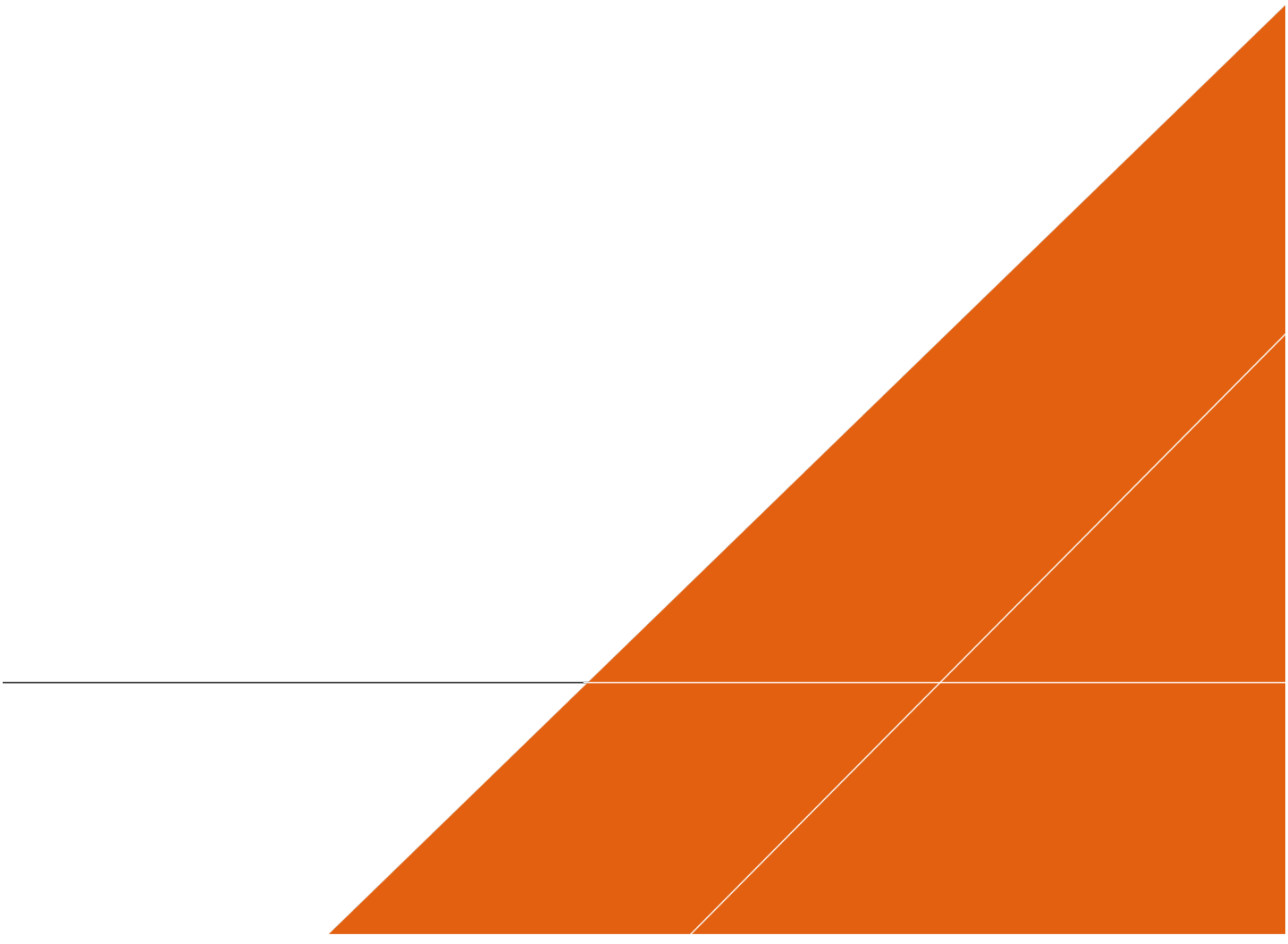
ARCADIS Design & Consultancy for natural and built assets

MORTDALE RESOURCE RECOVERY FACILITY

20 Hearne Street, Mortdale

05 APRIL 2019



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BINGO INDUSTRIES PTY LTD MORTDALE RESOURCE RECOVERY FACILITY

20 Hearne Street, Mortdale

Response to Submissions

Author	Sean Fishwick	
Checker	Brad Searle	
Approver	Brad Searle	

Report No	01
Date	5/04/2019
Revision Text	1

REVISIONS

Revision	Date	Description	Prepared by	Approved by
1	05/04/2019	Final	SF	BS

CONTENTS

APPENDICES

1 INTRODUCTION

Bingo Industries (the Applicant) currently own and operate the Resource Recovery Facility located at 20 Hearne Street, Mortdale (the Site). The Site currently operates under approval SSD 7421 (the Current Approval).

To optimise the efficiency of Bingo's broader resource recovery network and improve resource recovery outcomes, Bingo proposes to modify the Current Approval (the Modification Proposal). Modifications to the Current Approval as part of the Modification Proposal include:

- Reduced scale of processing and recycling equipment to produce two key streams of waste (<60mm and >60mm product) for further recycling at Bingo's advanced recycling centres.
- Changes to the layout of the recycling building and provision of a new entry and exit point to the recycling building
- Relocation of the outbound weighbridge
- Modification to site levels to accommodate processing changes
- Relocation of amenities and lunchroom
- Expansion of the incoming waste receival area
- Changes to parking arrangements
- Consolidation of external product storage bays
- Administrative changes

An application (pursuant to Section 4.55 (1A) of the EP&A Act) and an environmental assessment for the proposed modifications were prepared and submitted to the Department of Planning and Environment on the 7th March 2019. Submission of the application was followed by a 14 day notification period whereby notified stakeholders were able to provide feedback on the application. The following sections of this document provide a response to each of the issues raised within the submissions received and include additional information as required.

2 RESPONSE TO SUBMISSIONS

Feedback on the application was received from the following stakeholders:

- Department of Planning and Environment
- Environment Protection Authority
- Fire and Rescue NSW
- Department of Planning and Environment (Hazards Team)
- Office of Environment and Heritage
- Rural Fire Service
- Roads and Maritime Services
- Georges River Council

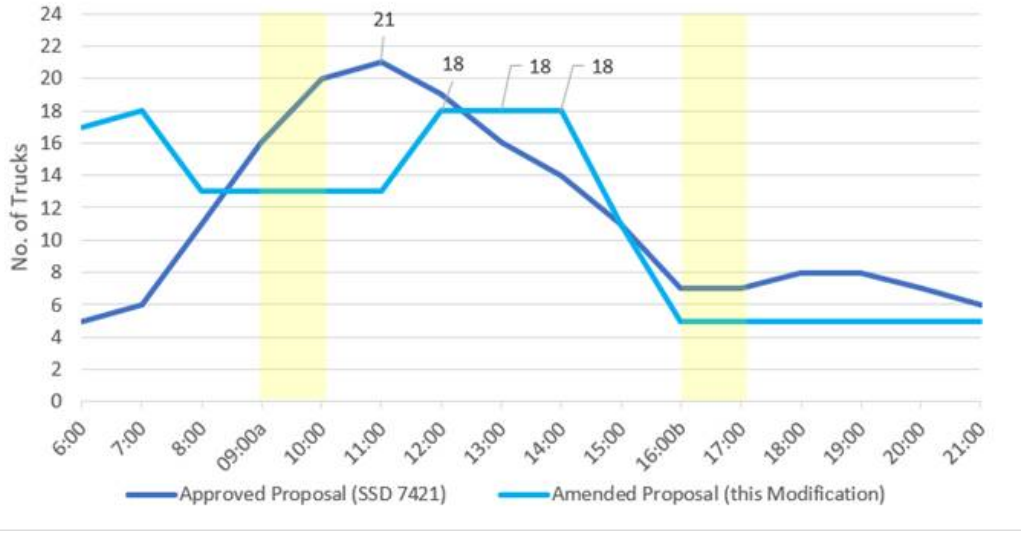
No submissions were received from community stakeholders.

The commentary provided by each submitter has summarised and responded to in the table below.

<table>
<tr><th>Submission text</th><th>Response</th><th>Reference</th></tr>
<tr><td colspan="3">Department of Planning and Environment</td></tr>
<tr><td>Traffic and Transport:
a. Please confirm what utes would be accessing the site (p.41). Would members of the public be accessing the site?</td><td>A small percentage of light vehicles accessing the site would consist of utes and cars including members of the public. The Modification Proposal would not alter the types or number of vehicles as approved within the Current Approval.</td><td>-</td></tr>
<tr><td>b. The figures in Table 6-4 and Figure 6-1 do not correspond. Please confirm the number of vehicles which are anticipated in the hourly traffic profile (p. 42).</td><td>The number of vehicles anticipated to access the site on an hourly basis under the Modification Proposal scenario has been provided in Table 6-4 of the Modification Report (reproduced below) and is show in the figure below.
Table 2-1 Comparison of the hourly profile from the Current Approval to the Modification Proposal
<table>
<tr><th>Starting hour</th><th>Current Approval
Truck movements per hour</th><th>Modification Proposal
Truck movements per hour</th></tr>
<tr><td>6:00</td><td>5</td><td>17</td></tr>
<tr><td>7:00</td><td>6</td><td>18</td></tr>
<tr><td>8:00</td><td>11</td><td>13</td></tr>
<tr><td>9:00</td><td>16</td><td>13</td></tr>
<tr><td>10:00</td><td>20</td><td>13</td></tr>
<tr><td>11:00</td><td>21</td><td>13</td></tr>
<tr><td>12:00</td><td>19</td><td>18</td></tr>
<tr><td>13:00</td><td>16</td><td>18</td></tr>
<tr><td>14:00</td><td>14</td><td>18</td></tr>
</table></td><td>Table 6-4 of the Modification Report</td></tr>
</table>

15:00	11	11
16:00	7	5
17:00	7	5
18:00	8	5
19:00	8	5
20:00	7	5
21:00	6	5
Total	**182**	**182**

Figure 6-1 provided a comparison of the hourly traffic profile under the Modification Proposal with the 'existing' traffic profile i.e. the profile prior to the implementation of the Current Approval. The numbers associated with that profile were not shown within Table 6-4 (however, they were detailed within the Amended Traffic Impact Assessment). Figure 6-1 has been updated below to show the hourly profiles for the Current Approval (SSD 7421) and the Modification Proposal (as detailed in Table 6-4).

Submission text	Response	Reference
		
c. Please describe the load assumptions used in vehicle movements and show how the number of vehicles taking material out of the site is sufficient given the amount of waste which is proposed to be managed on-site	As described in Section 4.2 of the Modification Report, the volume of waste received, the hours of operation and the number, proportion and types of vehicles (for both depositing and collecting waste) are not proposed to be modified with the Modification Proposal. Load assumptions and vehicle movements for vehicles taking material out of the site as described within the EIS would not be altered by this Modification Proposal.	Section 4.2 of the Modification Report
d. Further details are required for surveys/information which support reductions in site times from 25 to 17 minutes (p.44).	The Modification Proposal introduces a number of elements that result in improvements to turn around times. These include: • The ability to tip two trucks simultaneously, reducing tip floor dwell times and as such reducing waiting times for stacked vehicles.	-

Submission text	Response	Reference
	• Provision of a waste collection pit which would separate unprocessed waste from the tipping floor. This reduces the time required by machinery to scrape waste into a contained area, providing a greater availability of the tip floor. • Improved traffic flows through changes to stacking and parking spaces allowing vehicles to move through the site with minimal amounts of reversing. • A flattening of the vehicle peak arrival period (through greater coordination ability by the operator) to minimise the number of vehicles arriving to the site in a one-hour period and therefore reduce queuing time. • Increase in tip floor through simplification of processing providing greater efficiencies for traffic movements associated with deposition of waste within the RRF. • Improvements to load out including the provision of bulk load out and the ability for trucks to load directly from the overhead conveyor when positioned adjacent to the product storage bays. This is further supported through enhancements in the waste processing procedure itself, such as the removal of time-consuming manual picking stations and more efficient automated overhead gantry crane operation. Turnaround time surveys have been undertaken at the Minto RRF (September, 2017), a similar facility to the Mortdale facility, to verify the duration which vehicles spend on-site between entry and exit. The surveys found that the average turnaround time across all vehicle types is around 17 minutes. As the Minto Facility operates in a similar manner to the Modified Proposal it was determined that the 17-minute turnaround time can be appropriately adopted at the Mortdale RRF. When accounting for the factors outlined above 17 minutes is still considered to be a conservative figure for truck turnaround times.	
e. The assessment for the original SSD assumed a worst-case scenario of 50 mins for vehicles on site. Under the current modification application how is the 25 mins turnaround time in a worst case scenario justified?	The Current SSD Approval utilised 25 minutes as the average duration that a waste truck requires to complete its waste depositing / collection activities at the original RRF. For the purposes of a sensitivity analysis, 50 minutes was as a way of illustrating that even in an extreme case, the available stacking spaces could sufficiently accommodate traffic generated by the site. The use of 50 minutes in the sensitivity analysis was considered then and is still now considered to be highly conservative.	-

Submission text	Response	Reference
	Turnaround time surveys have been undertaken at the Minto RRF (September, 2017), a similar facility to the Mortdale facility, to verify the duration which vehicles spend on-site between entry and exit. The surveys found that the average turnaround time across all vehicle types is around 17 minutes. The analysis for the modification has therefore utilised 17 minutes (instead of 25 minutes) as it is a more realistic representation of future operations. When accounting for the potential improvements to turn-around times resulting from the proposed modifications (as outlined within responses above), 17 minutes is considered to be a conservative figure for truck turnaround times. In the Modification Proposal, to analyse a worst-case scenario where an incident or unforeseen circumstances occur, a turnaround time of 25 minutes has been utilised. This represents an increase in turn-around times by 50% (approximately). A worst-case scenario turn-around time of 25 minutes is considered to be appropriate as typically, unforeseen circumstances are resolved in a short timeframe. Furthermore, the assessment of the worst-case scenario can be considered to be conservative as it does not take into account the operator's discretion to divert waste to another Bingo waste facility during periods of unforeseen circumstances.	
f. Please show how the number of trucks (deliveries and collections) in the busiest hour would be able to access the site under worst case scenario without queuing on the local road network, this should include how swept paths will be maintained and trucks can exits the site if trucks are using stacking spaces under normal and worst case scenarios.	A summary of on-site stacking including an assessment of the typical and worst-case scenarios has been included in section 6.8.2 of the Modification Report and is detailed in the Amended Traffic Impact Assessment (Appendix E of the Modification Report). Figure 6-3 shows that even under the worst-case scenario in the busiest hour, the 18 trucks would be adequately accommodated across 8 stacking spaces, leaving seven stacking spaces remaining which could accommodate a potential overflow of vehicles in the event of an incident occurring. In all scenarios shown (typical and worst case) there are vacant stacking spaces available within the stacking channel and on-site stacking would extend beyond the weighbridge office that is on-site. Therefore, in the busiest hour, all trucks predicted to arrive at the site would be accommodated wholly on-site and would not be required to queue onto the local road network. Stacking spaces have been positioned outside of the path of travel for all vehicles entering and exiting to enable vehicles to manoeuvre safely around the site even during peak periods. Updated swept paths have been provided in Appendix A of this document to also show stacking spaces.	Section 6.8.2 of the Modification Report Appendix E of the Modification Report
g. Please clarify whether vehicles will be reversing or driving into the bunker area or both (p.44).	Normal operations would require vehicles to reverse into the bunker area. Swept paths have been included in Appendix E of the Modification Report (Amended Traffic Impact Assessment) and	Appendix E of the Modification Report

