

27 June 2017

Sandcore Pty Ltd
c/o Jensen Bowers
72 Costin Street
Fortitude Valley QLD 4006

Attention: Emmett Herps

ROCKHAMPTON REGIONAL COUNCIL
These plans are approved subject to the current
conditions of approval associated with
Development Permit No. D/56-2017
Dated 15-09-2017

Dear Emmett,

**RE: ELECTRONIC ADVERTISING DEVICE - 15 GLADSTONE ROAD, ALLENSTOWN
TRAFFIC ENGINEERING ASSESSMENT**

This report has been prepared by Pekol Traffic and Transport (PTT) to assess the traffic engineering aspects of a static illuminated electronic advertising device proposed for a commercial site at 15 Gladstone Road, Allenstown, in response to the information request from the Rockhampton Regional Council and Main Roads (TMR). The sign will be visible to drivers travelling southbound along Gladstone Road and from the Gladstone Road/ Derby Road intersection.

This report discusses the impact of the sign in terms safety and driver distraction with respect to its location, design and operation.

METHODOLOGY

In preparing this report, a desktop assessment was conducted to determine the existing signage and traffic operations in the area with application of the Department of Transport and Main Roads (TMR) Roadside Advertising Guide (2013) (RAG).

BACKGROUND

The subject site, described as Lot 21 on RP893676 on Gladstone Road, Allenstown, is in a specialised centre zone with an existing advertising device on site. The site is surrounded as follows:

- West Street to the east
- commercial properties to the south
- Gladstone Road to the north and west

Gladstone Road (Bruce Highway) is state controlled road under the jurisdiction of TMR. It has multiple lanes in both directions with a posted speed limit of 60 km/h in vicinity of the site. The proposed electronic advertising device will replace the existing billboard as indicated in Figure 1.

Figure 1: ADVERTISING LOCATION



PROPOSED ELECTRONIC ADVERTISING DEVICE

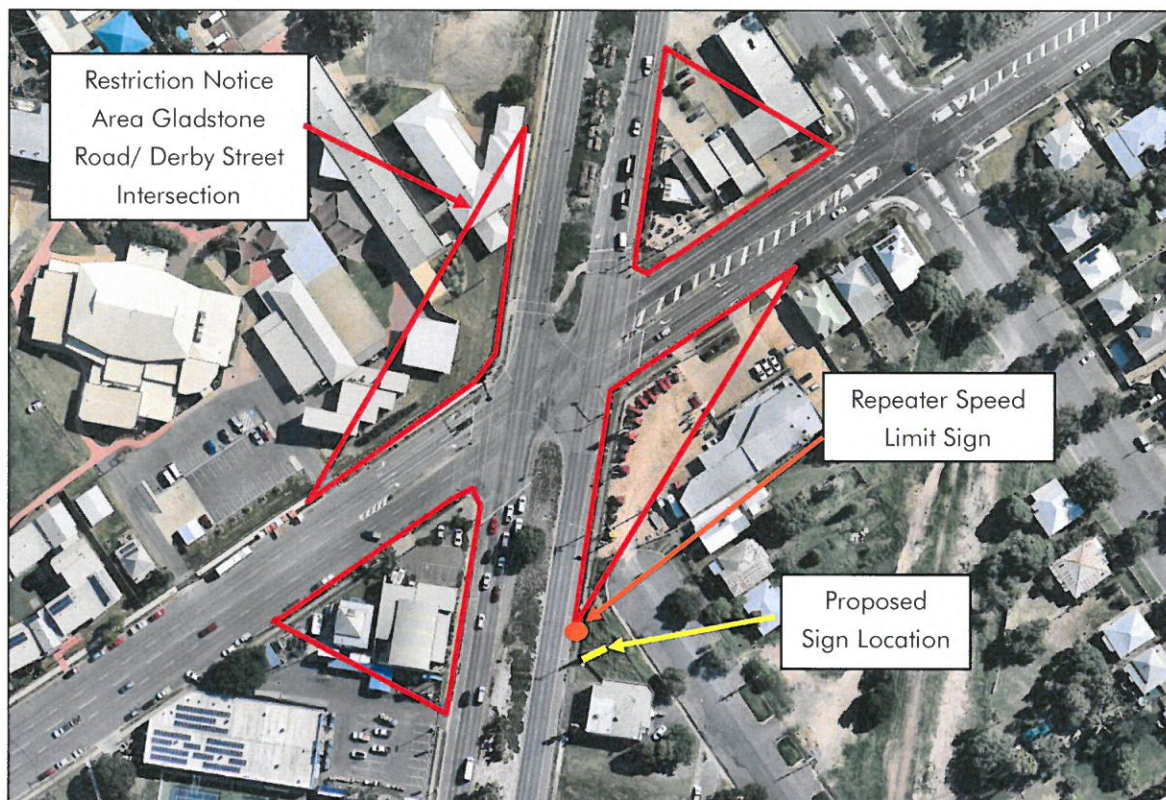
The proposed static electronic sign is described as a category one Advertising Device under TMR's RAG. It is proposed to have an approximate area of 42m², which would classify it as a 'supersite' device.

