF 3.4	Refer to 'Access Points' section of report.
PO 3.5	DTS/DPF 3.5	Refer to 'Access Points' section of report.
PO 3.6	DTS/DPF 3.6	Not applicable – on-street parking not appropriate in this location
PO 3.7	DTS/DPF 3.7	Not applicable – not located near a railway crossing
PO 3.8	DTS/DPF 3.8	Refer to attached turn paths.
PO 3.9	DTS/DPF 3.9	All vehicle circulation to occur within the site.

PO 4.1	DTS/DPF 4.1	DDA compliant parking spaces will be provided.
PO 5.1	DTS/DPF 5.1	Planning Code produced a requirement of 8 spaces to be provided for a retail fuel outlet. Proposed development provides a total of 9 spaces.
PO 6.1	DTS/DPF 6.1	Satisfies the requirement. Use of public roads not required.
PO 6.4	DTS/DPF 6.4	Footpaths provided within the proposed development where practicable.
PO 6.6	DTS/DPF 6.6	Loading areas and parking spaces are located within the site.
PO 6.7	DTS/DPF 6.7	Not applicable
PO 7.1	DTS/DPF 7.1	Not applicable
PO 9.1	DTS/DPF 9.1	No bicycle parking rate explicitly stated.
PO 9.2	DTS/DPF 9.2	Refer previous response.
PO 9.3	DTS/DPF 9.3	Specific end of trip facilities have not been provided however, this could be reviewed and provided at a later date if the need arises.

DIT Comments and Response

No formal comments received

TRAFFIC COMPLIANCE STATEMENT CERTIFICATION

It is hereby certified that the proposed development described in this document and shown on the attached drawings is in accordance with the "On the Run" Service Stations Generic Parking and Traffic – Updated Traffic Management Report (updated July 2017) with regards to the parking and traffic operation specified.

The proposed development has been designed with consideration of Austroads Guidelines and Australian Standards, and Traffic Code applicable to the design of traffic management and parking in South Australia.

Stantec verifies that the detailed design will be able to meet the requirements of the relevant guidelines, standards and code.

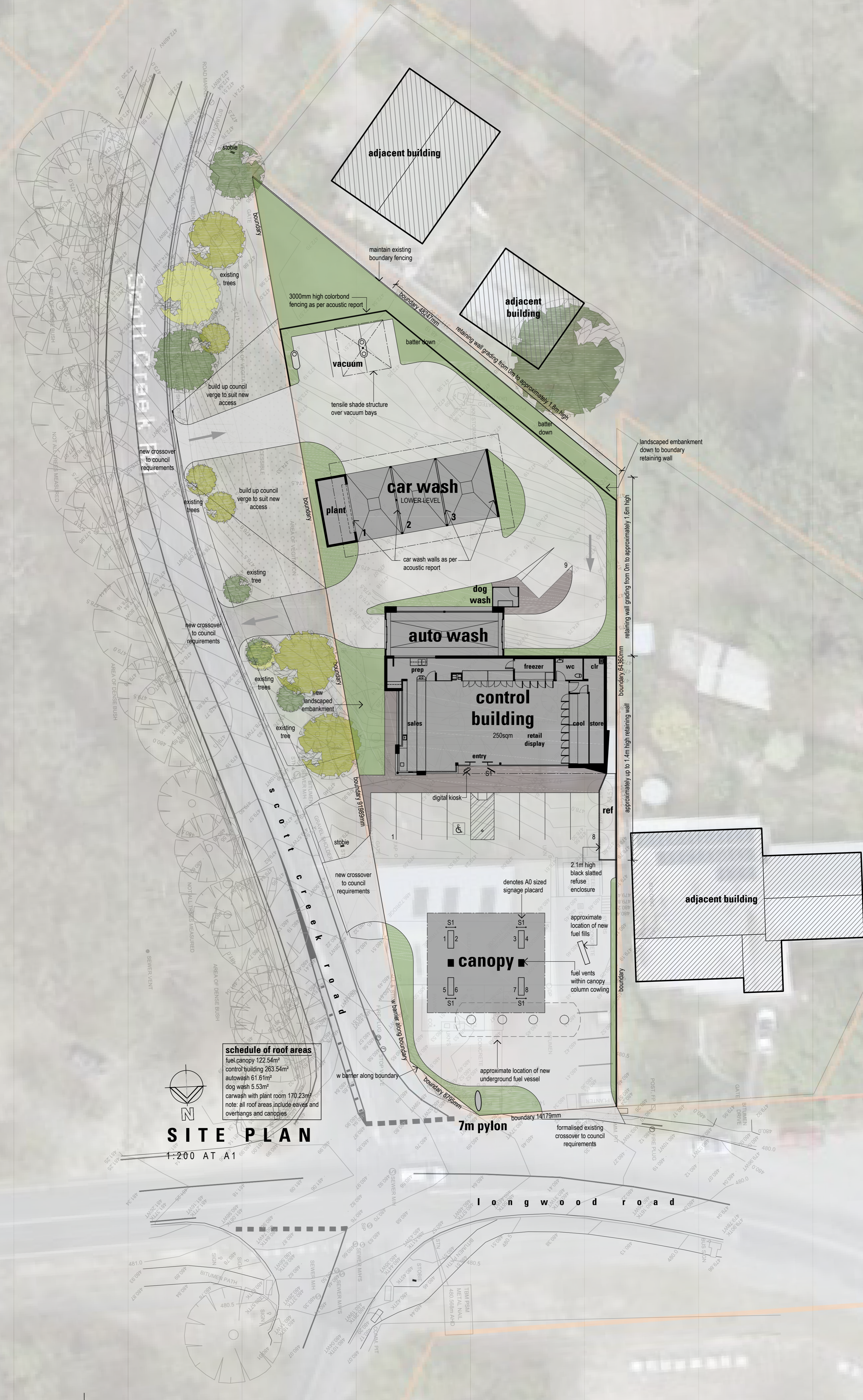
STANTEC



Timothy Jones

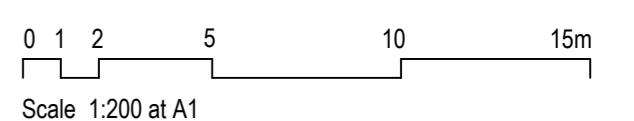
Senior Transportation Planner

APPENDIX A - DRAWINGS



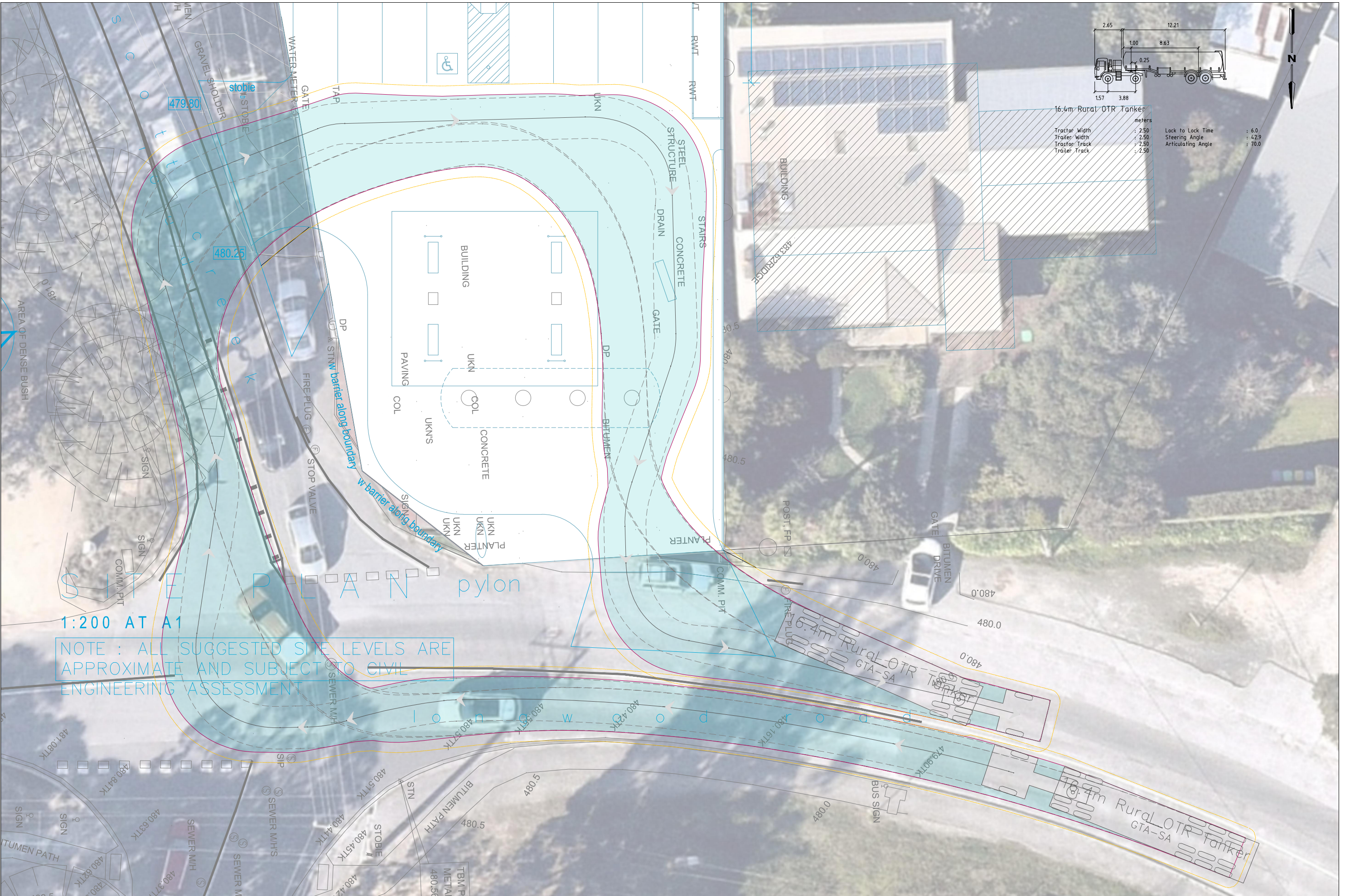
NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD



APPENDIX B – TURN PATH ANALYSIS

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NOTE : ALL SUGGESTED SITE LEVELS ARE APPROXIMATE AND SUBJECT TO CIVIL ENGINEERING ASSESSMENT



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
T.JONES

APPROVED BY
T.JONES

DESIGN CHECK
D.KWONG

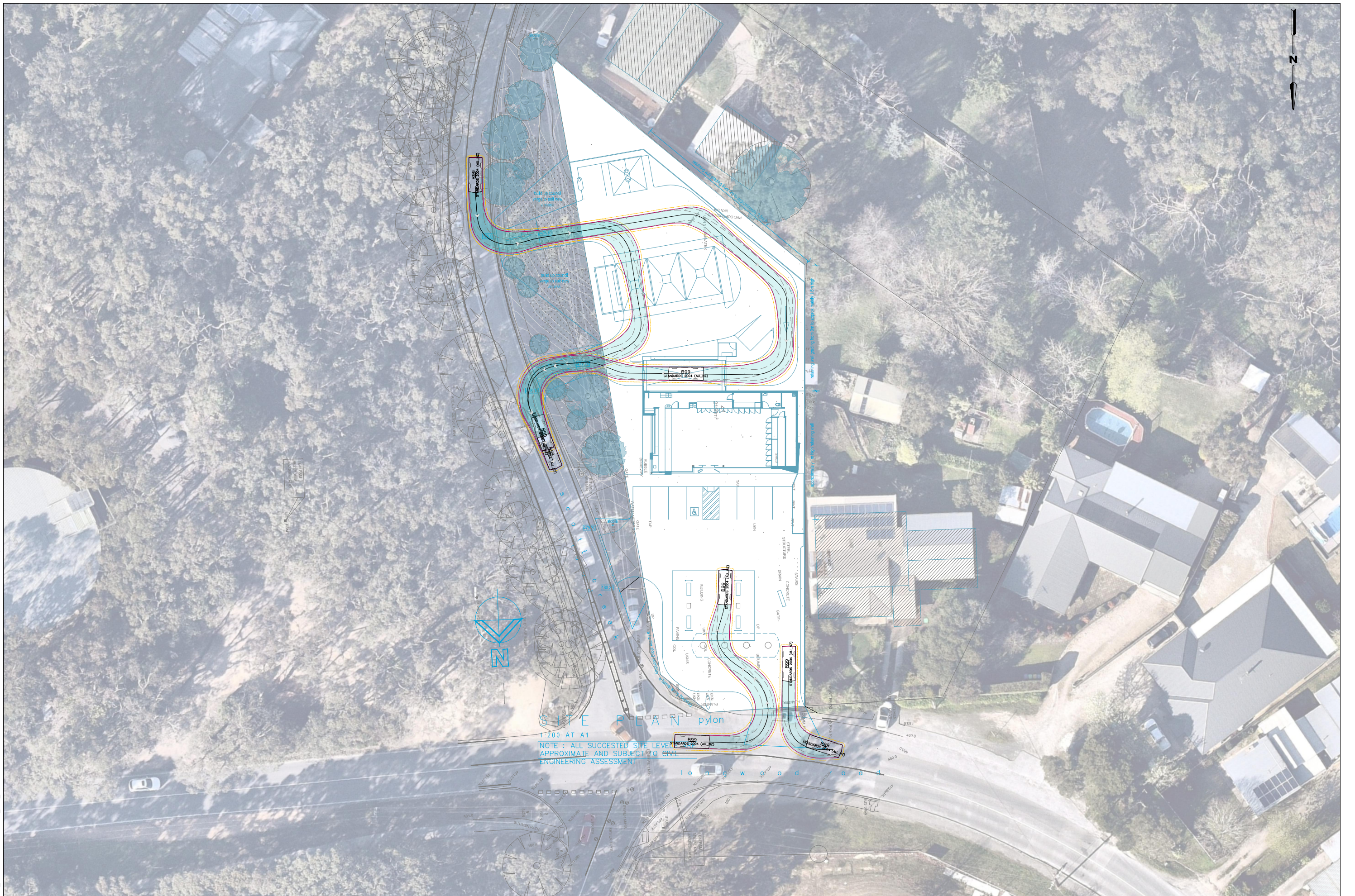
DATE ISSUED
22/12/2022

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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
16.4m RURAL TANKER
DRAWING 301401112-1040-AT01 SHEET 01 OF 04 ISSUE P3

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DESIGNED
T.JONES

DESIGN CHECK
D.KWONG

APPROVED BY
T.JONES

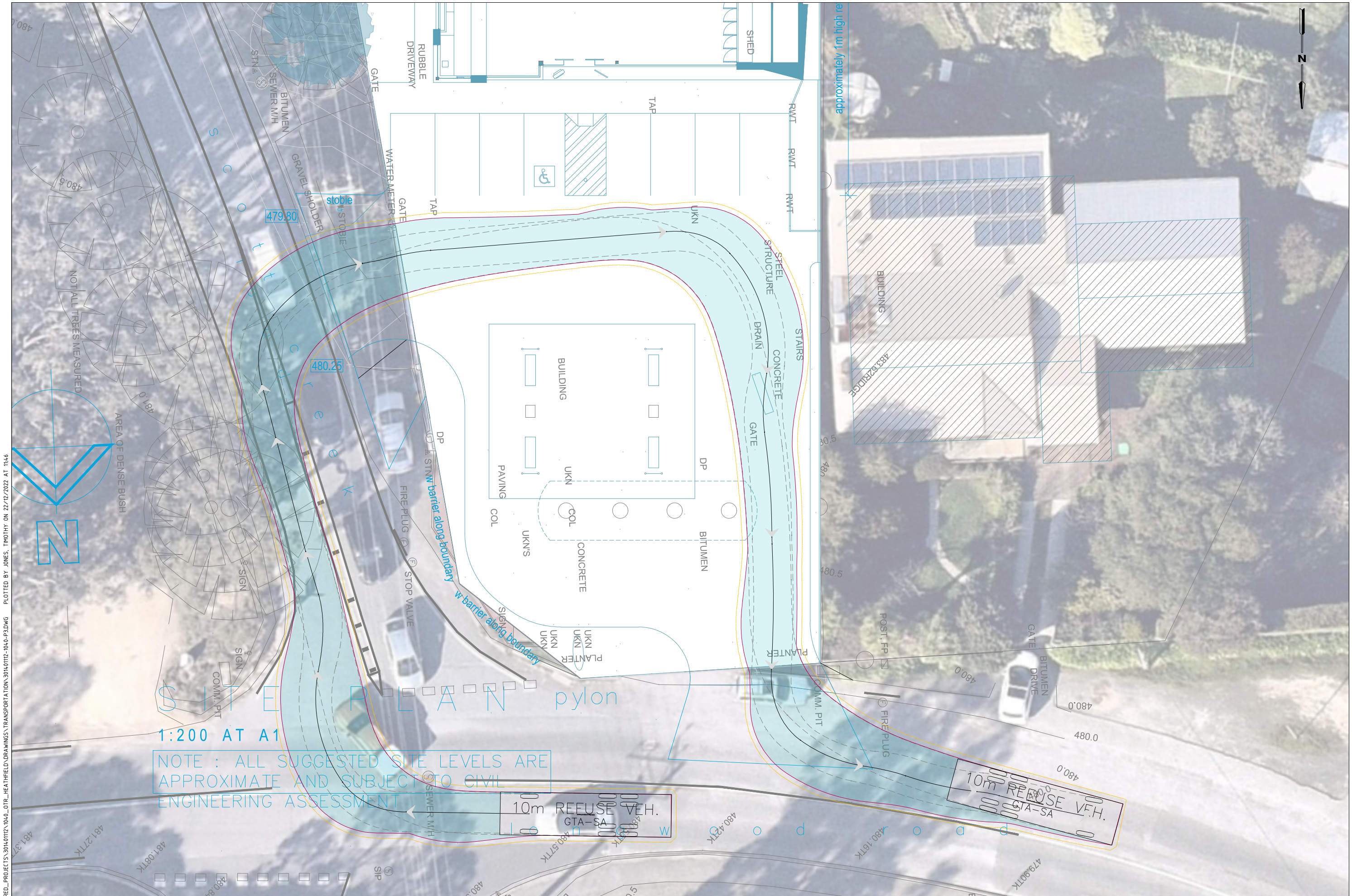
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22/12/2022

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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
B99 ACCESS

DRAWING 301401112-1040-AT02 SHEET 02 OF 04 ISSUE P3



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PRELIMINARY PLAN
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DESIGNED
T.JONES

APPROVED BY
T.JONES

DESIGN CHECK
D.KWONG

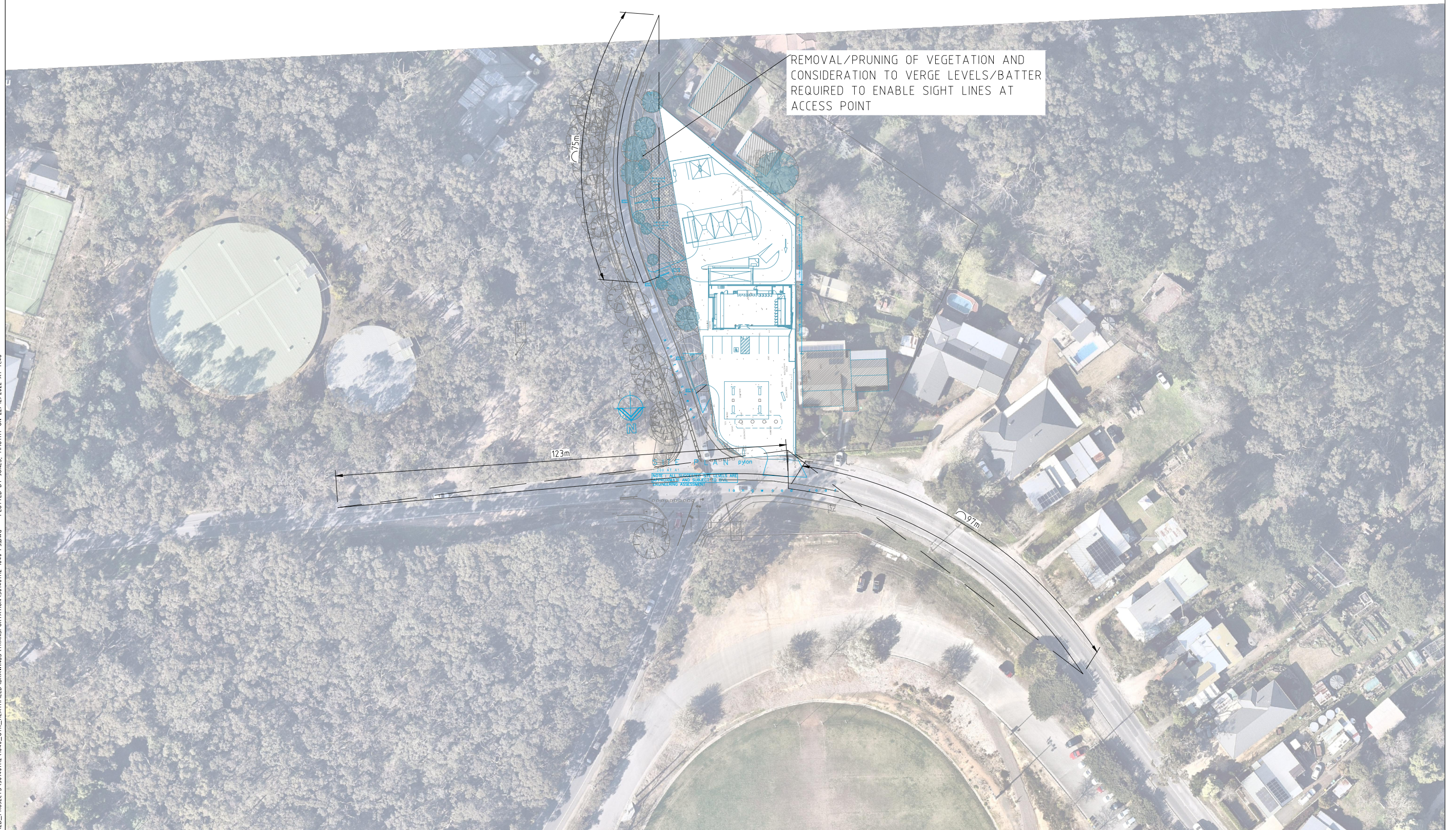
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22/12/2022

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CAD FILE NO.
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OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
B99 ACCESS

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PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT
NOTIFICATION

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DESIGNED
T.JONES

DESIGN CHECK
D.KWONG

APPROVED BY
T.JONES

DATE ISSUED
22/12/2022

SCALE
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CAD FILE NO.
301401112-1040-P3.DWG

OTR HEATHFIELD
160 LONGWOOD ROAD
HEATHFIELD SA 5153
SIGHTLINE ASSESSMENT
DRAWING 301401112-1040-AT04

SHEET 04 OF 04

ISSUE P3

04 May 2023

Project/File:

Tim Beazley
270 The Parade
Kensington SA 5068

Dear Tim,

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

We are in receipt of correspondence from the Adelaide Hills Council dated 07 April 2022 and 01 March 2023 for further information (RFI) in relation to the application for a 24-hour retail fuel outlet and associated facilities. Having reviewed the correspondence, the following are traffic related comments raised followed by our response. An updated TCS has also been prepared based on the updated plans and is included within this letter.

Correspondence dated 07 April 2022

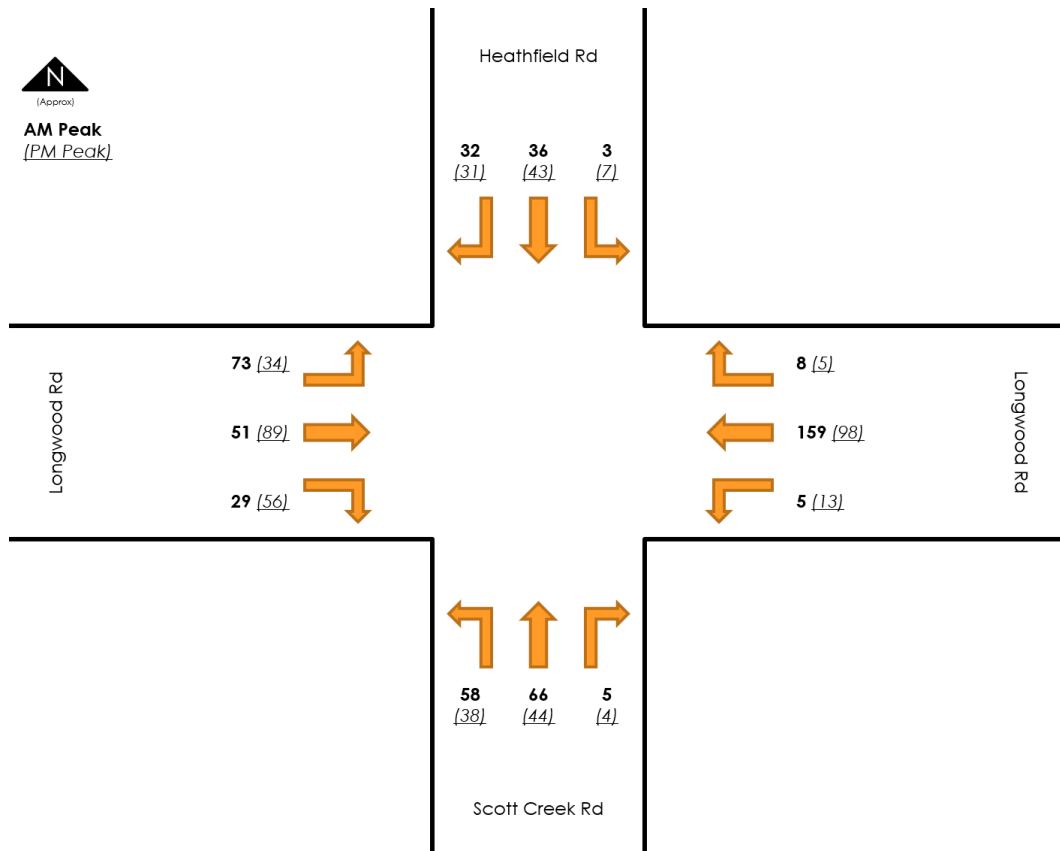
Inadequate Traffic Impact Assessment. The report states that the development will not have an adverse impact on the surrounding road network but does not provide any information around existing traffic volumes or the performance of the adjacent four-way intersection.

Existing Intersection Performance

To determine the existing traffic movements on the surrounding road network, traffic surveys were undertaken in October 2022 to determine the peak hour vehicle movements adjacent the subject site. The observed AM peak hour (8:00am to 9:00am) and PM peak hour (3:00pm to 4:00pm) traffic movements are summarised in Figure 1.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 1 – Peak Hour Movements



The above traffic volumes have been analysed utilising SIDRA Intersection 9 to gain an understanding as to the existing performance of the intersection. The intersection performance for the AM and PM peak is shown in Figure 2 and Figure 3.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 2 – AM Peak Existing Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Scott Creek Road														
1	L2	58	3	61	5.2	0.125	6.2	LOS A	0.5	3.5	0.32	0.59	0.32	53.0
2	T1	66	1	69	1.5	0.125	5.8	LOS A	0.5	3.5	0.32	0.59	0.32	49.6
3	R2	5	0	5	0.0	0.125	7.3	LOS A	0.5	3.5	0.32	0.59	0.32	52.6
Approach		129	4	136	3.1	0.125	6.0	LOS A	0.5	3.5	0.32	0.59	0.32	51.2
East: Longwood Road (E)														
4	L2	5	0	5	0.0	0.096	5.9	LOS A	0.1	0.5	0.04	0.04	0.04	57.9
5	T1	159	2	167	1.3	0.096	0.0	LOS A	0.1	0.5	0.04	0.04	0.04	59.5
6	R2	8	1	8	12.5	0.096	6.1	LOS A	0.1	0.5	0.04	0.04	0.04	52.8
Approach		172	3	181	1.7	0.096	0.5	NA	0.1	0.5	0.04	0.04	0.04	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.090	5.4	LOS A	0.3	2.3	0.36	0.60	0.36	46.7
8	T1	36	1	38	2.8	0.090	4.6	LOS A	0.3	2.3	0.36	0.60	0.36	49.1
9	R2	32	1	34	3.1	0.090	7.2	LOS A	0.3	2.3	0.36	0.60	0.36	48.6
Approach		71	4	75	5.6	0.090	5.8	LOS A	0.3	2.3	0.36	0.60	0.36	48.8
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.094	5.9	LOS A	0.3	2.0	0.15	0.35	0.15	50.6
11	T1	51	5	54	9.8	0.094	0.3	LOS A	0.3	2.0	0.15	0.35	0.15	56.1
12	R2	29	2	31	6.9	0.094	6.1	LOS A	0.3	2.0	0.15	0.35	0.15	53.7
Approach		153	18	161	11.8	0.094	4.1	NA	0.3	2.0	0.15	0.35	0.15	52.9
All Vehicles		525	29	553	5.5	0.125	3.6	NA	0.5	3.5	0.19	0.34	0.19	53.7

Figure 3 – PM Peak Existing Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] veh/h	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Scott Creek Road														
1	L2	38	0	40	0.0	0.081	5.9	LOS A	0.3	2.2	0.25	0.56	0.25	53.4
2	T1	44	2	46	4.5	0.081	5.6	LOS A	0.3	2.2	0.25	0.56	0.25	49.8
3	R2	4	1	4	25.0	0.081	8.1	LOS A	0.3	2.2	0.25	0.56	0.25	51.7
Approach		86	3	91	3.5	0.081	5.8	LOS A	0.3	2.2	0.25	0.56	0.25	51.4
East: Longwood Road (E)														
4	L2	13	0	14	0.0	0.064	5.7	LOS A	0.0	0.3	0.03	0.09	0.03	57.4
5	T1	98	1	103	1.0	0.064	0.0	LOS A	0.0	0.3	0.03	0.09	0.03	59.0
6	R2	5	0	5	0.0	0.064	5.9	LOS A	0.0	0.3	0.03	0.09	0.03	52.7
Approach		116	1	122	0.9	0.064	0.9	NA	0.0	0.3	0.03	0.09	0.03	58.5
North: Heathfield Road														
7	L2	7	0	7	0.0	0.093	4.8	LOS A	0.3	2.4	0.34	0.57	0.34	49.3
8	T1	43	1	45	2.3	0.093	4.5	LOS A	0.3	2.4	0.34	0.57	0.34	49.4
9	R2	31	0	33	0.0	0.093	6.6	LOS A	0.3	2.4	0.34	0.57	0.34	49.0
Approach		81	1	85	1.2	0.093	5.4	LOS A	0.3	2.4	0.34	0.57	0.34	49.2
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.105	6.0	LOS A	0.4	2.9	0.17	0.28	0.17	51.2
11	T1	89	2	94	2.2	0.105	0.2	LOS A	0.4	2.9	0.17	0.28	0.17	56.8
12	R2	56	0	59	0.0	0.105	5.8	LOS A	0.4	2.9	0.17	0.28	0.17	54.8
Approach		179	7	188	3.9	0.105	3.1	NA	0.4	2.9	0.17	0.28	0.17	55.0
All Vehicles		462	12	486	2.6	0.105	3.4	NA	0.4	2.9	0.18	0.34	0.18	54.0

The SIDRA modelling indicates that the intersection currently operates with a high level of spare capacity (as shown by a low Degree of Saturation), and minimal queues and delays.

Post Development Intersection Performance

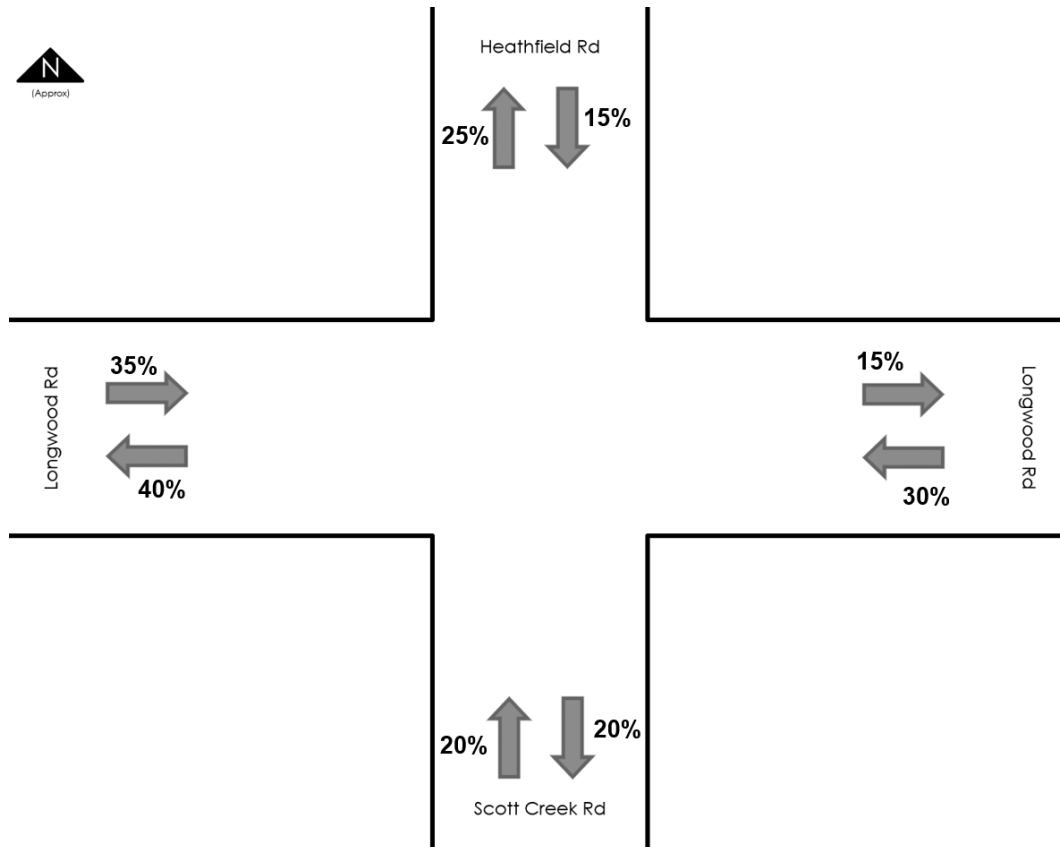
Based on a control building floor area of 250sq.m, the site is anticipated to generate in the order of 150 vehicle trips to/from the site. It is noted that arrangement of the site access points may result in some vehicles turning right into/out of the Longwood Road intersection. For the purpose of this assessment,

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

these movements have been consolidated to the Scott Creek Road intersection, as there are no dedicated right turn lanes at the intersection, which will result in a conservative assessment.

The traffic distributions have been based on an average of the existing peak hour movements on each of the intersection legs. The anticipated inbound and outbound movements to/from the site from each of the intersection legs are shown in Figure 4.

