Appendices

P07/92 Kaihu Valley Railway

Appendix 1 Legal Descriptions and Record of Titles

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Appendix 3 The Proposal Extracted from Resource Consent Application & Assessment of Environmental Effects

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Appendix 1

Legal Descriptions and Record of Titles

P07/92 Kaihu Valley Railway

Legal descriptions and Records of Title

Address	Legal Description	Status
	Crown Land	
	Part Section 20 Block XI Waipoua SD	
	Closed Road Survey Office Plan 18782/5	
	Part Old River Bed	
N/A	Part Section 3A Block XI Waipoua SD	Reserve (Conservation Act 1987)
	Closed Road Survey Office Plan 53550	
	Part Section 20 Block XI Waipoua SD	
	Part Section 2 Block XI Waipoua SD	
	Part Section 1 Block XI Waipoua SD	
Hooper Road		Local road
	Part Section 1 Block XI Waipoua SD	
N/A	Part Section 6 Block XI Waipoua SD	Reserve (Conservation Act 1987)
	Part Lot 6 DP 1458	
Aranga Station Road		Local road
N/A	Crown Land Survey Office Plan 59559	Reserve (Conservation Act 1987)
Opouteke Road		Local road
26 Opouteke Road	Crown Land	Reserve (Conservation Act 1987)
	Crown Land Survey Office Plan 17064	
	Crown Land	
	Crown Land Survey Office Plan 17064	
N/A	Crown Land	Reserve (Conservation Act 1987)
	Crown Land Survey Office Plan 17064	
	Opanake Crown Land Block	
	Crown Land	
Kaihu Wood Road		Local road
40B Kaihu Wood Road 40A Kaihu Wood Road	Part Opanake 1 Block	Reserve (Conservation Act 1987)
Kaihu Wood Road		Local Road
N/A	Section 15 SO 327162	Local purpose reserve: Water supply purposes
	Section 1 SO 327162	Local purpose reserve: Water supply purposes
Ahikiwi Road		Local road
N/A	Section 3 SO 46920	Local purpose reserve: Water supply purposes
Mamaranui Road		Local road
N/A	Section 4 SO 46919	Local purpose reserve: Water supply purposes
State Highway 12		State Highway
N/A	Section 5 SO 46919	Local purpose reserve: Water supply purposes
N/A	Section 6 SO 327164	Local purpose reserve: Water supply purposes
State Highway 12		State Highway
Maitahi Road		Local road
N/A	Lot 1 D 528305	Private land
N/A	Lot 2 DP 528305	Private land
1747 State Highway 12	Lot 1 DP 134571	Private land
N/A	Part Lot 5 DP 23704	Private land
N/A	Lot 1 DP 99864	Private land

Address	Legal Description	Status
N/A	Section 9 SO 46917	Local purpose reserve: Water supply purposes
State Highway 12		State Highway
N/A	Section 10 SO 46917	Local purpose reserve: Water supply purposes
N/A	Section 11 SO 327167	Local purpose reserve: Water supply purposes
N/A	Part Lot 89 DP 10700	Private land
N/A	Lot 2 DP 95099	Private land
N/A	Part 1 Kaihu Block	Private land
N/A	Lot 1 DP 62933	Private land
	Section 12 SO 327168	Local purpose reserve: Water supply purposes
N/A	Section 13 SO 327169	Local purpose reserve: Water supply purposes
	Section 14 SO 46916	Local purpose reserve: Water supply purposes
Station Road		Local road
Hokianga Road		Local road

Appendix 2

Plans of Proposed Route

P07/92 Kaihu Valley Railway

LEGEND

15/04/21

- PROPOSED ROUTE
- ROUTE USES LOCAL ROADS
- ROUTE YET TO BE CONFIRMED
- STATE HIGHWAY
- MARAE
- PROPOSED BRIDGE
- SH CROSSING
- EXISTING CORRIDOR

DONNELLY'S CROSSING

SECTION 3

PROPOSED BRIDGE

SECTION 2A

BAKER ROAD BRIDGE

TAMA TE UAUA

KAIHU

WAIKARAKA

SECTION 2B

AHIKIWI BRIDGE

AHIKIWI

SECTION 1A

MAMARANUI

SH CROSSING

TAITA

MAITAHI BRIDGE

MURARE

SH CROSSING
ONLY USED IF NOT DEVIATING OFF CORRIDOR

EXISTING CORRIDOR

WINDUST

SH CROSSING
ONLY USED IF NOT DEVIATING OFF CORRIDOR

SOLE

HANCOCKS

ARNESEN

PROPOSED EASEMENTS ON TO PRIVATE LAND

SECTION 4

SH CROSSING

PROPOSED EASEMENT ON TO WILES PROPERTY

EXISTING CORRIDOR

BABYLON BRIDGE

SECTION 1B

KAIHU RIVER BRIDGE

TE HOUHANGA

DARGAVILLE

PLAN 01
SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:50,000 AT ORIGINAL SIZE
0 250 500 750 1000 1250m

PLAN 02
SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:50,000 AT ORIGINAL SIZE
0 250 500 750 1000 1250m