Location

The proposed sign is to be positioned to face southbound traffic on the Gladstone Road. TMR's RAG designates a 'Restriction Notice Area' as a zone visible from a state-controlled outside the road reserve. In the restriction notice area, TMR may only provide comment on the proposed sign location with the relevant local government the controlling authority (ie Rockhampton Regional Council).

The proposed sign is located outside of the restriction notice area of the Gladstone Road / Derby Street intersection. There are no existing electronic advertising devices within the restriction area of the proposed sign. A desktop review shows a repeater speed limit sign located adjacent to the proposed sign from imagery dated February 2015. Therefore, the sign is outside of any restriction notice areas, as demonstrated in Figure 2.

Figure 2: TMR'S RAG RESTRICTION NOTICE AREAS



The requirements of the RAG have been considered and are discussed as follows:

- there is adequate advance visibility (3 seconds of continuous travel time) to view and read the sign
- the surrounding traffic lights are fitted with standard target boards
- as shown in Figure 3, the sign will not obstruct a driver's line of sight to traffic lights or other driver decision areas and official traffic signs
- the electronic sign is not located in restriction notice areas

Figure 3 demonstrates proposed sign is background to a traffic signal. This is a tertiary traffic signal and it is fitted with a standard target board in accordance with the RAG.

Figure 3: SIGN BACKGROUND TO TRAFFIC SIGNAL



Design

The device is classified as a 'supersite' with an area of approximately 42m². It is designed with dimensions of approximately 13m x 3m, consistent with Table 6.1 of TMR's RAG.

It is recommended that the height of the device be a maximum of 12.5m (relative to road level), (with a minimum vertical clearance of 2.5m underneath the sign, in accordance with Section 6.3.1 of TMR's RAG.

Also in line with Section 6.3 of TMR's RAG, there will be no impact or obstruction to other businesses, residents or the visual amenity of the surrounding area from the sign. The device is proposed to have no movement or rotation. It is recommended that the electronic sign support be certified as being structurally sufficient in accordance with the Building Act 1975. Therefore, the design is in accordance with Section 6.3 of TMR's RAG.

Operations

We have been advised that the proposed sign will be a category one, non-rotating advertising device showing one still image at a time. It will be located in a mixed use area with medium-high-ambient lighting and therefore has been classified as a Lighting Environment Zone 2 as per TMR's RAG.

Brightness

Due to the location of the proposed sign, it is recommended a maximum average luminance level of 350 cd/m² be maintained at all hours of the day, as consistent with Table D1 in Appendix D of TMR's RAG

The proposed advertising device will meet the following requirements, in line with TMR's RAG:

- will be located at an angle such that luminance levels are as uniform as possible for the viewer

- any retro-reflective material will be rotated approximately 5° away from normal line of vehicle headlight beams in order to minimise specular reflection
- will not contain flashing point sources
- all lighting associated with the advertising device will be directed solely on the advertising device and its immediate surroundings
- illumination does not include any reflective letters or strips

