

TE PUNA STATION ROAD



Te Puna Road Intersection Constructability

Te Puna Industrial Limited

TO: Te Puna Industrial Limited (TPIL)

HG PROJECT NO: A2314643.00

FROM: Harrison Grierson

DATE: 17th April 2024 (rev B)

1.0 Introduction

This memorandum has been prepared by Harrison Grierson on behalf of TPIL to assess and summarise the constructability of the proposed upgrade of the intersection of Te Puna Station Road and Te Puna Road.

Compliance with WESTERN Bay of Plenty District Council development code will be implemented at the detailed engineering design stage.

Harrison Transportation provided a 2D geometrical design for the proposed intersection widening and upgrade.

The subject site is situated at the intersection of Te Puna Station Road and Te Puna Road, Te Puna, approximately five kilometres outside of Tauranga within the Bay of Plenty region. It comprises a T-intersection formed by two existing public roads, with Te Puna Road extending from north to south and intersected by Te Puna Station Road from the southeast. The surrounding area is predominantly rural, featuring a mix of horticultural, agricultural, and light industrial zones alongside residential properties.

TPIL owns land approximately five hundred meters along Te Puna Station Road. Detailed depictions of the site's extent and its surrounding area can be found in **Figures 1 and 2**.

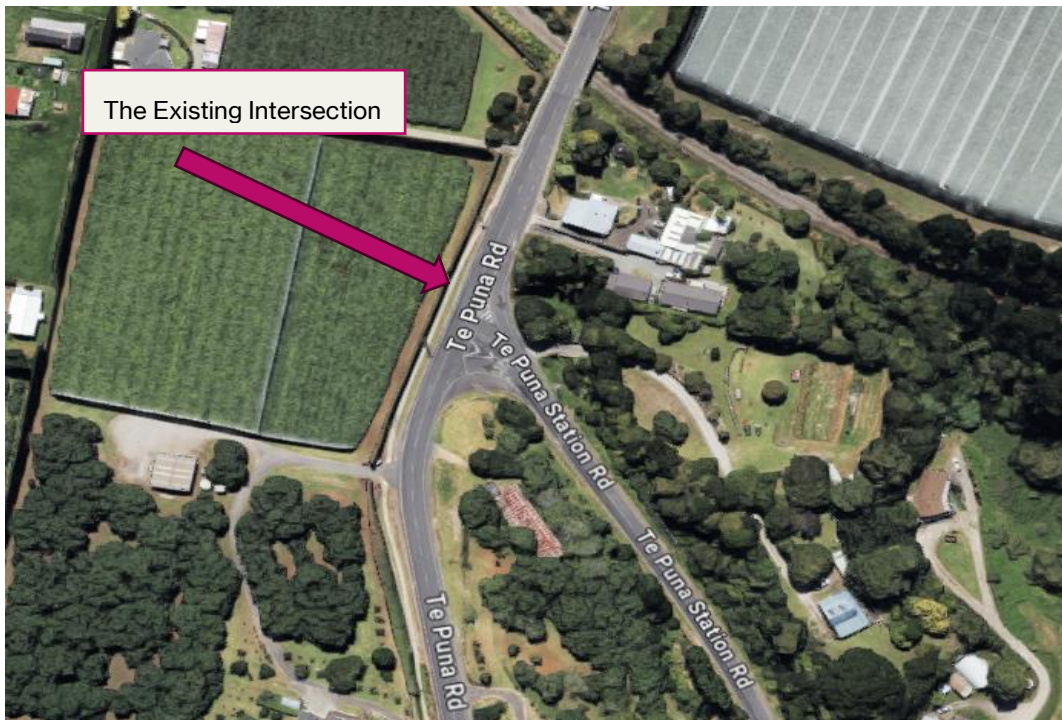


FIGURE 1: AERIAL VIEW OF THE EXISTING SITE (SOURCE: GOOGLE MAPS, MARCH 2024)

