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Memorandum

To	Andrew Driver	Page	7
CC	Harry Quartermain		
Subject	Response to Sydney Coordination Officer Request For Information		
From	Martin Mallia		
File/Ref No.		Date	08-Jan-2019

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by Hanson Construction Materials Pty Ltd (Hanson) to prepare a traffic impact assessment in support of the Environmental Impact Statement (EIS) prepared for the Glebe Island Aggregate Handling and Concrete Batching facility state significant development application (SSD 8544).

The EIS was exhibited on the Department of Planning's major projects website for a period of five weeks between Wednesday 11 April and Tuesday 15 May 2018 and attracted a number of submissions from various agencies and stakeholders. Transport for New South Wales (TfNSW) replied with a comment stating the following:

The intersection assessment, including the future traffic flows on the road network surrounding the site, should be updated to include the vehicles associated with other developments in the vicinity of the site, in consultation with the Sydney Coordination Office within TfNSW. Mitigation measures should be proposed to reduce the impact of the proposed development on the surrounding road network.

In response, a meeting was arranged between the Sydney Coordination Office (SCO) officers and the project team to discuss their assessment requirements. The meeting was held at the TfNSW offices at 680 George Street on 3 August 2018 at 11:00. The attendees were:

Name	Position	Organisation
Katherine McCray	Principal Transport Planner	Transport for New South Wales
Lisa McGill	Associate Director, Planning CBD	Transport for New South Wales
Robert Rutledge	Acting Senior Land Use Planner	Roads and Maritime Services
Martin Mallia	Principal Traffic Engineer	AECOM
Harry Quartermain	Principal, Planning	Ethos Urban
Ashleigh Zarlenga	Graduate Development Planner	Hanson

A number of key notes and action items were established during discussions between the SCO and the project team, which resulted in a request for information from SCO officers. This memo documents the key notes and action items arising from the consultation meeting of 3 August 2018, and outlines the project team responses.

2.0 On-site parking

The provision of a parking space for each employee as envisaged would not support the take up of alternative modes and should be reviewed.

The traffic impact assessment prepared for the development application indicated that parking requirements for concrete batching plants are not specified in Council's DCP nor the Roads and

Maritime Services – Guide to Traffic Generating Development 2002. Therefore, it was decided to adopt a first principals approach to determine the parking rate to ensure adequate parking is provided on-site so that overflow parking does not occur on the surrounding streets.

However, TfNSW have made a request to reduce the quantum of on-site parking to help encourage more sustainable methods of travel for staff to / from the site. Katherine McCray provided guidance for a parking rate that would be supported by TfNSW, which was to provide 0.7 parking spaces per employee. This rate was based on a review of journey to work mode share data for similar industries to the proposed development. Evidence of this advice is provided in **Appendix A.**

In response, Hanson has amended the site layout to reduce the number of staff parking spaces. With 67 members of staff employed at the site, the total quantum of parking spaces for staff on the site has now been reduced from 59 spaces to 35 spaces, with an additional four (4) spaces provided for visitors retained as per the traffic impact assessment. A green travel plan will be provided to all employees notifying them of the alternative transport options for them as discussed in the traffic impact assessment.

The amended site layout drawings are provided in **Appendix B**

3.0 Swept path analysis

RMS is concerned that additional large trucks will reduce the ability for two vehicles to turn side-by side at the intersection of The Crescent / James Craig Road, leading to a reduction in capacity of the right turn movement beyond that envisaged. Additional information is requested to be provided on whether the traffic capacity of the right turn is likely to reduce based on a swept path assessment of right turning Cement, Aggregate and Concrete trucks and if so, this is to be reflected in the traffic modelling.

Swept path analysis has been undertaken for the right turn from James Craig Road onto The Crescent, and for the right turn from The Crescent onto James Craig Road. The results are as follows:

- B-Doubles will enter and exit the site from the west, and at two (2) trips per hour. Right turns from James Craig Road onto The Crescent will not occur. The swept path analysis shows that two (2) B-Doubles can turn right from The Crescent onto James Craig Road.
- Truck and Dog trailers are able to simultaneously turn right from James Craig Drive onto The Crescent, with one entering the underpass and one headed east onto Victoria Road. They can also turn right simultaneously from The Crescent onto James Craig Drive.

Therefore, additional modelling is not required as the right turn capacity at these intersections is not restricted when multiple heavy vehicles turn simultaneously. .

The swept path analysis is presented in **Appendix C**

4.0 Cumulative Impact Assessment

The intersection assessment, including the future traffic flows on the road network surrounding the site, should be updated to include the vehicles associated with other developments in the vicinity of the site, in consultation with the Sydney Coordination Office within TfNSW. Mitigation measures should be proposed to reduce the impact of the proposed development on the surrounding road network.

4.1 Sydney Metro

A review of the Construction Traffic Management Plan (CTMP) – White Bay Truck Marshalling and Logistics Facility found at the above link was undertaken with the view to provide a cumulative impact assessment.

The CTMP outlines the traffic management measures for the site establishment and operation of the site with the works for Sydney Metro City & Southwest project. The requirement for a Truck Marshalling and Logistics Facility (TMLF) is stipulated in condition E89 of the Sydney Metro City and Southwest development approval.

The facility will be used to accommodate Tunnelling and Station Excavation (TSE) related vehicles in two stages, stage 1 being a temporary site accommodating a maximum of 21 trucks with limited staff

parking and stage 2 being a permanent site with the same capacity as the temporary site. The sites will not operate concurrently as the stage 1 site is to be handed over to Westconnex.

The stage 1 facility was due to be in operation until the permanent site was established in November 2018. The permanent stage 2 site has approval to operate 24 hours a day, seven days a week until early 2020.

