

14 September 2023

Daniel Seraglio  
Development Director, Acquisitions  
Mirvac Group  
Level 28, 200 George Street  
Sydney NSW 2000

**Re: Update to Planning Proposal - Georges Cove Marina - Acoustic report**

Dear Daniel,

## 1 Introduction

EMM Consulting Pty Limited (EMM) has been engaged by Mirvac to respond to Liverpool City Council (Council) regarding a request to update the current planning proposal for the Georges Cove Marina, Moorebank NSW.

Mirvac has received advice from Council requesting updates to the planning proposal document, as well as updates to selected technical reports.

This letter responds to Council's request relating to the report *Georges Cove Marina Residential Planning Proposal Acoustic Study* (Acoustic report) prepared by EMM dated 24 April 2018, as stated in Council's correspondence to Mirvac dated 14 June 2023.

## 2 EMM response

### 2.1 Intrusive impacts

#### 2.1.1 Council comment

Attachment A (Section 2.D) of the Council RFI email states in relation to the Acoustic report:

The 'Georges Cove Marina Residential Planning Proposal Acoustic Study' (Report J17357RP1, Final, Version v3) prepared by EMM dated 24th April 2018 focuses primarily on amenity noise impacts arising from the adjoining Moorebank Recycling Facility. In addition to amenity impacts, consideration must be given to intrusive noise impacts on future residential receivers occupying the proposed marina site.

#### 2.1.2 EMM response

Intrusive noise impacts from the adjoining Moorebank Recycling Facility in the Acoustic report were assessed in accordance with the NSW *Noise Policy for Industry* (NPfI) (EPA 2017). Section 4.1 of the Acoustic report discusses

the likely industrial noise impacts from the Moorebank Recycling Facility and demonstrates that only noise from road truck movements on the Moorebank Recycling Facility private access road would affect the proposed Georges Cove Marina residential buildings. The Acoustic report then concludes that impacts from the Moorebank Recycling Facility should be assessed against the project amenity noise levels only as per the NPfI, which is presented in Section 5.2 of the Acoustic report.

Notwithstanding, EMM notes that the Moorebank Recycling Facility land has been the subject of a planning proposal (received by Council on 5 March 2020) to rezone this site (often referred to as 'Site E' within the Moorebank East Precinct) for residential and commercial development. We understand that at a recent Council meeting (26 July 2023), it was resolved that Council would proceed with a planning proposal to rezone the first 40 m of land near the river as RE2 Private Recreation and the remainder of the land as E4 General Industrial. The continued operation as a concrete crushing and recycling facility (under the current heavy industrial use zoning) was not supported.

On this basis it appears to be the intention of Council to develop the area for general industrial and private recreation use, and it is highly unlikely that the Moorebank Recycling Facility land will be used for heavy industrial purposes. The impacts associated with recycling facility relating to noise amenity and/or intrusiveness may therefore become a redundant consideration for the Georges Cove Marina planning proposal.

## 2.2 Project amenity noise levels

### 2.2.1 Council comment

Attachment A (Section 2.D) of the Council RFI email states in relation to the Acoustic report:

The NSW EPA's Noise Policy for Industry (2017) confirms that the project amenity noise level for industrial developments = recommended amenity noise level (Table 2.2) minus 5 dB(A). EMM is requested to confirm how the project amenity noise levels within their report were derived as they are consistent with the recommended amenity noise levels and were not adjusted as outlined in the Noise Policy for Industry (2017).

### 2.2.2 EMM response

The project amenity noise levels presented in the Acoustic report were established in accordance with the NPfI to assess the potential industrial noise impacts from the Moorebank Recycling Facility at the proposed Georges Cove Marina residential buildings. Note 2 of Table 4.2 in the Acoustic report states that project amenity noise levels should be equal to the recommended amenity noise levels as no other industries (other than the Moorebank Recycling Facility) are present or likely to be introduced into the area. Adjustment (i.e. minus 5 dB) to the recommended amenity noise levels in Table 2.2 of the NPfI is to ensure that noise from all industrial sources within an area (existing or new) does not exceed the recommended amenity noise levels. One of the exceptions to this method, as stated in Section 2.4 of the NPfI, is as follows:

4. Where cumulative industrial noise is not a necessary consideration because no other industries are present in the area, or likely to be introduced into the area in the future. In such cases the relevant amenity noise level is assigned as the project amenity noise level for the development.

