
Memo

To Submitters, Hearing Commissioners and Processing Planner

From WSP New Zealand Limited

Project Te Karaka Stopbank Upgrade Project

Subject Response to Pine Hollow Family Trust submission matters relevant to road raising, access and drainage design

Date 2 September 2026

1. Introduction

WSP has prepared the road raising and culvert extension design for the Te Karaka Stopbank Upgrade Project. This includes the SH2 road raising sites, Rangatira Road road raising site, driveway/access tie-ins, stormwater design within the roadworks scope, pavement design, and road marking and signage elements described in the WSP draft design report.

This memo provides a technical response to submission matters relevant to WSP's road design scope.

This memo does not attempt to respond to all project-wide issues raised in the submissions. Matters relating to stopbank alignment, flood modelling, land acquisition, compensation, borrow pits, haul roads, broader construction methodology, and consent conditions are noted where relevant but should be addressed by the appropriate project discipline or evidence author.

WSP remains available to meet with the submitter and project representatives to discuss the road design, access and related concerns addressed in this memo.

2. Driveways Intersection Design Approach

Driveways were designed in accordance with Figure 7.2 of the Austroads Guide to Road Design Part 4: Intersections and Crossings – General. The geometry is intended to provide adequate safe sight distance at intersections, sufficient space for trucks accessing properties, and suitable vertical comfort for access to the state highway.

Horizontally, a 10 m radius curve was adopted to tie into the shoulder edge, with a 4 m wide single lane widening to a minimum of 8 m at the driveway access. Vertically, the access grade follows the 3.00% lane crossfall for the first 10 m, then increases to a maximum of 5.00% before tying into the existing ground.

2.1 Permanent access design

WSP has considered permanent access tie-ins affected by the SH2 road raising. The driveway intersection design has been developed to provide appropriate sight distance, truck manoeuvring space and vertical comfort for vehicles entering and exiting the raised road. The design includes widened access tie-ins and vertical transitions intended to maintain safe and functional property access following completion of the works.

Following receipt of the submission, swept-path tracking was undertaken for the Site 02 driveway using both a large rigid truck design vehicle and a smaller vehicle towing a horse float. These vehicles were selected as representative of typical horse transport movements likely to use the access. The assessment indicates that the representative vehicles can safely enter and exit the property via the proposed access arrangement. Where required, larger vehicles may use the opposing traffic lane during manoeuvring, which is typical for larger vehicles accessing rural properties from a two-lane state highway. The tracking assessment should be read alongside the sight-distance and road-safety provisions incorporated into the design. The swept path tracking is shown below in appendix A.

The project team's stated approach is that affected parties should be no worse off as a result of the works, where practicable, and that identified property effects will be considered through detailed design and landowner liaison. Where existing property infrastructure must be relocated to construct the works, the proposed approach is to provide a like-for-like replacement, for example replacement of an affected fence with a fence of a similar type and function.

2.2 Road safety, markings and signage

Road marking and signage have been reviewed as part of the road raising design and in response to the Safety System Audit. Where the audit identified that road raising could further constrain visibility on an existing curve, no-overtaking controls and updated signage have been included in the design. Requests for a speed limit change, flush median or other road-control measures outside the approved design scope would require consideration by NZTA as the road controlling authority.

A further sight-distance assessment has been undertaken in response to concerns that a small vehicle waiting near the centreline to turn into the site, a small vehicle exiting the site to travel north, or a low-profile rider or object could be obscured by the proposed crest. Stopping sight distance was assessed for vehicles travelling at 100 km/h in both directions using a driver eye height of 1.10 m and an object height of 0.20 m above road level. The assessment shows that the required minimum stopping sight distance of 160 m is achievable from both directions, allowing an approaching driver to see the low object, react and stop in accordance with the Austroads stopping sight distance criteria. This low object height provides a conservative check for small vehicles, riders and other low-profile objects in the vicinity of the access. Safe intersection sight distance was also assessed for the Site 02 access using a 1.10 m driver eye height and a 1.25 m vehicle object height. The required intersection sight distance is achievable for vehicles approaching from both directions. The sight-distance drawings are included in Appendix B.