Access to / from the permanent site will be entirely via James Craig Road. Vehicles will most likely be predominantly travelling to / from the east via Victoria Road given the locations of TSE sites considered in the CTMP.

The traffic generation has been difficult to quantify given the facility is to be used mainly during unforeseen events on site and within the road network to prevent queuing / parking on local roads. Therefore, for the purpose of the analysis, it has been assumed that under the worst-case, demand will be for 21 heavy vehicles during the AM and PM peak hours. This does not account for management measures that may be implemented, which include stopping trucks from leaving the original dispatch yard and diverting trucks to all alternative work sites for the duration of the incident. The CTMP describes the construction and operation traffic impacts to be minor and to have an unnoticeable impact on the road network.

Although the CTMP describes the impacts as minor and unnoticeable, the worst-case traffic generation of 21 heavy vehicle arrivals has been assumed during the AM and PM peak hours, arriving from the east.

The cumulative impacts of this level of traffic generation on the surrounding road network has been tested in **Section 5** for the opening (2019) year only. It is expected that the site will be decommissioned by 2020 and therefore will not be in operation in 2023.

4.2 Multi-User facility

In order to assess the forecast peak hour cumulative impacts of the multi-user facility, based on the REF assumption of 20 truck and dog arrivals, a total of 40 two-way trips during the AM and PM peak hours are assumed, with access / egress being split 50% from the east and 50% from the west.

The cumulative impacts of this level of traffic generation on the surrounding road network has been tested in **Section 5** for both the opening (2019) and design (2023) years.

4.3 White Bay civil site

An additional construction ancillary facility is proposed on a portion of the Port Authority of NSW's land located near White Bay at Rozelle. The facility would provide a truck marshalling area for around 40 heavy vehicles transporting tunnel spoil and around 50 parking spaces for the construction workforce. The facility would also provide additional space to store construction plant, machinery and materials at the site. The facility is planned to open in 2019, and be decommissioned by 2021.

The Westconnex – M4-M5 Link, submissions and preferred infrastructure report states that a total of 42 two-way heavy vehicles trips are expected to be generated by the site in the AM peak, and 31 two-way heavy vehicle trips in the PM peak. In addition to this, 100 two-way light vehicle trips are expected to be generated by the site in both the AM and PM peak periods. The access and egress points for all vehicles are expected to be via City West Link / The Crescent and then James Craig Road.

The cumulative impacts of this level of traffic generation on the surrounding road network has been tested in **Section 5** for the opening (2019) year only. It is expected that the site will be decommissioned by 2021 and therefore will not be in operation in 2023.

4.4 Summary of cumulative traffic generation

Based on the cumulative assessment, **Table 1** presents the forecast traffic generation from the proposed concrete batching plant (as described in the traffic impact assessment), the mutli-user facility, the White Bay civil site and the Sydney Metro TMLF. It should be noted that the light vehicle trips generated from the concrete batching plant have been discounted from those proposed in the traffic impact assessment due to the proposed reduction in onsite parking.

Table 1 Trip Generation – Cumulative Assessment

Location	AM Peak				PM Peak			
	Heavy Vehicles		Light Vehicles		Heavy Vehicles		Light Vehicles	
	Arrive	Depart	Arrive	Depart	Arrive	Depart	Arrive	Depart
Concrete Batching Plant	91	91	5	0	33	33	8	15
Truck Marshalling Logistics Facility	21	0	-	-	21	0	-	-
Multi-User Facility	20	20	-	-	20	20	-	-
White Bay Civil Site	21	21	50	50	10	21	50	50
Total	**153**	**132**	**55**	**50**	**84**	**74**	**58**	**65**

5.0 Traffic modelling

Traffic volumes for the site peak are to be modelled to understand the impacts on the network when the site is operating at 100% capacity. There are some errors in the geometry of the SIDRA model which if corrected may change some model outputs.

In light of the comments received from the SCO, the SIDRA intersection modelling has been updated to reflect the geometric anomalies identified during the modelling review, and the methodology has been updated in order to assess the forecast impacts on the road network prior to the opening of the Westconnex M4-M5 link. The M4-M5 link is expected to open in 2023, and as such the future modelling scenario has been undertaken for the 2023 design year, whilst applying a linear growth factor for background traffic of 1%, which is consistent with the approach undertaken in the traffic impact assessment. Traffic modelling for future years passed 2023 cannot be undertaken at this time as the Westconnex models are not available for review, and any future modelling will be inaccurate as it will not consider the impacts of the Westconnex project. The traffic modelling has also been undertaken using SIDRA intersection 8, which will provide the most up to date results. The previous assessment used SIDRA intersection 7 as the latest version was not yet released at the time the assessment was undertaken.

Table 2 and **Table 3** present the intersection performance results for the opening year (2019) and the pre WestConnex M4-M5 link opening (2023) scenarios under 'with development' and 'without development' conditions for the AM and PM peak hours. It should be noted that the trip generation for the TMLF have been included in both the 'with development' and 'without development' scenarios as the facility is currently operating. The trips generated by the multi-user facility and the White Bay Civil Site are only included in the 'with development' scenarios as the facilities are currently not operating or are only just starting to operate. Furthermore, the TMLF and White Bay Civil Site traffic generation has been excluded from the 2023 assessment as the facilities are planned to be decommissioned in 2020 and 2021 as previously stated.

Table 2 Intersection performance of road network base and design years - AM Peak.

