

# Teal Street, Kooragang

## Proposed Westbound Static Sign Traffic Safety Assessment

oOh!media

16 May 2022



**Gold Coast**

Suite 26, 58 Riverwalk Avenue  
Robina QLD 4226  
P: (07) 5562 5377

**Brisbane**

Level 2, 428 Upper Edward Street  
Spring Hill QLD 4000  
P: (07) 3831 4442

**Sydney**

Studio 203, 3 Gladstone Street  
Newtown NSW 2042  
P: (02) 9557 6202

**W:** [www.bitziosconsulting.com.au](http://www.bitziosconsulting.com.au)

**E:** [admin@bitziosconsulting.com.au](mailto:admin@bitziosconsulting.com.au)

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*The assessment team has undertaken assessments of similar advertising sign proposals elsewhere in NSW and Australia. In addition to the use of NSW guidelines, our assessments are founded on road safety auditing principles and traffic safety risk assessments. Where a significant change in road safety risk has been identified due to the proposal, potential treatment measures to mitigate the change in risk have been suggested. However, the adoption of any or all the treatment measures does not warrant that the site is absolutely safe from incidents in the future whether they be related or unrelated to the proposed sign.*

**Document Issue History**

Report File Name	Prepared	Reviewed	Issued	Date	Issued to
P5478.001R Teal Street Kooragang WB Static Sign TSA	A. Suriono / S. Daizli	D. Bitzios	S. Daizli	18/01/2022	Steve Huang, oOh!media <a href="mailto:Steve.Huang@oohmedia.com.au">Steve.Huang@oohmedia.com.au</a>
P5478.002R Teal Street Kooragang WB Static Sign TSA	A. Suriono	S. Daizli	S. Daizli	16/05/2022	Steve Huang, oOh!media <a href="mailto:Steve.Huang@oohmedia.com.au">Steve.Huang@oohmedia.com.au</a>

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# 1. INTRODUCTION

## 1.1 Background

oOh!media is seeking development approval for the installation of a static advertising sign. The sign will be located on the northern side of the Teal Street eastbound carriageway near Curlew Street in Kooragang within the Port of Newcastle as shown in Figure 1.1.



*\*Sign location is indicative.  
Adapted from Nearmap*

**Figure 1.1: Location of the Proposed Static Sign**

Bitzios Consulting has been engaged by oOh!media to undertake a traffic safety assessment of the proposal.

The proposed development plan is provided in **Appendix A**.

## 1.2 Methodology

The process used to assess the impact of the proposal involved:

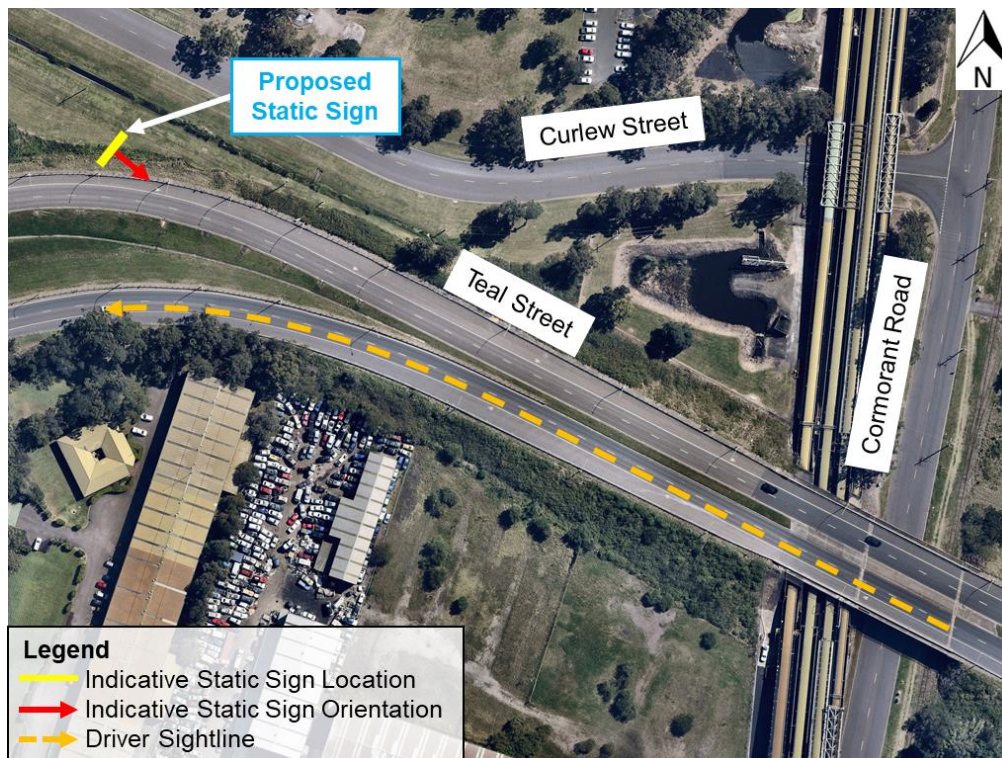
- A review of the viewing locations and sightlines to the proposed static sign to define the geographical scope of the assessment
- A review of the proposed static sign specifications
- A site inspection during day conditions to understand the road user's perspective of the sign, then a driver sightline assessment using images captured from in-vehicle video recordings
- A first-principles safety assessment of the proposed static sign, including reviewing road approaches, driver sightlines, surrounding environment and proximity of intersections
- A review of the most recently available five years of crash data in proximity to the proposed sign
- An assessment of the proposed static sign against:
  - State Environmental Planning Policy (Three Ports) 2013 (SEPP 2013)
  - State Environmental Planning Policy No. 64—Advertising and Signage (SEPP 64)
  - The Transport for NSW Advertising Sign Safety Assessment Matrix
  - The *Transport Corridor Outdoor Advertising and Signage Guidelines: Assessing development applications under SEPP 64* (Department of Planning and Environment, November 2017) (*Signage Guidelines*).



