Suite 5, Level 1, 18 Broadway
Newmarket 1023
Auckland
www.commute.kiwi

Mr V Hodgson
Hodgson Planning Consultants Limited
PO Box 97
Pukekohe
Auckland

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Copy via email: **vance@hpcplanning.co.nz**

Dear Vance

TRAFFIC ASSESSMENT REPORT – 362 JONES ROAD, DRURY

Further to your instruction, we are pleased to provide this traffic assessment in respect to the proposal to use the plot at 362 Jones Road, Drury, as a fill site. This transport assessment addresses the following aspects with respect to the proposal:

- A review of the existing road environment near the fill site;
- An assessment of traffic generation and distribution on the road network;
- An assessment of the site access design;
- A discussion on the effects of the proposal on surrounding road network.

1 SITE LOCATION

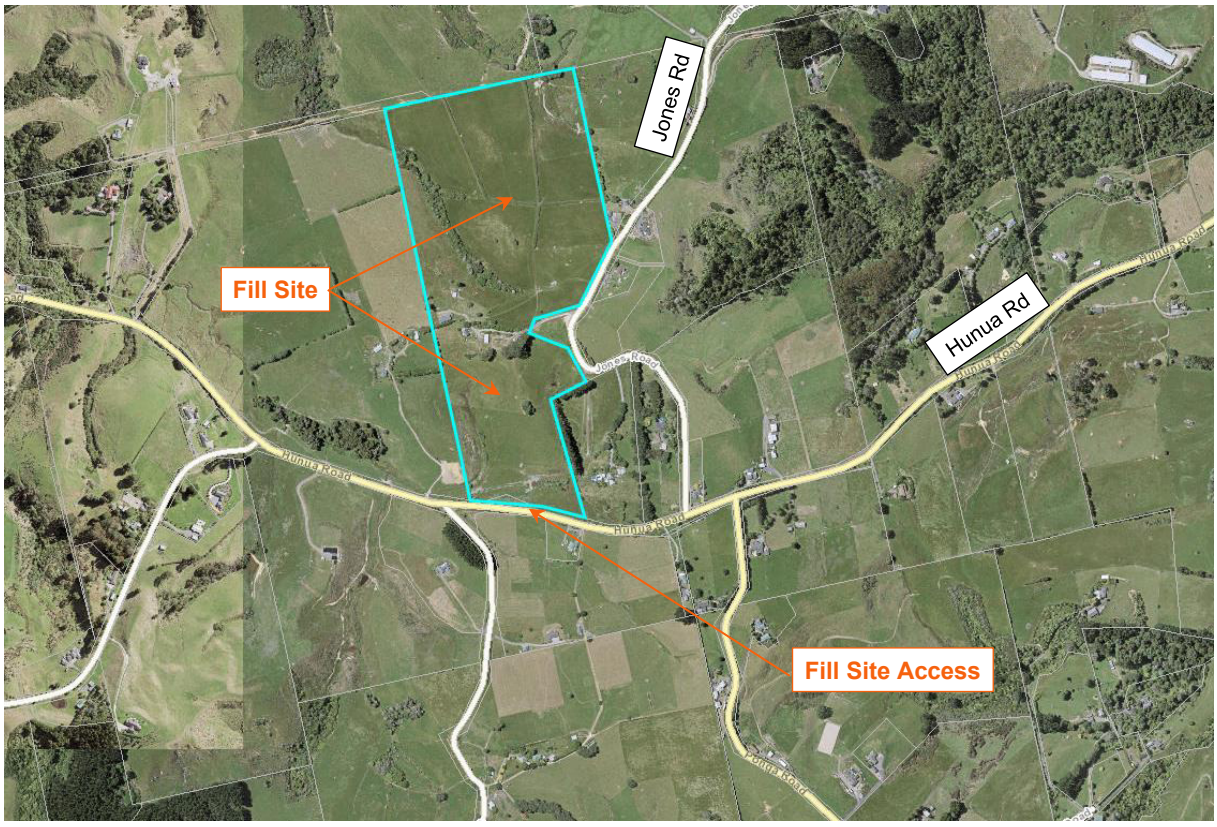
The fill site is located at 362 Jones Road in Drury, with frontage to Hunua Road as well as Jones Road. Existing access to the site is via both Jones Road and Hunua Road, with the fill site to be accessed via an upgraded farm access on Hunua Road. This access is located approximately 2km east of the intersection of Hays Creek Road / Hunua Road, which is the extent of the Auckland Freight Strategic Network as identified in Auckland Transports website[1].

The location of the site and the access in relation to the surrounding road environment is shown in Figure 1-1 and Figure 1-2.

[1] https://at.govt.nz/about-us/transport-plans-strategies/auckland-freight-plan

Figure 1-1: Site Location

Figure 1-2: Surrounding Road Environment



Two fill deposition areas (northern and southern areas) are located within the site zoned Rural – Rural Production Zone in the Auckland Unitary Plan.

2 EXISTING ENVIRONMENT

2.1 ROAD ENVIRONMENT

The site has frontage to Jones Road and Hunua Road, both which are not classified as an arterial road within the Auckland Unitary Plan adjacent to the site. It is noted that Hunua Road to the west of Dominion Road is an arterial road, with this classification stopping near the rural urban boundary.

Hunua Road is part of the Auckland Strategic Freight Network[2], with the corridor classification stopping approximately 2km west of the proposed fill site access. The classification for Hunua Road is 1B which is defined as follows:

"Roads of the highest strategic value to freight movement being Arterials where efficient freight movements must be actively supported to maintain Levels of Service, where competing modes and land uses require active management."

Hunua Road is comprised of one vehicle lane in each direction and has a posted speed limit of 80 km/hr adjacent to the site access.

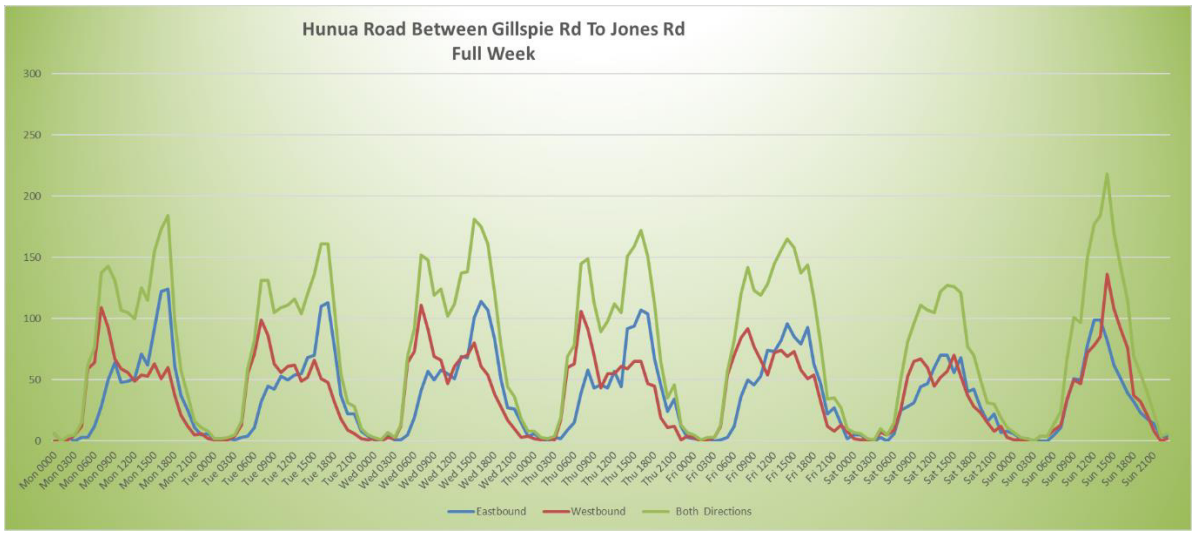
2.2 TRAFFIC ENVIRONMENT

A tube count was placed on Hunua Road, adjacent to the existing farm gate access to the site, to collect traffic volume and speed data. Data was recorded between Monday 18 March and Sunday 24 March, 2024.

The 5-day ADT for the corridor was found to be 1,921 vehicles. The 5-day AM peak hour was found to occur between 7:15 - 8:15 AM with 145 vehicles recorded, 41 eastbound and 103 westbound, and the 5-day PM peak hour was found to occur between 4:30 - 5:30 PM with 169 vehicles recorded, 116 eastbound and 53 westbound.

The 85th percentile speed for eastbound vehicles was found to be 88km/hr, while the 85th percentile speed for westbound vehicles was found to be 96km/hr. Given the corridor is signposted at 80km/hr, the speeds recorded are higher than expected and it is therefore recommended that Auckland Transport together with NZ Police undertake actions to manage vehicle speeds on this corridor.

Figure 2-1: Traffic Volumes



[2] https://at.govt.nz/about-us/transport-plans-strategies/auckland-freight-plan

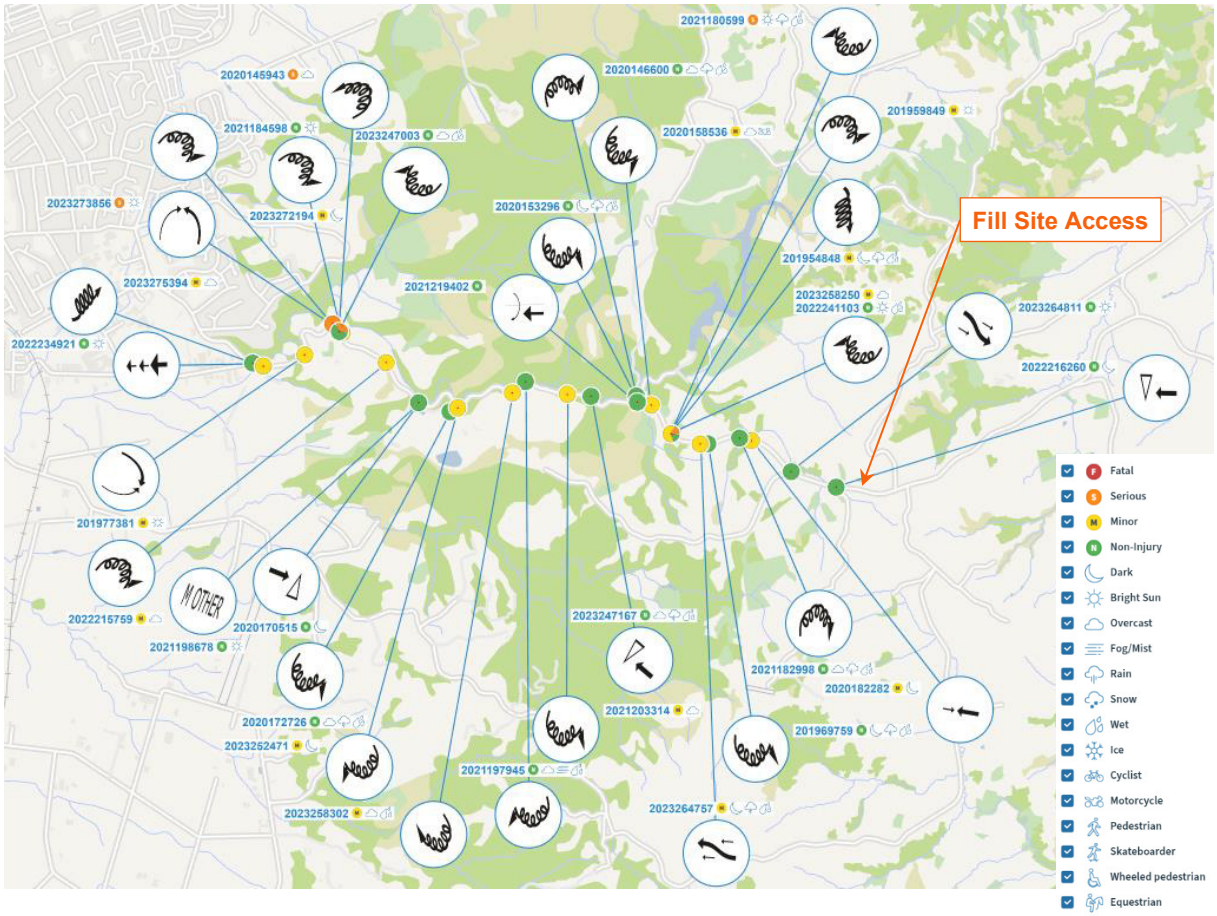
Of particular note the survey also recorded that Heavy Commercial Vehicles (HCV) represented 25% of total traffic over the week.