Figure 4 – Anticipated Traffic Distributions



Based on the above, Figure 5 outlines the expected vehicle movements to/from each of the access points and Figure 6 outlines the anticipated increase in vehicle movements at the existing intersection.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 5 – Anticipated Site Access Movements

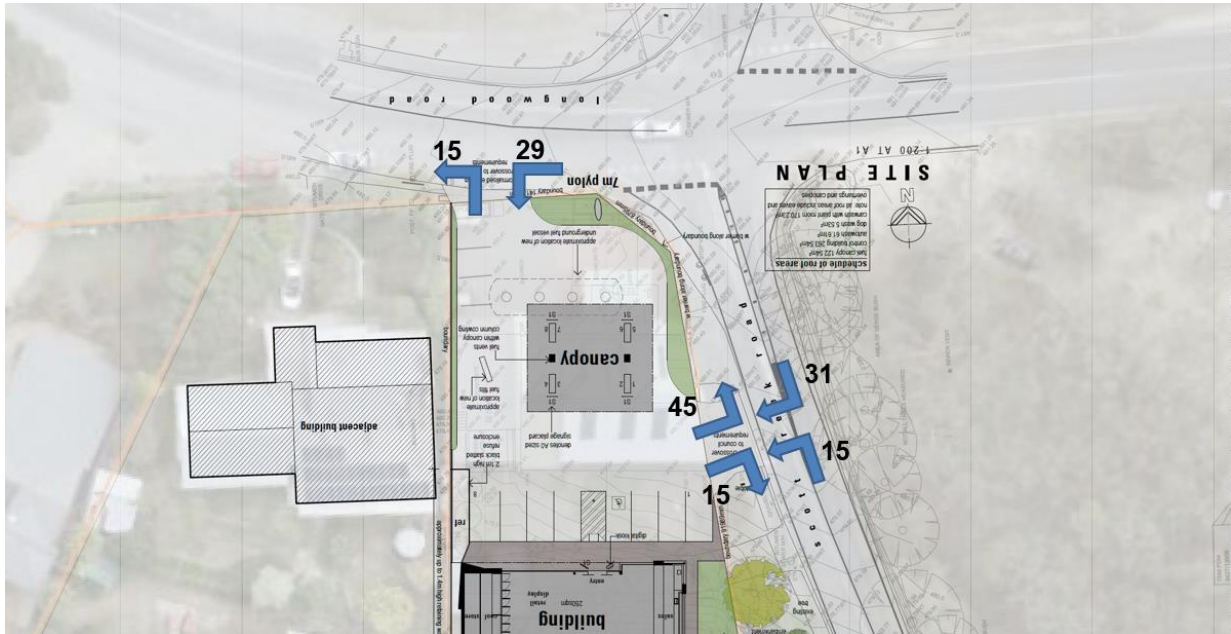
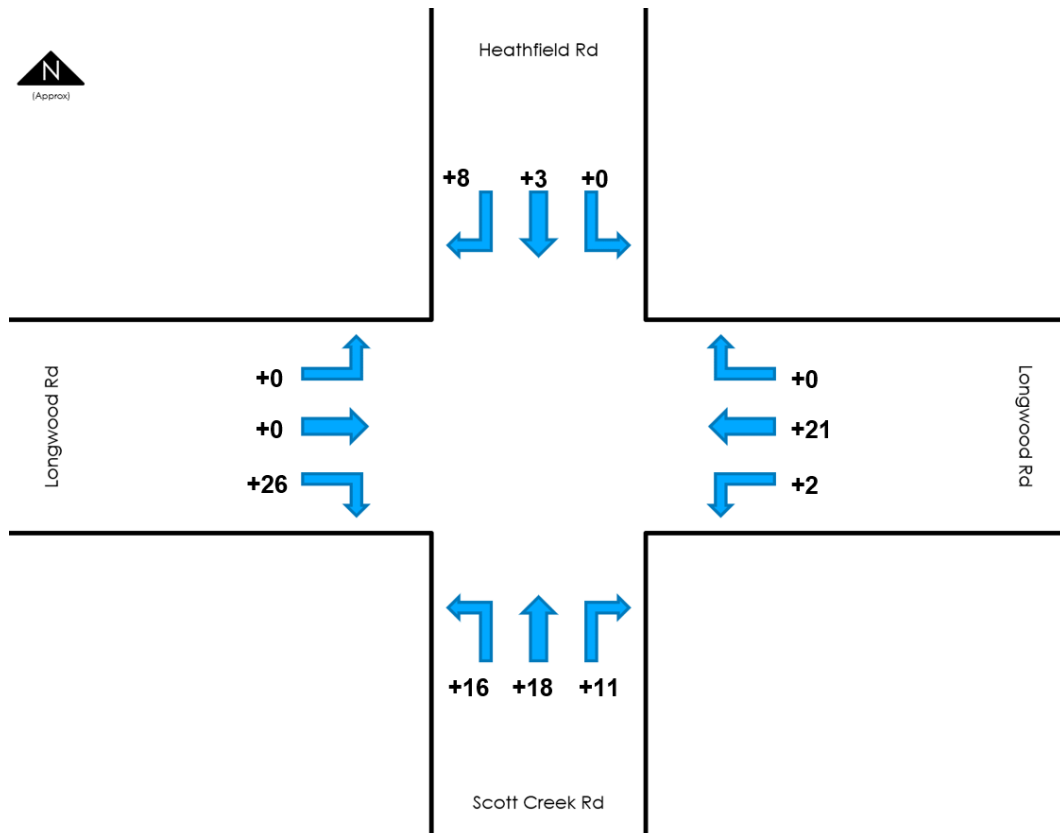


Figure 6 – Anticipated Additional Intersection Movements

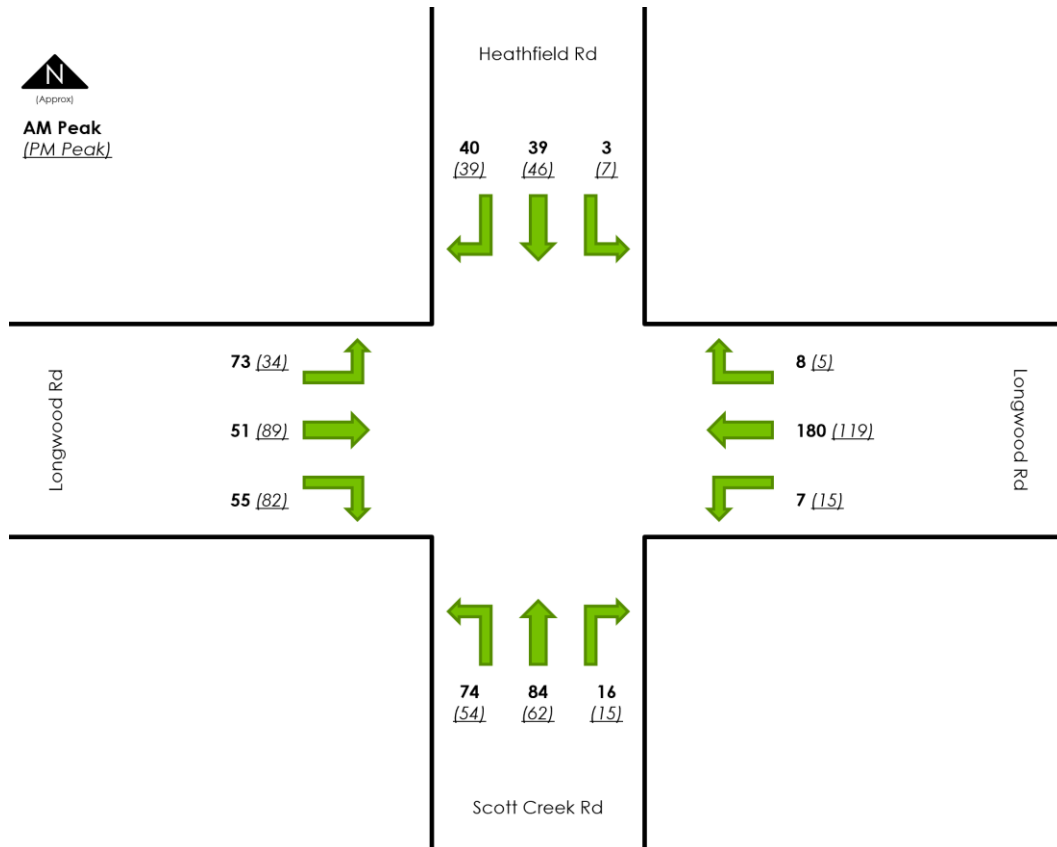


Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

It is noted that retail fuel outlets generally have a portion of passing trade that are already present on the road network. For the purpose of this assessment, no passing trade discounts have been applied to the site generated traffic volumes.

The post development intersection traffic volumes in the AM and PM peak hours are outlined in Figure 7.

Figure 7 – Post Development Intersection Traffic Movements



The post development traffic volumes have been analysed utilising SIDRA Intersection, with the forecast intersection performance for the AM and PM peak is shown in Figure 8 and Figure 9.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 8 – Post Development AM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV] veh/h	[Total veh/h]	[HV] %	v/c	sec		[Veh.]	[Dist] m				km/h
South: Scott Creek Road														
1	L2	74	3	78	4.1	0.178	6.3	LOS A	0.7	5.1	0.37	0.62	0.37	52.8
2	T1	84	1	88	1.2	0.178	6.2	LOS A	0.7	5.1	0.37	0.62	0.37	49.4
3	R2	16	0	17	0.0	0.178	7.8	LOS A	0.7	5.1	0.37	0.62	0.37	52.4
Approach		174	4	183	2.3	0.178	6.4	LOS A	0.7	5.1	0.37	0.62	0.37	51.1
East: Longwood Road (E)														
4	L2	7	0	7	0.0	0.108	5.8	LOS A	0.1	0.6	0.03	0.05	0.03	57.9
5	T1	180	2	189	1.1	0.108	0.0	LOS A	0.1	0.6	0.03	0.05	0.03	59.5
6	R2	8	1	8	12.5	0.108	6.1	LOS A	0.1	0.6	0.03	0.05	0.03	52.8
Approach		195	3	205	1.5	0.108	0.5	NA	0.1	0.6	0.03	0.05	0.03	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.114	5.4	LOS A	0.4	2.9	0.40	0.64	0.40	46.4
8	T1	39	1	41	2.6	0.114	4.9	LOS A	0.4	2.9	0.40	0.64	0.40	48.7
9	R2	40	1	42	2.5	0.114	7.9	LOS A	0.4	2.9	0.40	0.64	0.40	48.2
Approach		82	4	86	4.9	0.114	6.4	LOS A	0.4	2.9	0.40	0.64	0.40	48.4
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.112	6.1	LOS A	0.4	3.4	0.24	0.37	0.24	50.1
11	T1	51	5	54	9.8	0.112	0.5	LOS A	0.4	3.4	0.24	0.37	0.24	55.6
12	R2	55	2	58	3.5	0.112	6.2	LOS A	0.4	3.4	0.24	0.37	0.24	53.4
Approach		179	18	188	10.1	0.112	4.5	NA	0.4	3.4	0.24	0.37	0.24	52.6
All Vehicles		630	29	663	4.6	0.178	4.0	NA	0.7	5.1	0.23	0.37	0.23	53.4

Figure 9 – Post Development PM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	[HV] veh/h	[Total veh/h]	[HV] %	v/c	sec		[Veh.]	[Dist] m				km/h
South: Scott Creek Road														
1	L2	54	0	57	0.0	0.131	5.9	LOS A	0.5	3.6	0.29	0.59	0.29	53.1
2	T1	62	2	65	3.2	0.131	6.0	LOS A	0.5	3.6	0.29	0.59	0.29	49.6
3	R2	15	1	16	6.7	0.131	8.0	LOS A	0.5	3.6	0.29	0.59	0.29	52.2
Approach		131	3	138	2.3	0.131	6.2	LOS A	0.5	3.6	0.29	0.59	0.29	51.3
East: Longwood Road (E)														
4	L2	15	0	15	0.0	0.076	5.6	LOS A	0.0	0.3	0.03	0.08	0.03	57.5
5	T1	119	1	125	0.8	0.076	0.0	LOS A	0.0	0.3	0.03	0.08	0.03	59.1
6	R2	5	0	5	0.0	0.076	5.9	LOS A	0.0	0.3	0.03	0.08	0.03	52.8
Approach		139	1	146	0.7	0.076	0.8	NA	0.0	0.3	0.03	0.08	0.03	58.7
North: Heathfield Road														
7	L2	7	0	7	0.0	0.115	4.8	LOS A	0.4	2.9	0.38	0.61	0.38	48.9
8	T1	46	1	48	2.2	0.115	4.8	LOS A	0.4	2.9	0.38	0.61	0.38	49.0
9	R2	39	0	41	0.0	0.115	7.3	LOS A	0.4	2.9	0.38	0.61	0.38	48.6
Approach		92	1	97	1.1	0.115	5.9	LOS A	0.4	2.9	0.38	0.61	0.38	48.9
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.123	6.1	LOS A	0.5	4.0	0.22	0.31	0.22	50.8
11	T1	89	2	94	2.2	0.123	0.3	LOS A	0.5	4.0	0.22	0.31	0.22	56.3
12	R2	82	0	86	0.0	0.123	5.9	LOS A	0.5	4.0	0.22	0.31	0.22	54.3
Approach		205	7	216	3.4	0.123	3.5	NA	0.5	4.0	0.22	0.31	0.22	54.5
All Vehicles		567	12	597	2.1	0.131	3.9	NA	0.5	4.0	0.22	0.37	0.22	53.7

Based on the SIDRA modelling, the intersection is anticipated to continue to operate with a high level of spare capacity (based on a low Degree of Saturation of 0.192) in the AM peak period. This is well below the DIT accepted maximum Degree of Saturation of 0.8 for an unsignalised intersection. The queues and delays at the intersection remain low, with 95thile queues of less than 1 vehicle and average delays of any turning movement being less than 8 seconds.

Additionally, a theoretical sensitivity analysis has been undertaken of the intersection under the basis of the site generating 300 vehicle trips (double the anticipated vehicle movements which will not occur in reality). The analysis outlined in Figure 10 and Figure 11 indicates that the intersection would continue to operate with a low Degree of Saturation, as well as low queues and delays.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

Figure 10 – Sensitivity Analysis AM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV [veh/h]	[Total veh/h]	HV [%]	vic	sec		[Veh. veh]	[Dist] m				km/h
South: Scott Creek Road														
1	L2	90	3	95	3.3	0.238	6.4	LOS A	1.0	7.0	0.41	0.66	0.41	52.5
2	T1	102	1	107	1.0	0.238	6.7	LOS A	1.0	7.0	0.41	0.66	0.41	49.2
3	R2	28	0	29	0.0	0.238	8.4	LOS A	1.0	7.0	0.41	0.66	0.41	52.1
Approach		220	4	232	1.8	0.238	6.8	LOS A	1.0	7.0	0.41	0.66	0.41	50.9
East: Longwood Road (E)														
4	L2	10	0	11	0.0	0.121	5.8	LOS A	0.1	0.6	0.03	0.05	0.03	57.8
5	T1	200	2	211	1.0	0.121	0.0	LOS A	0.1	0.6	0.03	0.05	0.03	59.4
6	R2	8	1	8	12.5	0.121	6.1	LOS A	0.1	0.6	0.03	0.05	0.03	52.8
Approach		218	3	229	1.4	0.121	0.5	NA	0.1	0.6	0.03	0.05	0.03	59.1
North: Heathfield Road														
7	L2	3	2	3	66.7	0.143	5.5	LOS A	0.5	3.7	0.44	0.69	0.44	46.0
8	T1	42	1	44	2.4	0.143	5.3	LOS A	0.5	3.7	0.44	0.69	0.44	48.3
9	R2	49	1	52	2.0	0.143	8.8	LOS A	0.5	3.7	0.44	0.69	0.44	47.8
Approach		94	4	99	4.3	0.143	7.1	LOS A	0.5	3.7	0.44	0.69	0.44	48.0
West: Longwood Road (W)														
10	L2	73	11	77	15.1	0.132	6.3	LOS A	0.6	4.6	0.30	0.39	0.30	49.8
11	T1	51	5	54	9.8	0.132	0.6	LOS A	0.6	4.6	0.30	0.39	0.30	55.2
12	R2	82	2	86	2.4	0.132	6.3	LOS A	0.6	4.6	0.30	0.39	0.30	53.1
Approach		206	18	217	8.7	0.132	4.9	NA	0.6	4.6	0.30	0.39	0.30	52.4
All Vehicles		738	29	777	3.9	0.238	4.4	NA	1.0	7.0	0.27	0.41	0.27	53.1

Figure 11 – Sensitivity Analysis PM Peak Intersection Performance

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h]	HV [veh/h]	[Total veh/h]	HV [%]	vic	sec		[Veh. veh]	[Dist] m				km/h
South: Scott Creek Road														
1	L2	70	0	74	0.0	0.188	6.0	LOS A	0.7	5.3	0.34	0.62	0.34	52.8
2	T1	80	2	84	2.5	0.188	6.4	LOS A	0.7	5.3	0.34	0.62	0.34	49.3
3	R2	27	1	28	3.7	0.188	8.5	LOS A	0.7	5.3	0.34	0.62	0.34	52.1
Approach		177	3	186	1.7	0.188	6.6	LOS A	0.7	5.3	0.34	0.62	0.34	51.1
East: Longwood Road (E)														
4	L2	18	0	19	0.0	0.089	5.6	LOS A	0.0	0.3	0.02	0.08	0.02	57.5
5	T1	139	1	146	0.7	0.089	0.0	LOS A	0.0	0.3	0.02	0.08	0.02	59.1
6	R2	5	0	5	0.0	0.089	5.9	LOS A	0.0	0.3	0.02	0.08	0.02	52.8
Approach		162	1	171	0.6	0.089	0.8	NA	0.0	0.3	0.02	0.08	0.02	58.7
North: Heathfield Road														
7	L2	7	0	7	0.0	0.143	4.9	LOS A	0.5	3.6	0.42	0.65	0.42	48.5
8	T1	49	1	50	2.0	0.143	5.2	LOS A	0.5	3.6	0.42	0.65	0.42	48.6
9	R2	48	0	51	0.0	0.143	8.1	LOS A	0.5	3.6	0.42	0.65	0.42	48.2
Approach		104	1	109	1.0	0.143	6.5	LOS A	0.5	3.6	0.42	0.65	0.42	48.4
West: Longwood Road (W)														
10	L2	34	5	36	14.7	0.143	6.2	LOS A	0.7	5.0	0.27	0.34	0.27	50.5
11	T1	89	2	94	2.2	0.143	0.4	LOS A	0.7	5.0	0.27	0.34	0.27	55.9
12	R2	109	0	115	0.0	0.143	6.0	LOS A	0.7	5.0	0.27	0.34	0.27	53.9
Approach		232	7	244	3.0	0.143	3.9	NA	0.7	5.0	0.27	0.34	0.27	54.1
All Vehicles		675	12	711	1.8	0.188	4.3	NA	0.7	5.3	0.25	0.40	0.25	53.3

The report offers the site’s existing use as evidence in support of their claim that the proposal will have minimal traffic impact – this is not acceptable as the scale of the development is not comparable to the existing use.

While it is noted that the nature of the proposed development is different to that of the previous land use, the previous use would have generated vehicle movements to/from the site. The assessment outlined above has not considered any discounts/provisions for the previous land use or considered any passing trade that may be a result of the nature of proposed development. Therefore, the proposed development is not anticipated to adversely impact on the safety or function of the road network.

Turn path for tanker is in adequate, being laid over aerial imagery, and appearing to impact the centreline of the intersection. The turn path must be run over detailed engineering survey, inclusive of all present road assets, and assets proposed by the development, before an assessment can be made as to whether the fuel tanker can adequately access the site.

The swept path assessment has been updated on an engineering feature survey provided by the applicant. The swept path assessment demonstrates the ability for the anticipated 16.4m petrol delivery vehicle to access the site without crossing the centre line of Scott Creek Road and Longwood Road. It

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

is noted that the largest anticipated vehicle to access the site is categorised as a general access vehicle and has legal access via Scott Creek Road to/from either Longwood Road or Heathfield Road.

Only modified sight distances are achieved, which may not be acceptable, suggesting the site may not be suitable for a development of this scale.

Vegetation removal is required to achieve stated sight distances, and it is not clear if approval has or will be granted for the removal.

The TCS assessed the sight access points based on EDD Safe Intersection Sight Distance which is generally applicable to public road intersections and can be applied to site access points in a similar manner. SISD is generally assessed in the first instance and is more conservative than other sight line requirements outlined within Austroads. Other methods such as Minimum Gap Sight Distance (MGSD) from Austroads or the method from Australian Standards AS/NZS 2890.1:2004 can be more applicable to the minimum sight lines that are required at site access points.

It is noted that the principle of the Australian Standards method is similar to that of the Minimum Gap Sight Distance (MGSD) outlined within Austroads, corresponding to the distances corresponding to the critical acceptance gap that drivers are prepared to accept when undertaking a crossing or turning manoeuvre at intersections. Importantly, both provide for the ability for an approaching vehicle to observe the turning vehicles and make a decision to stop prior to a collision.

On site speed measurements along Longwood Road and Scott Creek Road indicate that the site has an observed 85th percentile speed of 60km/h, with an average speed of 54km/h. Therefore, the posted speed limit of 60km/h is applicable to the assessment. As a result, based on a critical gap of 5 seconds to undertake a right turn out of the site, a sight distance of 83m is required for a 60km/h posted speed limit to meet both Austroads and Australian Standards requirements.

The access points on Longwood Road provide in excess of 83m as outlined within the TCS, meeting the requirements of Austroads and the Australian Standards.

The speed measurements on Scott Creek Road were conducted at the bend, and it was observed that drivers were slowing down as they approached the intersection. The proposed egress point is located approximately 50m from the intersection, where vehicles were observed to be slowing on the approach to the intersection to give way to drivers approaching from Longwood Road. It is anticipated that vehicles at this location could be travelling in the order of 50km/h or less to stop and give way at the intersection (based on minimum Safe Stopping Distance for 50km/h of 45m).

Based on a critical gap of 5 seconds to undertake a right turn out of the site and an opposing vehicle speed of 50km/h adjacent the access point, a sight distance of 69m is required to meet both Austroads and Australian Standards requirements. The Scott Creek Road car wash access can provide approximately 75m of sight distance to the south, meeting the requirements of Austroads and the Australian Standards.

It is noted that to achieve sight lines at the Scott Creek Road access, vegetation removal/pruning is required. The extent of the impacts to address vehicle sight lines may be able to be accommodated with a combination of pruning and vegetation removal. It is understood that the applicant is willing to discuss these requirements with Council.

Based on the above, the sight lines at the access points are considered to be appropriate.

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

There is no commentary on pedestrian impacts.

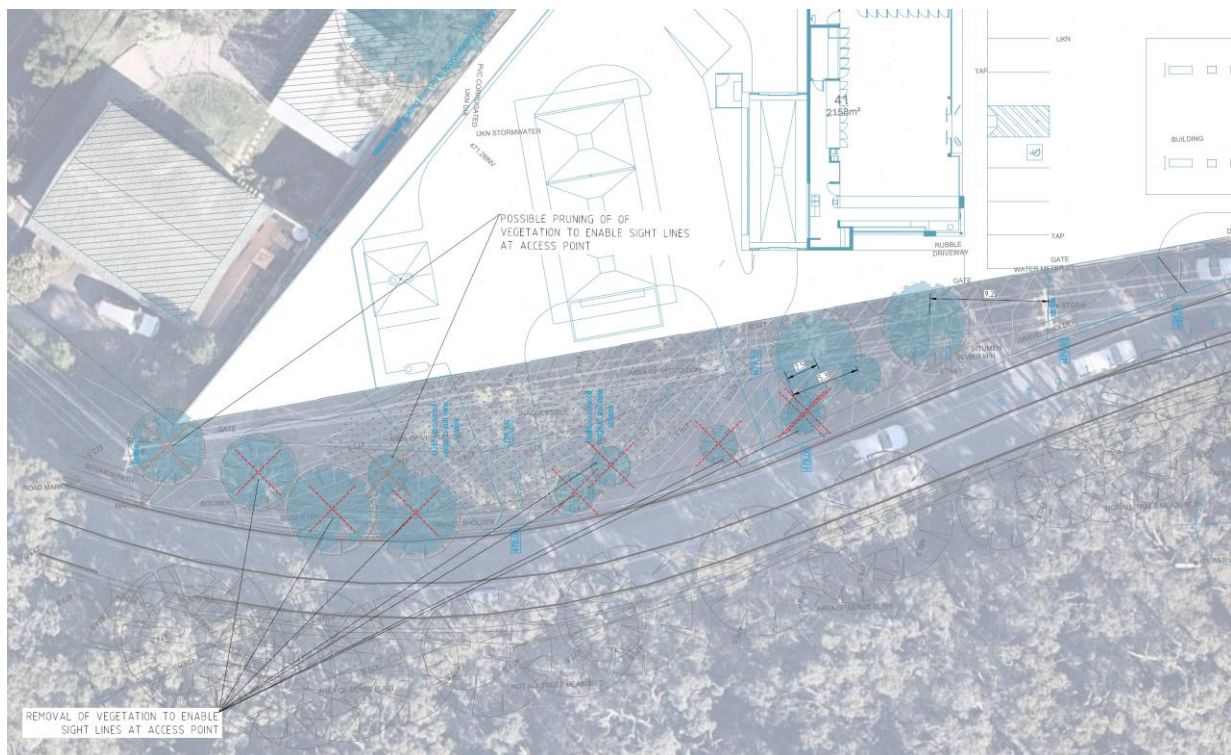
Pedestrian surveys were undertaken to determine the pedestrian movements that occur directly in front of the subject site. The surveys indicated along Scott Creek Road within the 3 hour survey periods, a total of 6 pedestrians were observed to utilise Scott Creek Road in the AM period, and a total of 1 pedestrian observed in the PM period. The typical pedestrian movements in the area were observed to be east-west movements along Longwood Road. As part of the proposal, no changes are proposed to the impact the existing pedestrian footpath network, and therefore is not anticipated to impact on pedestrian movements through the area.

Correspondence dated 01 March 2023

Site plan clearly showing the location of trees in the road reserve and dimension the setback to the cross-overs. Clearly highlight which trees outside of the site are recommend for removal or pruning.

A plan indicating the recommended tree removal and pruning is outlined in Figure 12.

Figure 12 – Trees for Removal



Pedestrian traffic especially from the school has been greatly underestimated as this will be the only shop style facility within the area. A safe pedestrian crossing on Longwood Road has not been addressed.

While it is noted that the site may generate some pedestrian crossing movements on Longwood Road, the existing road reserve on the southern side and the road reserve on Scott Creek Road do not provide any formal pedestrian facilities. The southern side of Longwood Road provides a combination of

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

unsealed and sealed shoulders that can be utilised by pedestrians, which is currently utilised for access to/from the existing bus stop 38. No formal crossing points are provided at this bus stop to the existing footpath network, with all current movements undertaken via informal crossings.

Pedestrians will be able to informally cross Longwood Road and/or Scott Creek Road as is currently undertaken to access the site. Pedestrians will be able to access the control building via the forecourt area, which is a low speed environment and a shared area between pedestrians and vehicles as is typical in all service stations.

Turn paths for the fuel tanker on Scott Creek Road are very tight against, if not overlapping the embankment and existing swale drain. Widening of the intersection and Scott Creek Road is required to safely accommodate the fuel tanker when negotiating the curves in/out from the site.

It is noted that the turn paths for the fuel delivery vehicle are tight, however the vehicle is a general access vehicle and has legal access to utilise Scott Creek Road without any modification to the intersection. It is noted that the Adelaide Hills Council Depot and the Heathfield Resource Recovery Centre are located along Scott Creek Road. These existing uses could also generate movements by larger commercial vehicles that may result in similar turn paths to that of the proposed fuel delivery vehicle. This is demonstrated within Figure 13, that indicates that the swept paths for a 12.5m HRV, (shown with red hatching) and the 16.4m Fuel Delivery vehicle (shown with green hatching) are similar at the edge of seal and line marking.

Figure 13 – 16.4m Fuel Delivery and 12.5m HRV Swept Path Comparison



The number of fuel deliveries to the site is expected to be low, with in the order of two to three fuel deliveries per week. This is not considered to materially increase the number of commercial vehicles

Reference: 160 Longwood Road, Heathfield - OTR Heathfield Council RFI

already accessing Scott Creek Road. Therefore, it is not considered that widening of the intersection is required as part of this development.

Right turn from and onto Longwood Road has not been demonstrated.

Right turn from and onto Scott Creek Road has not been demonstrated for the car/dog wash area.

Updated right turn swept paths have been included within the updated TCS.

Traffic/parking congestion in relation to paying for the car and dog wash has not been addressed as customers will need to park on the top level to pay for the car and dog wash and then enter Scott Creek Road to enter the car and dog wash facility.

It is understood that visitors utilising the manual car wash and the dog wash will be able to pay at the respective facilities, resulting in no traffic/parking congestion for these uses.

The auto wash can also be paid via the OTR app, minimising the requirement for vehicles to travel between the car wash area and the retail building. It is noted that there could be a small percentage of visitors that may access the retail building to pay for the auto wash and other goods at the retail control building. This number is anticipated to be low and could not be expected to result in traffic/parking congestion within either the upper or lower levels of the site.

How will congestion on Longwood Road and Scott Creek Road be prevented if the fuel tanker cannot access the premises immediately?

It is understood that fuel deliveries are not proposed to occur during the peak hour of the road network. This minimises the chance of vehicles impacting on the ability for the tanker to access the site. In the event that the delivery vehicle is required to wait to access the site, the vehicle can position clear of Longwood Road, minimising any impact to the performance of the intersection.

Regards,

STANTEC AUSTRALIA PTY LTD



Timothy Jones

Senior Transportation Planner
Phone: +61 8 8334 3609
timothy.jones@stantec.com

Attachment: TCS

SITE TRAFFIC COMPLIANCE STATEMENT

Proposed OTR Integrated Service Station

Site: OTR Heathfield	Reference: 301401112-1040	Date Issued: 17 January 2023
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Site Layout

Location	160 Longwood Road, Heathfield
Description of Subject Site	<ul style="list-style-type: none"> • 2,160 sq.m Total Site Area (approx.) • 250 sq.m control building area • 8 fuelling points in Domino layout • Air and water facilities • Two vacuum bays • 3 manual car washes • One automatic car wash
Relevant Documents (attached)	<ul style="list-style-type: none"> • ADS Architects, drawing no 21JN1448sk01e, dated 23/11/22. • Stantec Sketch 301401112-1040-AT01 to 301401112-1040-AT04, dated 22/12/2022

Technical Layout Review

This review should be read in conjunction with the Stantec 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017.

Parking Provision	Applicable Rates	Required Spaces	Provided Spaces	Complies
Proposed layout provides adequate parking in accordance with the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	2.5/100sq.m (with drive-thru facilities)	N.A.	N.A.	N.A.
	3.3/100sq.m (without drive-thru facilities)	9	9	✓

Additional Comments:	<p>It is noted the SA Planning Code outlines a provision 3 spaces per 100 sq.m GLFA, slightly less than the peak parking rates recommended to be adopted in the <i>Generic Parking and Traffic Updated Traffic Management Report</i>. Notwithstanding, the development complies with both rates.</p> <p>The provision of 9 parking spaces meets the parking demand calculated in accordance with the OTR generic parking rates and exceeds the SA Planning and Design Code demand of 8 spaces.</p>
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Parking Layout	Parking Space	Typical Dimensions	Complies
Proposed car parking layout conforms with Australian Standard/New Zealand Standard for Off Street Car parking (AS/NZS2890.1:2004 and AS/NZS2890.6:2009)?	Parking	2.6m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
	Disability Parking and Shared Space	2.4m wide, 4.8m long (with 600mm overhang), set within a minimum 7.5m wide aisle.	✓
Additional Comments:			
Access Points	Comments		Complies
The proposed access arrangements comply with Figure 3.1 in AS/NZS2890.1:2004?	<p>New access points are located outside of the prohibited zone (6m from the projection of the road property lines/from the tangent point).</p> <p>Existing access on Longwood Road is being maintained, and positioned further west, increasing separation to the Longwood Road/Scott Creek Road/Heathfield Road intersection</p>		✓
Additional Comments:			

Sight Distance Assessment	Comment	Complies
<p>The proposed layout provides appropriate sight distance from each access point.</p>	<p>It is noted that Safe Intersection Sight Distance (SISD) is generally applicable to public road intersections and can be applied to site access points in a similar manner. SISD is generally assessed in the first instance and is more conservative than other sight line requirements outlined within Austroads.</p> <p>Other methods such as Minimum Gap Sight Distance (MGSD) from Austroads or the method from the Australian Standards can be more applicable to the minimum sight lines that are required at site access points.</p> <p><u>Longwood Road</u></p> <p>East: Given the straight road alignment and lack of obstructions the minimum SISD of 123m for design speed of 60 kilometres has been achieved at the site access point along Longwood Road (shown in attachments).</p> <p>West: Sight distance is restricted due to the existing curves within the road alignment. Due to the location within the hills EDD SISD is considered to apply to the subject site. The minimum EDD SISD of 97m for design speed 60km/h can be achieved at the site access point along Longwood Road (shown in attachments). The sight distance exceeds the MGSD for a 60km/h speed and a critical gap of 5 seconds (right turn out movement) requirement of 83m.</p> <p><u>Scott Creek Road</u></p> <p>South: Sight distance is restricted due to the existing curves within the road alignment. On-site investigations indicate that 85thile vehicle speeds around the existing bend are in the 60km/h. It is noted that vehicles will be slowing after the bend on the approach to the intersection. It is likely that vehicle speeds adjacent the site access will be in the order of 50km/h. The minimum EDD SISD of 74m for design speed 50km/h and estimated 5% uphill gradient can be achieved at the site access point along Scott Creek Road with the removal/pruning of existing street trees (shown in attachments). It is understood that a majority of the vegetation is proposed to be removed as part of the development. The sight distance exceeds the MGSD for a 50km/h speed and a critical gap of 5 seconds (right turn out movement) requirement of 69m.</p> <p>North: Sight distance is unrestricted to the intersection, enabling visibility for when vehicles enter Scott Creek Road.</p>	<p style="text-align: center;">✓</p>

Additional Comments:				
Queuing Proposed fuelling layout provides sufficient queue spaces as per the 'Generic Parking and Traffic Updated Traffic Management Report', Issue 3, dated 29/11/2017	Fuelling Layout	Required Queue Space	Provided Queue Space	Complies
	Starter Gate	N.A.	N.A.	N.A.
	Domino	2	2	✓
Additional Comments:	The fuel bowzers are positioned perpendicular to Longwood Road, with approximately 12m from the closest bowser to the property boundary, allowing additional space for vehicles to pass or queue behind other bowzers. Proposed layout allows for vehicles to traverse the site without being impacted by queuing vehicles.			
Turn Paths Design vehicles able to traverse through the proposed layout? Swept paths of the heavy vehicles are enclosed at the end of the checklist	Vehicle	Design Vehicle		Complies
	Fuel Delivery	13.9m OTR Tanker		N.A.
		16.4m Semi Trailer		✓
		19.1m B Double		N.A.
	Waste Collection	10.0m Refuse Vehicle		✓
		8.8m MRV		N.A.
	Deliveries	12.5m HRV		N.A.
		8.8m MRV		✓
	Drive Thru	B99 Light Vehicle		N.A.
Car Wash	B99 Light Vehicle		✓	
Additional Comments:				
Traffic Generation What is the expected traffic generation of the proposed development?	Traffic Generator	Applicable Rate (per hr)	Traffic Generation (trips per hr)	
	Control Building/Bowzers	0.6 trips × 250 (sq.m)	150	
	Total PM Peak Period			150
Additional Comments:				

<p>Traffic Impact</p> <p>What is the expected traffic impact that the traffic generated by the proposed development will have on the surrounding road network?</p>	<p style="text-align: center;">Traffic Impact</p> <p>Petrol stations are typically located to capture passing trade based on a convenient location and access arrangement. Due to the location of the proposed development on the corner of the Longwood Road/Scott Creek Road, it is expected that a high proportion of the traffic generated by the subject site will be passing trade.</p> <p>Based on this and noting that there has existing petrol station on site, the development is not anticipated to have an adverse impact on the safety or operation of the adjacent road network.</p>
<p>Additional Comments:</p>	

Planning Code Assessment

This assessment only considers performance outcomes applicable to the relevant traffic and transport related matters that apply to the proposed development.