## 2. SIGN VIEWING LOCATIONS

### 2.1 Viewing Approaches

The static sign will face south-east towards westbound drivers on Teal Street. The driver sightlines to the sign from this approach are illustrated in Figure 2.1.



\*Sign location is indicative.  
Adapted from Nearmap

**Figure 2.1:** Driver Sightlines to the Proposed Sign

### 2.2 Driver Views

The westbound sign view from Teal Street during the daytime period is shown in Figure 2.2.



\*Sign location is indicative, not to scale and for illustration purposes only.

**Figure 2.2:** Daytime view from Teal Street westbound

### 3. STATIC SIGN SPECIFICATIONS

The specifications for the proposed static sign, as well as other relevant site information, are summarised in Table 3.1.

**Table 3.1: Specifications and Site Information for the Proposed Static Sign**

Attribute	Details
Location	Northern side of Teal Street eastbound near Curlew Street, Kooragang, NSW
Local Government Area	Newcastle
Land use zoning	SP1 Special Activities under the Three Ports SEPP*
Proposed facing direction	South-east
Proposed type of advertisement/sign	Freestanding advertisement – super 8
Proposed display format	Internally illuminated general advertising
Proposed advertising display area	8.32m x 2.24m = 18.63m <sup>2</sup>
Proposed overall advertising face	8.42m x 2.34m = 19.70m <sup>2</sup>
Display area greater than 20m <sup>2</sup> ?	No
Display area greater than 45m <sup>2</sup> ?	No
Is the site located within 250m of and visible from a classified road under the <i>Roads Act 1993</i> ?	Yes
Consent authority	NSW Department of Planning, Industry, and Environment
Does the sign contain moving parts?	No
Is it a Variable Message Sign?	No
Does it have any flashing or flickering content?	No

\*Signage in this land use zone is permitted with consent.

## 4. TRAFFIC SAFETY ASSESSMENT

### 4.1 Key Assumptions

The assessment of the proposed static sign was undertaken on the basis that:

- There is currently no advertising sign at the subject site. As such, the traffic safety assessment is based on an estimation of driver sightlines to where the static sign will be installed
- Illumination/lighting levels for the static sign will comply with the *Signage Guidelines* and maintain lighting levels to match the surrounding environment at the site.

### 4.2 Site Inspection

A site inspection was undertaken on Wednesday, 15 December 2021 during daytime hours (around 12:30pm). The weather was clear and traffic conditions were moderate. In-vehicle video recordings were taken for further analysis and for use in compiling photo montages of the driver's perspective on the approaches to the site.

The photo montages can be found in **Appendix B**.

### 4.3 Review of Crash Data

The sign could be noticed at 325m from the site. At this distance it would appear at the windscreen as 2.5cm wide and 0.7cm high. The sign presence might be noticeable at this distance, but its content would not be discernible.

Crash data for the approaching 325m section of Teal Street was sought from Transport for NSW and the most recent five years of crash data at the time of the data request was for 2016-2020. Zero crashes were reported within this viewable area. There are no prevailing crash issues on approach to the proposed sign.

### 4.4 Approach Sightline Assessments

#### 4.4.1 Description of Approaches

The westbound approach in proximity to the proposed sign is described in Table 4.1.

**Table 4.1: Approach Attributes – Teal Street westbound**

Attribute	Details
Posted speed limit	80km/h
Decision points within view of the site	There are no decision points within view of the site
Approach arrangement	1 uninterrupted bicycle shoulder and 2 uninterrupted traffic lanes
Sight length	From approximately 325m south-east of the sign
Minimum duration of visibility	15s at free-flow speed