Text

Text size has been calculated based on equations given in Schedule E of Appendix K in TMR's RAG. Assuming a speed of 60 km/h and a lateral placement of 15m, the following minimum capital letter heights for the advertising text is recommended:

- 6 words: 221mm
- 9 words: 247mm
- 12 words: 272mm

Display Content

Consistent with good roadside advertising practice, it is recommended that the displayed images:

- are directly and easily interpreted as to convey the required advertising message quickly
- do not give instructions to "stop" or similar
- do not imitate traffic control devices
- will not go blank between advertisements
- minimise emotional content that may affect emotional biases

CRASH HISTORY

The most recent available crash data provided by TMR for the past five years (2011-2015) was analysed to determine if an above average crash rate or high Killed or Seriously Injured (KSI) rate was evident. The analysis was conducted for the Gladstone Road / Derby Street intersection with the results shown in Figure 4. To determine if an above average crash rate was present, another two intersections were analysed further north on the Bruce Highway. Figures 5 and 6 show the relevant crashes at each of these intersections.

There were six crashes reported within the 100m the Gladstone Road / Derby Street intersection. Two hospitalisations and no fatalities were recorded between 2011-2015. This intersection and two other intersections to the north were also analysed using the approach detailed by with Jurewicz and Bennett (2008)¹ to calculate the crash rate in terms of number of crashes and traffic volumes through the intersections obtained through TMR as shown in Table 1. The results of this analysis show the crash rate of the proposed site to be below average, compared to the other sites analysed and the Queensland average, as determined by Jurewicz and Bennett (2008). Therefore, the crash rate at the intersection appears to be below average for the assessed sites and Queensland.

¹ Jurewicz, C and Bennett, P 2008, "Casualty Crash Rates for Australian Jurisdiction", 2008 Australasian Road Safety Research, Policing and Education Conference, Adelaide, South Australia

Table 1: CRASH RATES

SITE	NUMBER OF CRASHES (2011-2015)	AADT (vpd)	CRASH RATE (crashes/10M VKT)
Gladstone Road / Derby Street	6	22,200	1.48
Gladstone Road / Denham Street	8	22,200	1.97
Gladstone Road / Fitzroy Street	6	21,000	1.56
Assessed Sites Average			1.50
Queensland Average			1.89

The RAG states that a KSI of three or more in the last five years is considered a high KSI and that extra restrictions will apply where a KSI of this magnitude is found. The section of road has recorded two hospitalisations and no fatalities in the last five years for a KSI rate of two.

Figure 4: CRASH LOCATIONS AND SEVERITY (2011-2015)



Figure 5: CRASH LOCATIONS AND SEVERITY (2011-2015) NORTHERN SITE 1



Figure 6: CRASH LOCATIONS AND SEVERITY (2011-2015) NORTHERN SITE 2



CONCLUSIONS AND RECOMMENDATIONS

We have undertaken a review of the proposed electronic sign located at 15 Gladstone Road, Allenstown in response to a information request from Council and TMR. The impact of the sign has been assessed in terms of safety and driver distraction. The main points to note are:

- the traffic signal heads are fitted with standard target boards
- advance visibility of three seconds is provided to view the sign in both directions
- recent crash data suggests there are no atypical safety issues at this intersection
- the sign is not located in restriction notice areas
- the intersection has a low KSI and below average crash rate

It is therefore recommended that:

- the sign will display one static image at a time
- the sign has a maximum height of 12.5m above ground level
- the displayed images are easily interpreted
- the displayed images can not be confused with any traffic signs or devices
- the displayed images do not direct traffic to 'stop' or similar
- data is logged for a year subsequent to the installation of the sign to monitor potential effects of the sign

In our professional opinion, the location of the proposed sign complies with the RAG and has a low KSI and below average crash rate. Therefore, is not expected to pose an unacceptable risk to traffic safety and operations provided the above recommendations are taken into account.

If you have any questions regarding the issues discussed above, please do not hesitate to contact us.