Submission text	Response	Reference
	updated in this document (Appendix A of this document). These swept paths demonstrate that the reverse in manoeuvre can be undertaken safely.	Appendix A of this document
Air Quality: a. Clarify whether Table 6-2 includes the reduction in air emissions from material sorting as set out in the proposed modification. Provide source for figures in Table 6-2 (NB this table does not appear to be in Appendix D).	The estimated annual emission rates for the Modification Proposal, as presented in Table 6-2 of the Modification Report include reductions in air emissions from material sorting and reduced throughput (compared to the 300,000 proposed within the original EIS). It is noted that a superseded version of the Air Quality Assessment (prepared by Wilkinson Murray) was erroneously appended to the Modification Report. The correct version of the Air Quality Assessment has been included as Appendix B of this document. This version includes further detail on the emissions rate and control factors relating to information summarised in Table 6-2.	Appendix B of this document
Environment Protection Authority		
1. **Section 5.2 of the modification noise report requires further clarification relating to the predicted noise levels.** The header of Table 5-2 states "*SLR Predicted Noise Levels and Criteria (from Approved EIS) and Expected Noise Increase as a result of proposed modifications.*" However, the body of the report prior to the table states "*Table 5-2 presents the predicted noise levels at surrounding receivers due to site proposed operations...*" The EPA has inferred that the noise levels represent the predicted noise level from the modified premises, however this is not clear in the report. The Proponent must clarify if the noise levels in Table	It is noted that a superseded version of the Noise Impact Assessment (prepared by Wilkinson Murray) was erroneously appended to the Modification Report. The correct version of the Noise Impact Assessment (NIA) has been included as Appendix C of this document. The final version of the NIA (as attached to this document) compares the predicted SLR noise levels with those modelled for the Modification Proposal. The noise levels presented in the Modification Predicted Level columns, represent the total predicted noise with the Modification in place.	Appendix C of this document

Submission text	Response	Reference
5-2 represent either the increase in noise, a contribution from the modification or a total predicted noise with the modification in place.		
2. The modification noise report does not provide sufficient explanation or justification for the substantial differences in predicted noise levels between the application noise report and the modification noise report. The post-modification noise levels range from 27 dB lower to 7 dB higher than the pre-modification noise levels. The report states that modelling differences contribute to the differences, however does not provide any explanation of what the differences are or why there are so large. The modification does not appear to be significantly changing activities outside of the buildings and reductions in noise level of more than 20 dB do not appear reasonable without further context. The modification noise report has also used a higher Lmax sound power level for external activities than the application noise report, however has predicted noise levels more than 20 dB lower at the nearest receivers. The report should identify and	It is noted that a superseded version of the Noise Impact Assessment (prepared by Wilkinson Murray) was erroneously appended to the Modification Report. The correct version of the Noise Impact Assessment (NIA) has been included as Appendix C of this document. The Modification Proposal does not propose to substantially change the way the Site operates. Throughput, vehicle mix, vehicle numbers and operational equipment will be largely the same as that approved within the Current Approval. Whilst the reduced scale of processing machinery at the site would have some effect on noise levels, the changes in plant and equipment sound power levels are not substantial enough to be the primary contributor to the reduction in noise levels. Consequently, the differences in the predicted noise levels are not due to the modifications rather a difference in the noise modelling techniques and/or the noise models used. SLR used Soundplan and Wilkinson Murray used CADNA A. An additional reason the modelling results differ is likely to be the detail in the intervening buildings modelled by SLR. To ensure a comprehensive and realistic assessment was undertaken Wilkinson Murray modelled all industrial buildings in the Mortdale industrial area (See image below).	Appendix C of this document

Submission text	Response	Reference
quantify as far as possible the differences due to modelling techniques and those due to the proposed modification. Where there are significant differences in predicted noise levels due to different modelling techniques, the modelling approach should be fully justified.		

Submission text	Response	Reference
	The proposed modifications do not result in a significant increase in impacts above those identified within the original EIS. Typically, the predicted noise levels from the proposed modifications are lower than that presented in the original SLR report. Noise generated by the modified proposal is predicted to fully comply with the noise criteria from the SLR's Noise and Vibration Impact Assessment and the Site's SSD Approval noise limits. Additionally, in accordance with the Conditions of Consent for the Current Approval (Part B, Condition B29) a Post-Commissioning Noise Verification Report would be prepared to verify predicted noise levels are in compliance with the Approval criteria,	
3. **The report concludes that the noise levels would not increase above the existing operation's noise levels, except at three locations. However, the comparison of noise levels with existing operations is not based on the information used for the SSD approval.** The SSD application was approved using Revision 13 of the application noise report dated 13 March 2017 (Report no. 610.14692-R9, Revision 13, 16 March 2017). This report includes revisions based on comments from regulatory authorities prior to project approval. The noise report initially submitted for the SSD application was Revision 6 of the report (Report no. 610.14692-R9, Revision 6, 28 June 2016). This report was revised multiple times prior to the project being approved. The	It is noted that a superseded version of the Noise Impact Assessment (prepared by Wilkinson Murray) was erroneously appended to the Modification Report. The correct version of the Noise Impact Assessment (NIA) has been included as Appendix C to this document. The NIA as attached to this document has been based off the SLR noise report no. 610.14692-R9, Revision 13, 16th March 2017.	Appendix C of this document

Submission text	Response	Reference
modification noise report has used Revision 6 of the application report. The predicted noise levels at receivers in Revision 6 differ from those in Revision 13. The Proponent must confirm the appropriate version of the report for use in their comparison.		
4. The location of receiver R4 must be confirmed to represent the worst affected receiver in the group of adjacent receivers. Although the current location of R4 represents a multi-storey residential receiver, the receiver at 102 Boundary Road appears to have line of sight to the premises. The proponent must confirm that the location of R4 is appropriate to represent an assessment of the worst affected location.	The Noise Impact Assessment prepared for the Proposed Modification utilised the identified receivers as approved (in SSD 7421) within the SLR noise report no. 610.14692-R9, Revision 13, 16th March 2017. The Modification Proposal does not propose to substantially change the way the Site operates. Throughput, vehicle mix, vehicle numbers and operational equipment will be largely the same as that approved within the Current Approval. Noise modelling undertaken for the Modification Proposal identified that the proposed modifications do not result in a significant increase in impacts above those identified within the original EIS. Typically, the predicted noise levels from the proposed modifications are lower than that presented in the original SLR report. Noise generated by the modified proposal is predicted to fully comply with the noise criteria from the SLR's Noise and Vibration Impact Assessment and the Site's SSD Approval noise limits. As identified in the submission, the residence at 102 Boundary Road does have line of site to the entry of 20 Hearne St, Mortdale. Supplementary noise modelling has been conducted for 102 Boundary Road to identify potential impacts from the Proposal. As shown in the table below, predicted noise levels at 102 Boundary Road would comply with the applicable noise criteria.	Appendix C of this document

Period	Modification Predicted Level Criteria	Criteria

Submission text	Response			Reference
	Morning shoulder LAeq	38	44	
	Day LAeq	39	47	
	Evening LAeq	38	43	
	Sleep disturbance LAmax **Based on a 111dBA LAmax sound power level of truck at the site entry**	47	54	
5. Noise verification or quarterly noise monitoring of the existing site has not been taken into account. Project approval condition B29 requires a noise verification report to be completed within three months of completion of commissioning and condition B30(d) requires quarterly noise monitoring until directed otherwise by the Secretary. The modification noise report has not taken the noise verification or monitoring at the site into account and instead has relied on predicted noise levels from a previous report. The measurement information would	Construction for the Current Approval (SSD 7421) is in progress. A Noise Verification Report will be prepared prior to commissioning of the facility in accordance with Condition B29 in Part B of the existing Conditions of Consent. Quarterly operational noise monitoring will be undertaken during operation in accordance with Condition B30 in Part B of the existing Conditions of Consent.			-

Submission text	Response	Reference
provide actual noise levels from the site and an indication of the validity of the previous noise predictions. The proponent must either reference this information or provide a justification for not considering measurement data of the existing facility.		
6. Meteorological conditions not considered in the noise predictions. Project approval condition B28 requires that noise from the site is measured "…in accordance with the relevant procedures and exemptions (including certain meteorological conditions) of the NSW Industrial Noise Policy." The modification noise report should consider the effect of meteorological conditions as required by Section 5 of the Industrial Noise Policy and project approval condition B28.	As described within the Noise Impact Assessment prepared for the Proposed Modification (included as Appendix C of this document), noise modelling used to predict potential noise impacts of the Proposed Modification includes consideration of meteorological conditions. Condition B28 in Part B of the existing Conditions of Consent relates to the current approval and is not relevant to the assessment of Modification Proposal. Additionally, as the condition relates to operational noise limits it is not considered to be applicable at this stage, as the project is currently under construction.	-
7. Construction noise and vibration has not been assessed in the noise report. The modification noise report did not include a construction noise and vibration assessment. However, the EPA considers that project approval conditions B25, B26 and B27 would	As the modification proposal does not significantly alter the type or scale of construction at the site, there would not be a change to construction impacts as described in the EIS for the Current Approval. Construction activities for the proposed modifications would continue to be managed through the CEMP developed for the Current Approval.	-

Submission text	Response	Reference
be sufficient to control construction impacts.		
Fire and Rescue NSW		
On page 18 of the MORTDALE RESOURCE RECOVERY FACILITY 20 Hearne Street, Mortdale Section 4.55(1A) Application (SSD 15_7421) under the heading of: **4.3.8 Fire infrastructure -** An updated Fire Engineering Report including changes associated with the Modification Proposal is currently under preparation and will be submitted to Fire and Rescue NSW for review. The above statement is noted and FRNSW look forward to reviewing the fire engineering report.	Bingo intends to finalise the Fire Engineering Report upon approval of the modification and submit to FRNSW for review.	
As per previous correspondence from FRNSW – Letter out dated 22nd of August 2016 (D16/64949) recommendation no.4 – "In the event of development consent being granted, it is FRNSW recommendation that a Fire Safety Study (FSS) is developed and that the FSS is undertaken in accordance with the recommendations detailed in Hazardous Industry Planning Advisory Paper No.2. " FRNSW recommendation is for a fire safety study to be developed for the site as a condition of consent in accordance with the recommendations detailed in Hazardous Industry Planning Advisory Paper No.2.	An FSS was prepared and submitted to FRNSW in accordance with the conditions of consent. The FSS will be updated following completion of the Fire Engineering Report.	

Submission text	Response	Reference
Department of Planning and Environment (Hazards Team)		
In reviewing the attached document, it is noted that the modification does not involve significant changes to on-site storage and handling of dangerous goods and hazardous chemicals. These have already been described in the original SSD 7421 EIS. The SSD remains not potentially hazardous under SEPP 33 and the current hazards and risk conditions in the SSD 7421 consent would suffice.	Noted.	-
Office of Environment and Heritage		
Aboriginal Heritage It is recommended that should a development approval be granted the following Aboriginal Heritage conditions be included: • Prior to onsite ground disturbance commencing, the designated project team including all contractors on site should undergo heritage induction, which will include an archaeological awareness component to reinforce the importance of heritage issues and the management measures that will be implemented. • In the event of an unexpected discovery of archaeological relics during ground disturbance works the Unexpected Find Procedure should be followed. The procedure details the actions to be taken when a previously unidentified and/or	The proposed modification would not modify the impact footprint from the Project. Given that minimal excavation is required, the site is already highly disturbed and the minor nature of the proposed modifications, it is highly unlikely that objects or places of Aboriginal heritage significance will be impacted by the Modification Proposal. An unexpected find protocol is already included in the Construction Environmental Management Plan.	-

Submission text	Response	Reference
potential Aboriginal and/or historic heritage item/object/site is found during construction activities.		
Biodiversity: As DPE is aware, section 7.17 of the *Biodiversity Conservation Act, 2016* (BC Act) stipulates: *2 (b) a biodiversity development assessment report is required to be submitted and taken into consideration if this Division applies to the original development as proposed to be modified even if a biodiversity development assessment report was submitted in connection with the application for the original development or even if this Division did not apply to the original development (for example, because the modification results in the development exceeding the biodiversity offsets scheme threshold},* *(c) however, a further biodiversity development assessment report is not required to be submitted if the authority or person determining the application for modification (or determining the environmental assessment requirements for the application) is satisfied that the modification will not increase the impact on biodiversity values,* *(3) The regulations may make further provision with respect to any such applications for modification (including exemptions to the application of this section).*	As outlined in Section 5.1 of the Modification report, the EIS for the Current Approval determined that 'the development will not damage critical or other habitat and is not likely to have a significant effect on threatened species, populations, or ecological communities or their habitats.'. Given the minor nature of the proposed modifications and the limited ecological values of the site, the Modification Proposal would not result in a change to this assessment. Correspondence with DP&E during the preparation of the Modification Report confirmed that they are satisfied the modification will not increase the impact on biodiversity values from the Project.	Section 5.1 of the Modification Report

Submission text	Response	Reference
OEH notes that the applicant has not addressed the BC Act in its application for the proposed modification. If the application is not subject to section 7.17(3), OEH recommends that the applicant be requested to provide an assessment of biodiversity values (sections 1.4 and 6.1 of the Biodiversity Conservation Regulation 2017 and 1.5 and 6.3 of the BC Act) and the impact of the proposal on the biodiversity values. The provision of this additional information will assist OPE in determining the appropriate planning pathway for biodiversity assessment required for the modification application. As stipulated in section 7.17, if the determining authority is not satisfied that the modification will not increase the impact on biodiversity values, then the applicant will need to submit a biodiversity development assessment report.		
Rural Fire Service		
The New South Wales Rural Fire Service (NSW RFS) has considered the information submitted and has no specific recommendations in relation to bush fire protection.	Noted.	-
Roads and Maritime Services		
Roads and Maritime has reviewed the information provided and notes that the modified proposal does not seek to alter the throughput volume of material to be recycled,	Noted.	-