## 4.4.2 Driver Sightline Assessment

### Process

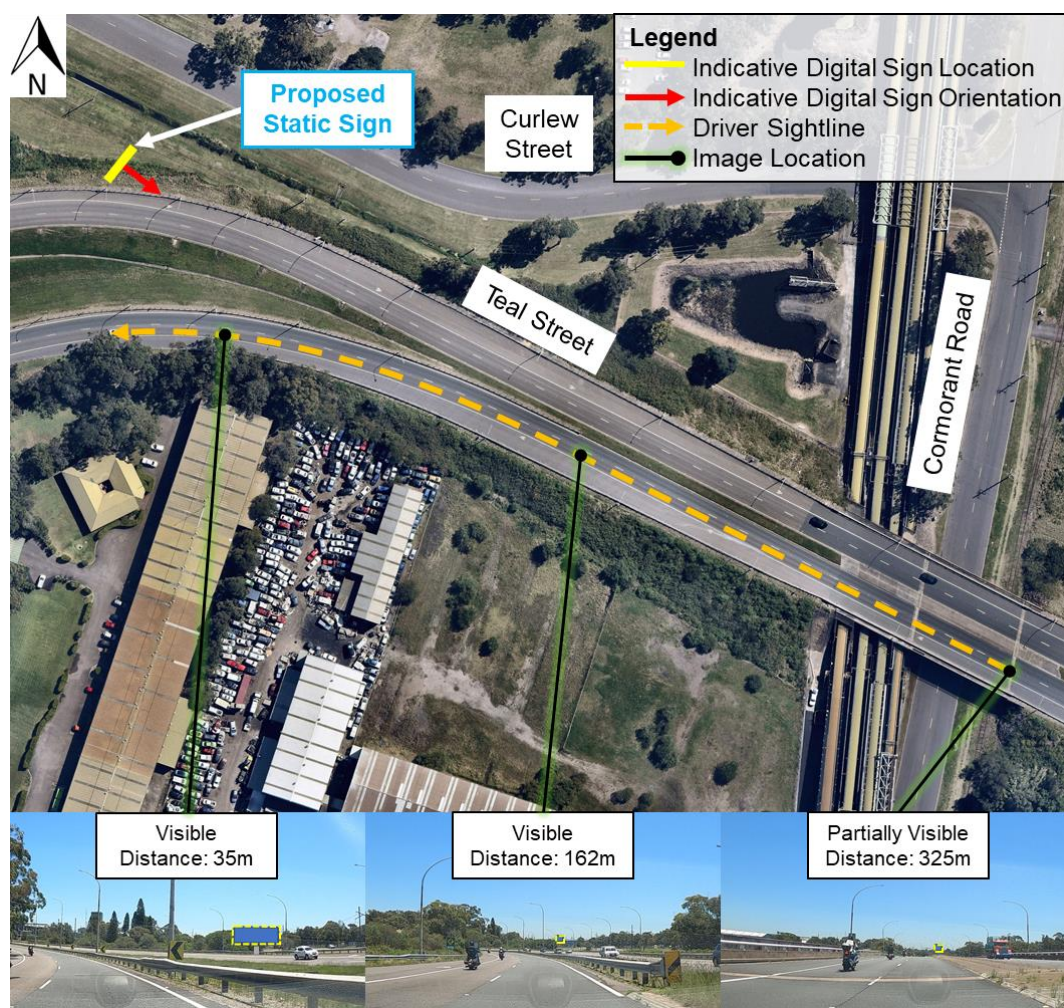
In-vehicle observations were undertaken to assess the subject site considering intersection points and other traffic control devices. An assessment of still images taken from the driver's perspective with a windscreen-mounted camera is presented in the following section. It should be noted that the assessment was undertaken based on a standard passenger car and as such a driver's eye height may vary for larger and smaller vehicles.

The premise of the assessment is to ensure that the proposed location of the static sign maintains a driver's sightline to intersections and traffic control devices and is not located as such that it may be confused with or confuse the interpretation of these traffic control devices.

The cognitive load within the driving environment on approach to the proposed sign is also considered. The locations where static signs could influence crash risk are locations where rapid, complex, multi-factor decision making is required.

### Teal Street westbound

The westbound approach along Teal Street is downhill and straight towards the proposed sign before a long left-hand bend as it becomes out of view. The sign will not obstruct sightlines to nor impede on the decision making which may lead to road hazards for drivers. Furthermore, this approach does not require rapid or complex decision making and is not in a location of high turning movements or cognitive load. The in-vehicle sightlines along Teal Street westbound are shown in Figure 4.1.



<sup>1</sup>Sign location is indicative, not to scale and for illustration purposes only. <sup>2</sup>Distances measured in Nearmap.

**Figure 4.1: In-vehicles sightlines along Teal Street westbound**

## 4.5 Compliance Assessment

### 4.5.1 SEPP 64 Schedule 1

The assessment against SEPP 64 Schedule 1 is provided in Table 4.2. Whilst the SEPP 64 criteria are quite generic, the basis for the responses to each criterion are provided next to them.

**Table 4.2: Assessment against SEPP 64 Schedule 1**

Section	Criteria	Response
8. Safety	Would the proposal reduce the safety for any public road?	<b>No</b> – The proposal would not reduce the safety to the public road because there are no crash-related risks apparent in the crash data.
	Would the proposal reduce the safety for pedestrians or bicyclists?	<b>No</b> – There are very few on-road cyclists in this area. In any event, the change in cyclist safety risk associated with a static sign installation is considered to be negligible.
	Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	<b>No</b> – There are unlikely to be (if any) pedestrians in this industrial area.

### 4.5.2 Transport for NSW Advertising Sign Safety Assessment Matrix

Table 4.3 details the assessment against the Transport for NSW Advertising Sign Safety Assessment Matrix.