2.3 Local road drainage

The road design assesses local road drainage and micro-drainage within the roadworks footprint. Existing drainage paths have been retained where practicable, and relevant culvert extensions are included within the road design. Broader flood effects, stopbank culverts, floodgates and drainage effects created by the stopbank itself are outside the WSP road design scope and should be addressed by the stopbank designer and flood modelling team.

2.4 Construction effects and landowner interface

Submission matters relating to temporary construction effects, including traffic, dust, noise, vibration, haul routes, temporary access and effects on equestrian operations, should be addressed through construction management planning, temporary traffic management, property access protocols and landowner liaison. These matters are separate from the permanent road design. WSP would be available to participate in discussions with the submitter and project team where transport design input would assist in resolving specific concerns.

3. Main concerns raised in the Pine Hollow Family Trust submission

The Pine Hollow Family Trust submission raises concerns relating to the established equestrian business and residential/property access. The following issues are relevant to WSP's road raising and access design.

Concern raised	WSP Response
Functionality of SH2 accessways for horse floats, disability vans and other vehicles using the property.	Permanent access tie-ins have been designed to maintain safe and functional connections to SH2. Swept-path tracking has been undertaken for the Site 02 driveway using both a large rigid truck design vehicle and a smaller vehicle towing a horse float. These vehicles were selected as representative of typical horse transport movements likely to use the access. The assessment indicates that the representative vehicles can enter and exit the Site 02 access under the proposed design.
Sightlines when exiting the property after SH2 is raised.	Access geometry and sight distance have been considered through the design and Safety System Audit process. A further assessment considered a vehicle travelling at 100 km/h approaching from either direction, with a driver eye height of 1.10 m and an object as low as 0.20 m above road level. The required minimum stopping sight distance of 160 m is achievable in both directions. Safe intersection sight distance for a vehicle exiting the Site 02 access was also assessed and the required distance is achievable for vehicles approaching from both directions. Refer to Appendix B.
Request for double yellow lines, speed reduction and a flush median near the raised SH2 section.	Road marking and signage have been updated where relevant, including no-overtaking controls where the Safety System Audit identified constrained visibility. Requests for a speed-limit change, flush median or other additional road-control measures require consideration by NZTA as the road controlling authority.
Construction noise/vibration and health and safety risks to horses and riders.	Acknowledged as matters to be addressed through construction management planning, temporary traffic management and landowner liaison. These matters are separate from the permanent road design. WSP is available to discuss transport-related concerns with the submitter and project team.
Potential relocation or reinstatement of existing property infrastructure affected by the works.	The project approach is that affected parties should be no worse off as a result of the works, where practicable. Where existing infrastructure such as fencing must be relocated, a like-for-like replacement of similar type and function is proposed, subject to confirmation through detailed design and landowner liaison.

4. Conclusion

- The WSP road design has considered the permanent road geometry, driveway/access tie-ins, local road drainage within the roadworks scope, pavement design, and road marking/signage requirements affected by the proposed road raising.
- The main Pine Hollow matters relevant to WSP's road design are access, sight distance, turning/manoeuvring, local road drainage, road marking/signage and the distinction between permanent design and temporary construction effects.
- The additional sight-distance assessment confirms that the Austroads stopping sight distance requirement for a 100 km/h vehicle to observe and stop for an object 0.20 m above road level is achieved from both directions. The safe intersection sight distance requirement for a vehicle exiting the Site 02 access is also achieved from both directions.
- WSP remains available to discuss these matters with the submitter and project team.