Part 4 General Development Policies

Transport, Access and Parking

Performance Outcome	Deemed-to-Satisfy / Designated Performance Feature	Stantec Assessment
PO 1.3	DTS/DPF 1.3	Loading / refuse collection to occur on-site and would occur outside of peak periods.
PO 1.4	DTS/DPF 1.4	Queuing can be contained within the site. Loading activities will be conducted within the site and should not have an impact on the operation and queuing on public road.
PO 2.1	DTS/DPF 2.1	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 2.2	DTS/DPF 2.2	Refer to 'Sight Distance Assessment' section for a detailed sightline assessment for the proposed development.
PO 3.1	DTS/DPF 3.1	New access points are proposed to be located outside of the prohibited zone. Refer to 'Access Points' section.
PO 3.2	DTS/DPF 3.2	Not applicable. No ramps proposed.
PO 3.3	DTS/DPF 3.3	Refer to 'Access Points' section of report.
PO 3.4	DTS/DPF 3.4	Refer to 'Access Points' section of report.
PO 3.5	DTS/DPF 3.5	Refer to 'Access Points' section of report.
PO 3.6	DTS/DPF 3.6	Not applicable – on-street parking not appropriate in this location
PO 3.7	DTS/DPF 3.7	Not applicable – not located near a railway crossing
PO 3.8	DTS/DPF 3.8	Refer to attached turn paths.
PO 3.9	DTS/DPF 3.9	All vehicle circulation to occur within the site.

PO 4.1	DTS/DPF 4.1	DDA compliant parking spaces will be provided.
PO 5.1	DTS/DPF 5.1	Planning Code produced a requirement of 8 spaces to be provided for a retail fuel outlet. Proposed development provides a total of 9 spaces.
PO 6.1	DTS/DPF 6.1	Satisfies the requirement. Use of public roads not required.
PO 6.4	DTS/DPF 6.4	Footpaths provided within the proposed development where practicable.
PO 6.6	DTS/DPF 6.6	Loading areas and parking spaces are located within the site.
PO 6.7	DTS/DPF 6.7	Not applicable
PO 7.1	DTS/DPF 7.1	Not applicable
PO 9.1	DTS/DPF 9.1	No bicycle parking rate explicitly stated.
PO 9.2	DTS/DPF 9.2	Refer previous response.
PO 9.3	DTS/DPF 9.3	Specific end of trip facilities have not been provided however, this could be reviewed and provided at a later date if the need arises.

DIT Comments and Response

No formal comments received

TRAFFIC COMPLIANCE STATEMENT CERTIFICATION

It is hereby certified that the proposed development described in this document and shown on the attached drawings is in accordance with the “On the Run” Service Stations Generic Parking and Traffic – Updated Traffic Management Report (updated July 2017) with regards to the parking and traffic operation specified.

The proposed development has been designed with consideration of Austroads Guidelines and Australian Standards, and Traffic Code applicable to the design of traffic management and parking in South Australia.

Stantec verifies that the detailed design will be able to meet the requirements of the relevant guidelines, standards and code.

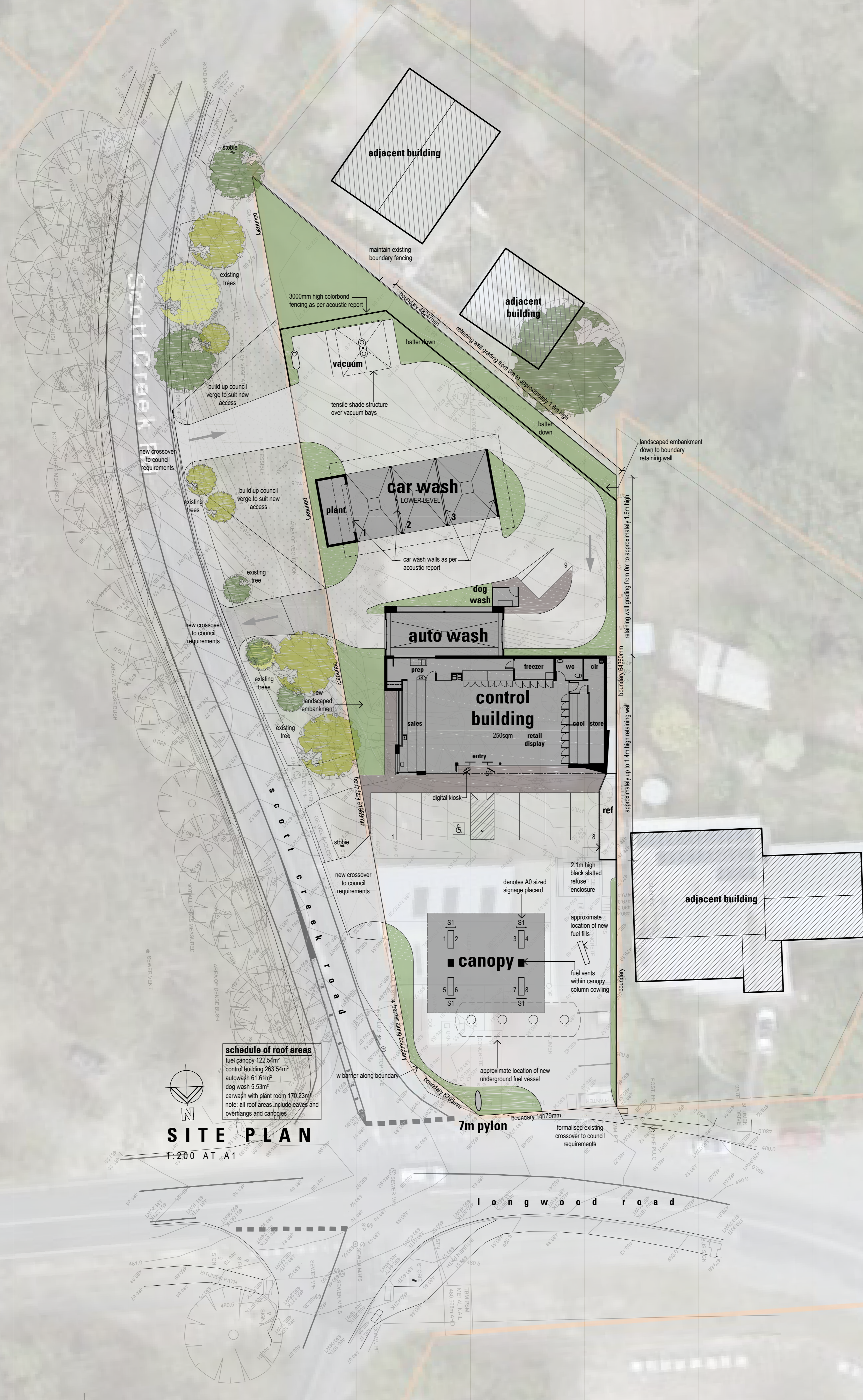
STANTEC



Timothy Jones

Senior Transportation Planner

APPENDIX A - DRAWINGS



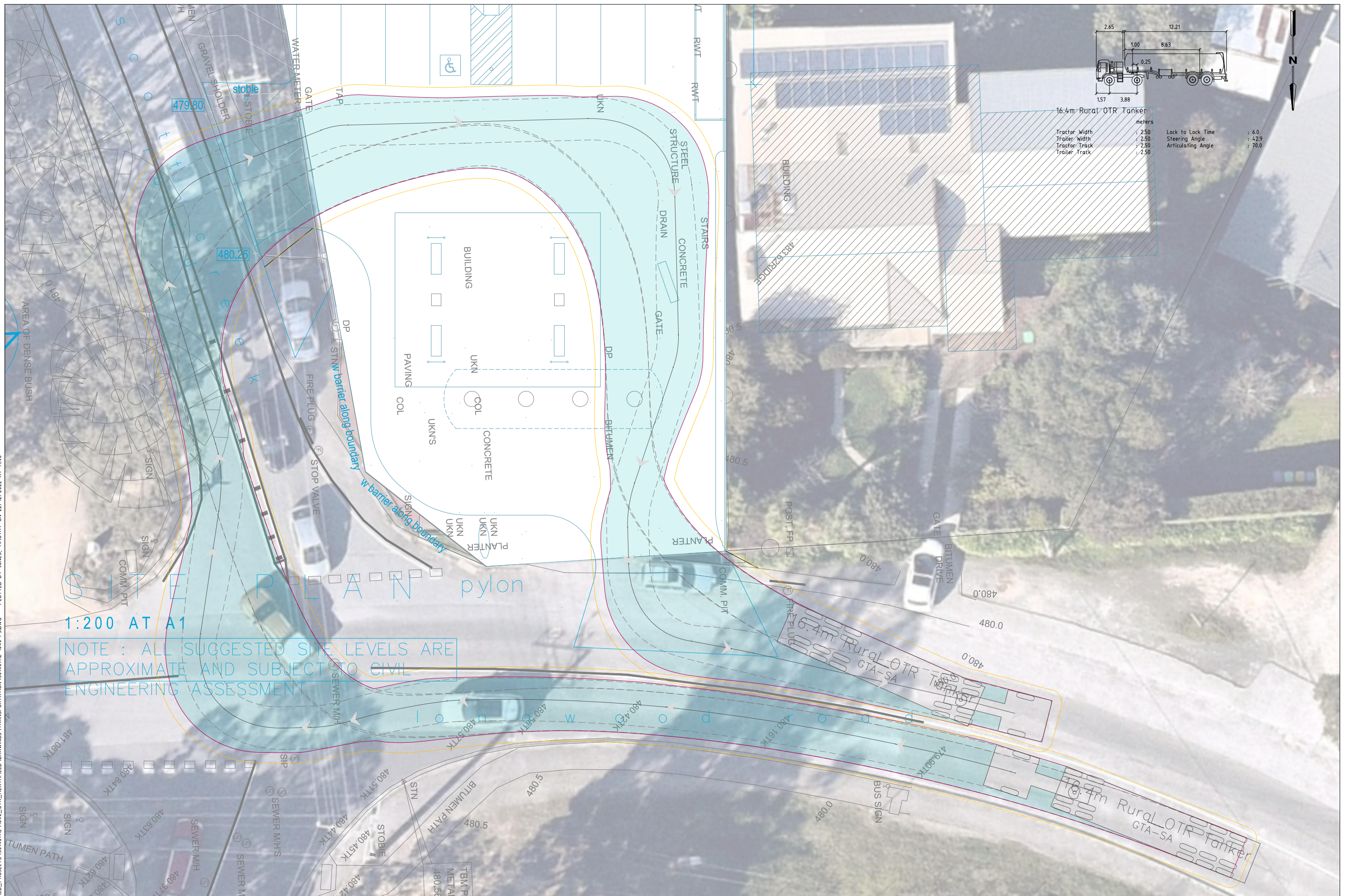
NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD

0 1 2 5 10 15m
Scale 1:200 at A1

APPENDIX B – TURN PATH ANALYSIS

\\AU2017-PPF5501\SHARED_PROJECTS\301401112\1040_OTR_HEATHFIELD\DRAWINGS\TRANSPORTATION\301401112-1040-P3.DWG PLOTTED BY JONES, TIMOTHY ON 22/12/2022 AT 11:46



1:200 AT A1

NOTE : ALL SUGGESTED SITE LEVELS ARE APPROXIMATE AND SUBJECT TO CIVIL ENGINEERING ASSESSMENT



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.

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T.JONES

APPROVED BY
T.JONES

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D.KWONG

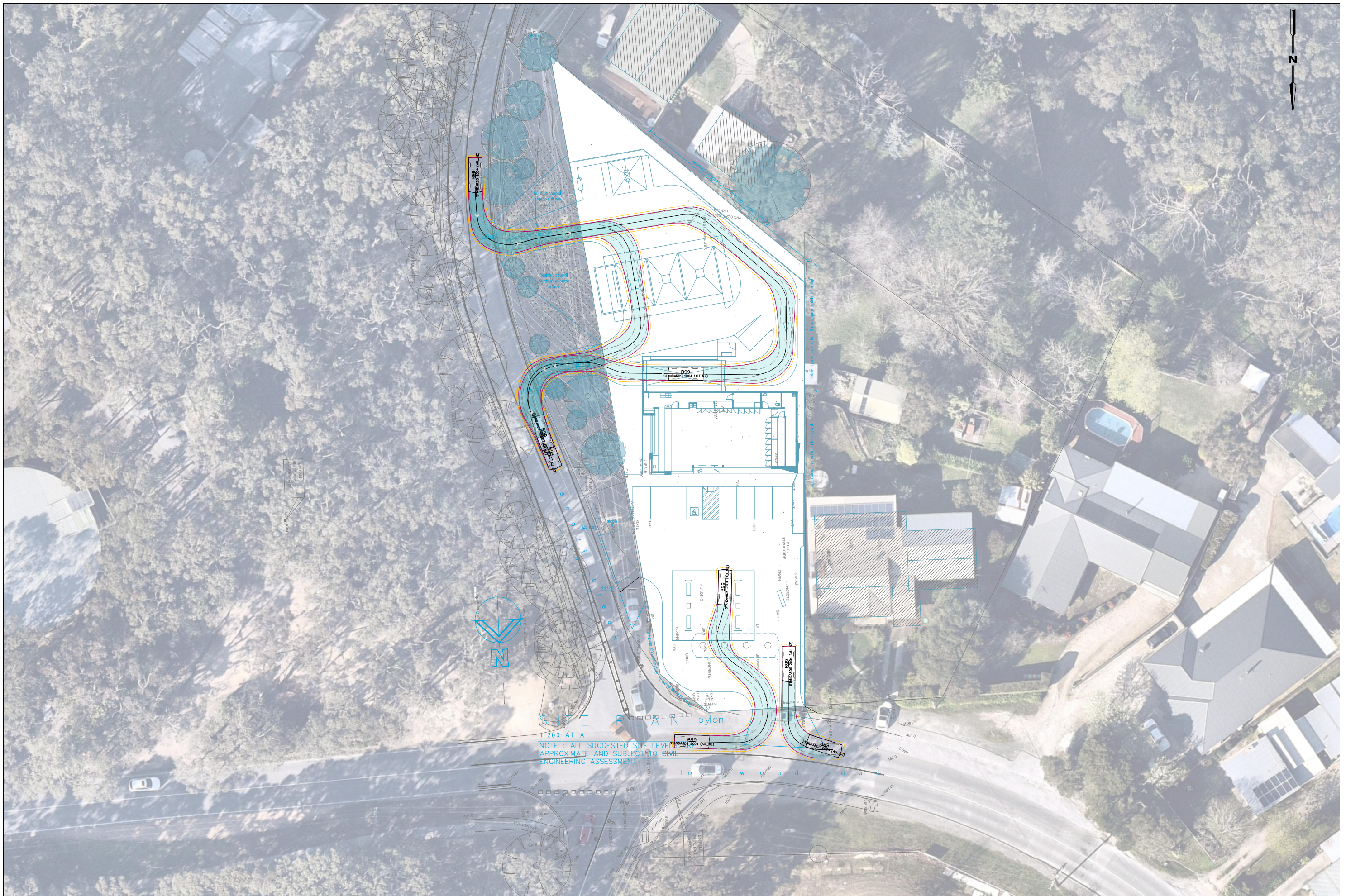
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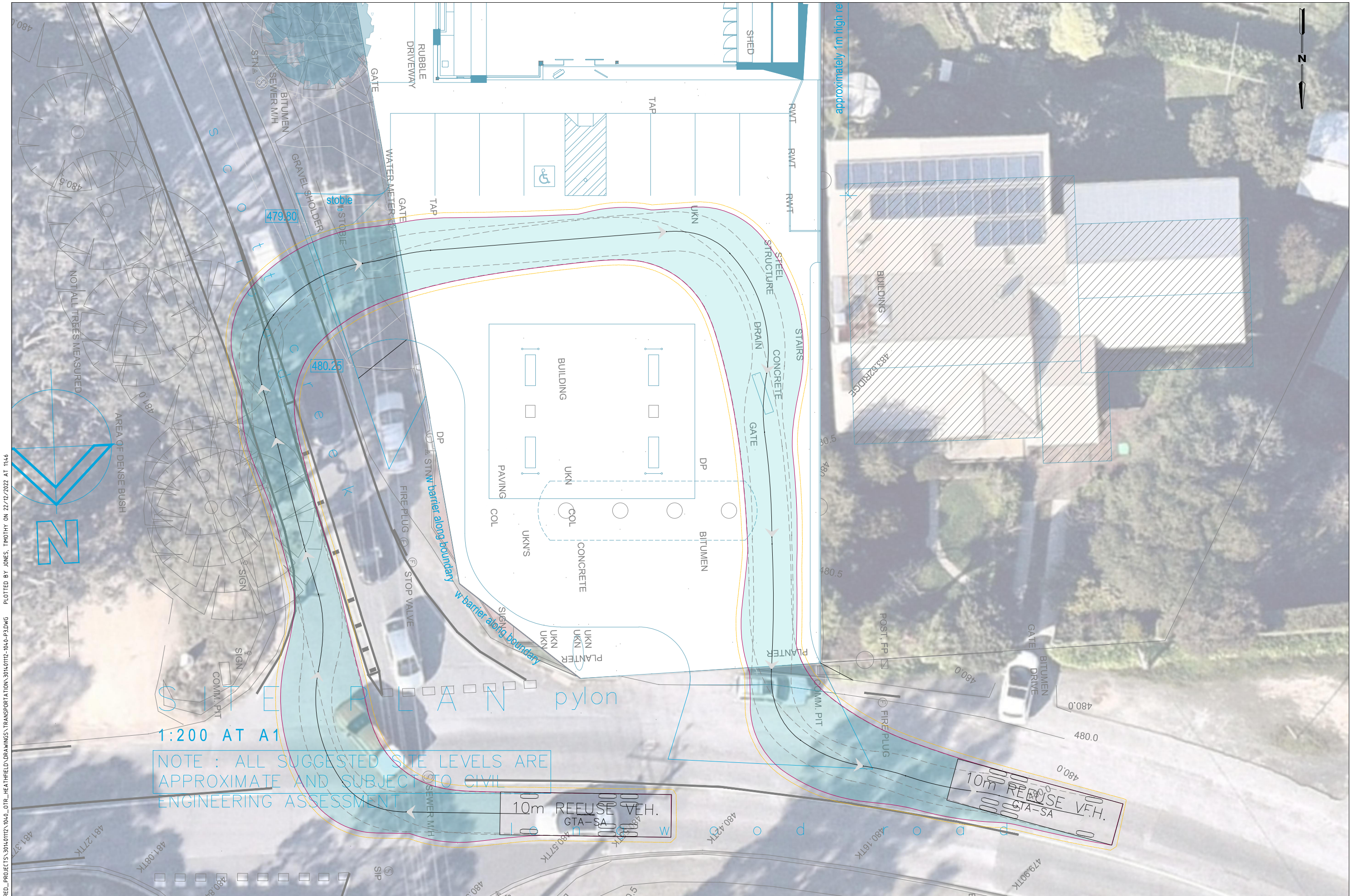
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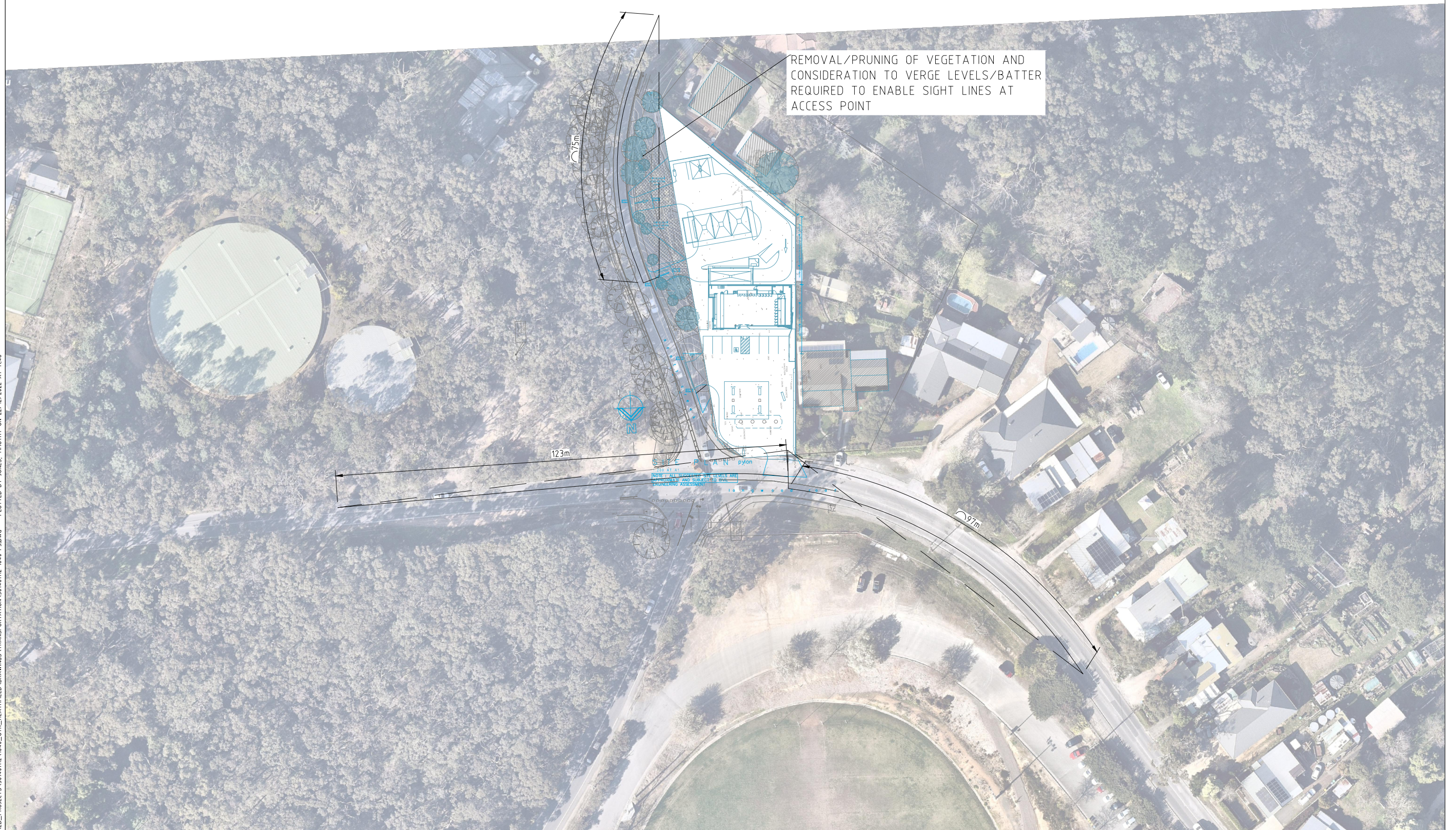
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ISSUE P3

Heathfield Fuel Outlet Needs Assessment



'Dagura Buumarri'

Liz Belanjee Cameron

'Dagura Buumarri' – translates to Cold Brown Country. Representing Victoria.

The river system illustrated in this visual image is bound in greens and golds to acknowledge the warmth often felt in a colder climate. The rich earth hues of green, reds and browns reflect the local landscapes of this state while the extensive use of rhythmic patterning captures the unique landscapes of flat and mountainous areas. The use of earth colours imparts a sense of strength and serenity while contrasting greens throughout the image reminds us of the lushness of the natural world, where animals and humans once lived in harmony – it reminds us of the

Ethos Urban acknowledges the Traditional Custodians of Country throughout Australia and recognises their continuing connection to land, waters and culture.

We acknowledge the Wurundjeri Woi Wurrung people, of the Kulin Nation, the Traditional Custodians of the land where this document was prepared, and all peoples and nations from lands affected.

We pay our respects to their Elders past, present and emerging.

Contact Ellis Davies
Associate Director

This document has been prepared by:
Ellis Davies and Zack Heap

This document has been reviewed by:
Sean Stephens

Version No.	Date of issue	Prepared By	Approved by
1.0 (DRAFT)	19/10/2022	ED & ZH	SS
2.0 (FINAL)	28/10/2022	ED & ZH	SS

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Executive Summary

Context Analysis

Peregrine Corporation, operator of OTR outlets, is proposing to develop a retail fuel outlet at 160 Longwood Road, Heathfield (Subject Site). The proposal consists of 8 fuel pumps, a fuel pump canopy, control building with a convenience retail shop, and car washing facilities.

The Subject Site is situated on the corner of Longwood Road and Scott Creek Road, both collector roads that provide the site with exposure to passing traffic.

Catchment Analysis

A Catchment Area for the proposed development has been defined which reflects the location of the Subject Site at the intersection of Longwood Road and Scott Creek Road, as well as the competitive landscape of retail fuel outlets in the area.

In 2021 the population of the Catchment Area is estimated at approximately 7,840 residents and is projected to reach 8,140 residents in 2036.

The socio-economic profile of the Catchment Area reflects a relatively affluent community of established families, early retirees and empty nesters. The population is more likely, on average, to live in standalone houses and maintain two or more cars than the balance of Greater Adelaide.

Fuel Outlet Needs Assessment

One fuel outlet is located in the Catchment Area, while another fuel outlet is located immediately beyond the Catchment Area. Both fuel outlets are located on Mount Barker Road in Stirling, some 3 km by road from the Subject Site. Four other fuel outlets are in the broader surrounding area in the suburbs of Crafers, Aldgate and Bridgewater.

The average of 2.2 motor vehicles per dwelling in the Catchment Area is above the average of 1.7 for Greater Adelaide. Residents in the Catchment Area are expected to travel further by motor vehicle than average. Analysis of the Stirling-Aldgate Statistical Area 2 (SA2), which holds the majority of the Catchment Area's population, reveals that residents have a longer commuting distance (16.9 km) on average than residents in Greater Adelaide (12.7 km) and all of South Australia (13.8 km).

Given the proximity of two fuel outlets in Stirling at the edge of the Catchment Area, an overall net escape of fuel sales from the area is likely and reflects a lack of locally available fuel retailing outlets.

However, the proximity of the Subject Site to Heathfield High School and community facilities (Arkaba Oval, Hills Little Athletics Centre and Mt Loft Community Sports Centre) means a fuel outlet at the Subject Site will limit the level of fuel sales escaping the area. Visitors will also generate demand for fuel sales, with local tourist attractions including Warrawong Wildlife Sanctuary and Mark Oliphant Conservation Park generating additional fuel demand.

A needs assessment of fuel outlets finds that the Catchment Area can currently support at least 2 and potentially 3 mid-sized fuel outlets. As such, with one existing service station the demand exists in the Catchment Area for an additional fuel outlet. The Subject Site presents an appropriate location for a fuel outlet given its central location in the Catchment Area at the intersection of two collector roads and in close proximity to various community facilities.

A fuel outlet at the Subject Site would result in a range of benefits, including serving an identified need for an additional fuel outlet in the Catchment Area, increasing choice for the motoring consumer, and creating job opportunities.

Conclusion

The proposed development will serve an identified market need for a retail fuel outlet at the Subject Site, improve access to services in the local area, and increase choice for the motoring community. Given these factors, a net community benefit will result from the proposed development as is related to economic considerations.

Introduction

Background

Peregrine Corporation has submitted a development application for an OTR retail fuel outlet at 160 Longwood Road, Heathfield (Subject Site) in the Adelaide Hills. The proposal is to redevelop a former auto repair workshop which included fuel retailing from two bowsers and traded as Heathfield Motors.

The development is proposed to replace the former workshop with a modern fuel outlet. This will include a new control building/retail convenience shop, eight fuel pumps, a fuel pump canopy, car washing facilities and a small provision of customer carparking.

Adelaide Hills Council has issued a Request for Information, including a request to provide economic modelling to support the proposal.

Ethos Urban has been engaged to provide an independent Fuel Outlet Needs Assessment for the subject development to investigate the economic need and implications of developing a fuel outlet at the Subject Site.

This Report

This report contains the following chapters:

Chapter 1: Context Analysis

Chapter 2: Catchment Analysis

Chapter 3: Fuel Outlet Needs Assessment

Chapter 4: Conclusion

Appendix

1.0 Context Analysis

The context relevant to the proposed development is outlined in this Chapter including an overview of the regional location, description of the proposed development scheme and outline of planning considerations.

1.1 Subject Site and Regional Context

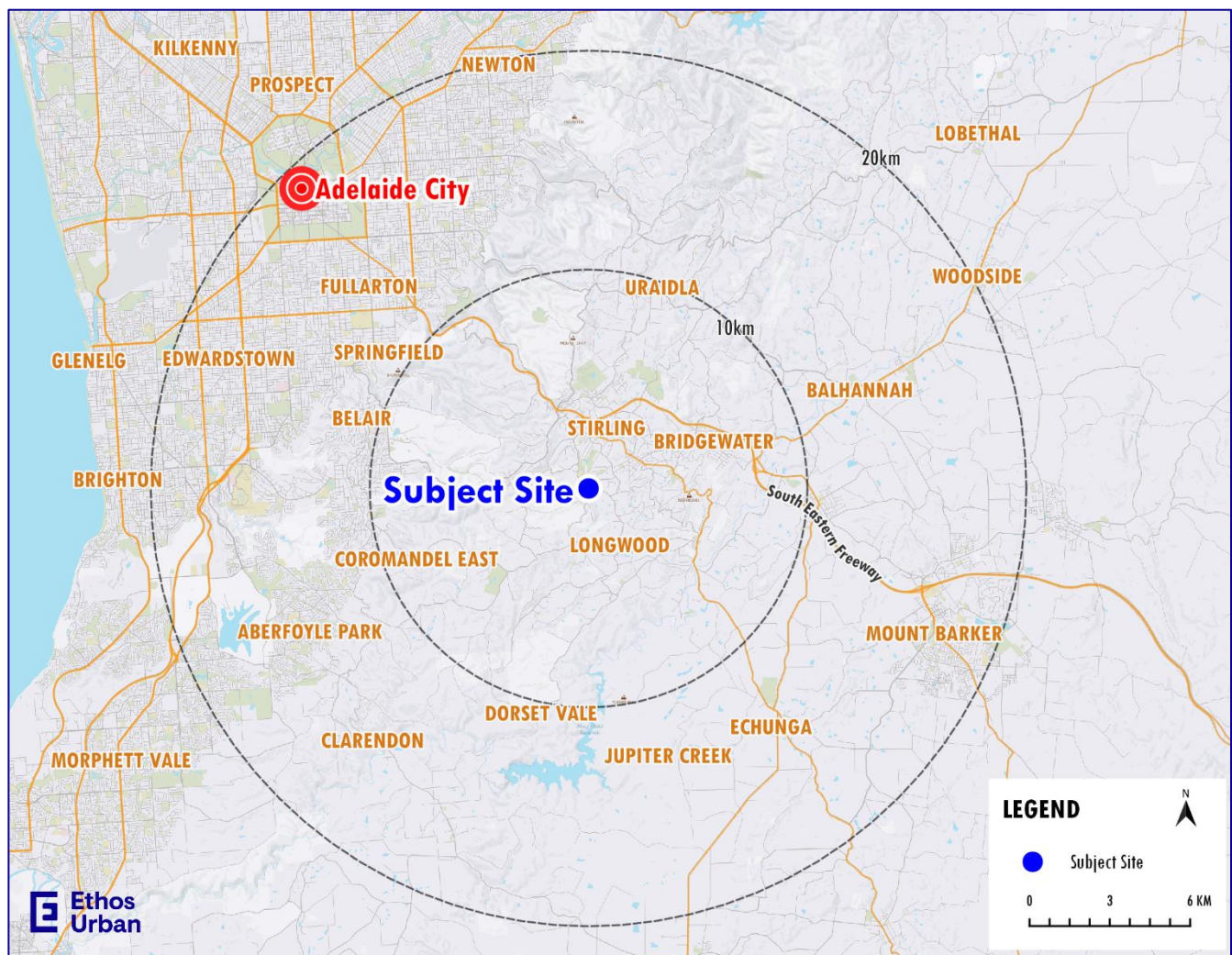
The Subject Site is located at 160 Longwood Road, Heathfield within the Adelaide Hills municipality, refer **Figure 1.1**. Approximately 3km (by road) south of the Stirling Town Centre and 2.5km south-west of Aldgate Town Centre, the Subject Site is sufficiently distant from these key commercial centres to serve residents in its own local area.

Situated prominently on the corner of Longwood Road and Scott Creek Road, the Subject Site has good exposure to passing traffic. The Subject Site's location is at the nexus of the southern and south-eastern traffic routes from the Stirling and Aldgate Town Centres to the north, allowing convenient access for local residents.

Directly opposite the Subject Site is Arkaba Oval, while Heathfield High School is a short distance to the west. The surrounding area is characterised by rural residential lots, while some Council utilities (wastewater treatment plant and a waste depot) are also nearby. The local context of the area is shown in **Figure 1.2**.