PLAN 03
SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:50,000 AT ORIGINAL SIZE
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PLAN 04
SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:50,000 AT ORIGINAL SIZE
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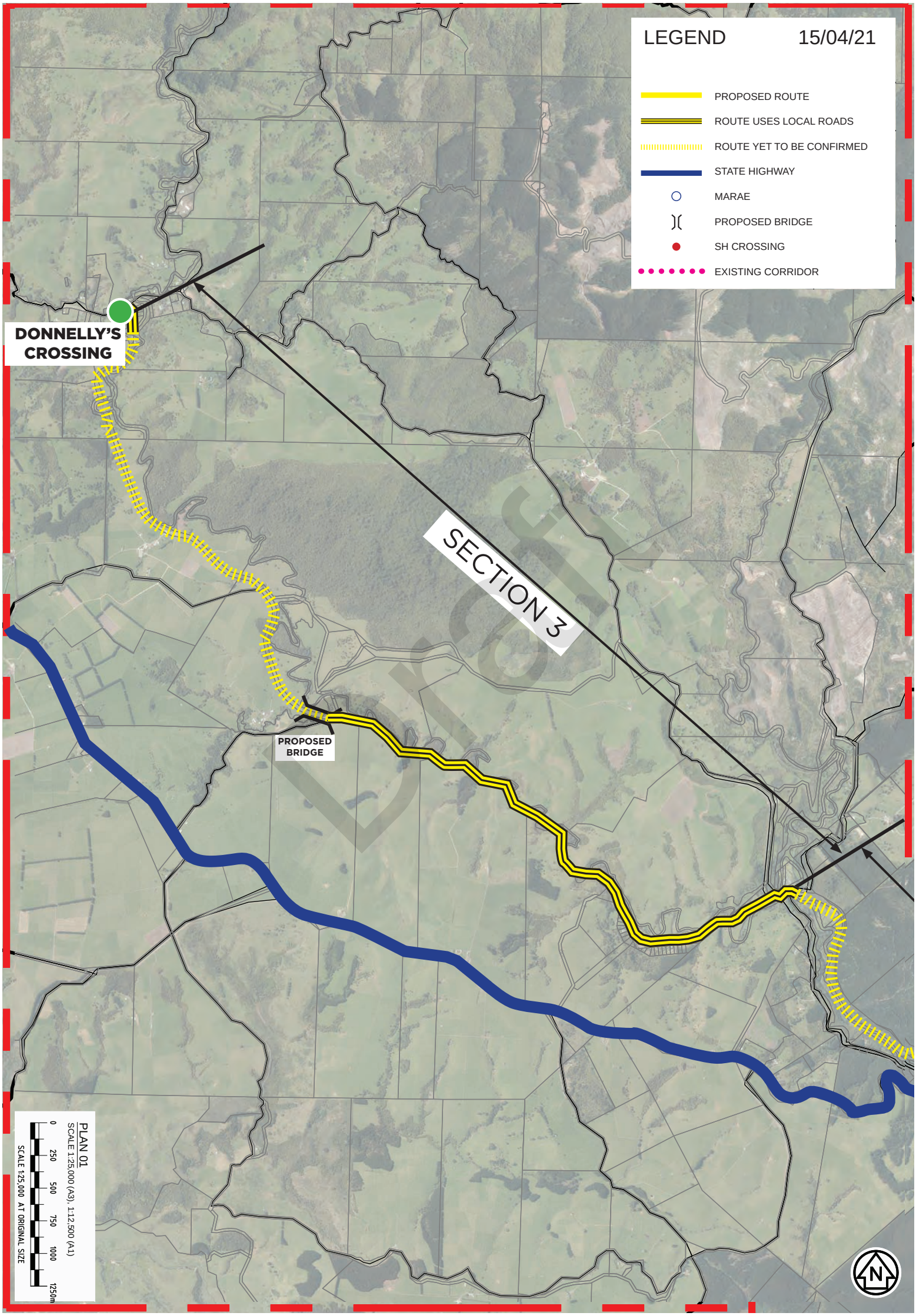
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ROUTE YET TO BE CONFIRMED
STATE HIGHWAY
MARAE
PROPOSED BRIDGE
SH CROSSING
EXISTING CORRIDOR
DONNELLY'S CROSSING
SECTION 3
PROPOSED BRIDGE
Draft
PLAN 01
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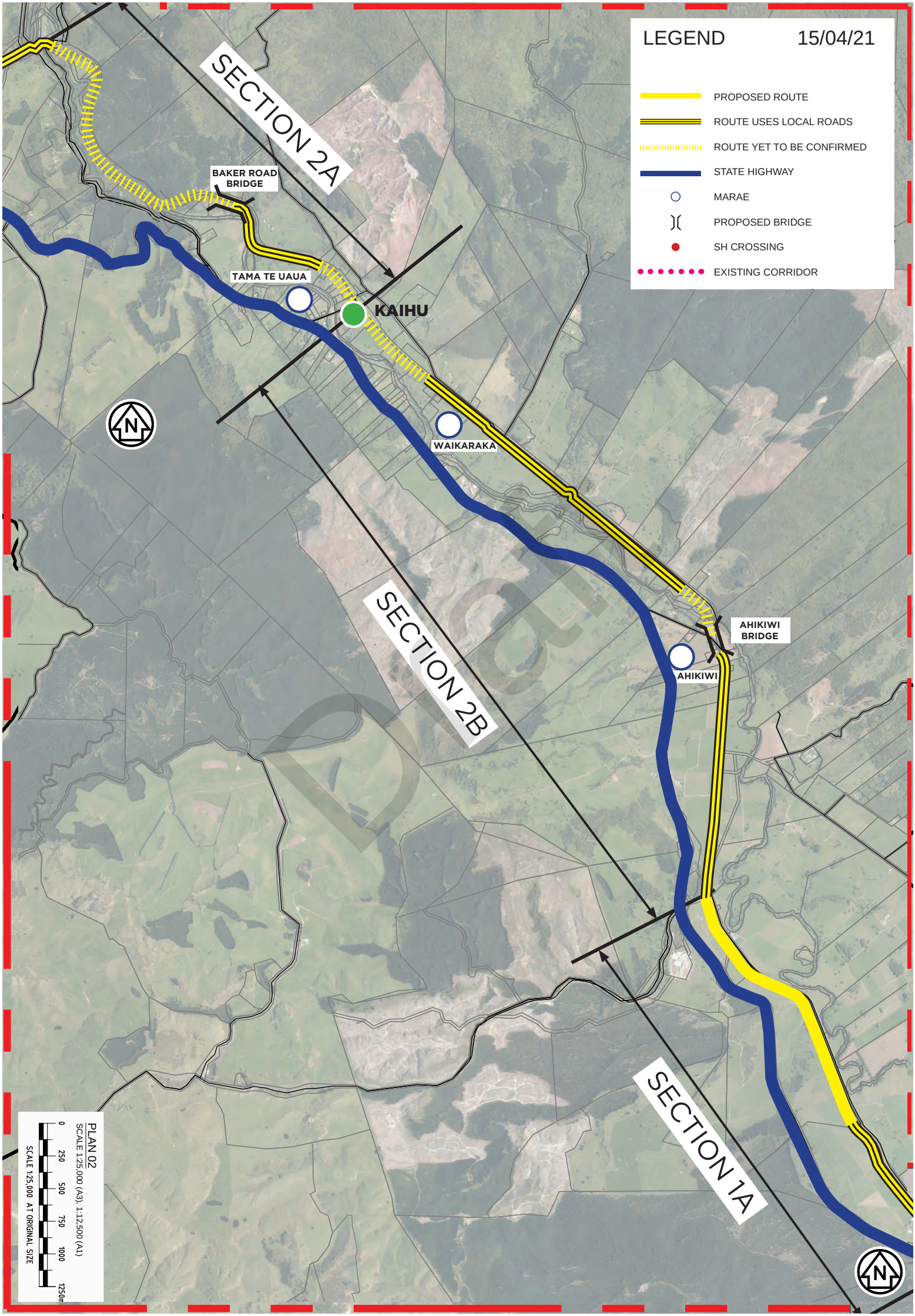
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ROUTE YET TO BE CONFIRMED
STATE HIGHWAY
MARAE
PROPOSED BRIDGE
SH CROSSING
EXISTING CORRIDOR
SECTION 2A
SECTION 2B
SECTION 1A
BAKER ROAD BRIDGE
TAMA TE UAUA
KAIHU
WAIKARAKA
AHIKIWI BRIDGE
AHIKIWI
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PLAN 02
SCALE 1:25,000 (A3), 1:12,500 (A1)
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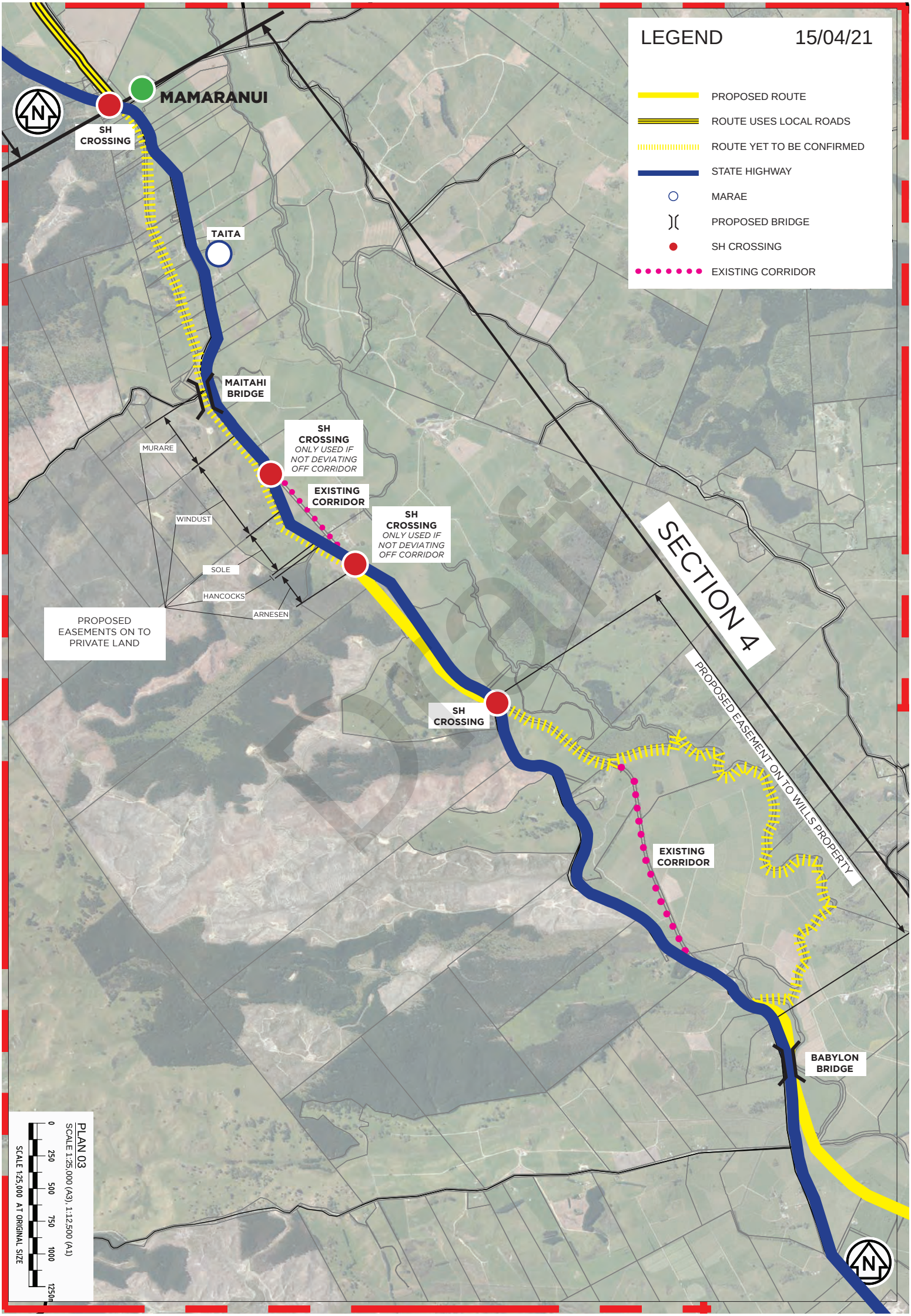
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MURARE
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SOLE
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PROPOSED EASEMENTS ON TO PRIVATE LAND
SECTION 4
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EXISTING CORRIDOR
BABYLON BRIDGE
PLAN 03
SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:25,000 AT ORIGINAL SIZE
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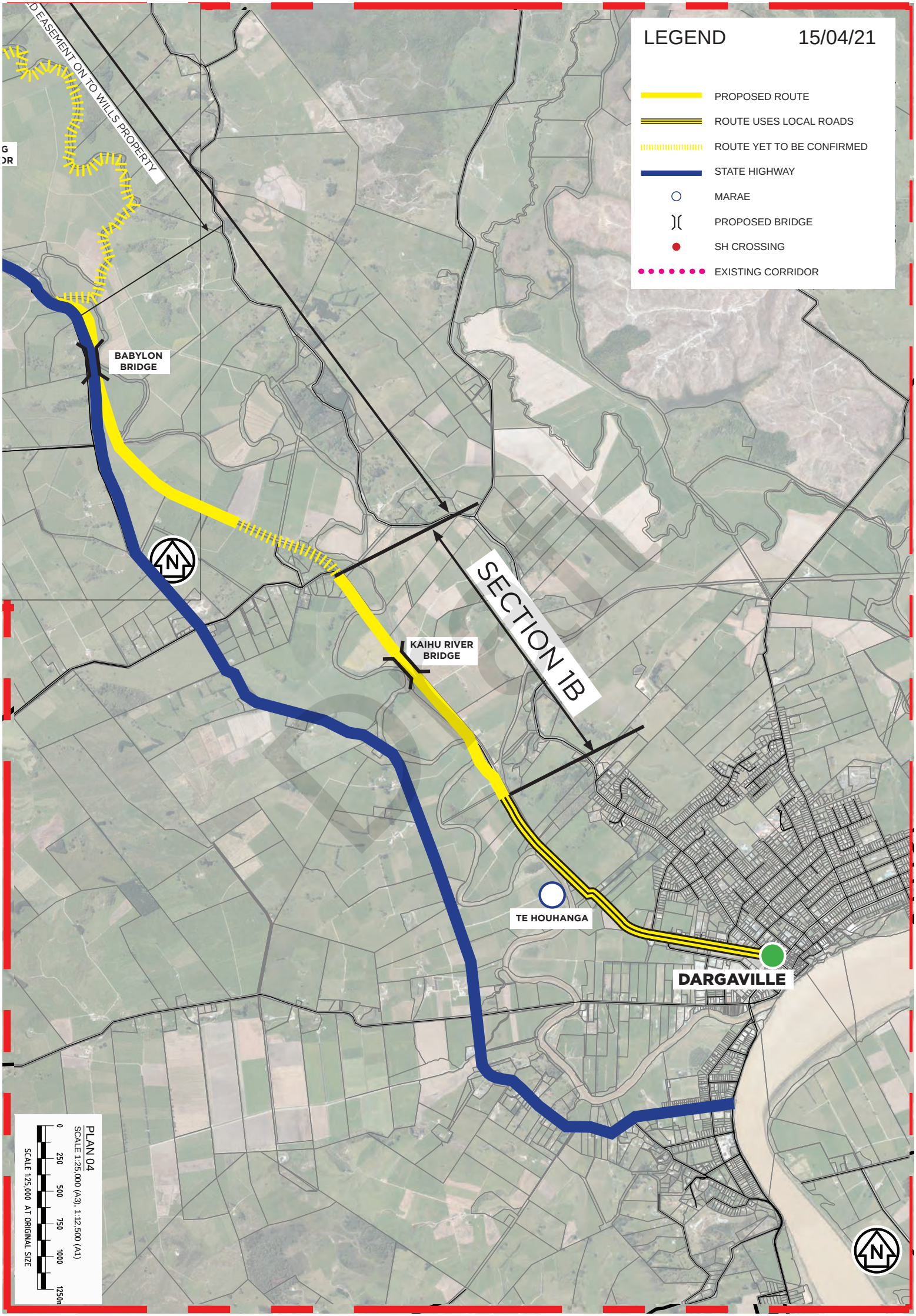
LEGEND
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PROPOSED ROUTE
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SCALE 1:25,000 (A3), 1:12,500 (A1)
SCALE 1:25,000 AT ORIGINAL SIZE
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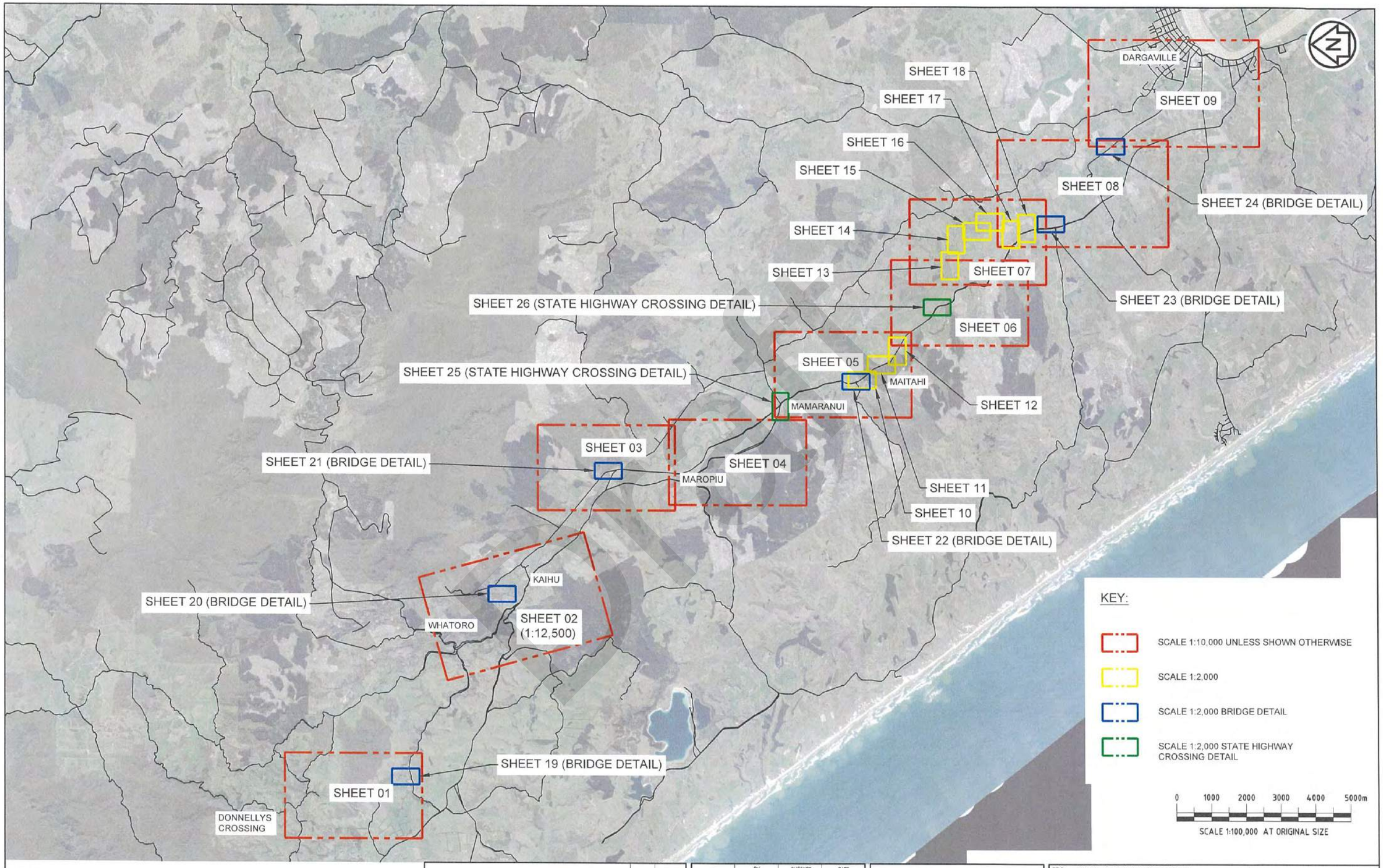

NOTES

1. EXTREME CAUTION SHOULD BE TAKEN DURING EXCAVATIONS.
2. THE CONTRACTOR SHALL CHECK FOR AND BE RESPONSIBLE FOR ALL UNDERGROUND AND/ OR OVERHEAD SERVICES.
3. ALL SETTING OUT TO BE CONFIRMED ON SITE WITH THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
4. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH KDC ENVIRONMENTAL ENGINEERING STANDARDS.
5. DO NOT SCALE DRAWING.
6. NOMINAL SCALE IS SHOWN FOR A3 SIZE UNLESS SHOWN OTHERWISE.
7. COORDINATES IN TERMS OF NZTM GEODETIC 2000 DATUM.
8. LEVELS IN TERMS OF MEAN SEA LEVEL ONE TREE POINT DATUM.
9. AERIAL PHOTOGRAPHY AND LAND PARCEL INFORMATION SOURCED FROM LAND INFORMATION NZ (LINZ) UNLESS STATED OTHERWISE.