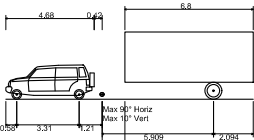
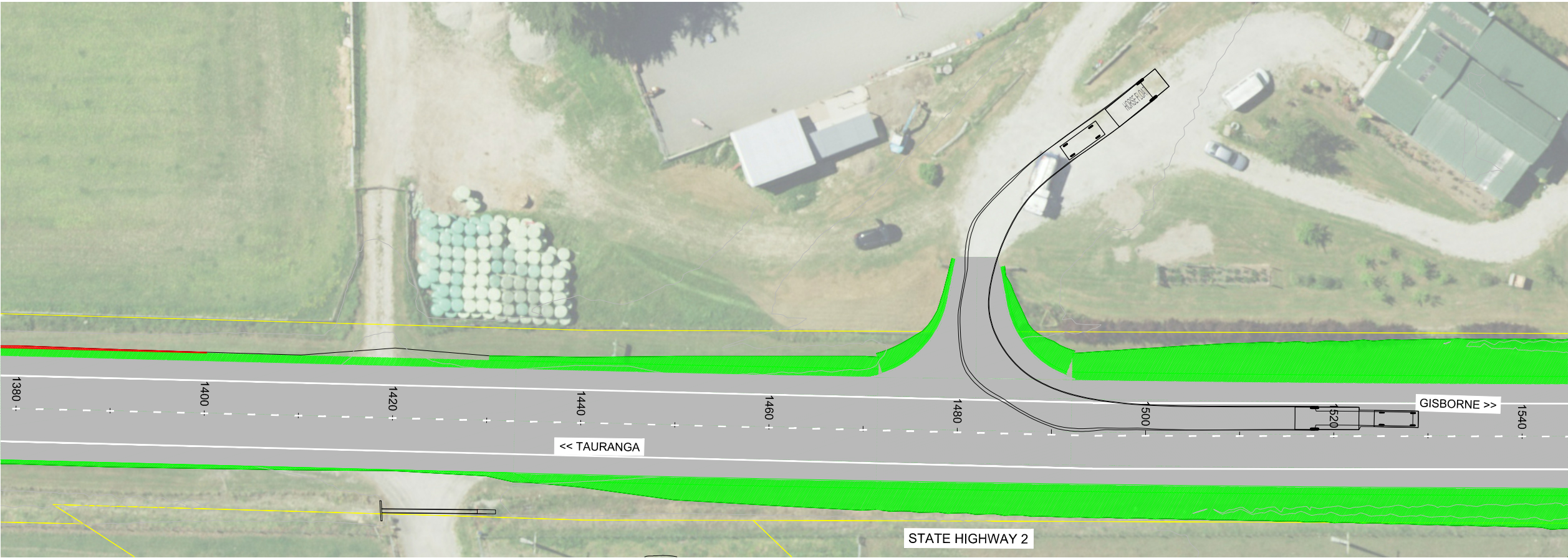
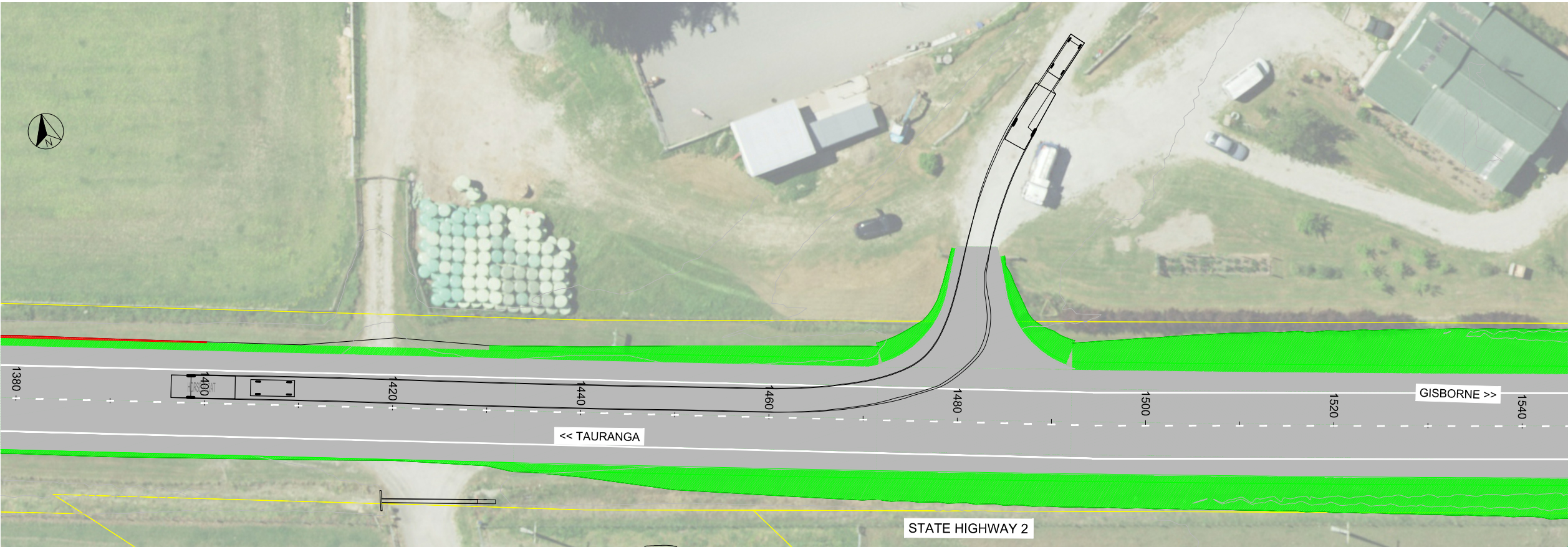
Appendix A: Vehicle Tracking