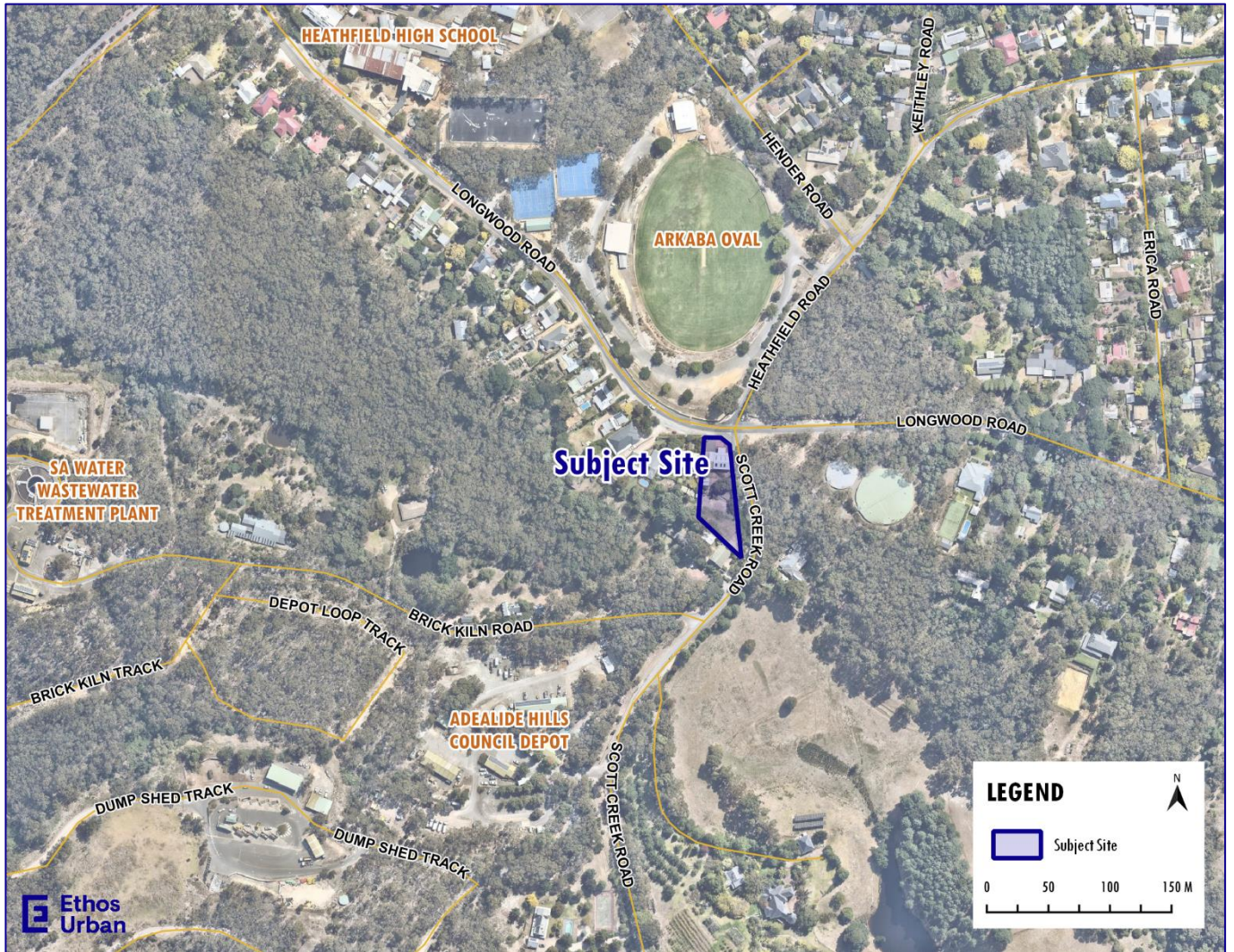
A former motor repair station and fuel outlet previously operated at the Subject Site. A view of the former business from Longwood Road, bearing south, is provided in **Figure 1.3**.

Figure 1.1 Regional Context



Source: Ethos Urban

Figure 1.2 Local Context



Source: Ethos Urban

Figure 1.3: Subject Site – View from Longwood Road



Source: Google Street View (July 2021)

1.2 Proposed Development

Peregrine Corporation proposes to redevelop the former workshop/fuel outlet at the Subject Site into a full-service retail fuel outlet with a convenience retail shop, eight fuel pumps, a fuel pump canopy, car washing facilities and a small provision of customer carparking. The Site Plan is included in **Figure 1.4**.

The Subject Site is currently under-utilised. Approximately one-third of the 2,160sqm site was being used for its primary commercial use, with the remainder of the site vacant land. The proposed redevelopment will fully utilise the Subject Site, increasing the land use efficiency and providing a greater level of service to the community.

Peregrine Corporation is a South Australian based, privately owned company that operates OTR outlets in Australia. Currently over 170 OTR fuel outlets and convenience stores are located across SA, VIC, WA and NSW.

Figure 1.4: Site Plan



Source: Peregrine Corporation

1.3 Planning Context

The Planning and Design Code (the Code) was prepared by the State Planning Commission, with version 2022.15 adopted on 18 August 2022. The Subject Site is within the Rural Neighbourhood Zone, refer **Figure 1.5**.

For the Rural Neighbourhood Zone, under Assessment Provisions, the Desired Outcome is stated as follows:

Housing on large allotments in a spacious rural setting, often together with large outbuildings. Easy access and parking for cars. Considerable space for trees and other vegetation around buildings, as well as on-site wastewater treatment where necessary. Limited goods, services and facilities that enhance rather than compromise rural residential amenity.

A number of Performance Outcomes for the Rural Neighbourhood Zone are detailed in the Code, with the most relevant for the proposed development considered to be the following:

PO 1.2 Commercial activities improve community access to services are of a scale and type to maintain residential amenity.

PO 1.4 Non-residential development located and designed to improve community accessibility to services, primarily in the form of:

- (a) small-scale commercial uses such as offices, shops and consulting rooms*
- (b) community services such as educational establishments, community centres, places of worship, pre-schools and other health and welfare services*
- (c) services and facilities ancillary to the function or operation of supported accommodation or retirement facilities*
- (d) open space and recreation facilities.*

The Code includes a Land Use Definition table, which includes the definition of Retail Fuel Outlet as follows:

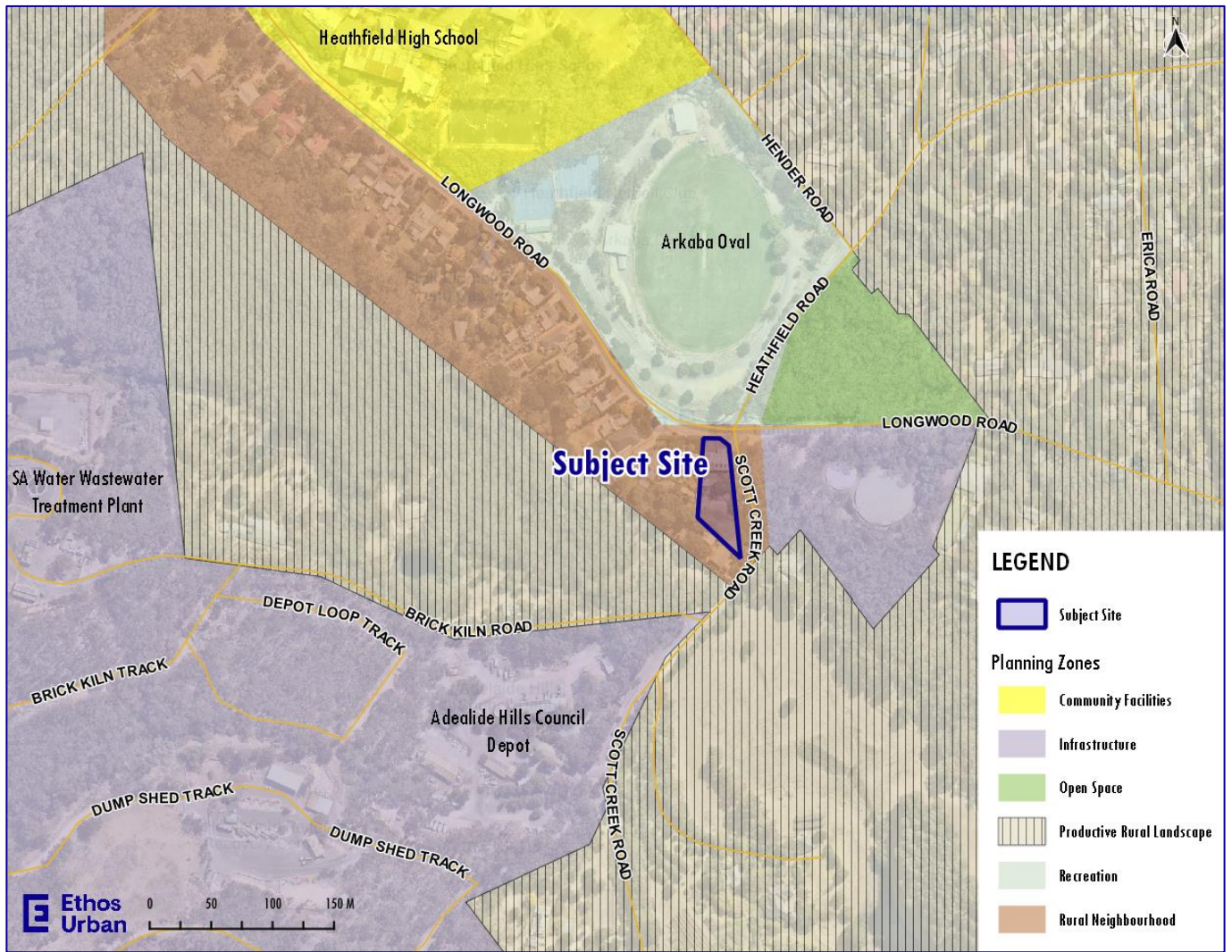
Means land used for:

- a) the fuelling of motor vehicles involving the sale by retail of petrol, oil, liquid petroleum gas, automotive distillate and any other fuels; and*
 - b) the sale by retail of food, drinks and other convenience goods for consumption on or off the land; and*
- both are operated as and constitute one integrated facility where on-site facilities, systems and processes, car parking and access and egress are all shared.*

The use may also include one or more of the following secondary activities:

- c) the washing and cleaning of motor vehicles*
- d) the washing of other equipment or things including dogs and other pets*
- e) the provision (on a paid or free basis) of facilities for charging electric vehicles*
- f) the hiring of trailers*
- g) selling of motor vehicle accessories and/or parts*
- h) the installation of motor vehicle accessories and/or parts.*

Figure 1.5 Planning Zones



Source: PlanSA: SA Property and Planning Atlas

2.0 Catchment Analysis

This Chapter provides analysis of the Catchment Area relevant to the proposed development.

2.1 Catchment Area Definition

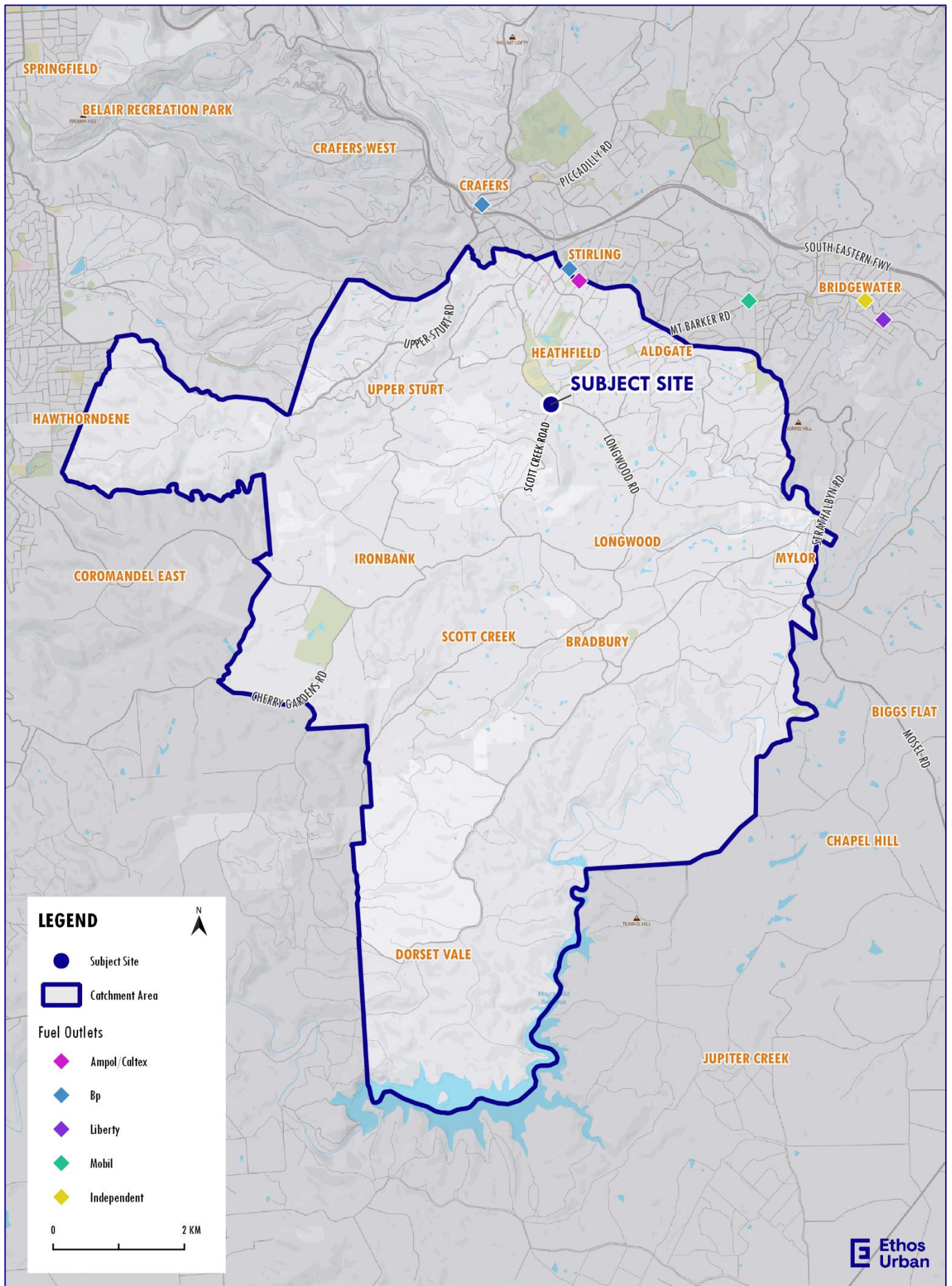
The extent of the catchment area for any fuel retail facility is influenced by a number of factors such as:

- The relative attraction of the facility in question as compared with alternative facilities, including the scale and composition, as well as ease of access of the subject facility.
- The surrounding competitive context, particularly the location, scale and quality of competing facilities.
- The available road network and public transport service and how they operate to effect ease of use and access to the site in question.
- Significant physical barriers which are difficult to cross, which can act to delineate the boundaries of a catchment area.

The extent of the defined Catchment Area for the proposed Retail Fuel Outlet at the Subject Site is shown on the following **Figure 2.1**, and is specifically informed by the following:

- The proposed uses at the Subject Site which are to include a Retail Fuel Outlet with a convenience retail shop and car washing facilities.
- The location of the Subject Site at the intersection of Longwood Road and Scott Creek Road, ensuring that it is visible and convenient to access for local residents.
- The provision of community facilities near the Subject Site, including local sporting facilities such as Arkaba Oval and Hills Little Athletics Centre.
- The location of Heathfield High School, a short distance to the west of the Subject Site, is the sole government high school in the area. The South Australian school zone for Heathfield High School, which extends to Crafers in the North, Bridgewater in the east, Dorset Vale in the South, and towards Hawthorndene in the west, is included in the **Appendix**.
- The provision and nature of competing retail fuel outlets in the surrounding area.

Figure 2.1 Catchment Area and Surrounding Fuel Outlets



Source: Ethos Urban

2.2 Population Trends and Forecasts

In 2021, the Catchment Area had an estimated resident population of 7,840 people. From 2016 to 2021 the population increased by approximately +20 persons per annum (refer to **Table 2.1**).

Looking ahead, population growth in the Catchment Area is anticipated to remain moderate over the forecast period. By 2036, the Catchment Area is estimated to reach 8,140 persons, representing an increase of +300 persons from 2021 or growth of +20 persons per annum.

Historic population levels (2016, 2021) for the Catchment Area have been estimated by using ABS ERP data, which is considered the most accurate and up-to-date population estimates. Population forecasts for the Catchment Area have regard to recent ABS new dwelling approval data which shows an average of 15 dwelling approvals per annum in the area over the past 5 years.

Table 2.1 *Historical and Project Population, Catchment Area, 2016 – 2036 (year ending June)*

	2016	2021	2026	2031	2036
Population (no.)	7,720	7,840	7,940	8,040	8,140
Annual Growth (no.)		+20	+20	+20	+20
Annual Growth (%)		+0.3%	+0.3%	+0.3%	+0.2%

Source: ABS: Cordell Connect; Ethos Urban

2.3 Socio-economic Profile

The socio-economic profile of the Catchment Area, which is sourced from the 2021 ABS Census and summarised in Table 2.2, is compared with Adelaide Hills Council and Greater Adelaide. The main findings include:

- **Above average incomes.** The median individual income in the Catchment Area was \$49,940 in 2021, which is above the average for Greater Adelaide (\$39,600). Similarly, median household income in the Catchment Area was \$117,610, while Greater Adelaide median sits at \$81,220, reflecting the affluence of Catchment Area residents.
- **Older age profile.** The median age of the Catchment Area was 46.0 years in 2021, substantially older than Greater Adelaide at 39.5 years. The major difference between the Catchment Area and Greater Adelaide is the higher share of older residents (65-84 years) in the Catchment Area, and lower shares of young adults (20-34 years) and young children (0-4 years).
- **Large proportion of couple families.** In 2021, the Catchment Area contained a high proportion of households comprising of couple families, with children (33.6%) or without children (39.4%), which is substantially higher than Greater Adelaide. The household composition of the area indicates a high proportion of established families and late career / early retiree empty nesters living in the Catchment Area.
- **Mostly separate houses.** The majority (97.5%) of dwellings in the Catchment Area are separate houses.
- **High proportion of owner occupiers.** In 2021, just 5.6% of households in the Catchment Area rent their homes, which is substantially lower than the average for Greater Adelaide (28.4%). In the Catchment Area nearly half (47.4%) of dwellings are owned with a mortgage, while 43.8% are owned outright.
- **Greater level of car ownership.** A total of 98.3% of dwellings in Catchment Area own at least one car, with 75.1% of dwellings having two or more. This level of car ownership is substantially greater than car ownership levels in Greater Adelaide where 55.2% of dwellings have two or more cars. This is likely a function of lower land/storage costs and the increased need of car travel to access essential services in the Catchment Area.

Overall, the socio-economic profile of the Catchment Area reflects a middle and upper middle-class demographic of established families, early retirees and empty nesters.

On average, the population is more likely to live in standalone houses and maintain two or more cars than the balance of Greater Adelaide. The area's affluence is reflected in substantially higher median incomes and greater levels of home ownership.

Table 2.2 Socio-economic Profile Catchment Area vs Benchmarks, 2021

Category	Catchment Area	Adelaide Hills Council	Greater Adelaide
Income			
Median individual income (annual)	\$49,940	\$46,510	\$39,600
<i>Variation from Greater Adelaide median</i>	+26.1%	+17.4%	n.a.
Median household income (annual)	\$117,610	\$109,190	\$81,220
<i>Variation from Greater Adelaide median</i>	+44.8%	+34.4%	n.a.
Age Structure			
0-4 years	4.3%	4.9%	5.4%
5-19 years	20.5%	19.8%	17.4%
20-34 years	11.7%	13.5%	20.5%
35-64 years	41.2%	41.7%	38.1%
65-84 years	20.1%	18.3%	16.0%
85 years and over	2.2%	1.9%	2.6%
Median Age (years)	46.0	43.9	39.5
Country of Birth			
Australia	84.0%	84.4%	72.7%
Other Major English Speaking Countries	11.9%	10.3%	8.6%
Other Overseas Born	4.1%	5.3%	18.7%
<i>% speak English only at home</i>	96.8%	94.9%	78.3%
Household Composition			
Couple family with no children	33.6%	33.0%	26.2%
Couple family with children	<u>39.4%</u>	<u>38.0%</u>	<u>29.6%</u>
Couple family - total	73.0%	70.9%	55.8%
One parent family	7.3%	8.0%	11.7%
Other families	<u>0.6%</u>	<u>0.4%</u>	<u>1.1%</u>
Family households - total	80.9%	79.4%	68.6%
Lone person household	17.9%	19.3%	27.8%
Group household	1.1%	1.3%	3.7%
Dwelling Structure (Occupied Private Dwellings)			
Separate house	97.5%	96.2%	75.3%
Semi-detached, row or terrace house, townhouse etc.	1.8%	2.5%	16.4%
Flat, unit or apartment	0.7%	1.2%	8.2%
Other dwelling	0.0%	0.1%	0.2%
<i>Occupancy rate</i>	91.0%	92.0%	93.1%
Average household size	2.7	2.6	2.4
Tenure Type (Occupied Private Dwellings)			
Owned outright	43.8%	41.5%	31.5%
Owned with a mortgage	47.4%	46.5%	37.8%
Rented	5.6%	10.2%	28.4%
Other tenure type	3.2%	1.9%	2.3%
Housing Costs			
Median monthly mortgage repayment	\$2,120	\$1,907	\$1,594
<i>Variation from Greater Adelaide median</i>	+33.0%	+19.7%	n.a.
Median weekly rents	\$432	\$363	\$322
<i>Variation from Greater Adelaide median</i>	+34.1%	+12.8%	n.a.
Car Ownership per Dwelling			
None	1.7%	1.6%	7.6%
One	23.2%	23.8%	37.1%
Two	44.2%	43.6%	37.0%
Three or more	31.0%	31.0%	18.3%

Note: interpretation of small area data from the 2021 ABS Census should consider potential outcomes from the COVID-19 pandemic.

Source: ABS, Census of Housing and Population, 2021; Ethos Urban

3.0 Fuel Outlet Needs Assessment

This Chapter provides an assessment of the economic need and implications of a retail fuel outlet development at the Subject Site.

3.1 National Service Station Industry Trends Overview

The following are some high-level observations in relation to the national service station industry:

- **Fleet and Travel Requirements.** The size of the Australian motor vehicle fleet and the number of kilometres travelled are two key indicators of demand for fuel retailing and for service stations. In recent years, before the COVID-19 pandemic, growth occurred in the number of vehicles and kilometres travelled throughout Australia. Travel restrictions due to the COVID-19 pandemic notably impacted both these measures, although indications are that growth has returned following the end of movement restrictions.
- **Fuel Consumption.** Fuel consumption in Australia continues to increase, although a trend towards diesel-powered vehicles has driven stronger growth in diesel sales compared to petrol sales. Continued growth in electric- and hybrid-powered cars in the future will impact fuel sales, although these vehicles currently represent only a very small proportion of the market. It is expected that traditional diesel and petrol-powered cars will continue to comprise the majority of vehicles on the road for a significant number of years. Nevertheless, the industry is already adjusting to cater for these new modes of transport such as introducing charging stations at fuel outlets.
- **Number of Fuel Outlets.** A consolidation of the number of fuel outlet throughout Australia has been one of the major trends impacting the industry in recent decades, although in recent years this trend has reversed marginally. It is understood the number of fuel outlets in Australia in the 1970s was in the order of 20,000 and this has declined to less than 8,000 fuel outlets at present, although up from approximately 6,500 outlets a decade ago. This trend has driven increased need for fuel outlets in highly accessible, convenient and visible locations to meet the needs of motorists.
- **Fuel Profitability.** Profit margins on fuel sales are relatively low, with fuel outlets earning only a few cents of profit per litre of fuel sales. A large proportion of profit for fuel outlets is derived from non-fuel sales associated with aligned convenience retailing, highlighting the importance of convenience retailing as a means of supporting the viability of fuel outlets and serving the community.

3.2 Key Locational Criteria

The key locational criteria for fuel outlets are as follows:

- **Exposure to passing traffic.** Fuel outlets generally rely on direct exposure to passing vehicular traffic to be successful. The Subject Site has frontage to Longwood Road and Scott Creek Road, both notable traffic routes in the local area.
- **Site size.** A fuel outlet requires sufficient land to accommodate a range of complementary uses such as convenience shop, petrol canopy, as well as sufficient space to allow for the circulation of vehicles and some car parking. The Subject Site is of a sufficient size to accommodate all relevant requirements.
- **Catchment.** The demand for a fuel outlet is partly determined by the geographic catchment of resident demand that is served by the outlet. For the Subject Site, this will largely include residents in the surrounding area who can conveniently access the Subject Site via Longwood Road or Scott Creek Road.
- **Accessibility.** It is critical for fuel outlets to be easily accessible, with the ability for customers to access and exit quickly, safely and efficiently. The Subject Site provides this attribute with direct ingress and egress to be provided from/to Longwood Road and Scott Creek Road.

Overall, the Subject Site presents an appropriate location for a retail fuel outlet, in that it is of sufficient size, has frontage to two collector roads and is easily accessible from local road networks.

3.3 Supply of Fuel Outlets

One fuel outlet is currently located in the Catchment Area (refer **Figure 2.1**). Five other fuel outlets are situated within around a 7km radius of the Subject Site, of which four are located on Mount Barker Road.

Located on the southern side of Mount Barker Road in Stirling, Caltex Woolworths is the only fuel outlet in the Catchment Area and is situated approximately 3.1km from the Subject Site by road. The outlet includes a small convenience store and is located adjacent to a BWS liquor store and Ultra Tune mechanic outlet.

Another fuel outlet (BP) in Stirling is located on the northern side of Mount Barker Road, approximately 3.3km from the Subject Site and just outside the Catchment Area. The site consists of an AMPM convenience store, Subway and a car washing facility. This location is a busy intersection that also includes Stirling Hotel, a Foodland supermarket, Adelaide Hills Library and a several retail shops.

Further beyond the Catchment Area are the following outlets:

- Approximately 3.9km north-east of the Subject Site is Mobil Aldgate, a small fuel outlet containing two fuel pumps and a small general store located on the northern side of Mount Barker Road.
- Located in Main Street, Crafers, approximately 4.3km north-west of the Subject Site, is a BP fuel outlet with an AMPM convenience store.
- Two small fuel outlets are located on Mount Barker Road in Bridgewater .

A summary of the retail fuel outlets located in the surrounding area is provided in **Table 3.1**, with the locations of the outlets shown on the previous **Figure 2.1**. A recent image of these fuel outlets is provided on the following page.

Table 3.1 Existing Fuel Outlets in the Surrounding Area

Fuel Outlets	Address	Distance by road from Subject Site	Additional Comments
<u>Within Catchment</u>			
Caltex Woolworths Stirling	66 Mount Barker Road, Stirling	3.1	Contains small convenience store and is adjacent to BWS and Ultra Tune
<u>Beyond Catchment</u>			
AMPM Stirling - Bp	65 Mount Barker Road, Stirling	3.3	Contains AMPM convenience store, Subway and car washing facility.
Mobil Aldgate	345 Mount Barker Road, Aldgate	3.9	Contains small convenience store
AMPM Crafers - Bp	3 Main Street, Crafers	4.3	Recently renovated and includes an AMPM convenience store
Bridgewater Service Station	466 Mount Barker Road, Bridgewater	5.7	Contains convenience store
Jarret Motor Company	510 Mount Barker Road, Bridgewater	6.2	Small Liberty fuel outlet located as part of the Jarrett Nissan dealership

Source: Ethos Urban

Caltex Woolworths Stirling



Source: Google Images

AMPM BP Crafers



Source: Google Images

AMPM BP Stirling



Source: Google Images

Bridgewater Service Station



Source: Google Images

Mobil Aldgate



Source: Google Images

Jarret Motor Company



Source: Google Images

3.4 Provision Benchmarks for Fuel Outlets

The South Australian government requires fuel retailers to report their fuel prices to a central database, although the database is not publicly available. Various businesses track the number and provision of fuel outlets nationwide including in South Australia. One such company that publishes the data publicly is LocationIQ through its Provision Benchmarks publication, the most recent of which was prepared for 2021.

The Provision Benchmarks 2021 publication states that Adelaide has an estimated provision of approximately 3,386 persons per fuel outlet or 3.0 per 10,000 residents, refer to **Table 3.2**. Adelaide's provision of fuel outlets is broadly similar to the estimated national average provision of approximately 2.9 per 10,000 people. The provision of fuel outlets in South Australia is much higher per capita, with an estimated 2,340 residents per fuel outlet or 4.3 per 10,000 residents.

Table 3.2 Estimated Fuel Outlet Provision, 2021

Area	Estimated No. Fuel Outlets	Population, June 2021 ('000)	Residents per Fuel Outlet	No. Fuel Outlet per 10,000 Residents
Adelaide	414	1,402	3,386	3.0
South Australia	770	1,803	2,341	4.3
Australia	7,408	25,740	3,475	2.9

Source: ABS; Location IQ Provision Benchmarks 2021; Ethos Urban

The nature of fuel retailing is more nuanced than simply applying population benchmarks. These benchmarks are averages and will reflect areas with a higher and lower provision of fuel outlets due to a range of factors. A high provision of fuel outlets in an area does not necessarily indicate an overprovision as other factors need to be considered, such as levels of passing traffic, density of population, commuter patterns etc. For example, people tend to buy fuel at a location at the time when they need it, which may be close to home, work or any other location.

In broad terms, applying an average provision of 3 fuel outlets per 10,000 residents to the Catchment Area population of 7,840 at June 2021 indicates the demand for **2.3 fuel outlets in the area**. Currently, only one fuel outlet is located in the Catchment Area, at its northern edge, while another fuel outlet is located nearby immediately beyond the Catchment Area. In addition to serving some residents of the Catchment Area, these outlets would serve residents to north of the Catchment Area reflecting their location on Mount Barker Road.

Four additional fuel outlets are located in the surrounding region which primarily cater to residents in Crafers, Aldgate and Bridgewater.

Current demand exists for another fuel outlet in the Catchment Area given the average provision of fuel outlets in Adelaide, the population of the Catchment Area and that the closest fuel outlets to the Subject Site are located more than 3km away.

3.5 Forecast Fuel Demand

The ABS publishes information on motor vehicle use in Australia, the most recent being the Survey of Motor Vehicle Use for the period ending June 2020. Using information from this publication, together with estimates on the number of vehicles per household, the total fuel requirements of private motor vehicles by Catchment Area residents can be estimated.

The estimated number of motor vehicles within the Catchment Area uses information from the 2021 ABS Census, as well as projected population growth previously detailed in Chapter 2. The average number of motor vehicles per dwelling in the Catchment Area is calculated at 2.2, which is well above the average for Greater Adelaide of 1.7 motor vehicles per dwelling.

The total number of motor vehicles in the Catchment Area is calculated to increase from 6,430 in 2021 to approximately 6,680 at 2036 (refer **Table 3.3**). This assumes that the average household size and the average number of motor vehicles per household remain constant over the forecast period.

Using the ABS published Survey of Motor Vehicle Use Australia data, it can be calculated that in the year ended June 2018, passenger vehicles in South Australia travelled an average of 12,120 km. The figure from 2018 has been used due to movement restrictions implemented from the COVID-19 pandemic impacting the 2020 figure.

The same ABS publication details that passenger vehicles in South Australia used an average of 11.0 litres of fuel per 100 km travelled in the year ended June 2020. Therefore, this data indicates that passenger vehicles in South Australia are estimated to currently use around 1,330 litres of fuel per annum.

Table 3.3 Estimated Fuel Consumption, Catchment Area, 2021 to 2036

	2021	2026	2031	2036
Estimated Passenger Vehicles				
Resident population	7,840	7,940	8,040	8,140
Avg household size	2.7	2.7	2.7	2.7
Est. dwellings	2,904	2,941	2,978	3,015
Avg vehicles per households	2.2	2.2	2.2	2.2
Total est. passenger vehicles in Catchment Area	6,434	6,516	6,598	6,680
<u>Fuel consumption (passenger vehicles)</u>				
SA average travel distance (km)	12,120	12,120	12,120	12,120
SA average fuel consumption (L per 100 km)	11.0	10.9	10.7	10.6
Average fuel usage per vehicle (L)	1,333	1,317	1,300	1,284
Est. fuel consump'n passenger vehicles in Catchment Area (ML)	8.6	8.6	8.6	8.6

Source: ABS; Ethos Urban

Electric cars will form a greater proportion of cars over time. However, at present the adoption of such vehicles in Australia is still relatively limited. To allow for the increase of electric cars, the following analysis assumes that the average fuel consumption per passenger vehicle declines over the forecast period. However, fuel outlets will also service the electric vehicle market to a significant degree, such as providing rapid charging facilities and comfort stops.

Based on this analysis, it is estimated that the total fuel consumption of passenger vehicles in the Catchment Area was 8.6 million litres in 2021 and this is projected to remain stable over the forecast period. Additional demand will come from commercial vehicles in the area, although this additional source of demand is expected to be modest.

The volume of fuel sales per fuel outlet can vary considerably depending on the location and size of the facility. In general, a mid-sized fuel outlet in a suburban area typically achieves annual fuel sales in the order of 3 – 4 million litres a year. Based on this fuel sales range, the analysis finds that **the Catchment Area can currently support at least two and potentially three mid-sized fuel outlets.**

For all areas, a proportion of fuel sales will 'escape' and be directed to fuel outlets located in the broader region. Likewise, fuel outlets will 'capture' fuel sales from people who do not reside in the local area. Given the proximity of two fuel outlets in Stirling at the edge of the Catchment Area, there may be an overall net escape of fuel sales from the area. This escape spending reflects a lack of appropriately located and accessible fuel retailing options.

The proximity of the Subject Site to Heathfield High School (860 enrolments in 2021) and community facilities including Arkaba Oval, Hills Little Athletics Centre and Mt Loft Community Sports Centre, will limit the level of fuel sales escaping the area if a fuel outlet is developed at the Subject Site.

Visitors to the area will also generate fuels sales demand. Of most relevance to the Subject Site are the local tourist attractions of Warrawong Wildlife Sanctuary and Mark Oliphant Conservation Park. It is noted that patrons of these facilities traveling from the urban area of Adelaide would most likely pass the Subject Site and some can be expected to stop to purchase fuel.

It is also noted that this analysis is based on the average distance travelled for all South Australian passenger vehicles. However, residents in the local area are expected to travel further than average. Analysis of the Stirling-Aldgate SA2, which holds the majority of the Catchment Area's population, reveals that residents in the area have a longer average commuting distance (16.9 km) than residents in Greater Adelaide (12.7 km) and all of South Australia (13.8 km). This suggests that the average distance travelled in passenger vehicles per annum by Catchment Area residents is likely to be greater than the South Australian average, resulting in higher overall fuel consumption.

Another important point to note is that a retail fuel outlet previously operated from the Subject Site, albeit was a smaller scale than the proposed development.

Weighing up all of this analysis, demand for another fuel outlet is identified in the Catchment Area. This particularly reflects the demand for fuel created by passenger vehicles compared with the existing supply of retail fuel outlets. Furthermore, the Subject Site presents an appropriate location for a new fuel outlet. This reflects its central location in the Catchment Area at the intersection of two notable traffic routes, the close proximity of various community facilities and the ability of the proposed fuel outlet to serve visitors to nearby attractions.

A fuel outlet at the Subject Site is expected to be able to achieve around 20% of sales from passenger vehicles outside the Catchment Area and from commercial vehicles. Based on annual fuel sales of 3.5 million litres, the proposed fuel outlet at the Subject Site would generate 2.8 million litres from passenger vehicles in Catchment Area **reflecting a market share of 33%** of the 8.6 million litres. Around two thirds or 67% of the fuel consumption of passenger vehicles in Catchment Area is still expected to be directed to other fuel outlets in the region. This level of market share is considered appropriate and achievable given the size of the market and the context of the area.

