RESPONSE TO SUBMISSIONS LETTER - TRAFFIC/VEHICLE MOVEMENTS

TO:	Mark Tartak (Skylife Properties)
CC:	Shivesh Singh (Skylife Properties), Anthony Williams (APP)
FROM:	Wayne Johnson (TTPP), Santi Botross (TTPP)
DATE:	03 April 2017
TTPP REF:	16222
RE:	Proposed Resource Recovery Facility, 20 Hearne Street Mortdale (SSD 7421) Response to Submissions

In December 2016, APP lodged a Response to Submissions report to the Department of Planning and Environment (DPE) following the submission of a State Significant Development (SSD) application for a proposed development at 20 Hearne Street, Mortdale. The proposal was for the upgrade of the existing Resource Recovery Facility (RRF) to have an annual waste throughput of 300,000 tonnes and permitted hours of operation of 24-hours per day Monday to Saturday.

In February 2017, DPE, Georges River Council and the Environmental Protection Authority (EPA) highlighted a number of concerns in relation to the operation of the future facility processing 300,000 tonnes of waste per annum (tpa). Following discussions between the Proponent and DPE, revised operational conditions are being proposed, namely:

- An annual waste throughput of 220,000 tonnes, and
- Hours of operation between 6:00am-10:00pm Monday to Saturday.

Each of the queries raised by the DPE, Council and EPA, with consideration of the revised operational conditions, are addressed within this letter.

DPE Item 1:

Additional information provided in TIA Letter, however the information lacks any detail regarding management of trucks at the site entry. Figure 2 depicts traffic controls which are all internal - there are no proposed controls at the entrance to avoid conflict with vehicles entering and exiting. If an exiting truck takes a wide berth, an incoming truck would not be able to enter.

Further details are required regarding management of vehicles entering and leaving the site to avoid queuing within the road reserve and traffic safety issues.

Traffic movements at the site access would be managed by implementing the following controls:

- Two-way traffic flows would be delineated by arrow stencils on the driveway. Traffic flows into and out of the site would be separated by a double barrier line (two-way). Delineation on the driveway would be provided in accordance with the design specification in RMS' Delineation Guidelines Section 4 – Longitudinal Markings and Section 10 – Pavement Arrows. Providing linemarking in line with RMS guidelines would ensure driver familiarity of information portrayed by the linemarking and to follow instructions accordingly.

- A Left Arrow Only sign is to be erected at the site access to instruct all drivers exiting the site to turn left when entering Hearne Street. As currently practiced, drivers would be informed of the approved haul routes to the site as part of their staff induction. Emphasis would be placed on the routes into the site via Hearne Street to/from the north, and that access via Barry Avenue is not permitted.

- A traffic controller would be stationed at the driveway access during site operation to supervise traffic movements on the driveway and on Hearne Street, near the site access.

  As with all traffic controllers and operators within the site, the traffic controller at the driveway access would communicate with other staff members via hand-held two-way radio. In the event of a traffic situation, real-time communication would allow site operators to attend to the issue immediately and resolve the problem as quickly as possible.

  The responsibility of the traffic controller would also include overseeing general driver behaviour including any drivers disobeying instructions to avoid the use of Barry Avenue (this point is discussed in further detailed in response to *EPA Item 6*).

The above controls at the site access are illustrated in Figure 1 while designated areas of supervision by site staff are shown in Figure 2. A traffic control plan showing measures across the entire site is provided in Attachment A.

Figure 1: Traffic Controls at Site Access

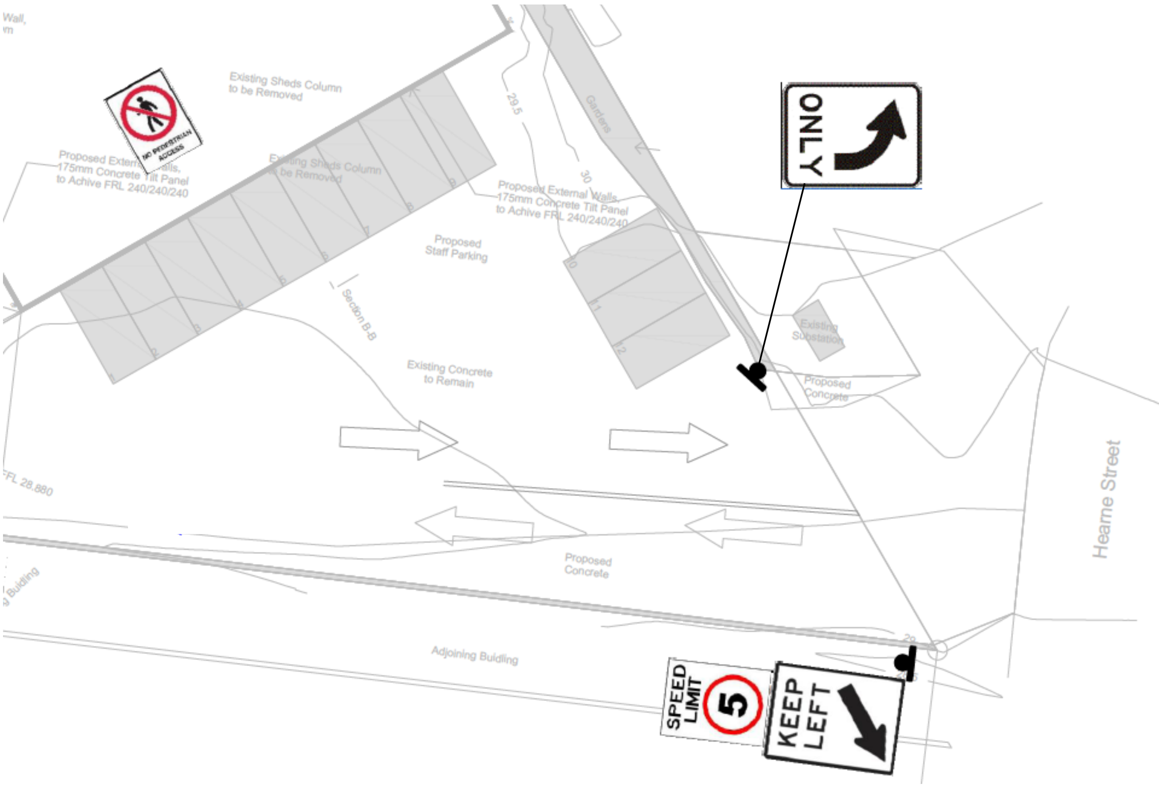
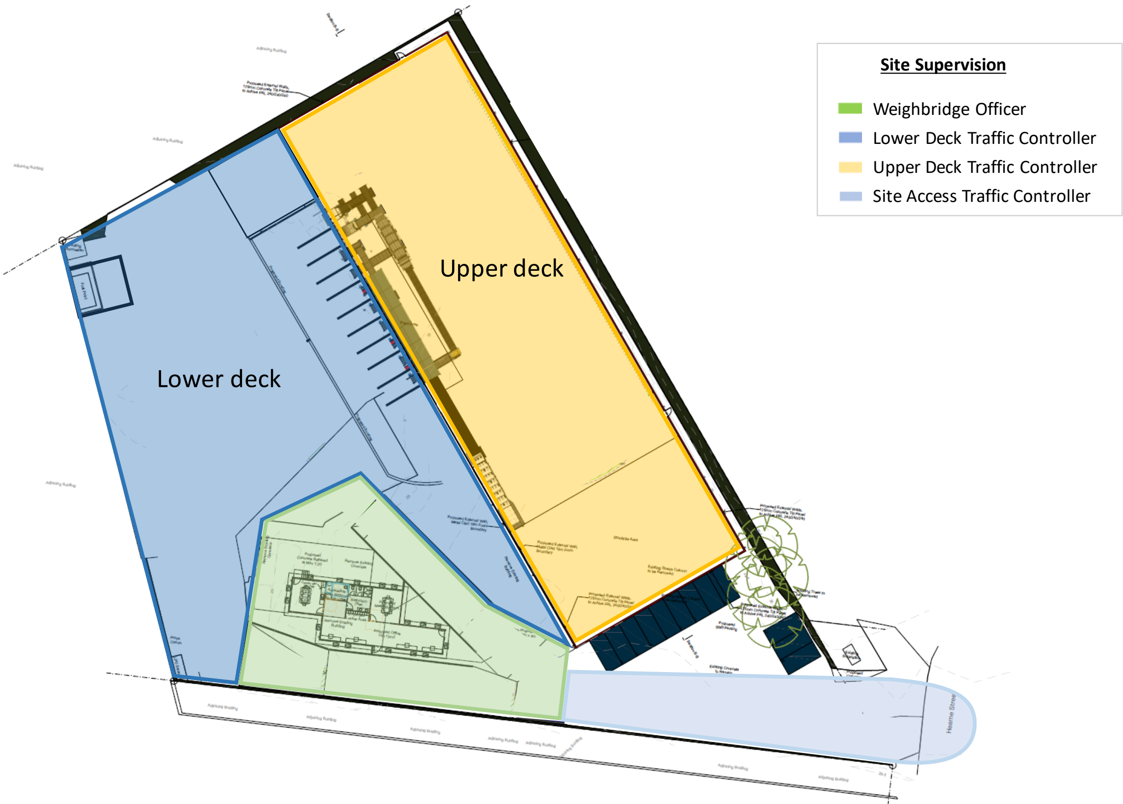
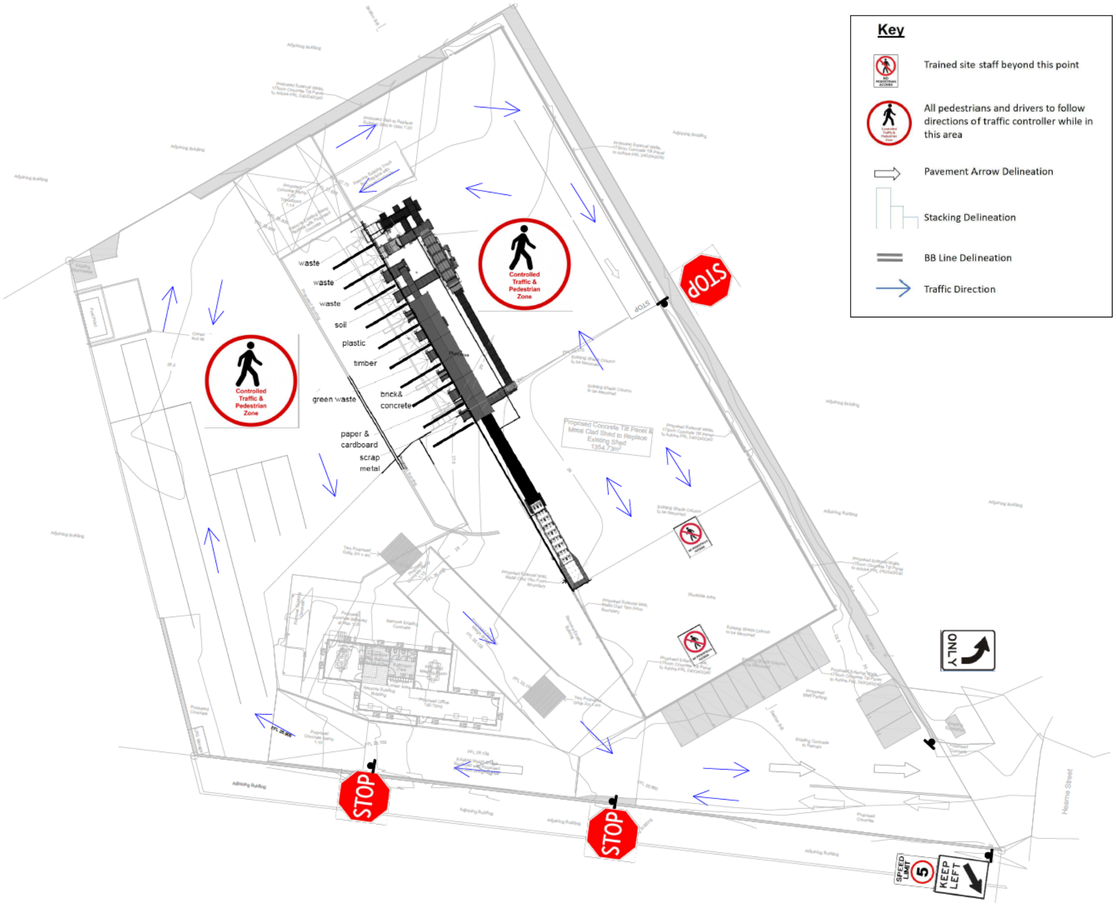


Figure 2: Areas of Site Supervision



Within the site, further management of trucks entering the stacking area would be achieved with delineation of stacking channels and hold lines indicating where the first vehicle in each channel is required to stop. The stacking channels and hold lines are illustrated in Figure 3 as well as being included on the overall site traffic control plan in Attachment A.