Submission text	Response	Reference
vehicle numbers or vehicle mix at the site from those described in the current approval. As such, the modified proposal should not result in any disturbance to traffic flows on the surrounding roads over and above what has currently been approved. Noting the comments above Roads and Maritime has no objection to the Modification Application for the Mortdale Resource Recovery Facility.		
Georges River Council		
The areas where Council is of the opinion further consideration and clarification is required relate to the access particularly in relation to the width of the access and the manoeuvrability of the trucks into, out of and with the facility. Swept path diagrams were not been provided with the application. Concern is raised if the swept path criterion for the trucks is not adequately considered in the design and layout of the application than queuing (for 18 vehicles) in the road network will result, impacting other business in the locality and the increased potential for conflict. In this regard Council requests that the design have regard for the 18 vehicles (per hour) nominated, and how they are going to access and egress the site simultaneously without the need for queuing in the road network.	Driveway access design and swept path plans were submitted as part of the RTS for the Original Approval. The Modification Proposal does not propose to modify the site entry or exit as approved within SSD 7421. Additionally, the number type and proportion of vehicle types would be the same as that approved within the Current Approval (SSD 7421). Swept path plans included within the RtS show that two trucks can turn to/from the site at the same time. Where there are two large trucks at the site access driveway at the same time, the truck exiting the site would give-way to the truck entering the site. A summary of on-site stacking including an assessment of the typical and worst-case scenarios has been included in section 6.8.2 of the Modification Report and is detailed in the Amended Traffic Impact Assessment (Appendix E of the Modification Report). Figure 6-3 shows that even under the worst-case scenario in the busiest hour, the 18 trucks would be adequately accommodated across 8 stacking spaces, leaving seven stacking spaces remaining which could accommodate a potential overflow of vehicles in the event of an incident occurring. In all scenarios shown there are vacant stacking spaces available within the stacking channel and on-site stacking would extend beyond the weighbridge office that is on-site. Therefore, in the busiest hour, all trucks predicted to arrive at the site would be accommodated wholly on-site and would not be required to queue on the local road network.	Section 6.8.2 of the Modification Report Appendix E of the Modification Report

Submission text	Response	Reference
In the design for the amendments to the site, we would like confirmation the access and manoeuvring will not result in the loss of any on street carparking spaces.	Stacking spaces have been positioned outside of the path of travel for all vehicles entering and exiting to enable vehicles to manoeuvre safely around the site even during peak periods. Updated swept paths have been provided in Appendix A of this document to also show stacking spaces.	

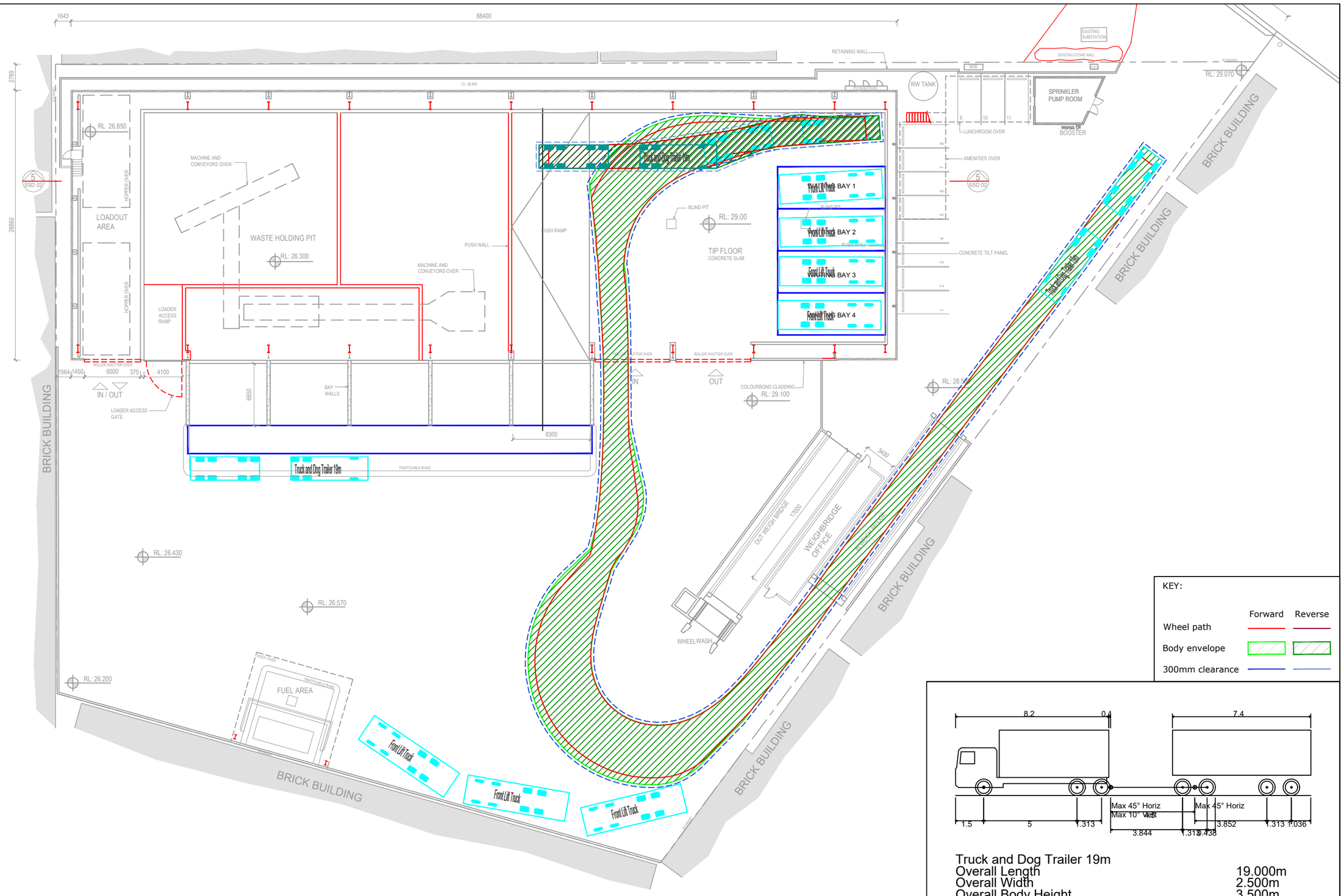
3 CONCLUSION

Bingo Industries (the Applicant) are seeking approval to modify the Current Approval at 20 Hearne Street, Mortdale (SSD 7421). The Modification Application was submitted to the Department of Planning and Environment on the 7th March and was followed by a 14 day notification period

This Response to Submissions Report has been prepared to address comments raised during the notification period and provide further information as required.

The Modification Proposal would, subject to the implementation of mitigation measures as outlined in the Original Approval, result in no substantial environmental impacts in addition to those identified within the Current Approval.

APPENDIX A UPDATED SWEPT PATHS



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Truck and Dog Trailer 19m	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

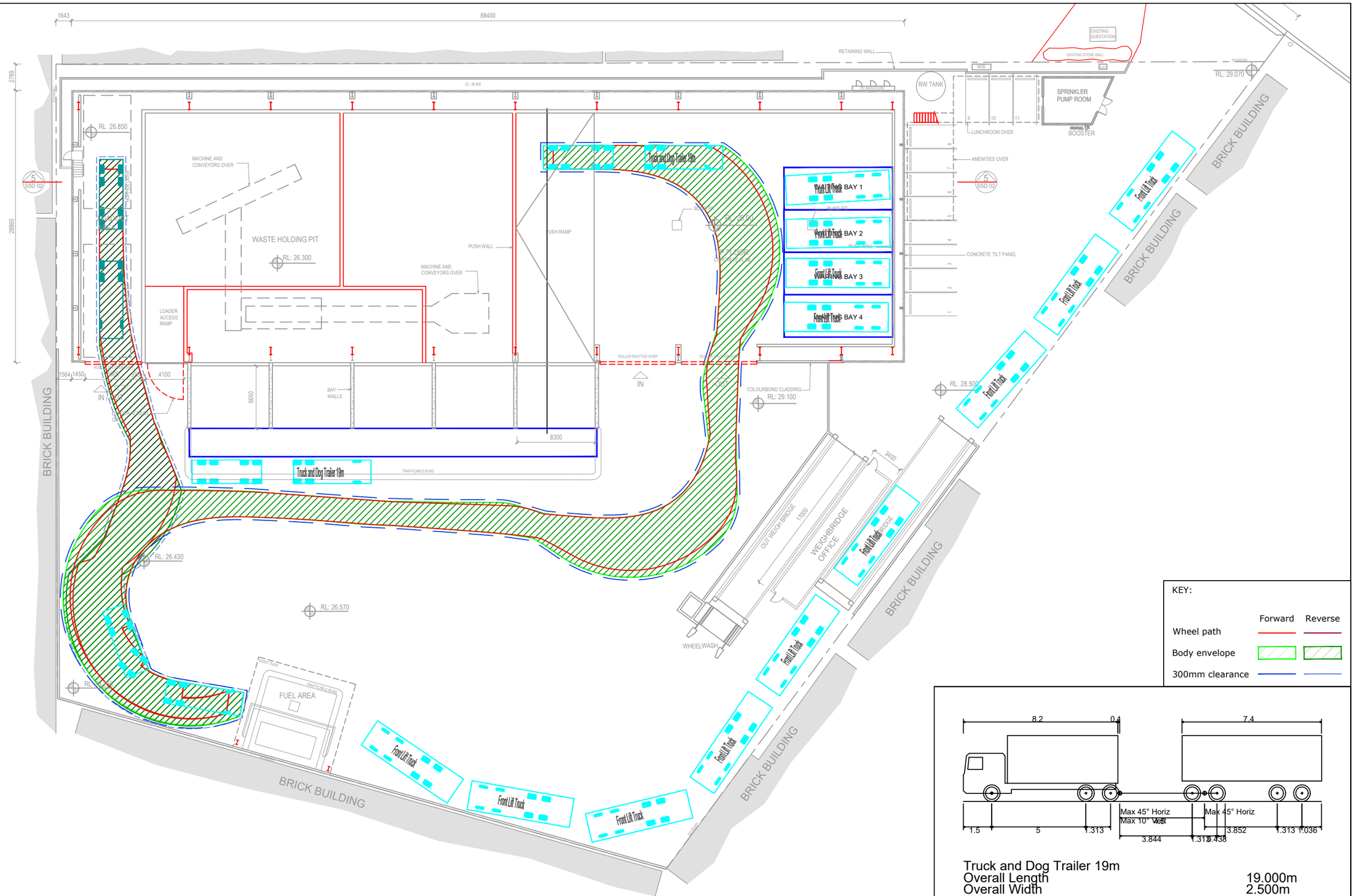
TITLE: 19m TRUCK & DOG TRAILER VEHICLE SWEPT PATH ANALYSIS
INBOUND WEIGHBRIDGE - DROP/ TIP AREA

DWG No. 16222CAD008
FIGURE 1

DATE STAMP 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Kurt.magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Truck and Dog Trailer 19m

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

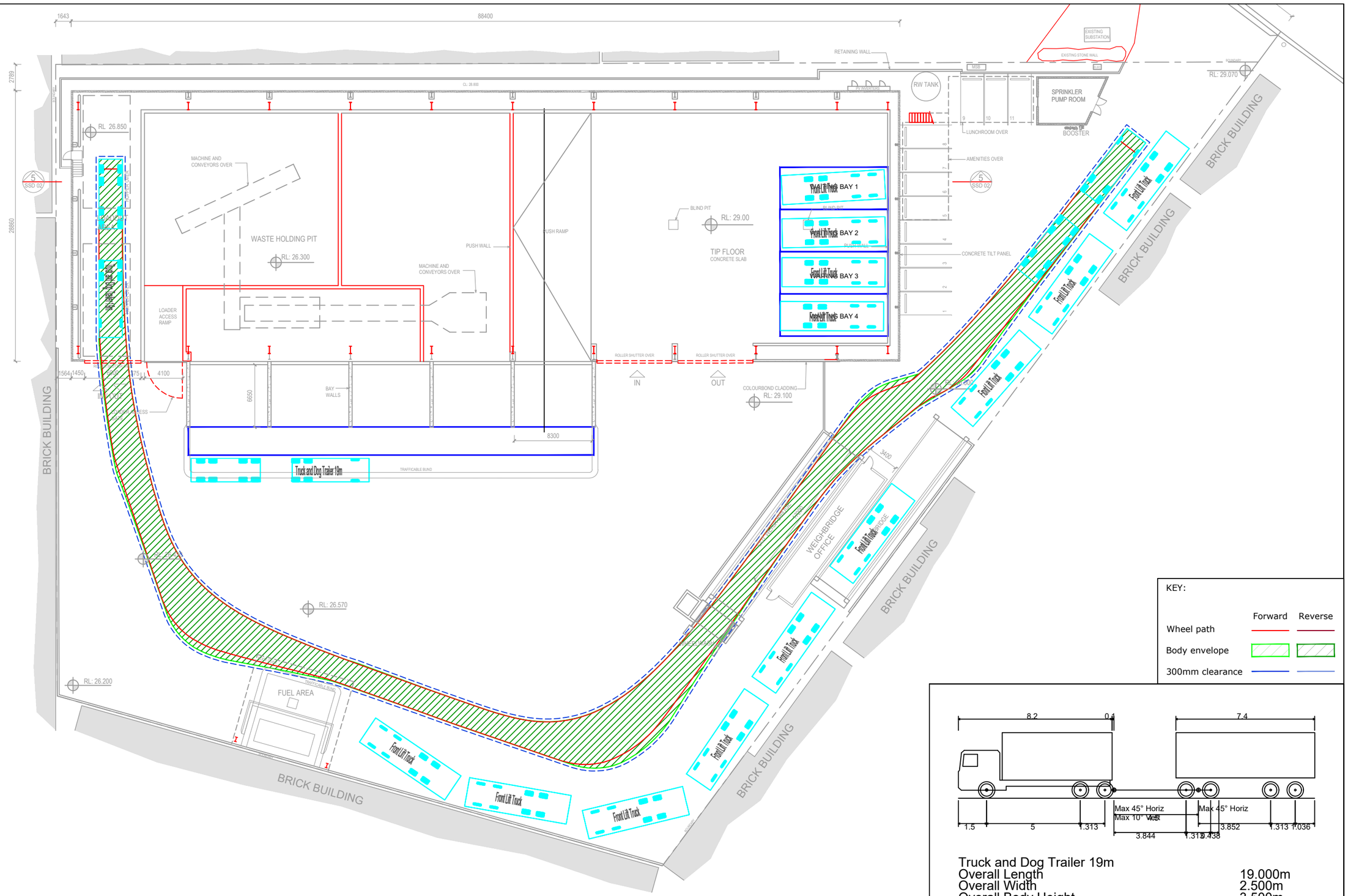
TITLE: 19m TRUCK & DOG TRAILER VEHICLE SWEPT PATH ANALYSIS
DROP/ TIP AREA - BUNKER AREA