Overall, the proposed OTR at Heathfield would serve a demonstrated community need and improve access to services, namely to a conveniently and appropriately located retail fuel outlet.

3.6 Economic and Community Implications

The Subject Site provides an opportunity to develop a modern and appropriately sized retail fuel outlet specifically designed for today's consumer. The analysis in this report identifies the demand generated by local residents and visitors to support a fuel outlet at the Subject Site.

The proposal also includes a convenience shop and car washing facilities. The provision of a convenience shop co-located with a fuel outlet is a contemporary expectation of the consumer of today, who value the opportunity for one-stop shopping for fuel and basic convenience retail items (such as milk, bread, basic groceries etc). Virtually all modern fuel outlets include some type of attached convenience shop. The provision of an automatic car wash at the Subject Site, which are regularly provided as part of a fuel outlet offer, would provide further convenience for consumers and would complement the fuel and convenience shop elements.

A range of economic and community benefits are likely to result from the proposed development of a fuel outlet at the Subject Site, including the following:

- **Serve the identified demand.** At present two fuel outlets are located at the northern edge of the defined Catchment Area, with one outlet within the Catchment Area and the other immediately beyond the area. Both of these outlets serve their own catchment areas which will overlap only partially with that for the subject proposal, and as such the analysis finds that demand currently exists for another fuel outlet in the Catchment Area.

The Subject Site is an appropriate location for a fuel outlet to serve this identified demand, particularly given that it previously contained a small retail fuel outlet. The Subject Site would provide the only fuel outlet south of Mount Barker Road in the surrounding region and is well-placed to serve visitors to Heathfield High School, community facilities and tourist facilities in the local area.

- **Increase choice.** The proposed development will introduce OTR to the local market, increasing convenience retail choice for the consumer. Increased choice provides a range of benefits for the community, and generally leads to downward pressure on price. This is an important consideration as higher fuel prices can impact on disposable incomes and economic growth in a region.
- **Create job opportunities and investment.** The proposed development will attract private sector investment at a time when the national economy is recovering from the COVID-19 pandemic. A new fuel outlet at the Subject Site will also create direct ongoing jobs, while further temporary jobs will be created during the construction period. Fuel outlets typically support an average of seven direct jobs according to IBISWorld (Fuel Retailing in Australia, November 2021), although the proposed facility is expected to employ around ten staff (full-time and part-time) given the uses proposed and its 24 hours a day of operation.

Overall, the market to support a retail fuel outlet at the Subject Site has been identified and the proposed development will improve access to fuel retailing and convenience shop facilities for the local community.

Given the location at the intersection of two key local traffic routes and near community facilities, the Subject Site is an appropriate location for a retail fuel outlet. The proposed development would not adversely impact on existing uses in the area, particularly given the site formerly operated as a motor repair station and retail fuel outlet. In addition, the development will increase choice for the community by introducing a new operator to the market and cater to the needs of the motoring public and will contribute to the local and wider economy.

4.0 Conclusion

The Subject Site provides an opportunity to develop a modern and appropriately sized retail fuel outlet to serve the needs of the community.

The proposed fuel outlet will have frontage to two traffic routes in the local area, namely Longwood Road and Scott Creek Road, ensuring it is easily accessible and convenient for local residents and visitors to the area.

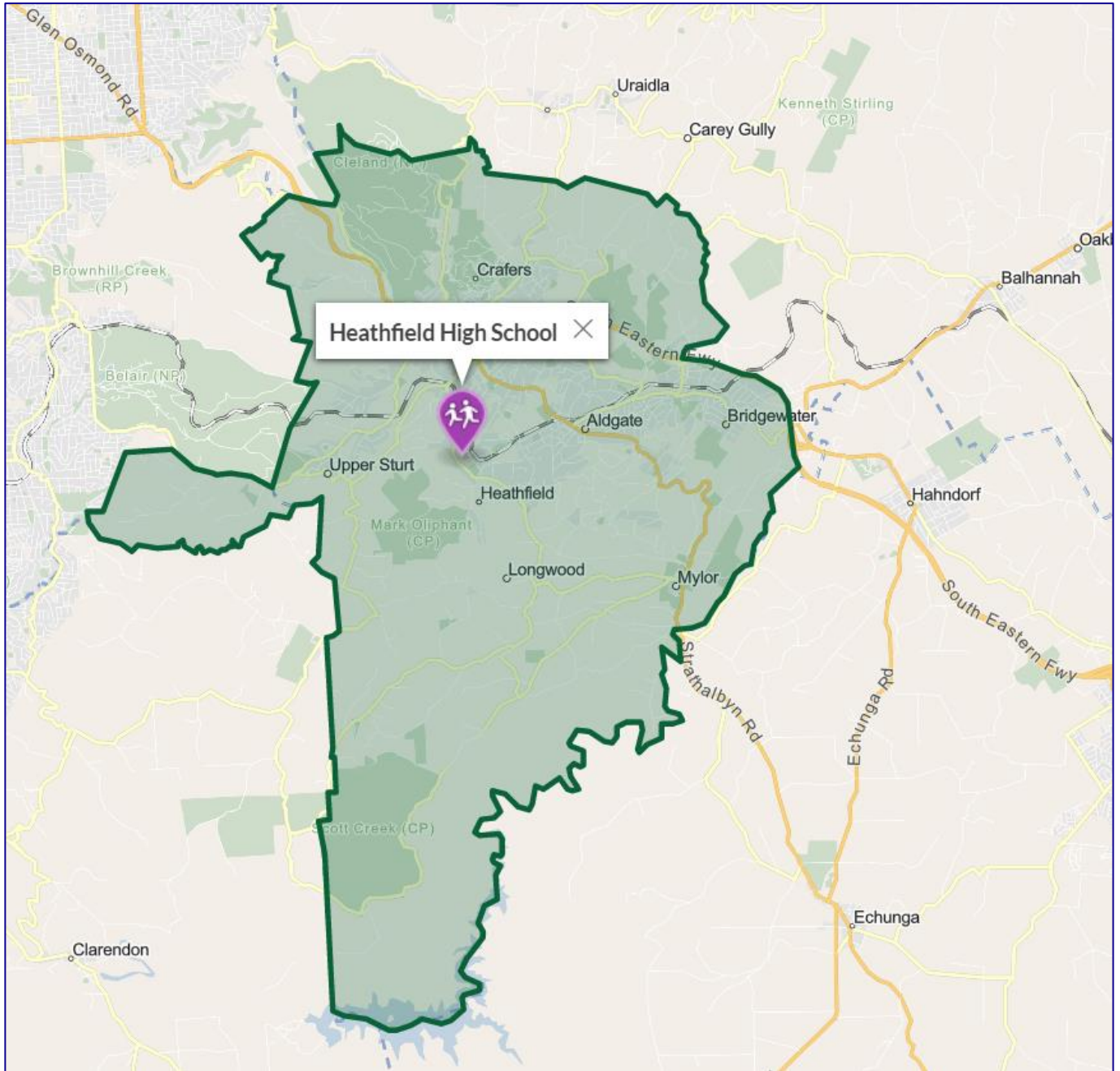
The analysis in this report demonstrates that the proposed retail fuel outlet at the Subject Site is supported in the context of market demand and the competitive context of the area. This finding is supported by the fact that the Subject Site previously accommodated a fuel retailing business, albeit smaller in size than the proposed development.

A range of community benefits have been identified that will arise from the proposed development such as serving an identified need for additional fuel outlets in the area, increasing consumer choice and attracting investment to the local area. The planned convenience retail shop and car washing facilities would complement the fuel retailing element of the development and add to the provision of services for the community.

In summary, the proposed development will serve an identified market need for a retail fuel outlet at the Subject Site, improve access to services in the local area, and increase choice for the motoring community. Given these factors, it is assessed that a net community benefit will result from the proposed development as is related to economic considerations.

Appendix

Heathfield High School Catchment Zone



Source: Department for Education, South Australia

Date: 15.08.2022 Job Number: 2112097

To: Peregrine Corporation Attention: Tim Beazley Email: T.Beazley@peregrine.com.au
From: Zhun Yee Lai
Project: OTR Heathfield
160 Longwood Road, Heathfield SA
Subject: Obtrusive Lighting Assessment

Dear Tim,

1.0 INTRODUCTION

TMK Consulting Engineers were engaged to provide a lighting assessment report to address the following:

An Obtrusive Light – Compliance Report prepared by a qualified and experienced Electrical Engineer in accordance with Australian Standard 4282 – 2019 ‘Control of the obtrusive effects of outdoor lighting’ shall be provided to Council for Approval.

External lighting requirements for the proposed development; involving light spill across to adjacent properties will be required to be compliance with current Australian Standards.



Figure 1: Aerial view of proposed development



Figure 2: Obtrusive Lighting calculation boundary

The objective of this report is to:

- a) Provide certification/commentary on the light spill across the boundary lines to adjoining residential properties boundaries during both curfew & non-curfew hours when the site is in operation, for compliance to AS4282-2019 Table 3.1 and table 3.2 criteria (extract copied below) for Environmental Zone A2 – Low District Brightness.



TABLE 3.1
ENVIRONMENTAL ZONES

Zones	Description	Examples
A0	Intrinsically dark	UNESCO Starlight Reserve. IDA Dark Sky Parks. Major optical observatories No road lighting -unless specifically required by the road controlling authority
A1	Dark	Relatively uninhabited rural areas No road lighting - unless specifically required by the road controlling authority
A2	Low district brightness	Sparsely inhabited rural and semi-rural areas
A3	Medium district brightness	Suburban areas in towns and cities
A4	High district brightness	Town and city centres and other commercial areas Residential areas abutting commercial areas
TV	High district brightness	Vicinity of major sports stadium during TV broadcasts
V	Residences near traffic routes	Refer AS/NZS1158.1.1
R1	Residences near local roads with significant setback	Refer AS/NZS 1158.3.1
R2	Residences near local roads	Refer AS/NZS 1158.3.1
R3	Residences near a roundabout or local area traffic management device	Refer AS/NZS 1158.3.1
RX	Residences near a pedestrian crossing	Refer AS/NZS 1158.4

NOTE: Recreational areas are not considered commercial.

Figure 3 – Table 3.1 of AS4282

TABLE 3.2
MAXIMUM VALUES OF LIGHT TECHNICAL PARAMETERS

Zones	Vertical illuminance levels (E_v) lx		Threshold increment (TI)		Sky glow
	Non-curfew	Curfew	%	Default adaptation level (L_{ad})	Upward light ratio
A0	See Note 1	0	N/A	N/A	0
A1	2	0.1	N/A	N/A	0
A2	5	1	20%	0.2	0.01
A3	10	2	20%	1	0.02
A4	25	5	20%	5	0.03
TV	See Table 3.4	N/A	20%	10	0.08
V	N/A	4	Note 2	Note 2	Note 2
R1	N/A	1	20%	0.1	Note 3
R2	N/A	2	20%	0.1	Note 3
R3	N/A	4	20%	0.1	Note 3
RX	N/A	4	20%	5	Note 4

Figure 4 Table 3.2 AS 4282

b) Provide recommendation on the illumination level on the car park areas and driveways for compliance to AS1158.3.1 - 2020 for below usage areas indicated below and shown in Figure 7;

- Lighting calculations are according to AS1158.3.1, sub-category:
- PC1 for carpark areas & general circulation space
- PCD for disabled car park areas

Obtrusive lighting calculations are within the limit permitted within AS4282:2019

The various steps undertaken in the investigation were:

- Computer modeling using readily available software & luminaire photometric (.IES) files received from lighting supplier.
- Cross referencing & examination of all relevant standards to ensure the requirement is achieved.

The following was excluded from the assessment:

Site survey visual walk through to examine the condition around the site

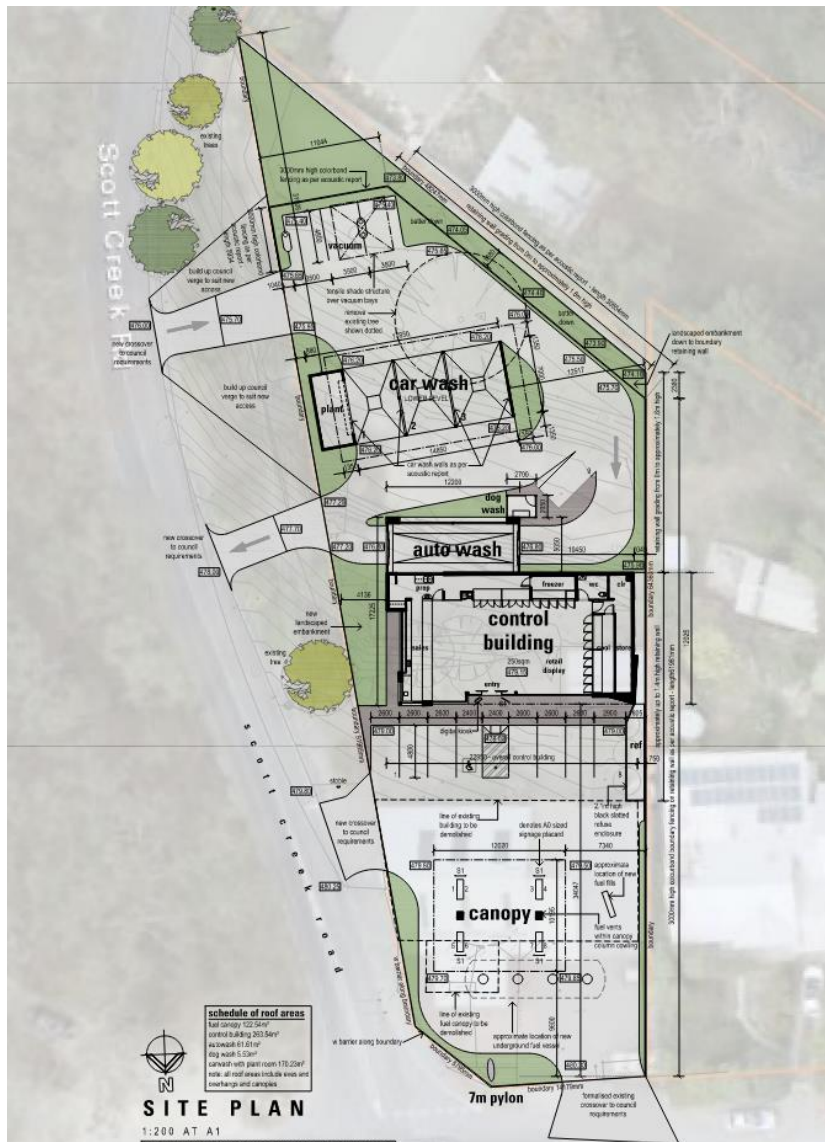


Figure 5 Site Plan Definitions

2.0 PROPOSED LIGHTING LAYOUT

The lighting layout proposed is based on the use of:

- 11x 60W, LED luminaires, mounted underneath of canopy (Gamma – 1065 VWFL)
- 3x 50W, LED luminaires, surface mounted floodlight (Haneco - Stax)
- 2x 100W, LED luminaires, Surface mounted floodlight (Haneco - Stax)
- 20x 22W, LED downlights, mounted underneath canopy (Gamma – 1004 VWFL)
- 7x 40W, LED weatherproof Battens, surface mounted on fence

Figure 6 provides an indication of the proposed lighting layout, along with Figure 7 shows the lighting schedule & symbols and Figure 8 shows an example 3D perspective of the proposed building:

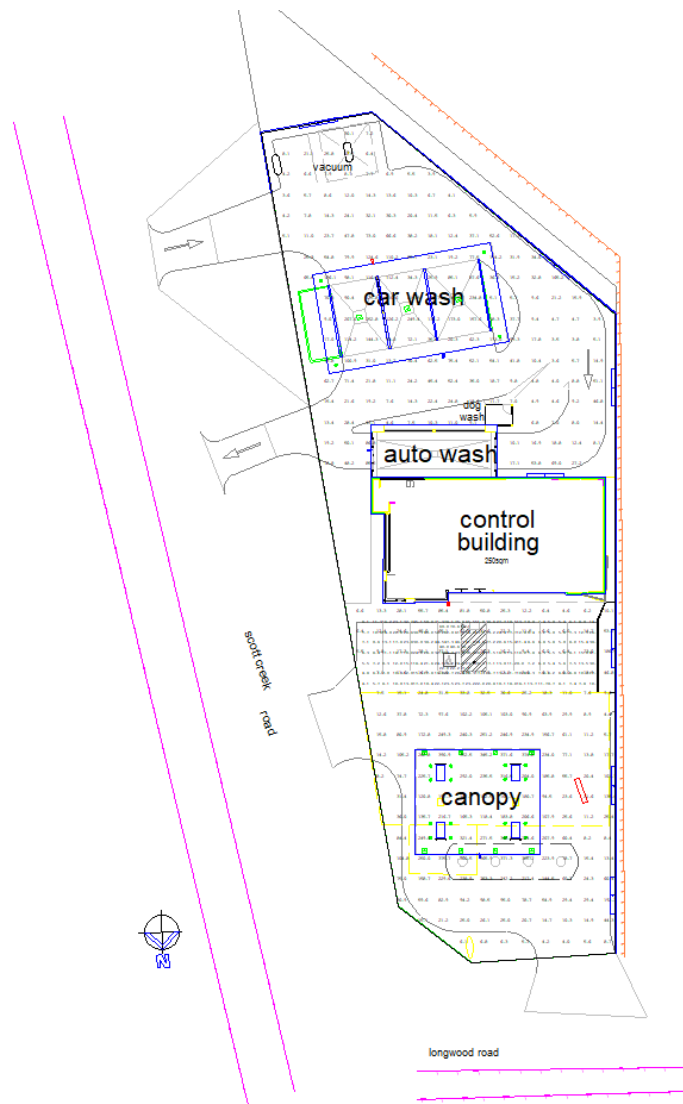


Figure 6 – Proposed Lighting Layout






Luminaire Schedule							
Symbol	Qty	Label	Description	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	2	STAX100W4K-S - IES	STAX100W4K	0.800	9612	100.13	200.26
	3	STAX50W-TRI - IES	STAX50W-TRI	0.800	5329	52.2186	156.656
	7	IES TRIPROOF40W12-4K	TRIPROOF40W12-4K	0.800	3650	42.1	294.7
	11	1065-VWFL-4K-60W - VORTEX - G	1065-VWFL-4K-60W	0.800	6123	59.08	649.88
	20	1004-VWFL-4K-22W - MYLO - G4	1004-VWFL-4K-22W	0.800	1998	20.62	412.4

Figure 7 – Proposed Lighting Schedule

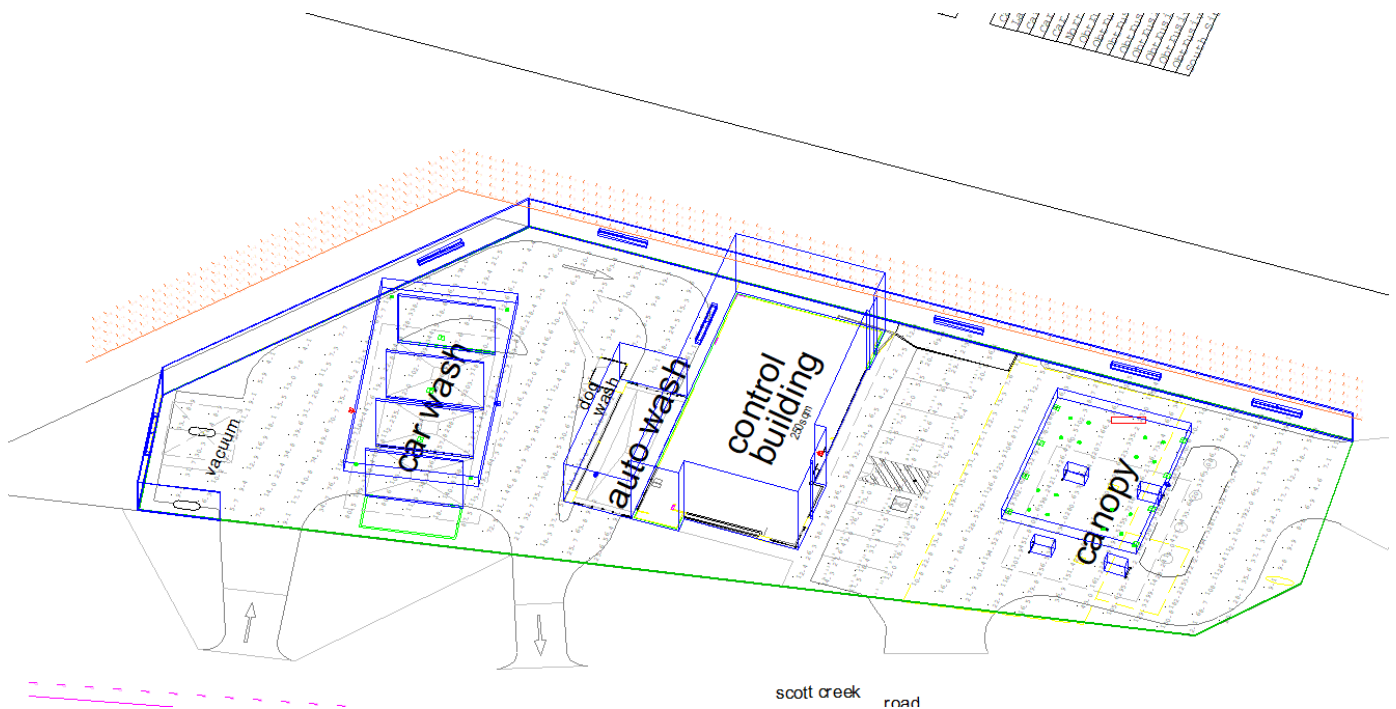


Figure 8 – Proposed 3D Perspective Model

3.0 LIGHT SPILL ASSESSMENT

The criteria for vertical light spills outline in AS 4282-2019 - Control of the obtrusive effects of outdoor lighting, Table 3.2:

- Non-Curfew hour (between 6am– 11pm) – maximum of 10 lux across the 'residential boundary line A2 – Low District Brightness under AS4282:2019 Tables 3.1 and 3.2
- Curfew hour (between 11pm– 6am) – maximum of 2 lux across the 'residential boundary line A2 – Low District Brightness under AS4282:2019 Tables 3.1 and 3.2

Assessment had been conducted based on 7-metre-high working planes on all boundaries, measuring from the highest point of impacted observation points on adjoining properties in the direct sight of line with height point of luminaries.

Boundary vertical spill had been measured at 1.5m off ground level, and at the face of the adjoining property or at 10m into the adjoining property, whichever is closer.

Threshold Increment (TI)

Maximum Allowable Value: 20 %

Calculations Tested (4):

Calculation Label	Adaptation Test Luminance	Test Results
ObtrusiveLight_TI_Southbound	0.1	PASS
ObtrusiveLight_TI_Southbound_1	0.1	PASS
ObtrusiveLight_TI_Westbound	0.1	PASS
ObtrusiveLight_TI_Westbound_1	0.1	PASS

Upward Waste Light Ratio (UWLR)

Maximum Allowable Value: 1.0 %

Calculated UWLR: 0.1 %
Test Results: **PASS**

Figure 9 – Threshold Increment and Upward Waste Light Ration for A3 zones



Obtrusive Light - Compliance Report

AS/NZS 4282:2019, A2 - Low District Brightness, Non-Curfew L1
Filename: 2112097 - Lighting
15/08/2022 11:36:31 AM

Illuminance

Maximum Allowable Value: 5 Lux

Calculations Tested (2):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_Ill_Seg1	PASS	0.6
ObtrusiveLight_Ill_Seg2	PASS	1.0

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 7500 Cd

Calculations Tested (2):

Calculation Label	Test Results
ObtrusiveLight_Cd_Seg1	PASS
ObtrusiveLight_Cd_Seg2	PASS

Figure 10 – Non-Curfew Obtrusive Light Compliance Report for A3 zones

Obtrusive Light - Compliance Report

AS/NZS 4282:2019, A2 - Low District Brightness, Curfew
Filename: 2112097 - Lighting
15/08/2022 11:35:28 AM

Illuminance

Maximum Allowable Value: 1 Lux

Calculations Tested (2):

Calculation Label	Test Results	Max. Illum.
ObtrusiveLight_Ill_Seg1	PASS	0.6
ObtrusiveLight_Ill_Seg2	PASS	1.0

Luminous Intensity (Cd) At Vertical Planes

Maximum Allowable Value: 1000 Cd

Calculations Tested (2):

Calculation Label	Test Results
ObtrusiveLight_Cd_Seg1	PASS
ObtrusiveLight_Cd_Seg2	PASS

Figure 11 – Curfew Obtrusive Light Compliance Report for A3 zones

4.0 SITE LIGHTING ASSESSMENT

The criteria for site lighting are based on AS1158.3.1 - 2020, Table 3.7:

- PC1 for carpark areas & general circulation space
- PCD for disabled car park areas

**TABLE 3.7
VALUES OF LIGHT TECHNICAL PARAMETERS FOR OUTDOOR
CAR PARKS (INCLUDING ROOF-TOP CAR PARKS)**

1	2	3	4	5
Lighting subcategory	Light technical parameters (LTP)			
	Average horizontal illuminance ^{a,b} (\bar{E}_h)	Point horizontal illuminance ^{a,b} (E_{ph})	Illuminance (horizontal) uniformity ^c Cat. P (U_{L2})	Point vertical illuminance ^{a,b} (E_{pv})
	lx	lx		lx
PC1	14	3	8	3
PC2	7	1.5	8	1
PC3	3.5	0.7	8	—
PCD ^d	—	≥ 14 and $\geq (\bar{E}_h)^d$	—	—
PCX ^e	21	5	8	—

Figure 12 Table 3.7 of AS1158.3.1

Calculation Summary						
Label	CalcType	Units	Avg	Max	Min	Max/Avg
Car Park	Illuminance	Lux	19.91	78.1	4.1	3.92
Car Park - DDA	Illuminance	Lux	43.20	70.6	21.1	1.63
North Site	Illuminance	Lux	43.77	252.8	3.5	5.78
South Site	Illuminance	Lux	92.74	390.9	4.0	4.22

Figure 13 Calculation Summary

4.0 SIGNAGE ILLUMINANCE LEVEL ASSESSMENT

We note that the signage contractor is unable to provide the photometric data for the advertising signs at this stage.

Figure 14 shows the elevations which include the new pylon signs.

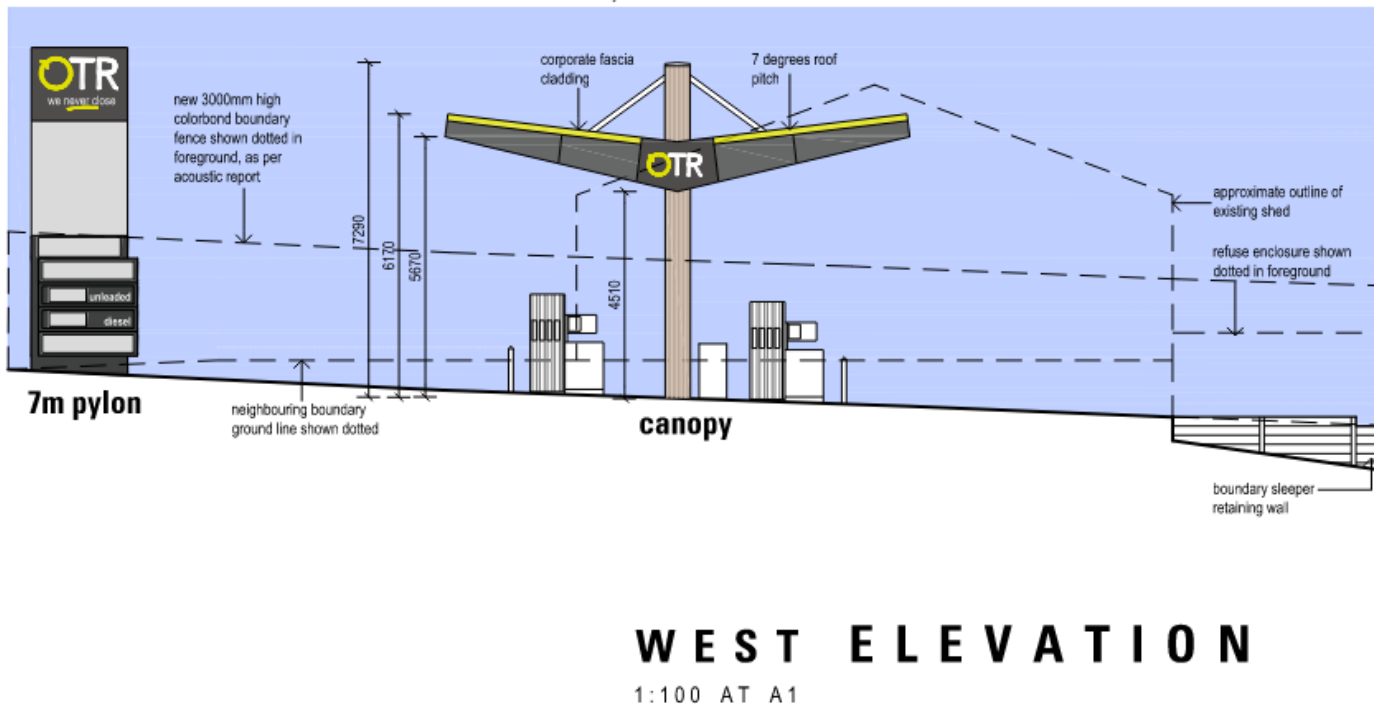


Figure 14 – Elevations showing Pylon Signs.

The brand light box will be completed with a dimmable driver Mean Well HLG -150H which will be dimmed down measured on site to ensure the *veiling luminance from the advertising signs not exceeding 0.25cd/m*.



150W Single Output Switching Power Supply **HLG-150H-xx** ADM series



Features :

- Universal AC Input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 94%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 / IP65 design for indoor or outdoor installations
- Type HL LED Driver for use in Class 1, Division 2 hazardous location luminaires
- Three in one dimming function (1~10Vdc or PWM signal or resistance)
- Suitable for LED lighting and street lighting applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 7 years warranty (Note.10)





We recommended that a dimmable controller ELEC0613-150Watt is installed for pylon signs. Pylon signs are suggested to be dimmed to meet the pre-curfew hours limited to a maximum of 5 lux across the boundary line, and the curfew hour limited to a maximum 1 lux (Light output to road way).



5.0 CONCLUSION

The modelled maximum spill on all boundaries for external lighting based on the above lighting layout and type complies with the criteria outlined in AS4282:2019.

The modelled illumination level on ground plane on the proposed carpark and circulating space based on the above lighting layout and type complies with the criteria outlined in AS1158.3.1.

We trust the above is satisfactory. However, should there be any further clarifications/assistance please do not hesitate to contact the undersigned or Adrian Ko.

For and on behalf of
TMK Consulting Engineers

Zhun Yee Lai
SERVICES MANAGER - VIC



TMK Consulting Engineers

Adelaide | Melbourne | Riverland

2112097 – BFR/A
BF227
02 May 2023

BUSHFIRE FIRE SERVICES REPORT (FR)

OTR HEATHFIELD
160 LONGWOOD ROAD, HEATHFIELD, SA

Prepared for

PC INFRASTRUCTURE PTY LTD



CONTENTS

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2	DEVELOPMENT DETAILS	3
3	FIRE SERVICES / PROTECTION MEASURES	4
	SCOPE OF WORKS	4
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1 INTRODUCTION

General

Peregrine Corporation have lodged a Development Application for a Retail Fuel Outlet on land at 160 Longwood Road, Heathfield. (Corner Scott Creek Rd)

The subject land is located within the Hazards (Bushfire – High Risk) Overlay under the Planning and Design Code.

The project is currently going through the planning DA process.

It was noted that the CFS commentary as part of the planning process was for bushfire zone requirements.

The proposed development will replace a similar fuel service station.

The following commentary has been provided as part of the DA submission:

“The design of the subject land will provide a level site, accommodating safe and efficient access to emergency service vehicles including rigid and articulated heavy vehicles from Scott Creek Road. All buildings and structures on site are proposed to be constructed using fire-resistant materials including steel substructure, concrete tilt slab walls, Colorbond roofing, glazing and will be equipped with essential fire safety equipment including fire hose reels and fire extinguishers. The fuel tank farm is located underground and will be isolated from above-ground infrastructure in the event of a fire on the subject land. Furthermore, the buildings are within close proximity to both Longwood Road and Scott Creek Road and the site is serviced by mains water. The subject land has excellent vehicle permeability, and a safe means of evacuation is possible by utilising the proposed and existing road infrastructure.

It is noted that the storage and sale of fuel have occurred at the site for many years. The proposed development will facilitate the removal and replacement of the existing dated fuel infrastructure, including the underground fuel tank. If approved the new fuel infrastructure will incorporate the latest safety treatments and measures with respect to fire prevention and mitigation.”

Objective

The objective of this report is to:

- a) Prepare a fire services report that might provide a list of measures and treatments that should be employed at the site given its location within a High Risk Area.