AMENDMENT	APPRVD	DATE
1 PRELIMINARY		20.4.21

	BY	CHECKED	DATE
DESIGN	SG		
DRAWN	BWP		
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY TRAIL

INDEX PLAN

STATUS		LOCAL AUTHORITY REF:		
SCALE	PLOT DATE	JOB	SHEET	REVISION
SHOWN		2103-SCH	00	1

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NOTES

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APPROVED			

JAS CIVIL Ltd

CLIENT: KAIPARA DISTRICT

TITLE: KAIHU VALLEY CYCLE TRAIL

PLAN

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NOTES

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JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

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NOTES

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APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

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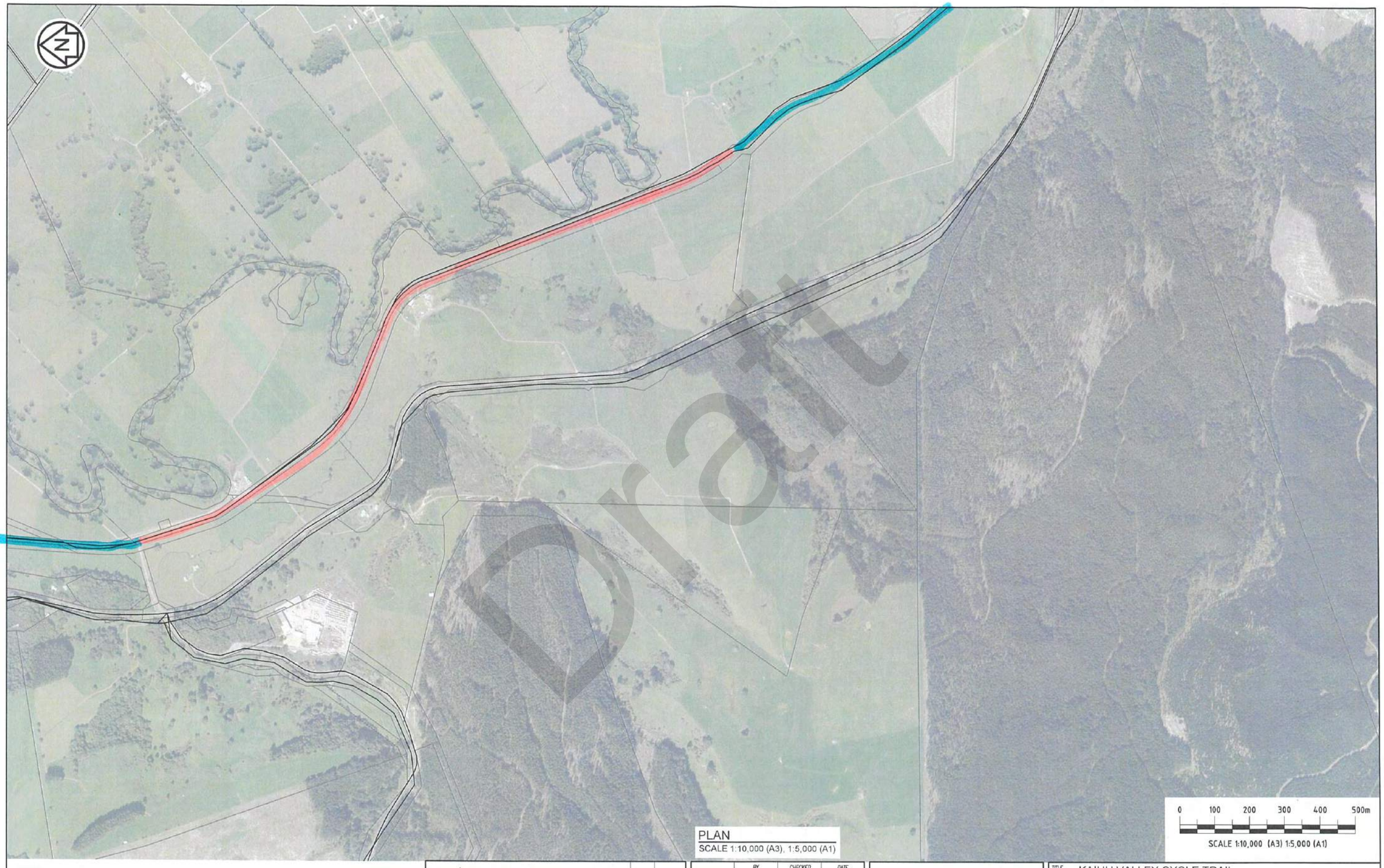

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JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

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NOTES

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APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

PLAN

STATUS		LOCAL AUTHORITY REF:		
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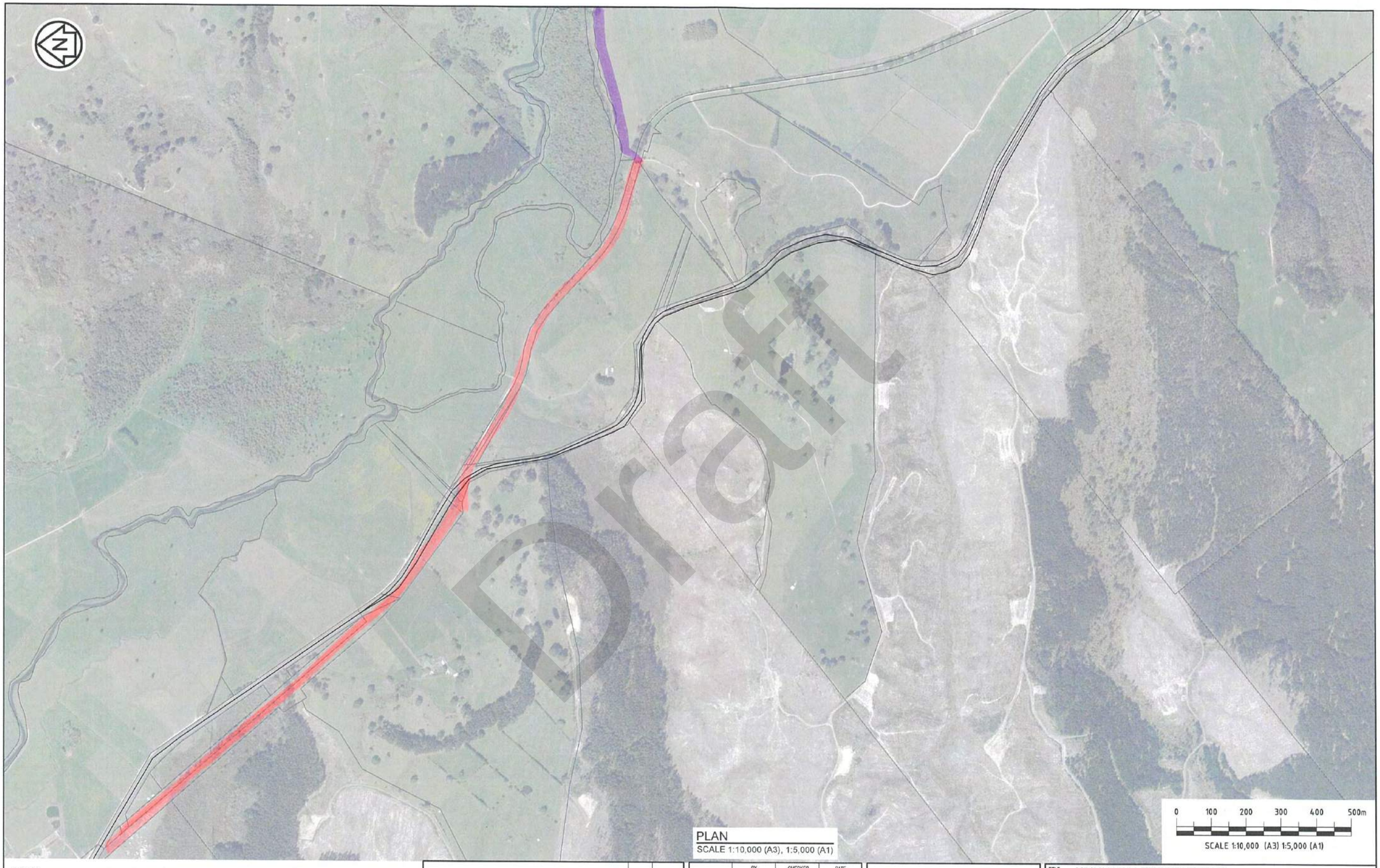

PLAN
SCALE 1:10,000 (A3), 1:5,000 (A1)

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AMENDMENT	APPRVD	DATE
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SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

PLAN

STATUS		LOCAL AUTHORITY REF:		
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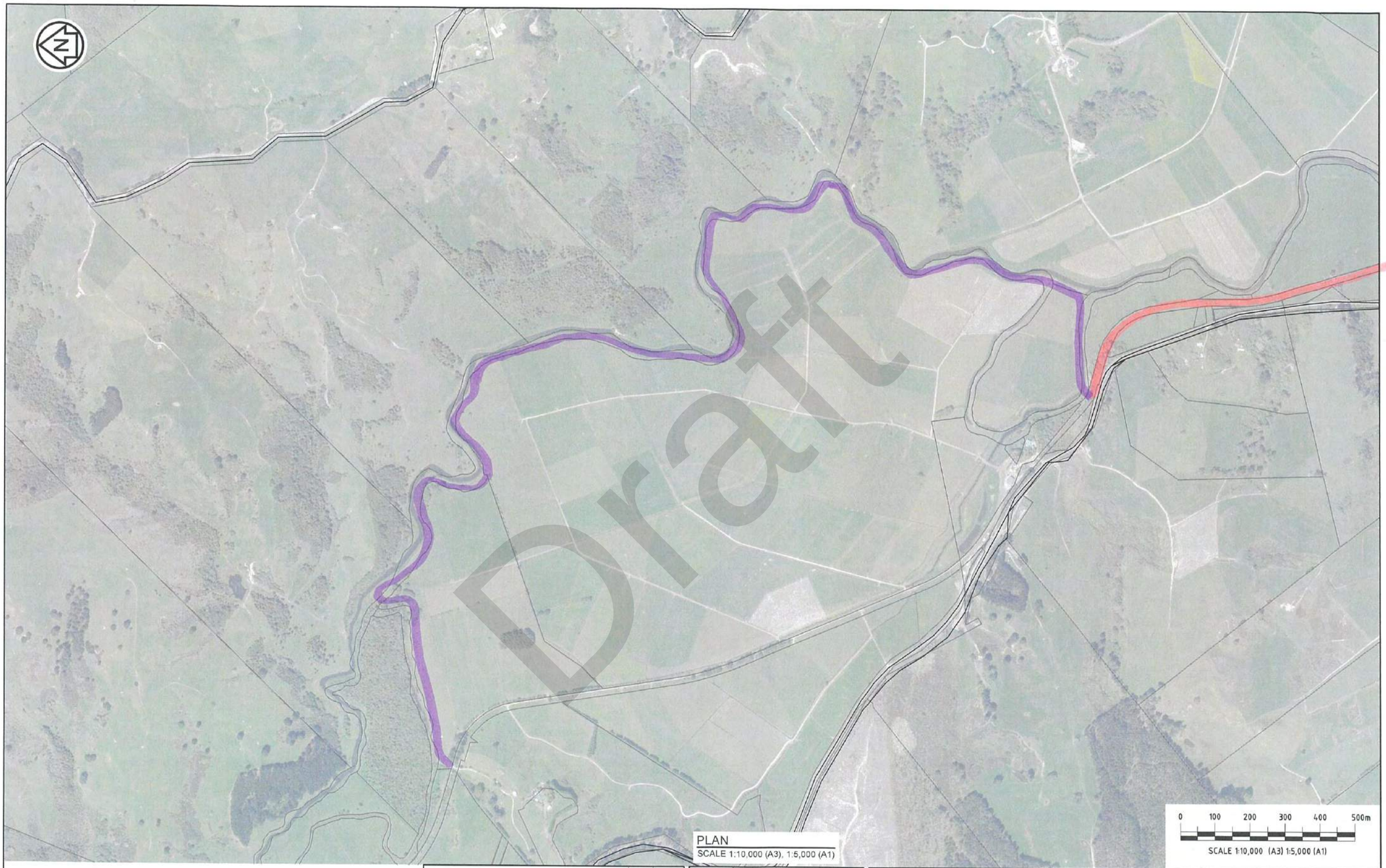

PLAN
SCALE 1:10,000 (A3), 1:5,000 (A1)

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SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

PLAN

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PLAN
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NOTES

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SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

PLAN

STATUS		LOCAL AUTHORITY REF:		
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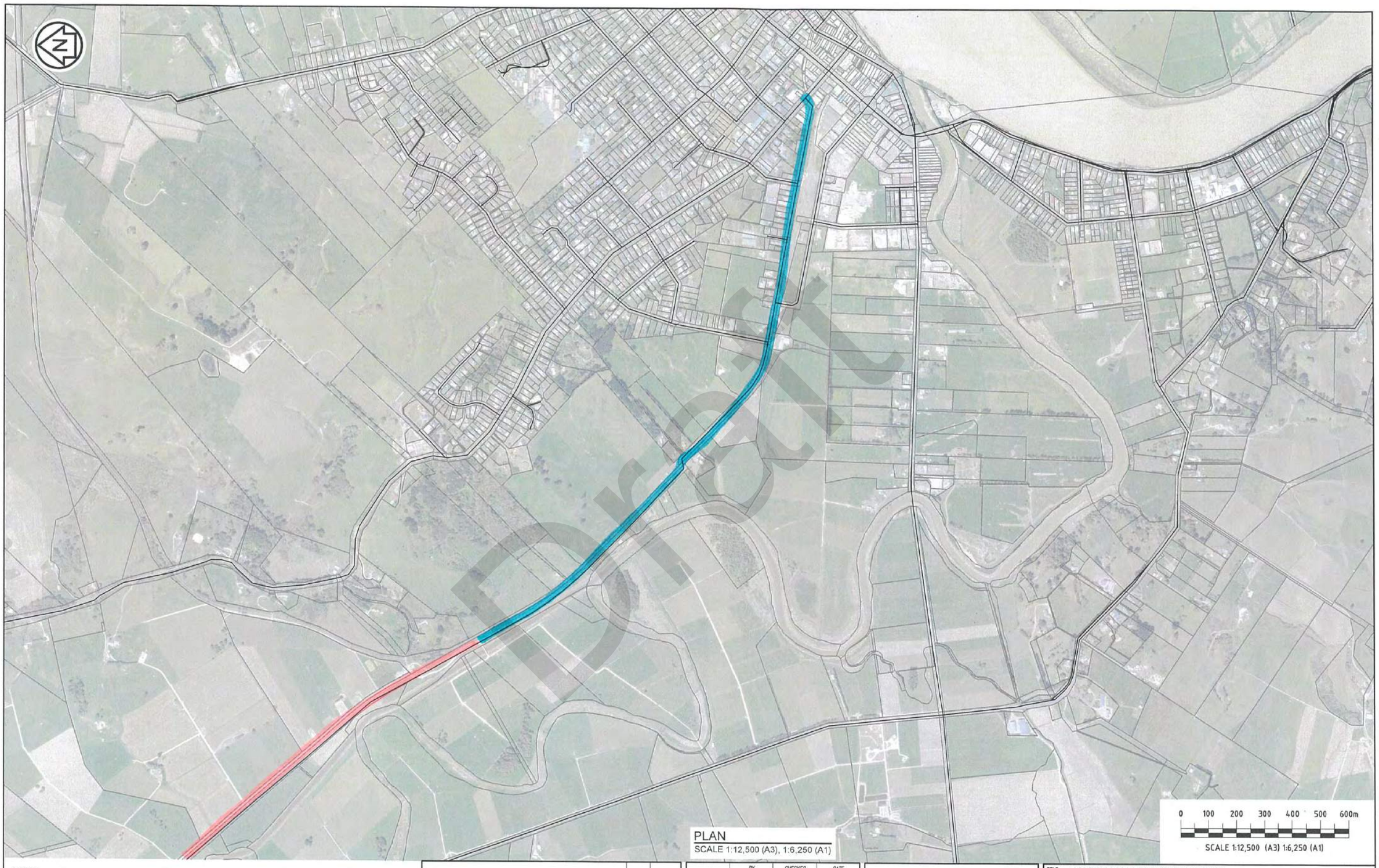

PLAN
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DESIGN	SG		
DRAWN	BWP		
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL

PLAN

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Appendix 3

The Proposal

Extracted from

Resource Consent Application
& Assessment of Environmental Effects

P07/92 Kaihu Valley Railway

THE PROPOSAL

Overview

33. The KVT is a cycling and walking trail extending approximately 42km between Donnellys Crossing and Dargaville, comprising a mix of dedicated off-road path and low volume local roads. A large portion of the trail follows the former Kaihu Valley Railway line corridor, which is public land owned/administered partly by the Department of Conservation and partly by KDC. Plans of the proposed route are included at Appendix A.