NOTES:

1. COORDINATE SYSTEM IS NEW ZEALAND TRANSVERSE MERCATOR (NZTM).
2. ALL SURVEY LEVELS IN TERMS OF NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016).
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THE UNDERGROUND SERVICES IN AND AROUND THE AREA OF WORKS.
4. LOCALITY MAP SOURCED FROM NZ TOPO MAPS. INCLUDES DATA WHICH IS LICENSED BY LAND INFORMATION NEW ZEALAND (LINZ) FOR RE-USE UNDER THE CREATIVE COMMONS ATTRIBUTION 4.0 INTERNATIONAL LICENCE.
5. SURFACE SOURCED FROM NZ TOPO MAPS WHERE THE DESIGN EXTRAPOLATED THE AREA WITH THE SURFACE PROVIDED BY GDC
6. ALL DIMENSIONS AND LEVELS ARE IN METERS (m) UNLESS NOTED OTHERWISE.
7. ALL DIMENSIONS AND LEVELS ARE INDICATIVE AND ARE TO BE VERIFIED ON SITE.

LEGEND:

- EXISTING PROPERTY BOUNDARY
- PROPOSED CARRIAGEWAY
- PROPOSED FILL
- PROPOSED CUT



1:250 @ A1
1:500 @ A3

REVISION	AMENDMENT	APPROVED	DATE
A	FOR INFORMATION	-	-



TRANSPORT

SCALES	ORIGINAL SIZE
AS SHOWN	A1
DRAWN	DESIGNED
R.SILVA	R.SILVA
DRAWING VERIFIED	DESIGN VERIFIED
P.BIRSE	G.RANDALL
	APPROVED DATE
	-

FOR INFORMATION

PROJECT	GISBORNE DISTRICT COUNCIL
S.H.2 R.5 R.P.406/8.50 TO R.P.416/1.83 (TE KARAKA)	
S.H.2. ROAD RAISING	
TITLE	VEHICLE TRACKING
WSP PROJECT NO. (SUB-PROJECT)	SHEET NO.
NZ0072338.2263 (1)	VT01
	REVISION
	A