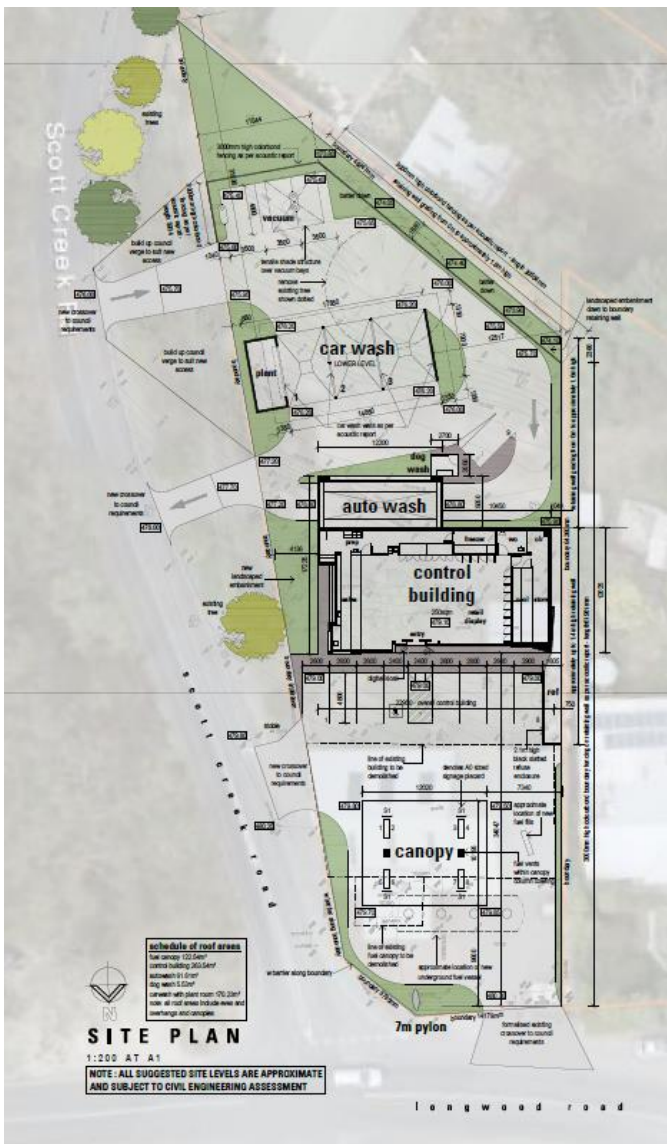
The various steps undertaken in the investigation were:

- b) Review of architectural documentation provided;
- c) Assessment of existing minimum level fire protection requirements;
- d) Meeting with Country Fire Service (CFS) to review requirements and input from the CFS for site accessibility/manoeuvrability and fire protection measures

2 DEVELOPMENT DETAILS

PROPOSED NEW SERVICES STATION

Description:	Proposed Service Station Development
DA ID:	22030127
Class of Building:	6 / 10a
Number of Storeys:	1
Type of Construction:	Type C
Overall Building Floor Area:	each building / structure less than 500m ²



The site concerned, with proposed development

3 FIRE SERVICES / PROTECTION MEASURES

SCOPE OF WORKS

The following is the proposed minimum level of works relating to fire protection systems, in accordance with the NCC BCA 2022, Vol.1; plus supplementary requirements to meet Bushfire Criteria; as agreed with the Country Fire Service (CFS)

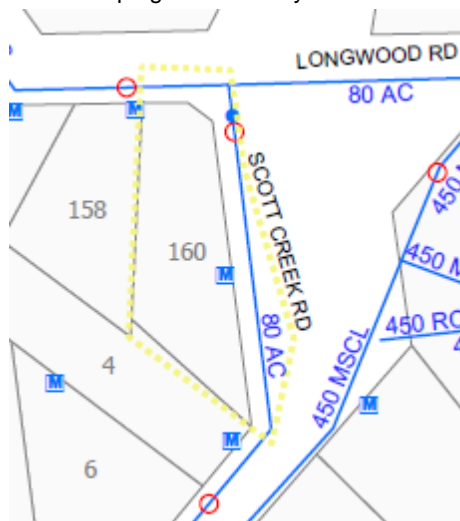
REQUIREMENTS / RECOMMENDATIONS – DEEMED TO SATISFY

Automatic Fire Sprinkler System

- An automatic fire sprinkler system is not a mandatory requirement for the overall building; on the basis of the following:
- Action Required
 - No action required from BCA compliance and Bushfire Criteria

Fire Hydrant System

- A hydrant system is not a mandatory requirement for the building to AS2419 requirements; with the fire compartment sizes not exceeding 500m²; on the basis of the following;
- An on-site fire water supply is not a mandatory requirement for a Class 6 building in a high bushfire area;
- Whilst hydrant protection and coverage is not a mandatory BCA requirement; it is noted that a SA Water town mains network is present, with a fire plug located on both Scott Creek Rd and Longwood Road. The coverage from these two fire plugs comfortably meets the buildings on the site with 2-hose lengths.

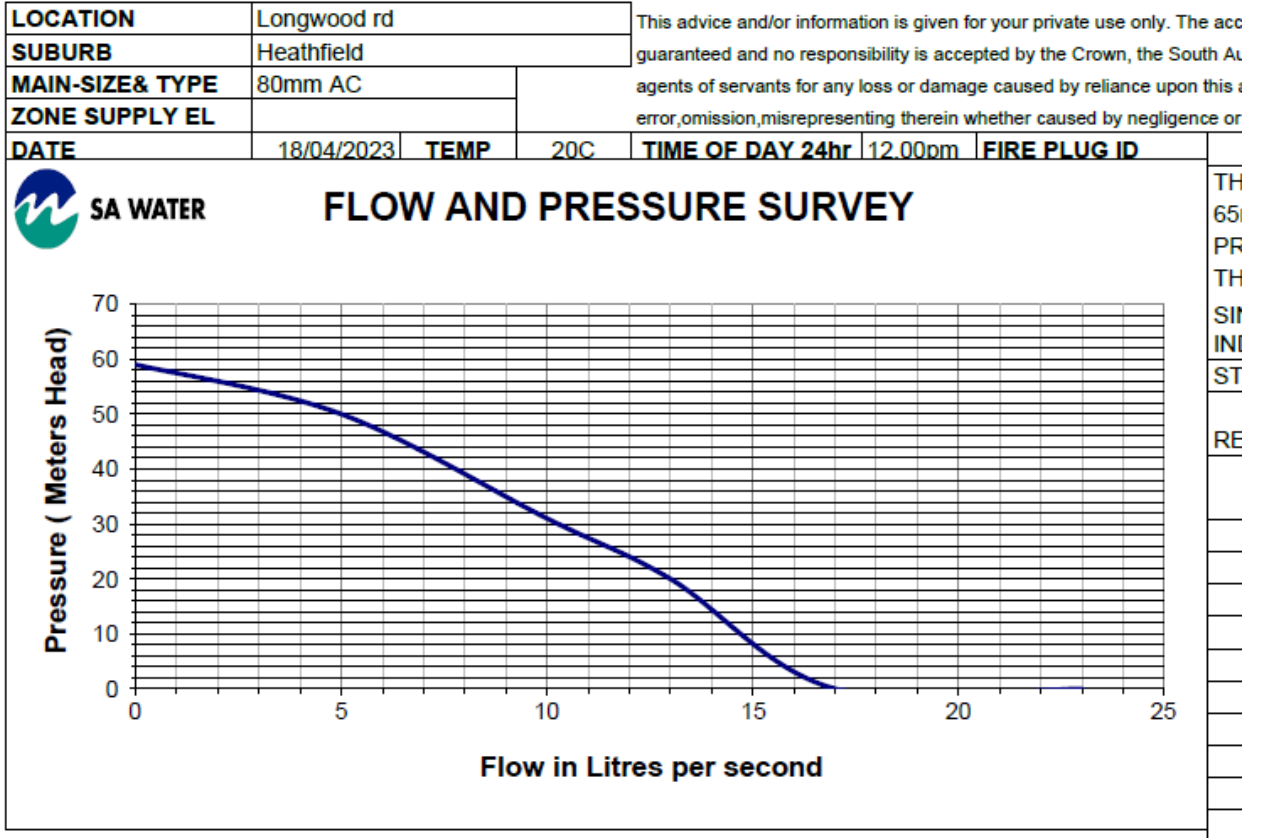


Extract from SA Water plan showing fire plugs (red circles) on Longwood Rd & Scott Creek Rd

- An SA Water flow test arranged on the two fire plugs indicates a good water supply; and suitable to service two fire plugs running at 10l/s@200Kpa each; which would be the level required if a fire hydrant system was a requirement for the site;

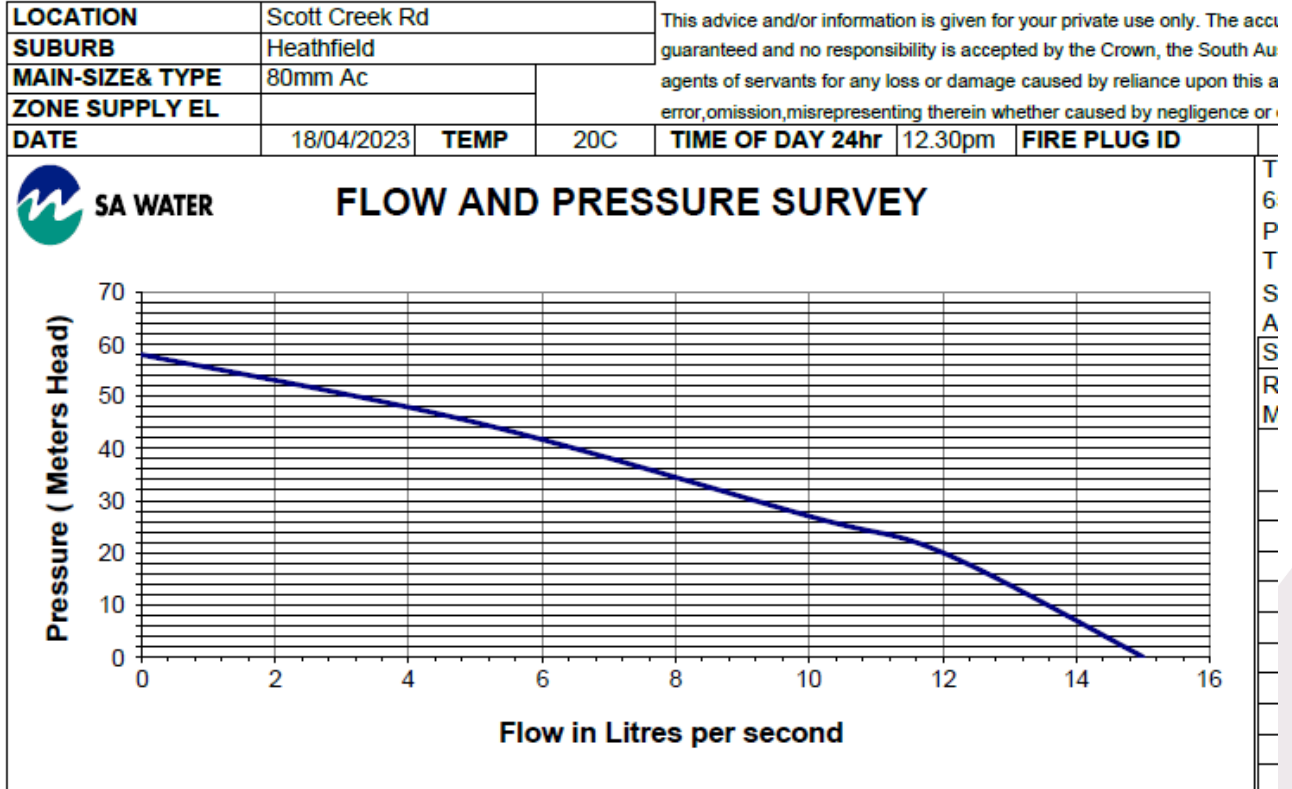


METERING TECHNICAL SERVICES- HAPPY VALLEY MAXIMO NO 8977490



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METERING TECHNICAL SERVICES- HAPPY VALLEY MAXIMO No 8977490



The SAWater flow test results from the fire plugs on Scott Creek Rd & Longwood Rd, which both indicate a flow of 10l/s @200kPa will be achievable from each fire plug, and satisfy expected demand reqmnts for the site;



- Action Required
 - No action required from BCA compliance and Bushfire Criteria;
 - The town mains supply suffices as an additional water supply for CFS intervention;

CFS Access

The proposed building has three (3) vehicle/appliance access points, with two on Scott Creek Rd and one on Longwood Road.

The CFS consider the arrangement suitable for emergency vehicle access and traversing on the site;

- Action Required
 - None; the existing access/egress points satisfy CFS criteria for the site;

Smoke Hazard Management System

- From a code compliance viewpoint, a fire detection system is not mandatory for the building;
- For early warning and asset protection, a skeletal fire detection system with connection to security; is raised as a consideration for the building owner;
- Action Required
 - No action required from BCA compliance and Bushfire Criteria;
 - Recommendation for skeletal system connected to security for earlier warning;

Fire Hose Reels

- A fire hose reel system is not a mandatory requirement for the building; with the fire compartment sizes not exceeding 500m²;
- However the CFS have recommended a Fire hose reel be provided, as an initial point of attack (above BCA criteria); located externally and between the control building & fuel canopy
- on the basis of the following;
- Action Required
 - No action required from BCA compliance and Bushfire Criteria;
 - However CFS recommendation for site FHR to be provided;

Portable Extinguishers/Fire Blankets

- Portable Fire Extinguisher protection is a requirement for all the occupied spaces, complying with the minimum requirements of AS2444 requirements

Exit / Emergency Lighting

- Exit and emergency lighting is required throughout the building complying with BCA Part E and As2293.1 requirements;

Construction Criteria

- The building size dictates Type C construction as a minimum level of compliance from a BCA criteria;
- Whilst Type C permits 'combustible' construction; it is required to adopt a 'non-combustible' criteria given the high bushfire rating;
- For commercial buildings; the BAL(Bushfire Attack Level) ratings do not apply as per residential Class 1,2,3, buildings, however a similar non-combustible building methodology is recommended to be adopted;
- Action Required
 - All buildings and structures on site are proposed to be constructed using fire-resistant materials including steel substructure, concrete tilt slab walls, Colorbond roofing, glazing;
 - No combustible componentry



Other Fire & Life safety Matters

CFS have raised the following to be addressed and recommend the following:

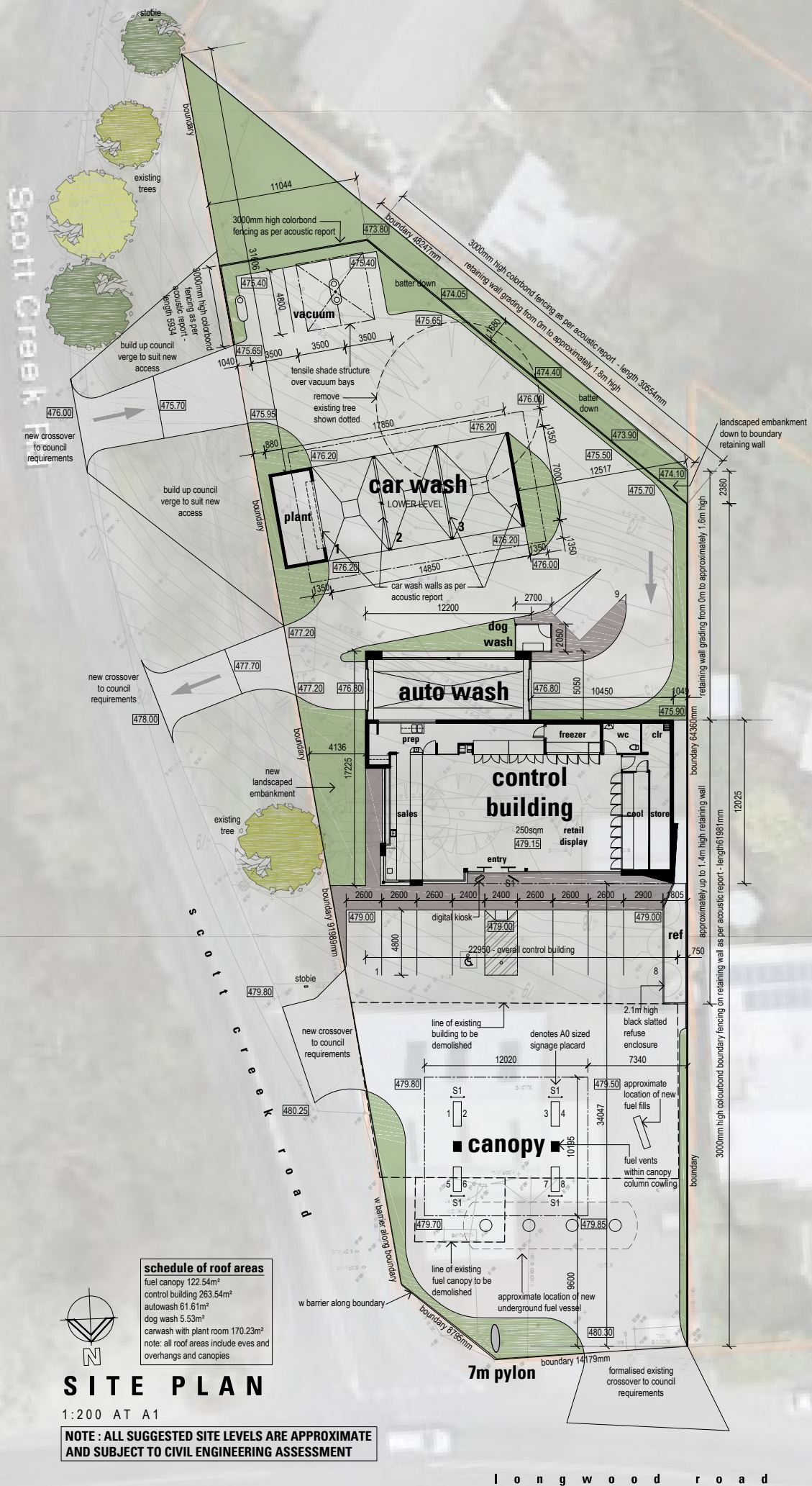
- Any above ground LPG storage(not shown on plans) is compliant with respect to clearance from buildings, etc;
- A manifest box be located on the site (visible location) which entails, services stop valve locations, electrical main board, etc;
- A 'Bushfire Plan' is developed and documented for the site



APPENDIX A: DESIGN STANDARDS

FIRE SERVICES	
Description	Provisions
NCC	BCA 2022; Vol.1
Automatic Fire Sprinkler System	NA
Fire Hydrant System	NA
Smoke Hazard Management	NA
Fire Hose Reels	To AS2441 Requirements
Fire Extinguishers	To AS2444 Requirements
Exit / Emergency Lighting	To AS2293.1 requirements
Fire Separation / Compartmentation	To BCA Part C
Egress	To BCA Part D + Performance Solutions 1 & 2

APPENDIX B: SITE PLAN / CFS MINUTES OF MEETING



NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD





Project: OTR Heathfield **TMK Ref:** 2112097
 160 Longwood Road, Heathfield, SA
Subject: Meeting Notes from meeting with CFS
Date: 11 April 2023

Present:

Colin Paton (CFS)
 Greg Caruso (TMK Consulting Engineers)

Date/Time: 28 March 2023; 02.30pm

Place: TMK Consulting Engineers

General: Meeting conveyed to discuss & agree approach for CFS access / water supply provisions for planning phase.

Description: Proposed Re-Development of existing Fuel Station to new OTR Service Station.

ITEM	ACTION
1.0 General	
1.1 Peregrine Corporation have lodged a Development Application for a Retail Fuel Outlet on land at 160 Longwood Road, Heathfield. (Corner Scott Creek Rd)	Note
1.2 The subject land is located within the Hazards (Bushfire – High Risk) Overlay under the Planning and Design Code.	Note
1.3 The project is currently going through the planning DA process. It was noted that the CFS commentary as part of the planning process was for bushfire zone requirements.	Note
1.4 The proposed development will replace a similar fuel service station.	Note
1.5 The following commentary has been provided as part of the DA submission: <i>“The design of the subject land will provide a level site, accommodating safe and efficient access to emergency service vehicles including rigid and articulated heavy vehicles from Scott Creek Road. All buildings and structures on site are proposed to be constructed using fire-resistant materials including steel substructure, concrete tilt slab walls, Colorbond roofing, glazing and will be equipped with essential fire safety equipment including fire hose reels and fire extinguishers. The fuel tank farm is located underground and will be isolated from above-ground infrastructure in the event of a fire on the subject land. Furthermore, the buildings are within close proximity to both Longwood Road and Scott Creek</i>	Note

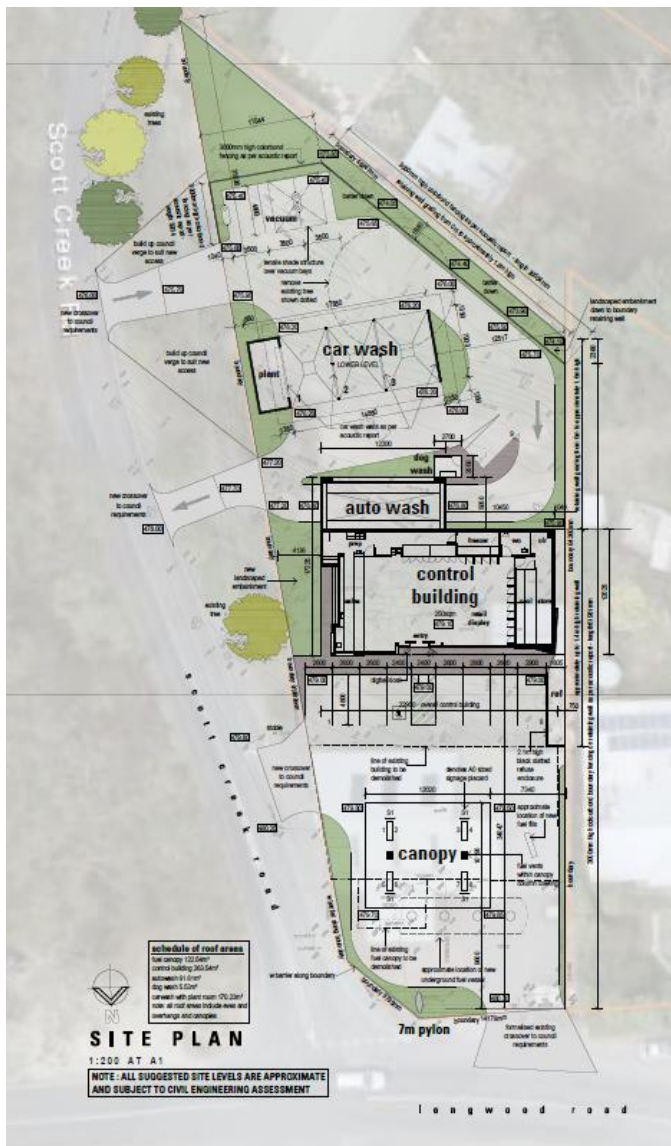
Road and the site is serviced by mains water. The subject land has excellent vehicle permeability, and a safe means of evacuation is possible by utilising the proposed and existing road infrastructure.

It is noted that the storage and sale of fuel have occurred at the site for many years. The proposed development will facilitate the removal and replacement of the existing dated fuel infrastructure, including the underground fuel tank. If approved the new fuel infrastructure will incorporate the latest safety treatments and measures with respect to fire prevention and mitigation.”

1.6 Building Details

Note

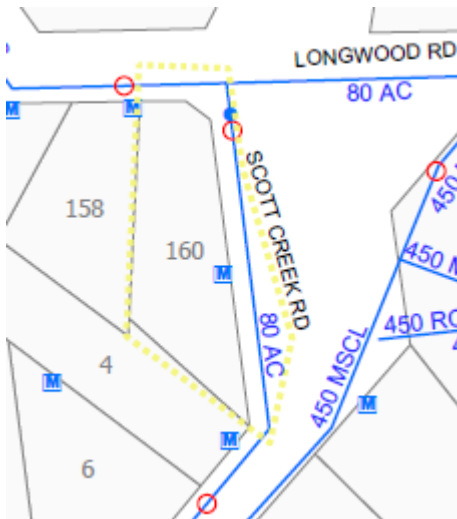
- (1) Service Station Development
 - Class: 6, 7a
 - Main Building; Approx 250m²
 - Rise in Storeys; 1
 - Type of Const: Type C



The site concerned, with proposed development

2.0 CFS Access / Fire Water Supply

- 2.1 The proposed building has three (3) vehicle/appliance access points, with two on Scott Creek Rd and one on Longwood Road. Note
- 2.2 The CFS consider the arrangement suitable for emergency vehicle access and traversing on the site; Note
- 2.3 Whilst hydrant protection and coverage is not a mandatory BCA requirement; it is noted that a SAWater town mains network is present, with a fire plug located on both Scott Creek Rd and Longwood Road. The coverage from these two fire plugs comfortably meets the buildings on the site with 2-hose lengths. Note



Extract from SAWater plan showing fire plugs (red circles) on Longwood Rd & Scott Creek Rd

- 2.4 CFS satisfied with building access and water supply for servicing the site. (No on-site water supplies deemed required); Note

3.0 Other Fire & Life safety Matters

- 3.1 CFS have raised the following to be addressed and recommend the following: Note / Peregrine
- A Fire hose reel be provided, as an initial point of attack (above BCA criteria); located externally and between the control building & fuel canopy
 - Any above ground LPG storage (not shown on plans) is compliant with respect to clearance from buildings, etc;
 - A manifest box be located on the site (visible location) which entails, services stop valve locations, electrical main board, etc;
 - A 'Bushfire Plan' is developed and documented for the site

4.0 Approvals;

- 4.1 An acknowledgement by CFS of minutes considered suitable. No formal lodgement to CFS deemed required. Note / CFS



Meeting Closed: 03.15pm

For and on behalf of
TMK Consulting Engineers

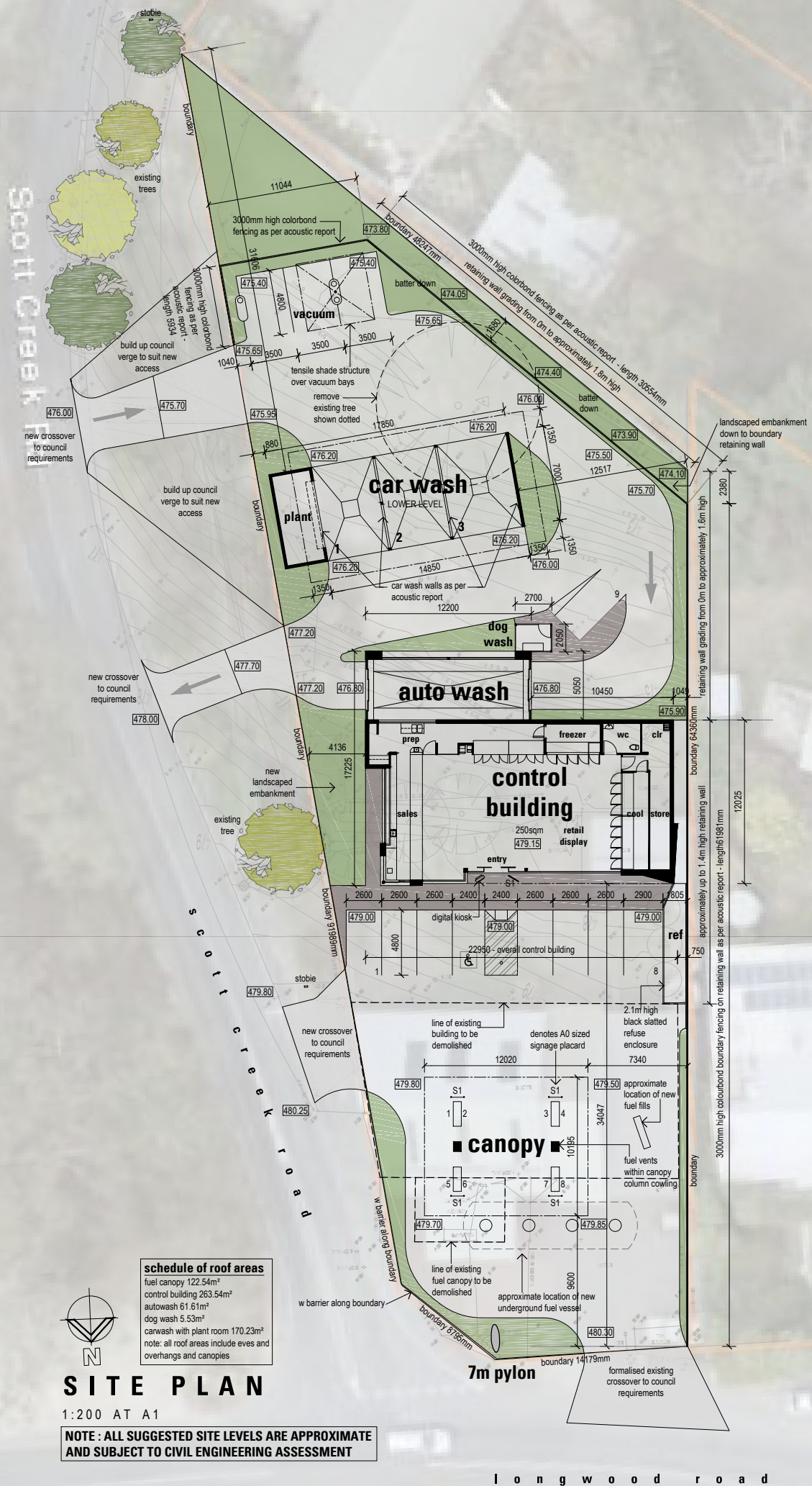
Greg Caruso

Building Services Engineer – Associate Director
TMK Consulting engineers

Enclosed:
Architectural Drawings – Site Plan

Distribution:
Country Fire Service
Peregrine Corporation
File

Colin Paton
Tim Beasley



NEW SERVICE STATION COMPLEX

160 LONGWOOD ROAD, HEATHFIELD





Waste Management Plan

OTR Heathfield

160 Longwood Road, Heathfield SA 5153
May 2023



1. Site Specific Waste Management Plan

Site Name OTR Heathfield	Site Address 160 Longwood Road, Heathfield SA 5153	Site Offers <ul style="list-style-type: none"> • OTR Convenience Store • Eat food range
------------------------------------	--	--

Waste Disposal Containers

- 1.1m³ bin (General Waste)
- 1.1m³ bin (Recyclable Cardboard)
- 0.66m³ bin (Food waste)

Collection Frequency

- 2 per week
- 1 per week
- 1 per day

Collection Hours

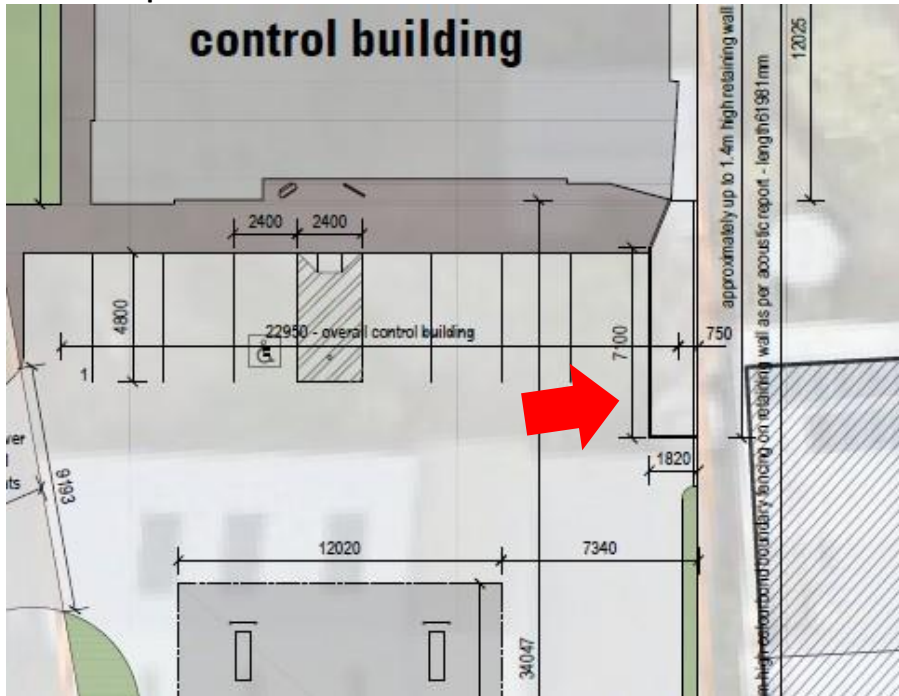
- Mon-Sat 7am – 7pm; Sun & PH 9am – 7pm
- Mon-Sat 7am – 7pm; Sun & PH 9am – 7pm
- Mon-Sat 7am – 7pm; Sun & PH 9am – 7pm

Trade Waste Pits

- Grease trap/septic 1 per quarter
- Forecourt waste water pit 1 per 6 months

- Mon-Sat 7am – 7pm; Sun & PH 9am – 7pm
- Mon-Sat 7am – 7pm; Sun & PH 9am – 7pm

Waste Compound:



Bin dimensions:



Specific waste management measures – OTR Heathfield

As the refuse area abuts a site boundary, specific measures will be taken to prevent any materially adverse amenity impact from noise or odour across this boundary, including:

- Collection of food waste on a daily basis and during the collection hours specified above by an accredited waste management contractor.
- Where possible, stock will be delivered to site from the OTR distribution centre on a “single pick” basis and delivered in reusable, food-grade containers, which will minimise the amount of waste generated at the site.
- The waste management contractor is required to comply with collection schedules and is provided with a detailed site brief that specifies approved and required collection times.
- The lids of food waste bins will be closely fitted and will be kept closed at all times.
- No waste (including food waste) will be deposited anywhere outside the designated bin for that kind of waste.
- The refuse area will be swept on a daily basis and hosed out at least once per week.

**Native Vegetation Assessment:
On the Run – 160 Longwood Road, Heathfield
for
PC Infrastructure Pty Ltd**



Assessed and compiled by:

Jeremy Tiller
Environmental Management Consultant
Forestville, SA
May 2021

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Assessor and Author: Jeremy Tiller

Media: Electronic

Issued to: Tim Beazley: Town Planner

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1. Client Information

Applicant:	PC Infrastructure Pty Ltd
Key contact:	Tim Beazley: Town Planner. Ph: 0439 883 977
Site Address:	160 Longwood Road, Heathfield
Local Government Area:	Adelaide Hills Council

2. Introduction

Jeremy Tiller was commissioned by PC Infrastructure Pty Ltd to conduct a native vegetation assessment at the proposed site for a new On the Run Service Station at 160 Longwood Road, Heathfield (Map 1) and to assess the proposed clearance envelopes against the Clearance Requirements of the *Native Vegetation Act 1991* and *Native Vegetation Regulations 2017* (Map 1).

3. Landform Description and Land Use History

The landform in the is described as hilly uplands and dissected lateritic tablelands with open parklands, forest and woodlands. The proposed site land use is currently zoned as retail commercial. The adjacent properties are used for residential, rural residential, utility industry and recreation purposes (Source: NatureMaps 2021).