Figure 3: Delineation Controls for Onsite Stacking



Management of vehicles entering/leaving and the stacking of vehicles would be overseen by traffic controllers and operators stationed within each of the designated areas across the site. As shown in Figure 2, a vehicle entering the site would be supervised at every stage of the waste delivery process, namely:

- Entering the site from Hearne Street, the Site Access Traffic Controller would supervise turning movements in/out of the driveway and any potential access conflicts between large trucks.
- Whilst on the weighbridge, the Weighbridge Operator would instruct drivers on where to stop for an accurate recording of truck mass followed by directions to proceed to the lower deck.
- Whilst stacking on the lower deck, the Lower Deck Traffic Controller would advise drivers of a suitable space to queue, when it is safe to alight from their vehicle to

begin untarping and when to move into single-file on the way up to the upper deck.

- Whilst stacking on the upper deck and depositing waste on tip floor, the Upper Deck Traffic Controller would advise drivers when it is safe to perform a U-turn manoeuvre and reverse into the tip shed to unload waste. The Traffic Controller would also supervise the depositing of waste off the back of trucks and clearing of tip floor by a loader.
- When leaving the site, drivers would proceed from the tip shed to the outbound weighbridge which is supervised by the Weighbridge Officer, then head towards the exit where the Site Access Traffic Controller would be present to supervise and direct traffic.

An assessment of the vehicle stacking potential onsite is presented herein with regard to the following key aspects:

- The site layout
- The site's peak operation
- The anticipated composition of waste delivery/ collection vehicles, and
- The vehicle turn-over rate.

SITE LAYOUT

The site layout would allow for the storage of trucks across two levels, the upper deck and the lower deck, where the latter includes the inbound travel lane on the driveway. Vehicles would stack in a single-file arrangement along the inside perimeter of the site, with the exception on the lower deck where vehicles would stack parallel to each other. The upper deck would accommodate seven stacked vehicles and the lower deck (including the inbound travel lane on the driveway) would accommodate 24 stacked vehicles. Across the entire site, there would be a total of 31 stacking spaces which is an increase of three stacking spaces as a result of the removal of the bin storage area.

A plan showing the full extent of the onsite stacking for waste delivery vehicles is provided in Attachment B.

SITE PEAK OPERATION

The previous assessment considered an annual throughput of 300,000 tonnes across 24-hour operation. With the annual throughput reduced to 220,000 tonnes, 24-hour operation is no longer required as the volume of waste and vehicles (transporting waste) has significantly decreased. The traffic volumes associated with the revised throughput have been redistributed between the hours 6:00am to 10:00pm. The vehicles from the night-time operation have been absorbed into the day-time operation.

The stacking plan analysis considers the types of trucks expected to deliver waste during the peak site operation with regard to vehicle movements in/ out of the site. The anticipated two-way vehicle flows to/from the site during the future operation are summarised in Table 1. These flows have been determined using a linear relationship between the existing throughput and vehicle movements with the future throughput (i.e 220,000 tpa).

As shown in Table 1, the site's current peak operation occurs between 11:00am – 12:00pm. This period is assumed to be the peak period for the future operation.

Traffic flows estimated as part of the assessment for 300,000 tpa have also been included in Table 1. By way of comparison, the traffic flows expected during future operation for the processing of 220,000 tpa are less than those associated with the throughput of 300,000 tpa. The morning peak hours of operation have reduced vehicle movements, however there has been a small increase to the afternoon vehicle movements which has had a minor consequence to the overall business operation. During the key peak periods, two-way vehicle trips have adjusted as follows:

- Morning road network peak (9:00am – 10:00am) – reduction of 11 two-way trips (roughly six trucks)
- Site peak operation (11:00am – 12:00pm) – reduction of 14 two-way trips (seven trucks)
- Afternoon road network peak (4:00pm – 5:00pm) – increase of five two-way trips (roughly three trucks).

Overall, the reduced waste throughput has resulted in a reduction of vehicle movements across the key peak periods. The hourly vehicle movements during the existing operation and future operation have been summarised in Table 1.

Table 1: Anticipated 24-hour Traffic Profile of Two-way Vehicle Movements at RRF

Starting Hour	Existing Operation		Future Operation (300,000 tpa)		Future Operation (220,000 tpa)	
	Volume	Percentage	Volume	Percentage	Volume	Percentage
00:00	0	0.0%	2	0.5%	0	0.0%
01:00	0	0.0%	2	0.5%	0	0.0%
02:00	0	0.0%	2	0.5%	0	0.0%
03:00	0	0.0%	4	1.0%	0	0.0%
04:00	0	0.0%	4	1.0%	0	0.0%
05:00	0	0.0%	6	1.5%	0	0.0%
06:00	11	5.4%	17	4.0%	10	2.8%
07:00	17	8.2%	30	7.0%	12	3.4%
08:00	18	9.0%	34	8.0%	22	6.0%
09:00a	22	11.0%	43	10.0%	32	8.8%
10:00	27	13.0%	52	12.0%	40	11.0%
11:00b	29	14.0%	56	13.0%	42	11.5%
12:00	21	10.2%	39	9.0%	38	10.4%
13:00	20	9.9%	39	9.0%	32	8.8%
14:00	13	6.6%	26	6.0%	28	7.7%
15:00	13	6.5%	22	5.0%	22	6.0%
16:00c	7	3.4%	9	2.0%	14	3.8%
17:00	6	2.8%	9	2.0%	14	3.8%
18:00	0	0.0%	9	2.0%	16	4.4%
19:00	0	0.0%	9	2.0%	16	4.4%
20:00	0	0.0%	6	1.5%	14	3.8%
21:00	0	0.0%	4	1.0%	12	3.4%
22:00	0	0.0%	4	1.0%	0	0.0%
23:00	0	0.0%	2	0.5%	0	0.0%
Total	**204**	**100%**	**430**	**100%**	**364**	**100%**

Notes:

a Road network AM peak hour

b Operational peak hour at Mortdale Resource Recovery Facility

c Road network PM peak hour

It is noted that the timing of waste collection activity would be controlled by the Site Operator and scheduled ahead of time so as not to impede the arrival of waste delivery trucks. Having the ability to schedule waste collection trucks would allow the Operator to ensure that waste delivery and removal activities operate efficiently, while further reducing the likelihood of queuing onto Hearne Street.

TYPE OF VEHICLES

The removal of waste would be prioritised to outside of the site's peak operation, and vehicles that would be using the stacking spaces would mostly consist of waste delivery vehicles. The anticipated composition of vehicles delivering and collecting waste is as follows:

Vehicles delivering waste to site

- Small vans/ utes
- Medium Rigid Vehicles (up to 8.8m)
- Heavy Rigid Vehicles (up to 12.5m)
- 19.0m semi-trailer
- Truck-and-dog (less than 19m)

Vehicles removing waste from site

- 19.0m semi-trailer
- Truck-and-dog (less than 19m)

To assess the stacking capacity of waste delivery vehicles onsite, a percentage split of vehicle types similar to the existing composition of vehicles arriving at the site during its peak operation has been adopted. The percentage split been applied to the 31 spaces such that, in the busiest period, the site can accommodate:

Vehicle Type	Approximate split of waste delivery vehicles	No. of stacking spaces occupied
Semi-trailer/ truck-and-dog	7%	2 spaces
MRVs	93%	29 spaces
Total	**100%**	**31**

A combination of utes, MRVs and HRVs would contribute around 93% of the inbound vehicles. As the finer breakdown of these vehicle classifications is variable day-to-day, the MRV truck has been adopted as the 'average' size vehicle of this group. Therefore, the MRV truck, semi-trailer and truck-and-dog have been used to assess the potential for onsite vehicle stacking, as shown in Attachment B.

Of these vehicles, the vehicle with the most constrained swept path is the 19.0m semi-trailer. Hence, the swept path of the semi-trailer has been shown on the stacking plans in Attachment B to demonstrate that the largest vehicle expected to access the is able to adequately manoeuvre into, out of and within the site without conflicting with stacked vehicles.

VEHICLE TURN-OVER

A total of 31 stacking spaces would be provided across both decks that could accommodate a mixture of waste delivery vehicle sizes, ranging from vans/utes to 19m semi-trailers. As summarised Table 1, there are 42 two-way truck movements estimated during the site's peak operation between 11:00am – 12:00pm. This is equivalent to around 21 trucks entering the site and the same 21 trucks leaving the site.

A breakdown of the time spent on each activity whilst onsite is summarised in Table 2. As a contingency, the 'Total Time Required' has been rounded up to the nearest 10 minutes to factor in additional waiting time.

Table 2: Timing of Waste Disposal and Collection Activities

Activity	Waste Disposal		Waste Collection
	Car/ute/MRV/HRV	**Semi-trailer**	**Semi-trailer and Truck-and-dog**
Truck weigh-in	2 mins	2 mins	2 mins
Truck depositing waste on tip floor	10 mins	15 mins	*No waste deposited*
Truck collecting waste at stockpiles	*No waste collected*	*No waste collected*	10 mins
Truck weigh-out	2 mins	2 mins	2 mins
Truck wheel-wash	2 mins	2 mins	2 mins
Total Time Required	**20 mins**	**30 mins**	**20 mins**

Based on the information in Table 2, a truck would spend an average of 25 minutes onsite between entry and exit. Applying this rate, each stacking space could accommodate 2.4 vehicles in one hour (60 minutes / 25 minutes). Therefore, during the site's peak hour of operation, the proposed stacking arrangement could accommodate the turn-over of 74 vehicles (2.4 vehicles x 31 spaces).

As discussed above, future operations would generate 42 two-way vehicle movements during the site's peak activity. Since a single vehicle generates one inbound movement and one outbound movement, the 42 two-way vehicle movements equate to 21 vehicles.

The availability of stacking space within the site would be able to adequately store the 21 vehicles expected to arrive during the site's peak hour. Hence, queuing of heavy vehicles would be entirely accommodated and managed within the site, and would not be expected to cause any impact on Hearne Street.

In theory, the 21 vehicles expected to arrive during the site's peak hour could be easily accommodated across only nine stacking spaces. This means that queuing along the property driveway is not predicted, consequently reducing the likelihood of trucks queuing onto Hearne Street.