Intersection	AM Peak				
	Demand flow (veh/h)	Deg of Saturation	Avg Delay (sec)	95% Back of Queue (m)	Level of Service
The Crescent / James Craig Road					
Base Year 2019 Without development	5937	0.816	11.2	193.1	A
Base Year 2019 With development	6135	0.924	13.7	188.6	A
Design Year 2023 Without development	6229	0.785	12.2	244.2	A
Design Year 2023 With development	6427	0.938	13.6	194.9	A
Victoria Road / The Crescent					
Base Year 2019 Without development	7543	0.882	18.8	213.6	B
Base Year 2019 With development	7660	0.898	25.7	406.2	B
Design Year 2023 Without development	7927	0.939	22.8	304.8	B
Design Year 2023 With development	7992	1.060	33.8	432.2	C
The Crescent / City West Link Road					
Base Year 2019 Without development	5944	1.108	47.1	384.8	D
Base Year 2019 With development	6057	1.241	66.5	429.4	E
Design Year 2023 Without development	6239	1.085	96.0	842.1	F
Design Year 2023 With development	6353	1.793	152.2	723.1	F

During the AM peak hour, the intersections of The Crescent / James Craig Road and Victoria Road / The Crescent operate at acceptable levels of service during the opening and design years under the cumulative assessment scenario.

The intersection performance at The Crescent / City West Link Road deteriorates during the opening year under the cumulative development scenario, with delays increasing by about 20 seconds, and the level of service falling from a D to an E. The southern leg of the crescent experiences significant delays under current operating conditions, and although the majority of traffic is travelling eastbound and westbound along City West Link, the increase in traffic volumes on the major link trigger the signals to give priority to the east / west movement being the priority route, causing further queues on the southern leg of The Crescent. However, it should be noted that the TMLF and the multi-user facility trip generation (61 trips) are not necessarily likely to take place daily on during the AM peak period, and these results are a 'worst-case' scenario for assessment purposes.

During the design year, it is clear that under both 'with development' and 'without development' scenarios, the intersection is operating at LoS F, for the same reasons as previously stated during the opening year scenario. The average delay deteriorates by about 55 seconds from the 'without development' to the 'with development'.

Table 3 Intersection performance of road network base and design years -PM Peak.

Intersection	PM Peak				
	Demand flow (veh/h)	Deg of Saturation	Avg Delay (sec)	95% Back of Queue (m)	Level of Service
The Crescent / James Craig Road					
Base Year 2019 Without development	6035	0.710	10.0	144.2	A
Base Year 2019 With development	6137	0.771	10.9	150.4	A
Design Year 2023 Without development	6331	0.761	10.2	157.2	A
Design Year 2023 With development	6433	0.772	10.9	168.7	A
Victoria Road / The Crescent					
Base Year 2019 Without development	8880	0.951	27.3	384.7	B
Base Year 2019 With development	8911	0.940	27.6	413.4	B
Design Year 2023 Without development	9333	1.105	35.6	416.4	C
Design Year 2023 With development	9363	1.240	44.7	428.2	D
The Crescent / City West Link Road					
Base Year 2019 Without development	6205	0.891	18.1	140.4	B
Base Year 2019 With development	6257	0.897	19.5	153.7	B
Design Year 2023 Without development	6514	0.901	20.3	174.8	B
Design Year 2023 With development	6565	0.891	20.4	209.8	B

During the PM peak, all of the intersections perform at a satisfactory level of service under all scenarios. The only notable change would be that under the design year 'with development' scenario at the intersection of Victoria Road / The Crescent, level of service deteriorates from C to D with the development traffic added to the network.

5.1 Summary of cumulative impact assessment

In light of the updated modelling assessment, it can be concluded that the addition of the forecast traffic volumes generated by the proposed concrete batching plant will have minimal impacts on the surrounding road network during the AM and PM network peak hours. Level of service at the critical intersections surrounding the site remain within acceptable thresholds during the PM peak hour under the opening and design year scenarios, noting a deterioration from LoS C to D at Victoria Road / The Crescent in 2023 results in an additional delay of about nine seconds at this intersection. During the AM peak hour, intersection performance generally remains constant during the opening year, noting deterioration from LoS D to E at the intersection of The Crescent / City West Link Road resulting in an additional delay of about 19 seconds. This is generally attributed to the north – south link of The Crescent experiencing additional delays due to the increased east – west traffic volumes on City West Link Road and The Crescent causing the redistribution of green time to prioritise network performance on the major east – west link. During the design year, performance at this intersection operates at LoS F under both 'with development' and 'without development' scenarios.

Based on the results of the intersection assessment, it is proposed to limit the concrete batching plant operations so that peak traffic generation is for 182 heavy vehicle movements per hour in order to limit the forecast network performance impacts to that shown in the modelling assessment. The traffic impact assessment stated that at full capacity, the facility could generate up to 286 heavy vehicle movements per hour, however considering the AM peak hour intersection performance at The Crescent / City West Link Road, additional heavy vehicle movements may add contribute to significant delays to the network. Due to the pending construction of the M4-M5 Link, it is not proposed to fund any upgrades of road improvement works, as this link is being implemented in order to address forecast capacity constraints at this location. It is proposed that once the M4-M5 Link is operational, that further traffic studies are undertaken to reassess the network performance in order to understand the network impacts if the concrete batching facility were to run at full capacity.

Principal Traffic Engineer

martin.mallia@aecom.com

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Direct Dial: +61 2 8934 0988

Appendix A. Car parking rate advice

Mallia, Martin

From: McCray, Katherine <Katherine.McCray@transport.nsw.gov.au>
Sent: Thursday, 9 August 2018 12:13 PM
To: Mallia, Martin
Cc: McGill, Lisa; ashleigh.zarlenga@hanson.com.au; Harry Quartermain
Subject: RE: Concrete Plant

Hi Martin,

Further to our discussion this morning, we have been unable to identify concrete plants in a similar location to be used as a basis for the parking provision rate for the site.