4. Survey Methodology

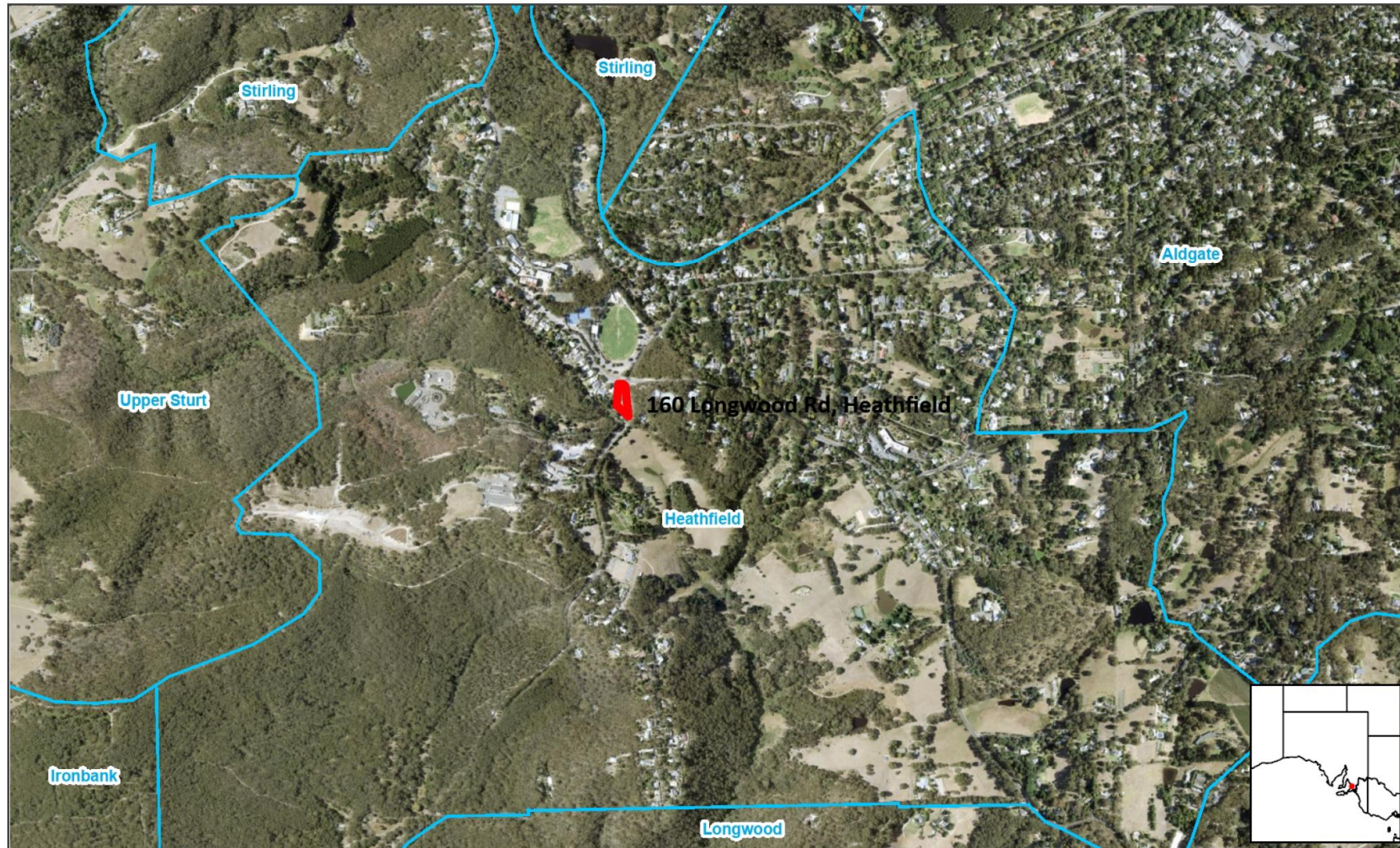
Prior to the site survey the following desktop assessments were conducted:

- Review of the Atlas of Living Australia and EPBC Act 1999 Protected Matter search tools within 5km of the site to determine the likelihood of any National and State listed fauna species that may utilise the vegetation under application.
- Review of the Atlas of Living Australia and EPBC Act 1999 Protected Matter search tools within 5km of the site to determine the likelihood of any National and State listed flora species and/or habitats of conservation significance that may be present on the subject land.

The project site was surveyed on 26 May 2021. The site survey was undertaken in accordance with the Native Vegetation Council (NVC) Bushland and Scattered Assessment Manual 2019. The aim of the site survey was to:

- record the vegetation association and flora species present;
- record the condition of the vegetation present;
- record the attributes of the native trees present;
- record any threatened flora species, if present;
- record any opportunistic fauna sightings;
- identify any suitable alternative locations to avoid or minimise the impacts to protected native vegetation; and
- to assess the proposed clearance against the Requirements and Regulations of the *Native Vegetation Act 1991* and *Native Vegetation Regulations 2017*.

Map 1. Location of the proposed On the Run site at Heathfield



Map data is compiled from a variety of sources and hence its accuracy is variable.

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Compiled: 27-May-2021
Generated at: www.naturemaps.sa.gov.au
Datum: Geocentric Datum of Australia, 1994
Projection: Web Mercator (Auxiliary Sphere)



5. Description of Vegetation under Assessment

Scott Creek Road Reserve (Area 1: Map 2)

The roadside vegetation along Scott Creek Road adjacent to the subject site is dominated by planted and self-seeded vegetation consisting of local and non-local natives and introduced species. Species include the following:


- *Banksia* sp.
- *Hakea rostrata*
- *Acacia longifolia* ssp. *longifolia*
- *Leptospermum* sp.
- *Grevillia* sp.
- *Acacia melanoxylon*
- *Eucalyptus* sp.
- *Callistemon* sp.
- *Pinaceae* sp.
- *Rosa* sp. (Rose)*
- *Rubus* sp. (Blackberry)*
- *Erica lusitanica* (Erica Heath)
- *Camellia* sp.
- *Pittosporum undulatum* (Sweet Pittosporum)*
- *Genista monspessulana* (Montpelier Broom)*

* declared pest plant species listed under the *Landscape South Australia Act 2019*.

The understorey vegetation along the road verge contains *Avena Barbata* (Wild oat), *Scabiosa atropurpurea* (Pincushion), *Phalaris* sp. (Canary Grass) and unidentifiable introduced grasses. No native flora species were observed in the understorey. All planted vegetation and species are not indigenous to the Adelaide Plains region and South Australia are not protected under the *Native Vegetation Act 1991*.

In addition, the road reserve contains two scattered *Eucalyptus obliqua* (Messmate Stringybark) which is a native species protected under the *Native Vegetation Act 1991* (Refer to Tree 1 and 2 on Map 2). Clearance of these trees would require approval from the Native Vegetation Council and a Significant Environmental Benefit Offset (SEB) contribution. The trees are in good health, however, the crown of their canopies are regularly trimmed due to their position under electricity powerline. See below for further detail of Tree 1 and 2.

Details of the scattered trees

Tree 1	<p>Photo 1</p> 
<i>Eucalyptus obliqua</i> (Messmate Stringybark)	
Number of trees – 1	
Height (m) – 6	
Hollows – Nil	
Diameter (cm) – 75	
Canopy dieback (%) – 0	
Total Biodiversity Score – 0.56	
<p>Tree 1 would receive a Total Biodiversity Score of 0.56 and require 0.59 SEB Points to Offset or a payment of \$818.91. Tree 1 would not provide suitable habitat for any threatened fauna species.</p>	


Tree 2	Photo 2
<i>Eucalyptus obliqua</i> (Messmate Stringybark)	
Number of trees – 1	
Height (m) – 4.5	
Hollows – Nil	
Diameter (cm) – 94	
Canopy dieback (%) – 0	
Total Biodiversity Score – 0.59-1.93	
<p>Tree 2 would receive a Total Biodiversity Score of 0.59 and require 0.62 SEB Points to Offset or a payment of \$861.16. Tree 2 would not provide suitable habitat for any threatened fauna species.</p>	

Photo 3: Vegetation along Scott Creek Road adjacent to the proposed On the Run site.



Photo 4: Vegetation along Scott Creek Road adjacent to the proposed On the Run site.



Rear Block at 160 Longwood Road, Heathfield (Area 2: Map 2)

The rear block at 160 Longwood Road, Heathfield contains planted landscaped garden beds and other introduced flora species that are not protected under the *Native Vegetation Act 1991*. Plants that were recoded include, but not limited to, three *Alnus* sp. (Alder) trees, *Acacia longifolia* ssp. *longifolia*, *Callistemon* sp., *Prunus nigra* (Purple-leaf Cherry Plum), *Rubus* sp. (Blackberry), *Erica lusitanica* (Erica Heath), *Pittosporum undulatum* (Sweet Pittosporum), *Vinca* sp. (Periwinkle), *Salvia Rosmarinus* (Rosemary), *Lavandula* sp. (Lavender), *Ilex* sp. (Holly), *Agapanthus* sp. (Lily of the Nile), *Jasminum* sp. (Jasmine) and *Gazania* sp. (Gazania). The groundcover contains *Avena Barbata* (Wild oat), *Scabiosa atropurpurea* (Pincushion), *Plantago* sp. (Plantain) and unidentifiable introduced grasses and composites. Small patches of scattered *Rytidosperma caespitosum* (Common Wallaby-grass) where also observed, however as its cover is very sparse (less than 3%) clearance would be considered very minor and approval to clear by the Native vegetation Council is not required.

Photo 5: Vegetation within rear yard at 160 Longwood Road, Heathfield



Photo 6: Vegetation within rear yard at 160 Longwood Road, Heathfield



Photo 7: Three *Alnus* sp. (Alder) trees within rear yard at 160 Longwood Road, Heathfield



Map 2. Proposed Heathfield OTR Site



Map data is compiled from a variety of sources and hence its accuracy is variable.

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6. Assessment and Compliance with the *Native Vegetation Act 1991* and the *Native Vegetation Regulations 2017*

Most of the vegetation to be impacted at the proposed On the Run site at 160 Longwood Road, Heathfield consists of planted and introduced flora species. Planted and non-indigenous species are not protected under the *Native Vegetation Act 1991* and therefore approval, or compliance with the *Native Vegetation Regulation 2017*, is not required.

However, two individual remnant *Eucalyptus obliqua* (Messmate Stringybark) are located along the Scott Creek Road Reserve near the bottom gate are naturally occurring and protected under the *Native Vegetation Act 1991*. Removal of the trees will require approve from the Native Vegetation Council.

CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

160 LONGWOOD ROAD, HEATHFIELD

Prepared for	Peregrine Corporation	Contact	Marc Andrews
Prepared by	Fyfe Pty Ltd		Environment Manager
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Address	Level 2, 124 South Terrace, Adelaide SA 5000	Email	marc.andrews@fyfe.com.au
Date	10/02/2023	Reference	80017-68 REV 0







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Document Information

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Reviewed by: Mark Peterson 	Principal Environmental Scientist, Fyfe Pty Ltd 	Date: 10 February 2023
Approved by: Marc Andrews 	Environment Manager, Fyfe Pty Ltd	Date: 10 February 2023
Issued to: Peregrine Corporation	Tim Beazley - Senior Town Planner	Date: 10 February 2023

Revision History

Revision	Revision Status	Date	Prepared	Reviewed	Approved
0	Original Issue	10 February 2023	OB	MP	MA

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1. INTRODUCTION

1.1 Background

Fyfe Pty Ltd (Fyfe) was commissioned by Peregrine Corporation (Peregrine) to produce a Construction Environmental Management Plan (CEMP) for the proposed development of a service station located at 160 Longwood Road, Heathfield (the site). A plan showing the location of the site is included as Figure 1.1.

In line with Peregrine’s ongoing commitment to protect the environment, the purpose of this CEMP is to identify the environmental protection measures, systems and tools to be implemented by Peregrine and its contractors during the redevelopment works. These measures are aimed at preventing potentially adverse environmental impacts arising during redevelopment activities, and at achieving compliance with environmental regulatory requirements. The CEMP also outlines a system for hazard and risk identification and determines appropriate management strategies to be adopted by Peregrine and its contractors to mitigate or eliminate these risks.

This CEMP has been prepared in accordance with the *Industry Guideline: Construction environment management plans (CEMP)* (SA EPA 1095/19, updated September 2019) and the *Guidelines for the assessment and remediation of site contamination* (SA EPA, 2018a) and may be subject to the review of the South Australian Environment Protection Authority (SA EPA).

1.2 Objectives of the CEMP

The key performance objectives of this CEMP are to ensure compliance with relevant environmental legislation and approvals, minimise the potential for pollution, reduce waste and implement effective controls to mitigate environmental impacts.

Table 1.1 details specific environmental objectives and targets relevant to the redevelopment project.

Table 1.1 Specific environmental objectives and targets

Objective	Target
To employ best environmental management practices to facilitate the construction project in meeting legislative and approval requirements.	No <i>significant</i> environmental incidents. No breach of legislative or regulatory requirements.
To employ best environmental management practice to facilitate compliance with all planning approvals and environmental authorisations	No non-compliance with planning approvals or applicable legislative requirements.
To employ best environmental management practice to minimise noise and vibration impacts.	Maintain noise levels to comply with <i>Environment Protection (Noise) Policy 2007</i> . Maintain vibration levels within human comfort and structural damage criteria.
To apply best environmental management practice to soil and water (surface water and groundwater) quality management.	No breach of environmental legislative or regulatory requirements.

Objective	Target
To minimise air pollution from demolition and construction activities.	Dust, odour and emission levels to comply with <i>Environment Protection Regulations 2009</i> .
To protect any vegetation adjacent to the construction zone.	No impacts on trees or other native vegetation outside the construction zone.
To avoid pollution of the environment caused by fuels, oils or chemicals stored at the site or used on the project.	No major spills of fuel, oil or other chemicals.

1.3 Site location and surrounding land use

The site (CT 6003/528) is situated on the corner of Scott Creek Road and Longwood Road, Heathfield.

The surrounding land uses are as follows:

- **North** Longwood Road, recreational (Arkaba Oval);
- **West** Residential properties;
- **South** Residential properties, Scott Creek Road and undeveloped land; and
- **East** Scott Creek Road, undeveloped land

1.4 Project description

The site is currently operated as a small garage station for mechanical servicing, repair and has a fuel bowser. The site redevelopment works will involve installing new fuel tanks and a grease arrestor and may generate surplus soils requiring off-site disposal or re-use on site.

According to design information provided by Peregrine, as well as standard industry practices for construction and earthworks programs, the proposed redevelopment will likely involve the following tasks:

- establishment of a work zone (including appropriate signage) delineated by fencing (covered where necessary) which complies with the requirements of Australian Standard AS 4687:2007 - *Temporary Fencing and Hoardings*;
- establishment (where necessary) of site contractors' offices, mess and toilet facilities, designated car parking areas, vehicle access and vehicle loading, unloading and lay down areas, areas for commissioning of equipment, plant and operations and establishment and maintenance of on-site work areas;
- prior to commencement of works, installation of environmental and safety controls – including occupational health and safety measures such as personal protective equipment, first aid supplies, signage and barriers as needed, together with environmental management measures including spill kits, booms, stormwater control, sampling and monitoring equipment, abatement and mitigation equipment as outlined in the various environmental management plans and control measures listed in Section 5.3;
- clearing of the work zone, including stripping and removal of existing pavements and hardstand areas where necessary;
- excavation and removal of all existing underground fuel storage tanks (USTs), associated fuel lines and above ground dispensers (bowsers);

-
- establishment of a level base for construction works;
 - excavation and removal of soils in preparation for the installation of replacement USTs – specific information about soil storage and off-site disposal/reuse (if required) are provided in section 2.3.1;
 - validation sampling of remaining *in-situ* soils;
 - appropriate disposal or re-use of surplus excavated soils, including ex-situ waste classification during construction as needed, utilising existing soil sampling results, and/or additional in-situ sampling if required;
 - installation of new USTs as well as associated fuel lines and bowsers;
 - construction of extension to existing control building;
 - construction of a new pylon with associated signage; and
 - installation of a new grease arrestor;

The proposed site development/layout plan is provided below as Figure 1.1



Figure 1.1 Site Redevelopment Plan

2. SITE CONTAMINATION STATUS

2.1 Site conditions

The site currently hosts an operational mechanical workshop with one fuel bowser and tank, located on the northern portion of the site. A storage shed with water tanks is located behind the mechanic workshops with undeveloped land making up the rest of the site.

The site has a steep slope downwards to the south and occupies an area of approximately 2,360 m².

2.2 Summary of previous assessment findings

2.2.1 2019 Site contamination audit

A site contamination audit was undertaken on the site by Australian Environmental Auditors Pty Ltd (AEA) in 2019 and reported in a site contamination audit statement in July 2019. Relevant information presented in the audit statement included the following:

- The southern portion of the site was historically used for motor vehicle repairs and fuel storage through the 1950s, until the service station was developed on the northern portion of the site in 1959.
- Buried waste including car parts and hydrocarbon and metal contamination was present throughout the southern portion of the site. This waste was believed to have been remediated through excavation and off-site disposal (however; refer to Section 2.2.2).

2.2.2 2021 Fyfe assessment

Fyfe undertook soil investigations in March 2021 and reported the results in April 2021. The investigation identified the following:

- Five soil bores were drilled to a maximum depth of 3.2 m, with refusal on sandstone bedrock. Soil bores were located in the vicinity of underground petroleum underground petroleum storage systems (UPSS) and dispensers (refer to Figure 2-1).
- Seven test pits were excavated at the rear of the service station building and on the southern portion of the site (refer to Figure 2.1).
- Based on the soil bore logs, the geology consisted of imported fill (with inclusions of ash and brick fragments) up to 1.4 m BGL, underlain by silty and/or sandy clay to a depth of approximately 2.5 m BGL, followed by sand (extremely weathered sandstone bedrock) before refusal on competent sandstone bedrock.
- The layer of fill in test pit TP02, located on the south-western site boundary, included buried rubbish to 1.2 m BGL, including car parts, oil filters, springs, metal scraps and black oil stains. This indicated that, contrary to the findings of the 2019 AEA audit, **unidentified buried waste may be present throughout the site.**
- No visual evidence of contamination was identified in the other locations assessed.
- Based on the results of laboratory analysis of collected soil samples, the preliminary classification of shallow fill in the vicinity of test pit TP01, for the purpose of off-site disposal, was Intermediate Waste. This classification was

driven by elevated concentrations of copper and zinc. Fill at this location was found to extend to approximately 0.8 m BGL.

- The preliminary classification of underlying natural soils (below 0.8 m BGL) in the vicinity of TP01, for the purpose of off-site disposal, was Waste Fill.
- The preliminary classification of both fill and underlying natural soils for the remainder of the site, for the purpose of off-site disposal, was Waste Fill.
- No assessment of the suitability of site soils for off-site reuse as Waste Derived Fill was undertaken.
- The concentration of contaminants in site soils did not pose a potentially unacceptable risk to human health, in the context of a commercial/industrial land use setting.
- Groundwater was not intersected during the investigations and was estimated to be present at approximately 30 m BGL.



Figure 2.1 Site location plan showing waste classification areas

2.3 Potential risks associated with site redevelopment

2.3.1 Human health risk

Concentrations of COPC in the soils assessed do not pose a potentially unacceptable risk to site workers, in the context of a commercial/industrial land use setting.

No additional HSE requirements, beyond those typically employed for construction projects of this nature, are considered necessary with respect to concentrations of contaminants in site soils.

2.3.2 Dewatering

The water table below the site is inferred to be at a depth of approximately 30 m BGL. Regional groundwater is therefore unlikely to be encountered during excavation works.

If dewatering is required, it must be done in accordance with the SA EPA guideline *Environmental management of dewatering during construction activities* (EPA 2018b). Peregrine should discuss options for dewatering with the Environmental Management Representative (EMR) prior to proceeding.

2.3.3 Soil disposal/reuse

Construction-related excavations to accommodate the underground infrastructure, as well as for the building and canopy footings and/or to achieve final design elevation levels, are anticipated to generate a volume of soil that will be excess to site requirements and require disposal and/or reuse off-site.

Dependent upon the final volumes of surplus soil requiring off-site disposal/reuse, additional soil sampling and analysis may be required to support waste classification. All excavated soils should therefore be stockpiled ready for additional testing prior to off-site transport. All soil stockpiles must be managed in accordance with relevant guidelines, as described in Section 5.3.2 of this CEMP.

The EMR must be contacted to discuss options for on-site reuse, and/or confirm whether additional analysis may be required to facilitate off-site disposal/reuse, prior to any soils leaving site.

Based on the elevated concentrations of metals identified, excavated fill from the vicinity of test pit TP01 should be segregated from underlying natural soils at this location, as well as soil from all other areas of the site, to avoid cross-contamination and facilitate further assessment by the EMR (if required). Should this material require off-site disposal, additional ex-situ assessment should be conducted by the EMR to confirm the preliminary waste classification.

The area from which fill must be segregated is identified in blue on Figure 1.1. **Prior to the commencement of earthwork activities, the boundary of this area must be identified and demarcated on the site.** Fill in this area is estimated to extend to a depth of approximately 0.8 m BGL.

2.3.4 Chance finds of additional contamination

Based on the results of historical site investigations, **there is considered to be a high likelihood of unidentified buried waste being present throughout the site.**

Should any indicators of possible gross soil contamination such as odour, staining, waste inclusions etc. be identified during the site redevelopment works, the material must be segregated and stockpiled separately for further assessment/testing by the EMR.

3. PLANNING

3.1 Regulations and legislative requirements

The demolition and redevelopment works to be undertaken will comply with applicable environmental regulatory and legislative requirements. The following provides a summary of the general requirements for the proposed works.

Table 3.1 Applicable legislation relevant to the redevelopment program

Legislation/policy/guideline	Key project requirements
<ul style="list-style-type: none"> – <i>Development Act 1993</i> 	<p>Development approvals for the works will be sought through the appropriate responsible authority.</p>
<ul style="list-style-type: none"> – <i>Environment Protection Act 1993 (the Act) and Environment Protection Regulation 2009</i> – <i>Handbook for Pollution Avoidance on Commercial and Residential Building Sites, second edition, SA EPA.</i> 	<p>All activities will be undertaken so as to minimise harm to the environment (in particular pollution of air and water and noise emissions).</p> <p>Wastes including waste soil will only be transported from site in appropriately licensed trucks.</p> <p>Wastes including waste soil will only be disposed of to appropriately licensed facilities.</p>
<ul style="list-style-type: none"> – <i>EPA Guidelines for the assessment and remediation of site contamination (2018a)</i> – <i>ASC NEPM 1999 (as amended 2013) Guideline on Investigation Levels for Soil and Groundwater. National Environment Protection (Assessment of Site Contamination) Measure Schedule B(1). National Environment Protection Council.</i> 	<p>Works on-site, associated with the excavation of contaminated soils and management of groundwater, will be undertaken in such a manner so as to meet the mandatory requirements and expectations of EPA and to ensure the on-going protection of human health and the environment.</p>
<ul style="list-style-type: none"> – <i>Environment Protection (Waste to Resources) Policy 2010</i> – <i>Waste Disposal Information Sheet EPA 889/10, SA EPA (2010), Current Criteria for the Classification of Waste – Including Industrial and Commercial Waste (Listed) and Waste Soil</i> – <i>EPA Standard for the production and use of Waste Derived Fill (WDF), dated October 2013</i> 	<p>The project should aim to achieve sustainable waste management by applying the waste management hierarchy consistently with the principles of ecologically sustainable development set out in section 10 of the Act.</p>
<ul style="list-style-type: none"> – <i>Environment Protection (Air Quality) Policy 2016</i> – <i>ASC NEPM (1999) – Schedule B9</i> – <i>enHealth (2002) Environmental Health Risk Assessment—Guidelines for Assessing Human Health Risks from Environmental Hazards</i> – <i>National Environment Protection (Ambient Air Quality) Measure (1998, as amended 2021)</i> 	<p>Potentially offensive odours/vapours encountered during the works will be managed in accordance with relevant policies and guidelines.</p>

Legislation/policy/guideline	Key project requirements
<ul style="list-style-type: none"> – <i>Environment Protection (Water Quality) Policy 2015</i> – <i>SA EPA guideline Environmental management of dewatering during construction activities (EPA 2018b)</i> – <i>Water Industry Act 2012</i> – <i>Restricted Wastewater Acceptance Standards (1/1/2012) by SA Water</i> 	<p>Ensure that all relevant environmental values for groundwater and surface water are protected during the development works, including:</p> <ul style="list-style-type: none"> – maintenance of aquatic ecosystems – drinking water – agriculture and aquaculture (including irrigation and livestock) – recreational uses (e.g. swimming or boating) and aesthetics (visual appearance and enjoyment) – industrial uses – obtain an authorisation to discharge restricted wastewater from SA Water and comply with the conditions attached to that authorisation. <p>Plan for and manage waters that may accumulate on the site so as to not impact on stormwater, surface water or inland or marine waters.</p>
<ul style="list-style-type: none"> – <i>Environmental Noise (October 2004), EPA Information Sheet 424/13</i> – <i>Environment Protection (Noise) Policy 2007</i> – <i>Construction Noise (April 2014), EPA Information Sheet 425/14</i> – <i>Handbook for Pollution Avoidance on Building Sites (2nd ed. June 2004), EPA</i> 	<p>Noise levels during construction works will be managed in accordance with the regulations/policies.</p>

3.2 Compliance standards

Construction activities associated with the development will comply with relevant Australian/New Zealand Standards including, but not necessarily limited to, the following:

- *AS 4482.1-2005 Guide to the Sampling and Investigation of Potentially Contaminated Soil.*
- *AS 2436-2010 Guide to Noise Control on Construction, Maintenance and Demolition Sites.*
- *AS 4976-2008 The Removal and Disposal of Underground Petroleum Storage Tanks.*
- *AS 4897-2008 The Design, Installation and Operation of Underground Petroleum Storage Systems.*
- *AS 1940-2017 The Storage and Handling of Flammable and Combustible Liquids.*
- *AS/NZS 5667.1-1998 Water Quality-Sampling Part 1: Guidance on the Design of Sampling Programs, Sampling Techniques and the Preservation and Handling of Samples.*
- *AS 2550.10-2006 Cranes, Hoists and Winches - Safe Use Part 10: Mobile Elevating Work Platforms.*
- *AS 2885.1-2007 Pipelines - Gas and Liquid Petroleum - Design and Construction.*
- *AS 3745-2002 Emergency Control Organization and Procedures for Buildings, Structures and Workplaces.*

3.3 Construction hours of operation

In accordance with information obtained from the EPA, construction hours are limited to 7 am – 6 pm Monday to Saturday.

Construction activities potentially resulting in noise with an adverse impact on amenity are subject to the following restrictions:

- must not occur on a Sunday or other public holiday, and
- must not occur on any other day except between 7 am and 6 pm.

However, a particular operation may occur on a Sunday or Public Holiday between 9 am and 6 pm or may commence before 7 am on any other day to:

- avoid an unreasonable interruption of vehicle or pedestrian traffic movement, or
- if other grounds exist that the EPA or administering agency determines to be sufficient.

3.4 Site establishment and security

Site establishment may (as required) include the establishment of site contractors' offices and mess and toilet facilities, designated car parking areas, vehicle access and vehicle loading, unloading and lay down areas, commissioning of equipment, plant and operations and establishment and maintenance of on-site work areas.

Fencing and gate access will be established/upgraded prior to the commencement of the redevelopment works, as appropriate to secure the site and preclude public access.

3.5 Removal and disposal of USTs

The existing USTs at the site will be removed and disposed of in accordance with AS4976:2008 – *The removal and disposal of underground petroleum storage tanks and Protection of the Environment Operations (Underground Petroleum Storage Systems Regulation 2019)*.

Key requirements of AS4976:2008 include the following:

- assessing the hazards due to the possible presence of flammable and/or combustible liquids and vapours, their toxicity, entry into confined spaces and excavations;
- environmental protection;
- product removal, disconnection of piping and electrical connections and removal of surface concrete/asphalt and excavation of overlying soils;
- removing tanks from the ground and purging them of vapours – either on- or off-site;
- transport, storage and scrapping of tanks; and
- record keeping.

The contractor engaged for this work will be experienced at removing USTs, will hold the appropriate insurance and permits and will undertake an assessment of the risks involved – this will include a vapour assessment and the implementation of vapour mitigation measures during UST removal activities.

3.6 Tank pit validation and reporting

The excavation and removal of the USTs and related infrastructure will be monitored by the EMR. Validation samples of soils excavated from the tank pits and remaining *in-situ* soil following UST exhumation will be collected and analysed for relevant contaminants. At the conclusion of the works a UST removal and validation report will be prepared. The report will be prepared in accordance with SA EPA 2018 - *Guidelines for the assessment and remediation of site contamination* and will include site plans showing the former locations of the USTs and validation samples, photographs and descriptions of the conditions of the USTs and the laboratory analytical reports and summary tabulations.

3.7 Soil management and remediation

If not properly managed there is the risk that vapours from contaminated soil (including excavations and stockpiles) could pose a risk to human health, or associated odours could affect amenity. It is expected that vapour risks will be highest when excavation of any contaminated soil is occurring, including the removal of the existing underground storage tanks.

These risks will be managed by a series of measures that are based on identifying potential sources of vapours and odours, and by measures that will be implemented to both monitor and manage any emissions to within acceptable levels. Odour and vapour management will be through site specific control measures detailed in Section 5.3.9.

4. ENVIRONMENTAL ASPECTS, IMPACTS AND RISKS

Environmental aspects as referred to in this document are those activities associated with the project that have the potential to result in adverse environmental impacts. Due to the nature of the development, different aspects of the project may present different degrees of environmental risk which need to be managed accordingly.

Effective environmental management should be proactive rather than reactive. In order to facilitate a proactive style of environmental management, a risk management assessment has been undertaken to identify and assess environmental aspects associated with the project and to propose appropriate mitigation strategies to minimise the likelihood of environmental risks associated with each aspect. This process involves:

1. identifying the risk/aspect;
2. analysing the risk/aspect (determining likelihood and consequence);
3. evaluating the risk/aspect;
4. applying the risk mitigation measures; and
5. undertaking on-going monitoring and reviews to ensure measures remain effective and proportionate.

All identified aspects are assessed based on the risk assessment matrix displayed in Table 4.1, whereby risk assessment is based on:

1. the likelihood of an impact occurring as a result of the aspect; and
2. the consequences of the impact if the event occurred.

Following this assessment, each impact is assigned a risk category – these range from “low” (low likelihood and consequence) to “extreme” (high likelihood and consequence).

A risk category identified as having an extreme or high risk (a significant impact) may be downgraded if appropriate environmental controls and measures are implemented and maintained. Proactive planning, installation and maintenance of appropriate environmental controls and ongoing monitoring will reduce the risks associated with each environmental impact identified for the project.

Table 4.1 details the environmental aspects identified for the development project, the initial risk category prior to appropriate management strategies, the proposed management strategy and a revised risk category.

Table 4.1 Risk matrix and qualitative measures of likelihood scale

Likelihood		Consequences				
		1	2	3	4	5
		Negligible discharge	Uncontrolled discharges in minor quantities	Moderate breach of environmental statutes	Major breach of environmental statutes	Shutdown of project due to environmental breach
A	Almost Certain	H	H	E	E	E
B	Likely	M	H	H	E	E
C	Moderate	L	M	H	E	E
D	Unlikely	L	L	M	H	E
E	Rare	L	L	M	H	H

Level	Categorisation of likelihood	Description
A	Almost Certain	Is expected to occur during the project, ≥90% probability
B	Likely	Will probably occur during the project, ~50% probability
C	Moderate	Might occur at some time during the project, ~10% probability
D	Unlikely	Could occur at some time during the project, ~1% probability
E	Rare	Only occur in exceptional circumstances, <1% probability

Table 4.2 Key aspects, potential impacts and risk analysis for the proposed development

Aspect	Potential impact	Untreated risk category	Mitigation measure (refer to Table 5.1)	Revised risk category
Site Preparation and Bulk Earthworks Phase	Odours and vapours emanating from soils exposed through excavation providing an on- and/or off-site nuisance/health risk.	(D3) Medium	(1)	(D1) Low
	Incorrect off-site disposal of odorous or potentially hydrocarbon-contaminated soils.	(C4) Extreme	(1, 16)	(E1) Low
	Incorrect management or off-site disposal of excess groundwater and/or rainfall that accumulates in excavations resulting in pollution of stormwater and surface waters.	(D4) High	(6, 19)	(D2) Low
	Excessive noise generated during the breaking and loading of concrete.	(C2) Medium	(15)	(D2) Low
	Erosion and sedimentation of potentially contaminated disturbed and natural soils resulting in pollution of the stormwater system.	(D4) High	(2, 3, 4, 5, 7, 8)	(D2) Low

Aspect	Potential impact	Untreated risk category	Mitigation measure (refer to Table 5.1)	Revised risk category
	Poorly maintained or inadequate erosion and sediment control measures not effectively treating construction run-off, resulting in a pollution event.	(C5) Extreme	(2, 3, 4, 5, 7, 8)	(D2) Low
	Excessive dust emissions during hardstand removal and earthworks resulting in a community complaint.	(C4) Extreme	(12)	(C1) Low
	Inappropriate stockpiling of material potentially resulting in a pollution event.	(C3) High	(2)	(D1) Low
	Exposed areas/surfaces contributing to increased dust emissions.	(B4) Extreme	(12)	(C1) Low
	Vibrations associated with compaction and bulk earthworks impacting on sensitive receptors.	(C2) Medium	(15)	(D2) Low
	Excessive smoke emissions and fumes into the atmosphere due to poorly maintained equipment.	(C2) Medium	(14)	(D2) Low
	Excessive noise generated during bulk earthworks resulting in a community complaint.	(C2) Medium	(15)	(D2) Low
	Spills and leaks during plant maintenance/operation resulting in soil/groundwater contamination.	(C2) Medium	(9,) (10)	(E2) Low
	Leaking site amenities (toilets) resulting in pollution off-site.	(C2) Medium	(4)	(E2) Low
Site Establishment (including fuel and chemical storage)	Inappropriate storage of fuels and chemicals resulting in soil contamination or pollution of waterways.	(C4) Extreme	(4, 10)	(D2) Low
	Increased rates of erosion and sedimentation of hardstand areas and unsealed surfaces.	(C4) Extreme	(3, 5, 7, 8)	(D2) Low
	Tracking of sediment onto public roads from construction fleet leaving site.	(B3) High	(13)	(D2) Low
Construction Phase	Excessive noise generated by construction fleet resulting in community complaints or public nuisance.	(C3) High	(15)	(D2) Low
	Poorly maintained or inadequate erosion and sediment control measures not effectively treating construction run-off resulting in a pollution event.	(B3) High	(3, 5, 7, 8)	(D2) Low
	Inappropriate management of water from excavations and dewatering.	(B3) High	(5,6,19)	(D2) Low
	Inappropriate management of sediment trap discharge resulting in stormwater pollution.	(B3) High	(3, 5, 7, 8)	(D2) Low
	Soil and/or groundwater contamination as a result of a fuel or chemical spill/leak.	(D4) High	(4, 10)	(D2) Low
	Soil contamination as a result of the importation of contaminated fill material for backfilling of former tank pit excavation/s.	(D3) Moderate	(11)	(E1) Low
	Cleaning of plant/equipment resulting in ground contamination and/or water pollution.	(C3) High	(4, 9)	(D2) Low

Aspect	Potential impact	Untreated risk category	Mitigation measure (refer to Table 5.1)	Revised risk category
	Disposing of clean fill soils and waste construction materials to landfill without the consideration of recycling or reuse.	(B1) Medium	(16, 17)	(D2) Low

5. ROLES AND RESPONSIBILITIES

The roles and responsibilities of project personnel with respect to the environmental performance of the project are specified below.

5.1 All personnel

All personnel (including sub-contractors) have a general environmental duty of care (as defined in the *Environment Protection Act 1993* and the *Native Vegetation Act 1991*) and are responsible for their own environmental performance whilst on the project.

As a minimum, personnel are required to:

- comply with the requirements of applicable environmental legislation and environmental authorities, including the specific requirements of any project approvals and supporting documentation;
- undertake all activities in an environmentally responsible manner;
- undertake all activities in accordance with this CEMP and relevant procedures and safe work method statements;
- identify and report any non-conformances with environmental management, legislative or approvals requirements;
- ensure that they are aware of the contact person regarding environmental matters and report any activity that has resulted in, or has the potential to result in, an environmental harm;
- ensure that they attend any environmental training provided relevant to their role and responsibilities; and
- support the construction team in planning and implementing environmental requirements.