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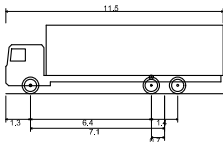
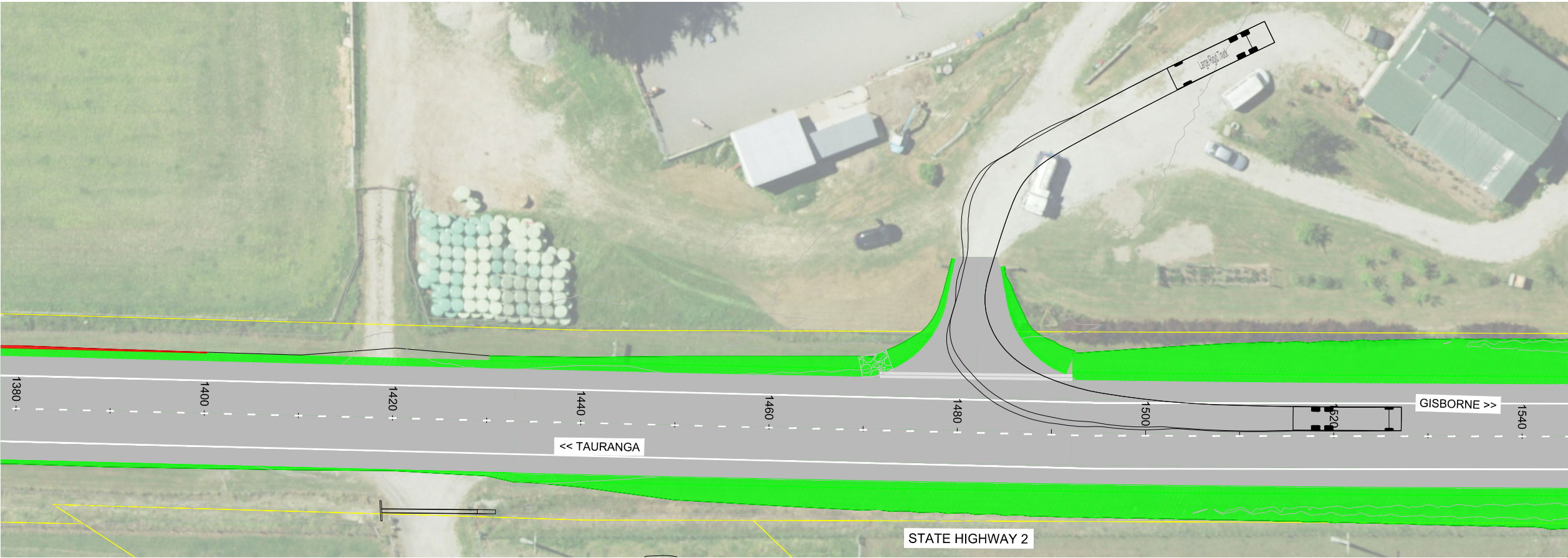
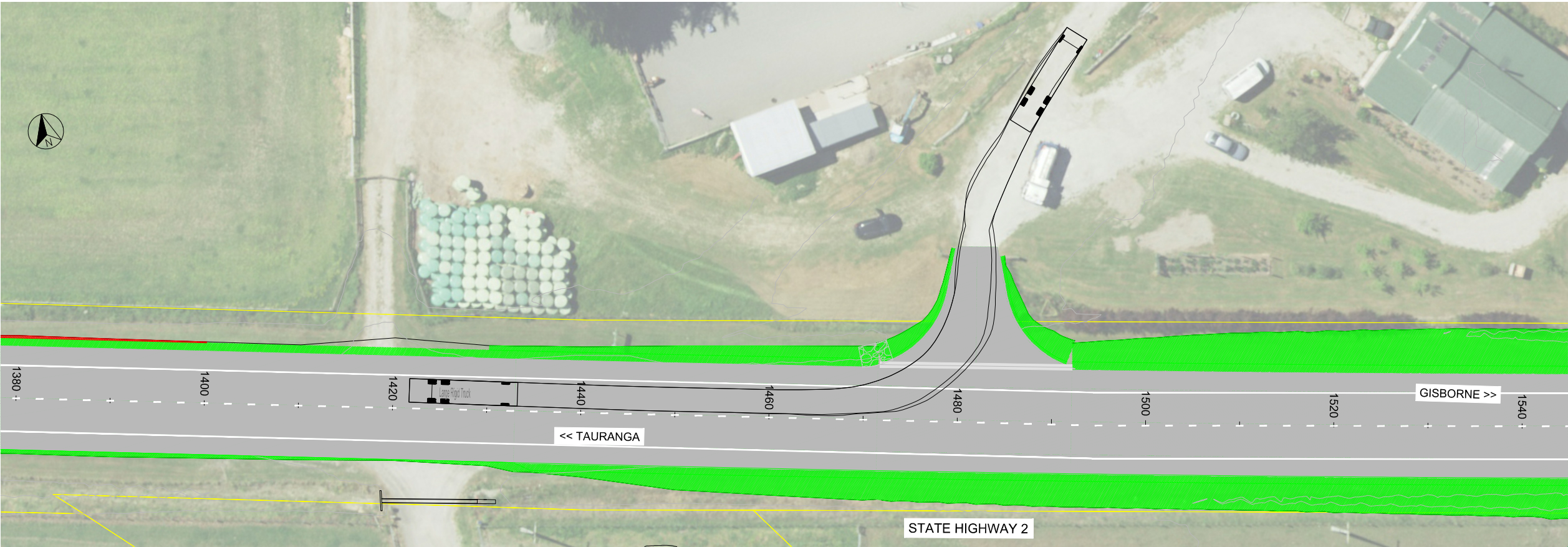
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6.