2.3 ROAD SAFETY ASSESSMENT

An assessment of the surrounding area's road safety record has been undertaken using the NZTA's CAS database. Crash records for the five year period 2019 - 2023 including all available records for 2024, have been assessed for Hunua Road between Dominion Road and Ponga Road. As such, the search area covers 6.5km of rural road.

A total of 32 crashes were reported within the search criteria as shown in Figure 2-2.

Figure 2-2: Collision Diagram



The primary trend in the crash history is that the majority of the crashes reported (20/32) were loss of control crashes. There are no other inherent trends in crash types, with one or two crashes classified for each of the following: changing lanes, farm animal, head on, manoeuvring, missed intersection, read end, slip on road network, vehicle swinging wide, and u-turn.

A total of three crashes resulted in serious injuries and are summarised as follows:

- A driver of a car swung wide on a bend and crashed into an oncoming truck. The car driver was on a learner license and was suspected of having drunk alcohol (it is understood that the test was refused). It is noted that this crash occurred after the speed was reduced on this corridor.
- A vehicle lost control on a bend. The car driver told police that the breaks locked so they steered to the left. Upon crashing into the ditch the vehicle rolled. It is noted that this crash occurred prior to the speed being reduced on this corridor.

- A vehicle lost control on a bend. The truck driver was taken to hospital prior to being questioned. Alcohol/drugs are suspected in this crash. It is noted that this crash occurred prior to the speed being reduced on this corridor.

None of the crahes occuered within 100m of the poposed site site access. While there have been a number of loss of control crashes on Hunua Road, these crashes are scattered along the corridor and are not entirely unexpected on high speed rural roads. These crashes are unrelated to the subject site, and therefore the proposed managed fill site is not expected to have any adverse effects on the road safety in the surrounding area. Furthermore, the speed reduction on Hunua Road, which occurred on 30 June 2022, is also expected to help reduce the number of loss of control crashes on this corridor.

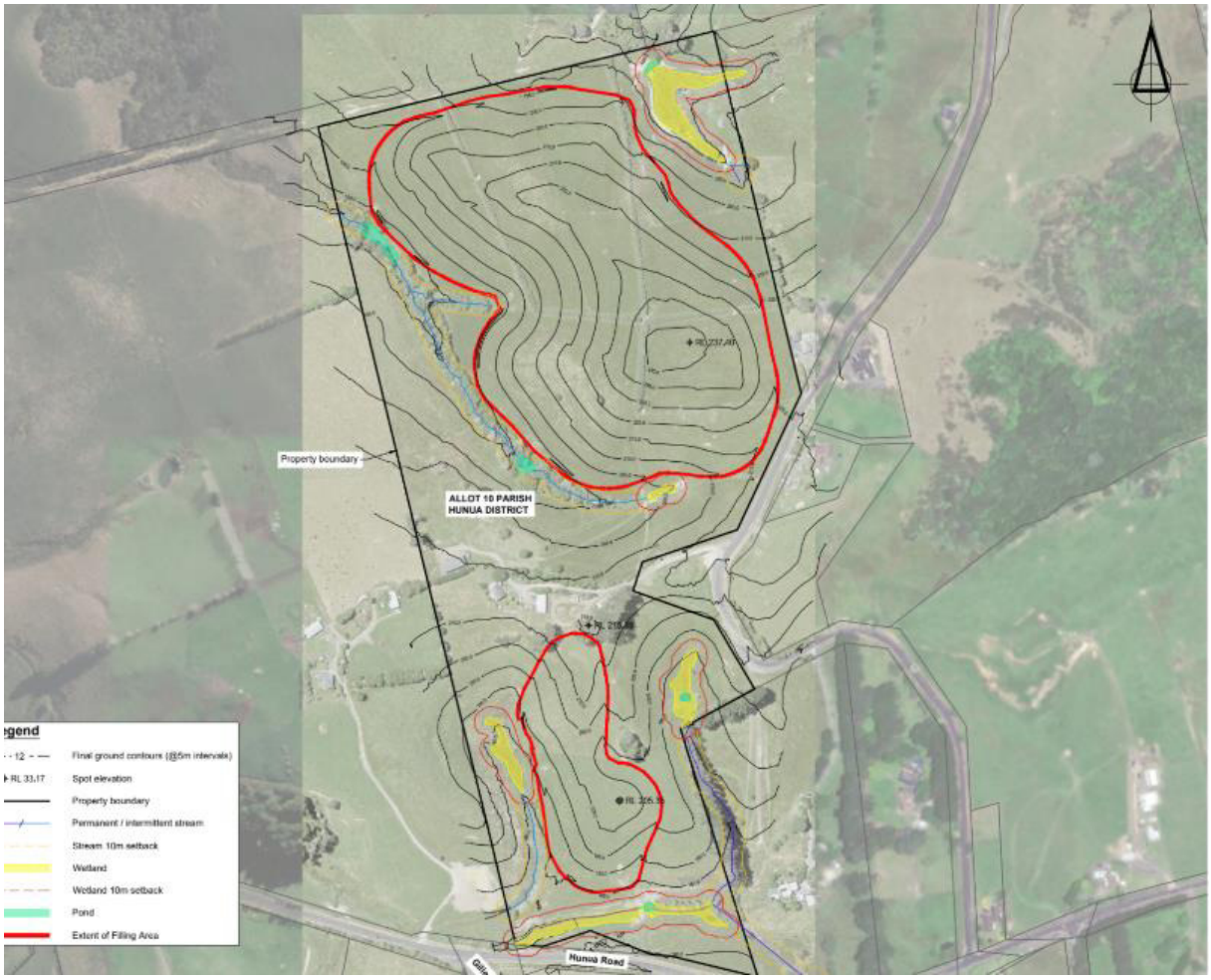
3 PROPOSAL

The proposal seeks to obtain resource consent to use the site at 362 Jones Road as a managed fill facility. The key components of the proposal in terms of traffic engineering and planning include:

- Up to 790,000m^3 of fill volume is to be imported to the site over 5-10 years;
- Site access to be via an upgraded farm access on Hunua Road (to be upgraded as part of the proposal)
- Site access for trucks to be prohibited from Jones Road (no access will be provided directly to Jones Road).
- Majority of trucks are anticipated to enter from the west (left in) and exit to the west (right out);
- The project has a maximum duration of 10 years;
- Operation will be Monday to Friday 7am to 6pm, Saturday 7am to 1pm, and no operations on Sunday or public holidays;
- Maximum of 96 truckloads (192 truck movements) per day on week days and 20 trucks (40 movements) in one hour, and 50 truckloads (100 movements) per day on Saturdays and 20 trucks (40 movements) in one hour; and
- Trucks will vary in size from smaller single unit trucks (6-8m^3 capacity) through to larger articulated trucks and truck and trailers (10-18m^3).

Figure 3-1 shows the proposed site plan including the fill locations.

Figure 3-1: Proposed Site Plan



4 TRAFFIC GENERATION

4.1 SITE GENERATION

The site is proposed to have a capacity of 96 truckloads (192 truck movements) per day. The site will operate from Monday to Friday 7am to 6pm and Saturdays from 7am to 1pm. The site will be closed on Sunday and Public Holidays.

In terms of a typical average over the 10 years, the following can be anticipated:

i. 790,000m^3 of fill volume imported to the site;
ii. 10 years maximum duration;
iii. Average volume of fill per truck of 10m^3;
iv. 5.8 days per week (approximately 290 days per year); and
v. Average of 11 hours during weekdays and 9 hours on Saturday.

The above translates to 79,000m^3 per year, 272m^3 per day, thus approximately 27 trucks per day and 2-3 trucks per hour. This further equates to 54 truck movements per day (in and out) and an average of 4-6 truck movements per hour. However, the applicant would like the flexibility to accommodate for seasonal fluctuations and thereby allow for up to 96 truckloads a day. This threshold would equate to 96 trucks a day or 192 truck movements a day, and 20 trucks an hour (40 truck movements an hour).

Experience from similar fill sites indicates that the peak hour of the site (near midday) is approximately 15% of the total daily volume, and therefore based on the maximum daily truckloads the sites peak hour is anticipated to be some 14 trucks or 28 movements per hour. Of note, in the morning and

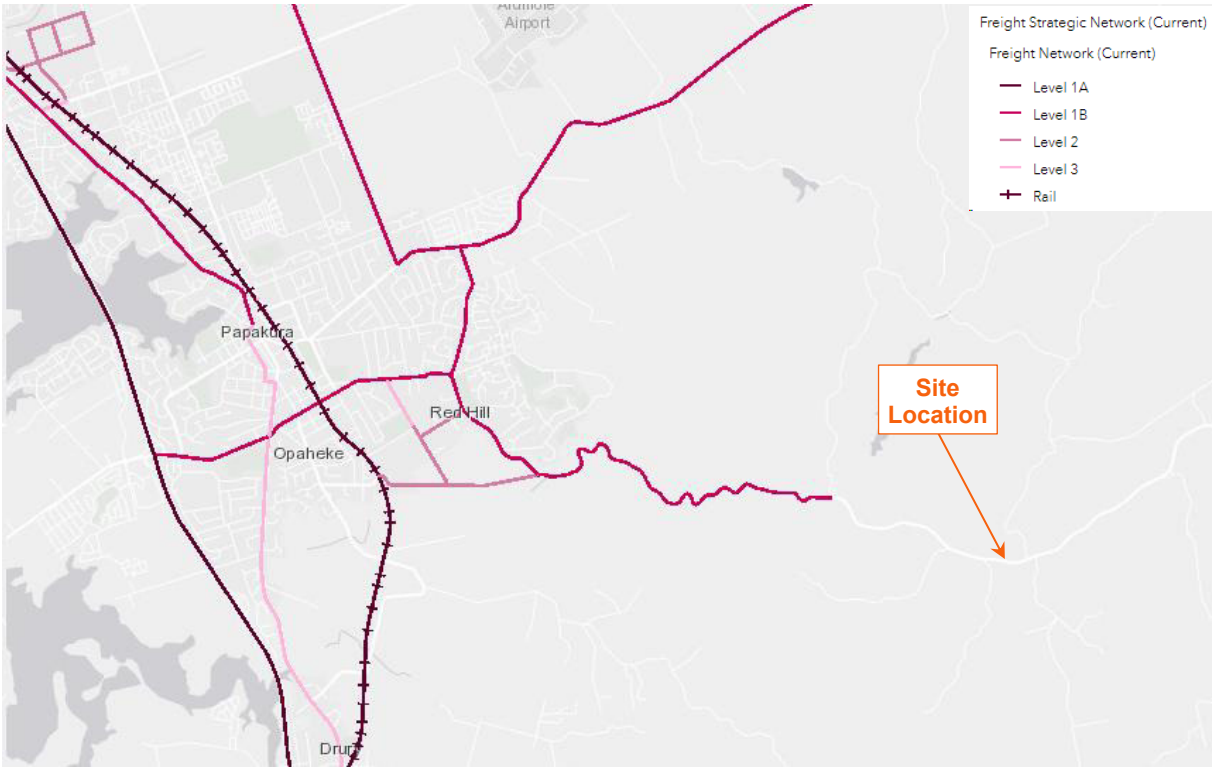
evening commuter peaks the hourly volumes is typically significantly less at approximately 7% and therefore based on the maximum daily truckloads the site is anticipated to generate up to 7 trucks and 14 movements during the commuter peak hours.