**Table 4.3: Assessment against the Transport for NSW Advertising Sign Assessment Matrix**

Consideration	Response	Risk Rating	Risk Level
<b>A.</b> It obscures a view of an object/vehicle/pedestrian that creates a hazard	The proposed sign will be located behind all surrounding objects/vehicles/pedestrians etc.	1	Low
<b>B.</b> Sign positioning relative to travel direction	The proposed sign will be positioned so that only glance appreciation is required. It will be visually prominent westbound.	2	Low
<b>C.</b> It distracts a driver at a critical time	The proposed sign will be located over 200m from the Teal Street/Sandpiper Close intersection.	2	Low
<b>D.</b> It interferes with the effectiveness and safety of a traffic control device (e.g., traffic signs, traffic signals or other traffic control devices)	The proposed sign is unlikely to noticeably obstruct or interfere with any traffic control devices.	1	Low
<b>E.</b> Sign Clutter	No other advertising sign is visible when a driver is in view of the subject site.	3	Low

### 4.5.3 Transport Corridor Outdoor Advertising and Signage Guidelines Table 3

Table 4.4 details the assessment against relevant road safety criteria in Section 3 of the *Signage Guidelines*.

**Table 4.4: Assessment against relevant Signage Guidelines Road Safety Criteria**

Criteria	Response
<b>Road clearance</b>	
<p>a. The advertisement must not create a physical obstruction or hazard. For example:</p> <ul style="list-style-type: none"> <li>i. Does the sign obstruct the movement of pedestrians or bicycle riders? (e.g., telephone kiosks and other street furniture along roads and footpath areas)?</li> <li>ii. Does the sign protrude below a bridge or other structure so it could be hit by trucks or other tall vehicles? Will the clearance between the road surface and the bottom of the sign meet appropriate road standards for that particular road?</li> <li>iii. Does the sign protrude laterally into the transport corridor so it could be hit by trucks or wide vehicles?</li> </ul>	<p>The proposed sign will not obstruct the movement of bicycle riders or protrude laterally into the transport corridor as it is raised on the roadside.</p>
<b>Line of sight</b>	
<p>To maximise visibility of the road and minimise the time a driver's attention is directed away from the road, the following criteria apply to all advertising signage:</p> <p>a. An advertisement must not obstruct the driver's view of the road, particularly of other vehicles, bicycle riders or pedestrians at crossings.</p>	<p>The advertisement will not obstruct the driver's view of the road, other vehicles, bicycle riders or pedestrians at crossings given its proposed raised location.</p>
<p>b. An advertisement must not obstruct a pedestrian or cyclist's view of the road.</p>	<p>The advertisement will not obstruct a pedestrian or cyclist's view of the road given its proposed raised location.</p>
<p>c. The advertisement should not be located in a position that has the potential to give incorrect information on the alignment of the road. In this context, the location and arrangement of signs' structures should not give visual clues to the driver suggesting that the road alignment is different to the actual alignment. An accurate photo-montage should be used to assess this issue.</p>	<p>The proposed advertisement is deemed not to be in a position that has the potential to give incorrect information on the road alignment. Daytime photo montages showing key approaches to the site are provided in <b>Appendix B</b> of this report.</p>
<p>d. The advertisement should not distract a driver's attention away from the road environment for an extended length of time. For example:</p> <ul style="list-style-type: none"> <li>i. Does the sign obstruct the movement of pedestrians or bicycle riders? (e.g. telephone kiosks and other street furniture along roads and footpath areas)?</li> <li>ii. The sign should not be located in such a way that the driver's head is required to turn away from the road and the components of the traffic stream in order to view its display and/or message. All drivers should still be able to see the road when viewing the sign, as well as the main components of the traffic stream in peripheral view.</li> </ul>	<p>The proposed advertisement will be located so that only glance appreciation is required, meaning drivers would not need to turn away from the road or traffic stream in order to view its display and/or message.</p>



Criteria	Response
e. The sign should be oriented in a manner that does not create headlight reflections in the driver's line of sight. As a guideline, angling a sign five degrees away from right angles to the driver's line of sight can minimise headlight reflections. On a curved road alignment, this should be checked for the distance measured back from the sign that a car would travel in 2.5 seconds at the design speed.	The advertisement will not create headlight reflections in the driver's line of sight given its proposed raised location and it will not tilt down towards them.
<b>Proximity to decision making points and conflict points</b>	
a. The sign should not be located: <ul style="list-style-type: none"> <li>i. less than the safe sight distance from an intersection, merge point, exit ramp, traffic control signal or sharp curves</li> <li>ii. less than the safe stopping sight distance from a marked foot crossing, pedestrian crossing, pedestrian refuge, cycle crossing, cycleway facility or hazard within the road environment</li> <li>iii. so that it is visible from the stem of a T-intersection.</li> </ul>	The proposed sign will not be located near any decision points when drivers are approaching in proximity of the sign.
b. The placement of a sign should not distract a driver at a critical time. In particular, signs should not obstruct a driver's view: <ul style="list-style-type: none"> <li>i. of a road hazard</li> <li>ii. to an intersection</li> <li>iii. to a prescribed traffic control device (such as traffic signals, stop or give way signs or warning signs)</li> <li>iv. to an emergency vehicle access point or Type 2 driveways (wider than 6-9m) or higher.</li> </ul>	The proposed sign will not be located near any decision points when drivers are approaching in proximity of the sign.
<b>Advertising signage and traffic control devices</b>	
a. The advertisement must not distract a driver from, obstruct or reduce the visibility and effectiveness of, directional signs, traffic signals, prescribed traffic control devices, regulatory signs or advisory signs or obscure information about the road alignment.	The advertisement will not distract a driver from or reduce the visibility and effectiveness of directional signs, traffic signals, other traffic control devices, regulatory signs or advisory signs or obscure information about the road alignment given its proposed raised location.
b. The advertisement must not interfere with stopping sight distance for the road's design speed or the effectiveness of a prescribed traffic control device. For example: <ul style="list-style-type: none"> <li>i. Could the advertisement be construed as giving instructions to traffic such as 'Stop', 'Halt' or 'Give Way'?</li> <li>ii. Does the advertisement imitate a prescribed traffic control device?</li> <li>iii. If the sign is in the vicinity of traffic lights, does the advertisement use red, amber or green circles, octagons, crosses or triangles or shapes or patterns that may result in the advertisement being mistaken for a traffic signal?</li> </ul>	<p>Conditions can be imposed by the consent authority to ensure that sign content, design, imagery, and messages neither replicate nor can be mistaken for a prescribed traffic control device or instruction to drivers.</p> <p>For example, advertisements must not instruct drivers to perform an action such as 'Stop'.</p>