ALL DIMENSIONS AND LEVELS ARE IN METERS (m) UNLESS NOTED OTHERWISE.
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ALL DIMENSIONS AND LEVELS ARE INDICATIVE AND ARE TO BE VERIFIED ON SITE.

LEGEND:

- EXISTING PROPERTY BOUNDARY
- PROPOSED CARRIAGEWAY
- PROPOSED FILL
- PROPOSED CUT



Large Rigid Truck
Overall Length 11.500m
Overall Width 2.500m
Overall Body Height 3.832m
Min Body Ground Clearance 0.427m
Track Width 2.500m
Lock-to-lock time 6.00s
Wall to Wall Turning Radius 12.000m

1:250 @ A1
1:500 @ A3

REVISION	AMENDMENT	APPROVED	DATE
A	FOR INFORMATION	-	-



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Gisborne 4040
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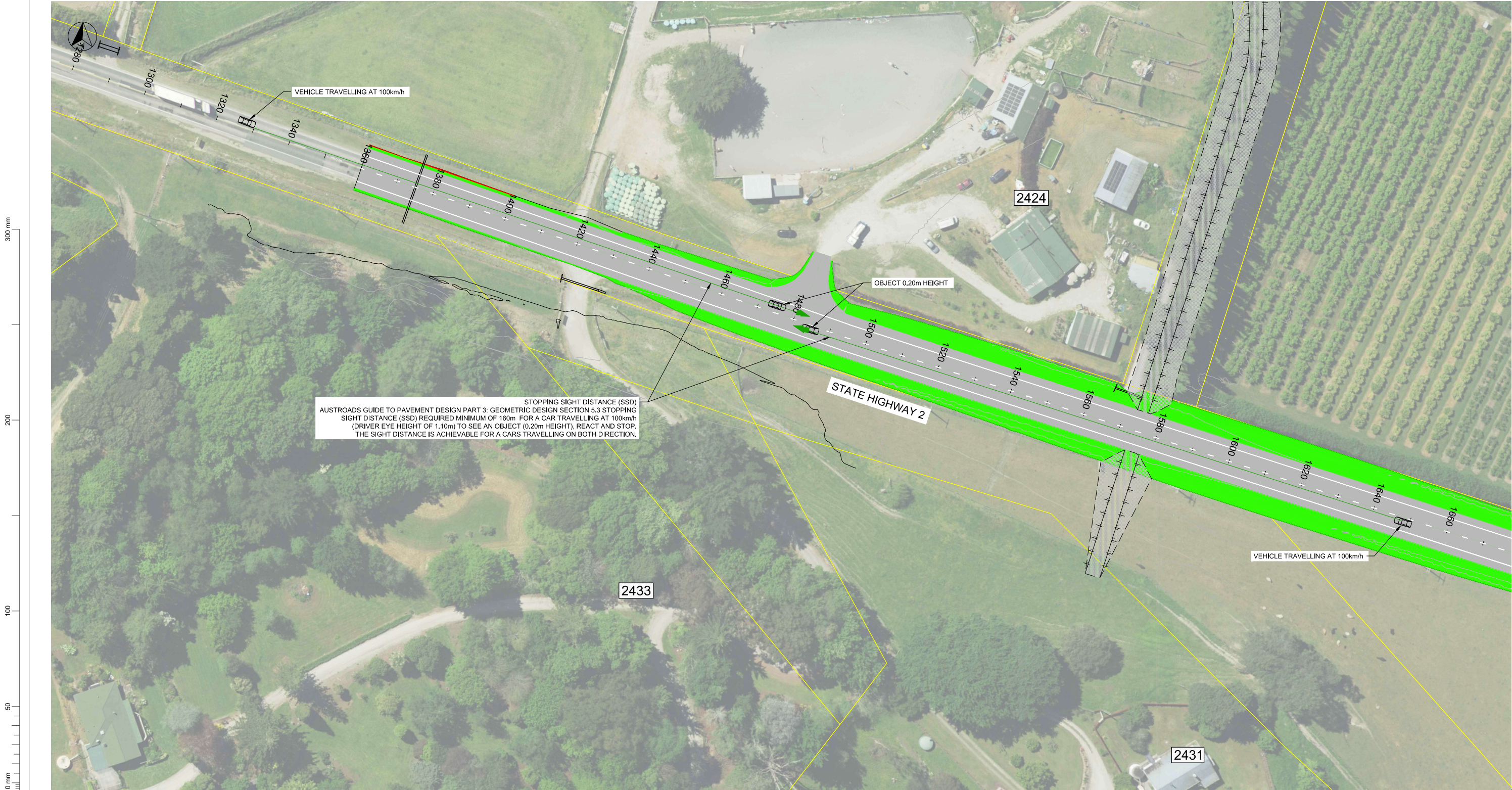
TRANSPORT