In summary, the above calculation demonstrates that the 21 trucks expected to arrive onsite during the busiest period of site operation could sufficiently be accommodated within the premises. Under the supervision and direction of Traffic Controllers and

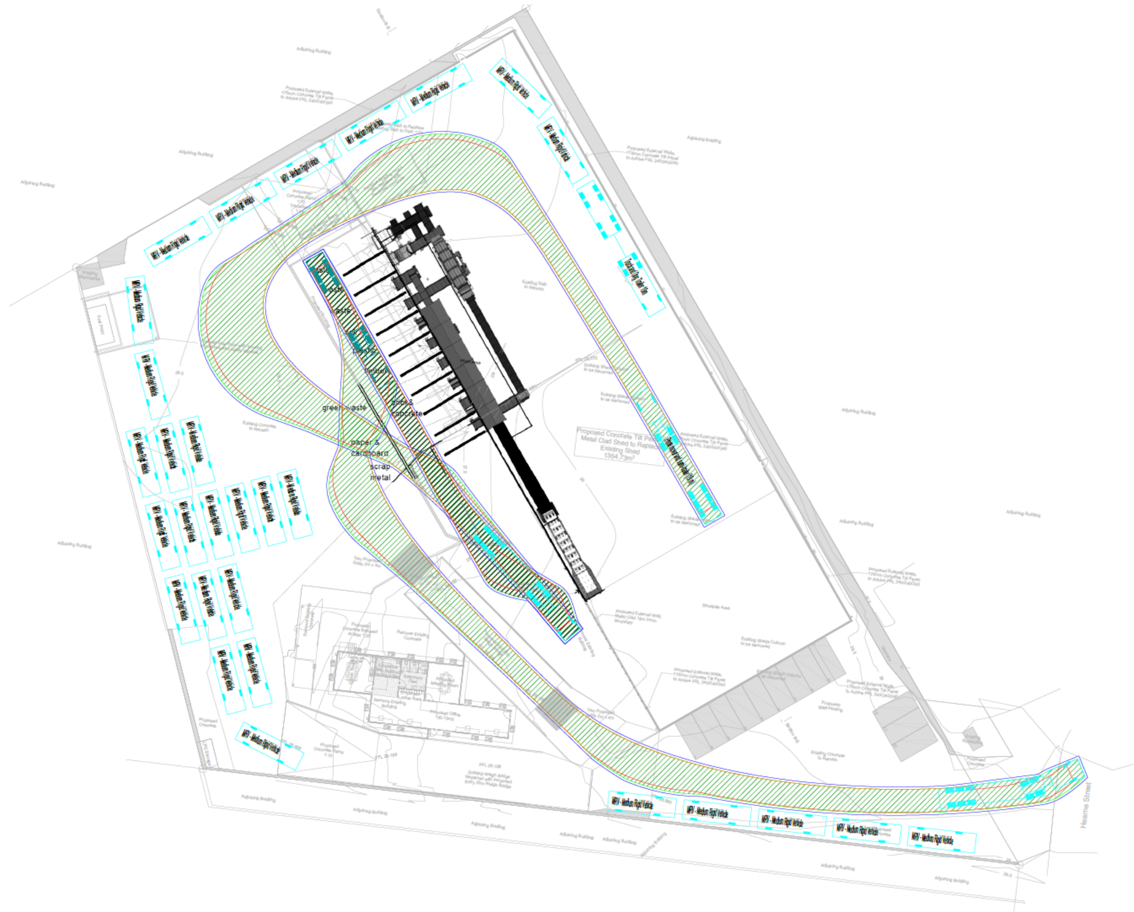
Weighbridge Operators, queuing of heavy vehicles would be managed completely within the site and would not be expected to queue back onto Hearne Street.

As shown in Figure 4 the proposed vehicle stacking arrangement would simultaneously accommodate 30 stacked vehicles and the largest waste delivery truck (ie. semi-trailer) exiting the site.

To further enhance operational efficiency at the site, the Operator would have the ability to load out semi-trailers and truck-and-dogs with processed waste once they have unloaded materials in the tip shed. For instance, the semi-trailers and truck-and-dogs expected to arrive during the site's peak operation to drop-off waste would proceed to the stockpile area (on the lower deck) to collect waste prior to leaving the site. Effectively, this would reduce the number of larger size waste collection trucks required to remove waste off-site.

As the vehicle with the most restricted turn movement, the swept path of a semi-trailer moving from the tip floor (on the upper deck) to the waste stockpiles (lower deck) then site exit would be achieved as shown in Figure 4. This swept path is also included in Attachment B.

Figure 4: Semi-Trailer Swept Path and Stacking Plan



DPE Item 2:

A stacking plan has been provided which only shows the stacking of heavy rigid trucks on site. There is no plan showing the stacking of semi-trailers collecting sorted materials. There is no indication of how traffic will be controlled at the access way. In particular, how will trucks be directed to the stacking locations. Further, the stacking plan contradicts the internal turning path diagrams with vehicles stacked in areas required for manoeuvring. Further clarification is required.

Control measures to be implemented at the site access have been detailed in the response to *DPE Item 1*. Direction given to drivers to proceed to the stacking location is also explained in the response.

A stacking plan showing the larger waste collection vehicles (semi-trailers and truck-and-dogs) is provided in Attachment C. The stacking arrangement and level of adequacy is discussed in detail in the response to *Council Item 5*.

DPE Item 3:

Exiting trucks have been placed in a location which contradicts the stacking plan diagrams. This requires amendment.

The stacking plan has been amended accordingly, and is provided in Attachment B and Attachment C. Vehicle swept paths at the site access are shown in greater detail in Attachment D.

DPE Item 4:

The explanation provided is inadequate. Whilst the processing capacity of the machinery may be sufficient to process (more than) 300,000 tpa of waste material, the Department's concerns also relate to the size of the site and its ability to support this amount of throughput. Provide full details of the method for processing waste materials including:

• unloading procedures and timeframes, especially in relation to the situation where the site is fully "stacked" with incoming trucks. How long would it take to unload each truck and how would this affect build-up of trucks behind it given only one truck can unload at any one time?

- **storage timeframes;**
- **processing timeframes;**
- **quality control;**
- **outputs; and**
- **methods for loading and removal from the site.**

In particular, information should be provided regarding the site's capability to store and process the waste received during night time, whilst still receiving more waste during the day without excessive build up occurring i.e. there would be no processing between 10pm and 6am while, according to Appendix A – TIA letter, 26 truckloads of waste are predicted to be delivered in this period, with another 17 truckloads between 6am and 7am.

Further details should also be provided regarding the machinery (screens etc) proposed for waste separation, as well as the method of conveyance of separated products into the material bays prior to removal.

Revisions to the proposal include:

- Waste throughput of 220,000 tonnes per annum
- Hours of operation 6:00am – 10:00pm on Monday to Saturday
- Removal of the bin storage area on the lower deck which has increased stacking spaces.

With regard to these amendments and to the onsite stacking capacity, the explanation addressing *DPE Item 1* demonstrates that there is a low likelihood of the site becoming "fully stacked" as there is an over-provision of stacking spaces.

To summarise the stacking capacity estimation, there are 21 trucks anticipated to arrive at the site during the busiest hour of site operation. In the same hour, the proposed stacking arrangement would be able to cater for a total of 74 trucks arriving at the site. Therefore, the stacking arrangement would be able to accommodate vehicles wholly within the site in typical operating conditions.

In the event of unexpected delays at the site, the turn-over rate could be reduced to half the number of trucks (ie. 33 trucks) and the expected number of trucks would still be able to be fully accommodated onsite.

Council Item 5:

MRV trucks laden with waste for processing enter the site and queue to await an available slot for unloading. Semi-trailers/truck and dog enter the site and queue awaiting an available slot for the loading of processed waste. The estimated time required for these movements is 25 minutes ("Response to Submissions Letter – Traffic Vehicle Movements" p 7). While pick up is to be limited to "outside of peak" (p7) it is unclear whether this is peak operation of the facility (during the middle of the day) or the am and pm peak traffic times.

Whilst waste collection would occur throughout the day on an as-need basis, waste collection would primarily be limited to the period between 6:00pm – 10:00pm, which falls outside of the site's peak operation (11:00am – 12:00pm) as well as the road network peaks (9:00am – 10:00am and 4:00pm – 5:00pm).

The Site Operator would control the arrival of waste collection trucks by scheduling bookings ahead of time. The Operator would also have the ability to reschedule bookings, if required.

The vehicle stacking plan "Response to Submissions Letter – Traffic Vehicle Movements" Attachment C) conflicts with many of the provided swept path arrangements for 19m vehicles indicated in ("Response to Submissions Letter – Traffic Vehicle Movements," Attachment G). The introduction of semi-trailers/truck and dog vehicles into the site has the potential to impact on the timing of queueing arrangements within the site which may increase the assumed vehicle processing turnover time of 25 minutes (as indicated on page 7). Any potential conflict between queueing and turning vehicles that leads to vehicle queueing on Hearn (or surrounding) streets is not supported.

68 semi-trailer in/out movements are stated to be required per day to "transport waste from the Mortdale site to other waste processing facilities…" ("Response to Submissions Letter – Traffic Vehicle Movements" page 19). Should 25 minutes be required for these vehicle movements ("Response to Submissions Letter – Traffic Vehicle Movements" page 7) some conflict of queueing during peak operation will be unavoidable. This would lead to vehicle queueing on the surrounding street network and this outcome is not supported.

The 68 required daily pick up movements is highly likely to result is some conflict between the large (semi-trailer/truck and dog vehicles) and the smaller drop-off MRV's as the allocated queueing spaces conflict with the required turning circles of the pick-up vehicles. This is likely to result in queuing of trucks on Hearne (and surrounding) streets. Council strongly objects to this outcome. As vehicle movements and queueing for the proposed operation are not likely to be able to be accommodated within the boundaries of the site, Council argues that the site is of an insufficient area for the use at the tonnage proposed.

Conflict between the large waste collection trucks and the smaller waste delivery vehicles would be unlikely as drop-off and pick-up times would be scheduled in advance. This would allow for drop-off and pick-up activities to occur concurrently across the day and evening periods.

In order to ensure the availability of turning space for a waste collection truck upon arrival, the Traffic Controller on the lower deck would direct waste delivery trucks to stack along the western boundary before commencing to double-stack side-by-side. The swept paths of a truck-and-dog and semi-trailer accessing the stockpiles with the number of available stacking spaces are shown in Figure 5 and Figure 6, respectively

Of both vehicles, the semi-trailer requires a greater area to adequately turn into the waste collection bay. In this scenario, up to 14 stacking spaces would still be available for use by waste delivery trucks across the upper and lower decks (queuing along the western boundary). Fourteen spaces remains in excess of the nine spaces required to accommodate the 21 trucks expected to arrive during peak operation. Therefore, there would be sufficient area onsite to accommodate waste pick-up and drop-off activities simultaneously without causing queuing onto Hearne Street.

As mentioned in response to *DPE Item 1*, some semi-trailers and truck-and-dogs that have deposited waste at the site would be used to load out waste from the site. This would further reduce the number of large waste collection trucks scheduled to pick-up waste. Therefore, the calculation presented herein is considered to be more conservative than what would be observed in practice during the future site operation.

Stacking plans showing a truck-and-dog and semi-trailer arriving for waste collection are shown in Figure 5 and Figure 6, respectively. The full plans are included in Attachment C.