## 5. CONCLUSIONS

The key conclusions from the traffic safety assessment of the proposed installation of a static advertising sign on the northern side of the Teal Street eastbound carriageway near Curlew Street in Kooragang are summarised as follows:

- There is currently no advertising sign at the site
- The proposed sign will not obstruct or interfere with the view of or restrict sight distances to any intersections, traffic control devices, vehicles, pedestrians or cyclists given its location on the roadside
- The approach to the sign has recorded crashes over the past five years of available data. It is not an inherently unsafe location
- The proposed sign is not expected to reduce the safety of any traffic, pedestrians or cyclist movements given its location on the roadside. It will be located within a driver's ordinary field of view and a glance to the sign will still permit co-incident recognition of all potential road hazards and vehicle, pedestrian and cyclist movements in the forward view
- A review of available five years of crash data within 325m of the site was undertaken and the data showed that zero crashes were reported within the viewable area to the proposed static sign. As such, this location is not inherently unsafe
- The proposed sign complies with the requirements of SEPP 64, the Transport for NSW Advertising Sign Safety Assessment Matrix and *Signage Guidelines*.

Given the above conclusions, the static sign should be approved as proposed.

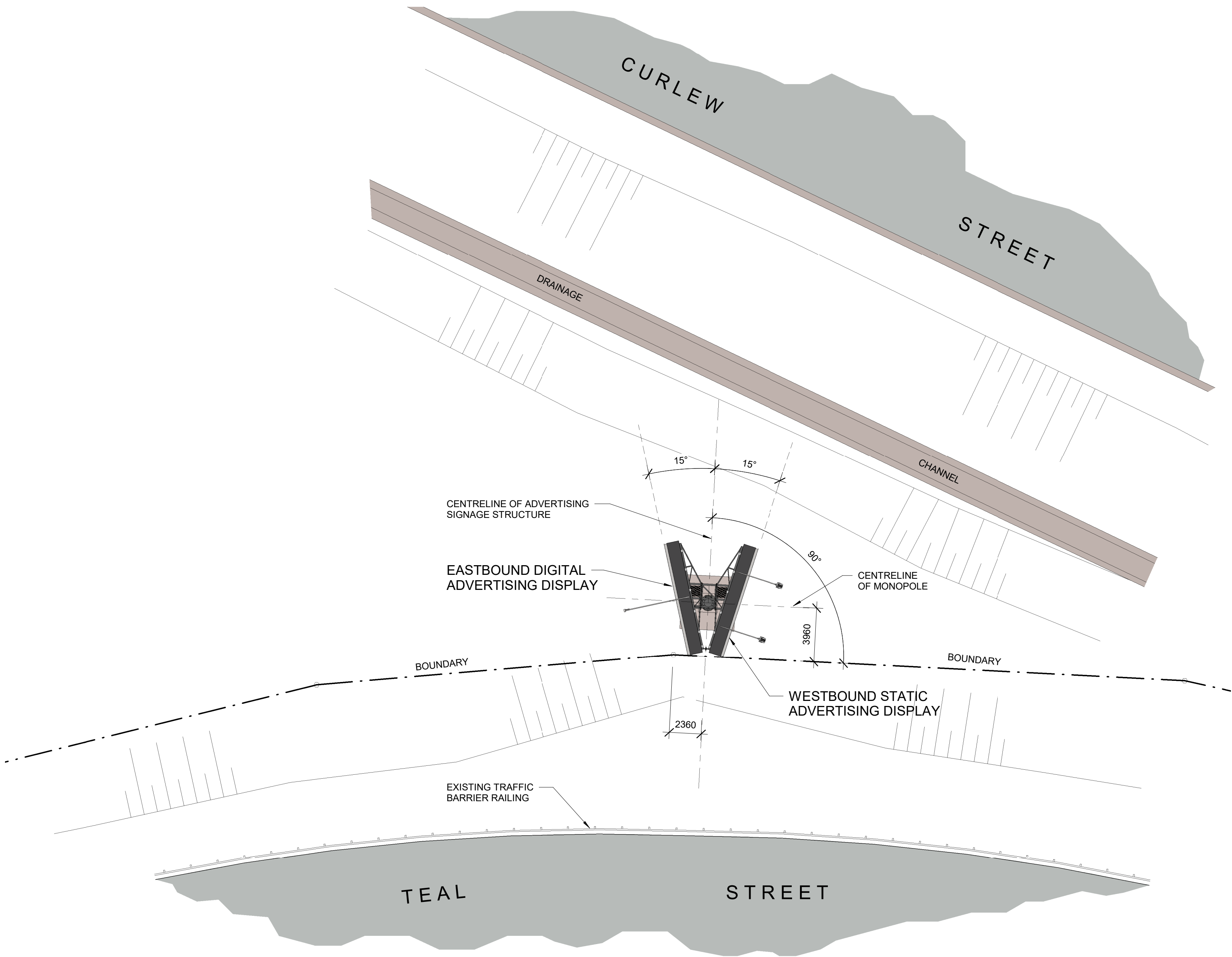
## Appendix A: Proposed Development Plan