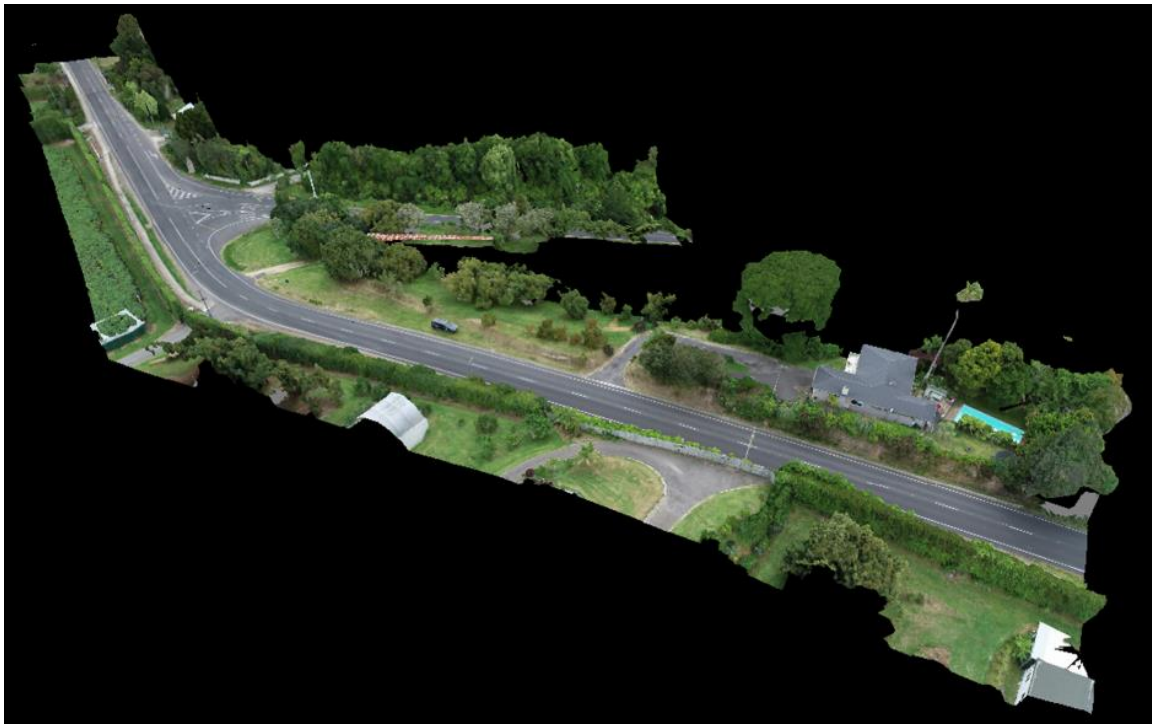


FIGURE 2: 3D IMAGE OF EXISTING INTERSECTION (SOURCE: HARRISON GRIERSON TOPO SURVEY)

Te Puna Station Road is a primary collector road as per the Waka Kotahi NZ Transport Agency One Network Road Classification. It is comprised of two lanes – one south-east bound and one north-westbound. Te Puna Road is also a primary collector road as per the same classification. It is a two-lane road, comprising a north-bound lane and a south-bound lane. As per the Western Bay of Plenty Operative District Plan, nearby land to the east of Te Puna Road, along Te Puna Station Road, is zoned industrial, whilst the remainder of the immediately surrounding land is zoned rural. Land to the south, towards State Highway 2, includes horticultural post-harvest and commercial zoning.

The requirement to upgrade the intersection was raised during the recent plan change process, and whilst the timing of the required works has been linked to the development of Te Puna Business Park, the safety concerns raised are existing and affect current / local traffic users.

Vehicle tracking to inform the intersection redesign, inclusive of heavy vehicle traffic, was completed by Harrison Transportation and can be found under **Appendix A**.

2.0 Scope of Work and Methodology

Harrison Grierson was engaged by TPIL to assess the constructability of the proposed intersection upgrade and to prepare a set of drawings to demonstrate and support our assessment.

The proposed intersection layout was overlain with the surveyed road boundaries, existing ground contours and existing road layout to ensure that the proposed design will fit within the legal road boundaries.

An assessment of other factors and physical features, which may influence the safety and visibility of the intersection, was also undertaken. This included identifying existing features including utility, services, existing driveways, mailboxes and other street furniture.

The proposed design is shown in Figure 3 below. The full Harrison Transportation drawing set, including vehicle tracking, is included under **Appendix A**.

Three cross sections have been created along the approaches to the intersection: one along Te Puna Station Road and two along Te Puna Road. These sections serve to illustrate the current ground surface, delineate the road reserve boundary, outline the existing road layout, and depict the proposed road widening. The drawings, prepared by Harrison Grierson, which include the proposed layout and overlays as well as these sections, are included in **Appendix B**.

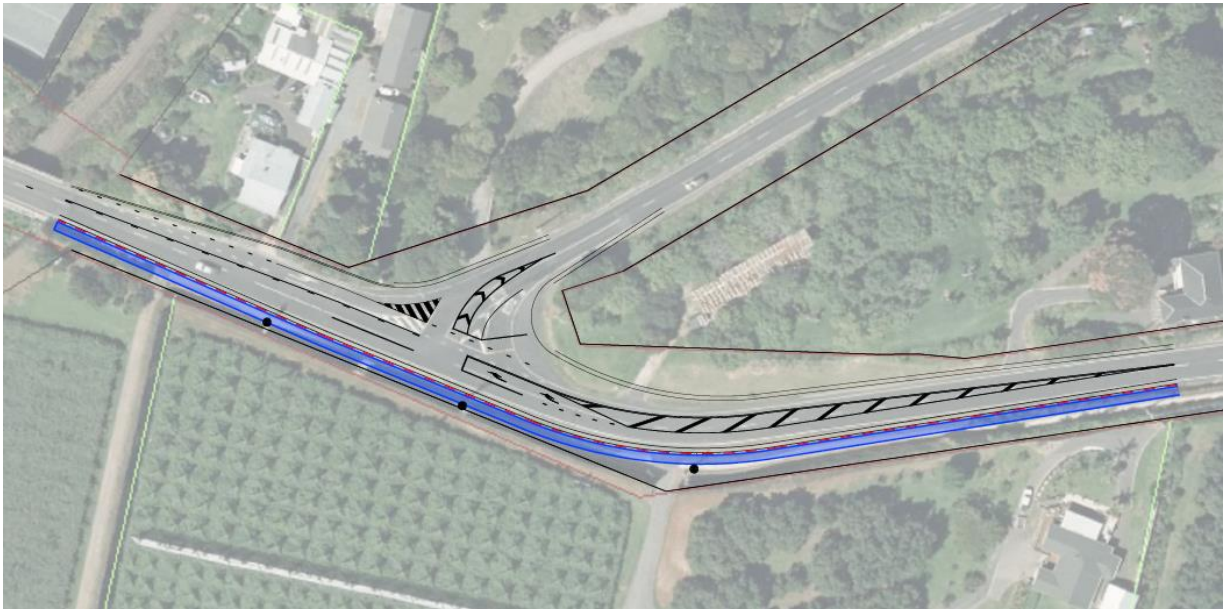


FIGURE 3: PROPOSED ROAD GEOMETRY (SOURCE: HARRISON TRANSPORTATION)

3.0 Conclusions

The proposed intersection layout falls within the legal road reserve boundary. At the closest point, the proposed design is approximately 1 metre away from the legal boundary line on the western side of Te Puna Road.