Therefore, the project amenity noise levels presented in the Acoustic report were appropriately established as per the NPfI at the time the assessment was undertaken.

Further, as discussed in Section 2.1.2, it is highly unlikely that the Moorebank Recycling Facility land will be constructed. Therefore, impacts associated with the Moorebank Recycling Facility relating to noise amenity and mitigation recommendations proposed in the Acoustic Report may therefore become a redundant consideration for the Georges Cove Marina planning proposal.

Moorebank Recycling Facility land may be developed for general industrial and private recreation use in the future, likely introducing new industrial sources south of the Georges Cove Marina site. If this is the case, an

updated assessment of noise impacts from future industrial sites (including the establishment of relevant noise amenity and/or intrusiveness levels) will be undertaken in accordance with the NPfI.

## 2.3 Road traffic noise impacts

### 2.3.1 Council comment

Attachment A (Section 2.D) of the Council RFI email states in relation to the Acoustic report:

The inclusion of residential uses within the proposed Georges Cove Marina has the potential to generate additional traffic on surrounding roads. Road traffic noise impacts associated with the proposed marina development comprising residential uses must be assessed in accordance with the NSW Road Noise Policy published by the Department of Environment, Climate Change and Water NSW in March 2011.

### 2.3.2 EMM response

Road traffic noise impacts associated with the proposed marina development comprising residential uses was assessed in accordance with the NSW Road Noise Policy (RNP) (DECCW 2011) in the Addendum letter report *Georges Cove Marina Residential Planning Proposal – Road traffic noise assessment* (RTNA) issued by EMM on 20 April 2019. The road traffic noise assessment was prepared as a supplementary document to accompany the Acoustic report.

The road traffic noise assessment prepared by EMM in 2019 concluded that noise levels from road traffic generated by the proposed development would satisfy the RNP criteria. The Addendum report is provided in Appendix A of this letter.

## 3 Conclusion

The Acoustic report and associated documents prepared for the current Georges Cove Marina planning proposal has been reviewed in response to comments made by Council.

EMM affirms that the Acoustic report and Addendum letter were prepared in accordance with relevant NSW noise policies as addressed herein and therefore is suitable as supporting documents for the planning proposal. Additional clarification to Council's comments is provided herein and trust this meets their needs.

Yours sincerely



**Teanuanua Villierme**

Associate Acoustic Consultant

[tvillierme@emmconsulting.com.au](mailto:tvillierme@emmconsulting.com.au)

Review: Najah Ishac 14/9/2023

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# Appendix A

## Addendum letter (EMM 2019)

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20 April 2019

Adam Perrott  
Project Director  
Mirvac  
Level 28, 200 George Street  
Sydney NSW 2000

**Re: Georges Cove Marina Residential Planning Proposal - Road traffic noise assessment**

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## 1 Introduction

EMM Consulting Pty Limited (EMM) has been engaged by Mirvac to prepare an addendum report to assess road traffic noise from the proposed Georges Cove Marina residential development (the proposed development) and the adjacent northern land (RE2 zoning) intended to be rezoned under RZ-1/2019 (RE2 land).

This report provides a response to a request made by the Liverpool City Council (NSW) (Council) in regard to the report *J17357\_Georges Cove Marina Planning Proposal\_Acoustic* (the acoustic report) prepared by EMM (dated 24 April 2018) as part of the planning proposal lodged for the proposed development and the adjoining RE2 land. Council is seeking an update to the acoustic report to consider potential road traffic noise impact from the proposed development and adjoining RE2 land on the surrounding roads, in accordance with the NSW Department of Environment, Climate Change and Water's (DECCW) Road Noise Policy (RNP) (2011).

This report presents the findings of the road traffic noise assessment for the nearest residential facades located on the surrounding roads. The surrounding roads considered relevant to this assessment include the road linking the proposed development to the Moorebank Cove residential development (ie Road 2), Brickmakers Drive (to the west) and Newbridge Road (to the north).