1. SCALES AS SHOWN.
2. DIMENSIONS SHOWN ARE IN MILLIMETRES.
3. CLADDING TO BASE AND SIDES SHALL BE 'LOCKER GLODIP' PERFORATED MESH RIBS - 1.2 - 2.0mm ALUMINIUM SHEET - APPROVED EQUIVALENT POWDER COATED PAINT COLOUR 'MONUMENT'.
4. MONOPOLE AND ASSOCIATED STEELWORK TO BE PAINTED - 'COLOUR MONUMENT'.
5. EASTBOUND DIGITAL ADVERTISING SIGN EQUIPPED WITH WEBCAM ON SUPPORT ARM.
6. WESTBOUND STATIC ADVERTISING SIGN EQUIPPED WITH 2 No. OVERHEAD 'TIGER' LED SHOEBOX LIGHTS ON SUPPORT ARMS.

NOT TO SCALE



SCALE 1 : 200

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3	FASCIA SKIRT REMOVED / HEIGHT AMENDED	21/03/22
2	RE-ISSUED FOR CLIENT REVIEW	03/03/22
1	ISSUED FOR CLIENT REVIEW	03/03/22

Issue	Description	Date
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Status

**PRELIMINARY**  
NOT TO BE USED FOR CONSTRUCTION

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oOh!Media  
Level 2, 73 Miller Street  
North Sydney NSW 2060  
Tel:  
+61 (0)2 9927 9555



Level 16, 580 George Street  
North Sydney NSW 2000  
Australia  
ABN 76 104 485 289

Tel: +61 (0)2 8907 9000  
Fax: +61 (0)2 8907 9001  
[www.arcadis.com](http://www.arcadis.com)