34. The proposed route for the trail is described from north to south as follows:

- *Donnellys Crossing to Opouteke Road* – from the start point, the trail follows the former railway line south along the western side of the Waima River. It crosses Hopper Road and joins Aranga Station Road in the vicinity of the former Aranga Station. The trail then continues on-road along Aranga Station Road for approximately 4km, before crossing both the Waima and Kaihu Rivers at the intersection of Trounson Park Road and Opouteke Road, adjacent to the Kauri Coast TOP 10 Holiday Park.

- *Opouteke Road to Kaihu Wood Road* – on the eastern side of the Kaihu River, the trail again follows the former railway line into the settlement of Kaihu.

- *Kaihu Wood Road to SH12/Mamaranui Road* – after crossing Kaihu Wood Road, the trail merges onto Kaihu Wood Road just before Waikaraka Marae. After reaching the southern end of Kaihu Wood Road, the trail follows the alignment of the paper road extension, crosses back to the western side of the Kaihu River and follows Ahikiwi Road and Mamaranui Road on a mix of road reserve and former rail corridor.

- *SH12/Mamaranui Road to Parore West Road* – near the intersection of Mamaranui Road and Waihue Road with SH12, the trail crosses the State Highway and re-joins the former rail corridor on the western side of SH12. North of Maitahi, the trail veers into the SH12 road reserve for a short distance before crossing a tributary of the Kaihu River and passing through five private properties on the western side of SH12. The trail re-joins the former railway corridor just north of the forestry block and continuing for approximately 1.2km before crossing over SH12 and onto the former railway embankment to the east of the road for approximately 775m. From this point, the trail deviates from the rail corridor and follows the path of the Kaihu River along its true right bank through the Puketaratara Farms landholding for approximately 4km. The alignment then returns to follow the rail corridor south between SH12 and the Kaihu River, crossing Manning Road.

- *Parore West Road to trail end* – the trail crosses Parore West Road and then the Kaihu River downstream of the water pipe bridge. From this point, the trail follows the rail corridor alongside Station Road before veering onto Station Road where the existing Tangowahine railway joins the corridor and culminates at the point where Hokianga Road meets SH12.

35. The trail will be an easy and family-friendly single-day Grade 1-2 cycle ride. It will provide an accessible and standalone ride that will link well with the Waoku Old Coach Road, Kauri Coast Cycleway and Kaipara Missing Link trails to provide a longer route for more serious cyclists.

36. The trail links several marae along the route, including Te Houhanga, Ahikiwi, Tama Te Uaua, Taita and Waikaraka, and provides opportunities to incorporate the strong cultural and historical character of the area.

Vegetation

37. Whilst much of the trail extends along rural roads or through grassed pasture, parts of the route are fringed by adjacent vegetation, both native and exotic. The sections of the route that follow the former railway are generally located on highly modified land that has been leased or appropriated by adjacent landowners for grazing of stock and/or use as farm raceways.

38. There are no identified areas of significant vegetation present along the route. It is acknowledged that parts of the proposed route pass through Department of Conservation reserve land. However, the reserve land in these locations is currently either grazed by adjacent farmers through a lease agreement or has been modified through previous use and has little current recreational, amenity, ecological or habitat value for significant species.

39. Any vegetation removal or alteration associated with the earthworks will be limited to removal of weeds and exotic species within the trail surface and minor trimming of overhanging branches that present a safety risk during construction and/or operation of the trail. These works can be undertaken within the permitted activity thresholds.

Archaeology and heritage

40. From a review of the New Zealand Archaeological Association (NZAA) ARCHSITE there are no recorded archaeological sites in proximity to the KVT route. The Heritage New Zealand List/Rārangi Kōrero does not identify any heritage places along the length of the KVT, with the exception of a collection of heritage buildings around the Dargaville terminus where the trail utilises the existing road.

41. The Kaipara District Plan identifies one heritage site (H85 – Old Aranga Station) where the railway corridor intersects with Aranga Station Road. This site is the location of the former Aranga Station, located approximately 32km north of Dargaville and 4km south of Donnellys Crossing on the Kaihu Valley Railway. The proposed works will not affect H85. Thirteen other stations were present on the line between Dargaville and Donnellys Crossing, but little evidence of any station or railway infrastructure remains.

42. Being of pre-1900 construction, any existing or remnant features of the former railway are likely to be covered under the Heritage New Zealand Pouhere Taonga Act 2014 (HNZPTA). As such, an archaeological assessment has been commissioned to support an application for a general archaeological authority under s44 of the NZHPTA. This application is being lodged concurrently with the application for land use consent, but under a separate piece of legislation. Both applications can therefore be processed independently of each other and implemented together for the duration of the construction phase of the project.

43. Given the scale of the proposed earthworks and the state of the former railway corridor, any adverse effects on archaeological or heritage values are anticipated to be less than minor. The KVT also presents opportunities to highlight the culture and history of the Kaihu Valley Railway, historical native timber milling and kauri gum prospecting activities, and the growth and development of the Kaipara area through the 19th and early-20th Centuries.

Cultural values

44. The KVT route does not directly impact any mapped or identified sites or areas of cultural significance to Māori. However, it does pass directly adjacent to several marae and urupā, and through a landscape that has a rich Māori history. The project team is being guided in these matters by our project partners, Te Roroa Iwi, who continues to provide valuable input on environmental aspects of the proposal, as well as design, engagement, and construction. Te Roroa's direct involvement in the project brings a focus on partnership and tikanga and allows the KVT to provide opportunities for Māori in the local community.

45. To determine the cultural values and significance of the wider project area and evaluate the KVT's potential impact on these values, Te Roroa is preparing a Cultural Impact Assessment (CIA). The CIA will be provided to Council on receipt.

46. Te Roroa holds mana whenua over the subject area. A mandate for Te Roroa's meaningful and ongoing involvement is provided for in both the project contract and the proposed conditions of consent, which require ongoing liaison and consultation with hapū and marae, cultural and environmental monitoring, and accidental discovery response procedures. This application and the proposed conditions have been reviewed by Te Roroa prior to lodgement and the iwi supports the application.

Bridge crossings and structures

47. The proposed KVT route includes five (5) bridge crossings (from north to south):

- Waingarara Stream – referred to as Baker Road Bridge;
- Kaihu River – referred to as the Ahikiwi Bridge;
- Waitakahuruhuru Stream – referred to as the Maitahi Bridge;
- A stream/tributary just north of Babylon Coast road – referred to as the Babylon Bridge; and
- Kaihu River – referred to as the Kaihu River Bridge.

48. The design for these structures has yet to be confirmed, but it is anticipated that the bridges will be single span suspension structures, with foundations located outside the bed and banks of the watercourses they cross.

49. Bridges will be designed in compliance with the permitted activity criteria and standards of the PRPN (C.2.1.8(4)). The design of the bridges will meet the requirements of the New Zealand Cycle Trail Design Guide and will also allow sufficient passage beneath to ensure safe and adequate passage for flood flows.

50. Culverts and/or minor structures will be installed (or extended where existing structures occur) to cross open drains at several locations along the proposed route. All culverts will comply with the permitted activity criteria and standards for culverts in the PRPN (Rule C.2.1.8(3)) and the National Environmental Standard for Freshwater 2020, and include provision for fish passage, where required.

Earthworks

51. The approximate length of the KVT is 42km, approximately 22km of which will comprise a 3m wide off-road formed path within a fenced corridor averaging approximately 4m. The off-road sections will require the topsoil to be scraped back to a maximum depth of approximately 0.3m before aggregate is applied—up to a maximum fill depth of 0.5mm—and compacted.

52. Earthworks will occur over a maximum area of approximately 66,000m^2. The maximum approximate volume of cut (removal of topsoil) will be 19,800m^3 and the maximum approximate volume of fill will be 33,000m^3. Whilst the maximum area and volumes have been calculated by applying the maximum cut and fill depths across the entire maximum area of the earthworks, it is expected that the actual volumes will be much lower due to the existing ground conditions along the former railway embankment, which is largely flat and reasonably well compacted from its previous use as a rail corridor.

53. No earthworks are required where the KVT passes along low volume local roads.

54. For the purposes of construction, the trail earthworks have been separated into discrete sections for staging, as follows:

- **Stage 1:**
  - Dargaville to Parore West Road (Section 1B)
  - Mamaranui Road to Ahikiwi Road (Section 1A)
- **Stage 2:**
  - Kaihu Wood Road to Opouteke Road (Section 2A)
  - Ahikiwi Road to Kaihu (Section 2B)
- **Stage 3:** Aranga Station Road to Donnellys Crossing (Section 3)
- **Stage 4:** Parore West Road to Mamaranui (Section 4)

The corresponding sections are shown on the proposed route plans included at Appendix A.

The order of staging is indicative only and subject to change as a result of design and construction considerations and engagement with landowners. The division of stages and the components within each stage will remain as stipulated in this application and the conditions of consent proposed by the applicant. Any changes to the order of staging will be addressed through the provision of a final Earthworks and Fill Management Plan and Erosion and Sediment Control Plans for each stage, as required in accordance with the proposed conditions of consent.

55. As previously noted, this application seeks earthworks consent for all sections of the trail, with the exception of where the proposed route extends through properties listed below and shown in **Figure 1**:

- Lot 1 DP 528305 (Murare)
- Lot 2 DP 528305 (Windust)
- Lot 1 DP 134571 (Sole)
- Part Lot 5 DP 23704 (Hancocks)
- Lot 1 DP 99864 (Arnesen)

56. Engagement with landowners over the proposed route in this section remains ongoing and a variation to consent or additional consent for earthworks will be sought as necessary once negotiations have been finalised. For completeness, the description of the earthworks required for construction considers the trail as a whole.

57. Discrete excavations will likely be required to construct the bridges along the proposed KVT route. The design for these structures has yet to be confirmed, but it is expected that the extent of earthworks required for their construction will be limited to that required for piling and is not anticipated to exceed approximately 50m^3 of earthworks for all structures combined.

58. The construction of the bridges will be undertaken in two stages, as follows:

- **Stage 1:** Kaihu River Bridge, Ahikiwi Bridge and Baker Road Bridge
- **Stage 2:** Babylon Bridge, Maitahi Bridge and Aranga Station Road Bridge

The locations of the bridges are shown on the proposed route plans included at Appendix A.

59. It is noted that the Kaipara District Plan exempts earthworks undertaken as part of "normal rural practices" within the Rural Zone. This exemption provides for activities such as establishment and maintenance of fences and fencelines, and maintenance of rural tracks, stop-banks and drains. As noted above, the off-road sections of the KVT will be formed within a fenced corridor averaging approximately 4m in width, largely within the Rural Zone. As such, the erection of fences along the corridor can be undertaken as a permitted activity in accordance with this exemption.

60. An Earthworks and Fill Management Plan (EFMP) has been prepared for the proposed earthworks and is attached at Appendix D.

Erosion and sediment control

61. The entire Project site is long and narrow and generally has small contributing catchments. Staging of the Project means that works will progress from commencement to completion in discrete areas before soil in other sections/stages is disturbed.

62. Erosion and sediment control measures will be installed on site during the execution of the construction phase in accordance with Guideline Document 2016/005: "*Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region*" (GD05).

63. The objectives of sediment and erosion control approach to be adopted for the site are to:

- Minimise the extent of open and unstabilised areas to reduce the rate of erosion and sediment generation;
- Provide practical sediment and erosion control measures to reduce the amount of sediment leaving the site; and
- Protect and maintain the passage of flows within flood hazard areas.

64. Generally, the management of sediment laden stormwater discharges from the area of earthworks will involve the following:

- Progressive stabilisation – The earthworks areas will be progressively stabilised with compacted aggregate for the trail surfaces, and topsoil and grass seed on adjacent areas. Erosion and sediment controls will only be removed once the aggregate is compacted and/or grass seed has struck.
- Silt fences – Silt fences will be constructed along the downstream perimeter of open works areas to ensure that any sediment within the area of works is caught prior to leaving the site and does not get washed into nearby waterways or accumulate on adjacent land.
- Timing of works – Ideally, works will occur during periods of dry weather. However, given the programme for the construction of the KVT, it is likely that the majority of earthworks will need to be undertaken outside of the usual earthworks season. Much of the trail is located within the identified flood hazard area; however, in these areas, the trail is located atop the former rail embankment, which sits above the modelled flood levels for both the 10-year and 100-year ARI event, so the earthworks will be largely outside the modelled extent of flooding.