DWG No. 16222CAD008
FIGURE 2

DATE STAMP 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Karl.magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Truck and Dog Trailer 19m

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

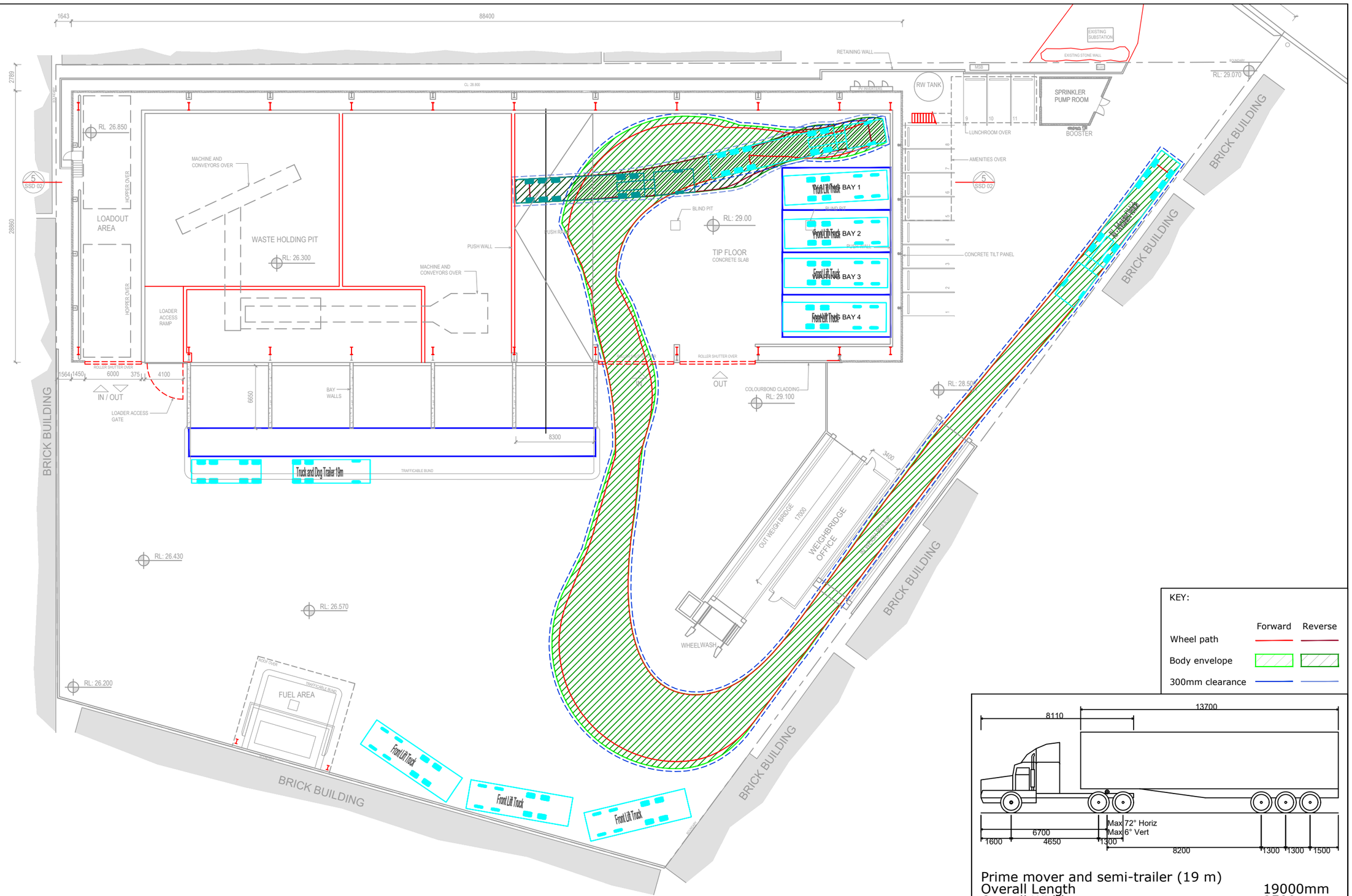
TITLE: 19m TRUCK & DOG TRAILER VEHICLE SWEPT PATH ANALYSIS
BUNKER AREA - OUTBOUND WEIGHBRIDGE

DWG No. 16222CAD008
FIGURE 3

DATE STAMP: 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Kiet.magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT

BINGO MORTDALE

TITLE

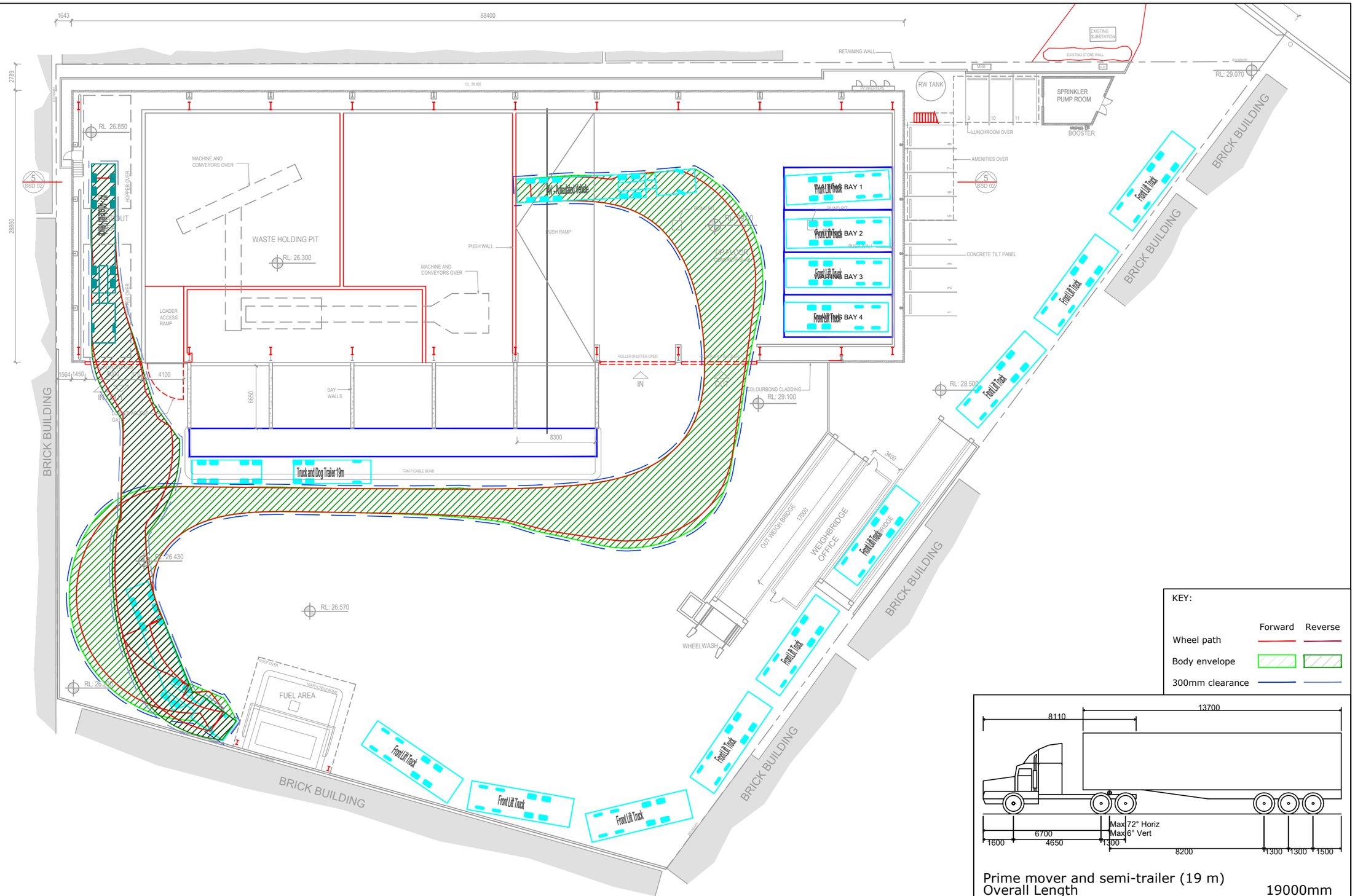
19m PRIME MOVER & SEMI-TRAILER VEHICLE SWEPT PATH ANALYSIS
INBOUND WEIGHBRIDGE - DROP/ TIP AREA

DWG No. 16222CAD008 FIGURE 4

DATE STAMP 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Karl.magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

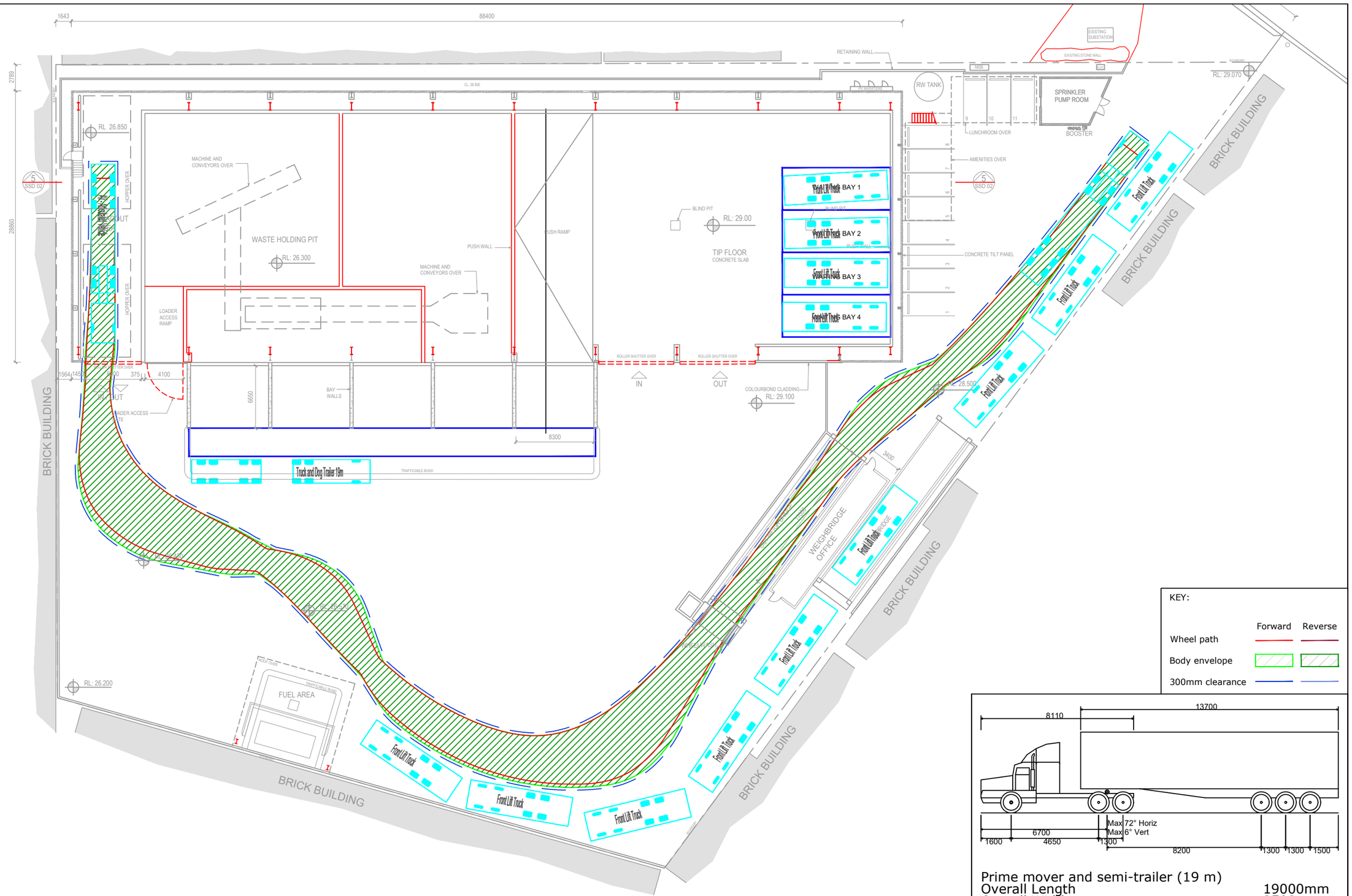
TITLE: 19m PRIME MOVER & SEMI-TRAILER VEHICLE SWEPT PATH ANALYSIS
DROP/ TIP AREA - BUNKER AREA

DWG No. 16222CAD008
FIGURE 5

DATE STAMP 04 APRIL 2019

PROJECT No. 16222 | SCALE 1:400 @ A3 | REV. A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Karl.magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Prime mover and semi-trailer (19 m)

Overall Length	19000mm
Overall Width	2500mm
Overall Body Height	4300mm
Min Body Ground Clearance	540mm
Track Width	2500mm
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12500mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