Project

PORT OF NEWCASTLE  
PROPOSED ADVERTISING  
STRUCTURE TEAL STREET,  
KOORAGANG

Title

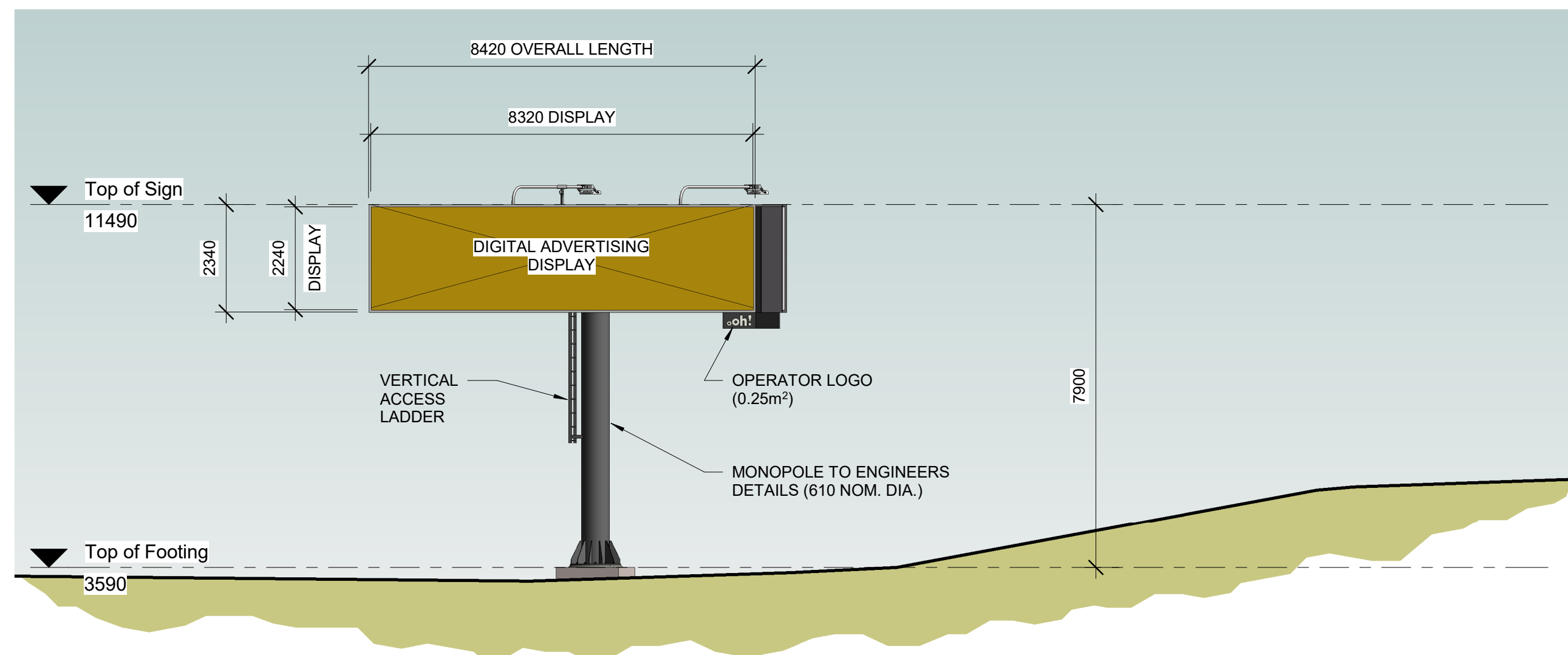
GENERAL ARRANGEMENT -  
SHEET 1

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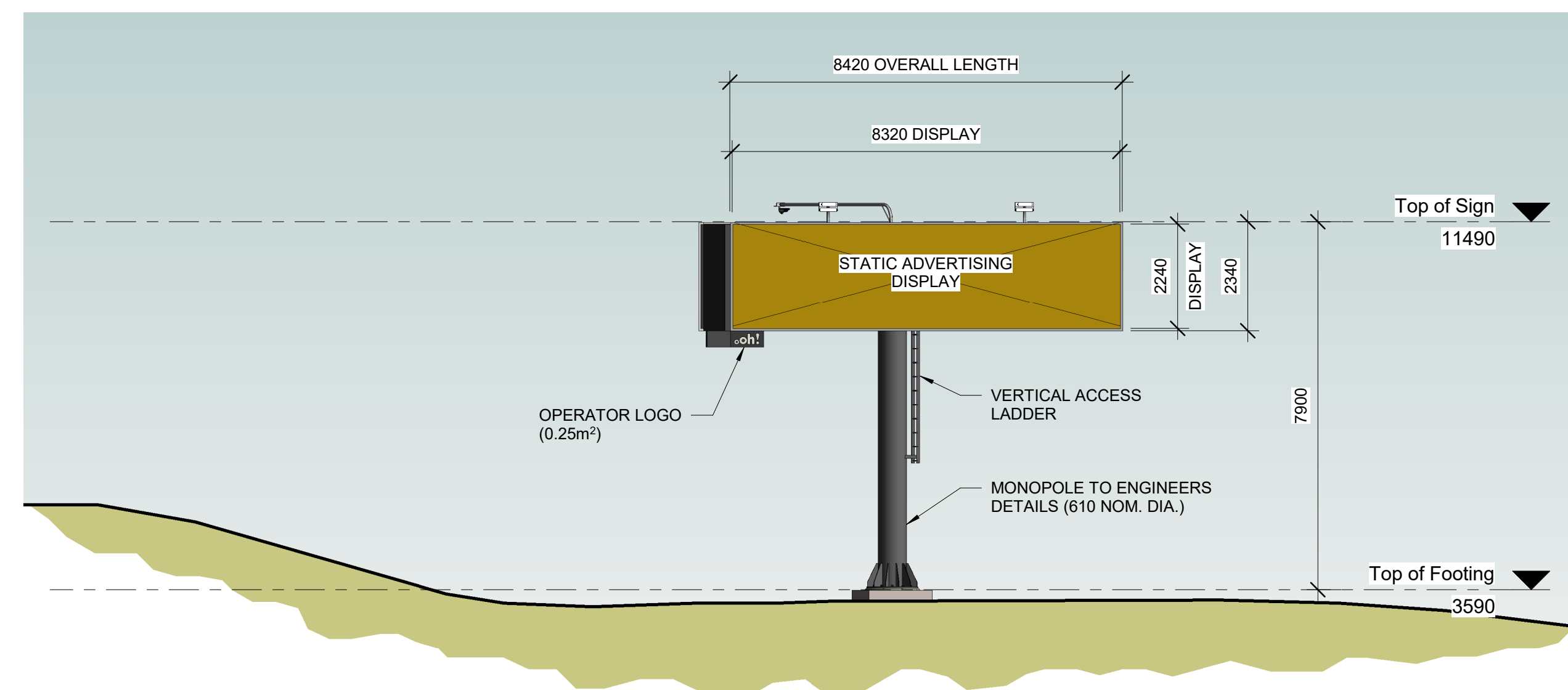
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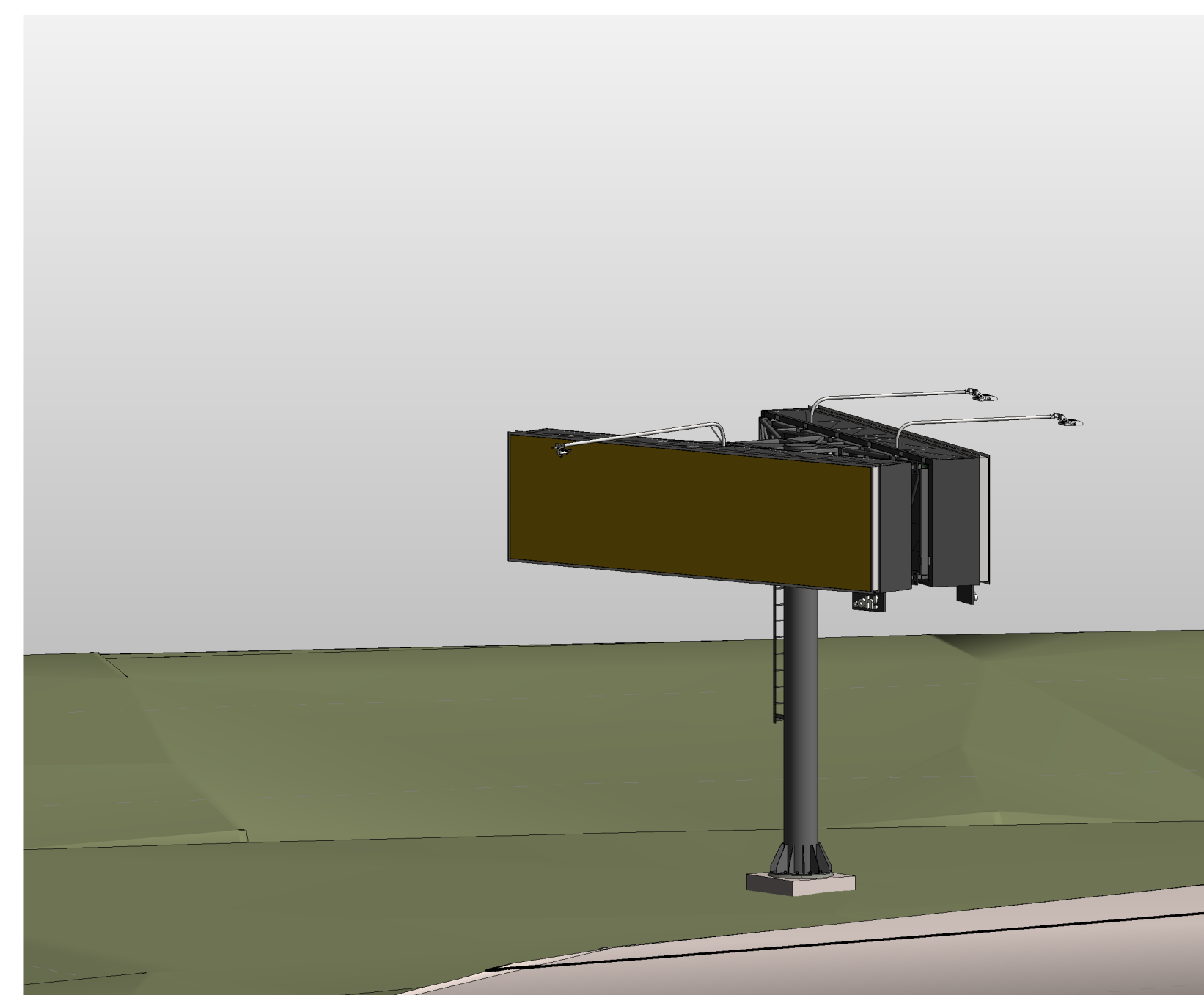