SCALES			ORIGINAL SIZE
AS SHOWN			A1
DRAWN	DESIGNED	APPROVED	
R.SILVA	R.SILVA	-	
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE	
P.BIRSE	G.RANDALL	-	

FOR INFORMATION

PROJECT		
GISBORNE DISTRICT COUNCIL		
S.H.2 R.5 R.P.406/8.50 TO R.P.416/1.83 (TE KARAKA)		
S.H.2. ROAD RAISING		
TITLE		
VEHICLE TRACKING		
WSP PROJECT NO. (SUB-PROJECT)		SHEET NO.
NZ0072338.2263 (1)		VT01
		REVISION
		A

Appendix B: Site Distances



SAFE SIGHT DISTANCE (SSD)

SCALE: 1:500 (A1) 1:1000 (A3)

1:500 @ A1
1:1000 @ A3

REVISION	AMENDMENT	APPROVED	DATE
A	FOR INFORMATION	-	-



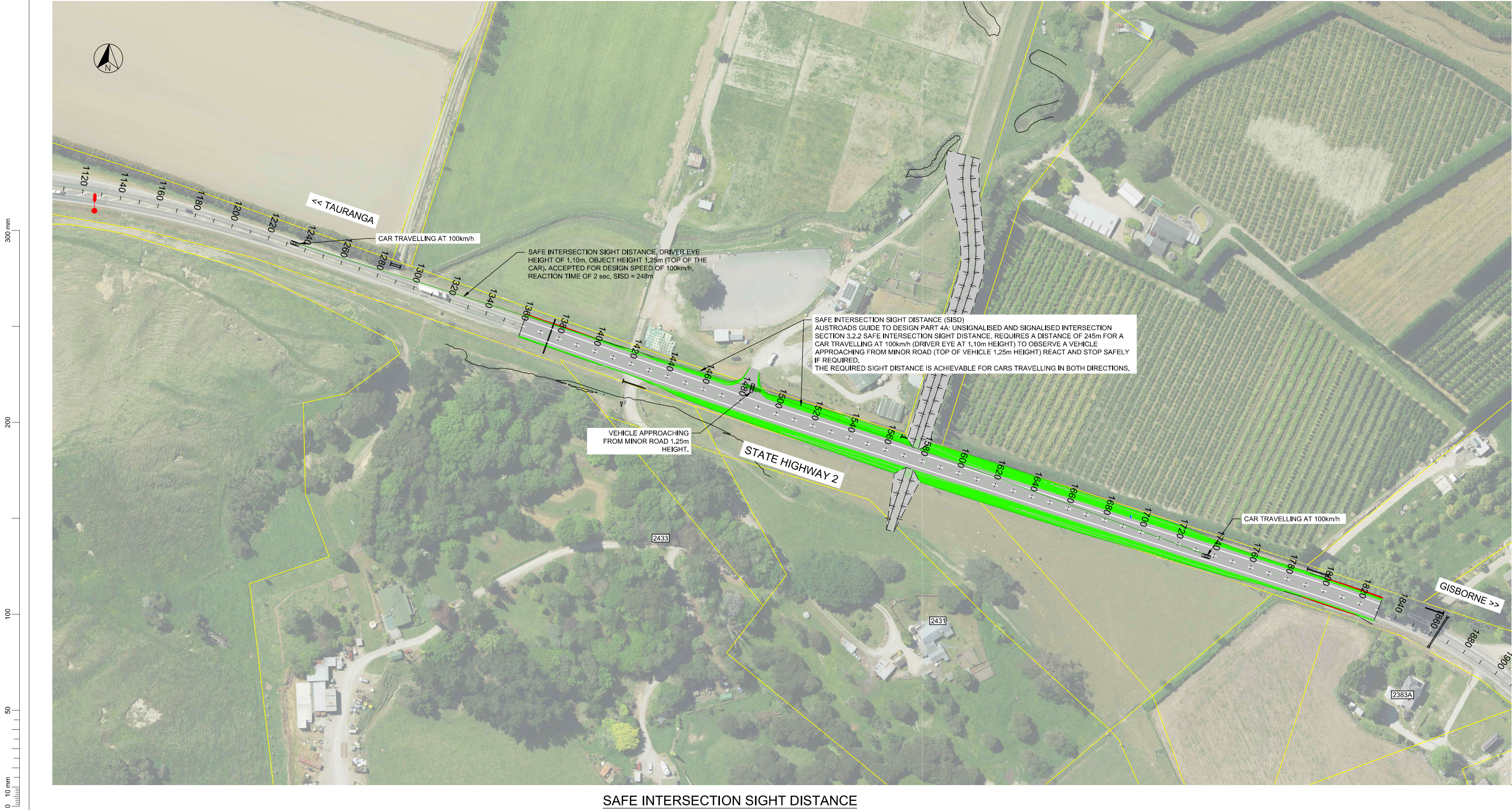
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+64 6 868 5199
PO Box 49
Gisborne 4040
New Zealand

TRANSPORT

SCALES			ORIGINAL SIZE
AS SHOWN			A1
DRAWN	DESIGNED	APPROVED	
R.SILVA	R.SILVA	-	
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE	
P.BIRSE	G.RANDALL	-	