Figure 5: Truck-and-Dog Swept Path and Stacking Plan

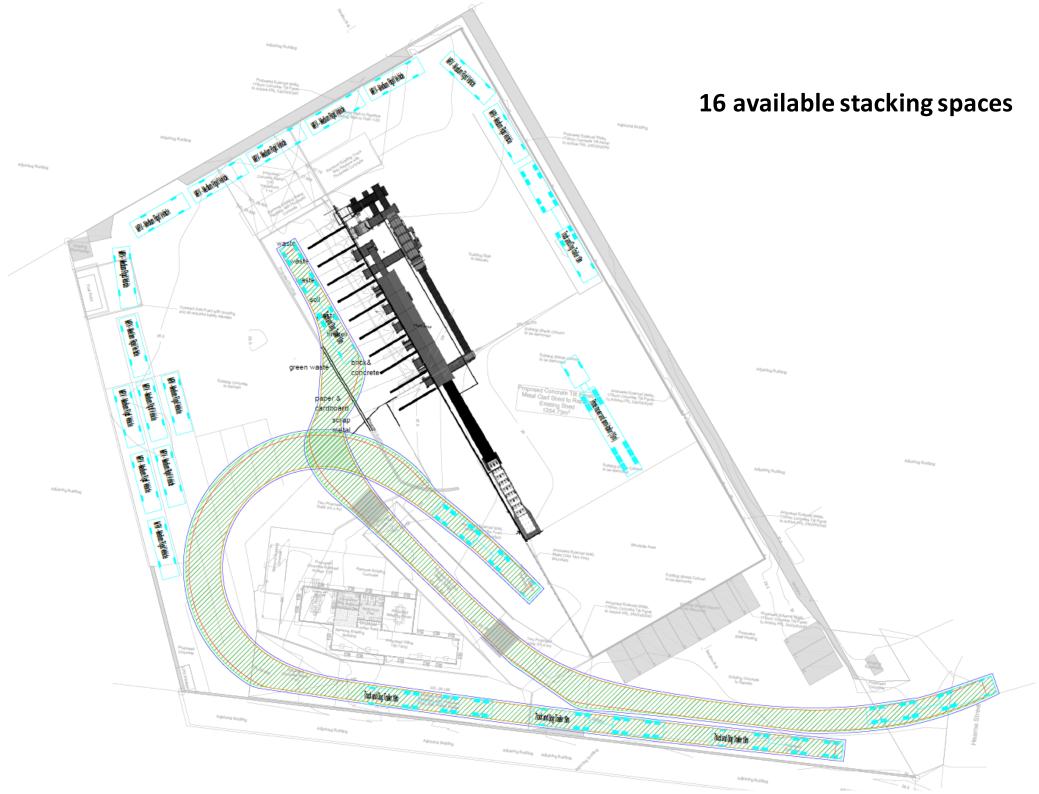
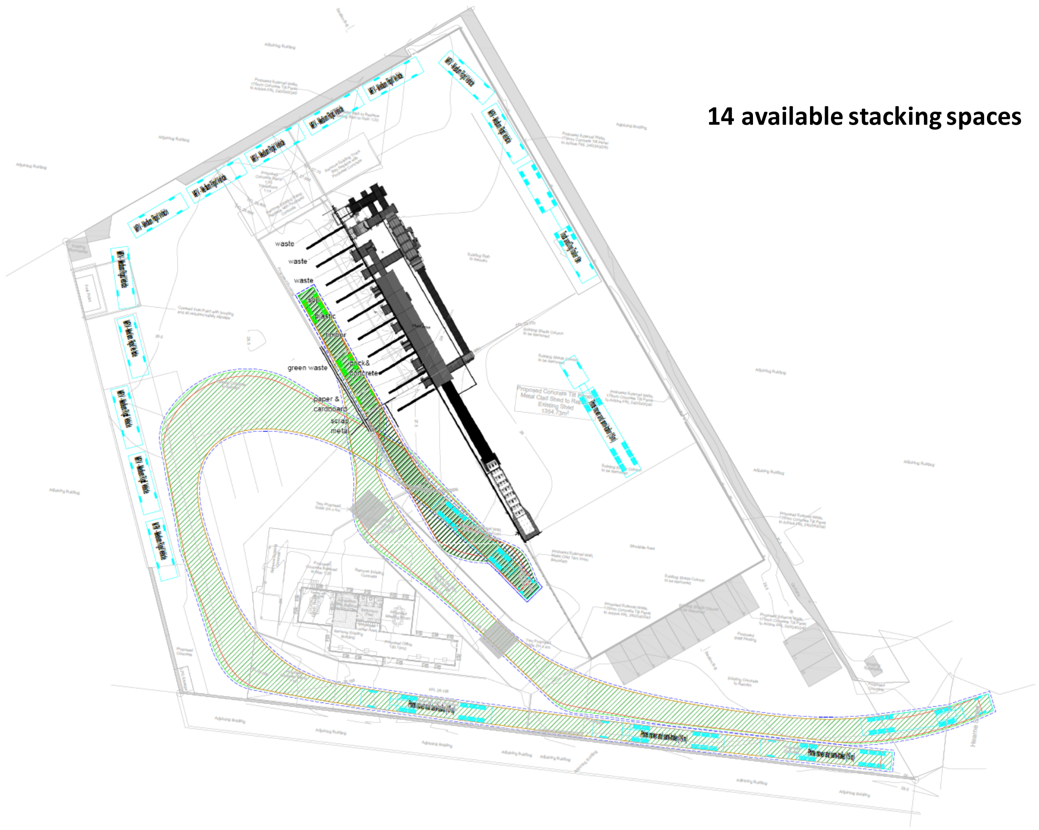


Figure 6: Semi-trailer Swept Path and Stacking Plan



EPA Item 6:

In relation to Barry Avenue, the EPA notes that predicted noise levels from the additional traffic generated by the proposal are acceptable along the simulated route. However, this route assumes that trucks do not access the facility via Barry Avenue.

One item which DPE may wish to consider is the inclusion of a condition on any approval that requires the Proponent to include, if possible and enforceable, clauses in any contracts with truck drivers requiring them not to use Barry Avenue. Alternatively, Council may be able to place weight restrictions on Barry Avenue. This would lessen noise from truck traffic for those residents on Barry Avenue.

The EPA notes that, while the Proponent has included a commitment to "encourage all vehicle access to the site via Boundary Road and Hearne Street" in their Statement of Commitments, Barry Avenue is a public road that any road registered vehicle is entitled to use.

As part of the Transport Impact Assessment prepared by GTA Consultants (dated 29/06/2016), traffic turning movements at the site access were surveyed during the road network peak periods on Wednesday 9th December 2015. The morning and afternoon road network peak periods during which the traffic surveys were undertaken include 7:00am – 9:00am and 4:00pm – 6:00pm, respectively. To assess the utilisation of Barry Avenue by traffic accessing the current site, TTPP has undertaken a review of existing light and heavy vehicles movements at the site's driveway. The traffic survey results used in herein have been extracted from Appendix A of GTA's report, and have been included as Attachment E in this letter.

Turning movement surveys at the site access indicate a very low number of trucks accessing the site via Barry Avenue in the surveyed morning and afternoon peaks. Across the two-hour peak period in the morning, a total of two trucks were surveyed entering and leaving the site (per direction) via the south of Hearne Street, and subsequently, via Barry Avenue. In the afternoon period, a single truck was surveyed leaving the site via the south of Hearne Street. These traffic movements are illustrated within the context of the local road network in Figure 7.

Figure 7: Traffic Movements To/From Site During Peak Periods

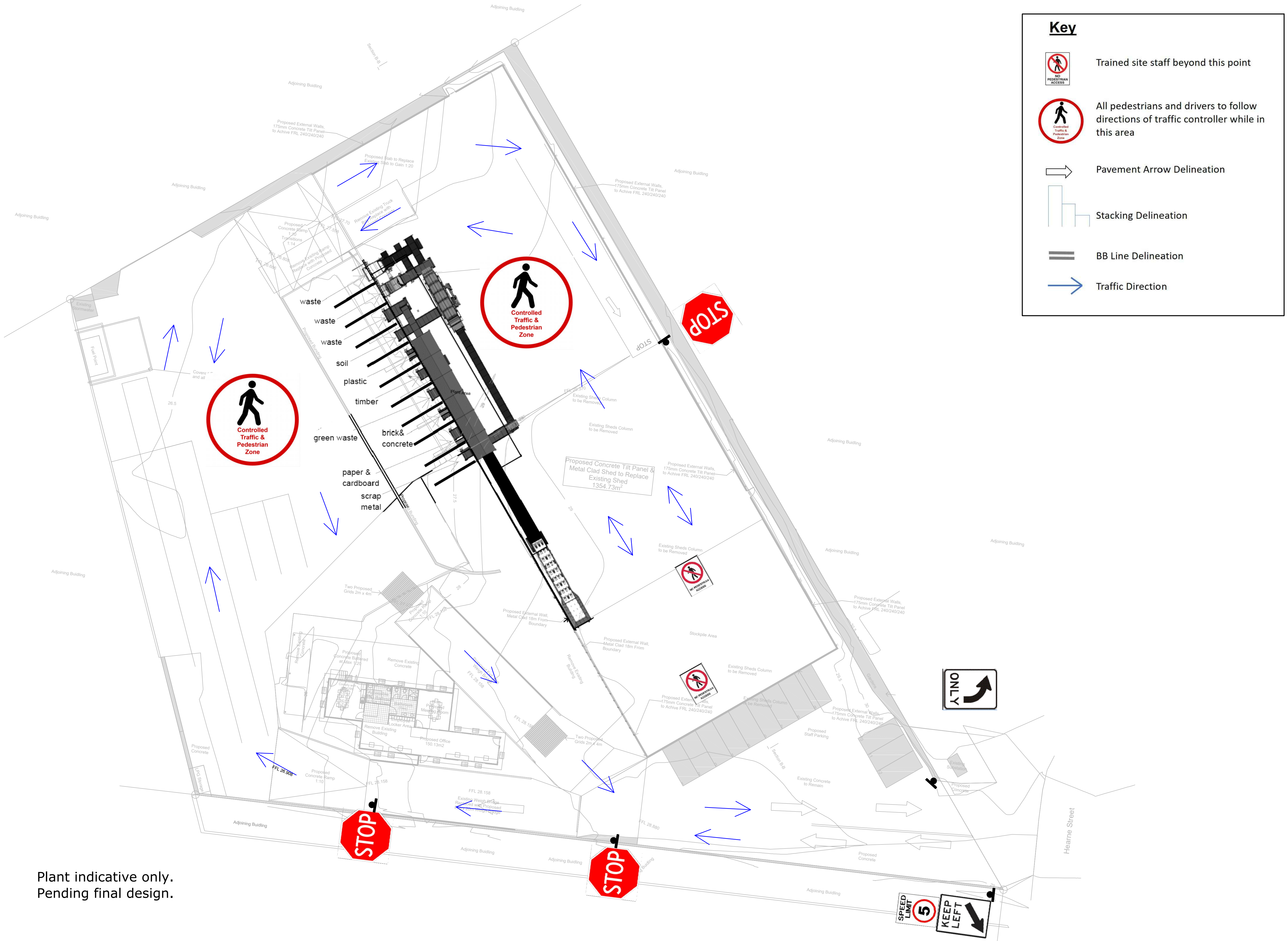
As shown above, the volume of heavy vehicles accessing the site via the south of Hearne Street (ie. Barry Avenue) is close to nil. This demonstrates that the current measures implemented by the Operator to avoid heavy vehicles accessing the site via Barry Avenue are effective. The Operator would aim to achieve all trucks travelling via the north of Hearne Street by incorporating a haul route plan into its truck driver training and induction pack.

During the future operation, a traffic controller would be located at the site access to direct outbound trucks to the north of Hearne Street. Furthermore, a Left Arrow Only sign would be installed at the site egress to ensure all drivers know to turn left upon exit.

In the unlikely scenario whereby a truck driver would travel to the site via Barry Avenue, the traffic controller would inform them of the appropriate haul route to the site (that is, from/ to the north of Hearne Street) and would record the vehicle registration details. A logbook of any drivers disobeying the instructions given be the traffic controller would be used as a measure to monitor the effectiveness of the procedures in place.

ATTACHMENT A

Traffic Control Plan



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	17/03/17
B	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

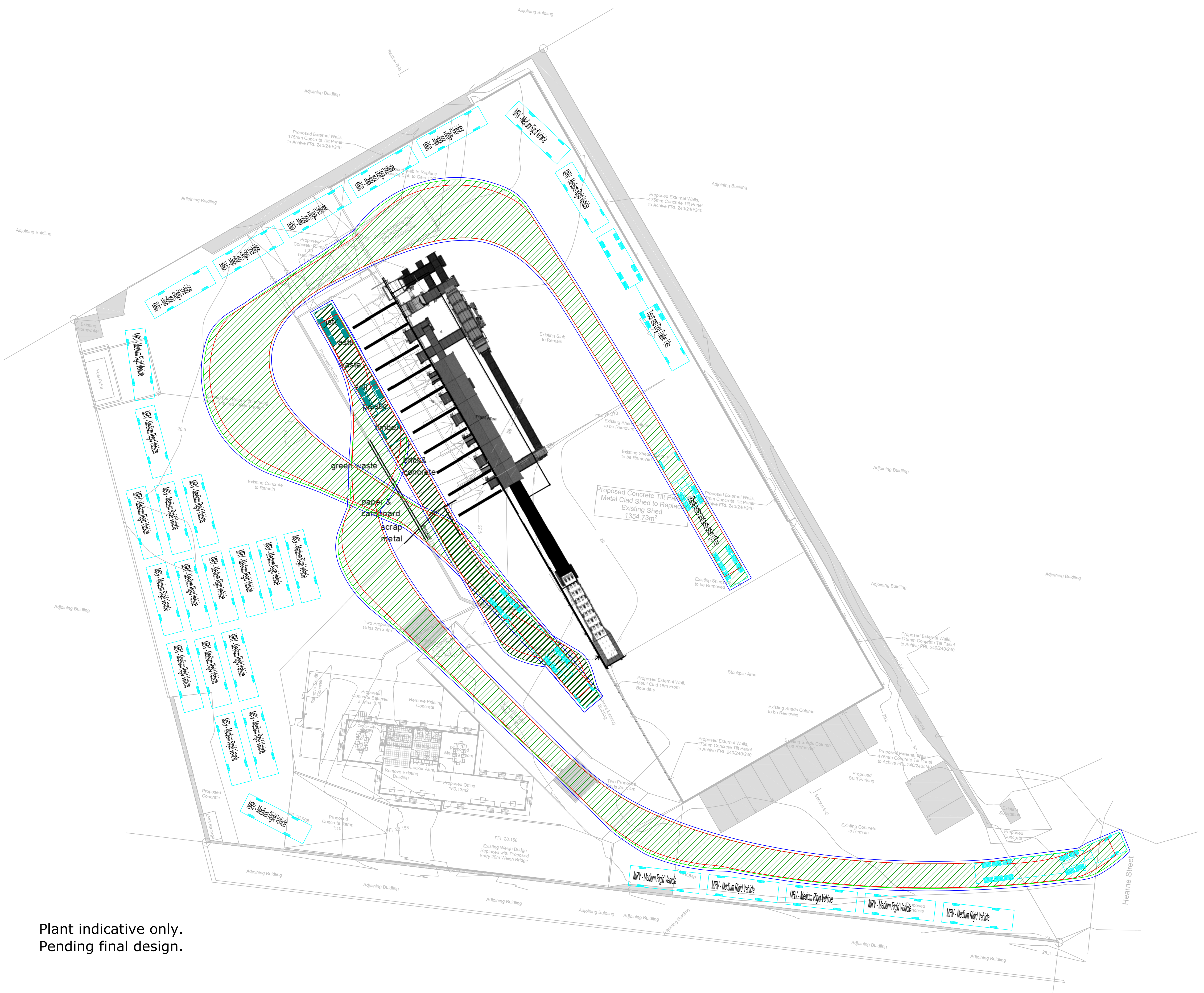
The Transport Planning Partnership
Suite 402, 22 Atchison Street
St. Leonards NSW 2065
Tel: 02 8437 7800
Email: info@ttpp.net.au