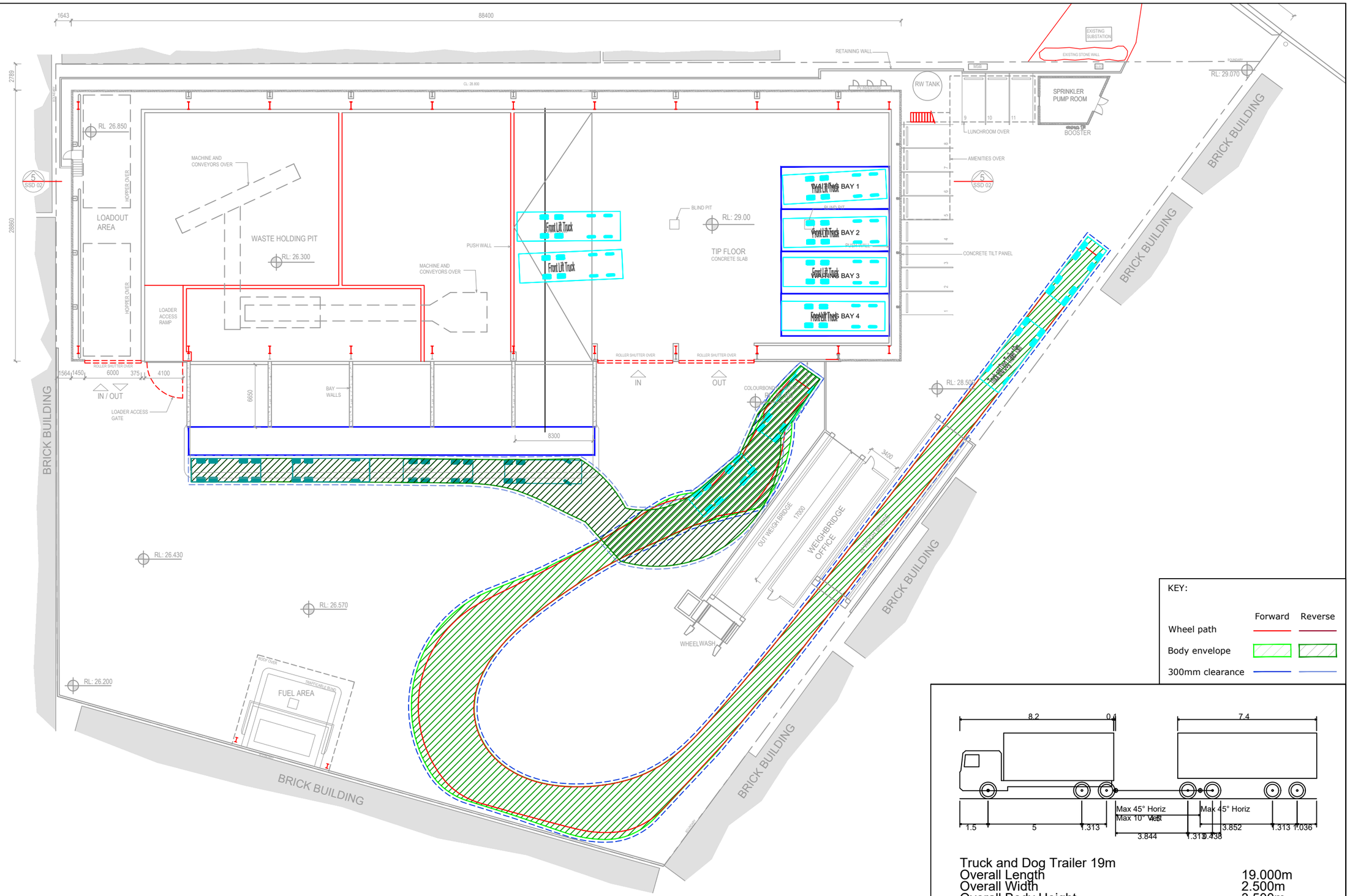
TITLE: 19m PRIME MOVER & SEMI-TRAILER VEHICLE SWEPT PATH ANALYSIS
BUNKER AREA - OUTBOUND WEIGHBRIDGE

DWG No. 16222CAD008
FIGURE 6

DATE STAMP 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg
Date: 4 April 2019
By: Kiet magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Truck and Dog Trailer 19m	
Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

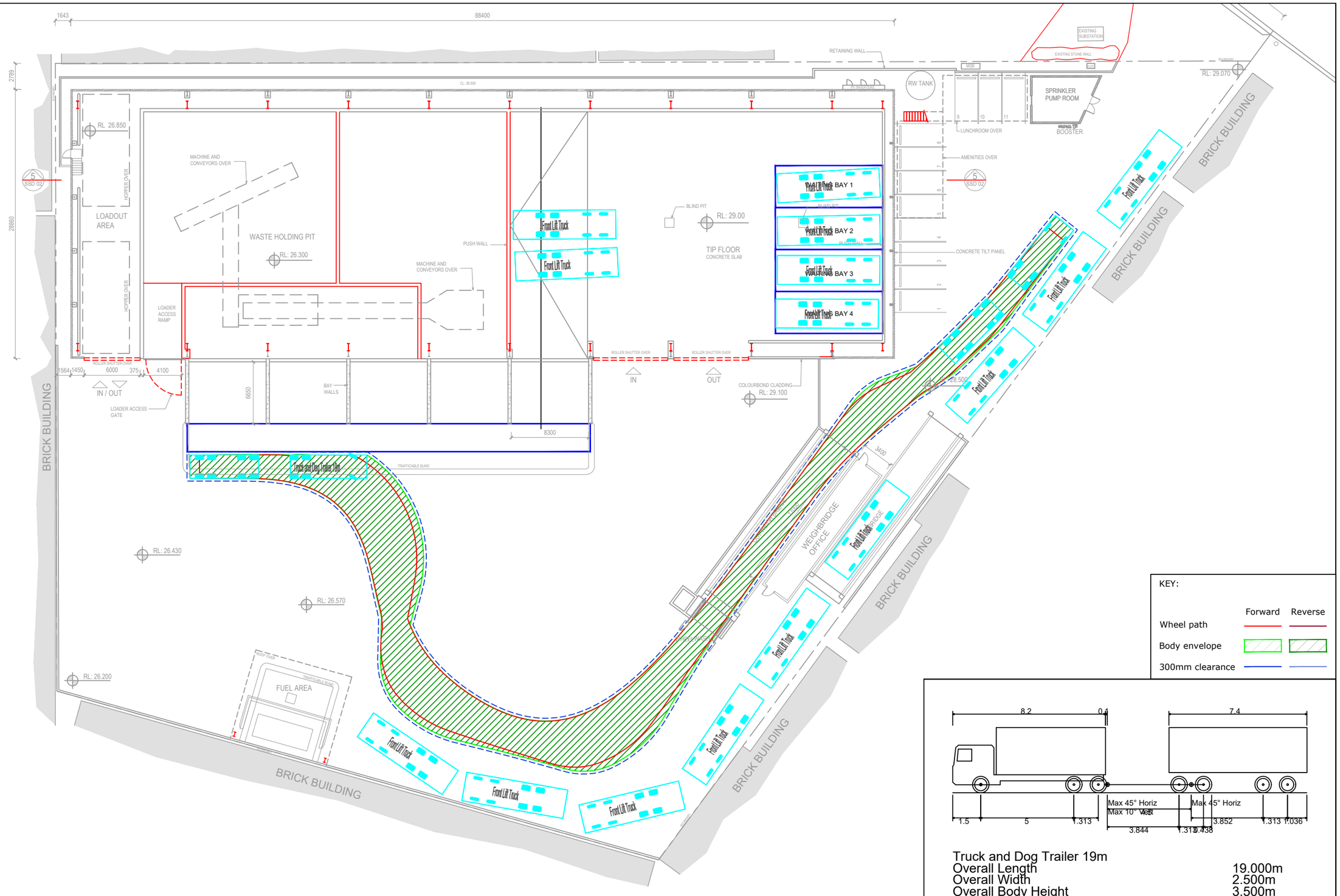
TITLE: 19m TRUCK & DOG TRAILER VEHICLE SWEPT PATH ANALYSIS
INBOUND WEIGHBRIDGE - BIN AREA

DWG No. 16222CAD008 FIGURE 7

DATE STAMP 04 APRIL 2019

PROJECT No.	SCALE	REV.
16222	1:400 @ A3	A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Karl magistrado



KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		

Truck and Dog Trailer 19m

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	3.500m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KM	SB	WJ	04/04/19

ttpp transport planning

PROJECT: BINGO MORTDALE

TITLE: 19m TRUCK & DOG TRAILER VEHICLE SWEPT PATH ANALYSIS
BIN AREA - OUTBOUND WEIGHBRIDGE

DWG No. 16222CAD008 FIGURE 8

DATE STAMP 04 APRIL 2019

PROJECT No. 16222 | SCALE 1:400 @ A3 | REV. A

Filename: 16222CAD008-SWEPT PATH-190404.dwg Date: 4 April 2019 By: Karl.magistrado

APPENDIX B AIR QUALITY ASSESSMENT

WILKINSON MURRAY

21 February 2019

WM Project Number: 19036
Our Ref: a19036ltr090219JW
Email: sean.fishwick@arcadis.com

Sean Fishwick
Arcadis
Level 16, 580 George Street
SYDNEY NSW 2000

Dear Sean

Re: Mortdale Project - Resource Recovery Facility (RRF)

Wilkinson Murray Pty Limited has been engaged by Arcadis on behalf of Bingo Industries to conduct an air quality assessment for the modifications of the existing Mortdale Resource Recovery Facility (RRF). This assessment intends to accompany the application for a number of minor changes to the approved plans for the existing Mortdale Resource Recovery Facility (RRF), approved under SSD7421, at 20 Hearne St, Mortdale.

An Air Quality Impact Assessment (AQIA) was prepared by SLR (28 May 2016) to support the initial State Significant Development Application (SSD) in the Environmental Impact Statement (EIS). Additional information was requested by EPA to provide:

- a tabulated emission inventory outlining all input parameters utilised to estimate emissions; and
- where exceedances of the EPA's impact assessment criteria for particles are predicted, the modelling assessment should be revised to include proposed emission controls which will be adopted at the premises.

SLR in a Memorandum dated 28 October 2016 provided a response to submissions (RtS) with the additional information as requested by the EPA.

This assessment report aims to demonstrate qualitatively, that provided all recommended mitigation measures previously recommended remain in place, that the modification for a number of minor changes to the approved plans for the existing Mortdale Resource Recovery Facility would be similar or less compared to air quality impacts presented by SLR AQIA and SLR Memorandum.

The Mortdale Resource Recovery Facility site is located within an established industrial area with many industrial facilities and associated activities taking place around the site. The location of the Project Site is shown in Figure 1.

Figure 1 Mortdale Resource Recovery Facility Site and Receivers

PROPOSED MODIFICATION TO APPROVED OPERATIONS

This modification under Section 4.55 (1A) of the *Environmental Planning & Assessment Act 1979* (EP&A Act) seeks approval from the Department of Planning and Environment (DPE) for a number of minor changes to the approved plans for the existing Mortdale Resource Recovery Facility (RRF) (approved under SSD7421) at 20 Hearne St, Mortdale (the site).

To optimise the efficiency of Bingo's broader resource recovery network and improve resource recovery outcomes, Bingo proposes to modify the Current Approval (the Modification Proposal). Modifications to the Current Approval as part of the Modification Proposal are presented in Table 1.

Table 1 Extent of proposed modifications

Component of approved project being modified	Modification proposed
Modification to operation	
Resource recovery process	Reduce scale of the resource recovery process including: • Replacing large scale recovery plant with a finger screen. • Consolidation of outputs to two primary recovered product streams, >60mm and < 60mm. • Primary waste movement activities undertaken by overhead gantry crane.
On-site vehicle movements	Change to the way vehicles move through the site by: • Providing an additional access point on the south western side of the recycling building. • Providing a bulk load out are in the north west of the recycling building. • Relocation of the outbound weigh bridge.
Queuing and stacking	• Changes to stacking arrangement to suit modifications to built form. • Reduced stacking spaces to reflect a reduction in vehicle dwell times.
Modifications to built form	
• Layout of the recycling building	• The recycling shed layout would be modified to: • Include a bulk load out area in the north west. • Expand the tip floor from 574m2 to 1120m2 • Include holding pits • Provide new entry / exit on the south western side of the building.
Outbound weigh bridge.	• Change in orientation of outbound weighbridge and wheel wash to support more efficient vehicle movements.
Site levels	• Site levels (elevations) changed to facilitate other built form change
Site amenities	• Reduction in footprint of administration/office building • Relocation of site amenities to be above car parking spaces
Product storage bays	• Consolidation of nine product storage bays into five
Processing plant and equipment	• Installation of a feed hopper, screens and conveyors to process and separate the mixed waste. • Installation of an overhead gantry crane within the building to move waste between various areas of the building, including loading of feed hopper, overhead bulk loading chutes, and picking of oversize materials including steel and large concrete from the waste holding area. • Installation of an overhead bulk loadout hopper.

Component of approved project being modified	Modification proposed
Car parking	• Reduction in car spaces from 12 to 11 reflecting reduced numbers of workforce on site
Administrative modifications	
Schedule 2 Part A Condition A8	• Change in specified waste storage areas and maximum volumes allowed to be stored in each area.