65. The sequence of sediment and erosion control works at the site is proposed as follows:

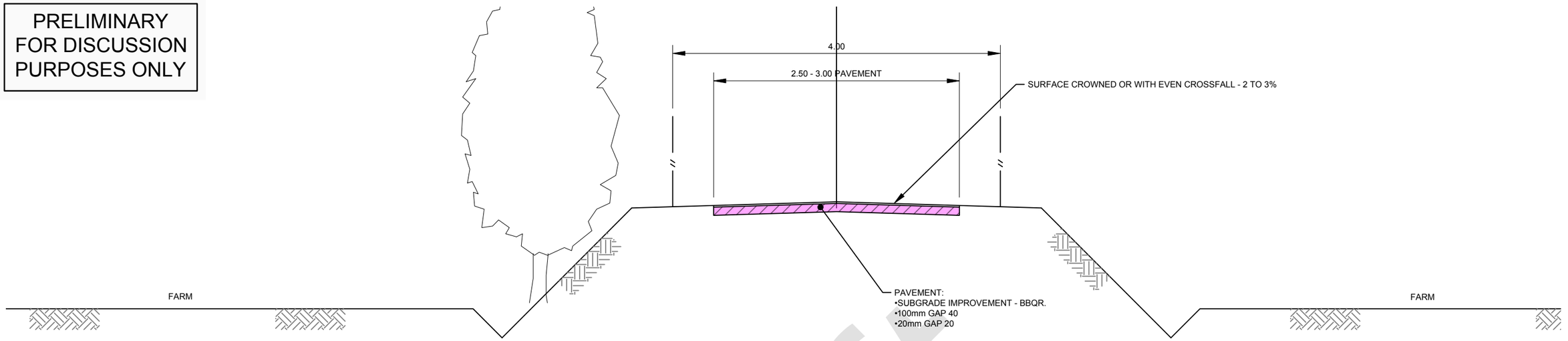
- Install silt fences;
- Initiate earthworks, while maintaining the control measures throughout the construction phase;
- Remove topsoil over areas of work;
- Placement and compaction of aggregate on trail surface;
- Progressive stabilisation of the site; and
- Decommissioning of sediment control measures.

Appendix 4

Typical Sections

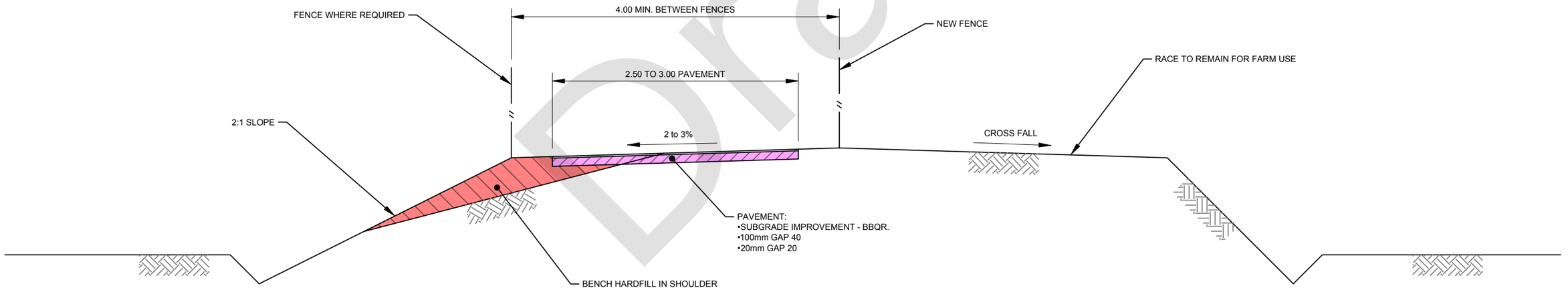
P07/92 Kaihu Valley Railway

PRELIMINARY
FOR DISCUSSION
PURPOSES ONLY



KAIHU VALLEY TRAIL - TYPICAL SECTION 1

ON EXISTING RAIL CORRIDOR
SCALE 1:50 (A3), 1:25 (A1)



KAIHU VALLEY TRAIL - TYPICAL SECTION 2

ON EXISTING RAIL CORRIDOR SHARED WITH FARM RACE
SCALE 1:50 (A3), 1:25 (A1)

0 0.5 1.0 1.5 2.0 2.5m

SCALE 1:50 (A3), 1:25 (A1)

NOTES

1. EXTREME CAUTION SHOULD BE TAKEN DURING EXCAVATIONS.
2. THE CONTRACTOR SHALL CHECK FOR AND BE RESPONSIBLE FOR ALL UNDERGROUND AND/ OR OVERHEAD SERVICES.
3. ALL SETTING OUT TO BE CONFIRMED ON SITE WITH THE ENGINEER PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
4. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH KDC ENVIRONMENTAL ENGINEERING STANDARDS.
5. DO NOT SCALE DRAWING.
6. NOMINAL SCALE IS SHOWN FOR A3 SIZE UNLESS SHOWN OTHERWISE.
7. COORDINATES IN TERMS OF NZTM GEODETIC 2000 DATUM.
8. LEVELS IN TERMS OF MEAN SEA LEVEL ONE TREE POINT DATUM.
9. AERIAL PHOTOGRAPHY AND LAND PARCEL INFORMATION SOURCED FROM LAND INFORMATION NZ (LINZ) UNLESS STATED OTHERWISE.

AMENDMENT	APPRVD	DATE
1 PRELIMINARY		19.04.21

	BY	CHECKED	DATE
DESIGN	SG		
DRAWN	BWP		
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY TRAIL

TYPICAL CROSS SECTIONS

STATUS		LOCAL AUTHORITY REF:			
SCHEME					
SCALE	PLOT DATE	JOB	SHEET	REVISION
SHOWN		2103-TYP	01	1

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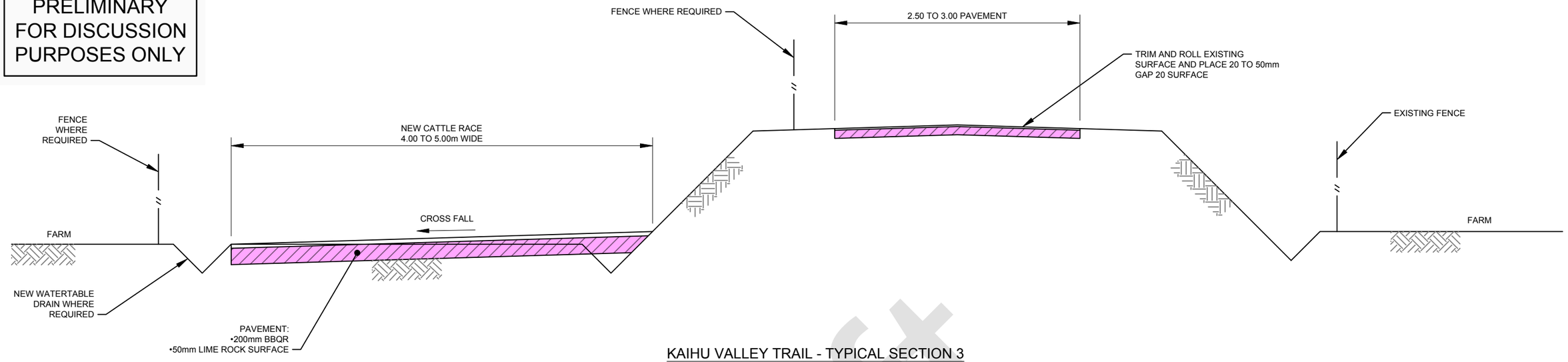
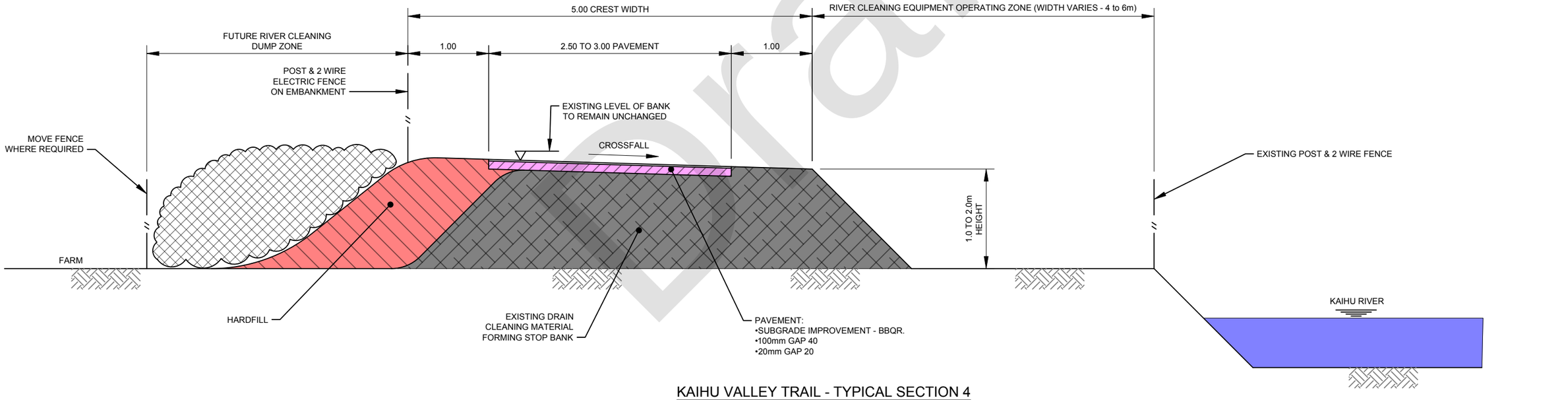
PRELIMINARY
FOR DISCUSSION
PURPOSES ONLY



KAIHU VALLEY TRAIL - TYPICAL SECTION 3

ON EXISTING RAIL CORRIDOR WITH NEW FARM RACE
SCALE 1:50 (A3), 1:25 (A1)



KAIHU VALLEY TRAIL - TYPICAL SECTION 4

AROUND RIVER EDGE
SCALE 1:50 (A3), 1:25 (A1)

0 0.5 1.0 1.5 2.0 2.5m

SCALE 1:50 (A3), 1:25 (A1)

NOTES

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8. LEVELS IN TERMS OF MEAN SEA LEVEL ONE TREE POINT DATUM.
9. AERIAL PHOTOGRAPHY AND LAND PARCEL INFORMATION SOURCED FROM LAND INFORMATION NZ (LINZ) UNLESS STATED OTHERWISE.

AMENDMENT	APPRVD	DATE
1 PRELIMINARY		19.04.21

	BY	CHECKED	DATE
DESIGN	SG		
DRAWN	BWP		
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY TRAIL

TYPICAL CROSS SECTIONS

STATUS	SCALE	PLOT DATE	JOB	SHEET	REVISION
SCHEME	SHOWN		2103-TYP	02	1

LOCAL AUTHORITY REF:

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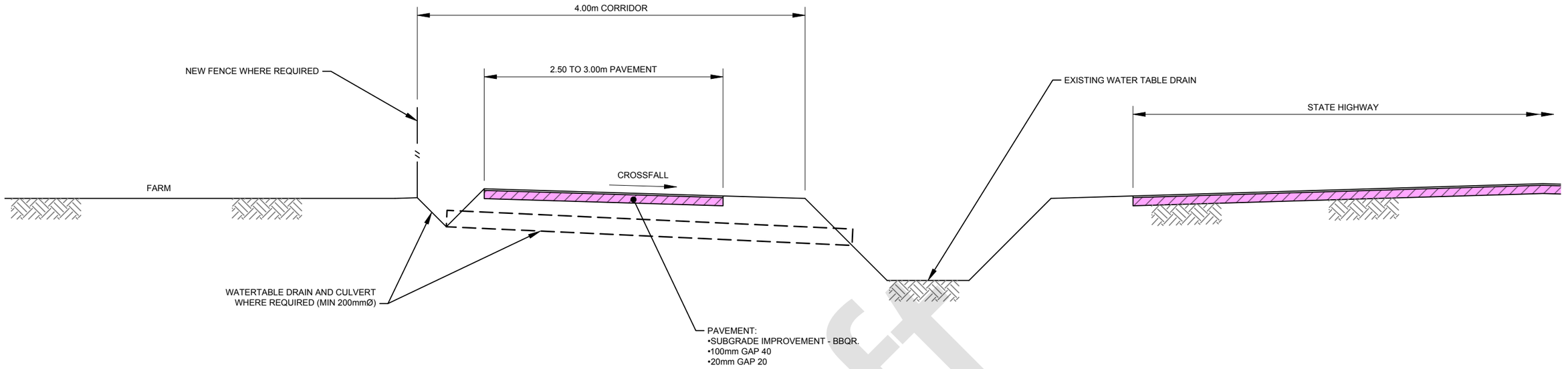

KAIHU VALLEY TRAIL - TYPICAL SECTION 5

ON GENERAL LAND OFF RAIL CORRIDOR
SCALE 1:50 (A3), 1:25 (A1)

PRELIMINARY
FOR DISCUSSION
PURPOSES ONLY

0 0.5 1.0 1.5 2.0 2.5m

SCALE 1:50 (A3), 1:25 (A1)

NOTES

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AMENDMENT	APPRVD	DATE
1 PRELIMINARY		19.04.21

	BY	CHECKED	DATE
DESIGN	SG		
DRAWN	BWP		
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY TRAIL