It is noted that the Moorebank Recycling consent applicable to the property immediately to the south of the marina has lapsed and any future development on this land cannot be industrial. This land remains vacant at the present time and we understand there is no current DA with Council for development of any kind. Therefore, impact from industrial noise and road traffic movements previously considered from the Moorebank Recycling Facility are no longer relevant to the proposed development. Further, Council's comments relating to industrial noise impacts from the Moorebank Recycling Facility are considered to be no longer relevant to the proposed development and hence have not been discussed further in this report.

## 2 Road traffic noise criteria

The potential impacts of traffic noise resulting from the proposed development and adjoining RE2 land on public roads are assessed against criteria defined in the RNP (DECCW 2011). The application of appropriate criteria for the proposed development has followed the two-step process identifying the assessment and relative increase criteria as outlined in Section 3.4.1 of the RNP.

Table 2.1 presents the road traffic noise assessment criteria for residential land uses, reproduced from Table 3 of the RNP. The road linking the proposed marina development to Brickmakers Drive has been classified by Council as a collector road in their Development Control Plan (DCP) 2008 for Moorebank East

(Part 2.10). Hence, the relevant RNP category for noise assessment purposes is the sub-arterial road and corresponding criteria as shown in Table 2.1.

**Table 2.1 Road traffic noise assessment criteria for residential land uses**

Road category	Type of project/development	Assessment criteria, dB	
		Day (7 am–10 pm)	Night (10 pm–7 am)
Freeway/arterial/sub-arterial roads	<ul style="list-style-type: none"> <li>-Existing residences affected by noise from new freeway/arterial/sub-arterial road corridors.</li> <li>-Existing residences affected by noise from new freeway/arterial/sub-arterial road corridors.</li> <li>-Existing residences affected by additional traffic on existing freeway/arterial/sub-arterial roads generated by land use developments.</li> </ul>	$L_{Aeq,15hr}$ 60 (external)	$L_{Aeq,9hr}$ 55 (external)

Source: RNP (DECCW 2011).

Additionally, the RNP states where existing road traffic noise criteria are already exceeded, any additional increase in total traffic noise level should be limited to 2 dB, which is generally accepted as the threshold of perceptibility by the human ear to a change in noise level.

In addition to meeting the assessment criteria, any significant increase in total traffic noise at receivers due to a development must be considered. Receivers experiencing increases in total traffic noise levels above those presented in Table 2.2 should be considered for mitigation.

**Table 2.2 Relative increase criteria for residential uses**

Road category	Type of project/development	Total traffic noise level increase, dB	
		Day (7 am–10 pm)	Day (7 am–10 pm)
Freeway/arterial/sub-arterial roads and transitways	New road corridor/redevelopment of existing road/land use development with the potential to generate additional traffic on existing road.	Existing traffic $L_{Aeq,15hr}$ +12 dB (external)	Existing traffic $L_{Aeq,9hr}$ + 12 dB (external)

Source: RNP (DECCW 2011).

### 3 Traffic generation

The planning proposal is seeking to amend Council's Local Environmental Plan (LEP) to enable residential development within the marina site. The proposed marina development comprises 353 apartments (above ground floor retail facilities) plus 21 terraces. The proposed marina development will incorporate 594 car spaces, provided by external parking areas and in basement car parks. Vehicular access from Brickmakers Drive from and to the proposed development will be provided via a Council classified collector road comprising Road 7 (bridge) and Road 2 as per Council's DCP. Road 2 is proposed to be constructed as part of the Moorebank Cove residential development immediately north of the project, also proposed by Mirvac. Therefore, road traffic noise levels predicted at residential facades on Road 2 have been assessed against the  $L_{Aeq,period}$  criteria for sub-arterial roads. Concept drawings provided by Mirvac which show Moorebank Cove's Road 2 and Road 7 are provided in Appendix A.

It is noted that the northern section of Road 2 (to the north of Road 7) will not be used by traffic generated by the proposed marina development and therefore noise levels predicted at residences on Road 2 as part of this assessment do not apply at residences north of the bridge.

The adjoining RE2 land to the north is expected to form part of the Moorebank Cove residential development following the sought rezoning approval. This parcel of land is proposed to accommodate approximately eight residential lots with dwellings, and hence road traffic movements from those are expected to be insignificant in comparison to movements expected from the proposed marina development.