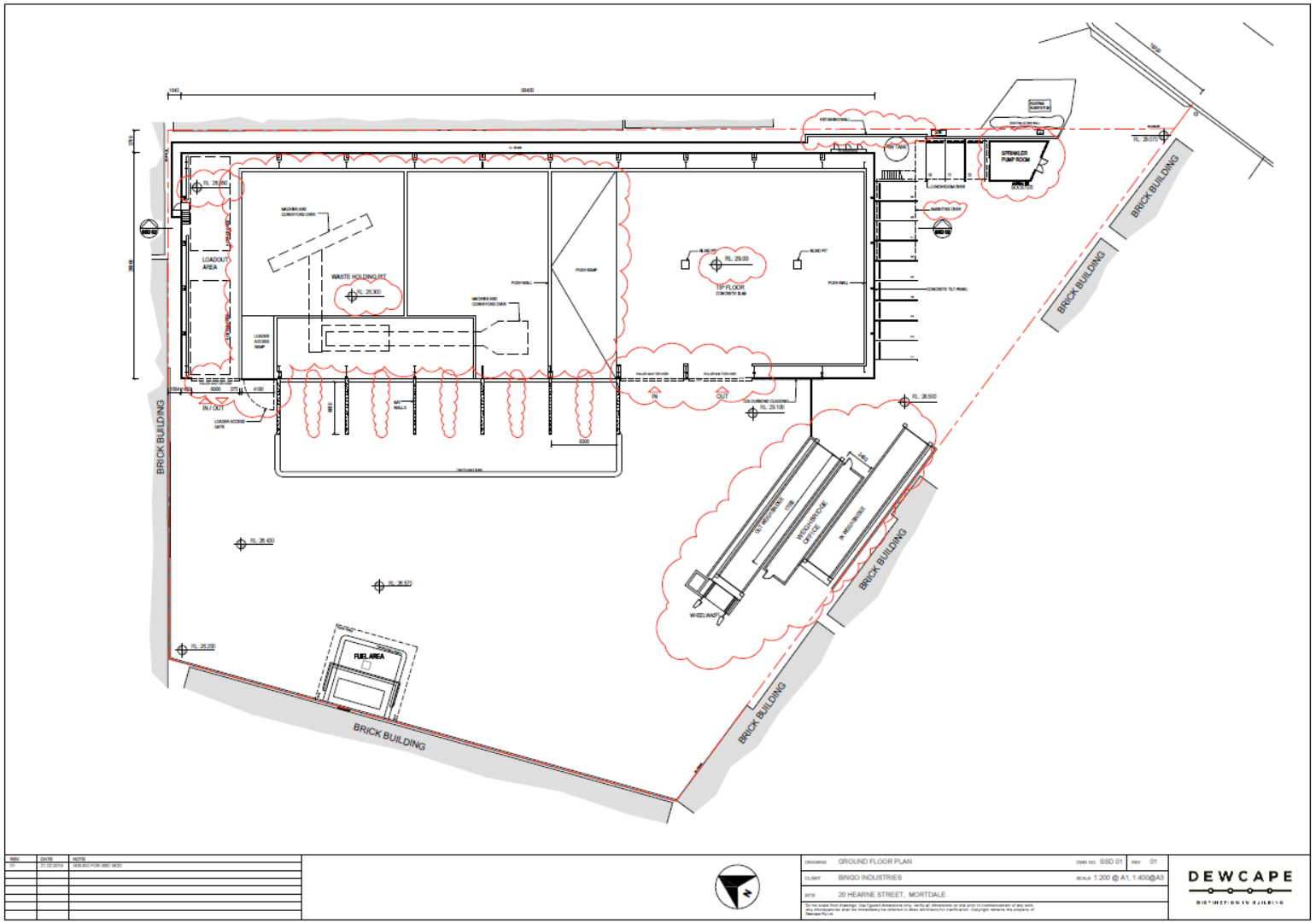
Hours of Operation

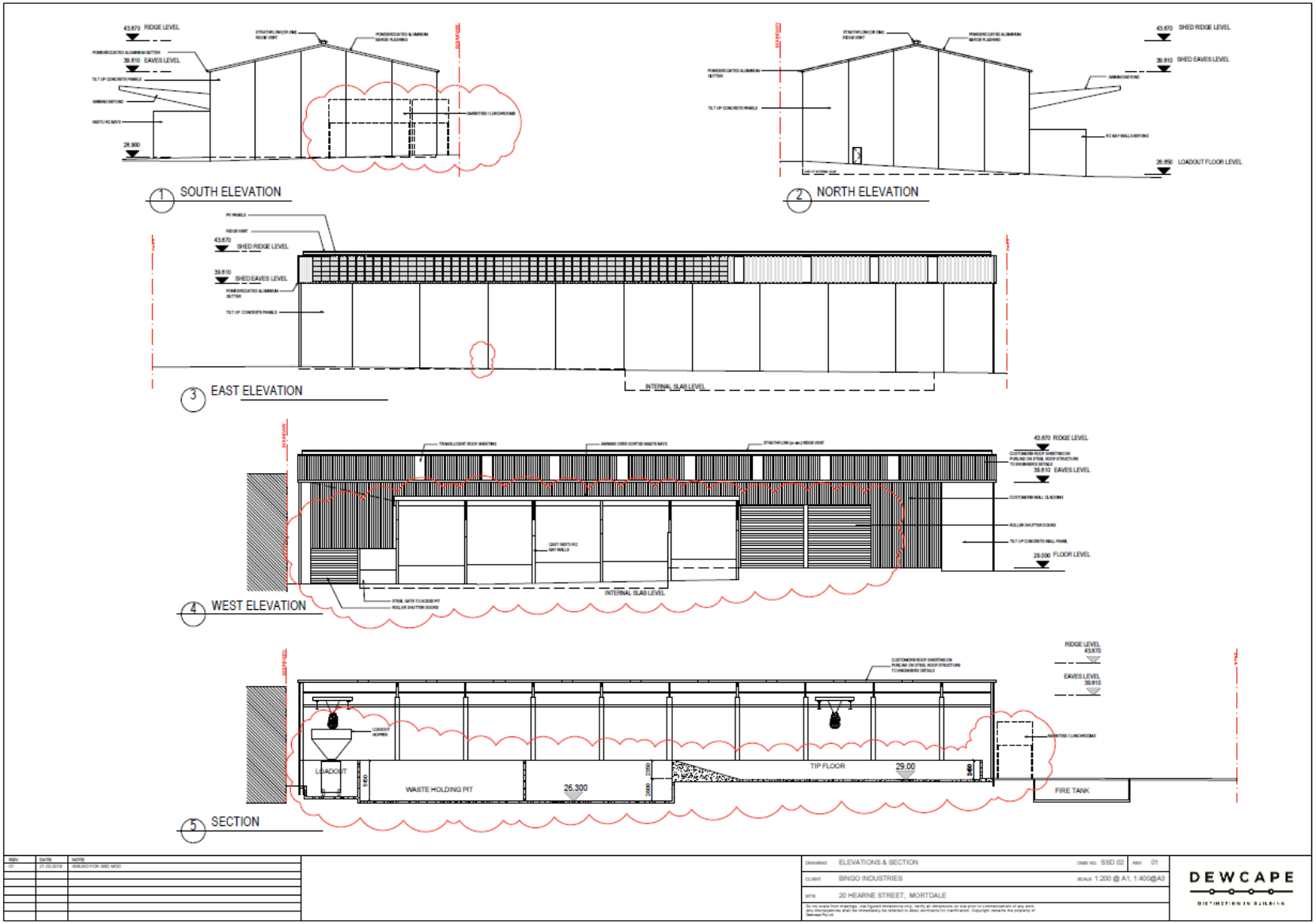
The site is to continue operating during the same approved hours of operation i.e. Monday to Friday, 6am to 10pm, as per condition B25 of the development consent.

Proposed Layout

Figure 1 shows the proposed layout changes and equipment at the Mortdale RRF

Figure 2 Proposed layout changes and equipment at the Mortdale RRF




43.670 RIDGE LEVEL
39.810 EAVES LEVEL
26.900
1 SOUTH ELEVATION
43.670 SHED RIDGE LEVEL
39.810 SHED EAVES LEVEL
26.850 LOADOUT FLOOR LEVEL
2 NORTH ELEVATION
43.670 SHED RIDGE LEVEL
39.810 SHED EAVES LEVEL
INTERNAL SLAB LEVEL
3 EAST ELEVATION
43.670 RIDGE LEVEL
39.810 EAVES LEVEL
26.000 FLOOR LEVEL
INTERNAL SLAB LEVEL
4 WEST ELEVATION
RIDGE LEVEL 43.670
EAVES LEVEL 39.810
LOADOUT
WASTE HOLDING PIT
26.300
TIP FLOOR
29.00
FIRE TANK
5 SECTION
ELEVATIONS & SECTION
SSD 02
01
BINGO INDUSTRIES
1:200 @ A1, 1:400@A3
20 HEARNE STREET, MORTDALE
DEWCAPE
DISTINCTION IN BUILDING

PREVIOUS ASSESSMENT

The SLR report identified several activities that may result in particulate emissions, including:

- loading/unloading and handling/processing of waste material;
- onsite vehicle movements; and
- wind erosion from waste stockpiles and exposed areas.

Based on an annual throughput of 300,000 tonnes per annum and the aforementioned emission sources, the initial AQIA identified that:

- Maximum 24-hour average cumulative (i.e. including background) PM2.5 concentrations predicted at surrounding sensitive receptor locations are below the relevant ambient air quality criterion of 25 µg/m³.
- Annual average cumulative PM2.5 concentrations predicted as a result of the proposed operation at surrounding sensitive receptor locations are well below the relevant ambient air quality criterion of 8 µg/m³.
- Maximum 24-hour average cumulative PM10 concentrations predicted at surrounding sensitive receptor locations are below the relevant ambient air quality criterion of 50 µg/m³.
- Annual average cumulative PM10 concentrations predicted as a result of the proposed operation are well below the relevant ambient air quality criterion of 30 µg/m³.
- Annual average cumulative dust deposition level predicted as a result of the proposed operation are well below the relevant ambient air quality criterion of 4 g/m²/month.
- Predicted TSP and dust deposition rates at neighbouring industrial sites which would indicate the potential for nuisance impacts are below the relevant criteria at the locations assessed. Annual average PM10 and maximum 24-hour and annual average PM2.5 concentrations were also predicted to be below the relevant criteria.
- A slight exceedance of the 24-hour average criterion for PM10 (50 µg/m3) was predicted at one of the industrial receptors assessed, receptor I3, where a maximum concentration of 57 µg/m3 was predicted.

The SLR Memorandum provided an updated the emissions inventory to include all control measures and re-modelling incremental and cumulative 24-hour average PM_{10} concentrations at surrounding sensitive/industrial receptors. With the revised emissions inventory and revised emission rates, cumulative 24-hour average PM_{10} concentrations at each receptor were calculated using the predicted increment from the Project and background 24-hour average PM_{10} concentrations outlined in the AQIA. With all additional controls in the emission inventory, the maximum predicted 24-hour average PM_{10} concentrations at all receptors included in the model (including industrial sites) comply with the assessment criterion of 50 µg/m^3.

EMISSIONS ESTIMATES

The dust emissions estimates presented in the SLR AQIA was based on the activity intensities presented in Table 2 and the emission factors and input assumptions in Table 3.

Table 2 Intensity of Each Activity (300,000 tpa)

Activity	Intensity	
	Annual	Unit
Unloading materials from truck	300,000	tonnes/annum
Material sorting/handling	600,000	tonnes/annum
Loading product material to truck	240,000	tonnes/annum
Onsite Hauling	10,057	vkt/annum
Wind erosion	0.5	ha

Table 3 Emission Factors and Input Assumptions

Activity[3]	Annual Average Emission Rate (kg/annum)				Input Assumptions	Emission Factor Source
	TSP	PM10	PM2.5	Unit		
Unloading materials from truck	0.0002	0.0001	0.00001	kg/t	Wind speed factor – 1.21 Moisture content – 10% Control efficiency – 90%[1]	USEPA AP42
Material sorting/handling	0.0002	0.0001	0.00001	kg/t		
Loading product material to truck	0.0002	0.0001	0.00001	kg/t		
Onsite Hauling	0.056	0.011	0.003	kg/t	Mean Vehicle weight – 15 t Onsite road length – 0.2 km/return trip Silt loading – 1.1 g/m² Control efficiency – 65%[2]	

The control efficiencies used for the revised modelling were:

- 90% for activities in the shed and in the loading bays;
- 70% on haul roads through the application of water sprays and limiting the onsite vehicle speeds to 5 km/hr; and
- 65% through the application of water spray and wind barrier effect achieved due to the fence at the site boundary and buildings/infrastructure within the site.

Table 4 presents the emissions estimates for the project as presented in the SLR AQIA.

Table 4 Estimated Emissions from the Project Site (Presented in the SLR Memorandum (300,000 tpa)

	Estimated Annual Emission Rate		
Activity	TSP	PM10	PM2.5
Unloading materials from truck	5	2	0.30
Material sorting/handling	9	4	0.60
Loading product material to truck	4	2	0.30
Onsite Hauling	168	32	7.80
Wind erosion	615	307	28.80
Total Site Emissions (kg/annum)	**801.00**	**347**	**37.80**

During the RtS process the proposed throughput was reduced to 220,000 tpa. However, air quality modelling undertaken for the RtS continued to be based on 300,000 tpa. As the SLR AQIA was conducted based on a total through put of 300,000 tpar, it has been revised for the through put of 220,000 tpa. The revised activity intensities are presented in Table 5 with the emissions estimates presented in Table 6. The control efficiencies were the same as described in the SLR Memorandum.

Table 5 Modified Intensity of Each Activity (220,000 tpa)

Activity	Intensity	
	Annual	Unit
Unloading materials from truck	220,000	tonnes/annum
Material sorting/handling	440,000	tonnes/annum
Loading product material to truck	176,000	tonnes/annum
Onsite Hauling	7,375	vkt/annum
Wind erosion	0.5	ha

Table 6 Estimated Emissions from the modified Project Site (220,000 tpa)

	Estimated Annual Emission Rate		
Activity	**TSP**	**PM10**	**PM2.5**
Unloading materials from truck	3.7	1.5	0.2
Material sorting/handling	6.6	2.9	0.4
Loading product material to truck	2.9	1.5	0.2
Onsite Hauling	123.1	23.5	5.7
Wind erosion	615.0	307.0	28.8
Total Site Emissions (kg/annum)	**751.3**	**336.3**	**35.4**

A comparison of the dust emissions for the current air quality impact assessment and the RtS modified project with 220,000 tpa it can be seen that dust emissions would reduce substantially in the oder of 10%.

Consequently, as the Modification Proposal would operate at an annual throughput of 220,000 tpa and the air quality impacts presented for the Current Approval assumed an annual throughput of 300,000 tpa it has overestimated the predicted air quality impacts.

IMPLICATIONS OF THE PROPOSED MODIFICATIONS

The Modified Proposal would not alter these emission sources. To identify the potential impacts of the Modification Proposal on operational air quality, the effect of the modifications on each emission sources is provided below:

- **Unloading materials from trucks:**
  - Unloading of materials in the recycling shed is a relatively small dust emission. The proposed modification would not result in any change of the emissions inventory as the waste would be tipped within the shed.
- **Material sorting/handling**
  - The proposed modification would likely reduce the emissions as a proportion of the waste would now go directly to the truck for loading (adjacent to the product storage bays). Additionally, the number of product streams would be reduced, reducing the overall waste handling requirements.
- **Loading product material to trucks**
  - The proposed modification would not result in any change of the emissions inventory as the same amount of waste would be loaded into trucks.
- **Onsite Hauling**
  - The proposed modification would not result in any change of the emissions as the 'vehicle kilometres travelled on site remain the same.
- **Wind erosion**
  - The proposed modification would not result in any change of the emissions as the site area is remaining the same.

As the Modified Proposal would operate at an annual throughput of 220,000 tpa and the proposed modifications would have no impact on or would reduce emissions from emission sources, the air quality impacts to surrounding receivers would be less than those identified within the Current Approval.