PROJECT	BINGO MORTDALE
TITLE	TRAFFIC CONTROL PLAN
DWG No.	FIGURE 1
DATE STAMP	30 MARCH 2017
PROJECT No.	16222
SCALE	1:500 (A3)
REV.	B

Filename: 16222CAD01 - 170330- Attachment A Traffic Plan.dwg Date: 30 March 2017 By: Lalaine malaluan

ATTACHMENT B

Vehicle Stacking Plan (Waste Delivery Vehicles)



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REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WH	15/11/16
B	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

The Transport Planning Partnership

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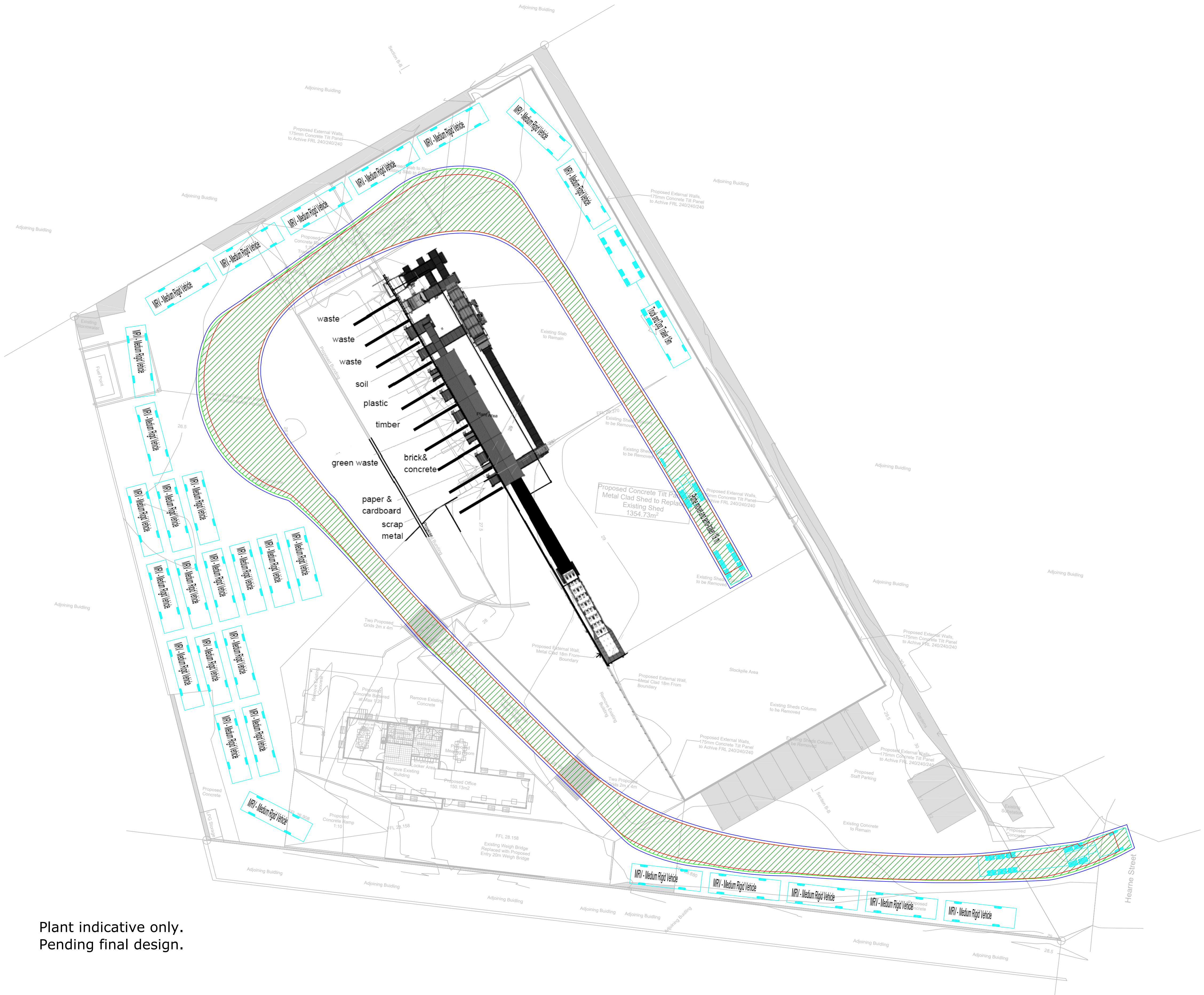
PROJECT	BINGO MORTDALE
TITLE	VEHICLE STACKING PLAN AND 19.0m SEMI-TRAILER OUTBOUND SWEPT PATH - WASTE TIPPING COLLECTION
DWG No.	FIGURE 1
DATE STAMP	30 MARCH 2017
PROJECT No.	16222
SCALE	1:500 (A3)
REV.	B

Filename: 16222CAD02 - 170330 - Attachment B.dwg Date: 30 March 2017 By: Lalaine malaluan



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WH	15/11/16
B	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

The Transport Planning Partnership
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St. Leonards NSW 2065
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Email: info@ttpp.net.au

PROJECT
BINGO MORTDALE

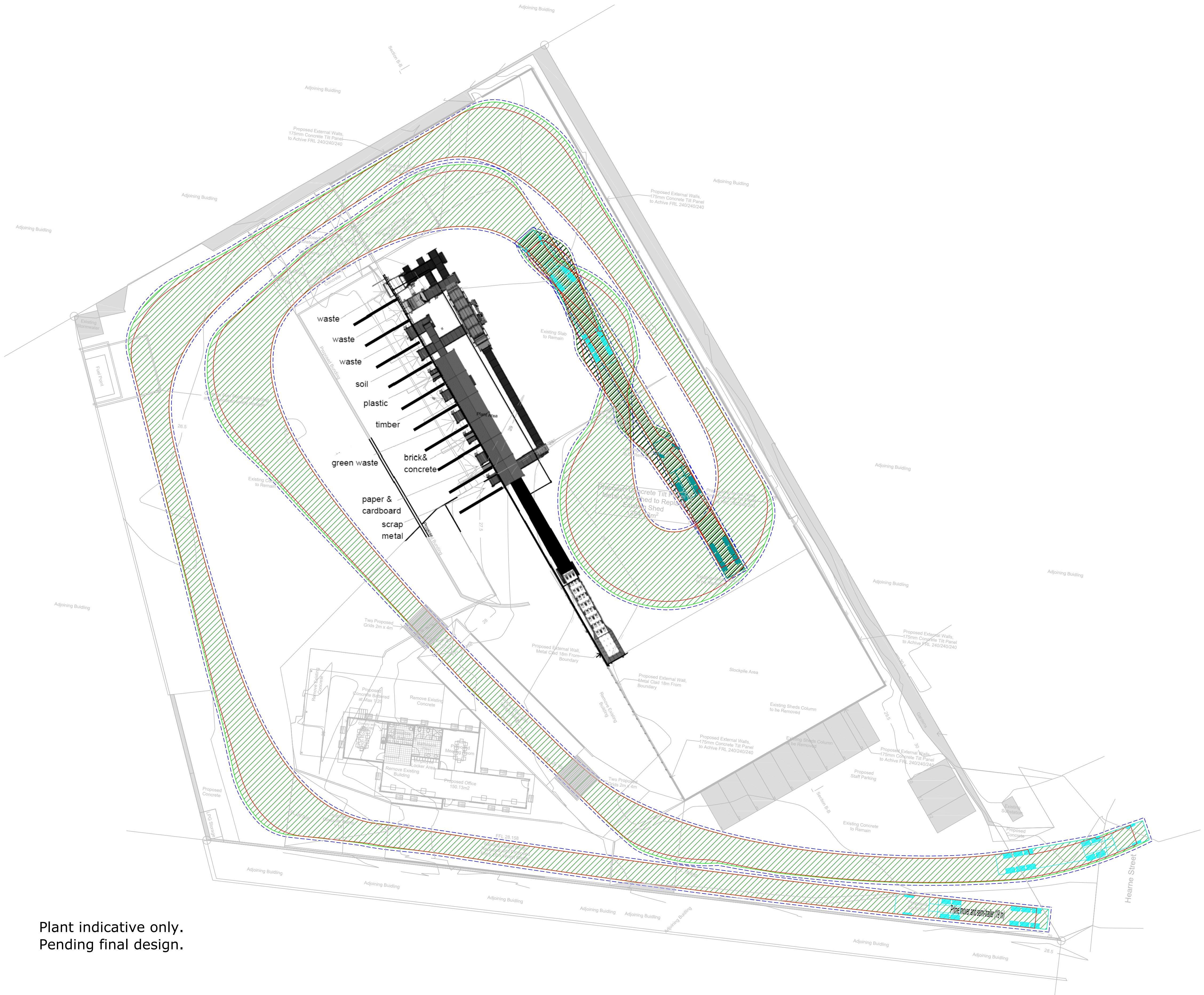
TITLE
19.0m SEMI-TRAILER - SWEPT PATH

DWG No.
FIGURE 2

DATE STAMP
30 MARCH 2017

PROJECT No.	SCALE	REV.
16222	1:500 (A3)	B

Filename: 16222CAD02 -170330-Attachment B.dwg Date: 30 March 2017 By: Lalaine.malaluan



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WH	15/11/16
B	ISSUE FOR DISCUSSION	LM	SB	SB	24/03/17
C	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