For the purposes of this assessment the maximum volumes expected in an hour are conservatively taken as 20 truckloads and 40 truck movements which represents the sites peak hour on a day where the maximum number of truckloads permitted occurs.

4.2 TRIP ORIGIN / DESTINATION

The exact origin and destination of the trucks depends on the origin of the earth to be removed however, it is noted that the significant majority of these trips are anticipated to be travelling from urban Auckland and therefore to / from SH1. Furthermore, the Auckland Transport's Strategic Freight Network shows that the most appropriate freight route to the site is via Hunua Road, as shown in Figure 4-1.

Figure 4-1: Auckland Transport Strategic Freight Network



As such, the majority of truck movements are anticipated to turn left into the site and right out of the site. There is the possibility that trucks turn left in and right out, however the volume of trucks are anticipated to be low.

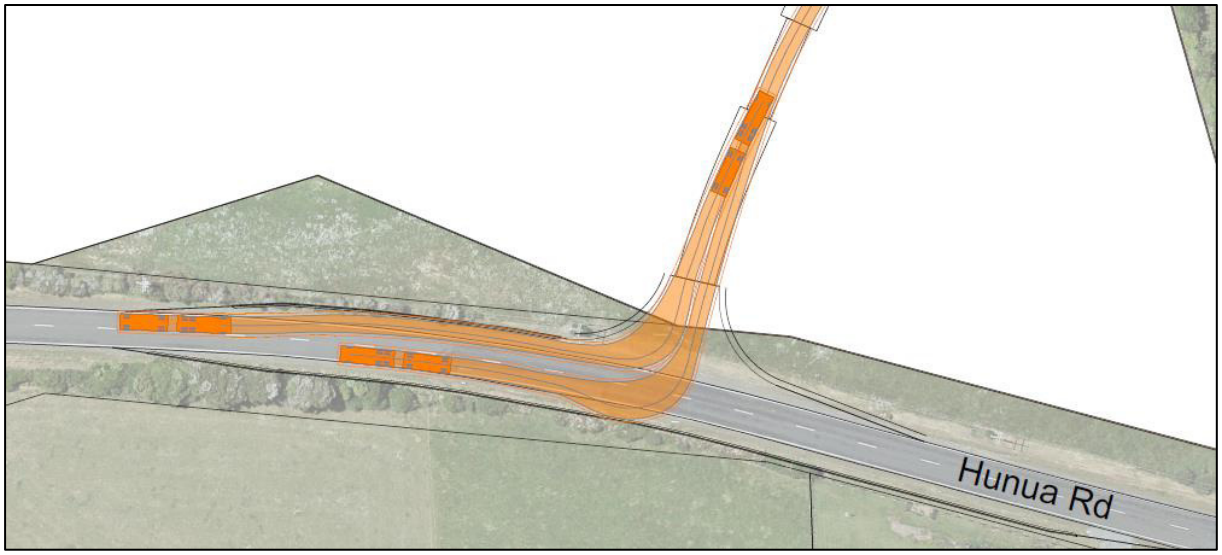
5 ACCESS

5.1 GENERAL

The site access is proposed to be located on Hunua Road, approximately 300m west of the Jones Road intersection, near an existing farm gate to the site.

Hunua Road adjacent to the site access will be widened to accommodate a passing opportunity when a vehicle is waiting to turn right into the site, as well as a sealed taper space for vehicles turning left into the site. The proposed access is shown in Figure 5-1 and discussed in detail in the following sections.

Figure 5-1: Proposed Site Access



The site access design is also shown in **Attachment A**.

5.2 SIGHT DISTANCE

Austroads Safe Intersection Sight Distance (SISD) is considered the appropriate design standard for sight distance for a rural road such as Hunua Road. The Austroads sight distance requirements, when adopting a 2.0s reaction time and a 2.0s observation time (1.0s less than the Austroads base[3]) are as follows:

- 88km/hr eastbound speed requires 182m to the west,
- 96km/hr westbound speed requires 207m to the east.

Photographs 1 and 2 show the sight distance available to the east and west of the proposed access on Hunua Road.

[3] Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, Table A8 provides observation times when assessing an Extended Design Domain SISD and allows observation time as low as 1.5s for a low volume corridor such a Hunua Road.

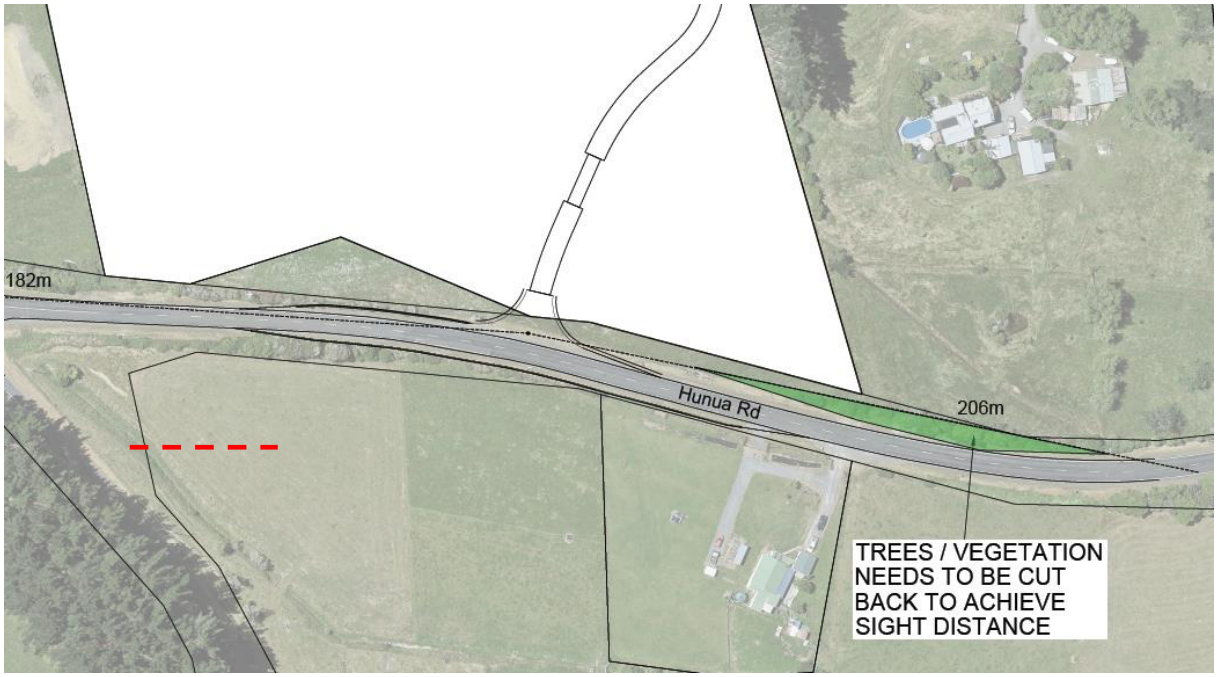
Photograph 1: Sight Distance to the West of the Site Access on Hunua Road

Photograph 2: Sight Distance to the East of the Site Access on Hunua Road

The available sight distance to the west is currently 198m and therefore meets the required 182m sight distance. The available sight distance to the east is currently 180m and therefore short of the 207m Austroads design standard. This sightline is restricted due to vegetation that is located within the road reserve, and therefore it is recommended that the trees along the corridor are cut back to improve the visibility from the site access.

Upon trimming the vegetation within the road reserve, the Austroads sight distances can be met as shown in **Attachment B**.

Figure 5-2: Recommended Vegetation removal



Furthermore, it is reiterated that the speeds on the corridor are higher than expected when compared to the posted speed limit. While beyond this application, it is noted that enforcing the posted speed limit on Hunua Road, notably the westbound speed, would improve safety and reduce the sight distance requirements (and therefore vegetation removal) at this access.

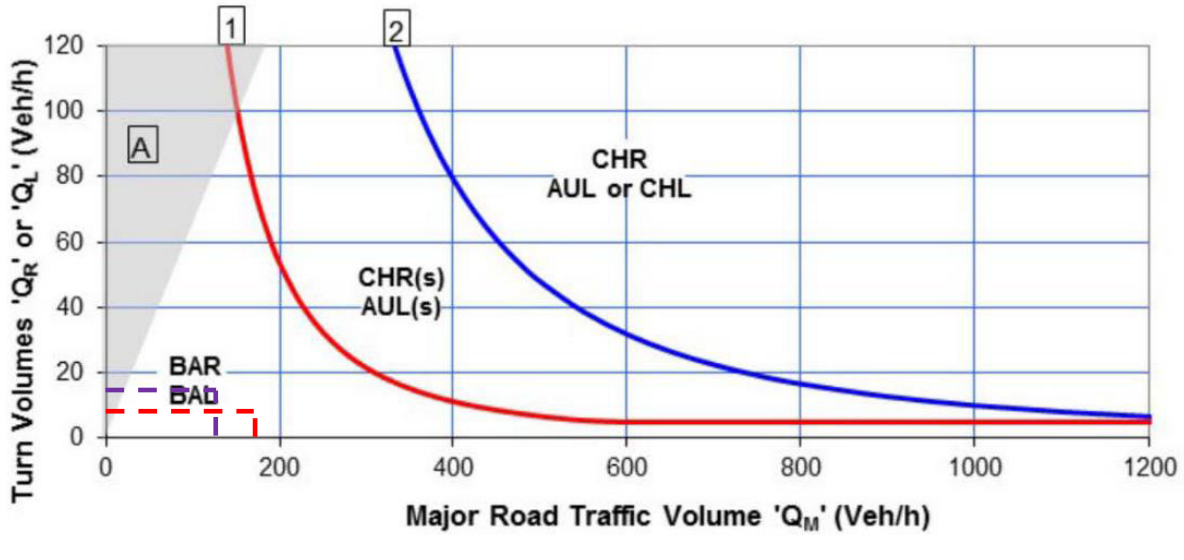
5.3 TURNING MOVEMENTS

The Austroads Guide to Road Design has been reviewed to inform the recommended treatment for turning vehicles.

The peak hour flow on Hunua Road in the vicinity of the site measured 145 - 169 vph (two-way movement) in the commuter peak hours as detailed in Section 2.2.

Figure 5-3 below details the turning warrants, sourced from the Austroads Guide, for a speed environment corresponding to what was found to occur on Hunua Road.

Figure 5-3: Recommended Turning Treatment for Design Speed >70km/h and <100 km/hr



Assuming a worst-case scenario for right turn movements into the site, that is that the sites peak hour occurs during the commuter peak hour and 50% of truck movements turn right into the site (8 vehicles), only a basic turn treatment is recommended (ie not a full right turn bay) as shown by the red dashed line.

Similarly, assuming a worst-case scenario for left turn movements into the site, that is that the sites peak hour occurs during the commuter peak hour and 100% of truck movements turn right into the site (15 vehicles), only a basic turn treatment is recommended as shown by the purple dashed line. It is noted that for a left turn warrant only one lane off traffic is affected (the eastbound movements) and therefore only this lane is considered in the warrant (116 eastbound vehicles).

5.4 ACCESS DESIGN

The RTS 6 access design is considered to be consistent with the Austroads turning warrants detailed previously, which suggested the inclusion of a basic right turn treatment for westbound vehicles, and a basic left turn treatment for eastbound vehicles. It is noted that all road widening proposed can be accommodated within the existing road reserve.

The RTS 6 access design is detailed in Figure 5-4 and 5-5 below (for a low volume and high volume driveway respectively). These diagrams are used on arterial roads with more than one truck a day (as is generally the case in this situation).