Yours sincerely,



Adam Pekol
Director (RPEQ 5286)

Road Edge

GLADSTONE RD

Road Edge

Vegetated Island

Road Edge

GLADSTONE RD

Road Edge

Footpath

Grass Verge

SIGN

SIGN

O/H Pwr Lines

PWR POLE

Footpath

Crossover

Driveway

BUILDING

Driveway

Void of hedging so as to maintain visual truncation

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
25-01-2018
DATE
These plans are approved subject to the current
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Development Permit No. D/56-2017 dated 15-9-17

WEST ST

1m high Hedging to
perimeter of Boundary line

2m high Hedging to
length of sign panel

INSTALL
LANDSCAPE PLANTING

LANDSCAPE PLAN



LOCALITY PLAN

Grass to internals of land area

1m high Hedging to
perimeter of Boundary line

21

7.5m

1.55m

13.45m

RP 893676
21
254m²

REMOVE
EXIST: SIGN PANEL

24.724m
0° 25' 13"

30.753m
137° 30'

PROPOSED SIGN PANEL
12580

LED PANEL

88° 34'
7.5m

0° 34'
1.55m

Orientate Sign @ 16° off rear BDY
16°
Boundary

22

SITE PLAN

Scale 1:200



Sandcore Pty Ltd
PO Box 749, Subiaco, WA, 6904
M: 0439909318
P: 08 93644955

Project:

Signage Panel
LED 12.0 x 3.0m
Monopole

Location:

**LT 21
15 GLADSTONE RD
ALLENSTOWN QLD**

Revision: 3

SHEET SIZE: A3

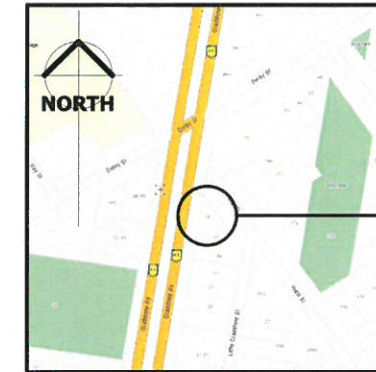
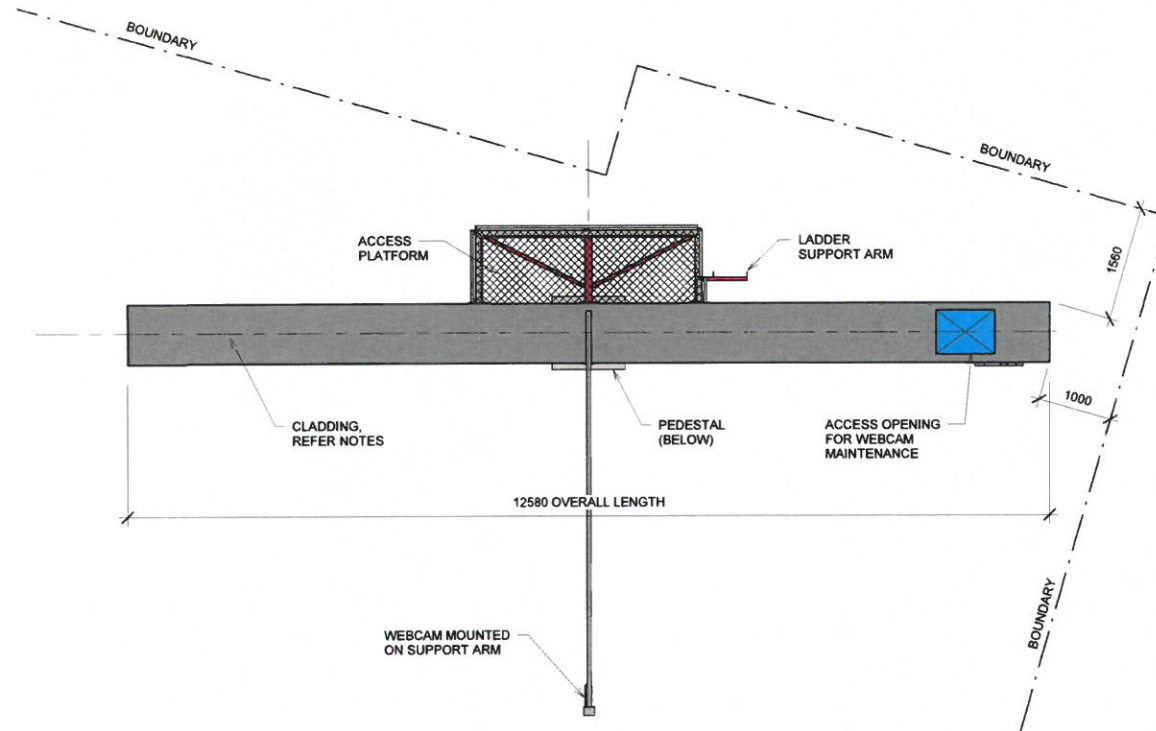
Date: 15/1/18