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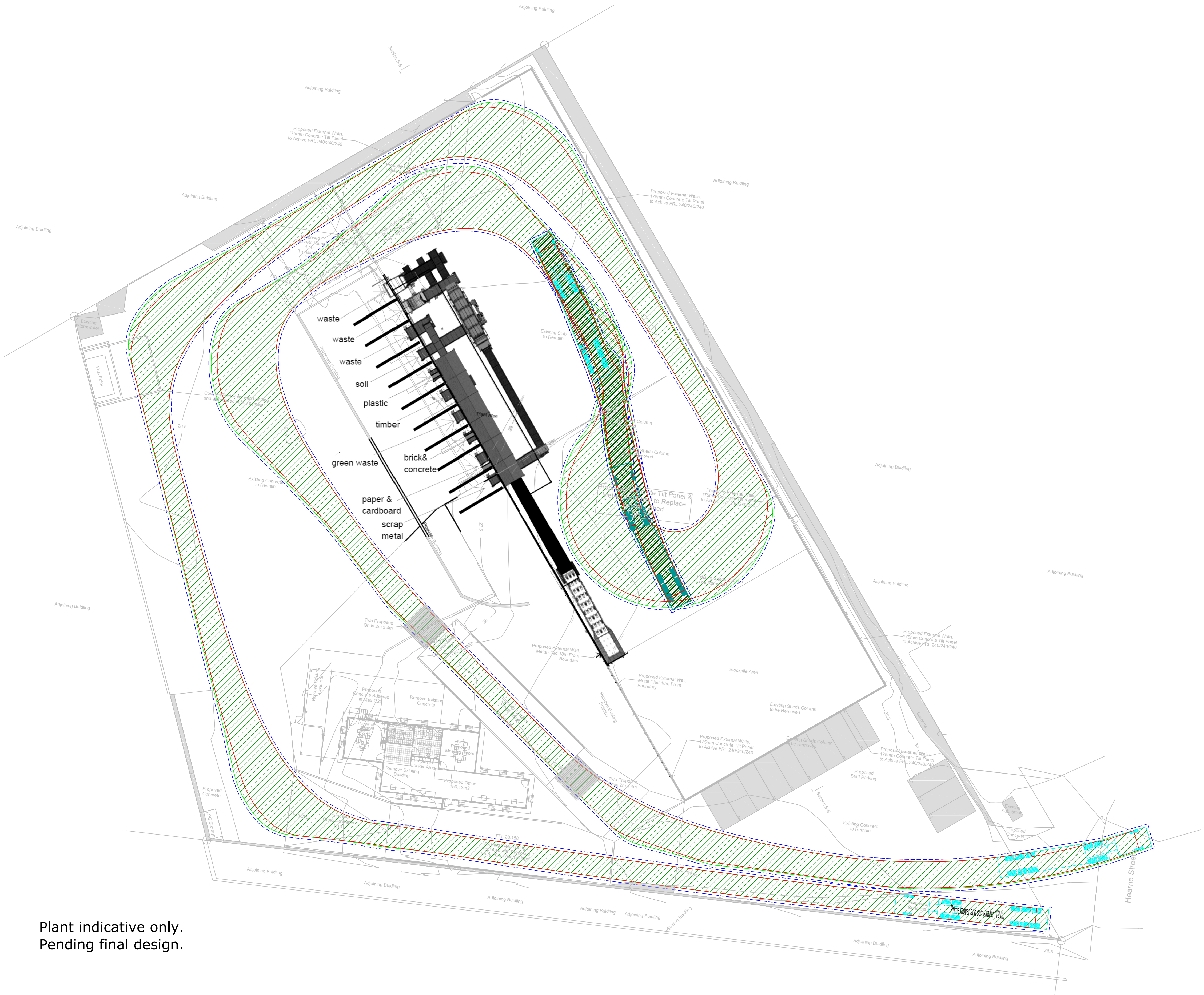
PROJECT
BINGO MORTDALE

TITLE
19.0m SEMI-TRAILER - SWEPT PATH

DWG No.	DATE STAMP	PROJECT No.	SCALE	REV.
FIGURE 3	30 MARCH 2017	16222	1:500 (A3)	C

Filename: 16222CAD02 -170330-Attachment B.dwg   Date: 30 March 2017   By: Lalaine.malaluan



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WH	15/11/16
B	ISSUE FOR DISCUSSION	LM	SB	SB	24/03/17
C	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

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PROJECT
BINGO MORTDALE

TITLE
19.0m SEMI-TRAILER - SWEPT PATH

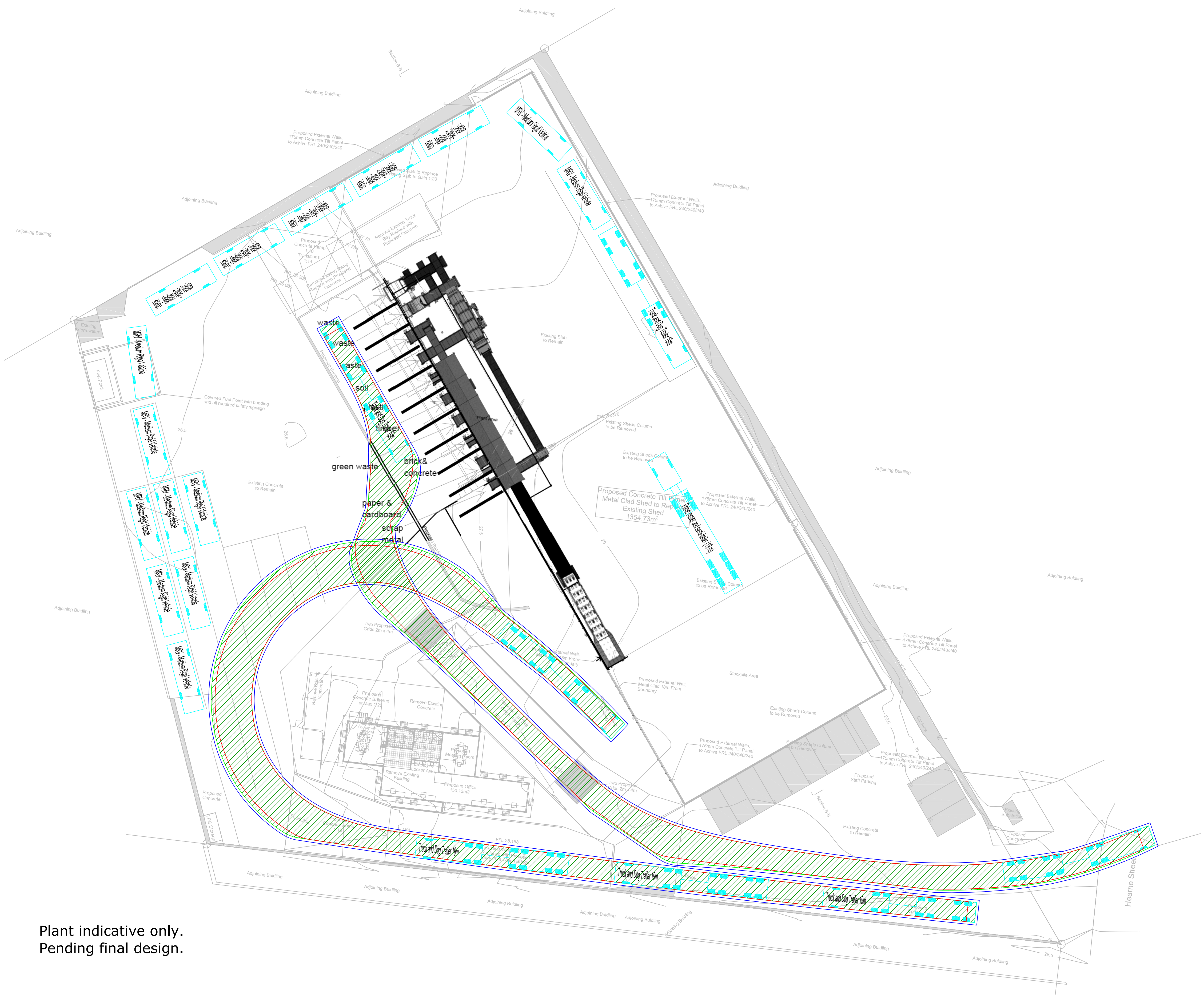
DWG No.
FIGURE 4

DATE STAMP
30 MARCH 2017

PROJECT No.	SCALE	REV.
16222	1:500 (A3)	C

ATTACHMENT C

Vehicle Stacking Plan (Waste Collection Vehicles)



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	17/07/17
B	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

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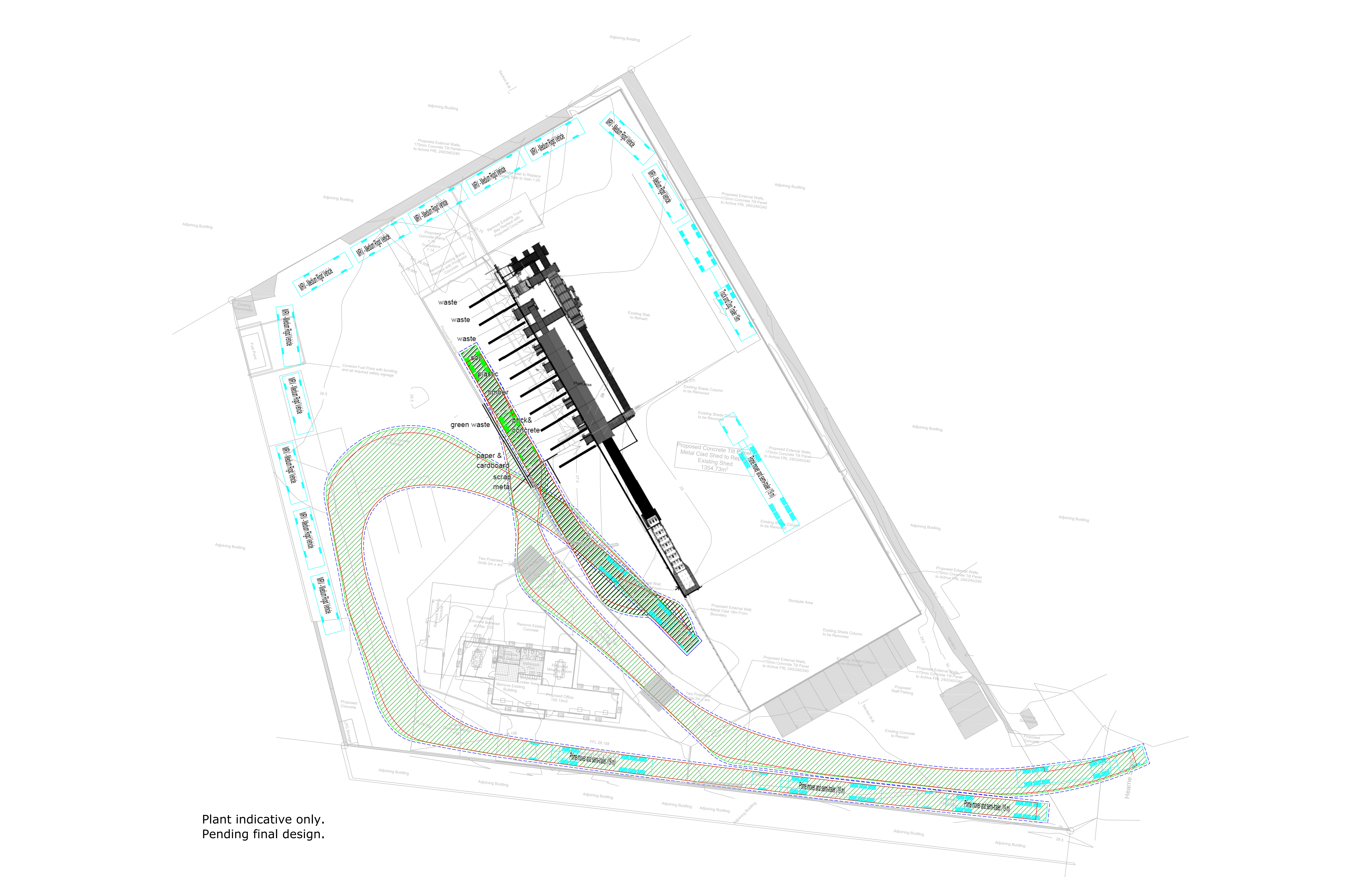
PROJECT	BINGO MORTDALE	
TITLE	19.0m TRUCK AND DOG - SWEPT PATH	
DWG No.	FIGURE 1	
DATE STAMP	30 MARCH 2017	
PROJECT No. 16222	SCALE 1:500 (A3)	REV. B

Filename: 16222CAD03 - 170330- Attachment C.dwg Date: 31 March 2017 By: Lalaine malabuan



Plant indicative only.
Pending final design.