FOR INFORMATION

PROJECT		
GISBORNE DISTRICT COUNCIL		
S.H.2 R.5 R.P.406/8.50 TO R.P.416/1.83 (TE KARAKA)		
S.H.2. ROAD RAISING		
TITLE		
STOPPING SIGHT DISTANCE (SSD)		
WSP PROJECT NO. (SUB-PROJECT)		
NZ0072338.2263 (1)		
SHEET NO.		
SD01		
REVISION		
A		



SAFE INTERSECTION SIGHT DISTANCE
SCALE: 1:1000 (A1) 1:2000 (A3)

1:1000 @ A1
1:2000 @ A3

REVISION	AMENDMENT	APPROVED	DATE
A	FOR INFORMATION	-	-



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TRANSPORT

SCALES			ORIGINAL SIZE
AS SHOWN			A1
DRAWN	DESIGNED	APPROVED	
R.SILVA	R.SILVA	-	
DRAWING VERIFIED	DESIGN VERIFIED	APPROVED DATE	
P.BIRSE	G.RANDALL	-	

FOR INFORMATION

PROJECT		
GISBORNE DISTRICT COUNCIL		
S.H.2 R.5 R.P.406/8.50 TO R.P.416/1.83 (TE KARAKA)		
S.H.2. ROAD RAISING		
TITLE		
SAFE INTERSECTION SIGHT DISTANCE (SISD)		
WSP PROJECT NO. (SUB-PROJECT)		SHEET NO.
NZ0072338.2263 (1)		SD02
		REVISION
		A