## 4 Road traffic noise assessment

### 4.1 Newbridge Road and Brickmakers Drive

Traffic from the proposed development will use Newbridge Road and Brickmakers Drive to access or leave the proposed development. Residences facing those roads are unlikely to be impacted by road traffic movements from the proposed development. Calculated total increase in traffic volumes as a result of vehicles associated with the development is up to 2% on Newbridge Road and 11% on Brickmakers Drive. These increases in traffic volumes would lead to a negligible increase (<0.5 dB) in road traffic noise at most affected residential facades. Therefore, the impact of road traffic noise associated with the proposed development is predicted to be negligible for existing residences on Newbridge Road and Brickmakers Drive and within the 2 dB allowable increase for land use developments as described in the RNP.

### 4.2 Road 2 (Moorebank Cove)

The US Federal Highway Administration (FHWA) Traffic Noise method was used to calculate road traffic noise levels for the proposed development. This method was developed by the US FHWA and considers traffic flow volume, average speed, angle of view, attenuation due to distance, ground effects, facade reflection and shielding (eg from barriers). The FHWA method is more suited to relatively lower traffic volumes than other algorithms.

The road traffic volumes used for the calculations were referenced from the EMM traffic report *20180410 Transport planning assessment* (2018), and are as follows:

- Moorebank Cove residential development – 1,610 daily movements;
- Marina commercial development – 555 daily movements; and
- Marina residential development – 1,810 daily movements.

The vehicle speed used in the noise model for Road 2 was 50 km/h and the percentage of heavy vehicles adopted was approximately 5% for marina commercial traffic and 1% for residential traffic. It has also been assumed that approximately one-third (ie 33%) of Moorebank Cove traffic movements would be on Road 2.

Assumptions relating to road design and residential setbacks adopted for the assessment of road traffic noise impact at future Moorebank Cove residences on Road 2 were based on concept drawings provided by Mirvac (refer Appendix A). The future Moorebank Cove residences located on Road 2 will generally consist of two storey dwellings and will be generally configured as follows:

- ground level – living room, dining room, family room, powder room, store room, laundry and kitchen; and
- first level – bedrooms, bathrooms and study (for some).

The representative assessment locations used for the future Moorebank Cove dwellings were at 1.5 m above ground level (single storey locations) but the results are also relevant to two-storey homes as there is no ground level acoustic screening.

It has been assumed that the proposed development will be constructed after Moorebank Cove (residential area) and hence future traffic movements generated by Moorebank Cove has been adopted as 'existing' for the purpose of this assessment.

Road traffic noise levels calculated at the most affected residential façade(s) from 'existing' traffic (ie future Moorebank Cove residential) and the proposed marina development are shown in Table 4.1.

**Table 4.1 Road traffic noise results for nearest residential facades**

Location	Distance (road to nearest façade)	Period	Calculated 'existing' L <sub>Aeq,period</sub> , dB	Calculated 'proposed development' L <sub>Aeq,period</sub> , dB	Calculated future combined L <sub>Aeq,period</sub> , dB	RNP L <sub>Aeq,period</sub> criteria <sup>1</sup> , dB	Exceedance, dB
Residences on Road 2 <sup>2</sup>	11 m	Day	50 L <sub>Aeq,15h</sub>	57 L <sub>Aeq,15h</sub>	58 L <sub>Aeq,15h</sub>	60 L <sub>Aeq,15h</sub>	Nil
		Night	41 L <sub>Aeq,9h</sub>	49 L <sub>Aeq,9h</sub>	50 L <sub>Aeq,9h</sub>	50 L <sub>Aeq,9h</sub>	Nil

Notes: 1. Sub-arterial road criteria.  
2. Residences south of the bridge (Road 7).

The road traffic noise results show that future combined noise levels are predicted to satisfy the relevant RNP noise criteria for the day and night periods at the most affected residential façade(s) on Road 2. Therefore, no road traffic noise impact is expected from the proposed marina development at residences along Road 2.

In addition to meeting the assessment criteria, the increase in total traffic noise at residences on Road 2 due to the proposed marina development is predicted to satisfy the relative increase criteria of existing L<sub>Aeq,period</sub> +12 dB.

## 5 Conclusion

EMM has completed a road traffic noise assessment for the proposed marina development. Predicted road traffic noise levels at nearest residential facades on the surroundings roads were assessed against the RNP.

It was found that road traffic noise levels from traffic generated by the proposed development are unlikely to impact residences on Brickmakers Drive and Newbridge Road given the insignificant traffic movements likely to be generated on these roads.