However, based on our review of the journey to work mode share for similar industries to the proposed development, within the local area the site is located, a car driver mode share of 70% is considered reasonable. Based on this, we advise a parking provision rate of 0.7 spaces/ employee should be considered.

We are happy to discuss this further, particularly with reference to the mode share/ parking provision for existing Hanson sites.

Also, an additional project that should be considered as part of the cumulative impacts assessment is Sydney Metro City and Southwest. Details on the White Bay truck marshalling facility can be found here

http://jhcpbg.com.au/Documents_/SMCSWTSE-JCG-TPW-TM-PLN-002299%20White%20Bay%20Truck%20Marshalling%20Facility%20redacted.pdf

Kind Regards,

Katherine McCray
Principal Transport Planner
Sydney Coordination Office
Transport Coordination
Transport for NSW

T 02 8265 7753 M 0466 350 083
Level 44, 680 George Street, Sydney NSW 2000

From: Mallia, Martin [mailto:Martin.Mallia@aecom.com]
Sent: Thursday, 9 August 2018 10:15 AM
To: McCray, Katherine
Subject: RE: Concrete Plant

Katherine – Call me on my landline highlighted below

Thanks

Martin Mallia
Principal Traffic Engineer
D +61 2 8934 0988 M +61 488 213 981
Martin.Mallia@aecom.com

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From: McCray, Katherine [mailto:Katherine.McCray@transport.nsw.gov.au]
Sent: Wednesday, 8 August 2018 5:13 PM
To: Mallia, Martin
Subject: Concrete Plant

Hi Martin,

Just following up from last week's meeting, I tried to call you to discuss the car parking provision rate. Can you please give me a call when you are free? Thanks.

Kind Regards,

Katherine McCray
Principal Transport Planner
Sydney Coordination Office
Transport Coordination
Transport for NSW

T 02 8265 7753 M 0466 350 083
Level 44, 680 George Street, Sydney NSW 2000

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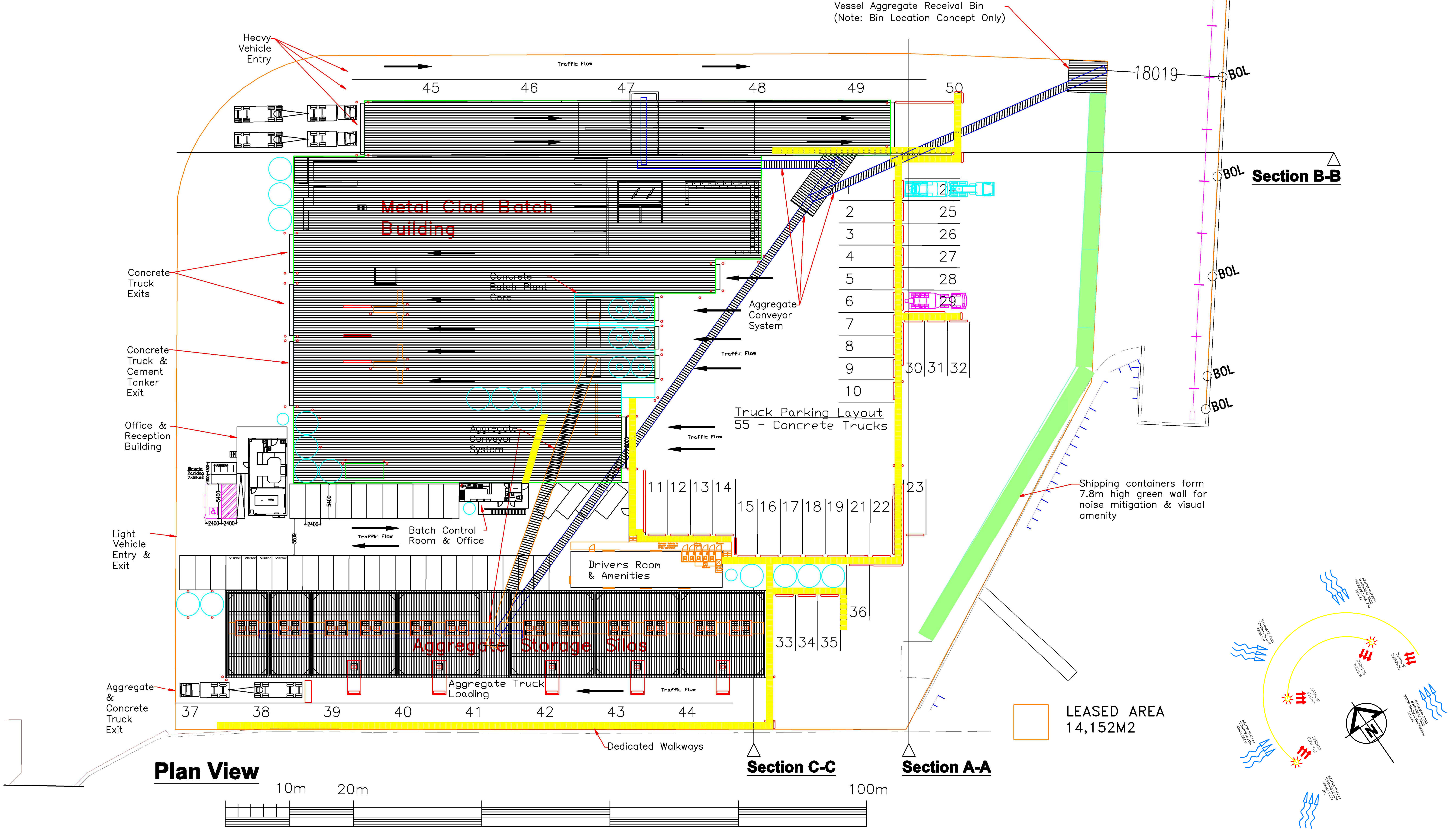
Appendix B. Revised car park layout