Figure 5-4: RTS 6 accessway design (low volume driveway)

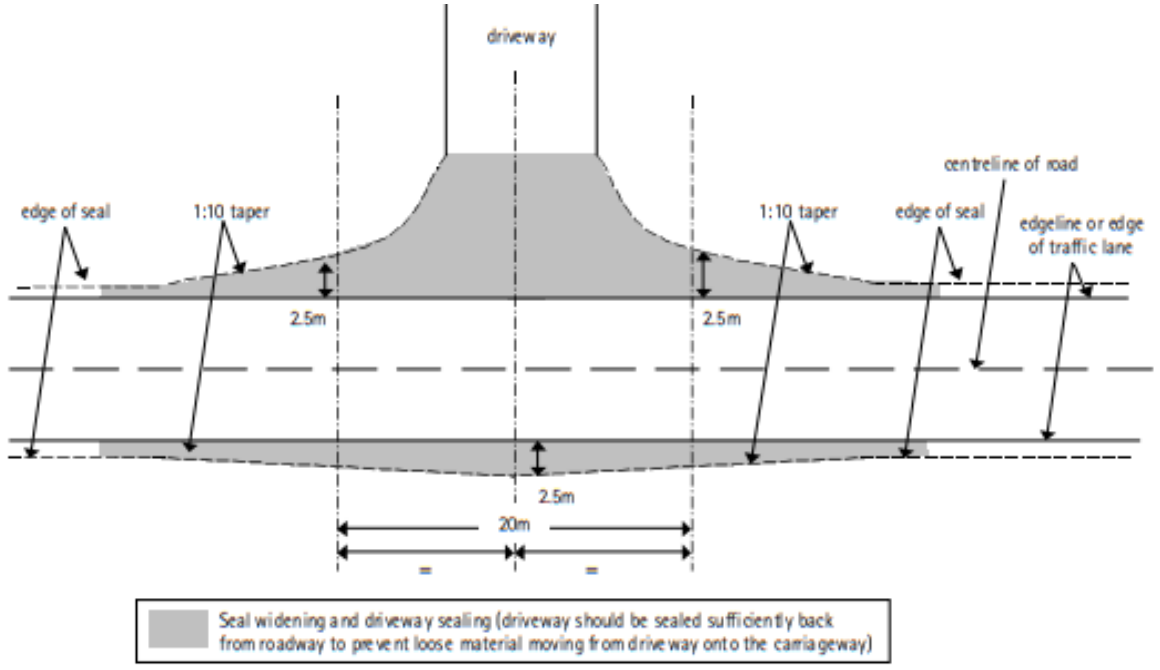
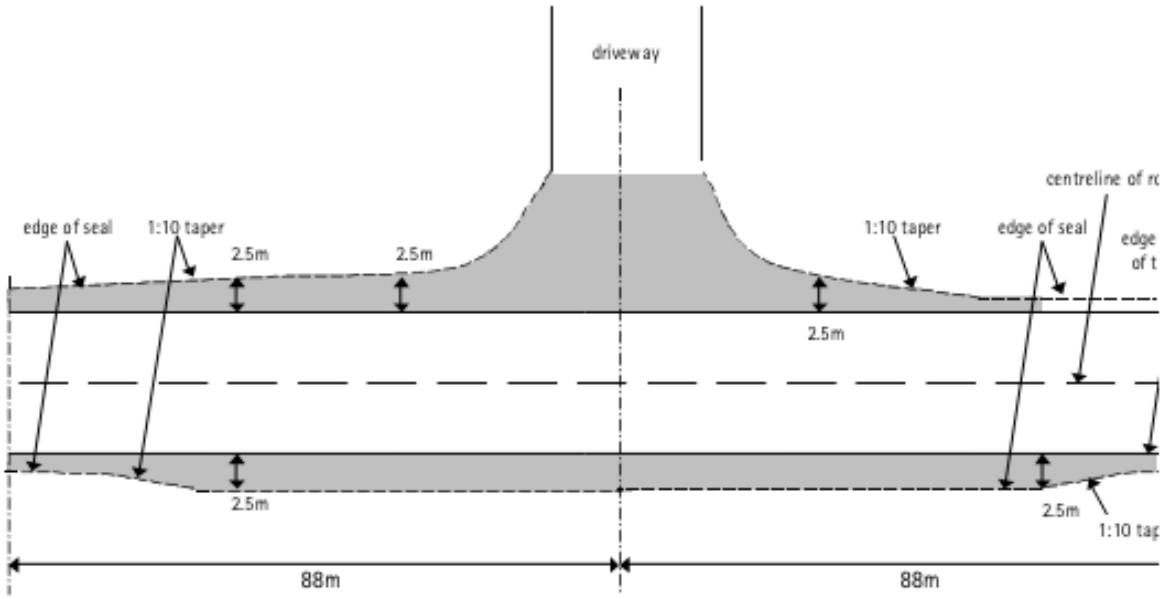


Figure 5-5: RTS 6 accessway design (high volume driveway)



Given the high number of trucks expected, the High Volume option has been chosen (Figure 5-5).

5.5 DISTRICT PLAN REQUIRMENTS

Section 7.6.4.3.2 “Vehicle Crossing and Vehicle Access Widths” (T156) states that the maximum width of crossing at site boundary 6.0m however it also notes that a maximum width of 9.0m is permitted where the crossing needs to accommodate the tracking path of large heavy vehicles (which is the case in this situation).

The proposed vehicle access is 12.73m wide at the property boundary and does not comply with the requirements of the AUP. In this regard:

- The access has been specifically designed to simultaneously accommodate an entering and exiting truck and trailer to ensure no queuing occur on Hunua Road; and
- There is no footpath in the location and as such the wider crossing has no effect to pedestrian safety

Overall, the wider crossing is considered both acceptable and appropriate in this situation.

5.6 INTERNAL ACCESS DESIGN

The access will be sufficiently wide to accommodate two-way movements for at least the first 50 m from the road boundary. Furthermore, within the site the vehicle access is anticipated to change with time, particularly as fill is delivered to the site, however the first portion of the access should be retained throughout the 10-year consent period.

6 WIDER EFFECTS

6.1 GENERAL

The following wider assessment includes a review of Hunua Road from Dominion Road in the west to the site access in the east. The fill site access is proposed to be located on Hunua Road, approximately 300m west of Jones Road as shown in Figure 6-1.

Figure 6-1: Wider assessment

For the purpose of this assessment the study area has been broken into three segments being:

- Dominion Road to Winstone Aggregates Quarry access
- Winstone Aggregates Quarry access to Ardmore Quarry Road
- Admore Quarry Road to the site access

6.2 DOMINION RD TO WINSTONE AGGREGATES QUARRY ACCESS

6.2.1 SPEED LIMIT

The posted speed limit through this section of the corridor is 60km/hr. A speed reduction was implemented on Hunua Road on 30 June 2022 which reduced the speed from Dominion Road to 1712 Hunua Road to 60km/hr (from 100km/hr).

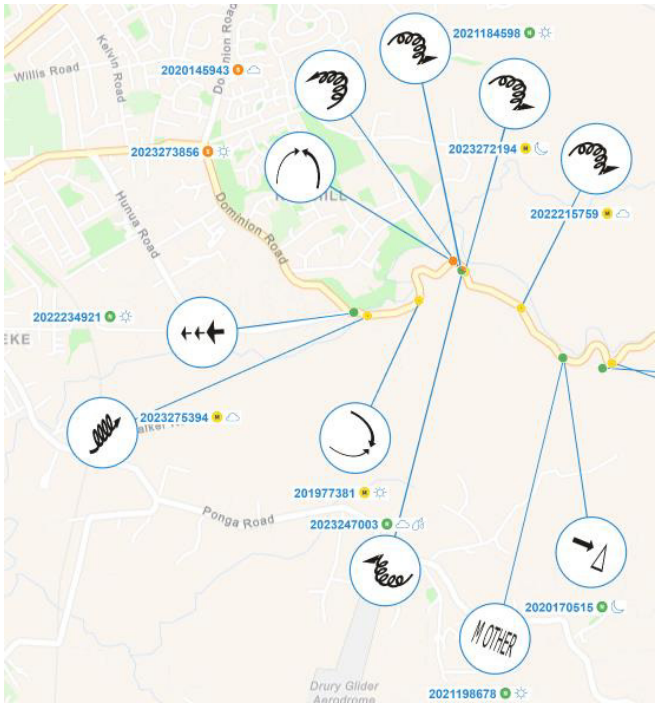
6.2.2 ROAD SAFETY ASSESSMENT

An assessment of the surrounding area's road safety record has been undertaken using the NZTA's CAS database. Crash records for the five year period 2019 - 2023 including all available records for 2024, have been assessed for Hunua Road between Dominion Road and Winstone Aggregates Quarry Access. A total of 11 crashes occurred within the search criteria, including six loss of control crashes, two head on crashes, one rear end, one object hit (cow on road), and one intentional crash.

Figure 6-2 shows the collision diagram for the search area and time period. Where the crashes resulted in serious injuries (no fatalities have occurred), or involved a truck, further details are provided below:

- Non-injury truck crash occurred when a truck rear ended a truck due to the front vehicle suddenly turning unexpectedly;
- Minor injury truck crash (incorrectly coded as non-injury) occurred when a truck lost control on the bend, the report states speed has been a contributing factor;
- Minor injury truck crash occurred when a truck crossed the centreline. The oncoming truck driver swerved out of the way however the trailer of this truck clipped the other vehicle;
- A serious injury crash involving a truck occurred when a car driver swung wide on a bend and crashed into an oncoming truck. The car driver was on a learner license and was suspected of having drunk alcohol (the test was refused). It is noted that this crash occurred after the speed was reduced on this corridor.
- A serious injury crash not involving a truck occurred when a driver lost control on a bend. The car driver told police that the breaks locked so they steered to the left. It is noted that this crash occurred prior to the speed being reduced on this corridor.

Figure 6-2: Crash Diagram for Dominion Rd to Winstone Quarry



Loss of control crashes are not unexpected on a rural road. The speed reduction implemented in 2022 is expected to help reduce the number of loss of control crashes on this corridor.

The truck and serious injury crashes are considered random events, with driver behaviours commonly reported as sudden breaking, speeding and unlicensed driver.

6.2.3 VEHICLE TRACKING

Only minimal vehicle tracking has been undertaken in this area given that hundreds of large heavy vehicles use this section of road every day, with many of these vehicles being truck and trailers to the Hunua quarry. Observations show that truck and trailers regularly meet through this section of the corridor, with the existing operation considered to be safe and appropriate.

6.2.4 FREIGHT NETWORK

Dominion Road to Winstone Aggregates Quarry access is classified as Level 1B on the Auckland Transport Freight Network. A Level 1B road is defined as:

"Roads of the highest strategic value to freight movement being Arterials where efficient freight movements must be actively supported to maintain Levels of Service, where competing modes and land uses require active management."

6.2.5 SUMMARY

Based on the assessment above which shows there are no inherent safety concerns based on past crashes, the corridor is part of the freight network, and that hundreds of trucks travel on this section of road, no upgrades are considered necessary between Dominion Road and Winstone Aggregates Quarry access.