## EASTBOUND ADVERTISING SIGNAGE ELEVATION



## WESTBOUND ADVERTISING SIGNAGE ELEVATION



## 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. MONOPOLE AND ASSOCIATED STEELWORK TO BE PAINTED - COLOUR 'MONUMENT'.
5. EASTBOUND DIGITAL ADVERTISING SIGN EQUIPPED WITH WEBCAM ON SUPPORT ARM.
6. WESTBOUND STATIC ADVERTISING SIGN EQUIPPED WITH 2 No. OVERHEAD 'TIGER' LED SHOEBOX LIGHTS ON SUPPORT ARMS.

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3	FASCIA SKIRT REMOVED / HEIGHT AMENDED	21/03/22
2	RE-ISSUED FOR CLIENT REVIEW	03/03/22
1	ISSUED FOR CLIENT REVIEW	03/03/22

Issue	Description	Date
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Status	PRELIMINARY
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PRELIMINARY  
NOT TO BE USED FOR CONSTRUCTION

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oOhlMedia

Level 2, 73 Miller Street  
North Sydney NSW 2060  
Tel: +61 (0)2 9927 9555

North Sydney NSW 2060      Tel (0)2 9527 5555



**ARCADIS**

Level 16, 580 George Street

North Sydney NSW 2000  
Australia

ABN 76 104 485 289

Tel: +61 (0)2 8907 9000  
Fax: +61 (0)2 8907 9001

Fax: +61 (0)2 8907 9001  
www.arcadis.com

Project	PORT OF NEWCASTLE
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PORT OF NEWCASTLE  
PROPOSED ADVERTISING

PROPOSED ADVERTISING  
STRUCTURE TEAM STREET

STRUCTURE TEAL STREET,  
KOOBAGANG

KOORAGANG

Title	
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## GENERAL ARRANGEMENT

GENERAL ARRANGEMENT -  
SHEET 2

SHEET 2

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Drawing No.	Project No.	Issue
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## Appendix B: Photo Montages



# 1. Teal Street westbound approach (Day)