GLEBE ISLAND 1 - Proposed Hanson Aggregate Facility & Concrete Batching Plant



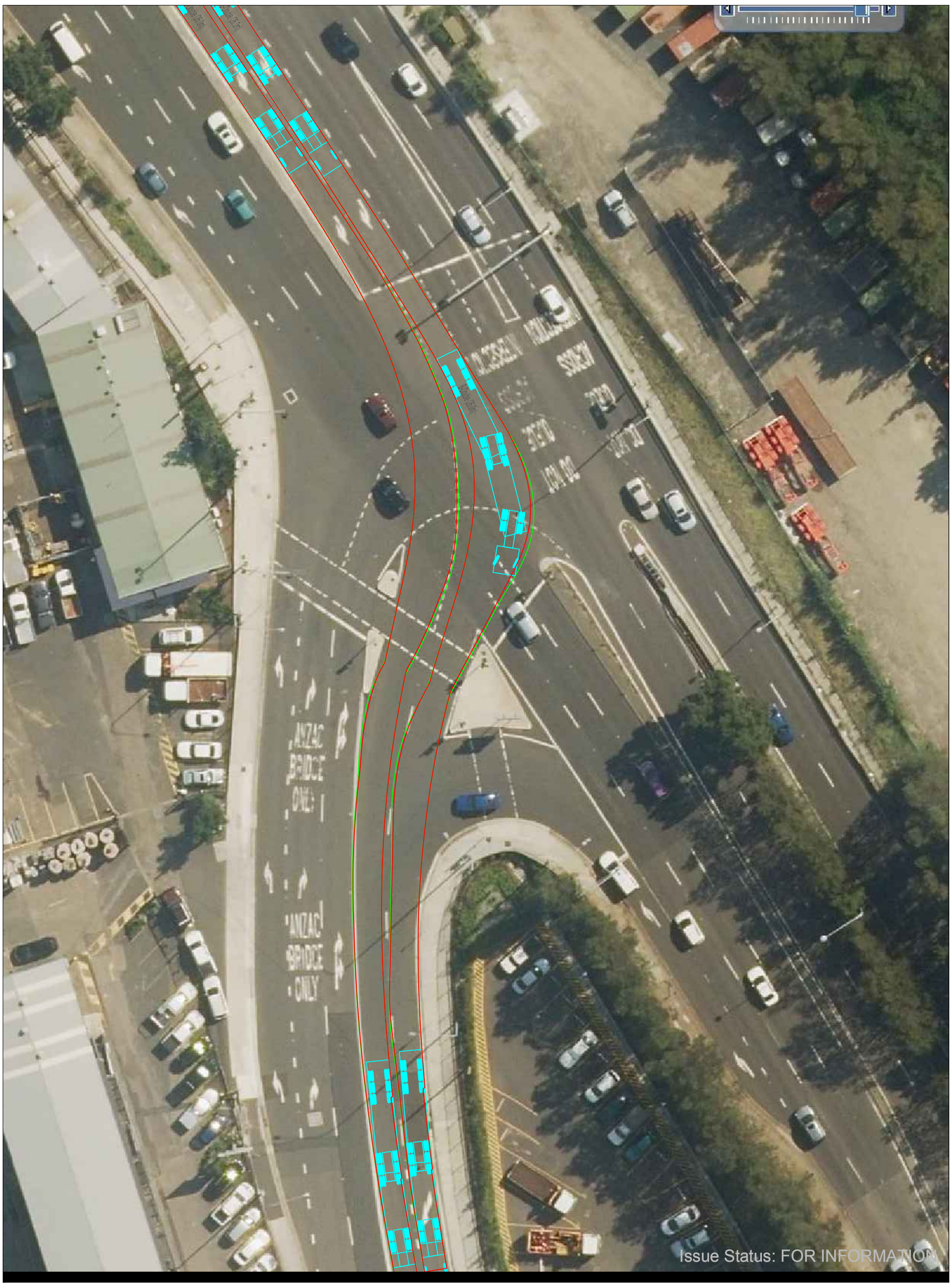
Vessel Aggregate Receival Bin
(Note: Bin Location Concept Only)
Heavy Vehicle Entry
Traffic Flow
45
46
47
48
49
50
18019
BOL
Section B-B
Metal Clad Batch Building
Concrete Batch Plant Core
Aggregate Conveyor System
Concrete Truck Exits
Concrete Truck & Cement Tanker Exit
Office & Reception Building
Light Vehicle Entry & Exit
Batch Control Room & Office
Truck Parking Layout
55 - Concrete Trucks
Drivers Room & Amenities
Aggregate Storage Silos
Aggregate Truck Loading
Aggregate & Concrete Truck Exit
37
38
39
40
41
42
43
44
Dedicated Walkways
Shipping containers form 7.8m high green wall for noise mitigation & visual amenity
LEASED AREA
14,152M2
Section C-C
Section A-A
Plan View
10m
20m
100m