6.3 WINSTONE AGGREGATES QUARRY ACCESS TO ARDMORE QUARRY ROAD

6.3.1 SPEED LIMIT

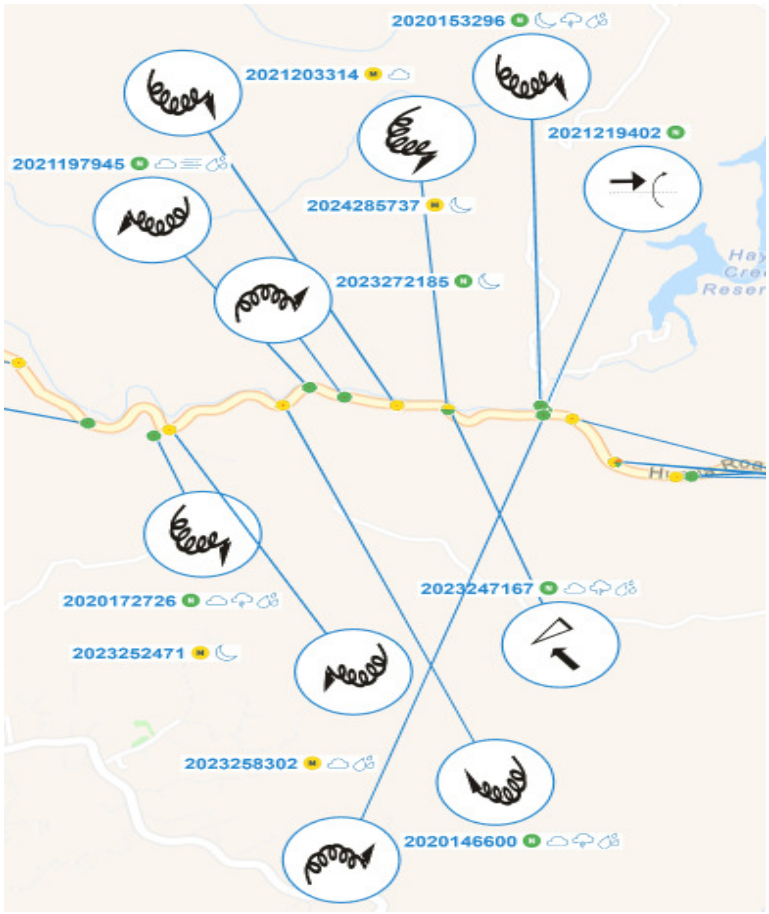
The posted speed limit through this section of the corridor is 60km/hr. A speed reduction was implemented on Hunua Road on 30 June 2022 which reduced the speed from Dominion Road to 1712 Hunua Road to 60km/hr (from 100km/hr).

6.3.2 ROAD SAFETY ASSESSMENT

An assessment of the surrounding area's road safety record has been undertaken using the NZTA's CAS database. Crash records for the five year period 2019 - 2023 including all available records for 2024, have been assessed for Hunua Road between Winstone Aggregates Quarry Access and Ardmore Quarry Road. A total of 11 crashes occurred within the search criteria, including nine loss of control crashes, one u-turn crash, and one crash involving a vehicle hitting an object (a landslip).

Figure 6-2 shows the collision diagram for the search area and time period. No serious crashes, crashes involving trucks, or crashes relating to vehicles passing each other head on, occurred in this part of the corridor within the search timeframe.

Figure 6-3: Crash Diagram for Winstone Quarry to Ardmore Quarry Rd



6.3.3 VEHICLE TRACKING

Vehicle tracking shows to fully accommodate two 19m truck and trailers (as used by the applicant), widening is required in three general locations between Winstone Aggregates Quarry access and Ardmore Quarry Road. The full vehicle tracking is included in **Attachment A**, with the sections which require widening highlighted in Figure 6-4.

Figure 6-4: Segments of Hunua Road which require widening

On-site observations have shown that the trucks currently using this section of road tend to travel slowly through this section of road and potentially wait for other trucks to pass safely.

6.3.4 FREIGHT NETWORK

Winstone Aggregates Quarry access to Ardmore Quarry Road is classified as Level 1B on the Auckland Transport Freight Network. A Level 1B road is defined as:

"Roads of the highest strategic value to freight movement being Arterials where efficient freight movements must be actively supported to maintain Levels of Service, where competing modes and land uses require active management."

Furthermore, Section 4.1 of the Auckland Freight Plan states one of the main functions of the strategic freight network is to provide roads and routes capable of accommodating the largest vehicles within normal legal limits.

As such Auckland Transports Freight Network in this location does not yet meet its own requirements.

6.3.5 SUMMARY

The assessment above shows there are no inherent safety concerns based on past crashes and the corridor is part of the freight network. Despite being part of the freight network, and therefore being required able to accommodate large trucks per the Auckland Freight Plan, there are three segments within this section which would benefit from mitigation.

6.4 ADMORE QUARRY ROAD TO THE SITE ACCESS (SECTION C)

6.4.1 SPEED LIMIT

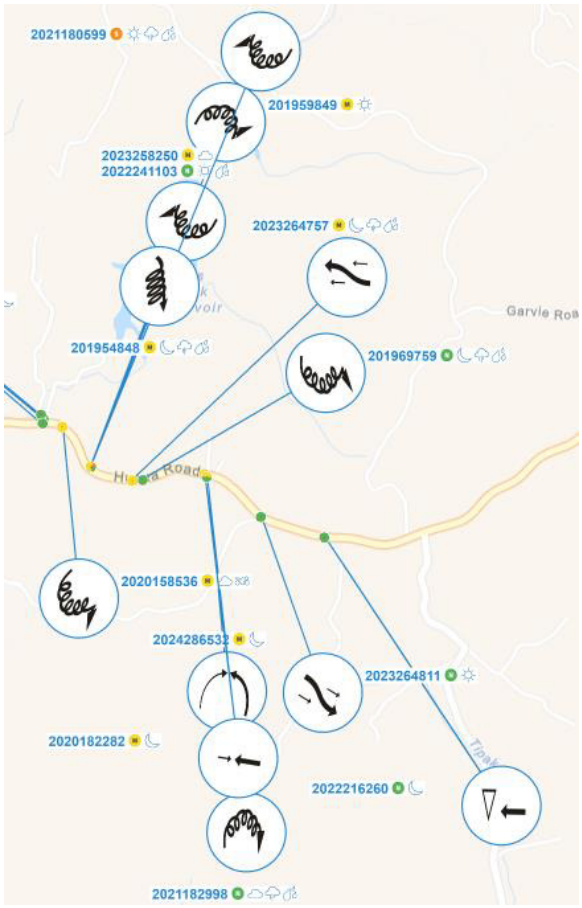
The posted speed limit through this section of the corridor is 80km/hr. A speed reduction was implemented on Hunua Road on 30 June 2022 which reduced the speed from 1712 Hunua Road to White Road to 80km/hr (from 100km/hr).

6.4.2 ROAD SAFETY ASSESSMENT

An assessment of the surrounding area's road safety record has been undertaken using the NZTA's CAS database. Crash records for the five year period 2019 - 2023 including all available records for 2024, have been assessed for Hunua Road between Ardmore Quarry Road and Jones Road. A total of 13 crashes occurred within the search criteria, including eight loss of control crashes, two merging crashes, two head on crashes, and one crash involving an object being hit.

Figure 6-5 shows the collision diagram for the search area and time period. One crash involved a truck and or resulted in serious injuries (no fatalities have occurred). This crash was a serious injury crash involving a truck occurred when a truck lost control on a bend. The truck driver was taken to hospital prior to being questioned. Alcohol/drugs are suspected in this crash. It is noted that this crash occurred prior to the speed being reduced on this corridor.

Figure 6-5: Crash Diagram for Ardmore Quarry Rd to Site Access



6.4.3 VEHICLE TRACKING

Vehicle tracking shows this section of Hunua Road can operate acceptably. The vehicle tracking is included in **Attachment A**.

6.4.4 FREIGHT NETWORK

The section of Hunua Road between Ardmore Quarry Road and the site access is not part of the freight network (only section which is not part of the freight network).

6.4.5 SUMMARY

Based on the assessment above which shows there are no inherent safety concerns based on past crashes, the corridor is not part of the freight network, that some 30% of the existing vehicle traffic is HCVs, and that vehicle tracking can operate acceptably, no upgrades are considered necessary between Ardmore Quarry Road and the site access.

6.5 MITIGATION

6.5.1 GENERAL

Upon assessing Hunua Road between Dominion Road and the site access, the following is concluded:

- No mitigation is considered required between Dominion Road and Winstone Aggregate Quarry access.
- Some mitigation is considered beneficial between Winstone Aggregate Quarry access and Ardmore Quarry Road.
- No mitigation is considered required between Ardmore Quarry Road and the site access.

A total of three segments have been identified between Winstone Aggregate Quarry access and Ardmore Quarry Road where conflict might arise. We note that this section is part of AT's freight network which is already required to be able to accommodate the largest legal vehicles within normal legal limits.

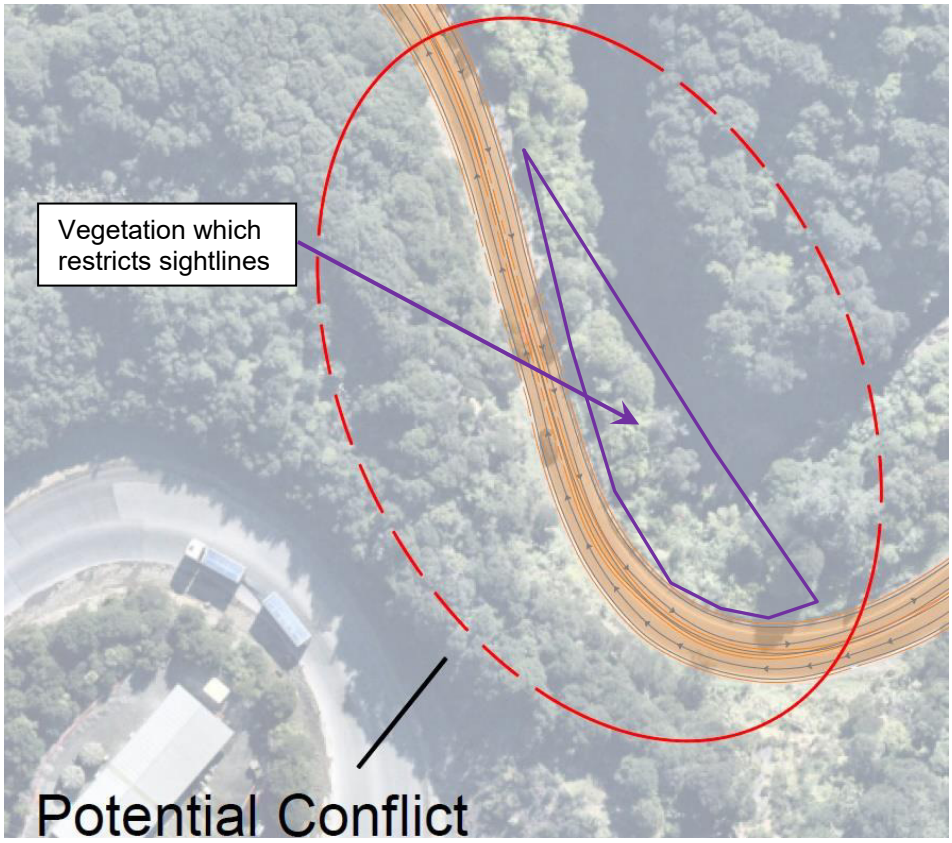
Mitigation is recommended between Winstone Aggregate Quarry access and Ardmore Quarry Road to address the existing sightline issues our reporting has identified to Auckland Transport. This could include signs where truck movements are operating in opposing direction and also improving visibility in the areas where tracking is constrained. While this proposal will be increasing the two-way traffic, the recommended mitigation measures would resolve the current risk existing in the road network and any risk from traffic associated with this activity. We suggest those mitigations should be undertaken and not rely on a decision on this proposal to facilitate those works.

The following details the sightline improvements that could be achieved through vegetation management within the road reserve adjacent the three segments (A, B, C) identified.

6.5.2 SECTION A

The figure below identifies possible sightline improvements including vegetation trimming that would allow one truck to observe another from a section where two-way movement is easily achievable.

Figure 6-6: Sight Distance Assessment (Section A)



A sightline assessment has been undertaken for a vehicle approaching this section from both directions and is shown in Figure 6-7 and shows the approximate vegetation trimming.