TYPICAL CROSS SECTIONS

STATUS		LOCAL AUTHORITY REF:		
SCHEME				
SCALE	PLOT DATE	JOB	SHEET	REVISION
SHOWN		2103-TYP	03	1

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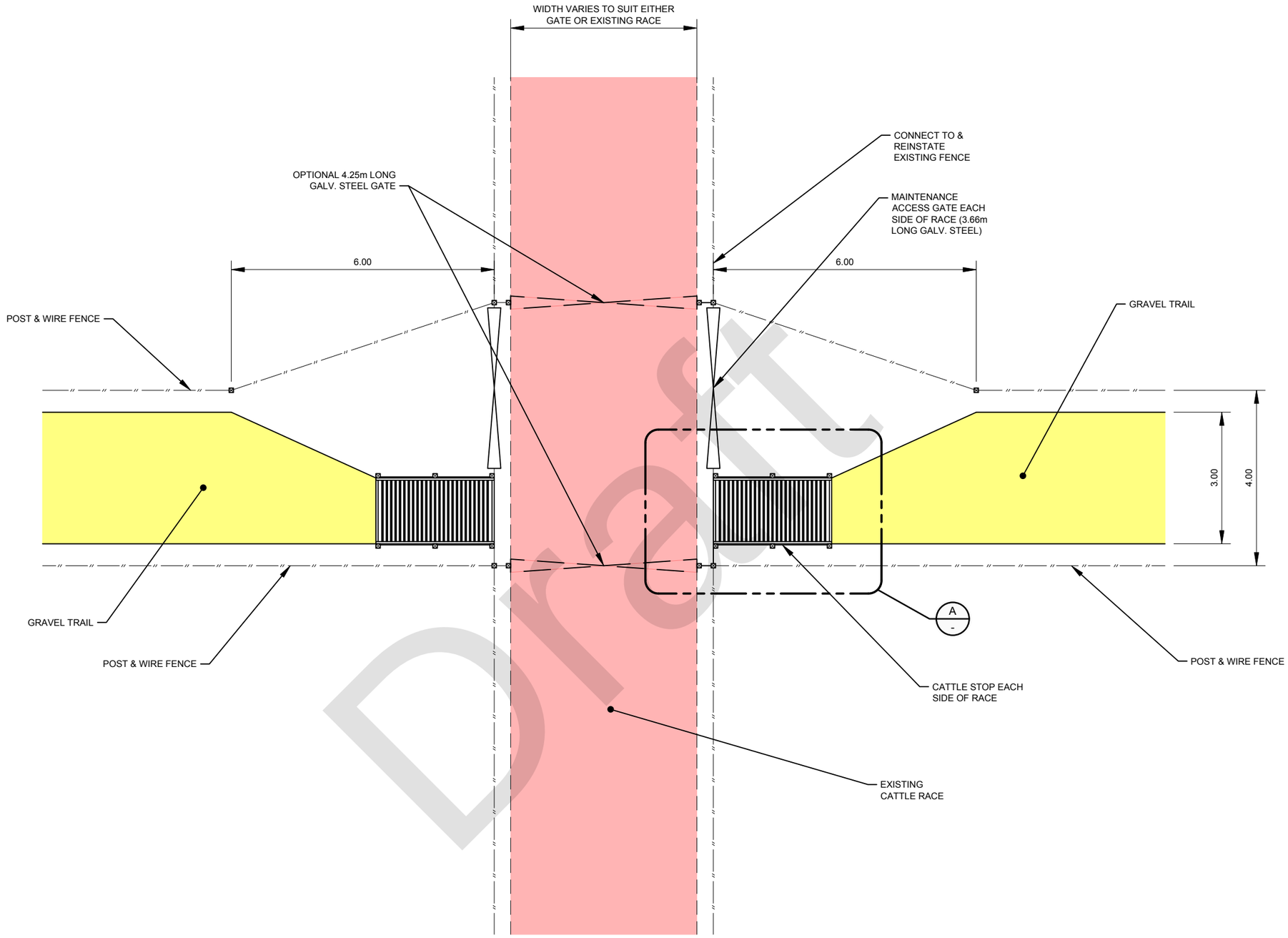
Appendix 5

Farm Race / Cycle Trail Intersection & Cattle Stop Construction

P07/92 Kaihu Valley Railway



PLAN - FARM RACE CYCLE TRAIL INTERSECTION LAYOUT

SCALE 1:100 (A3), 1:50 (A1)

0 1 2 3 4 5m

SCALE 1:100 (A3), 1:50 (A1)

NOTES

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AMENDMENT	APPRVD	DATE
1 PRELIMINARY		19.2.21

	BY	CHECKED	DATE
DESIGN	SG		2.21
DRAWN	BWP		2.21
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT

TITLE KAIHU VALLEY CYCLE TRAIL
FARM RACE / CYCLE TRAIL INTERSECTION

PLAN

STATUS		LOCAL AUTHORITY REF:		
SCHEME				
SCALE	PLOT DATE	JOB	SHEET	REVISION
SHOWN		2103-SCH	01	1

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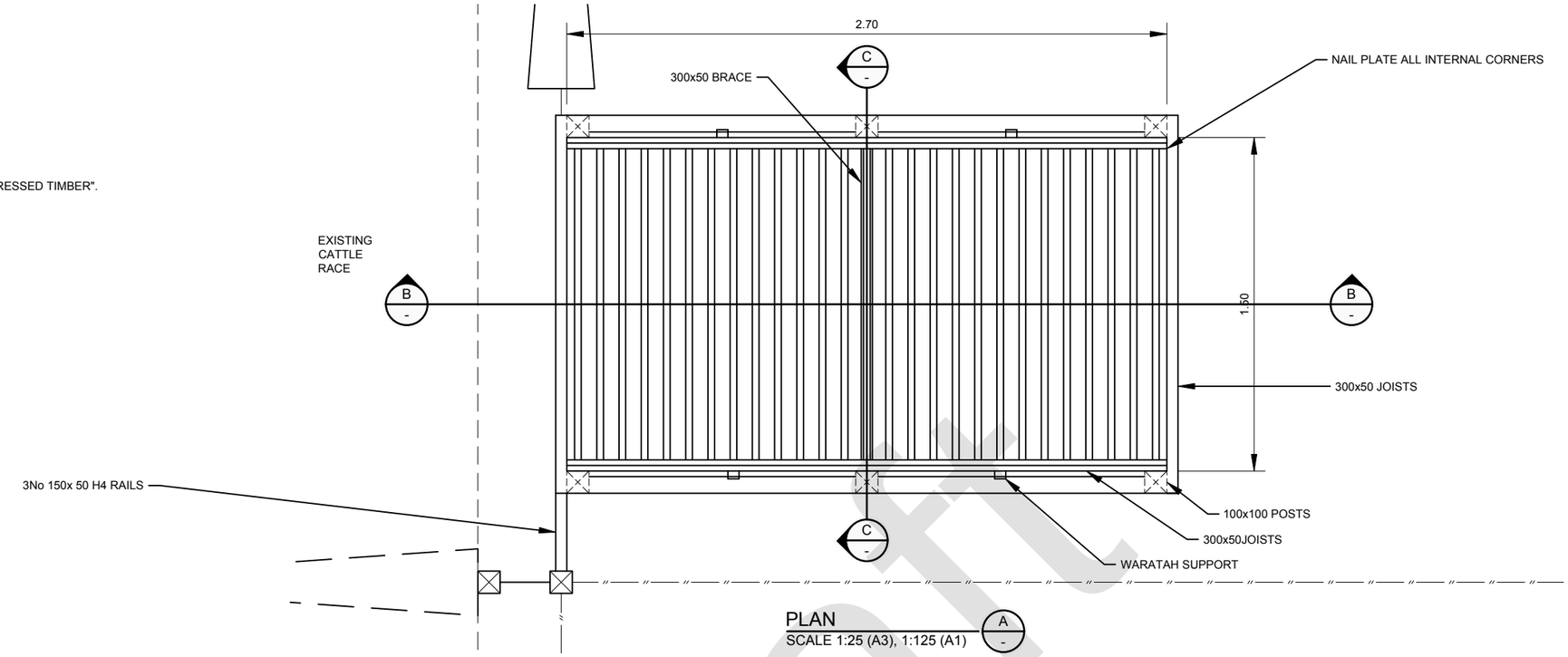
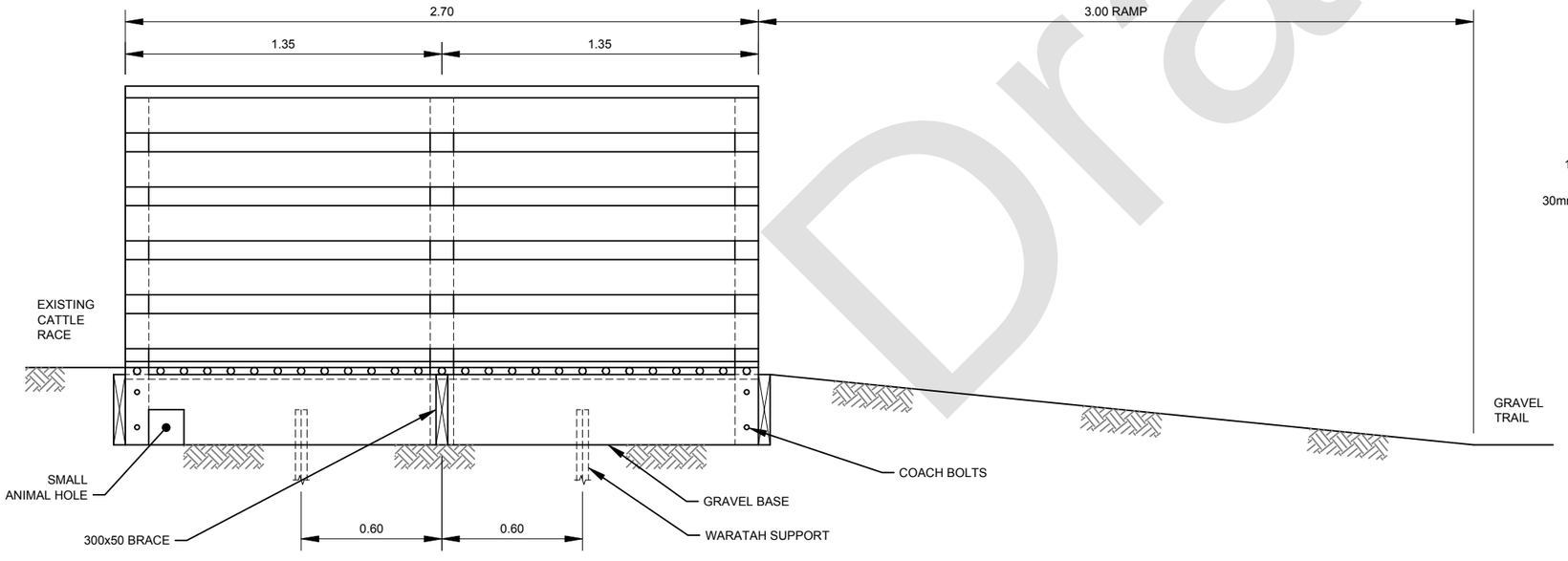
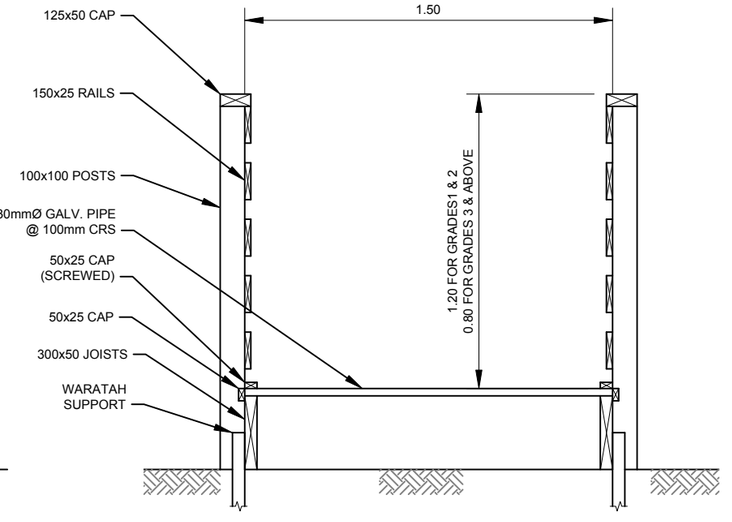
NOTES:
1. ALL TIMBER H4 TREATED.
2. ALL BOLTS TO BVE GALVANISED.
3. POSTS, RAILS AND CAPS TO BE "DRESSED TIMBER".



PLAN
SCALE 1:25 (A3), 1:125 (A1) A -



SECTION
SCALE 1:25 (A3), 1:125 (A1) B -



SECTION
SCALE 1:25 (A3), 1:125 (A1) C -

0 0.25 0.5 0.75 1.0 1.25m

SCALE 1:25 AT ORIGINAL SIZE

NOTES
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AMENDMENT	APPRVD	DATE
1 PRELIMINARY		19.2.21

	BY	CHECKED	DATE
DESIGN	SG		2.21
DRAWN	BWP		2.21
SURVEYED			
APPROVED			

JAS CIVIL Ltd

CLIENT KAIPARA DISTRICT
Kaipara te Oranganui • Two Oceans Two Harbours

TITLE KAIHU VALLEY CYCLE TRAIL
FARM RACE / CYCLE TRAIL INTERSECTION
CATTLE STOP CONSTRUCTION

DETAILS

STATUS		LOCAL AUTHORITY REF:		
SCHEME				
SCALE	PLOT DATE	JOB	SHEET	REVISION
SHOWN		2103-SCH	02	1

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Appendix 6

Draft Farm Races Sections 1 A & 1B

P07/92 Kaihu Valley Railway

Grade a place
20–40mm
GAP 20

width
varies
3–5m

New cattle race
Strip
300– BBQR
100– Lime rock.

Typical Section

cattle track
Manoeuvring
space

entry

cattle crossing

fence

cattle
yards

Fence

New cattle
race
4–5m wide

PLAN 09
SCALE 1:2,000 (A3), 1:1,000 (A1)
0 20 40 60 80 100m
SCALE 1:2000 AT ORIGINAL SIZE

Fill shoulder where required BBQR

Race. 4.5m

Cycleway

Trim existing Build up shoulder 100 mm GAP 40 20 mm GAP 20

Trim topsoil bank where required

Repair existing fences

Fine adj Race surface Depth varies

Bridge others

Fence along race

Isolated race shoulder widening To be confirmed

cattle crossing

cattle crossing 2x gates 2x cattle stops

existing track

fence

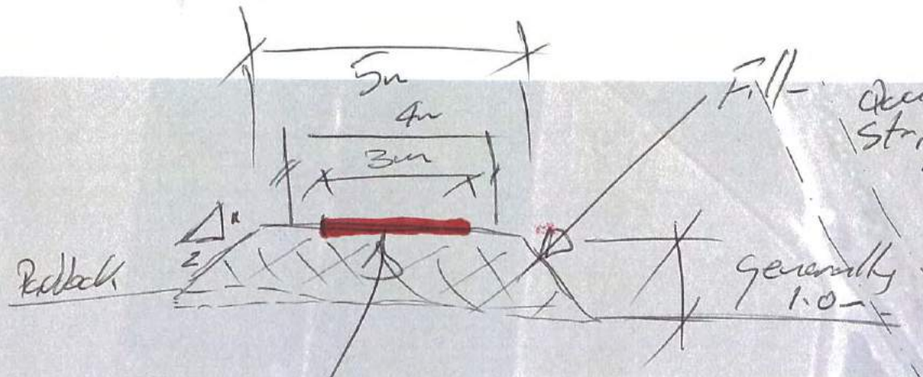
form new embankment across paddock to bridge.