Further, the results showed that road traffic noise levels likely to be generated by traffic from the proposed development at residences on Road 2 are predicted to satisfy the relevant day L<sub>Aeq,15h</sub> and night L<sub>Aeq,9h</sub> criteria. The increase in total traffic noise at residences on Road 2 due to the proposed marina development is also predicted to satisfy the relative increase criteria.

We trust the preceding meets your current requirements. If you have any questions or need any further information, please contact our office.



Yours sincerely

A handwritten signature in black ink, appearing to read 'T. Villierme', with a stylized, cursive script.

**Teanuanua Villierme**

Senior Acoustic Consultant

[tvillierme@emmconsulting.com.au](mailto:tvillierme@emmconsulting.com.au)

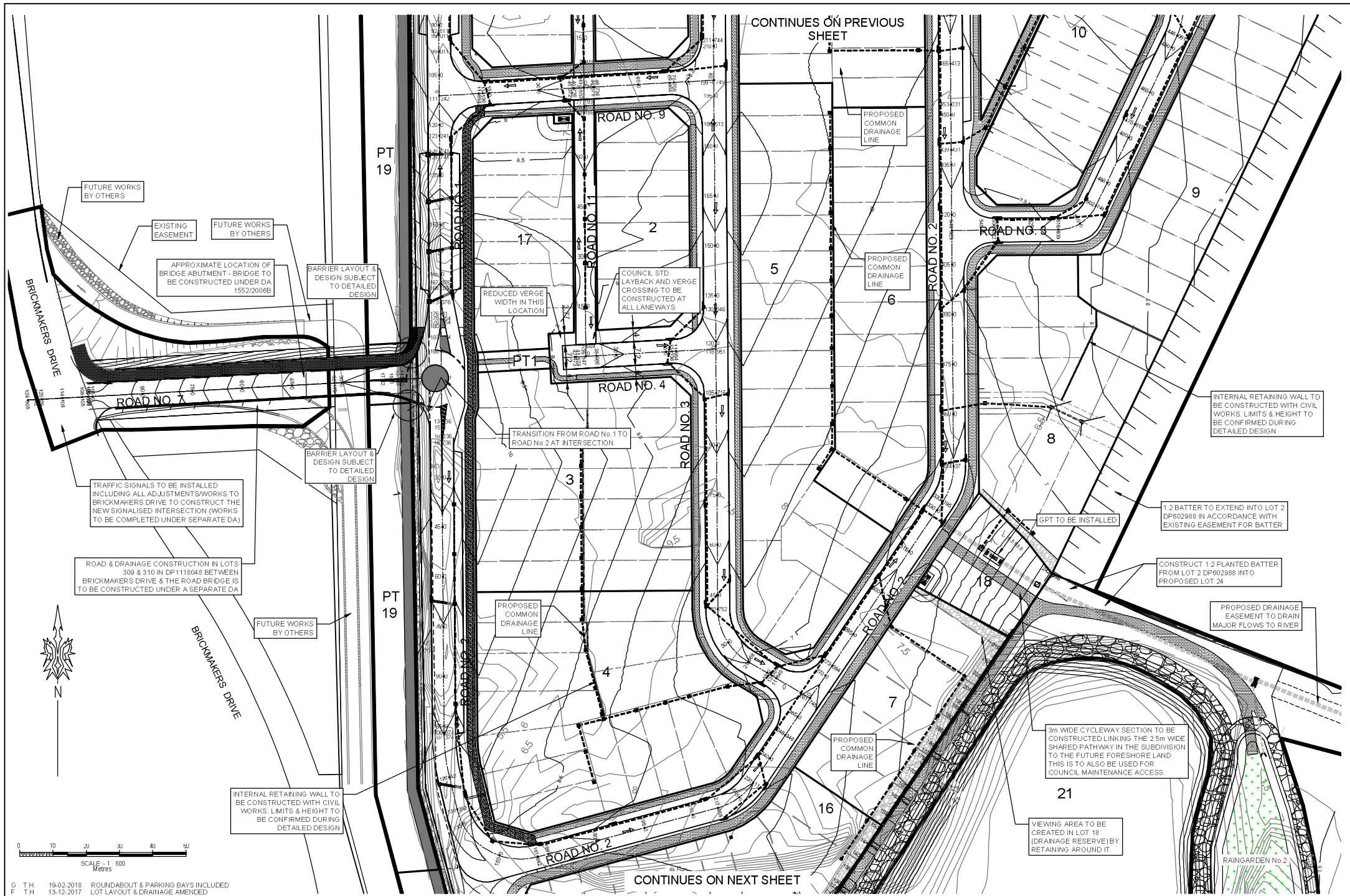
Review: Najah Ishac 20/4/2019

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Appendix A

# Moorebank Cove concept drawings

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Issue	App	Date	Description
E	TH	19-03-2018	ROUNDABOUT & PARKING BAYS INCLUDED
F	TH	13-12-2017	LOT LAYOUT & DRAINAGE AMENDED
D	TH	31-03-2017	MINOR AMENDMENTS TO THE LOT LAYOUT
C	TH	07-11-2016	LOT LAYOUT & SHEET NUMBERS AMENDED
B	TH	10-08-2016	LOT LAYOUT AMENDED
A	TH	15-07-2016	ISSUED FOR DA

Client: MIRVAC HOMES (NSW) PTY LTD.	Datum : AHD
Designed by : S.G.	Origin of Levels :
Date of Drawing : 15-07-2016	Date of Survey : N/A
Ratio (A3) : 1:1000/1:2000	

John M. Daly & Associates PTY LTD  
A.B.N. 88051977989

32 Idanthe Street  
P.O. BOX 25  
CAMPBELLTOWN N.S.W. 2560

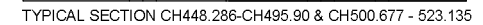
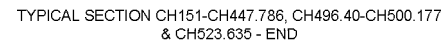