The proposed upgrade, as currently designed, will be constrained by a number of existing features, including four overhead power poles, several mailboxes, and an 'armco' crash-barrier, all of which will need to be relocated / modified to accommodate the proposed intersection upgrade. Refer to **Figure 4**.

The proposed widening will also require retaining structures to be built on property boundaries, as there is insufficient land available between the extent of the proposed road and the legal boundaries to construct a batter. It is anticipated two structures will be required: one approximately 0.5 metres in height and one approximately 1.5 metres in height. There are several types of retaining structure that may be suitable in these locations, the options for which will be investigated as part of the detailed engineering design for the intersection upgrade.

It may also be necessary to trim / remove some existing vegetation and trees to provide the required visibility splays. An assessment of the proposed visibility splays at the intersections has been prepared – refer drawing **Appendix A**.

From the existing topographical survey, there are six private driveways adjacent to the proposed intersection upgrade. The visibility assessment undertaken indicates the existing driveway located at the corner of Te Puna Station Road suffers from insufficient visibility for vehicles traveling from north of Te Puna Road, heading south. For additional details, please refer to Harrison Grierson drawing A2314643-202 (cyan coloured visibility splay lines).

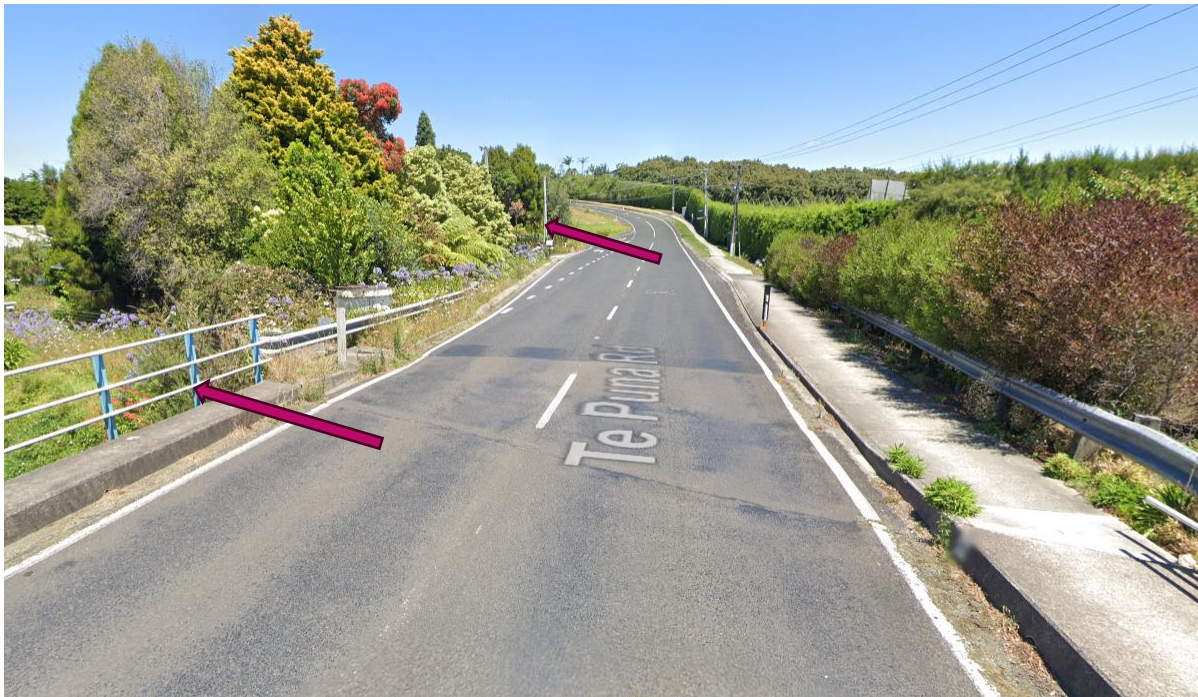


FIGURE 3: LOOKING DOWN TE PUNA ROAD TOWARDS THE INTERSECTION WITH TE PUNA STATION ROAD

4.0 Limitations

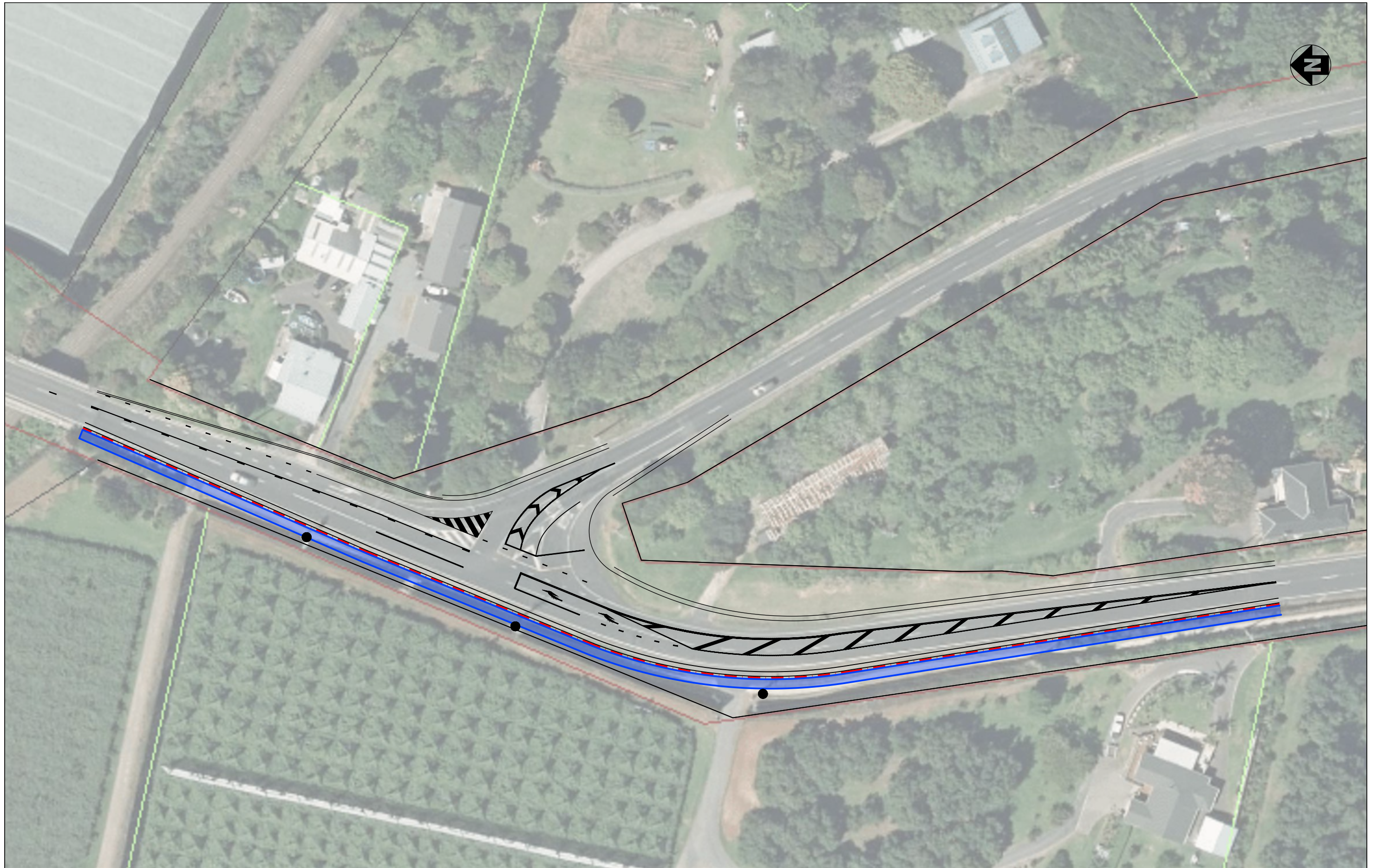
This memorandum is for the use of Te Puna Industrial Limited only and should not be used or relied upon by any other person or entity or for any other project.

This report has been prepared for the project described to us and its extent is limited to the scope of work agreed upon between the client and Harrison Grierson Consultants Limited.

No responsibility is accepted by Harrison Grierson Consultants Limited or its directors, servants, agents, staff, or employees for the accuracy of information provided by third parties and/or the use of any part of this report in any other context or for any other purposes.

Appendix A

HARRISON TRANSPORTATION DESIGN PLANS



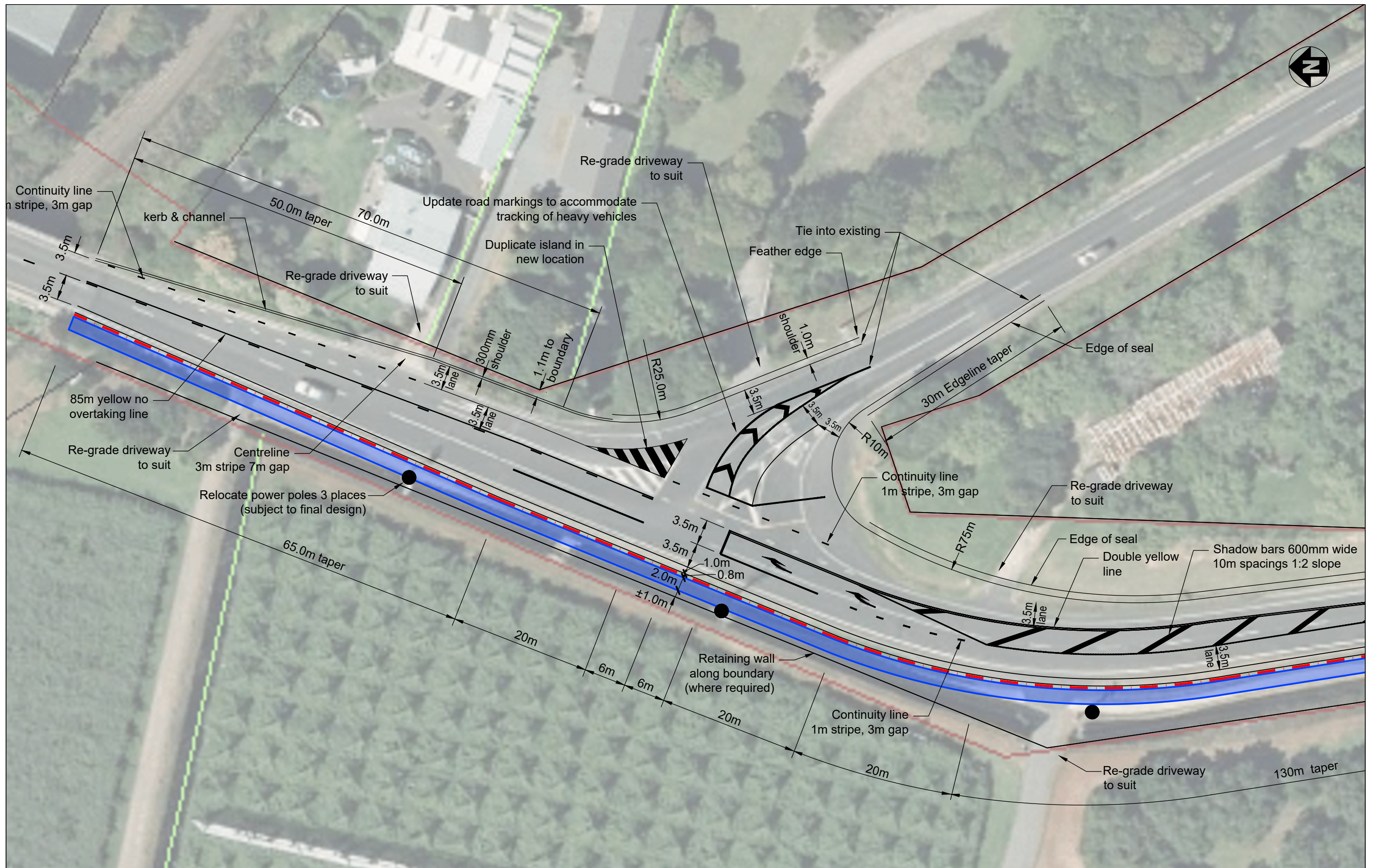
TE PUNA INDUSTRIAL LTD
 TE PUNA & TE PUNA STATION ROAD INTERSECTION
 INDICATIVE RIGHT TURN BAY