PLAN 10

SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE



No fence along edge of race.

New fence one side new

cattle crossing
2x gates
2x cattle stops

along edge of race

New culvert.

on new alignment
small embankment

trail on new embankment

PLAN 11
SCALE 1:2,000 (A3), 1:1,000 (A1)
0 20 40 60 80 100m
SCALE 1:2000 AT ORIGINAL SIZE

stop at pumps.

WDC Roading Maint.

cattle crossing
2 x gates
2 x cattlestops

PLAN 12
SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kaihu rail trail\dwgs\2103_sch_09-12.dwg

PLAN 13

SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kallu rail trail\dwgs\2103_sch_09-12.dwg

AHIKIWI RD

KAIHU RIVER

Use existing farm access way

existing fence to be moved approximately 2m into cattle race - 4m wide corridor fenced (new) both sides

ADJOINING PLAN 06

MAMARANUI RD

OMAMARI RD EAST

east gate

entry/exit

east gate

cattle stops/gates

STATE HIGHWAY 12

PLAN 05

SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kaihu rail trail\dwgs\2103_sch_05-08.dwg

Trail to transition up into cutting around corner & back onto edge of existing road fence western side. existing race fence to remain.

existing fence moved approx 2m into race

KAIHU RIVER

MAMARANUI RD

ADJOINING PLAN 05

ADJOINING PLAN 07

bridge Conc slab -

Bridge Conc slab.

cattle stops/gates on farm access ways

cattle stops/gates

STATE HIGHWAY 12

PLAN 06

SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kaihu rail trail\dwgs\2103_sch_05-08.dwg

existing fence moved approximately 2m into race - 4m wide corridor (new) fenced both sides

KAIHU RIVER

MAMARANUI RD

ADJOINING PLAN 06

ADJOINING PLAN 08

cattle stops | gates

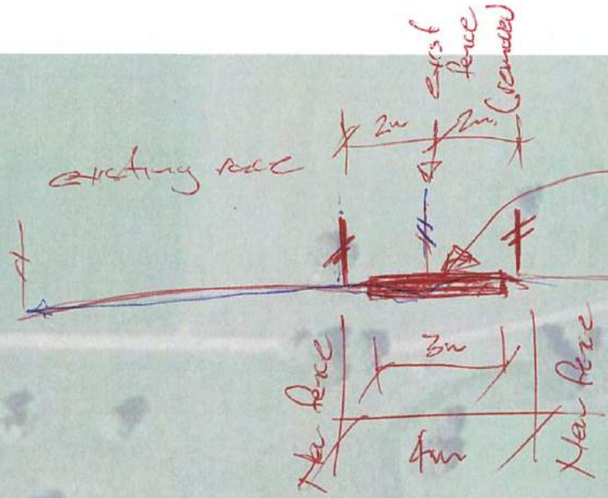
check ??
Allow 4 sw. | drain coils required ??

PLAN 07
SCALE 1:2,000 (A3), 1:1,000 (A1)

0 20 40 60 80 100m

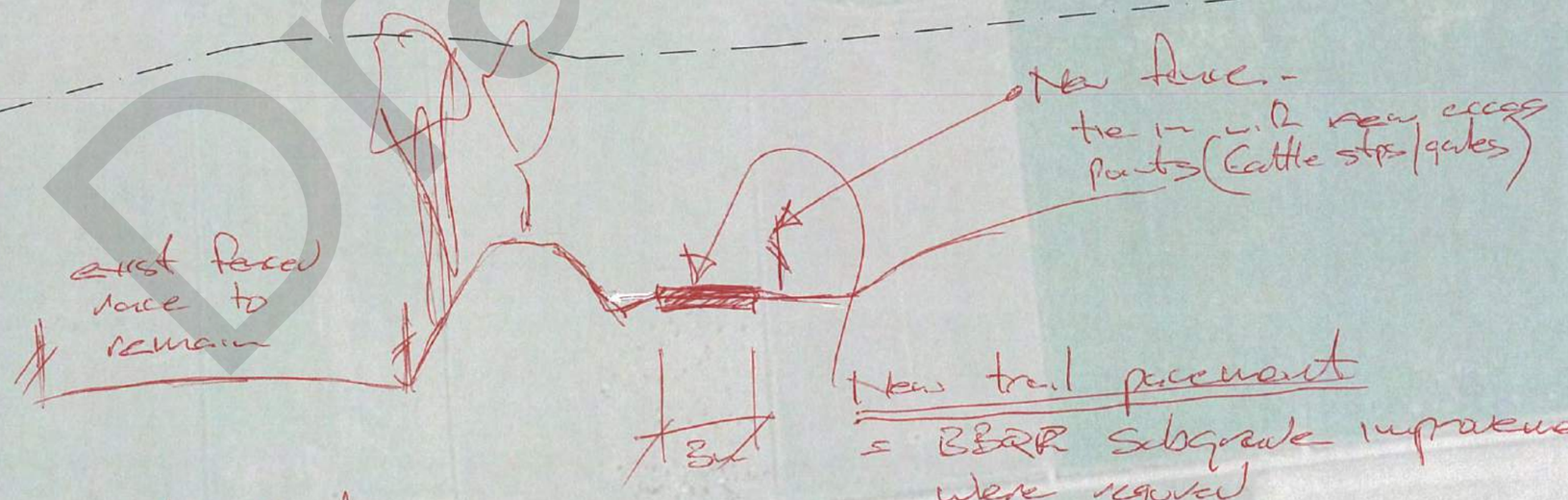
SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kaihu rail trail\dwgs\2103_sch_05-08.dwg



Typical section.

New trail pavement
- BBQR subgrade improvement where required
- 100 mm GAP 40
- 20 -- GAP 20 surface
- 2-3% cross fall towards cattle race
- WT & Sn culverts where required.



Typical Section - on Corner

New trail pavement
- BBQR Subgrade improvement where required
- 100 -- GAP 40
- 20 -- GAP 20
- 2-3% cross fall
- WT & Sn culverts where required

ADJOINING PLAN 05

MAMARANUI RD

entry exit

PLAN 08
SCALE 1:2,000 (A3), 1:1,000 (A1)
0 20 40 60 80 100m
SCALE 1:2000 AT ORIGINAL SIZE

preston-design\users\public\documents\pds design\projects\2103 kaihu rail trail\dwgs\2103_sch_05-08.dwg

Appendix 7

From the Wairoa to Maunganui Bluff

<u>New Zealand Herald</u>

27 September 1887, page 6

P07/92 Kaihu Valley Railway

FROM THE WAIROA TO MAUNGANUI BLUFF.

NEW ZEALAND HERALD, VOLUME XXIV, ISSUE 8064, 27 SEPTEMBER 1887, PAGE 6

FROM THE WAIROA TO MAUNGA-NUI BLUFF.

THE KAIHU VALLEY RAILWAY.

[BY OUR OWN REPORTER.]

THE wealth in kauri of the Northern Wairoa River and the importance of its timber trade have long been known. From an early period in the history of the Kaipara Harbour the Wairoa has had the lion's share in the export of kauri timber and kauri gum from that estuary; and the private townships of Te Kopuru, Aratapu (once known as Bonar's Mill), Maungawhare, and Dargaville have succeeded to the scattered camps and shanties of the early logchoppers. In the process of time the bushes in the vicinity of the river, its tributary streams and driving creeks, were denuded of kauri, and skid roads, slush lubricated, and wooden tramways carried the campaign against the forest farther afield. Such helps had their limits, and the desire to tap the rich store of timber yet more inland gave rise to the conception and present execution of the Kaihu Valley Railway.

The past winter has hindered the advance of the work on the line, but the fine weather of spring will be taken every advantage of, that, with a strong force of hands, renewed headway can be made. Starting from the substantial wharf at Dargaville, and passing through the heart of that township, the line of the railway follows the general course of the Kaihu River, which it crosses, at two miles sixty-two chains, by a strongly-built wooden truss bridge near the flaxmill. The shore piers of the bridge and the adjacent ends of the embankments are protected against floods by terraced tiers of strongly made tea-tree stake fascines well pinned down. The river flat near Dargaville is but little below formation level. Though moist, it can hardly be called swampy for the first mile, but on passing the native village of chief Parore, and cutting through a high spur, a stretch of kahikatea swamp is met with, through which the line is carried upon a high embankment, not yet completed, and for which much of the earth has been obtained by side-casting. Owing to the wet state of the ground, and the snarled and

state of the ground, and the gnarled and intertwisted roots of the trees, coiled together like the snake folds of the Laocoön, the task of making the line has been most unpleasant for the workmen. Shortly before reaching the bridge a flood opening of a hundred feet has been left. As is common in the Wairoa district, the land at the water's edge is rather higher than farther back from the river. This is probably owing to the accumulation of drift wood round the stems of the trees near the stream first, and the deposit of silt among the drift, the whole forming a low, irregular dyke, bound together by the subsequent growth of herbage. Hence, when floods have come and gone again, the water is retained in lagoons and pools back from the river. To prevent this the flood opening has been made, and a channel provided for the escape of the water to the river lower down at a point where the Kaihu, after making a long loop, curves back. The course of the flood water is, in fact, a short cut across the bend; but no danger is thought to exist that this will develop into a cut-off, and form a new and direct channel for the river.

Across the bridge the land is higher and dryer, flax swamp taking the place of kahikatea. The flaxmill and the associated buildings, with the run of the land known as the "flax lease," are occupied by Mr. Trounson, whose residence, placed on the point of a spur that comes down to the Kaihu, has a fine view of the surrounding country, backed up by the serrated Tangihua Range and the long, sloping back and high shoulder of Tutamoe, one of the loftiest of mountains north of Auckland, and 2576 feet in height. The railway just touches the foot of the spur, and passes on through a level country, not much below the level of the line. A rolling tea-tree country lies to the left hand, and flax swamp extends on the right to the river, or to the intervening belt of kahikatea marsh. At four miles thirty chains the road curves to the left to avoid crossing the Kaihu, here sharply bending back. A short bit of small and not very wet kahikatea swamp is passed through, a "billabong" rather than a stream is crossed by a bridge, of which the piles have been driven down forty feet to secure a firm foundation, and then Babylon, "that great city," consisting of a store and sundry seedy-looking shanties, is come to. As Babylon, however,

is the centre of gum camps, mustering a population of over one hundred and fifty gumdiggers, and is the shipping port of the Kaihu for their gum, Babylon is not to be sneezed at. Half a mile beyond Babylon is a high bank, around the point of which the line curves quickly, and then comes to the "long swamp," a mile long, over which it is carried by a high embankment and two bridges, which are really flood openings, forty feet wide each. These are more to admit the passage of water backing up from the Kaihu in floods than to drain the land behind them. Should, however, it be deemed advisable to fit these openings with valves to keep back the waters of the Kaihu, that the lands at the rear, when settled on, may not be burdened with more than their own drainage, the embankments are deemed strong enough to withstand the pressure of the water. From the long swamp onward to Opaheke the country is very favourable to the engineer: the grades are light and the curves easy. Immediately beyond the long swamp, after cutting through a spur, is a curious little piece of bog, too thick to swim in, but not thick enough to walk upon. Its composition is of a black, treacherous sponge, into which a stone disappears with a splash or a puff. A sixteen-foot plank has been thrust down into it without touching bottom, and this horrible morass may yet engulf and suffocate more than one hapless traveller.

At a little beyond this, at the Taita Church, native school, and settlement, the character of the country changes, and becomes more favourable for the intending settler. Hitherto the country passed through has preserved one appearance. From the flaxmill bridge to the Taita Church bridge across the Mititai stream, the line has kept to the right bank of the Kaihu, that is, to the left-hand side going up the valley. Low rolling ridges and spurs, sometimes clayey, but more often, superficially at least, of a grey sandy nature, come down to or nearly to the river, forming side valleys, which at bottom were level expanses of swamp overgrown with flax, raupo, rushes, and kiekie. These valleys run back almost to the coast, narrowing as they go back, but widening as they approach and become verged in the swampy recesses of the main Kaihu Valley. All the creeks crossed by the line drain these swamps; in most cases they run but a little into the swamp mass. The Government road from Maungawhare to Hokianga runs up the valley on the same side of the river as the railway, but keeps well back from the river, now sidling up a spur or running across a saddle back in it, searching for an easy grade more than for a straight course, and crossing the swamps or causeways, fascined at the top, and set out with white-painted pilot posts on either hand to guide the wayfarer when the road is under water. The high lands, covered with tea-tree chaparral, with regard to gum may be considered rich; they are not too attractive to the farmer. The swamps, when drained or where drainable, are valuable for pasture and root crops, not for cereals, and the fund of dark decomposed vegetable matter can be drawn upon for long without exhaustion. But the advisability of taking up swamp land is a question greatly of levels, and throughout the Wairoa district, where swamp prevails, and more especially in the neighbourhood of tidal influence, the lowlands will have to be treated Dutch fashion with dyke and windmill. The natural slopes are not enough in many places to rid the land of surplus water till late in the season, and the experience gained in the Bedford Level and the lower Mississippi is needed in the Lower Wairoa.