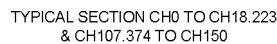
PH (02) 4625 5055  
FAX (02) 4628 2013  
email: admin@jmd.com.au

Project :	MOOREBANK COVE - STAGE 2 NEWBRIDGE ROAD, MOOREBANK	Sheet 8 of 26 sheets
	PLAN OF WORKS - SHEET 2 OF 3	Ref: 1400566
Locality : MOOREBANK	L.G.A. : LIVERPOOL	CAD Ref: S:\DATA\1\4\1400514005 EMM(ENG)\CAD\EG-RES\DA PLANS\1400566-PLAN 1

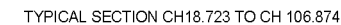
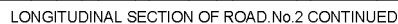
This plan is shown on the plan relates to the original plan, produced by JMD only. Any photocopying or printing from digital files provided (particularly PDF files) may significantly alter the ratio of this plan.







WEARING COURSE	25mm COMPACTED THICKNESS ASPHALTIC CONCRETE AC10
	25mm COMPACTED THICKNESS ASPHALTIC CONCRETE AC10
	7mm OR 10mm PRIMER SEAL
BASE COURSE	200mm COMPACTED THICKNESS DB020 (CH TO CH150)
	150mm COMPACTED THICKNESS DB020 (CH150 TO END)
SUB BASE COURSE	400mm COMPACTED THICKNESS CRUSHED SANDSTONE OR APPROVED EQUIVALENT
SUB BASE THICKNESS IS SUBJECT TO GEOTECHNICAL INVESTIGATION OF THE SUBGRADE LEVEL	
CONTRACTOR IS TO ENSURE TESTING AND REVISED PAVEMENT DESIGN IS CARRIED OUT PRIOR	
TO SUB-BASE MATERIAL PLACEMENT. TESTING IS TO BE CARRIED OUT BY A REGISTERED N.A.T.A	
LABORATORY. COMPARISON TO BE IN ACCORDANCE WITH INVESTIGATION SERIES	
DESIGN & MATERIAL AND SUBDIVISION ENGINEERING STANDARDS AND PLANNING GUIDELINES	



Project :	MOOREBANK COVE - STAGE 2 NEW BRIDGE ROAD, MOOREBANK		
	ROAD NO.2 - LONGITUDINAL SECTIONS, TYPICAL SECTION & PAVEMENT DETAILS		
Locality :	MOOREBANK	I.G.A. :	LIVERPOOL

IS, ILS	Sheet 11 of 26 sheets  Ref: 14005E6
CAD Ref: S:\DATA\4\14005\14005 EMMON C\CAD\VE6-BES\DA PLANS\14005VE6-BD LONGSECT	