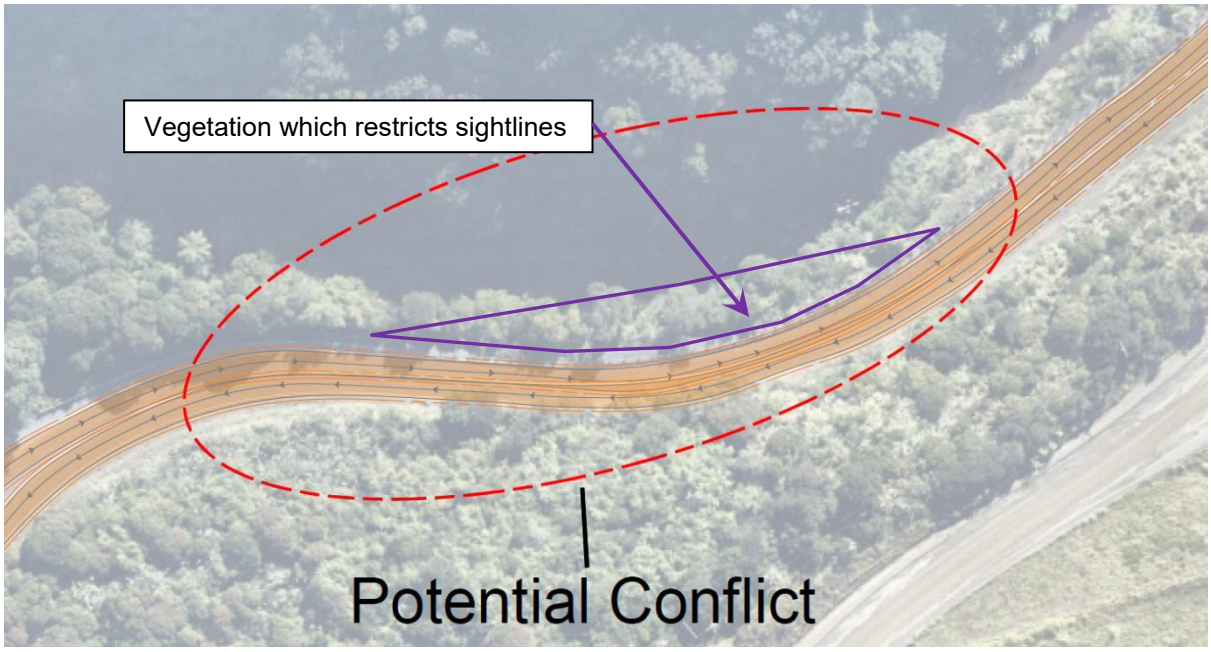
Figure 6-7: Sight Distance Assessment (Section A)

Visibility when travelling eastbound	Visibility when travelling westbound
	

6.5.3 POTENTIAL CONFLICT FROM SECTION B

The figure below identifies possible sightline improvements including vegetation trimming that would allow one truck to observe another from a section where two-way movement is easily achievable.

Figure 6-8: Sight Distance Assessment (Section B)



A sightline assessment has been undertaken for a vehicle approaching this section from both directions and is shown in Figure 6-9.

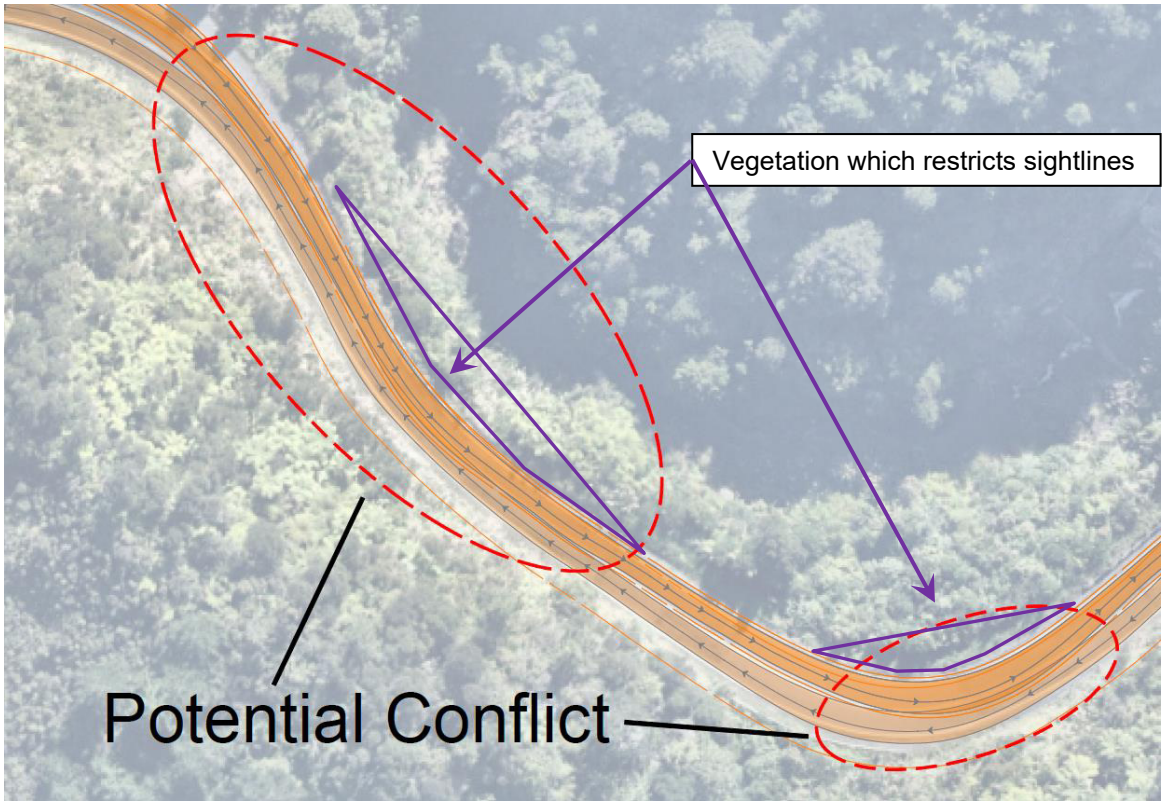
Figure 6-9: Sight Distance Assessment (Section B)

Visibility when travelling eastbound	Visibility when travelling westbound
	

6.5.4 POTENTIAL CONFLICT FROM SECTION C

The figure below identifies possible sightline improvements including vegetation trimming that would allow one truck to observe another from a section where two-way movement is easily achievable.

Figure 6-10: Sight Distance Assessment (Section C)



A sightline assessment has been undertaken for a vehicle approaching this section from both directions and is shown in Figure 6-11

Figure 6-11: Sight Distance Assessment (Section C)

	Visibility when travelling eastbound	**Visibility when travelling westbound**
Western Segment		
Eastern Segment		

6.5.5 OPERATIONAL MITIGATION

Significantly, the trucks to / from subject fill site can be controlled (unlike other trucks in the area). In this regard:

- All trucks to / from the site will be controlled by Scarbro (site operator)
- All Scarbro trucks to / from the site will be GPS monitored
- All trucks are in constant communications
- Trucks exiting the site can therefore be advised of the nearest truck (via communication and potentially TV screen) and then alter their leaving time accordingly.

Given the number of trucks (4-6 per hour on average), this management should ensure there is minimal chance of two site trucks meeting in the narrow section.

7 AUCKLAND TRANSPORT DISCUSSION

A number of positive discussions have been had with Auckland Transport regarding the proposal. The following table responds to Auckland Transport's comments.

Table 7-1: Auckland Transport Questions

AT Questions	Commute Response
We would like to see some further assessment for when there are two-way truck movements (from separate quarry operations) and what mitigating treatments are feasible because there may be side-swipe incidents, but we would expect them to be low speed and non-injury.	Based on observations on site (including following trucks) we consider the speeds are between 35-45km/hr. Vehicle speeds through these sections are already considered to be managed and therefore trimming the trees within the corridor to improve sightlines (as per above) is considered an appropriate treatment.
Sightline assessment and how to improve the sightlines for all the conflict points.	Sightlines are limited due to vegetation. Tree trimming/removal as per above would significantly improve sightlines.
There also could be a possible risk for existing guardrails which would also be good if you could assess this to help us understand if they are at risk of being damaged at these points.	There is a guardrail on the northern side of the corridor through this section. If two large trucks met at this location, the eastbound vehicle may swipe potentially the guardrail. The trimming of vegetation, controlling of trucks (see below) and signage will significantly aid in mitigation of this.
Identify any other additional mitigation measures that you would deem feasible for you that is out of the box to help provide for a better safety outcome here.	Road narrows signs either side of each section (PW-43) can be provided. Further, the trucks for the subject fill site can be controlled. In this regard: • All trucks to / from the site will be controlled by Scarbro (site operator) • All Scarbro trucks to / from the site will be GPS monitored

	• All trucks are in constant communications • Trucks exiting the site can therefore be advised of the nearest truck (via communication and potentially TV screen) and then alter their leaving time accordingly. Given the number of trucks (4-6 per hour on average), this management should ensure there is minimal chance of two Scarbro trucks meeting in the narrow section.

Following this discussion, we understand there is acceptance from Auckland Transport that additional signage / vegetation management is appropriate for the areas identified above.

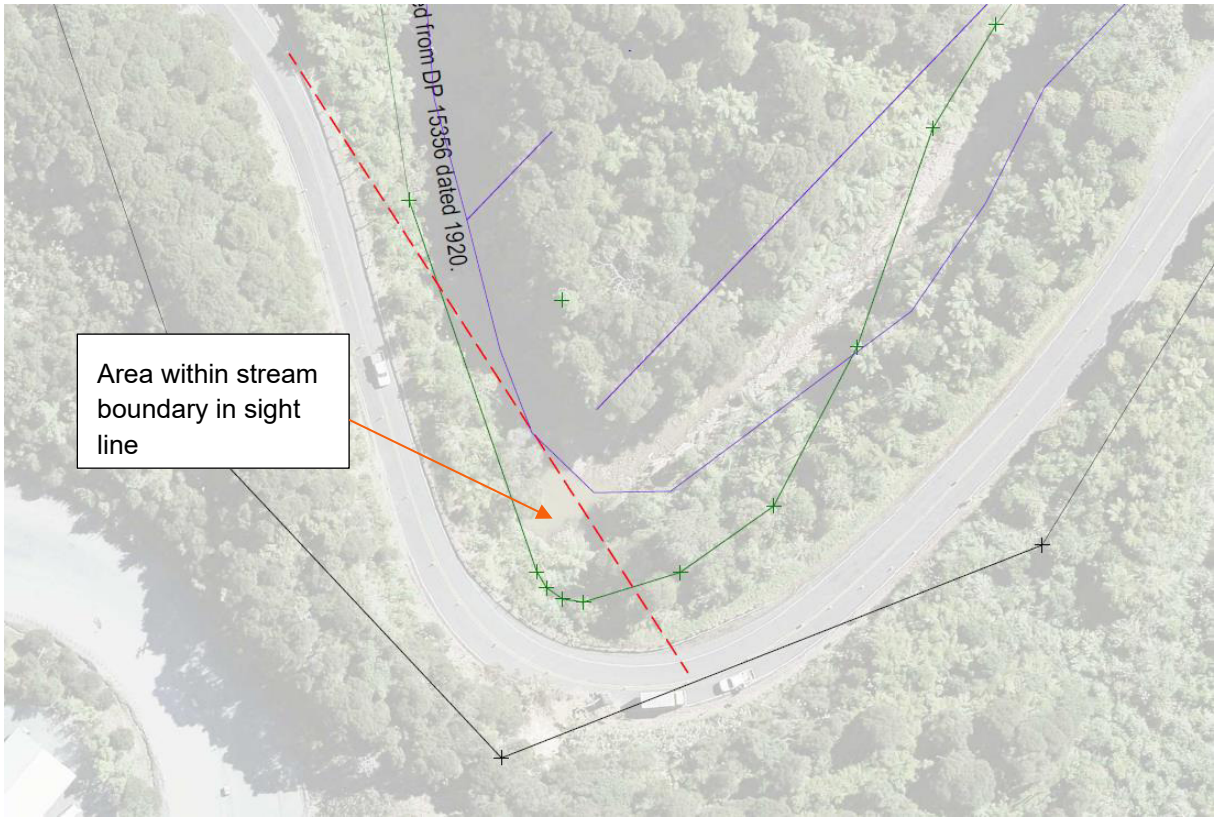
Further questions have been raised on the extent of works relative to the road reserve and consenting status under the AUP

These areas requiring vegetation removal / trimming have been identified as being fully contained within the legal road reserve (not in private land or hydro parcel) under the control and responsibility of Auckland Transport. In this regard Section B and C are entirely within road reserve based on Auckland GIS. Section A has however been re-surveyed and is shown in Figure 7-1 below. Inj this regard:

- Red line is sight line
- Purple line is the extend of Significant Ecological Area (SEA)
- Green line is the surveyed stream boundary definition checked from the surveyor on-site.
- Black line is road reserve boundary

There is a section of sight line inside the stream boundary (and thus outside road reserve / Auckland Transport control). However, this location drops away steeply to a point that there is no vegetation that practically restricts the sight line.