Hanson HEIDELBERGCEMENTGroup

Hanson Aggregate Facility & Concrete Plant - Glebe Island Layout - Concept Only

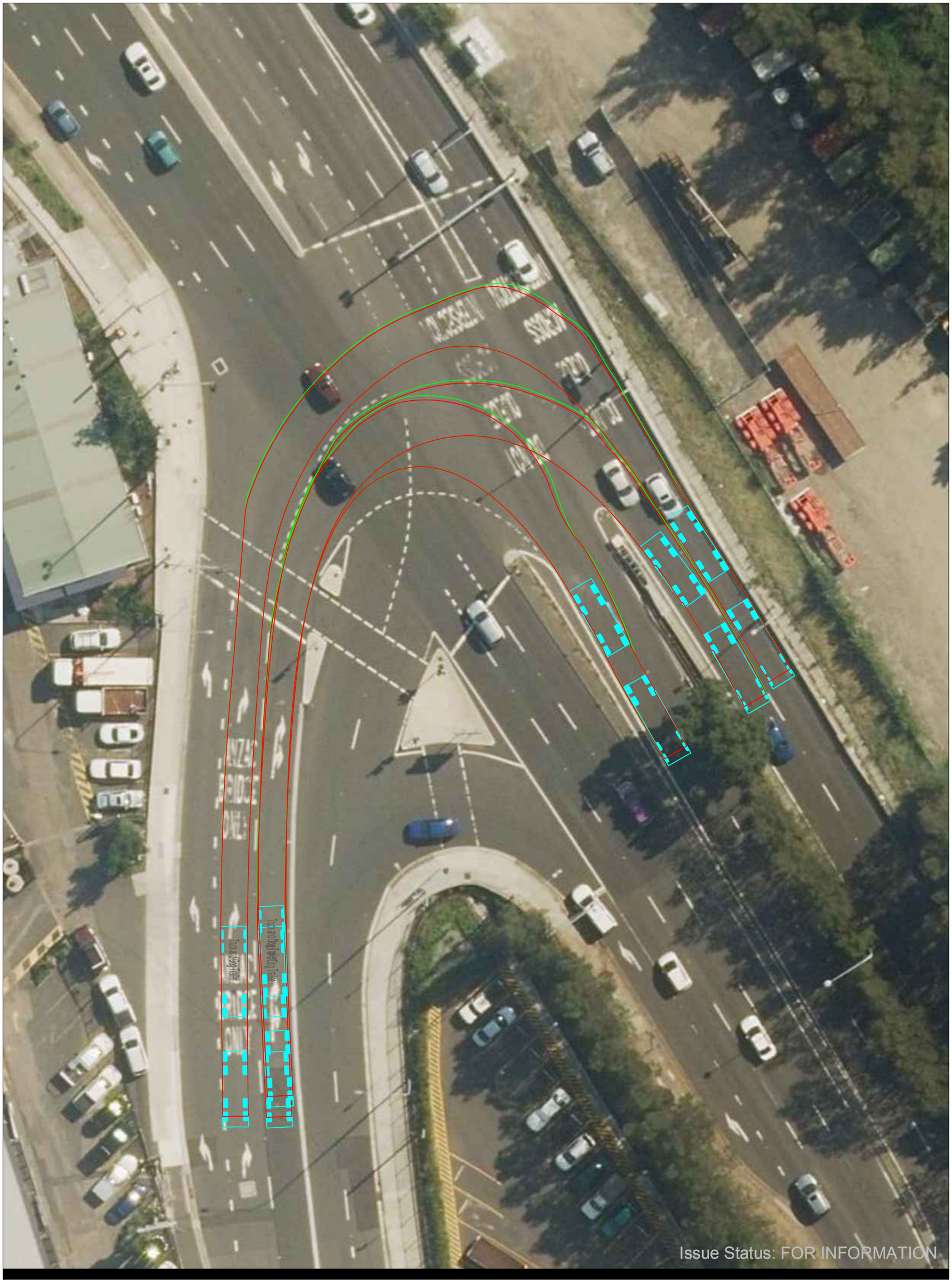
Glebe Island 1GAs - D1

Appendix C. Swept path analysis at The Crescent / James Craig Road



JAMES CRAIG ROAD / THE CRESCENT INTERSECTION
SWEPT PATHS - B-DOUBLE
HANSON CONSTRUCTION MATERIALS PTY LTD
Project No.: 60555976