Project: 1



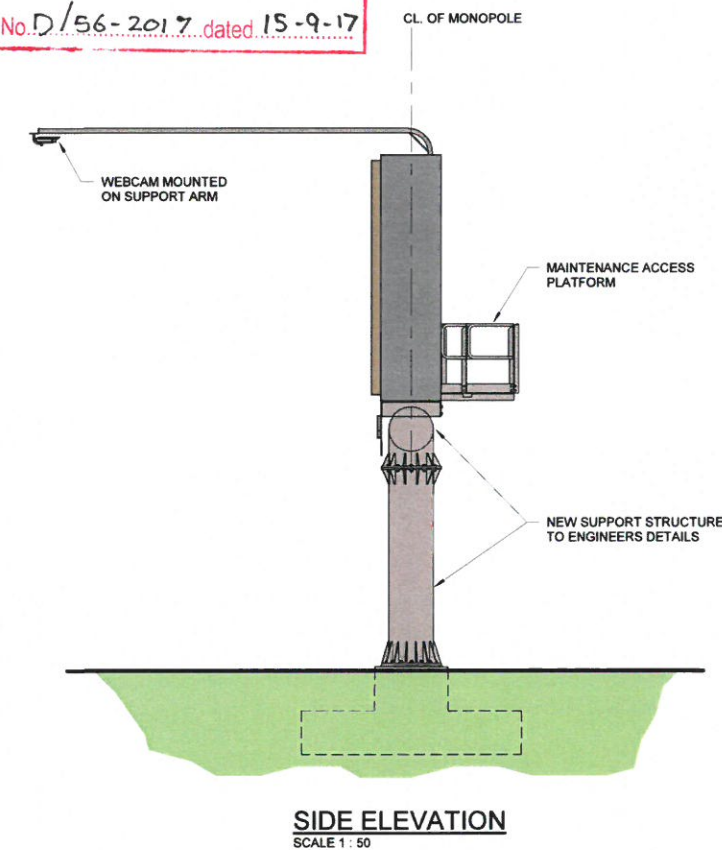
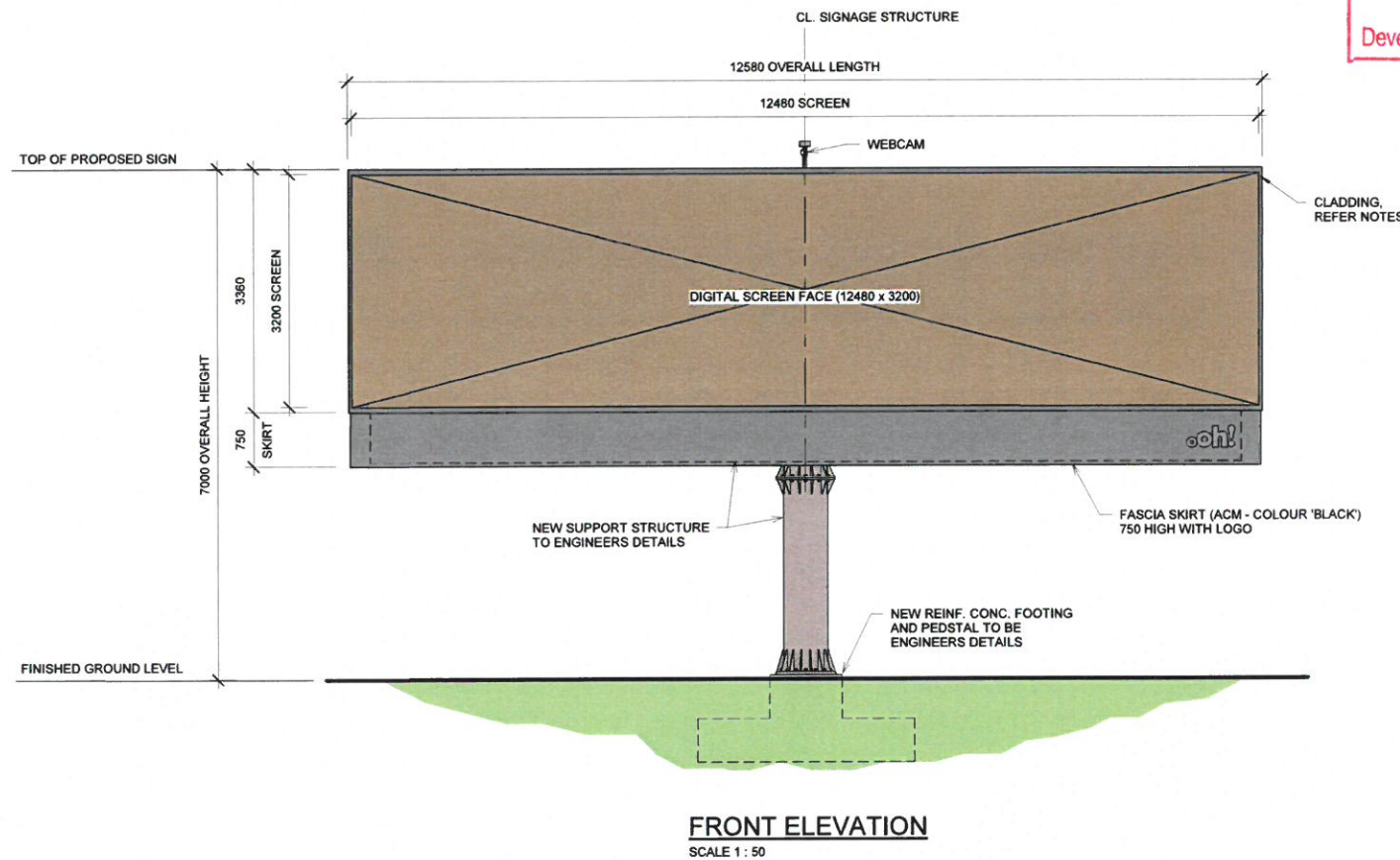
NOTES