Harrison Transportation

PO Box 11557, Papamoa 3151
 Phone: 07 576 6737
 Mobile: 027 221 6926
 Email: bruce@harrisontransportation.co.nz

Design	BH	Job No.		DRAWING No
Drawn	JM	592	CAD File	23-169
Checked	BH		Plot Date	03/04/24
Date	07/12/23	Drawing No.	Rev.No.	
Drawing	1 of 4	592-01	A	SCALE 1:750 @A3

No	DESCRIPTION	DATE	CHK
A	LAYOUT REVISED	03/04/24	BH



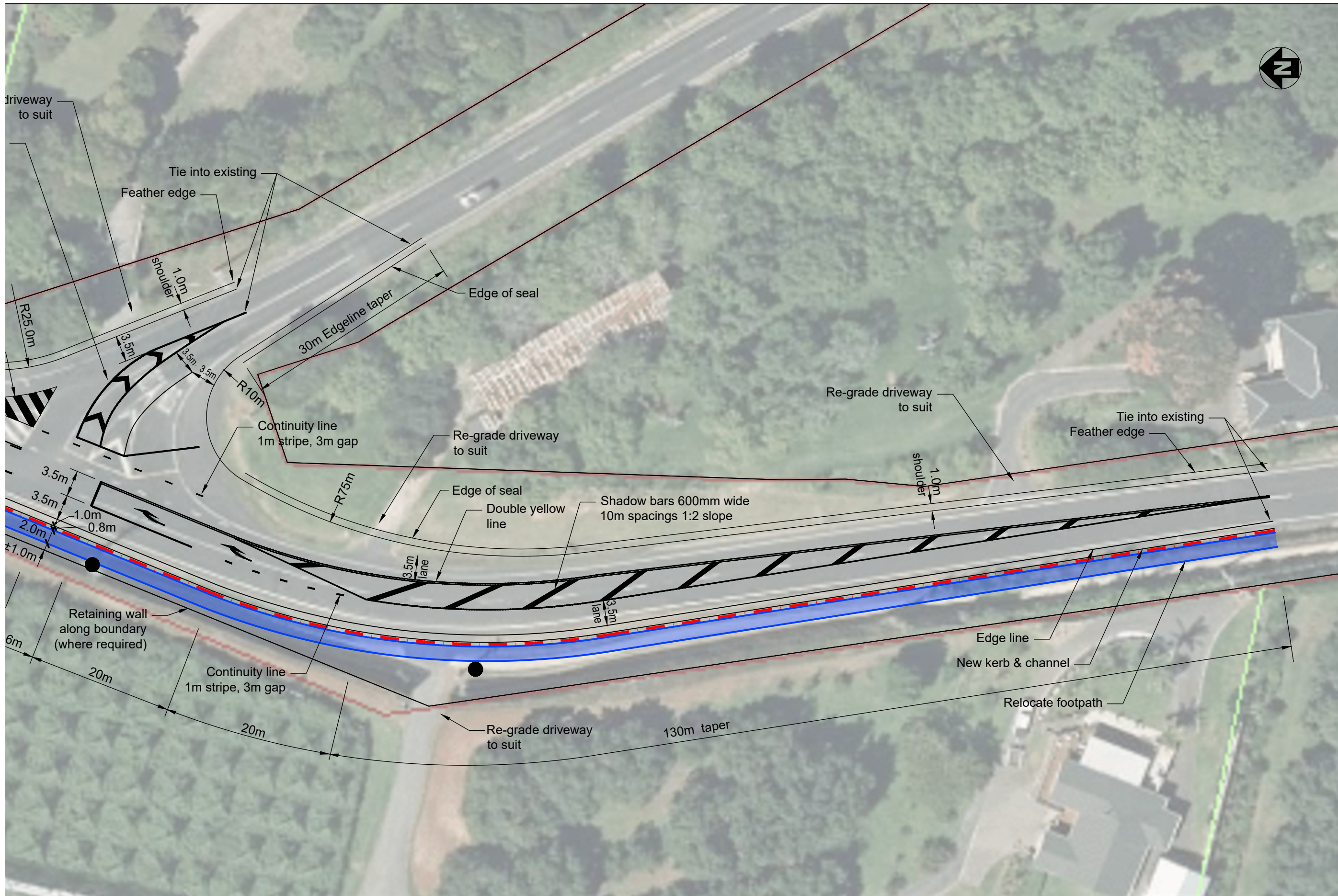
TE PUNA INDUSTRIAL LTD
 TE PUNA & TE PUNA STATION ROAD INTERSECTION
 INDICATIVE RIGHT TURN BAY LAYOUT