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	17/07/17
B	UPDATED PLANT DESIGN	LM	SB	SB	30/03/17

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PROJECT: BINGO MORTDALE

TITLE: 19.0m SEMI-TRAILER - SWEPT PATH

DWG No.: FIGURE 2

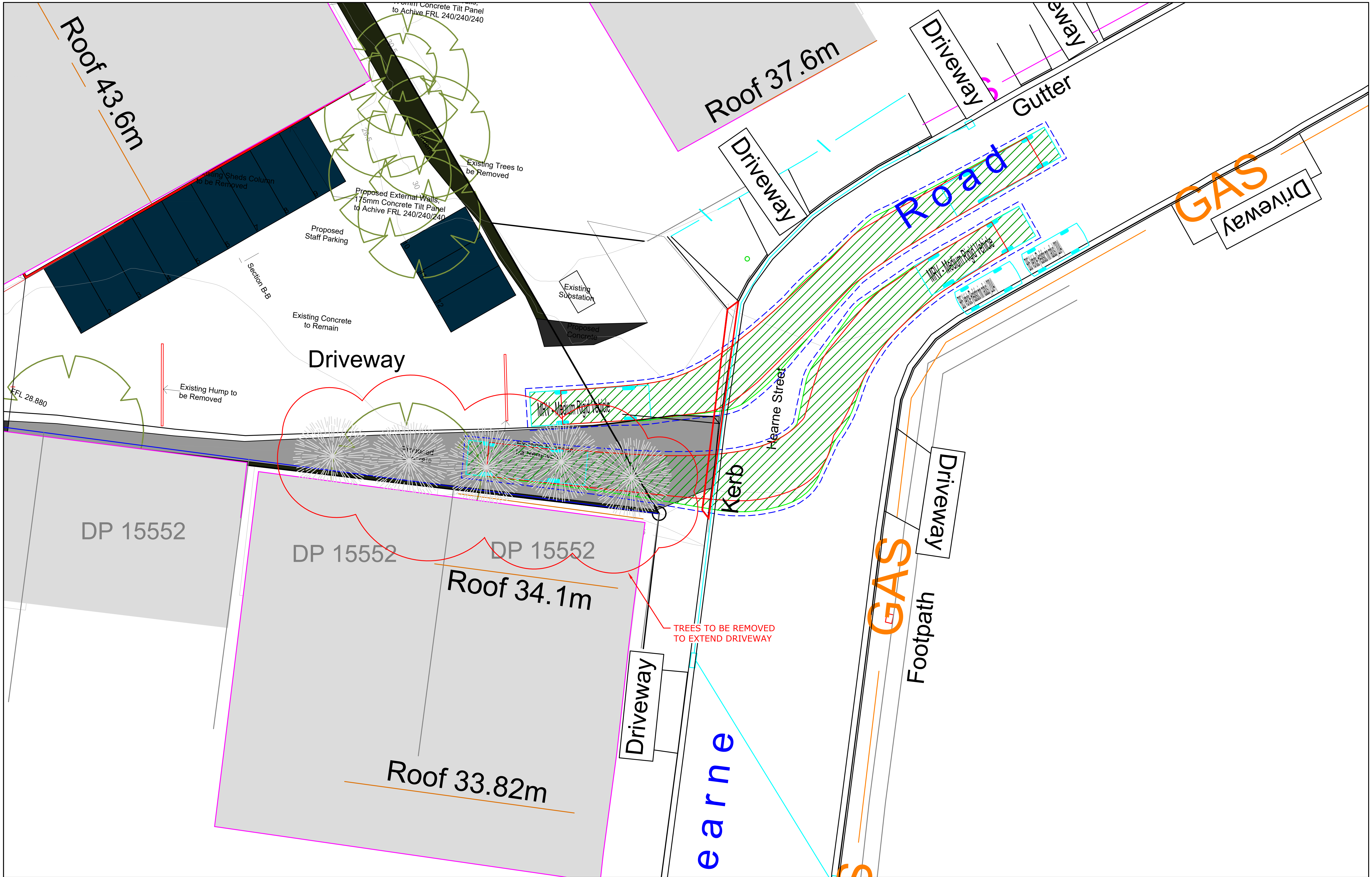
DATE STAMP: 30 MARCH 2017

PROJECT No.	SCALE	REV.
16222	1:500 (A3)	B

Filename: 16222CAD03 - 170330- Attachment C.dwg Date: 31 March 2017 By: Lalaine matabuan

ATTACHMENT D

Driveway Access Vehicle Swept Paths



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	16/11/16

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Email: info@ttpp.net.au

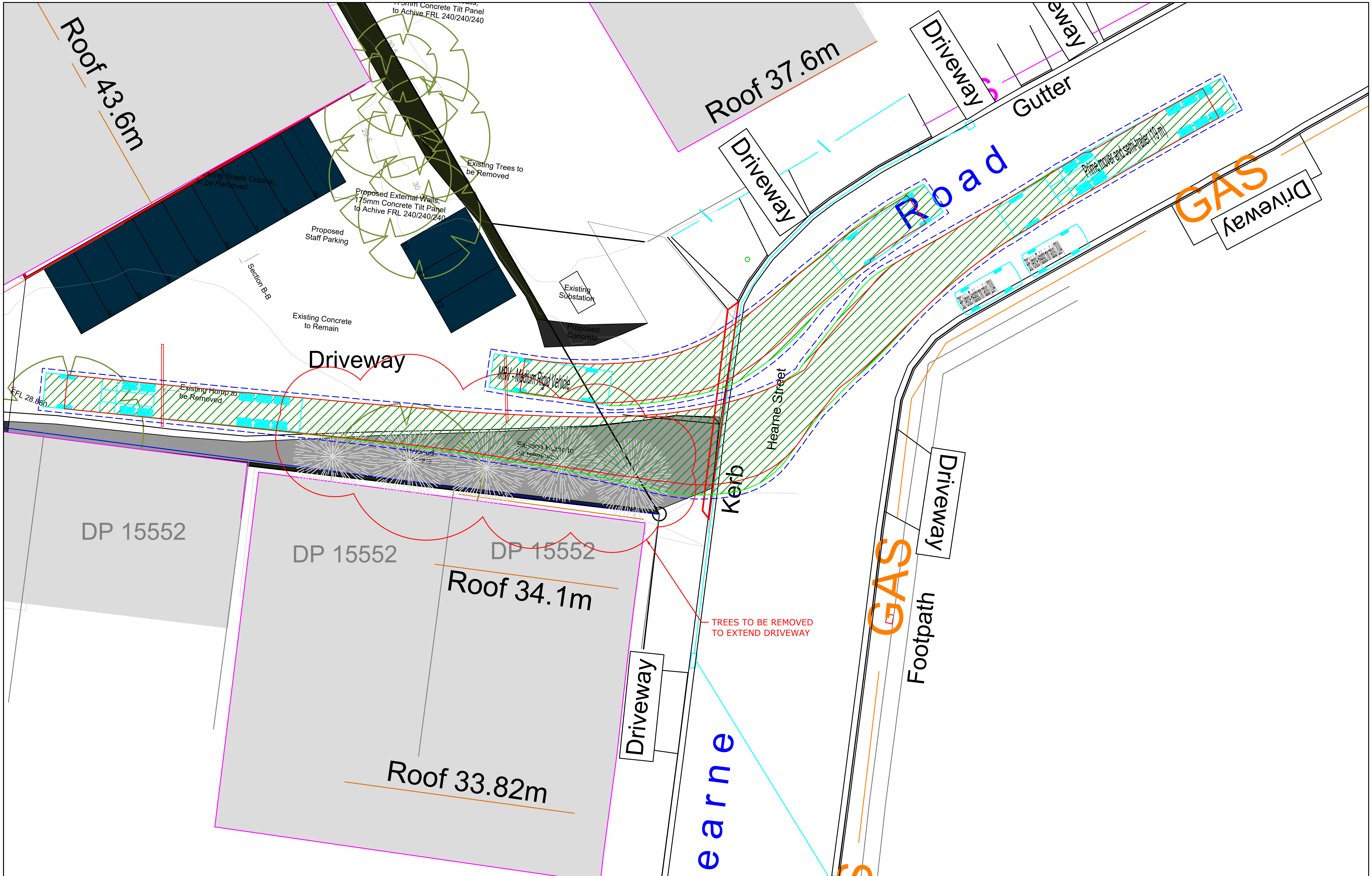
PROJECT: BINGO, MORTDALE

TITLE: MRV - SWEPT PATH

DWG No.: FIGURE 1

DATE STAMP: 16 NOVEMBER 2016

PROJECT No.	SCALE	REV.
16222	1:250 (A3)	A



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	16/11/16

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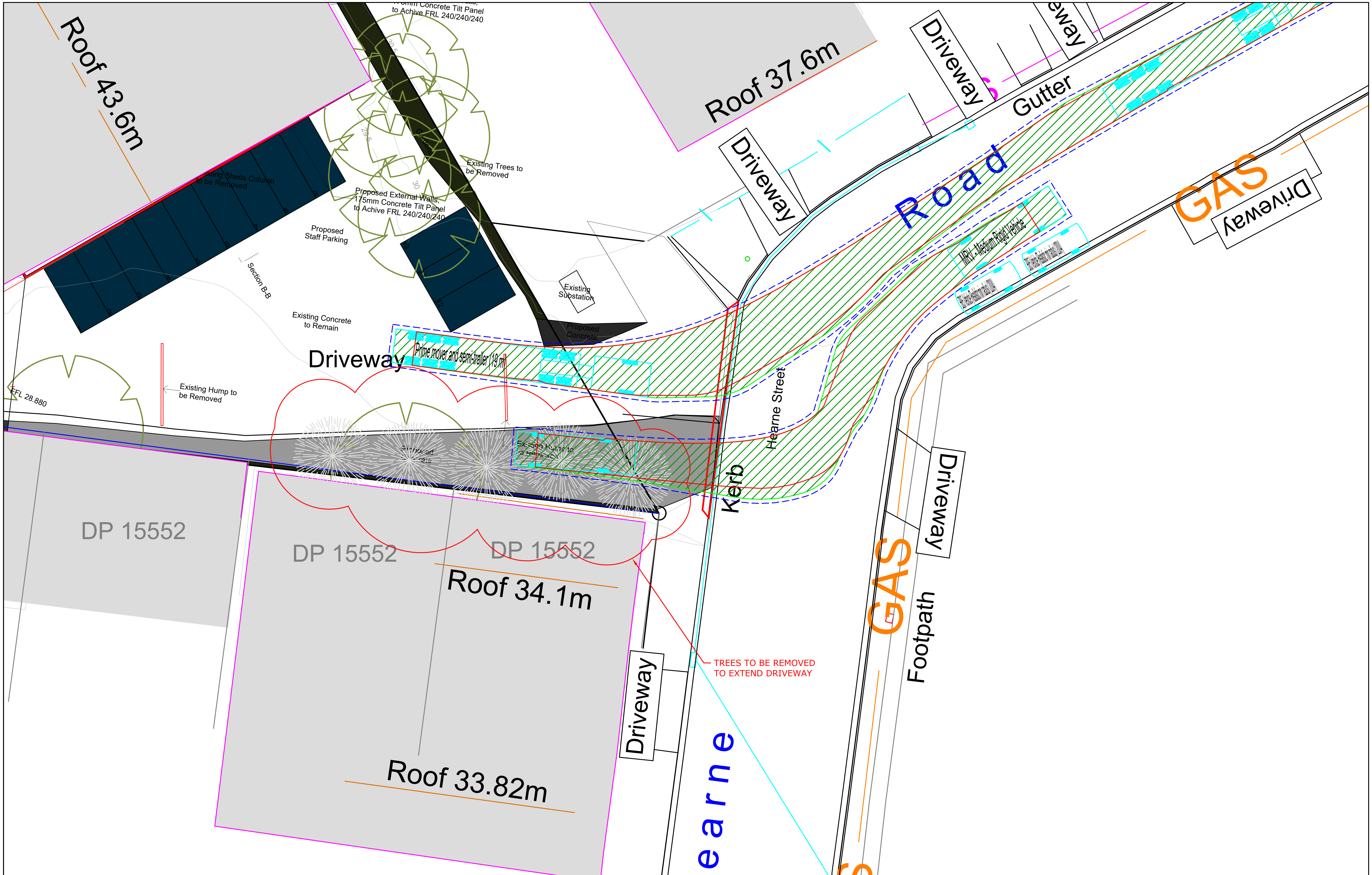
PROJECT	BINGO, MORTDALE
TITLE	19.0m SEMI-TRAILER AND 8.8m MRV - SWEPT PATH
DWG No.	FIGURE 2
DATE STAMP	16 NOVEMBER 2016
PROJECT No.	16222
SCALE	1:250 (A3)
REV.	A