1. SCALES AS SHOWN.
2. DIMENSIONS SHOWN ARE IN MILLIMETRES.
3. CLADDING TO BASE AND SIDES SHALL BE 'LOCKER GROUP PERFORATED MESH R02411' - 2.0mm ALUMINIUM SHEET, OR APPROVED EQUIVALENT. POWDER COATED PAINT COLOUR 'MONUMENT'.
4. TOP OF SIGN BOX TO BE FITTED WITH 50 x 50 x 4. DIA. WELDMESH PANELS FIXED IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS.



LOCALITY PLAN
NOT TO SCALE

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1 ISSUED FOR INFORMATION 7/12/17

Issue Description Date

Status

CONSTRUCTION

Scale 1:50

Current Issue Signatures

Original Size A1

Height Datum DATUM

Grid Grid

Filename: F:\A0084201\0005436-30 Rockhampton Digital Signage\Drawings\Rockhampton 1.rvt

Client

oh!media

oh!Media

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ARCADIS

Level 5, 141 Walker Street

North Sydney NSW 2060

Australia

ABN 76 104 485 289

Tel: +61 (0)2 8907 9000

Fax: +61 (0)2 8907 9001

www.arcadis.com

Project

PROPOSED ADVERTISING

SIGNAGE, LOT 21 15 GLADSTONE

ROAD ALLENSTOWN

ROCKHAMPTON

Title

GENERAL ARRANGEMENT

Drawing No. DA.01

Project No. 10005436-30

Issue 1

Date Plotted: 7/12/2017 4:58:11 PM