DUST MANAGEMENT

The following mitigation and management measures will be implemented at the site to minimise offsite air quality impacts, namely:

- A dust misting system will be installed in the shed. This system pressurises water through nozzles designed to produce fine water droplets that encapsulate and suppress dust particles present in the atmosphere, so that they settle out of the air.
- Water sprays will be used to dampen dusty materials as they are moved around the site and loaded into bins and also to minimise emissions from on-site stockpiles, supported by the use of hand-held hoses.
- Paved roadways, hard stand areas and driveways will be kept clean by use of the onsite sweeper and dampened using hoses as required to prevent dust from the vehicle movements.
- Hand held hoses will also be used in areas not controlled by the sprinkler system.
- The site supervisor has the authority to cease operations if weather conditions have a major negative impact on the operation.
- A general vehicle speed limit of 5 km/hr will be imposed across all areas of the site.
- All vehicles are checked for mud and soil on tyres prior to leaving site and where mud or soil is detected on the entrance road (i.e. "track out"), staff will be deployed to sweep the road.
- All on-site, fixed and mobile diesel powered plant (excluding road vehicles) will be maintained in accordance with the manufacturers' specifications.
- Trucks will remain covered until waste removal (unloading).

The results of this air quality assessment indicates that dust and particulate matter concentrations due to the operation of the Modified Proposal can be adequately managed on site to mitigate impacts and would be less than that previously modelled within the Current Approval.

I trust this information is sufficient. Please contact us if you have any further queries.

Yours faithfully
WILKINSON MURRAY

John Wassermann
Director

APPENDIX C NOISE IMPACT ASSESSMENT

ACOUSTICS AND AIR

MORTDALE RESOURCE RECOVERY FACILITY NOISE ASSESSMENT

SECTION 4.55(1A) APPLICATION (SSD 15_7421)

REPORT NO. 19036
VERSION B

FEBRUARY 2019

PREPARED FOR

ARCADIS AUSTRALIA PACIFIC PTY LTD
LEVEL 16, 580 GEORGE STREET
SYDNEY

WILKINSON MURRAY

DOCUMENT CONTROL

Version	Status	Date	Prepared By	Reviewed By
A	Draft	4 February 2019	Remi Larmandieu	John Wassermann
A	Draft	7 February 2019	Remi Larmandieu	John Wassermann
B	Final	20 February 2019	John Wassermann	-

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AAAC

This firm is a member firm of the Association of Australasian Acoustical Consultants and the work here reported has been carried out in accordance with the terms of that membership.

Celebrating 50 Years in 2012

Wilkinson Murray is an independent firm established in 1962, originally as Carr & Wilkinson. In 1976 Barry Murray joined founding partner Roger Wilkinson and the firm adopted the name which remains today. From a successful operation in Australia, Wilkinson Murray expanded its reach into Asia by opening a Hong Kong office early in 2006. Today, with offices in Sydney, Newcastle, Wollongong, Orange, Queensland and Hong Kong, Wilkinson Murray services the entire Asia-Pacific region.

TABLE OF CONTENTS

GLOSSARY OF ACOUSTIC TERMS

Most environments are affected by environmental noise which continuously varies, largely as a result of road traffic. To describe the overall noise environment, a number of noise descriptors have been developed and these involve statistical and other analysis of the varying noise over sampling periods, typically taken as 15 minutes. These descriptors, which are demonstrated in the graph below, are here defined.

Maximum Noise Level (L_{Amax}) – The maximum noise level over a sample period is the maximum level, measured on fast response, during the sample period.

L_{A1} – The L_{A1} level is the noise level which is exceeded for 1% of the sample period. During the sample period, the noise level is below the L_{A1} level for 99% of the time.

L_{A10} – The L_{A10} level is the noise level which is exceeded for 10% of the sample period. During the sample period, the noise level is below the L_{A10} level for 90% of the time. The L_{A10} is a common noise descriptor for environmental noise and road traffic noise.

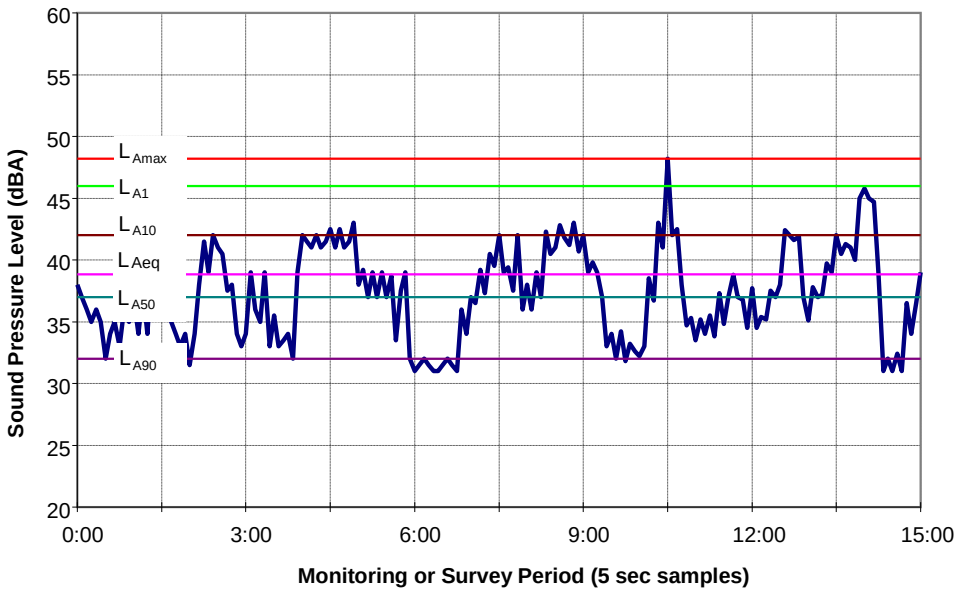
L_{A90} – The L_{A90} level is the noise level which is exceeded for 90% of the sample period. During the sample period, the noise level is below the L_{A90} level for 10% of the time. This measure is commonly referred to as the background noise level.

L_{Aeq} – The equivalent continuous sound level (L_{Aeq}) is the energy average of the varying noise over the sample period and is equivalent to the level of a constant noise which contains the same energy as the varying noise environment. This measure is also a common measure of environmental noise and road traffic noise.

ABL – The Assessment Background Level is the single figure background level representing each assessment period (daytime, evening and night time) for each day. It is determined by calculating the 10th percentile (lowest 10th percent) background level (L_{A90}) for each period.

RBL – The Rating Background Level for each period is the median value of the ABL values for the period over all of the days measured. There is therefore an RBL value for each period – daytime, evening and night time.

Typical Graph of Sound Pressure Level vs Time



1 INTRODUCTION

Wilkinson Murray Pty Limited has been engaged by Arcadis on behalf of Bingo Industries to conduct a noise impact assessment of the Mortdale Resource Recovery Facility operations. This assessment intends to accompany the application for a number of minor changes to the approved plans for the existing site, approved under SSD7421, at 20 Hearne St, Mortdale.

A Noise and Vibration Impact Assessment (NVIA) prepared by SLR and dated 28 June 2016 was conducted to support the initial State Significant Development Application. Additional, supplementary assessments were conducted by SLR dated 5 December 2016 dated 16 March 2017. Any reference in this report referring to the SLR NVIA refers to the latest SLR NVIA dated 16 March 2017.

This assessment provides an updated noise assessment for the nearest residential receptors to the existing facility for future operations, taking into account the proposed modifications.

This assessment has been prepared based on monitoring results and criteria established in the approved SSD7421 assessment.

The scope of this noise impact assessment includes modified operational noise predictions (i.e. noise from the site and associated fixed and mobile equipment including; internal equipment, unloading and loading activities, etc.) impacting on nearby receivers.

The following sections of this assessment detail the noise assessment methodology, noise assessment criteria, and the noise predicted levels at the receivers.

2 SITE DESCRIPTION

The Mortdale Resource Recovery Facility site is located within an established industrial area with many industrial facilities and associated activities taking place around the site.

A review of the local area has been conducted and there have not been any changes in the land uses compared to the SLR NVIA. Therefore, for the purpose of consistency with the approved project the same receivers have been considered as the SLR NVIA as presented in Table 2-1.

Table 2-1 Noise Receivers Types and Locations

Receiver	Address	Type of Receiver
R1	147 Boundary Road	Residential
R2	128 Boundary Road	Residential
R3	106 Boundary Road	Residential
R4	55 Boundary Road	Residential
R5	27 Barry Avenue	Residential
R6	41 Anderson Avenue	Residential
R7	64 Roberts Avenue	Residential
R8	45 Roberts Avenue	Residential
R9	72 Lorraine Street	Residential
R10	46 Lorraine Street	Residential
R11	18 Lorraine Street	Residential
R12	27 Hannons Street	Residential
R13	12 Turpentine Avenue	Residential
R14	6 Pritchard Place	Residential
R15	824 Forest Road	Residential
R16	38 Anderson Road	Residential
R17	48 Barry Avenue	Childcare Centre
R18	128 Boundary Road	Industrial

Receivers locations are presented in Figure 2-1.

Figure 2-1 Existing Mortdale Resource Recovery Facility Site and Receivers

Image courtesy of Six Maps - Photographed 22 July 2018

3 PROPOSED MODIFICATION TO APPROVED OPERATIONS

3.1 Proposed Modifications Summary

This modification under Section 4.55 (1A) of the *Environmental Planning & Assessment Act 1979* (EP&A Act) seeks approval from the Department of Planning and Environment (DPE) for a number of minor changes to the approved plans for the existing Mortdale Resource Recovery Facility (RRF) (approved under SSD7421) at 20 Hearne St, Mortdale (the site).

To optimise the efficiency of Bingo's broader resource recovery network and improve resource recovery outcomes, Bingo proposes to modify the Current Approval (the Modification Proposal). Modifications to the Current Approval as part of the Modification Proposal are presented in Table 3-1.

Table 3-1 Extent of proposed modifications

Component of approved project being modified	Modification proposed
Modification to operation	
Resource recovery process	Reduce scale of the resource recovery process including: • Replacing large scale recovery plant with a finger screen. • Consolidation of outputs to two primary recovered product streams, >60mm and < 60mm. • Primary waste movement activities undertaken by overhead gantry crane.
On-site vehicle movements	Change to the way vehicles move through the site by: • Providing an additional access point on the south western side of the recycling building. • Providing a bulk load out are in the north west of the recycling building. • Relocation of the outbound weigh bridge.
Queuing and stacking	• Changes to stacking arrangement to suit modifications to built form. • Reduced stacking spaces to reflect a reduction in vehicle dwell times.
Modifications to built form	
• Layout of the recycling building	• The recycling shed layout would be modified to: • Include a bulk load out area in the north west. • Expand the tip floor from 574m2 to 1120m2 • Include holding pits • Provide new entry / exit on the south western side of the building.
Outbound weigh bridge.	• Change in orientation of outbound weighbridge and wheel wash to support more efficient vehicle movements.
Site levels	• Site levels (elevations) changed to facilitate other built form change
Site amenities	• Reduction in footprint of administration/office building • Relocation of site amenities to be above car parking spaces
Product storage bays	• Consolidation of nine product storage bays into five
Processing plant and equipment	• Installation of a feed hopper, screens and conveyors to process and separate the mixed waste. • Installation of an overhead gantry crane within the building to move waste between various areas of the building, including loading of feed hopper, overhead bulk loading chutes, and picking of oversize materials including steel and large concrete from the waste holding area. • Installation of an overhead bulk loadout hopper.

Component of approved project being modified	Modification proposed
Car parking	• Reduction in car spaces from 12 to 11 reflecting reduced numbers of workforce on site
Administrative modifications	
Schedule 2 Part A Condition A8	• Change in specified waste storage areas and maximum volumes allowed to be stored in each area.