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	16/11/16

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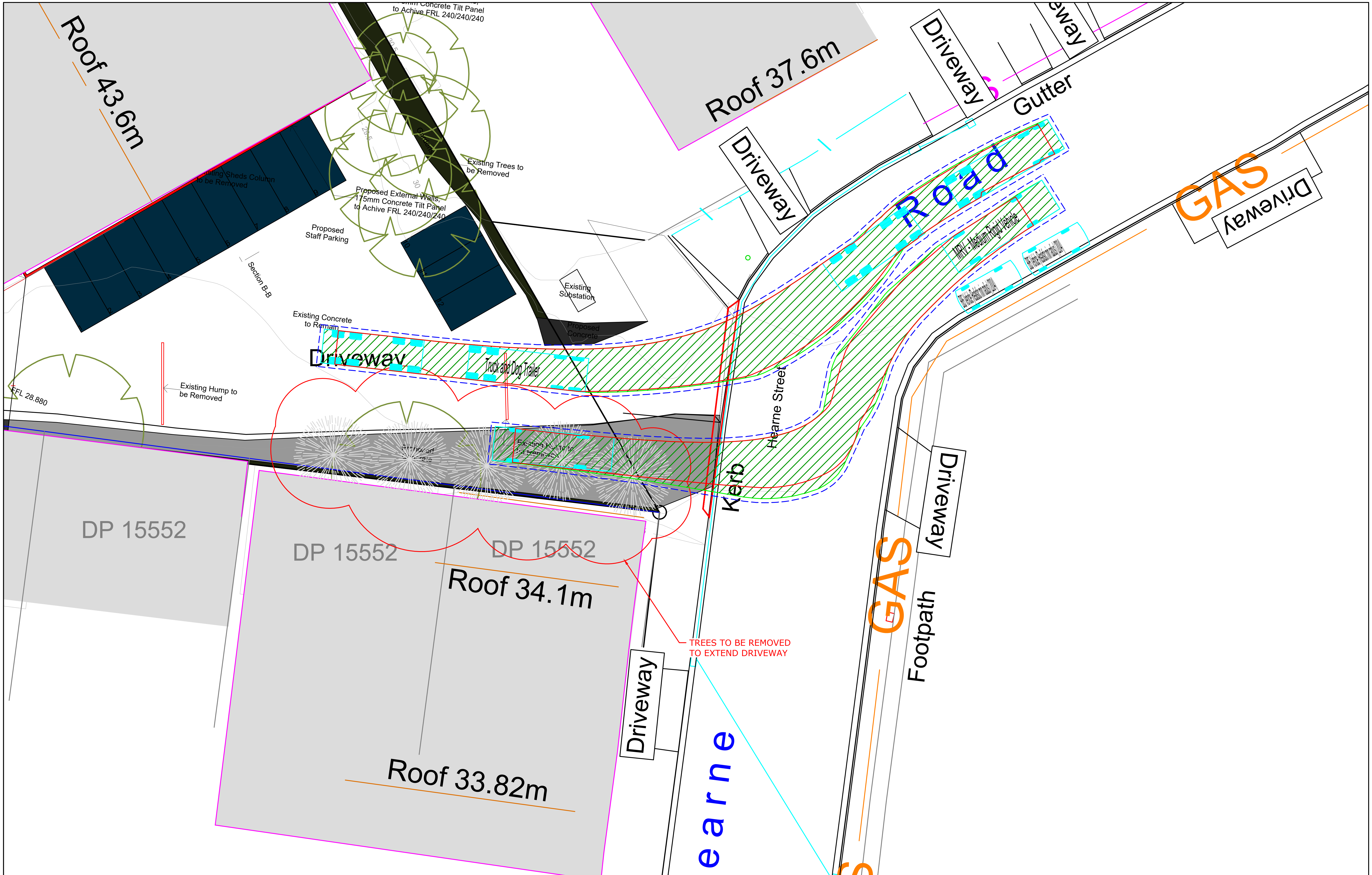
PROJECT: BINGO, MORTDALE

TITLE: 19.0m SEMI-TRAILER AND 8.8m MRV - SWEPT PATH

DWG No.: FIGURE 3

DATE STAMP: 16 NOVEMBER 2016

PROJECT No.	SCALE	REV.
16222	1:250 (A3)	A



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	16/11/16

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PROJECT: BINGO, MORTDALE

TITLE: 19.6m TRUCK AND DOG AND 8.8m MRV - SWEPT PATH

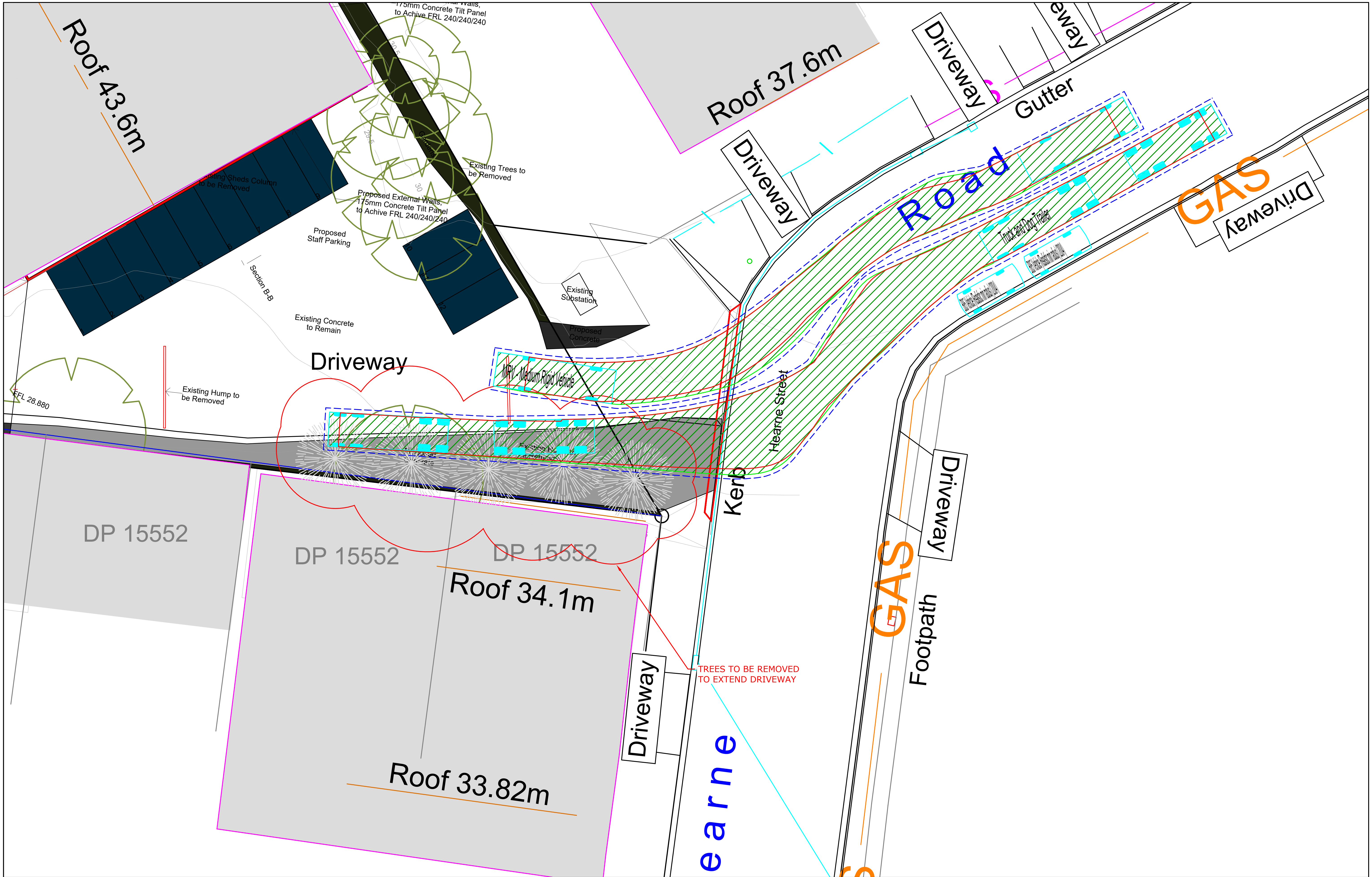
DWG No.: FIGURE 4

DATE STAMP: 16 NOVEMBER 2016

PROJECT No.: 16222

SCALE: 1:250 (A3)

REV.: A



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	HC	WJ	WJ	16/11/16

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Email: info@ttpp.net.au

PROJECT: BINGO, MORTDALE

TITLE: 19.6m TRUCK AND DOG AND 8.8m MRV - SWEPT PATH

DWG No.: FIGURE 5

DATE STAMP: 16 NOVEMBER 2016

PROJECT No.: 16222

SCALE: 1:250 (A3)

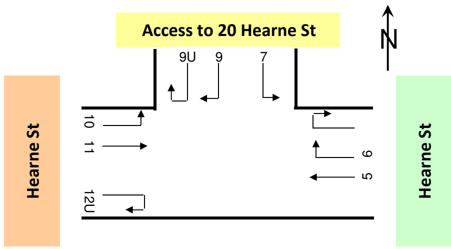
REV.: A

ATTACHMENT E

Survey Results (extracted from Transport Impact Assessment by GTA Consultants)

Job No. : N2114
Client : GTA
Suburb : Mortdale
Location : 3. Hearne St / Access to 20 Hearne St

Day/Date : Wed, 9th December 2015
Weather : Fine
Description : Classified Intersection Count
: Hourly Summary



Approach	Hearne St											
Direction	Direction 5 (Through)				Direction 6 (Right Turn)				Direction 6U (U Turn)			
Time Period	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
7:00 to 8:00	61	7	0	**68**	11	7	0	**18**	0	0	0	**0**
7:15 to 8:15	58	8	0	**66**	13	8	0	**21**	0	0	0	**0**
7:30 to 8:30	54	7	0	**61**	11	9	0	**20**	0	0	0	**0**
7:45 to 8:45	45	4	0	**49**	13	10	0	**23**	0	0	0	**0**
8:00 to 9:00	41	5	0	**46**	11	10	0	**21**	0	0	0	**0**
AM Totals	**102**	**12**	**0**	**114**	**22**	**17**	**0**	**39**	**0**	**0**	**0**	**0**
16:00 to 17:00	43	7	0	**50**	1	3	0	**4**	0	0	0	**0**
16:15 to 17:15	34	4	0	**38**	1	3	0	**4**	0	0	0	**0**
16:30 to 17:30	29	3	0	**32**	1	6	0	**7**	0	0	0	**0**
16:45 to 17:45	22	0	0	**22**	2	4	0	**6**	0	0	0	**0**
17:00 to 18:00	18	0	0	**18**	3	4	0	**7**	0	0	0	**0**
PM Totals	**61**	**7**	**0**	**68**	**4**	**7**	**0**	**11**	**0**	**0**	**0**	**0**

Approach	Access to 20 Hearne St													Hearne St												
Direction	Direction 7 (Left Turn)					Direction 9 (Right Turn)				Direction 9U (U Turn)				Direction 10 (Left Turn)				Direction 11 (Through)					Direction 12U (U Turn)			
Time Period	Cars	Trucks	Buses	Total		Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total		Cars	Trucks	Buses	Total
7:00 to 8:00	2	8	0	**10**		0	1	0	**1**	0	0	0	**0**	1	2	0	**3**	28	8	0	**36**		0	0	0	**0**
7:15 to 8:15	3	3	0	**6**		0	2	0	**2**	0	0	0	**0**	1	1	0	**2**	34	8	0	**42**		0	0	0	**0**
7:30 to 8:30	5	7	0	**12**		0	2	0	**2**	0	0	0	**0**	2	1	0	**3**	31	8	0	**39**		0	0	0	**0**
7:45 to 8:45	7	8	0	**15**		1	2	0	**3**	0	0	0	**0**	1	1	0	**2**	26	6	0	**32**		0	0	0	**0**
8:00 to 9:00	6	8	0	**14**		1	2	0	**3**	0	0	0	**0**	1	0	0	**1**	27	5	0	**32**		0	0	0	**0**
AM Totals	**8**	**16**	**0**	**24**		**1**	**3**	**0**	**4**	**0**	**0**	**0**	**0**	**2**	**2**	**0**	**4**	**55**	**13**	**0**	**68**		**0**	**0**	**0**	**0**
16:00 to 17:00	4	2	0	**6**		0	1	0	**1**	0	0	0	**0**	0	0	0	**0**	70	6	0	**76**		0	0	0	**0**
16:15 to 17:15	5	2	0	**7**		0	1	0	**1**	0	0	0	**0**	0	0	0	**0**	64	4	0	**68**		0	0	0	**0**
16:30 to 17:30	4	0	0	**4**		0	1	0	**1**	0	0	0	**0**	0	0	0	**0**	60	2	0	**62**		0	0	0	**0**
16:45 to 17:45	4	0	0	**4**		0	1	0	**1**	0	0	0	**0**	0	0	0	**0**	56	1	0	**57**		0	0	0	**0**
17:00 to 18:00	4	0	0	**4**		0	0	0	**0**	0	0	0	**0**	0	0	0	**0**	49	0	0	**49**		0	0	0	**0**
PM Totals	**8**	**2**	**0**	**10**		**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**119**	**6**	**0**	**125**		**0**	**0**	**0**	**0**