Harrison Transportation

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Design	BH	Job No.		DRAWING No
Drawn	JM	592	CAD File	23-169
Checked	BH		Plot Date	03/04/24
Date	07/12/23	Drawing No.	Rev.No.	
Drawing	2 of 4	592-02	A	SCALE 1:500 @A3

No	DESCRIPTION	DATE	CHK
A	LAYOUT REVISED	03/04/24	BH



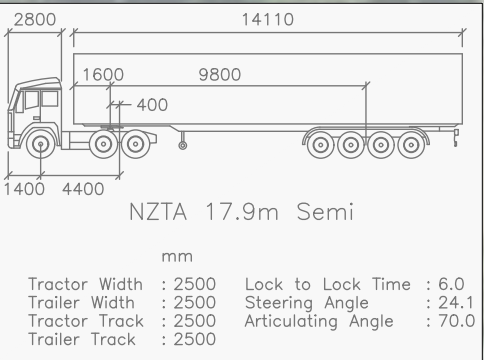
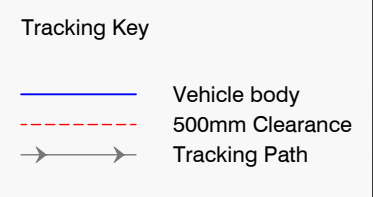
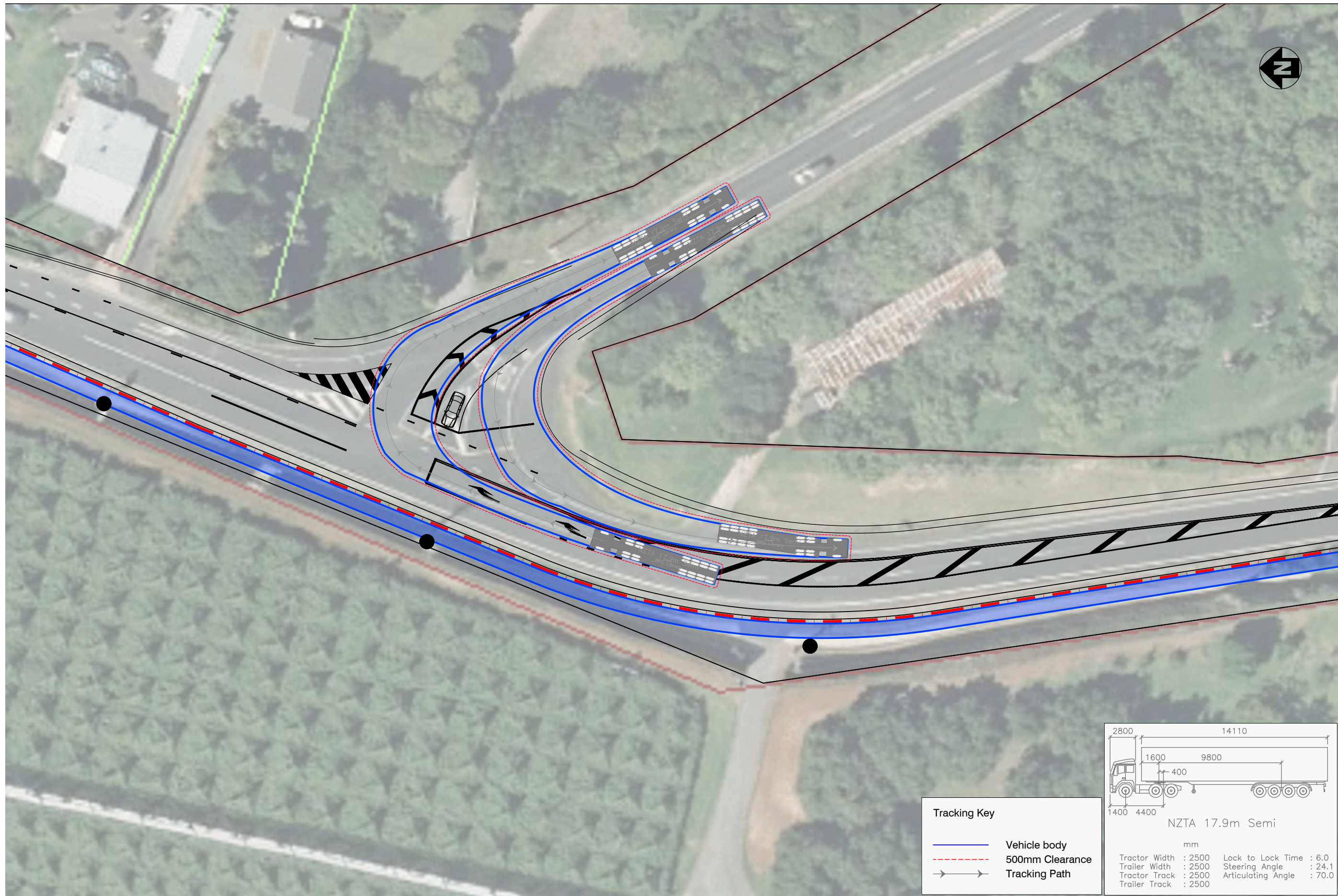
03/04/24	BH	
DATE	CHK	