5.2 Key personnel

5.2.1 Project Manager

The Project Manager is responsible for the delivery of the demolition and construction phases of the project, while ensuring that environmental impacts are minimised, and obligations are met. The Project Manager will be working in conjunction with the EMR, as required, to ensure that the project team delivers the prescribed environmental outcomes. Key tasks include the following:

- ensuring compliance with all applicable legal, approval and project environmental obligations including, but not necessarily limited to, this CEMP;
- ensuring that all project staff have a clear understanding of the environmental requirements relevant to their area/scope of work;
- ensuring that all project staff are competent to undertake their duties (including fulfilment of their general environmental duty), with regard to appropriate education, training and experience;
- ensuring that the necessary resources and processes are in place for the implementation of required environmental controls;
- ensuring that all site superintendents/supervisors are familiar with their environmental obligations, any project approvals, the CEMP, site level plans, relevant environmental management plans and other associated documents, and understand their responsibilities within them;
- participating in, and providing guidance on, the regular review of the CEMP and any associated documents;

- taking action in the event of an emergency and allocating the required resources to minimise environmental impacts;
- ensuring that any non-conformances are identified, recorded and reported and that the appropriate corrective and remedial actions are implemented; and
- reporting any activity that has resulted in an environmental incident to the EMR and Peregrine within two hours of the incident occurring (or as soon as is practicable).

5.2.2 Site Supervisor

The Site Supervisor reports to the Project Manager and will have a direct role in the compliance with identified environmental procedures and controls. The Site Supervisor will also be responsible for checking the site on a daily basis and ensuring that regular maintenance is undertaken to minimise environmental impacts and that personnel are provided with appropriate environmental “toolbox” training, prepared by the EMR (if required). Where applicable, the Site Supervisor will be responsible for ensuring that any work performed by external parties meets with the requirements of this CEMP, including identifying and documenting the environmental risks of the proposed works. Key tasks include:

- ensuring that all personnel and sub-contractors are made aware of the requirements for compliance with this CEMP, their environmental obligations and site specific environmental issues;
- implementing all environmental requirements outlined in this CEMP, as required to avoid and minimise actual or potential environmental harm;
- ensuring that construction and sub-contractor personnel are aware of the need to exercise heightened awareness for the possible presence of unidentified historical contamination (or other unexpected finds) in the subsurface, and of the requirement to immediately cease work and inform the Site Supervisor;
- liaising with the EMR should additional contamination of soil and/or other unexpected finds be observed, and only allow a resumption of works when authorised by the EMR, in accordance with any conditions or requirements that the EMR may recommend;
- supporting the EMR in planning and implementing environmental requirements (if required);
- ensuring that non-conformances are identified, recorded and reported;
- ensuring the implementation of preventative and corrective actions;
- co-ordinating the implementation and maintenance of environmental control measures;
- providing necessary resources required for implementation of the CEMP;
- co-ordinating action in emergency situations and allocating required resources accordingly; and
- ensuring that instructions are issued and adequate information provided to field-based employees which relate to environmental risks on-site and the requirements of this CEMP, including via regular “toolbox” meetings that address environmental issues and controls.

5.2.3 Environmental Management Representative (EMR)

The EMR is an independent third party with experience and qualifications in environmental management. The EMR has primary responsibility for managing all aspects of environmental compliance for the demolition and construction phases of the project. The key responsibilities of the EMR are to:

- develop and support with implementation of the CEMP (where requested);
- conduct or support the Project Manager in environmental briefings and toolboxes to construction staff;
- conduct or support with environmental site inspections;

-
- identify and report on any non-conformances;
 - monitor the implementation and effectiveness of the CEMP;
 - complete environmental reporting requirements; and
 - provide advice and direction on environmental matters, incident response and corrective actions

5.2.4 Construction personnel

In addition to the key positions outlined above, with respect to environmental management, all personnel working on the project (including, but not limited to, demolition/construction workers, personnel involved in preparatory works for construction, surveyors, geotechnical consultants and any other persons undertaking investigations or preparatory works) have responsibility for the environmental performance of the project. The responsibilities of these personnel include:

- attending all required environmental training and adhering to, and remaining familiar with, the principles covered in the training session(s);
- undertaking all activities in accordance with agreed procedures and work methods;
- ensuring awareness of the contact person for environmental matters;
- ensuring that any clearances are obtained from the EMR, where required;
- exercising heightened awareness for the possible presence of unidentified historical contamination (or other unexpected finds) in the subsurface and the corresponding actions required; and
- reporting any activity that has resulted in an environmental incident.

5.2.5 Sub-contractors

It is recognised that often sub-contractors present the greatest environmental risks to a project due to:

- their detachment from the main construction delivery teams and the associated potential for poor communication regarding environmental issues/risks;
- differing certification standards for quality assurance and environmental management; and
- the potential for large number of additional personnel on site who have not necessarily been educated on the requirements of the CEMP.

It is Peregrine's responsibility to ensure that all personnel on the project, including sub-contractors, are notified of their need to comply with the relevant environmental requirements, including this CEMP.

All sub-contractor personnel are considered equivalent to the construction team personnel in all aspects of environmental management and control, and their responsibilities in this respect mirrors those of the construction team personnel.

Sub-contractors working on the project will be required to:

- observe sub-contract and statutory requirements relating to environmental protection and other environmental legislation and to follow instructions issued by the Project Manager and supervisory personnel;
- nominate site representatives to liaise with the construction team regarding, and take responsibility for, environmental requirements associated with their site activities;
- adhere to the site management system as it applies to their operations on the site;
- co-operate fully with site emergency and incident procedures as well as consultative arrangements;

- exercise heightened awareness for the possible presence of unidentified historical contamination and/or other unexpected finds in the subsurface and the corresponding actions required; and
- follow all procedures detailed in this CEMP.

The Project Manager will ensure that the work of sub-contractors is monitored through the site inspection process. Observations will be made by relevant personnel to assess the effectiveness of the environmental protection measures being used on-site by the sub-contractor and determine compliance with the requirements of the CEMP.

5.3 Environmental control measures and procedures

5.3.1 General approach

Control measures and safeguards to minimise and manage the environmental risks identified in Table 4.1 are detailed in Table 5.1, noting that “construction” includes all service station demolition and redevelopment activities. The timing of installation of control measures will be critical to ensuring that environmental obligations are met within the required timeframe and that controls are effective in achieving their purpose.

A program of routine maintenance will be conducted on environmental controls. Daily inspections of work areas will be undertaken by the Site Supervisor and inspections will also be undertaken by the EMR as required. These inspections will provide a means for identifying maintenance requirements before they reach a critical stage.

Table 5.1 Control measures and safeguards to manage and minimise environmental risks

Ref. No	Control measures and safeguards	Responsibility for co-ordination	Timing*
1	<p>With an expectation of hydrocarbon-impacted soils being present on the site (particularly within the vicinity of existing fuel storage/dispensing infrastructure), proceed with excavation works while observing for the presence of any historical spills or leaks of fuel into the sub-surface.</p> <p>Should observations indicate that soil is discoloured, highly odorous or saturated with fuels, cease works in that area and inform the Site Supervisor immediately – the EMR must then be consulted about any assessment and/or management requirements. Resume works in the affected area only when advised in writing by the EMR.</p> <p>Ensure that any surplus soils marked for off-site disposal/reuse conform to the criteria provided within Current Criteria for the Classification of Waste – Including Industrial and Commercial Waste (Listed) and Standard for the production and use of Waste Derived Fill (WDF), dated October 2013.</p> <p>Pre-approval for acceptance of soils at a nominated soil management facility must be obtained prior to off-site transportation, and a minimum of 24 hours’ notice of transport to the facility must be given following landfill/recycling acceptance approval.</p> <p>Ensure that no soil is transported from the site for disposal purposes without appropriate sampling, classification and approval by the EMR.</p>	Project Manager Site Supervisor EMR	Pre-construction Construction

Ref. No	Control measures and safeguards	Responsibility for co-ordination	Timing*
2	<p>Prior to construction, designate appropriate soil stockpiling locations away from site boundaries (if possible) – especially if adjoining properties are occupied or used by the general public – and away from drainage/creek lines, low-lying areas subject to inundation (flooding) or areas subject to excessive surface water run-off, drains and sumps in hardstand areas.</p> <p>Depending on how long material/s will be held in stockpile/s, consider covering the stockpile/s – the benefits of covers include a reduction in wind-generated dust, odours and surface water run-off and, in the case of tarpaulins and plastic covers, cleaner surface water run-off.</p>	Site Supervisor	Pre-construction
3	<p>Establish appropriate sediment and erosion controls measures, which comply with applicable state and council legislative requirements.</p> <ul style="list-style-type: none"> – <i>Environment Protection (Water Quality) Policy 2015</i> – <i>Local Government Act 1999</i> 	Project Manager Site Supervisor	Pre-construction
4	<p>Prior to commencing work on-site, ensure that all personnel undergo a site-specific induction which includes information regarding environmental aspects associated with the project and relevant mitigation measures to be implemented. Incorporate any activities which have the potential to generate significant environmental risk into a specific Construction Method Statement (CMS – refer to Section 5.3.3) detailing specific environmental risks and mitigation measures applicable to that activity.</p>	Project Manager Site Supervisor	Pre-construction
5	<p>Regularly, including during construction activities and after significant rainfall events (>10 mm/24 hours), inspect and maintain erosion controls to ensure they are operational.</p> <p>Undertake maintenance repair works as required.</p>	Site Supervisor	Construction
6	<p>Consider all liquids encountered on-site that display a visible hydrocarbon sheen or odour (whether they be pooled rainwater collected within excavation pits/sumps, perched groundwater or the contents of underground structures – the latter including any known or previously unidentified USTs) as potentially contaminated and therefore requiring transportation to a liquid waste treatment facility.</p> <p>Ensure that persons transporting liquid waste are licensed to do so.</p> <p>Retain any additional liquids (as defined above) that do not display obvious signs of contamination on-site for inspection and testing by a qualified Environmental Consultant prior to appropriate management.</p>	Project Manager Site Supervisor	Construction
7	<p>Maintain appropriate records regarding the functionality of erosion and sediment control devices, including details of rainfall events, use of any flocculants, discharge, sediment removal and dewatering activities.</p>	Project Manager Site Supervisor	Construction
8	<p>Regularly update sediment control plans when construction activities change and/or new areas are exposed and/or when current plans are deemed inadequate.</p>	Project Manager	Construction
9	<p>Undertake the refuelling, cleaning and servicing of construction machinery and equipment in designated locations or where appropriate measures have been installed to ensure that any spills or leaks are adequately contained and remediated.</p>	Site Supervisor	Construction
10	<p>Provide specified personnel with spill management and emergency response training, including the location and application of spill kits and associated remediation products.</p>	Site Supervisor	Construction

Ref. No	Control measures and safeguards	Responsibility for co-ordination	Timing*
11	<p>Do not accept contaminated fill material for re-use on the site.</p> <p>Ensure that the supplier of “clean fill” material provides certification that the material is chemically and aesthetically suitable for use prior to acceptance on site and maintain (and make available to the EMR) records of all imported material.</p> <p>Confirm that remnant soils within excavation areas, as well as any excavated soils to be re-used on-site, are chemically suitable to remain on a commercial/industrial site.</p>	Project Manager Site Supervisor EMR	Construction
12	<p>Undertake site activities in a manner which minimises the generation of dust emissions. This includes using water carts for dust suppression, restricting vehicle speeds on-site, restricting vehicles to authorised access roads, modifying construction activities during high wind periods, stabilising/covering exposed areas and stockpiles and covering vehicle loads prior to leaving site.</p>	Site Supervisor	Pre-construction Construction
13	<p>Implement adequate controls to minimise the potential of mud tracking onto public roads.</p> <p>Undertake regular inspections of public roads adjacent to the construction works (especially during wet weather conditions) – remove any tracked sediment from public roads (as far as possible) and regularly assess the effectiveness of the mitigation controls.</p> <p>Sweep site access areas to/from public roads, to collect any bulk/loose soils, periodically and prior to leaving site at the end of each day.</p> <p>Where there is the potential for excess soil to be deposited on public roads, install additional control measures (as appropriate) – this may include:</p> <ul style="list-style-type: none"> – placement of crushed rock or other material in areas where vehicles may travel; – delaying works until site conditions improve; – increasing the manual cleaning of vehicles prior to them leaving the site (through the use of shovels, brooms and/or pressure washers); and/or – installing a rumble strip across the site exit to minimise vehicular drag-out of soil. 	Site Supervisor	Pre-construction Construction
14	<p>Maintain and operate construction plant and equipment in a manner that minimises smoke emissions and fumes into the atmosphere – this includes switching off plant and equipment when not in use and undertaking regular maintenance services.</p>	Site Supervisor	Pre-construction Construction
15	<p>Undertake construction activities in a manner which minimises the potential for noise and vibration impacts on sensitive receptors – this includes operating only during approved construction hours, turning off machinery and equipment when not in use, minimising reversing and horn signals, ensuring plant and equipment are operated and maintained in a satisfactory manner and abiding by proximity limits.</p>	Site Supervisor	Pre-construction Construction

Ref. No	Control measures and safeguards	Responsibility for co-ordination	Timing*
16	<p>Establish appropriate strategies to manage/recycle wastes generated as a part of the construction works. The strategy should aim to achieve sustainable waste management.</p> <p>Record all waste removed from site in a waste management register.</p> <p>Ensure that no soil is transported from the site for disposal purposes without appropriate sampling, classification and approval by the EMR.</p>	<p>Project Manager Site Supervisor EMR</p>	<p>Pre-construction Construction</p>
17	Segregate wastes for recycling as much as possible.	Site Supervisor	Construction
18	Equip all construction plant with certified fire extinguishers.	Site Supervisor	Construction
19	<p>Should excavations require dewatering, do not discharge water to the stormwater drainage system without prior written approval from the EMR – i.e. due to the potential for it to contain silt/suspended solids and other contaminants.</p> <p>Give preference to re-using accumulated water on the site where possible – depending on its contamination status) – e.g. for dust control.</p> <p>Refer to section 5.3.5 if there is surplus water that cannot be re-used on the site.</p>	Site Supervisor	Construction

5.3.2 Health and Safety Management Plan

A detailed Health and Safety Management Plan (HASP), which will include a health and safety risk assessment for the planned construction works, will be prepared by the Site Supervisor.

The HASP shall include, but not necessarily be limited to:

- naming key personnel responsible for site safety;
- describing the risks associated with each operation to be conducted;
- confirming that on-site personnel are adequately trained to perform their job responsibilities;
- describing the protective clothing and equipment (such as gloves, boots and hard hats) to be worn by personnel during various site operations;
- describing the actions to be taken to mitigate existing hazards and make the work environment less hazardous;
- describing the type of emergency equipment to be available during the works; and
- setting out a contingency plan for safe and effective response to emergencies – the plan is to include telephone numbers for emergency services and a map showing the route to the closest hospital.

5.3.3 Erosion and Sediment Control Plan

Appropriate planning is crucial to the effective management of erosion and sedimentation during site redevelopment activities. An Erosion and Sediment Control Plan (ESCP) is a planning document which clearly shows the site layout and the approximate location of erosion and sediment control structures on the site.

With respect to the proposed works program, only limited earthworks and stockpiling of soils will be undertaken and a formal ESCP will not be required – the measures described in this CEMP are considered to be adequate.

5.3.4 Stormwater management and dewatering of excavations

It is possible that rainwater will accumulate in excavations and need to be removed (dewatered) to allow the redevelopment works to proceed. **Water should not be discharged to the stormwater drainage system without prior written approval by the EMR, due to the potential for it to contain silt and suspended solids other contaminants.**

The SA EPA guideline *Environmental management of dewatering during construction activities (2018b)* provides a mechanism for considering the options for managing these accumulated waters. It involves considering the hierarchy of options, from reuse/recycling (most preferred) to treatment, and disposal (least preferred). If, after exploring all of these options there is still an unavoidable need to discharge wastewater to stormwater, inland or marine waters, then, SA EPA (2018b) outlines the process and restrictions that must be followed. This may include the preparation and implementation of a Dewatering Management Plan (DMP).

- a. **Less than 20 kL (low risk)** – discharge is permitted with no further investigation required, unless the site or adjacent land was identified as having risks associated with site contamination or potentially contaminating activities (see medium risk below). Proponents are still required to do all that is reasonable and practicable (under general environment duty) to decrease suspended solids in wastewater, ensuring turbidity is below 50 NTU prior to discharge. The CEMP guideline is applicable to address any other risks associated with water quality.
- b. **Between 20 kL to 100 kL (medium risk)** – discharge is subject to water quality testing and dewatering discharge limits must be met prior to any discharge (Appendix 4), this volume of wastewater triggers the need for a dewatering management plan (DMP). Any further requirements for managing identified risks should also be addressed and reflected in the water quality testing.
- c. **Greater than 100 kL (high risk)** – discharge is subject to water quality testing and dewatering discharge limits must be met prior to any discharge. This volume of wastewater triggers the need for a DMP. If suspended solids are 25 mg/L or greater, earthworks drainage is triggered (Appendix 3) and an EPA licence is required. The conditions of the licence, when granted, will require an earthworks drainage management plan (EDMP). Any further requirements for managing identified risks should also be addressed and reflected in the water quality testing.

5.3.5 Management Plan for Asbestos in Soil

Since no asbestos-containing materials (ACM) have yet been encountered during drilling on the site, an Asbestos Management Plan is not considered to be required at this stage. Should any ACM be identified, this will be treated as an unexpected find and should be handled as described in Section 5.3.9.

5.3.6 Traffic control

All traffic to and from the site will be through the designated main site entry points. Parking for site workers and visitors will be provided on site in a location that does not allow vehicles to come into contact with excavated material.

Transportation of “over-sized” equipment will be performed outside peak hours and school zone hours with appropriate signage and in accordance with DPTI regulations.

In addition to the above:

- designated transport routes will be used regularly over the duration of the proposed construction works which will be communicated to haulage contractors
- no vehicles are to arrive at the site outside the site working hours
- trucks will only leave the site when they have reached their capacity loads wherever possible.

5.3.7 Odour and Vapour Management

Odour and vapour from contaminated media, including but not limited to excavations associated with tank removal, could pose a risk to human health or affect amenity.

Excavation and soil management practices will be implemented as follows:

- Ensure stockpiles of contaminated soil are kept covered when not in active use;
- Excavations are not left open or exposed for any longer than is necessary and are covered or backfilled as soon as possible;
- Excavations in contaminated areas are staged and surface coverings applied (where possible) so that exposed areas of contaminated surfaces are minimised to the extent practical;
- Periodic surveys should be performed of any odorous areas (excavation areas, soil stockpiles or other odorous locations) using a photo-ionisation detector (PID). A PID provides an instantaneous measure of the volatile hydrocarbon content of the air being sampled. It provides a semi-quantitative measure that can be used to determine exposure risks. Locations tested should be noted, the PID reading recorded and a record made of the strength and nature of any odour detected;
- Periodic surveys may be required at the external perimeter of the site to check if any dust or potentially offensive hydrocarbon odorous might be leaving the site
- The frequency of these surveys should be determined based on the activities being undertaken on the site at the time. As a guide, initial inspection could be scheduled every two hours ;
- Monitoring and survey results should be conducted by or provided to the EMR for review and recommended actions.

5.3.8 Unexpected finds and contingency measures

Based on the results of historical site investigations, **there is considered to be a high likelihood of unidentified buried waste being present throughout the site.**

Any additional environmental or health and safety issues that arise should be reported immediately to the Project Manager so that specific management measures can be implemented. These may include:

- the uncovering of ACM;
- buried waste that could be contaminated or present a risk to human health or the environment;
- previously unidentified fuel infrastructure, including historically abandoned USTs and pipework; and/or
- areas of highly odorous or stained soils indicating potential contamination.

6. TRAINING, AWARENESS AND COMPETENCE

6.1 Site induction – Environment and Occupational Health & Safety (OHS)

Prior to working on the site, all personnel (including sub-contractors) shall undertake an induction that incorporates Environmental and OHS requirements. The induction will address a range of environmental awareness issues including, but not necessarily limited to:

- the contents, and instigation of, the CEMP;
- legal requirements, including due diligence, duty of care and potential consequences of infringements;
- environmental responsibilities under relevant State and Federal legislation;
- conditions of licences, permits and approvals;
- any significant environmental issues;
- areas of the site designated for soil stockpiling, waste management, washing, refuelling and maintenance of vehicles/equipment, plant and equipment storage; and
- incident management reporting and emergency plans.

6.2 “Toolbox” training

Regular/on-going “toolbox” training will help to ensure that relevant information is communicated to the workforce and that feedback can be provided on issues of interest or concern. “Toolbox” training sessions will generally be prepared and delivered by the Project Manager, Site Supervisor and/or EMR (as appropriate). A “toolbox” training session can be integrated into a CMS, delivered to personnel prior to commencing specific high risk activities or used as a standalone training tool.

“Toolbox” training topics may include:

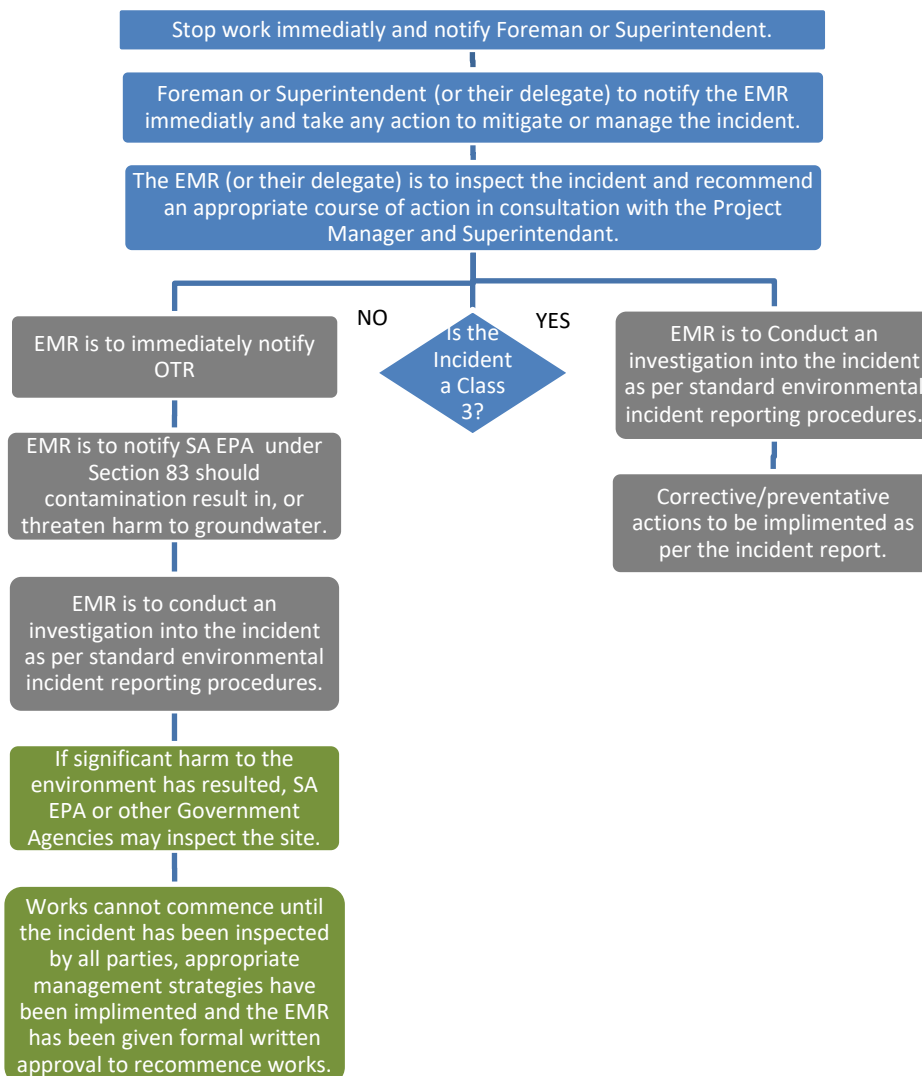
- efficient use of plant and materials;
- waste management, minimisation and recycling;
- noise and vibration minimisation;
- dust control;
- waste water infiltrating to excavations control;
- management of excavated/contaminated soil;
- installation and maintenance of erosion and sediment control devices;
- storm management procedures; and
- other general site issues.

7. INCIDENT AND EMERGENCY PLANNING, PREPAREDNESS AND RESPONSE

7.1 Emergency Planning

Emergency planning and incident management procedures are included in following in Figure 7.1 and Tables 7.1 and 7.2. Included is a list of emergency contact details and various specific management procedures for potential emergencies. **Prior to any action, identify materials involved and obtain the appropriate PPE.**

Figure 7.1 Procedure in Dealing with Environmental Incidents



Notes:

*An unexpected event may result in harm to the environment and requires some action to minimise the impact or restore the environment.

Further information on the notification requirements is found in section 5 and Appendix 3 of EPA *Guidelines for the assessment and remediation of site contamination (2018)*.

Environmental Incident Classes:

Class 1 – Causes or has the potential to cause permanent environmental damage and results in remediation costs of >\$100,000

Class 2 – Causes or has the potential to cause damage to the environment which can be rectified and in results in remediation costs of >\$5,000 to \$100,000

Class 3 – Causes or has the potential to cause damage to the environment which can be easily rectified and results in remediation costs of <\$5,000

Notes: Prior to any action, identify materials involved and obtain appropriate PPE.

Table 7.1 Environmental incident management procedure for minor hydrocarbon spills

	Action	Responsibilities	Comments
1	Stop further spill/leak & inform Site Supervisor	Person causing spill/finding leak	If leak from drum take action to stop the leak – for example, roll drum so that leak area is uppermost. If leak from pipe, close valve.
2	Form barrier around leak/spill to contain it Obtain oil spill kit and apply absorbent material	Site Supervisor	Soil or sand can be used and absorbent booms (usually provided within spill kits) are also effective.
3	Manage the area	Site Supervisor	Stop human and vehicular traffic and isolate area. Place barriers around drains and outlets – i.e. Seal drain entry points by blocking with sandbags or other available material.
4	Remove source	Site Supervisor	Transfer fuel/oil from failed container into another drum etc.
5	Determine the magnitude and extent of the leak	Site Supervisor/EMR	For major spills on site, or if spill has escaped off-site, contact the EMR immediately.
6	Clean up/remove absorbent material	Site Supervisor	Dispose of material appropriately – use shovel or bob cat loader, depending on quantity.
7	Clean up surface soil by excavating	Site Supervisor/EMR	Stockpile contaminated material in designated area. Validate remediation via sampling.
8	Complete incident log	Project Manager/Site Supervisor	Record incident. Investigate how/why it occurred. Implement appropriate procedures to minimise possibility of follow-up event.

Table 7.2 Environmental incident management procedure for impending storm events

	Action	Responsibilities	Comments
1	Maintain awareness of weather conditions and impending significant storm events	Project Manager/Site Supervisor	Check daily weather forecasts from Bureau of Meteorology. Inform all relevant personnel of an impending significant storm event.
2	Inspect and manage sediment control devices in critical areas	Site Supervisor	Inspect sediment control devices and ensure silt fences/hay bales/sandbagging in good condition. Remove any sediment build-up and upgrade devices if necessary. Ensure adequate supplies of back-up control devices are available.
3	Manage pooled water	Site Supervisor	Ensure any sumps are able to function at full capacity and diversion drains in place. Assume accumulated water may be contaminated unless proven otherwise and dispose of appropriately.
4	Manage soil stockpiles	Site Supervisor	Ensure stockpiles are stable and not in a position to impact on public thoroughfares/watercourses . Seal stockpiles and/or cover with plastic. Ensure appropriate sediment control devices in place.
5	Manage hazardous substances	Site Supervisor	Store hazardous substances appropriately. Ensure hazardous substances storage areas/bunds are in order.
6	Ensure adequate supplies of control devices and relevant personnel are on hand	Site Supervisor	Undertake forward planning.
7	Undertake emergency work during storm event (if required)	Site Supervisor	Ensure adequate procedures undertaken – e.g. pumping of excavations, handling of excess potentially contaminated surface water etc.

7.2 Incident notification

In the event that an incident has caused, is causing, or is likely to cause material or serious environmental harm, whether the harm occurs on or off the site, the work team will follow the procedure in dealing with environmental incidents (Figure 7.1).

In addition to notifying key government agencies in accordance with the procedure detailed in Figure 7.1 the Project Manager and EMR will also liaise closely to ensure Peregrine and the responsible regulatory agencies are kept well informed.

Key emergency contacts are provided in Table 7.3. Where key contacts have not yet been assigned, these must be determined prior to the commencement of works and an updated version of Table 7.3 produced.

Table 7.3 Emergency contacts list

Organisation	Name	Phone number(s)
Project Manager	TBD prior to commencement of works	TBD prior to commencement of works
Site Supervisor	TBD prior to commencement of works	TBD prior to commencement of works
EMR	TBD prior to commencement of works	TBD prior to commencement of works
SA EPA	Pollution Watch Hotline	1800 623 445
SA Police	Emergency Police Assistance	000 Mobile 112
Adelaide Metropolitan Fire Brigade	Fire or life threatening emergencies SES Emergency Assistance Emergency Information	000 Mobile 112
SA Ambulance Services	Emergency General Enquiries	000 Mobile 112
Nearest Hospital	RAH	08 7074 0000

All incidents shall be documented, investigations conducted, and action plans established in order that the event does not occur again – this is expected to involve the Site Supervisor and possibly also the EMR (as required).

Where lessons are learnt from the investigation or current procedures are identified as being ineffective, the CEMP (and any associated documentation) will be revised by the EMR (or their nominated delegate) so as to include the improved procedure/s or requirement/s.

An environmental investigation report is expected to include the following basic elements:

- incident or activity that has caused contamination or environmental harm;
- nature of contamination and chemicals of potential concern;
- area affected (on- or off-site);
- aspects of the environment affected; and
- any other relevant information.

Further to this, an environmental investigation will also include:

- identifying and implementing the necessary corrective action/s;
- identifying the personnel responsible for carrying out the corrective action/s;
- implementing or modifying controls necessary to avoid a repeat occurrence of the incident; and
- recording any changes in written procedures (as required).

All incident investigation reports and associated documentation will be forwarded from the Site Supervisor/EMR to the Project Manager and Peregrine – the findings, outcomes and corrective actions required will be communicated back to the entire construction team (e.g. via a “toolbox” meeting).

8. COMPLIANCE

8.1 Environmental inspections

The Project Manager and/or Site Supervisor will be required to track activities on the site. Information recorded will include, but not necessarily be limited to:

- the general condition of the site;
- status of environmental controls and
- the progress of activities carried out on the site.

The effectiveness of environmental protection measures will be assessed from on a daily basis by the Site Supervisor, or their nominated delegate, unless otherwise specified – to this end, a checklist will be developed, the purpose of which is to:

- provide a surveillance tool to ensure that environmental safeguards are being implemented;
- identify where issues might be occurring; and
- facilitate the early resolution of, and action on, identified issues.

Any actions that are identified in these site inspections and recorded on the checklist are to be prioritised and will remain “open” until:

- the issue has been resolved/closed out;
- a new or revised procedure has been established and implemented; and/or
- training has been provided to relevant personnel/sub-contractors.

8.2 Environmental aspect assessment/monitoring

Environmental aspect assessment/monitoring will be undertaken in accordance with the CEMP to assist in ensuring that environmental safeguard measures are achieving their objectives and to facilitate modification where necessary.

The following aspects shall be amongst those that are subject to on-going assessment:

- air quality;
- water quality;
- erosion and sediment control;
- implementation of CMS; and
- wastes and hazardous substances.

8.2.1 Monitoring technique and frequency

Specific monitoring programs developed for the project shall be compliant with those standards specified in Section 3.2 – monitoring may include, but will not necessarily be limited to:

- soil sampling – e.g. validation of UST/triple interceptor pit excavations, sediment traps, odorous soils;
- water sampling – e.g. stormwater, perched water, groundwater; and/or
- visual inspections and relevant vapour (head space) measuring.

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from site redevelopment activities – where warranted, the results will be analysed by the EMR.

Generally, monitoring undertaken specifically by the EMR will be on an as-needs basis and may include, but not necessarily be limited to, the following specific tasks/events:

- decommissioning of groundwater monitoring wells;
- any deep excavations (assessment of soil condition and vapour issues);
- prior to off-site disposal of any surplus soils (stockpiled or direct loaded); and
- after any significant rain events (surface water and erosion control).

8.2.2 Monitoring non-conformances

Where a non-conformance is detected or monitoring results are outside of the expected range:

- the results will be analysed by the EMR in more detail, with the view of determining possible causes for the non-conformance;
- a site inspection will be undertaken by the Project Manager and/or EMR;
- relevant personnel will be contacted and advised of the situation;
- an agreed action plan will be identified and action/s will be implemented to rectify the problem; and
- the Project Manager/EMR, or their delegate, will notify Peregrine.

An Environmental Incident Report (EIR) or an Environmental Improvement Notice (EIN) may be issued by the Project Manager/EMR to the non-conforming party in response to the problem. The timing for any improvement will be agreed between the Project Manager and the EMR based on the level of risk – for example, a significant risk will require immediate action.

9. REVIEW/AMENDMENTS OF THE CEMP

The EMR will review the CEMP and its operation and implementation from time to time. Between the reviews, a register of issues will be maintained to ensure that any issue raised by internal and external personnel associated with the project are recorded for later inclusion into the CEMP. The purpose of the review is to ensure that the system is meeting the requirements of the standards, policies and objectives and, if not, to amend the CEMP to facilitate continuous improvement. A report will be provided to Peregrine with any recommendations for change to the system. The review will consider:

- Pererine and Project Manager comments;
- site personnel comments;
- authority comments;
- assessment/inspection findings;
- environmental monitoring records;
- complaints;
- environmental non-conformances;
- incident reports;
- details of corrective and preventative actions taken;
- changes in organisation structures and responsibilities;
- the extent of compliance with objectives and targets; and
- the effect of changes in standards and legislation.

The EMR will review the various policies and objectives and approve any changes in consultation with the Project Manager/Peregrine.

10. LIMITATIONS

Fyfe has prepared this CEMP for the use of Peregrine Corporation (Peregrine), in accordance with the usual care and thoroughness of the consulting profession. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The methodology adopted and sources of information used by Fyfe are outlined in this report. Fyfe has made no independent verification of this information beyond the agreed scope of works and Fyfe assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to Fyfe was false.

This CEMP is based on the information provided by Peregrine and reviewed at the time of preparation. Fyfe disclaims responsibility for any changes that may have occurred after this time. This CEMP should be read in full. At the time of writing the CEMP Fyfe was not engaged as the EMR. No responsibility is accepted for use of any part of this CEMP in any other context or for any other purpose or by third parties. This CEMP does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

This report has been signed-off by a Certified Environmental Practitioner – Site Contamination Specialist. The responsibility of this professional was limited solely to the review of the draft report and did not extend to any other aspect of the project.