Figure 7-1: Sight Distance areas / land



Auckland Transport provided no specific commentary on whether the advice on mitigations might be actioned but our primary recommendation remains that these should be undertaken irrespective of a decision on this proposal. We understand that if actioned by Auckland Transport matters such as a Corridor Access Request and any resource consent thresholds are the responsibility of Auckland Transport as the agency responsible for this land.

Of further note, Auckland Transport have advised that they request a Pavement Impact Assessment (PIA) only when the new generated heavy vehicle volume exceeds more than 10% of the current level of traffic. In this case with daily volumes of 1921vpd this translates to 192 trips per day. In this regard the average generation is 27 trucks per day or 54 truck movements per day (in and out) or well below this threshold.

8 CONCLUSION

With regards to the proposal to establish a managed fill site at 362 Jones Road in Drury, the assessment can be summarised as follows:

- The development is not expected to exacerbate the safety record within the area;
- The level of traffic generated by the operation is considered to have a minimal effect on the surrounding road network;
- The access can satisfy relevant sight distance requirements if the vegetation within the road reserve is cut back;
- Design of the accessway can be achieved in accordance with relevant Austroads and RTS 6 standards as detailed in Section 5, with the inclusion basic right and left turn treatments for northbound and southbound vehicles, respectively;
- While the access width is greater than the Unitary Plan maximum, it is considered appropriate given the use (large trucks) and lack of pedestrians; and
- The Auckland Strategic Freight Network is designed to accommodate trucks and to have sufficient capacity to accommodate the additional truck movements.

- From an assessment of vehicle tracking there are three areas where current road width is constrained. In this regard:
    - All areas are on the Auckland Strategic Freight Network;
    - These areas already experience high levels of Heavy Commercial Vehicles; and
    - There are mitigation measures available (signage and vegetation trimming) and these are considered to be already required (regardless of the proposal).

Accordingly, it is concluded that there are no traffic engineering or transportation planning reasons that would preclude the development of the subject site as proposed.

Yours sincerely

Commute Transportation Consultants

Leo Hills

Director

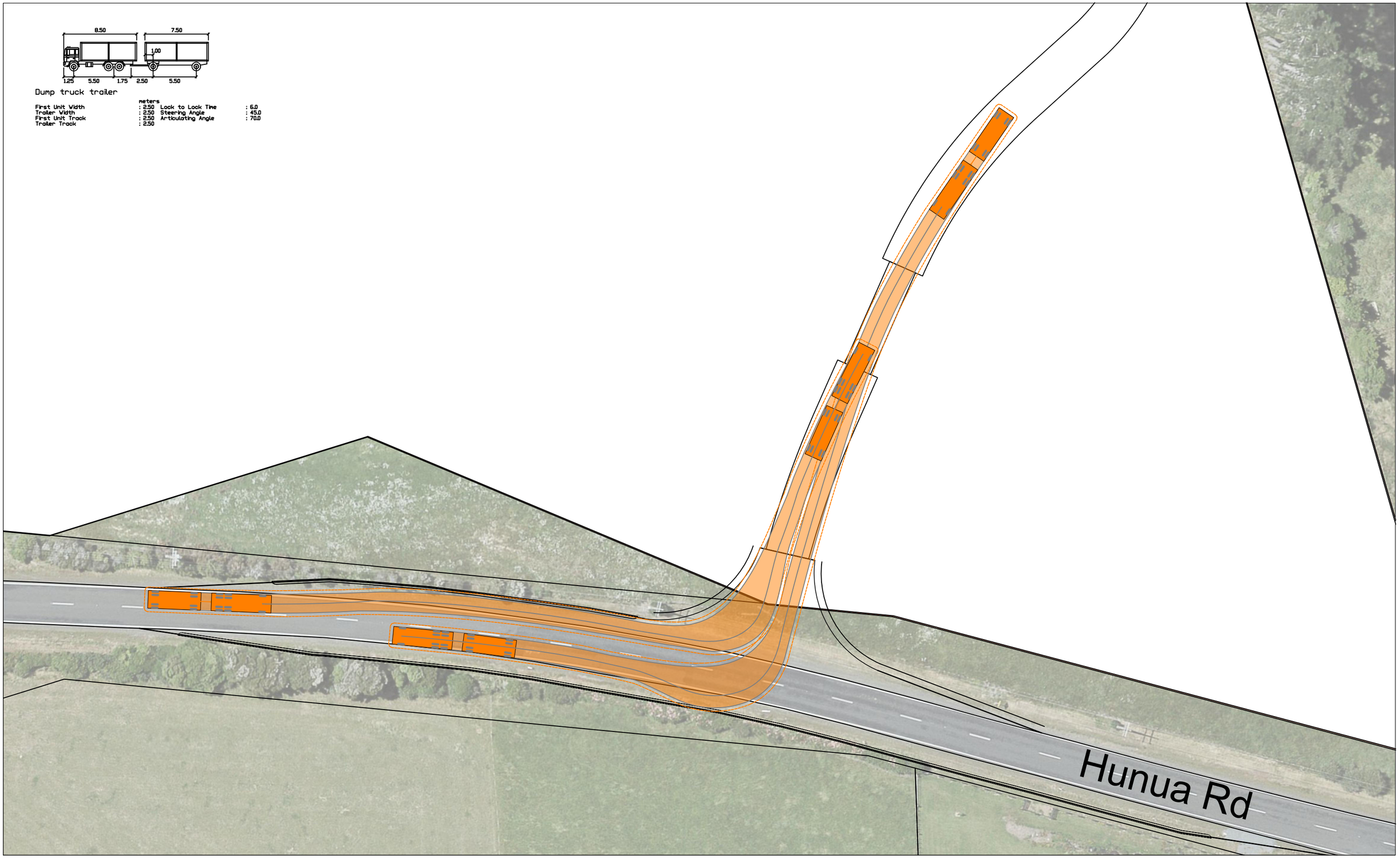
leo@commute.kiwi

ATTACHMENT A – SITE ACCESS DESIGN / SIGHT DISTANCE

Dump truck trailer

meters

First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		



Revision notes:

Rev:	Date:	Notes:

Drawn by:
LH
J002929

Client:

Project:
362 JONES ROAD
Fill site

Drawing Title:
VEHICLE TRACKING
Entry / Exit (truck and trailer)

Date:
19 Noverber 2024

Scale @ A3:
1:500

Revision:
A

commute
TRANSPORTATION CONSULTANTS

Figure:
1

Revision notes:

Rev:	Date:	Notes:

Drawn by:
LH
J002929

Client:

Project:
362 JONES ROAD
Fill site

Drawing Title:
Sight Distance

Date:
19 Noverber 2024

Scale @ A3:
1:1000

Revision:
A

commute
TRANSPORTATION CONSULTANTS

Figure:
2

ATTACHMENT B– WIDER TRACKING

DRAWING SCHEDULE / SHEET NUMBERING

Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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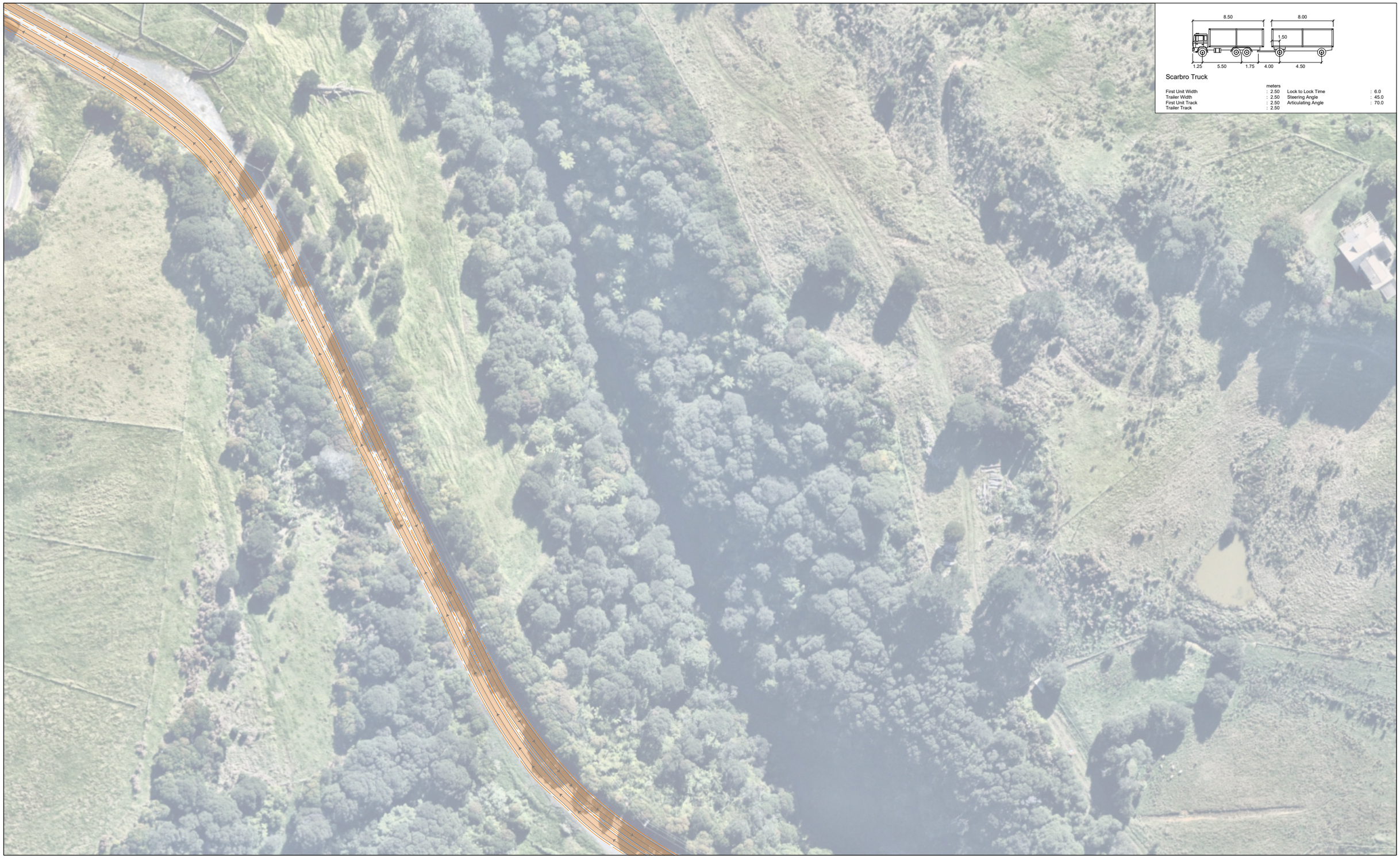
Figure:
2-1



Scarbro Truck

meters			
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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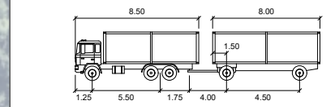
Figure:
2-2



Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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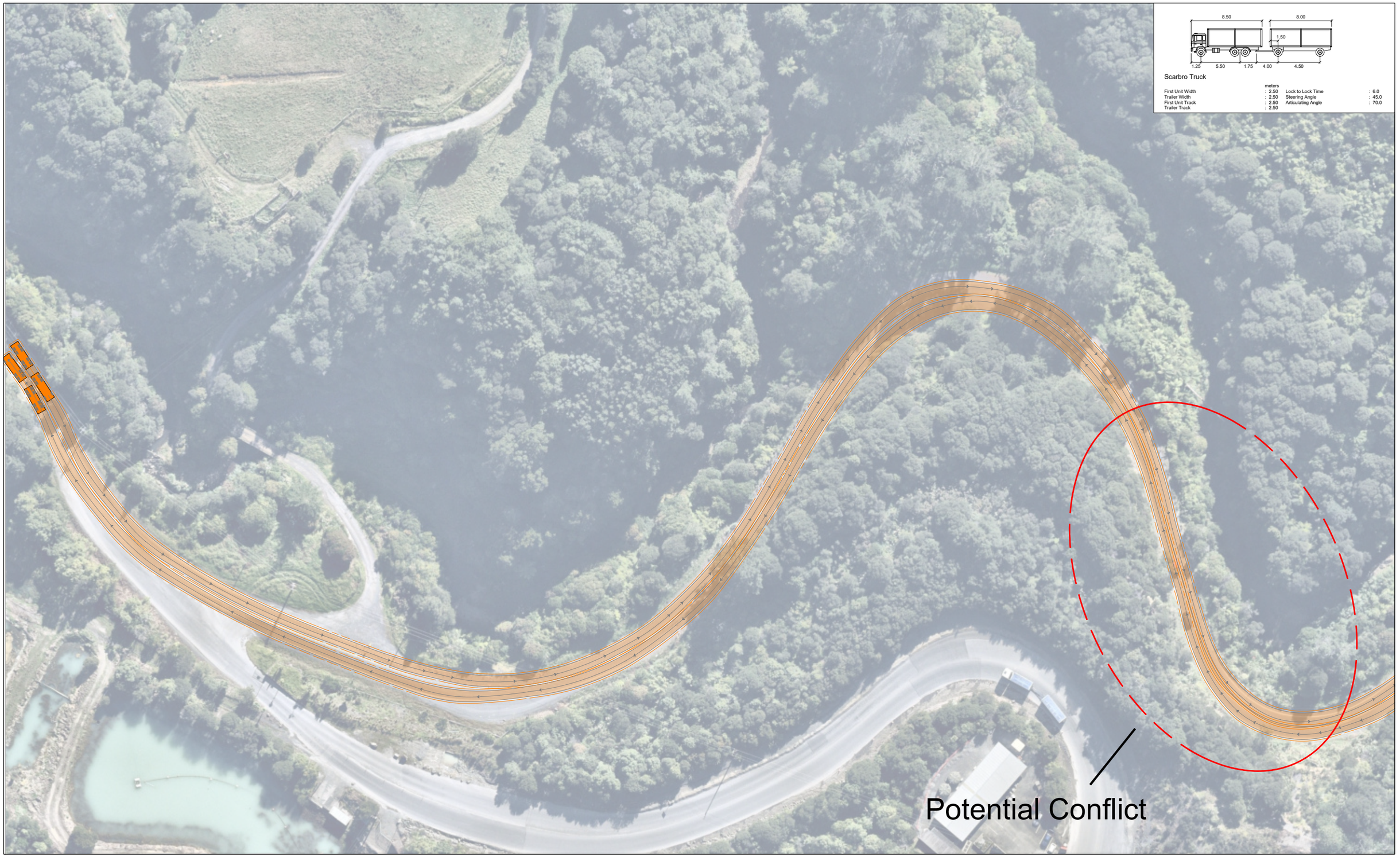
Figure:
2-3



Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
3-1

Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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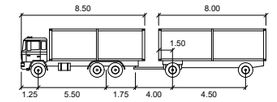
Figure:
3-2



Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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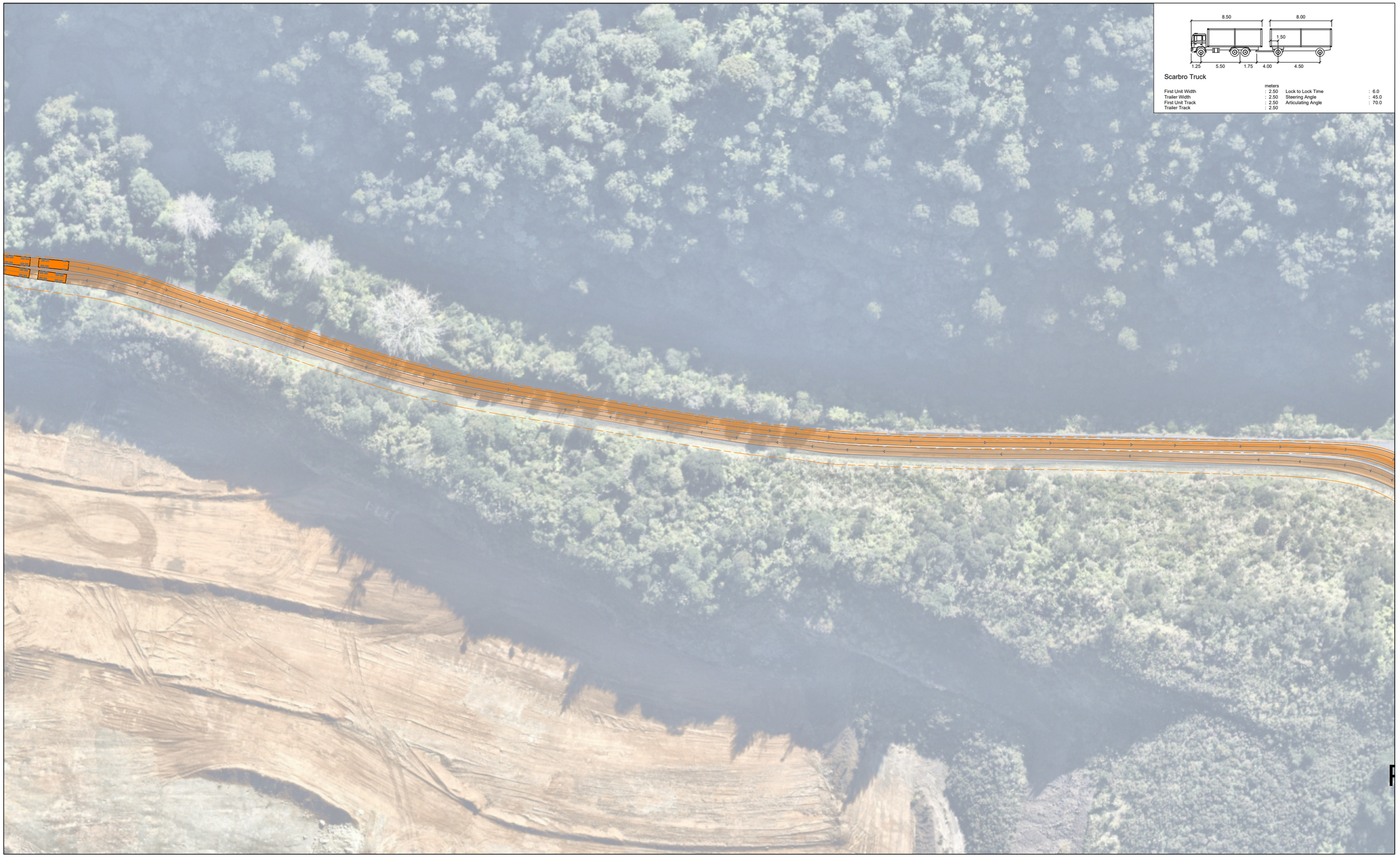
Figure:
3-3



Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
3-4

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

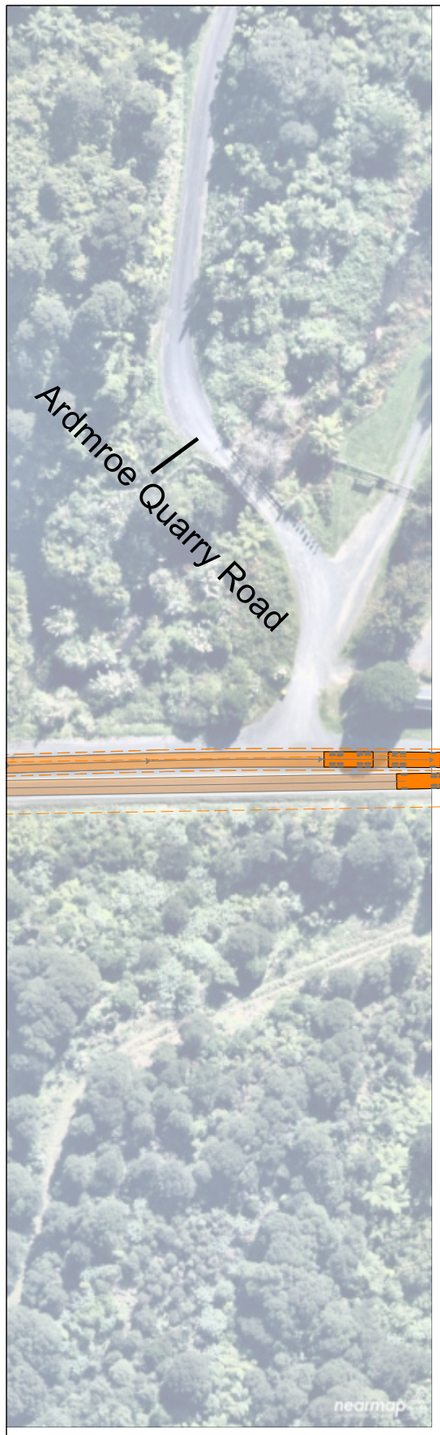
Date:
AUGUST 2024

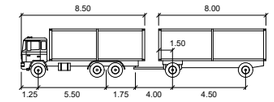
Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
3-5





Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by: IS J002929

Client: 236 JONES ROAD, DRURY

Project: 236 JONES ROAD, DRURY NETWORK ASSESSMENT

Drawing Title: VEHICLE TRACKING ASSESSMENT

Date: AUGUST 2024

Scale @ A3: 1:1000

Revision: D

commute TRANSPORTATION CONSULTANTS

Figure: 3-6

Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

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Figure:
4-1

Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

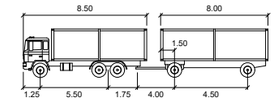
Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
4-2



Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by: IS J002929

Client: 236 JONES ROAD, DRURY

Project: 236 JONES ROAD, DRURY NETWORK ASSESSMENT

Drawing Title: VEHICLE TRACKING ASSESSMENT

Date: AUGUST 2024

Scale @ A3: 1:1000

Revision: D

commute TRANSPORTATION CONSULTANTS

Figure: 4-4

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

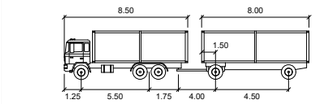
Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
5-1



Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Gillespie Road

Revision notes:

Rev:	Date:	Notes:

Drawn by: IS
J002929

Client: 236 JONES ROAD, DRURY

Project: 236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title: VEHICLE TRACKING ASSESSMENT

Date: AUGUST 2024

Scale @ A3: 1:1000

Revision: D

commute TRANSPORTATION CONSULTANTS

Figure: 5-2

Scarbro Truck

	meters		
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 45.0
First Unit Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

Revision notes:

Rev:	Date:	Notes:

Drawn by:
IS
J002929

Client:
236 JONES ROAD, DRURY

Project:
236 JONES ROAD, DRURY
NETWORK ASSESSMENT

Drawing Title:
VEHICLE TRACKING ASSESSMENT

Date:
AUGUST 2024

Scale @ A3:
1:1000

Revision:
D

commute TRANSPORTATION CONSULTANTS

Figure:
5-3