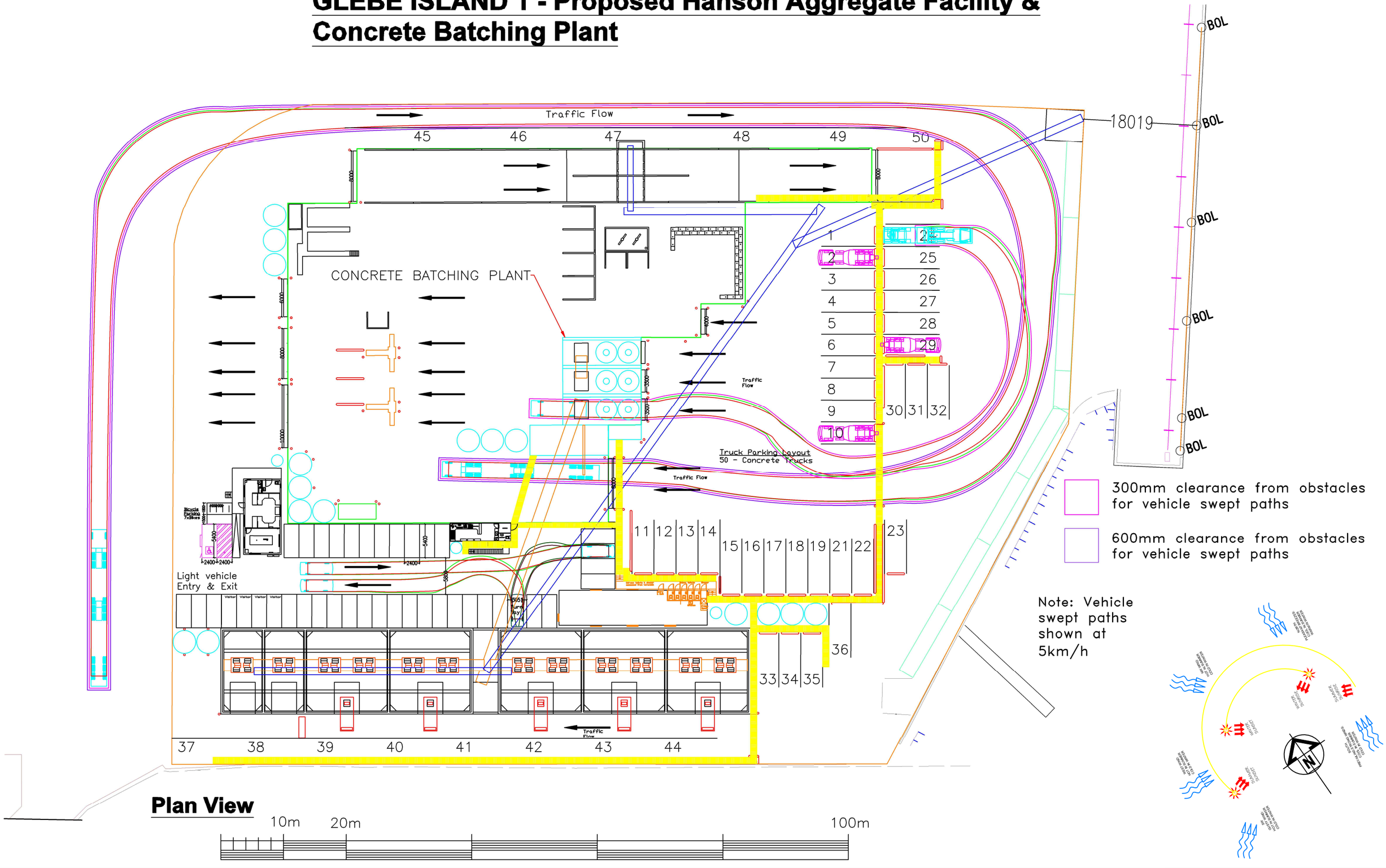
AECOM



JAMES CRAIG ROAD / THE CRESCENT INTERSECTION
SWEPT PATHS - TRUCK AND DOG
HANSON CONSTRUCTION MATERIALS PTY LTD
Project No.: 60555976

AECOM

GLEBE ISLAND 1 - Proposed Hanson Aggregate Facility & Concrete Batching Plant



Plan View

10m 20m 100m

REVISION	General Arrangement	RtS	C	D	E
A					

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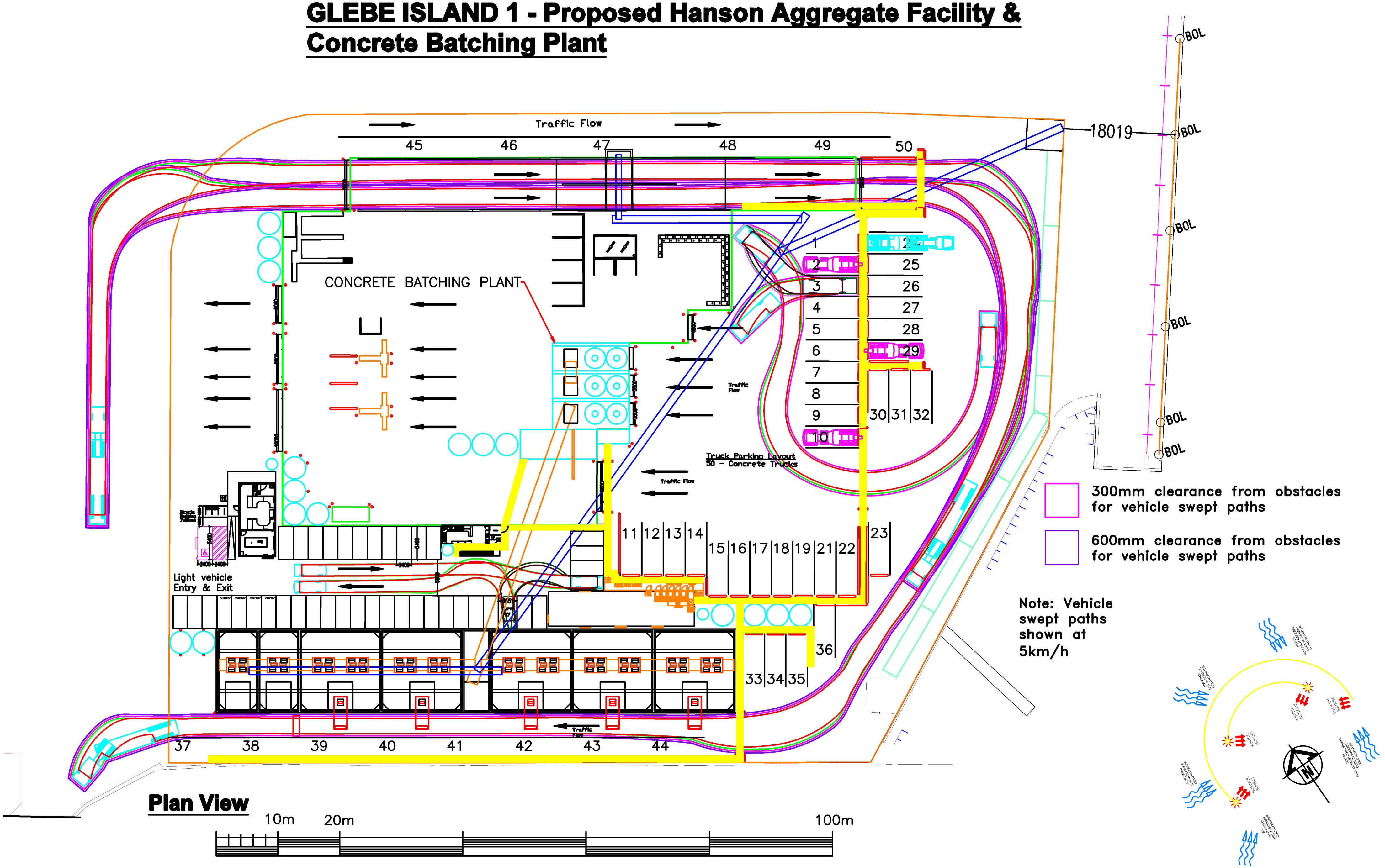
Hanson Aggregate Facility & Concrete Plant - Glebe Island