TE PUNA INDUSTRIAL LTD
 TE PUNA & TE PUNA STATION ROAD JUNCTION
 INDICATIVE RIGHT TURN BAY LAYOUT

Harrison Transportation
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Design	BH	Job No.	
Drawn	JM	592	CAD File 23-169
Checked	BH		Plot Date 03/04/24
Date	07/12/23	Drawing No.	Rev.No.
Drawing	3 of 4	592-03	A

DRAWING No	03
SCALE	1:500 @A3



03/04/24	BH	
DATE	CHK	

TE PUNA INDUSTRIAL LTD
TE PUNA & TE PUNA STATION ROAD JUNCTION
TRUCK TURNING

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Design	BH	Job No.	
Drawn	JM	592	CAD File 23-169
Checked	BH		Plot Date 03/04/24
Date	07/12/23	Drawing No.	Rev.No.
Drawing	3 of 4	592-04	A

DRAWING No
04
 SCALE
 1:500 @A3

Appendix B





HARRISON GRIERSON PLANS

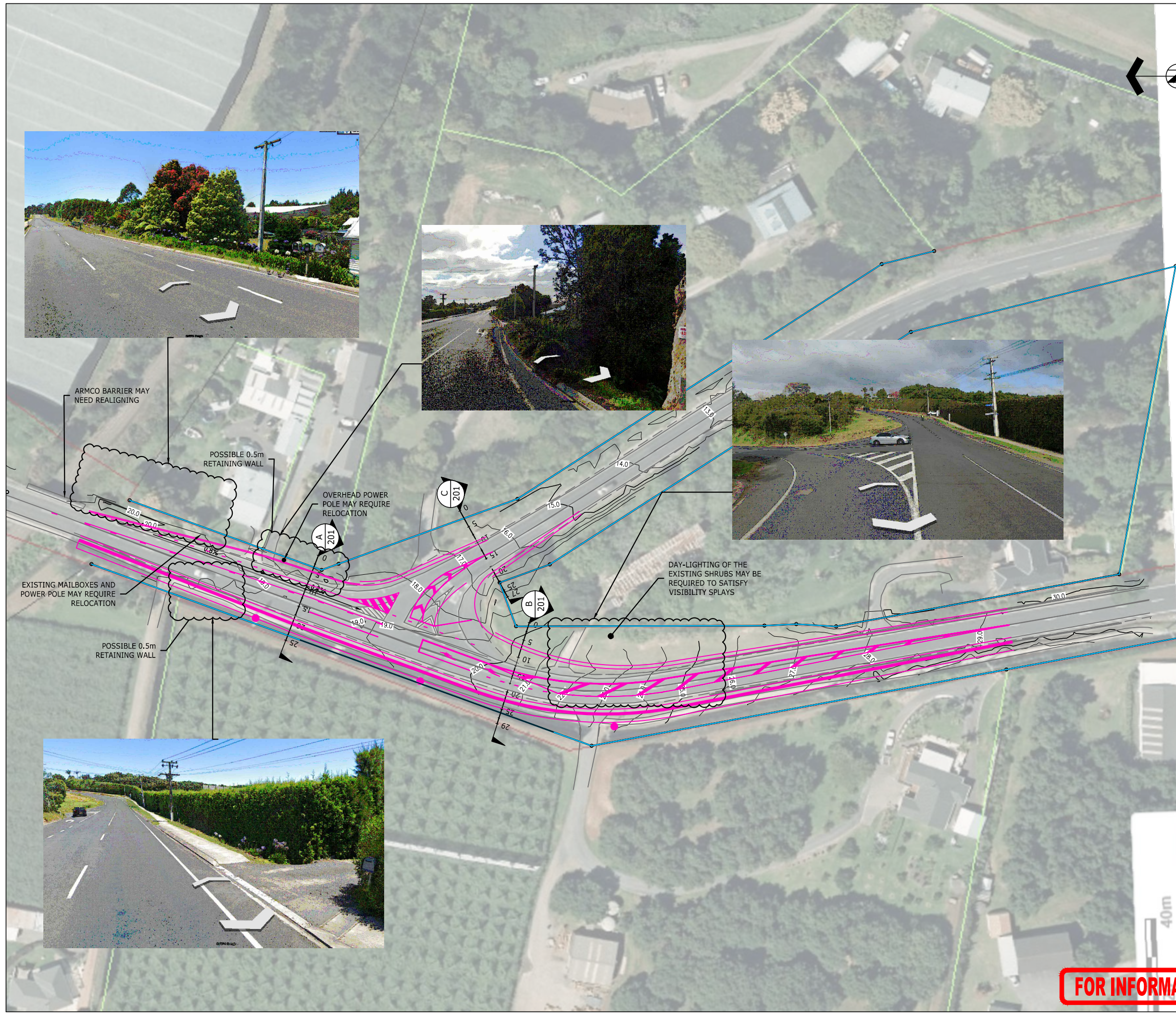


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LEGEND:

-  EXISTING ROAD RESERVE BOUNDARY
-  PROPOSED ROAD LAYOUT
-  EXISTING ROAD LAYOUT
-  EXISTING CONTOURS SHOWN AT 1.0m INTERVALS



B	FOR INFORMATION	JEP	12.04.24
A	FOR INFORMATION	JEP	19.03.24
REF	REVISIONS	BY	DATE

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 T +64 9 917 5000
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PROJECT:
**TE PUNA STATION ROAD/
 TE PUNA ROAD
 INTERSECTION**

TITLE:
**TE PUNA ROAD
 INTERSECTION
 ROAD LAYOUT PLAN**

ORIGINATOR:	DATE:	SIGNED:	PLOT BY:
ROR	03.2024		JEP
DRAWN:	DATE:	SIGNED:	PLOT DATE:
ROR	03.2024		12/04/24
CHECKED:	DATE:	SIGNED:	SURVEY BY:
NEP	04.2024		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
MNH	04.2024		

ISSUE STATUS: **FOR INFORMATION**

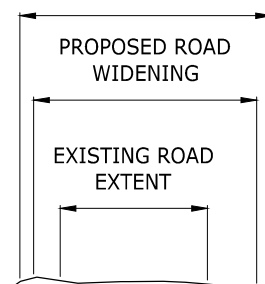
PROJECT No:	SCALE:	A1
A2314643.00	SCALE 1:500-A1, 1:1000-A3	
DRAWING No:	REV	
A2314643.00	B	

FOR INFORMATION

LEGEND:

EXISTING GROUND

ROAD RESERVE BOUNDARY



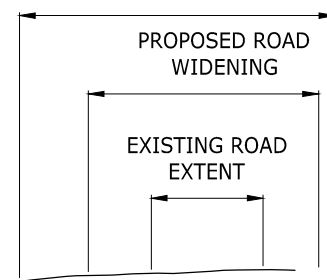
DATUM R.L. 16.00

EXISTING LEVELS		19.301	18.904	18.989	18.645	
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CROSS-SECTION A

A CROSS-SECTION VIEW
 200 SCALE 1:300 -A1
 1:600-A3

ROAD RESERVE BOUNDARY



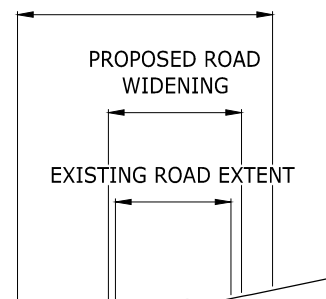
DATUM R.L. 16.00

EXISTING LEVELS	19.618	20.169	20.350	20.490	20.668	
CHAINAGE	0.00	5.00	10.00	15.00	20.00	29.16

CROSS-SECTION B

B CROSS-SECTION VIEW
 200 SCALE 1:300 -A1
 1:600-A3

ROAD RESERVE BOUNDARY



DATUM R.L. 14.00

EXISTING LEVELS		16.373	16.609	16.870	17.903	18.345
CHAINAGE	0.00	5.00	10.00	15.00	20.00	27.10

CROSS-SECTION C

C CROSS-SECTION VIEW
 200 SCALE 1:300 -A1
 1:600-A3

B	FOR INFORMATION	JEP	12/04/24
A	FOR INFORMATION	JEP	19/03/24
REF	REVISIONS	BY	DATE

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PROJECT:
 TE PUNA STATION ROAD/
 TE PUNA ROAD
 INTERSECTION

TITLE:
 TE PUNA ROAD
 INTERSECTION
 CROSS-SECTIONS

ORIGINATOR	DATE:	SIGNED:	PLOT BY:
ROR	03.2024		JEP
DRAWN:	DATE:	SIGNED:	PLOT DATE:
ROR	03.2024		12/04/24
CHECKED:	DATE:	SIGNED:	SURVEY BY:
NEP	04.2024		
APPROVED:	DATE:	SIGNED:	SURVEY DATE:
MNH	04.2024		

ISSUE STATUS: FOR INFORMATION

PROJECT No:	SCALES:	A1
A2314643.00	AS SHOWN	

DRAWING No:	REV
A2314643.00-201	B

FOR INFORMATION



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LEGEND:

- EXISTING ROAD RESERVE BOUNDARY
- PROPOSED ROAD LAYOUT
- EXISTING ROAD LAYOUT

NOTES:

SISD = 65m
Vd = 60km/h
VALUES AS PER NZTA GUIDELINES FOR VISIBILITY
AT DRIVEWAYS RTS 6 - TABLE 1: SIGHT DISTANCES.

REF	REVISIONS	BY	DATE
B	FOR INFORMATION	JEP	12/04/24
A	FOR INFORMATION	JEP	26/03/24

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PROJECT:
**TE PUNA STATION ROAD/
TE PUNA ROAD
INTERSECTION**

TITLE:
**TE PUNA ROAD
VISIBILITY ASSESSMENT**

ORIGINATOR: ROR	DATE: 03.2024	SIGNED:	PLOT BY: JEP
DRAWN: ROR	DATE: 03.2024	SIGNED:	PLOT DATE: 12/04/24
CHECKED: NEP	DATE: 04.2024	SIGNED:	SURVEY BY:
APPROVED: MNH	DATE: 04.2024	SIGNED:	SURVEY DATE:

ISSUE STATUS: **FOR INFORMATION**

PROJECT No: A2314643.00	SCALES: SCALE 1:500-A1, 1:1000-A3	A1
DRAWING No: A2314643.00-202		REV B

FOR INFORMATION