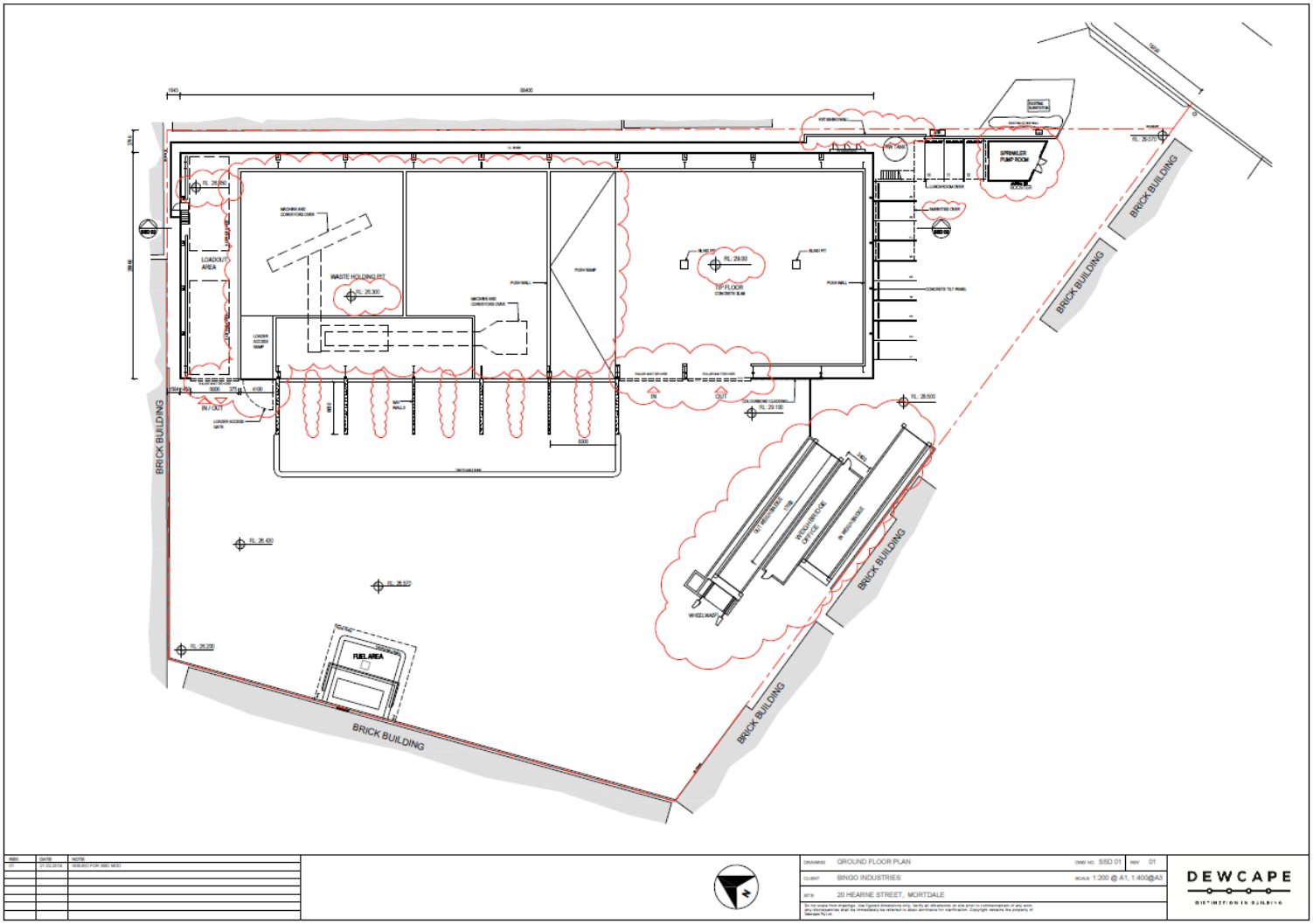
3.2 Hours of Operation

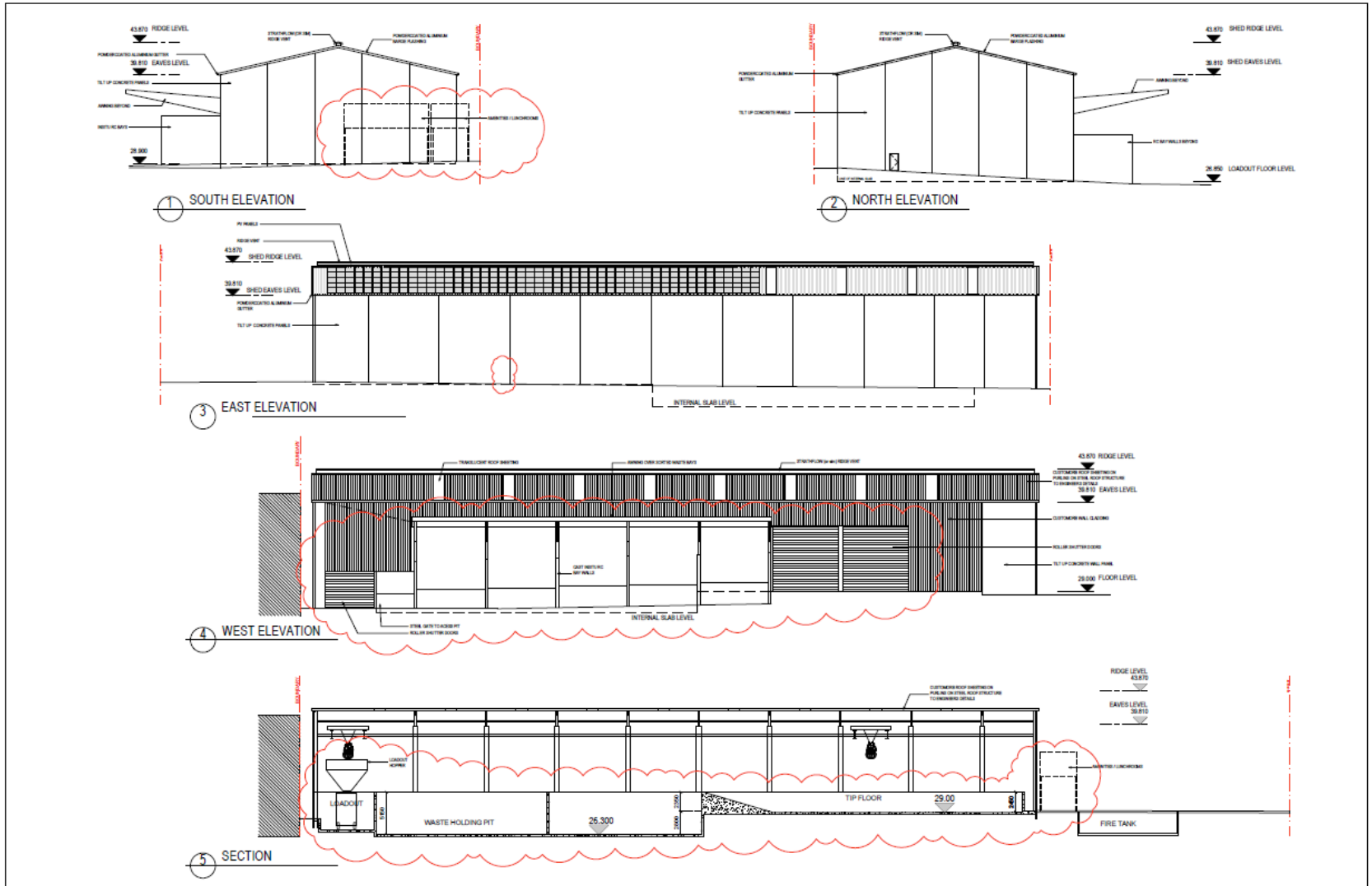
The site is to continue operating during the same approved hours of operation i.e. Monday to Friday, 6am to 10pm, as per condition B25 of the development consent.

3.3 Proposed Layout

Figure 3-1 show the proposed layout changes and equipment at the Mortdale RRF.

Figure 3-1 Proposed layout changes and equipment at the Mortdale RRF




1 SOUTH ELEVATION
2 NORTH ELEVATION
3 EAST ELEVATION
4 WEST ELEVATION
5 SECTION
RIDGE LEVEL
EAVES LEVEL
SHED RIDGE LEVEL
SHED EAVES LEVEL
LOADOUT FLOOR LEVEL
INTERNAL SLAB LEVEL
FLOOR LEVEL
LOADOUT
WASTE HOLDING PIT
25.300
TIP FLOOR
29.00
FIRE TANK
ELEVATIONS & SECTION
BINGO INDUSTRIES
20 HEARNE STREET, MORTDALE
DEWCAPE

4 NOISE CRITERIA

4.1 Background Noise Monitoring

For the purpose of characterising the existing acoustical environment at sensitive receivers, background noise monitoring was conducted by SLR in February 2015. The monitor was located at Receiver R6 (41 Anderson Avenue) between Wednesday 11 February and Wednesday 18 February 2015.

Measured ambient noise levels are presented in Table 4-1.

Table 4-1 Measured Ambient Noise Levels (SLR Monitoring)

Measurement Descriptor	Noise Levels– (dBA)					
	Daytime 7.00am-6.00pm		Evening 6.00-10.00pm		Night Time 10.00pm-7.00am	
	$L_{Aeq,(period)}$	RBL (L_{A90} Background)	$L_{Aeq,(period)}$	RBL (L_{A90} Background)	$L_{Aeq,(period)}$	RBL (L_{A90} Background)
Receiver R6: 41 Anderson Avenue	57	42	55	38	54	34

4.2 Approved Noise Criteria

The noise criteria set out in the initial SLR NVIA are summarised in Table 4-2.

Table 4-2 Noise Criteria for Receivers

Receiver type	Time of Day [4]	ANL $L_{Aeq,(period)}$ [1]	Measured RBL $L_{A90,15minute}$ [2]	Measured $L_{Aeq,(period)}$ Noise Level	Intrusive $L_{Aeq,15min}$ Criterion for New Sources	Amenity $L_{Aeq,(period)}$ Criterion for New Sources [3]	Sleep Disturbance Criteria
Residential	Morning Shoulder Period (6am–7am) [6]	-	39	55	**44**	45	INP 54 RNP 60-65 and 75-80
	Day	60	42	57	**47**	57	-
	Evening	50	38	55	**43**	45	-
	Night	45	34	54	**39**	44	INP 49 RNP 60-65 and 75-80
Childcare Centre	When in use	Peak hour $L_{Aeq(1hour, internal)}$ (8) 40	-	-		$L_{Aeq(1hour, external)}$ [4] **65**	-
Industrial	When in use	Acceptable 70 Maximum 75	-	-	**-**	**70-75**	-

Notes:
1) ANL Acceptable Noise Level
2) RBL Rating Background Level
3) Assuming existing noise levels unlikely to decrease
4) The internal criterion for school classrooms has been adopted for the childcare centre. The internal ANL has been set to $L_{Aeq(1hour,internal)}$ 40 dBA as determined that the premises is currently affected by noise from existing industrial noise sources. Accordingly, it is appropriate to adopt an external L_{Aeq} noise criterion of 65 dBA based on the assumption that windows would be closed

The noise criteria proposed by SLR were adopted by the Department of Planning in the SSD Approval.

5 PREDICTED OPERATIONAL NOISE LEVELS AND ASSESSMENT

Noise predictions associated with the revised operation of the site on the surrounding receivers have been conducted using the CADNA A noise model using the CONCAWE prediction algorithm consistent with the SLR assessment. Noise modelling was used to predict the resultant noise emission levels at nearby residential receivers.

Noise modelling is based on:

- equipment sound level emissions (measured or assumed) and location;
- screening effects from existing buildings;
- receivers' locations;
- meteorological conditions;
- ground topography, and;
- noise attenuation due to spherical spreading.

Noise levels have been assessed at all the receivers' locations as presented in Table 2-1.

5.1 Noise Scenario

Operational site noise has been modelled based on the following unchanged noise scenario:

- Morning shoulder period (6 am to 7 am): Processing and sorting of waste only, finger screen, gantry and waste processing vehicles operational (wheel loader and excavator in the shed), trucks entering and leaving the site;
- Daytime (7 am to 6 pm): Busiest operational period with finger screen and waste processing vehicles operational, wheel loader in shed, excavator loading truck at the bays, gantry operating, trucks dropping off / collecting waste, up to five trucks and fork lift on hardstand area;
- Evening (6 pm to 10 pm): Finger screen and gantry operational, wheel loader in the shed, trucks entering the site, loading and unloading.

5.2 Sound Power Levels of Proposed Plant and Equipment

Table 5-1 presents the sound power levels associated with the noise sources presented in the above scenario.

The sound power level of Loaded Finger and Finlay Screen has reduced because the new plant had five screens associated with the process, where it now only has one screen.

It should also be noted that the sound power level of the gantry crane is less than that of the excavators that would be required to operate less within the shed.

Table 5-1 Sound Power Levels of Equipment

Source [3]	Sound Power Level L_{Aeq} (dBA)	Sound Power Level L_{Amax} (dBA)
Loaded Finger and Finlay Screen (Single Screen) (within shed)	109[2]	123[1]
Gantry crane (within shed)	99[2]	110[2]
Volvo ECR145C Excavator	103[1]	110[1]
Volvo EC140C Excavator	103[1]	110[1]
Volvo L110F Wheel Loader	108[1]	115[1]
Liebherr LH22M Excavator	99[1]	102[1]
Komatsu 3.5 tonne Forklift	101[1]	106[1]
Trucks idling	100[1]	103[1]
Round trip truck entry, dump and exit	108[1]	111[1]

(1) Source SLR report.

(2) Wilkinson Murray Database.

(3) Due to the gantry crane it is likely that only one of the excavators would be used at any one time.

5.3 Predicted Operational Noise Levels

Table 5-2 presents the predicted noise levels at surrounding receivers due to site proposed operations detailed above. The assessment is based on standard meteorological conditions. Additionally, Table 5-2 presents the SLR predicted noise levels at surrounding receivers so that a comparison between the previous assessment and this assessment can be made.

As processing and sorting of waste activities are proposed between the 6 am to 7 am morning shoulder period, assessment of sleep disturbance is required. Resultant noise levels at residential receivers s have been predicted based on metal impact noise sound power level of 123 dBA, being the loudest noise source located at the site, within the shed. Predicted sleep disturbance noise levels are also presented in Table 5-2.

As can be seen from Table 5-2, compliance with criteria will be achieved for all surrounding receivers during all time periods for the modified operations on site.

Additionally, it can be seen that the predicted noise levels from the proposed modifications are lower than that presented in the original SLR NVIA and as such the proposed modifications would not result in an increase in impacts above those identified for the Approved project.

Table 5-2 SLR Predicted Noise Levels and Criteria (from SLR NVIA) and Expected Noise Changes as a result of Proposed Modifications

Receiver	Predicted Noise Levels, $L_{Aeq,15min}$												Compliance
	Morning shoulder L_{Aeq}			Day L_{Aeq}			Evening L_{Aeq}			Sleep disturbance L_{Amax}			
	SLR Predicted Level	Modification Predicted Level	Criteria	SLR Predicted Level	Modification Predicted Level	Criteria	SLR Predicted Level	Modification Predicted Level	Criteria	SLR Predicted Level	Modification Predicted Level	Criteria	
R1	30	21	44	37	22	47	34	21	43	36	23	54	**Yes**
R2	32	29	44	41	29	47	38	29	43	38	30	54	**Yes**
R3	38	32	44	47	33	47	41	32	43	44	33	54	**Yes**
R4	39	34	44	46	34	47	42	34	43	45	35	54	**Yes**
R5	36	34	44	43	35	47	40	34	43	41	34	54	**Yes**
R6	41	36	44	47	36	47	43	36	43	47	27	54	**Yes**
R7	39	36	44	46	37	47	42	36	43	45	39	54	**Yes**
R8	37	32	44	44	33	47	40	32	43	43	35	54	**Yes**
R9	33	30	44	40	31	47	38	30	43	39	33	54	**Yes**
R10	27	27	44	34	31	47	31	27	43	33	33	54	**Yes**
R11	40	30	44	46	32	47	41	30	43	46	32	54	**Yes**
R12	34	34	44	41	36	47	38	34	43	40	38	54	**Yes**
R13	32	32	44	39	36	47	36	32	43	38	37	54	**Yes**
R14	30	30	44	37	32	47	34	30	43	36	36	54	**Yes**
R15	28	28	44	35	29	47	31	28	43	34	32	54	**Yes**
R16	24	24	44	31	26	47	28	24	43	30	29	54	**Yes**
R17 Commercial	41	35	65	47	36	65	42	35	65	N/A	N/A	N/A	**Yes**
R18 Industrial	59	49	70	65	49	70	53	49	70	N/A	N/A	N/A	**Yes**

6 CONCLUSION

Wilkinson Murray Pty Ltd has conducted an acoustic assessment of the Mortdale Resource Recovery Facility, that are proposed be amended by Bingo Industries. Noise levels at surrounding receivers were predicted. The modelling results indicate that noise generated by the modified activities at the facility will fully comply with the noise criteria from the original SLR Noise and Vibration Impact Assessment and the sites SSD Approval noise limits.

It is also demonstrated that the proposed modifications do not result in a significant increase in impacts above those identified within the original EIS as typically the predicted noise levels from the proposed modifications are lower than that presented in the original SLR report.

It is noted that no additional noise controls, based on the proposed modification, are required for the Mortdale Resource Recovery Facility.

The previous mitigation measures and controls recommended in the approved SLR Noise and Vibration Impact Assessment will still apply.

ARCADIS Design & Consultancy for natural and built assets