		Date	Scale	Job No Drawing Number	Rev.
Drawn	GB				
Checked		15.11.2019	NTS	Glebe Island IGAs - D6	Rev B
Approved					

GLEBE ISLAND 1 - Proposed Hanson Aggregate Facility & Concrete Batching Plant



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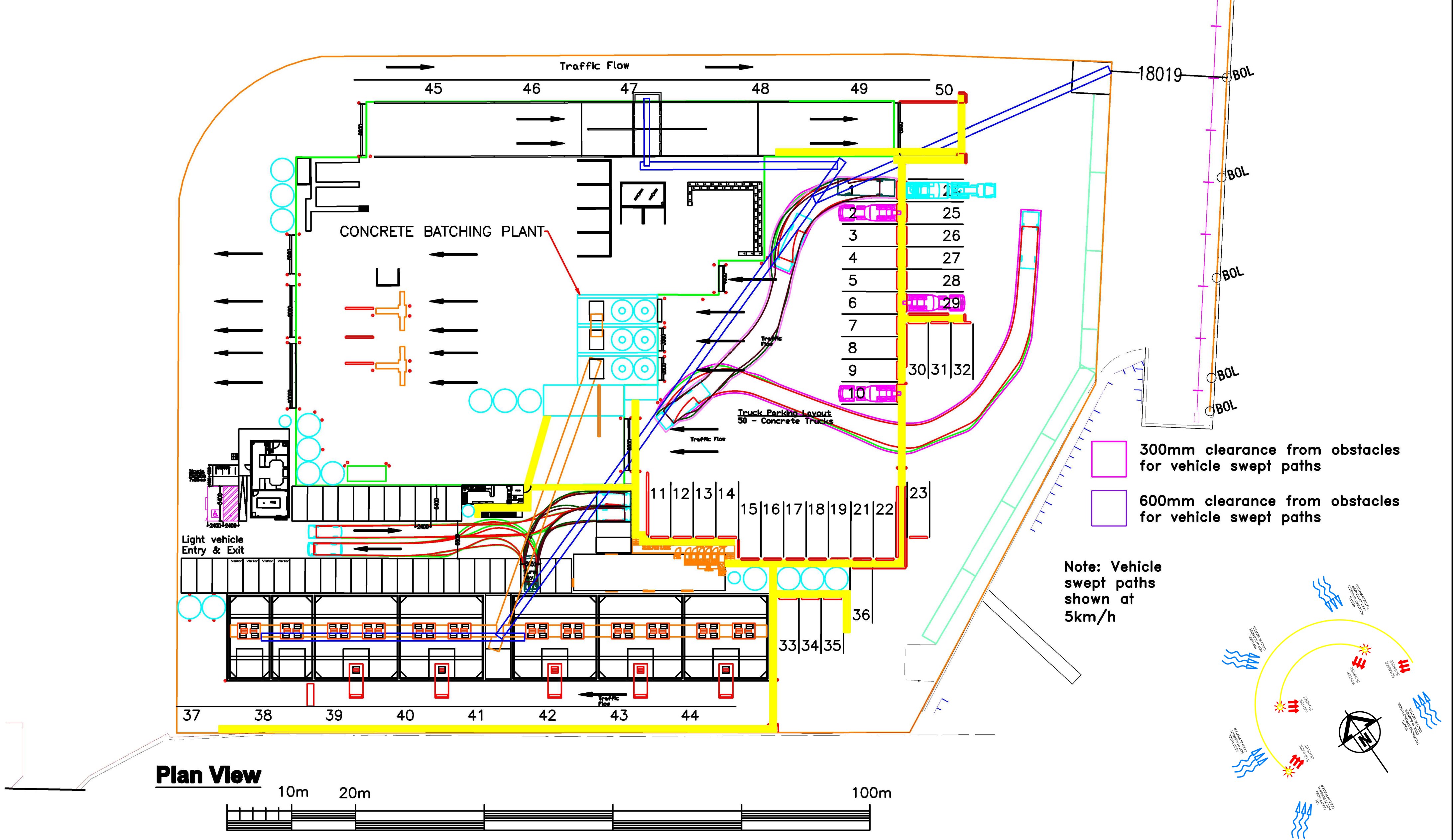
Hanson Aggregate Facility & Concrete Plant - Glebe Island
Glebe Island
IGAs - D8

GLEBE ISLAND 1 - Proposed Hanson Aggregate Facility & Concrete Batching Plant



E	D	C	B RtS	A General Arrangement	REVISION	Hanson HEIDELBERGCEMENTGroup

Hanson Aggregate Facility & Concrete Plant - Glebe Island

Drawn		Date	Scale	Job No	Drawing Number	Rev.
Checked		15.11.2019	NTS	Glebe Island 1GAs - D9		Rev 3
Approved						