Beyond the Taita Church, higher up the valley, the land is dryer and more level. The natural growth for about three miles or more is medium to heavyish tea-tree bush, interspersed with cabbage trees. A considerable extent of ground has been cleared by the natives on both sides of the road; the cultivation grounds are well fenced with pig-proof posts and rails, and where turned up and in crop show a black, freely-working soil. Some of the enclosures have been allowed to take a Maori fallow—i.e., have gone back to flax bush and milk weed. Outside the enclosures there was much pasture, well established, and with a good bite of feed in it.

Without saying that the line can be laid as a surface line, there is not much to do in the way of earthwork on this section of the railway. Hence, though nothing has been done here more than clearing the bush away, there is really very little to do. A slight diversion has been made at eleven miles from Dargaville. The original survey led across a by-wash from the Kaihu, which took off a deal of water from the main channel in freshets. The Maoris had dammed the inlet of this by-wash, but the dam had given way, and had not been replaced. The fresh survey avoids crossing this by-wash twice, and involves a slight increase of gradient, though this is counterbalanced by a slight straightening of the course. The Government road, which here runs alongside the line, will no doubt follow the railway in this diversion.

Maropiu store and native settlement is met with at twelve miles, making the division between Mr. Tinne's land and the native-owned block of Opaneke, also marking the transition from the tea-tree bush to the heavy bush. To this point the line will be open and trains running by March next. The native clearings and cultivations here occupy both banks of the Kaihu River at intervals. The banks show a good depth of brown, friable loam, resting upon a stratum of boulders and large water-worn shingle. This soil bears an excellent name for fertility; the natural growth upon it is pretty heavy, consisting of large puriri, taraire, kahikatea, and nikau, with large kauri on the spurs and ranges at the back. Across the river is the new hotel belonging to Mr. Nathan, a partner in the Maropiu store. As this is the only institution of the

kind between Dargaville and Hokianga, it furnishes a great convenience to the traveller. There are seventeen rooms in all; two sittingrooms, one reservable for ladies, a commodious diningroom, and eight private bedrooms. The place is kept very clean; the cuisine is capital, and the liquors of good quality. The licensee and manager is Mr. J. S. Snowden, late of the Manganui Bluff Hotel, and his knowledge of the country will prove of great use to the visitors. The river if fordable in ordinary circumstances, but there is a help-yourself ferry in time of high water. A boat is moored by a traversing loop to a wire strained across the river; a rope leads from either bank to the boat, and by this the passenger becomes his own ferryman.

The clearing for the line terminates at Maropiu; the survey is completed, and the contracts let as far as the native settlement of Opaneke, distant in all 16½ miles from Dargaville from the railway. The final survey of three and a-half miles will be finished before Christmas, and will take the line half a mile into Government land, up the valley of the Waima, famous for its kauri. Two miles from Maropiu the railway will cross the Kaihu at the "broad ford" by a truss bridge of two 40ft spans and two 14ft shore spans; three miles farther on the river is crossed once more by a bridge, presumably of three 40ft spans, and then what is called the "gorge" portion of the valley is entered. The ranges come right up to the river's brink, and are covered with kauri; the formation becomes basaltic, and possibly a small tunnel of five or six chains length may be necessary, unless the survey will admit of its avoidance. Just beyond this, at the junction of the Wairoa and Maungatu Rivers (which form the Kaihu), is the line between the Crown land and the native block of Opaneke. The company have reserved for them by the Government the right of selection in this Crown land to an amount specified in their charter, and on the completion of a certain portion of the line can begin their selection. The ultimate terminus of the railway is fixed at twenty miles from Dargaville. At this terminal station a township will be established.

This land is at present only traversed by the Maungawhare-Hokianga Road, that, after running along the valley as far as Opaneke, mounts the low ranges to the west. After

mounts the fern ranges to the west. Rising some seven miles of high, open country; the great Maunganui Bluff swamp is reached. The great morass, over a thousand acres in area, lies at an elevation of 500 feet above sea level, and, like nearly all the country between the North Head of Kaipara Harbour and the Maunganui Bluff, drains eastward, the outlet stream being crossed a little before arriving at the now closed Maunganui Bluff Hotel. The swamp lies in the fork of the Government road and a track which runs off to the left along a ridge three-quarters of a mile before coming to the stream; it is of an irregular elliptic shape, and ends north-westward at a wall of heavy bush lying in a valley between the great bush-clad bluff itself and the spur up which the Government road runs. The stream running out of the swamp flows into the Waima at a mile and a-half, falling in that space 150 feet, and all that hinders the swamp from being converted into firm land is a ledge of rock near the road. This cut through the one-time swamp will be a fine farm for somebody, and a grand racecourse could be laid out upon it. Once the dam of rock was got rid of, the rest would be matter of detail simply; contour drains could catch the rainfall of the enclosing slopes, while the swamp drains would form another system. Otherwise a great arterial drain running along the middle of the swamp would gather the drainage of the hills with its own. But this is not the only way by which the swamp could be drained. The beforementioned track, leading to the left, runs along a ridge that, at a point opposite the hotel, is but two hundred yards wide and twenty feet above the margin of the swamp. Westward is a deep gully running into the Waihaupai River. From this gully a drive put through the ridge for less than ten chains would furnish another outlet for the drainage of the swamp. Abundance of kauri lies on the ranges to the east, and three miles beyond the hotel, along the Government road, rumour tells of a level tableland of over ten thousand acres of taraire bush, 1300 feet above the sea. All this country is to be served by the Kaihu Valley Railway.

The railway, as a railway, should work very well, for the general course of the line is straight, there are no great heights to be overcome, and the curves are neither numerous nor cruel. The governing is one in 58½,

and of this there are only a length of twelve chains; there is one curve of eight chains radius, one of nine, the majority are of fifteen to forty chains radius, and there are no reverse curves. Where the curves exist the line is level or of very slight inclination, while there are many stretches of level upon which an engine-driver can make time. The formation level is kept eighteen inches above ascertained flood level. Packs of drift timber in the Kaihu River have dammed up flood waters to an unusual height at times, but it will become the duty of the line tenders to remove these, and with them their attendant dangers. Mr. Morton Williams, chief engineer of the line, is confident that all danger from floods is removed by his arrangements: for fourteen or fifteen chains embankments have been raised to guard against the effects of the packs in the river, but of embankments raised to the full height determined on, no one has been submerged. The bridges are stoutly made, considering the weight they are to bear. Where washing of the embankments by flood water is looked for, fascine work will be resorted to in the first instance, and when the rocky gorge is entered, the stone obtained in excavation will be used in making aprons of loose rubble (pierres perdues), or "rip-rap," as our American cousins call it, in replacement of the fascines. Where the banks are sandy the rubble work will need a further backing of small shingle to prevent the washing through of the sand. Barrow-pits have been largely resorted to to find the stuff for the embankments, as the cuttings actually needed are both shallow and short. The line will be laid with flat-footed, single-head rails of Bessemer steel, 53lbs to the yard, fastened down with fang spikes. The rail joints will be simultaneous, made upon the sleeper, flanged fishplates being used. The gauge is 3ft 6in. The vessel with the first instalment of the iron is due at Dargaville the middle of this month (September), and the laying of the rails will commence on her arrival. Fifteen thousand sleepers are already on the ground. The line will be ballasted with river shingle, taken from an old bed of the Kaihu, and with the advent of the four-wheeled "pony" engines, ballast trains will be run. The standard type of engine will be a six-coupled, twenty-ton engine of short wheel base, and the remainder of the rolling stock will be of the kind usual

on our railways. The cost of the whole line, equipment included, will be kept much within the primary estimate, and by this time next year, if not before, the line will be regularly open for traffic throughout.

Appendix 8

New Zealand Archaeological Association
Site Record Form

P07/92 Kaihu Valley Railway

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

ARCHSITE archaeological site recording scheme

Site Record Form

NZAA SITE NUMBER: P07/92

SITE TYPE: Transport/ communication

SITE NAME(s): Kaihu Valley Railway

DATE RECORDED:

SITE COORDINATES (NZTM) Easting: 1666015 **Northing:** 6037195 **Source:** On Screen

IMPERIAL SITE NUMBER: **METRIC SITE NUMBER:** P07/92

Finding aids to the location of the site

Northern Kaipara. The Kaihu Valley Railway runs up the Kaihu River Valley from Dargaville to Donnellys Crossing

Brief description

Railway bench

Recorded features

Bridge, Building, Railway, Tank

Other sites associated with this site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD HISTORY	NZAA SITE NUMBER: P07/92

Site description

Updated 31/05/2021 (Field visit), submitted by michaeltaylor , visited 27/05/2021 by Birch, Dawn; Joseph, Laurie; Kronqvist
Grid reference (E1666015 / N6037195)

The grid reference is the approximate mid-point of the railway formation between Dargaville and Donnellys Crossing.

Description
The Kaihu Railway formation runs from Dargaville to Donnellys Crossing, in Northern Kaipara. Most of the line and its stations were constructed and in use before 1900.

In 2021 most of the original railway formation, consisting of a raised earth embankment for much of its route, remains relatively intact. The stations, the original bridges and other associated structures have all gone. Most bridge heads remain as do the culverts and concrete water tank foundations.

History
In 1882 The Kaihu Valley Railway Company was contracted to build the railway from near to the Wairoa River up the Kaihu River Valley for about 31.4 km (19.5 miles) to the kauri forests at the head of the valley.

By 1888 a total of 27.36 km (17 miles) of track had been laid to a point just north of Maropiu and the company had purchased two locomotives. By this time the company was mortgaged to the Government (Fordyce 1998:63 & 76).

Financial problems led to a Commission of Inquiry being held in 1890 and the Public Works Department took possession of the railway on 27 May 1890 (AJHR 1890 H6: 1-26).

The extension of the railway from Opanake to Kaihu was completed on the 11 November 1895 by the Public Works Department (Hansen & Neil 1992: 56).

A further short extension of the line from Kaihu to the booms on the Kaihu River was completed and handed over to the Railway Department for use on 21 October 1896 (AJHR 1897 D-1 iii). The timber booms and skids had been constructed for the transfer of logs from the river to the railway (AJHR 1896 D-1 viii).

The Kaihu Valley Railway Extension Act 1895 authorised the construction of an extension of the railway from Opanake to Waima (later Whatoro) but this was not completed until 1 June 1914 (AJHR 1895 D-1 viii).

Work recommenced after World War I and the final extension of the line opened to Donnellys Crossing on 1 April 1923.

Initially the railway was mainly used to transport kauri logs and timber and continued to carry freight and passengers until it closed in 1959.

Initially the railway was called the Kaihu Valley Railway, it was later known as the Kaihu Section, the Dargaville Section and finally the Donnellys Crossing Branch.

There were 15 stations on the line (see attached table).

Kaipara District Council is planning to use the rail formation for a walking and cycling trail.

References
Fordyce, S. 1998 Longwater: Historical Aspects of the Northern Wairoa, The Charford Press, New Plymouth.
Hansen, H. J & F. J Neil 1992 Tracks in the North, Private Publication.

The path of the railway is shown on NZMS maps: N18 Waipoua 1944, 1967; N19 Mangakahia 1943, 1969; N23 Dargaville 1943, 1964.

See additional information & photographs.

Condition of the site

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

Updated 31/05/2021 (Field visit), submitted by michaeltaylor , visited 27/05/2021 by Birch, Dawn; Joseph, Laurie; Kronqvist

The raised earth rail formation remains in reasonable condition. There are some visible remains of most structures associated with the railway including the stations and bridges.
It is planned to develop the rail formation as a walking & cycling trail

Statement of condition

Updated: 03/06/2021 - Good – Majority of visible features are intact, but some minor loss of definition and/or damage

Current land use:

Updated: 03/06/2021 - Grazing, Reserve/ recreation, Services

Threats:

Updated: 03/06/2021 - Stock trampling, Farming practices, Erosion, Road/ track formation or maintenance, Services/ utilities, Visitor impacts/ vandalism

NEW ZEALAND ARCHAEOLOGICAL ASSOCIATION

SITE RECORD INVENTORY	NZAA SITE NUMBER: P07/92

Supporting documentation held in ArchSite

P07/92

Stations on the Kaihu Valley Railway

Station Name	Distance from Dargaville	Date Opened
Parore (ex-Flax Mill)	2 km	2/1889
Babylon	5 km	2/1889
Rotu	8 km	2/1889
Maitahi	11 km	2/1889
Taita	12km	2/1889
Mamaranui (ex-Taita)	14km	2/1889
Dairy Flat	15km	2/1889
Maropiu	17km	2/1889
Ahikiwi	19km	2/1889
Opanake	22km	2/1889
Kaihu	23km	2/1889
Kaihu Booms		2/1889
Whatoro	27km	1/06/1914
Aranga	32km	22/12/1922
Donnellys Crossing	36km	1/04/1923

Information up-loaded by Michael Taylor, Archaeology North Ltd., 3 June 2021.

P07/92

Looking north at route of former railway embankment from just north of where the Opanake Station was located. It is between Waikaraka Marae & Kaihu. It is currently utilised as a farm track.
Image taken by T. Kronqvist, 3 May 2021.

Looking north at a bridgehead of a former railway bridge & the railway embankment. Mamaranui Station once stood in the mid-distance. The road signs visible in the distance mark where Waihue Road meets SH12. In the far distance is the Tutamoe Range.
Image taken by T. Kronqvist, 21 May 2021.

Information up-loaded by Michael Taylor, Archaeology North Ltd., 2 June 2021.

P07/92

Looking nor-nor-west at the northern end of the former Maitahi Station, showing the railway embankment between the fence and figure, where it is wider & then narrows.
Image taken by T. Kronqvist, 21 May 2021.

Looking north along the former railway route from a former bridgehead, located approximately 150 metres north from Maitahi Road. SH12 is to the east of this image.
Image taken by T. Kronqvist, 7 May 2021.

Information up-loaded by Michael Taylor, Archaeology North Ltd., 2 June 2021.

P07/92

The site of Parore (Flaxmill) Station) close to Parore West Road, Dargaville. Looking north-west showing terracing & the wider cutting for the railway siding.
Image taken by T. Kronqvist, 25 May 2021.

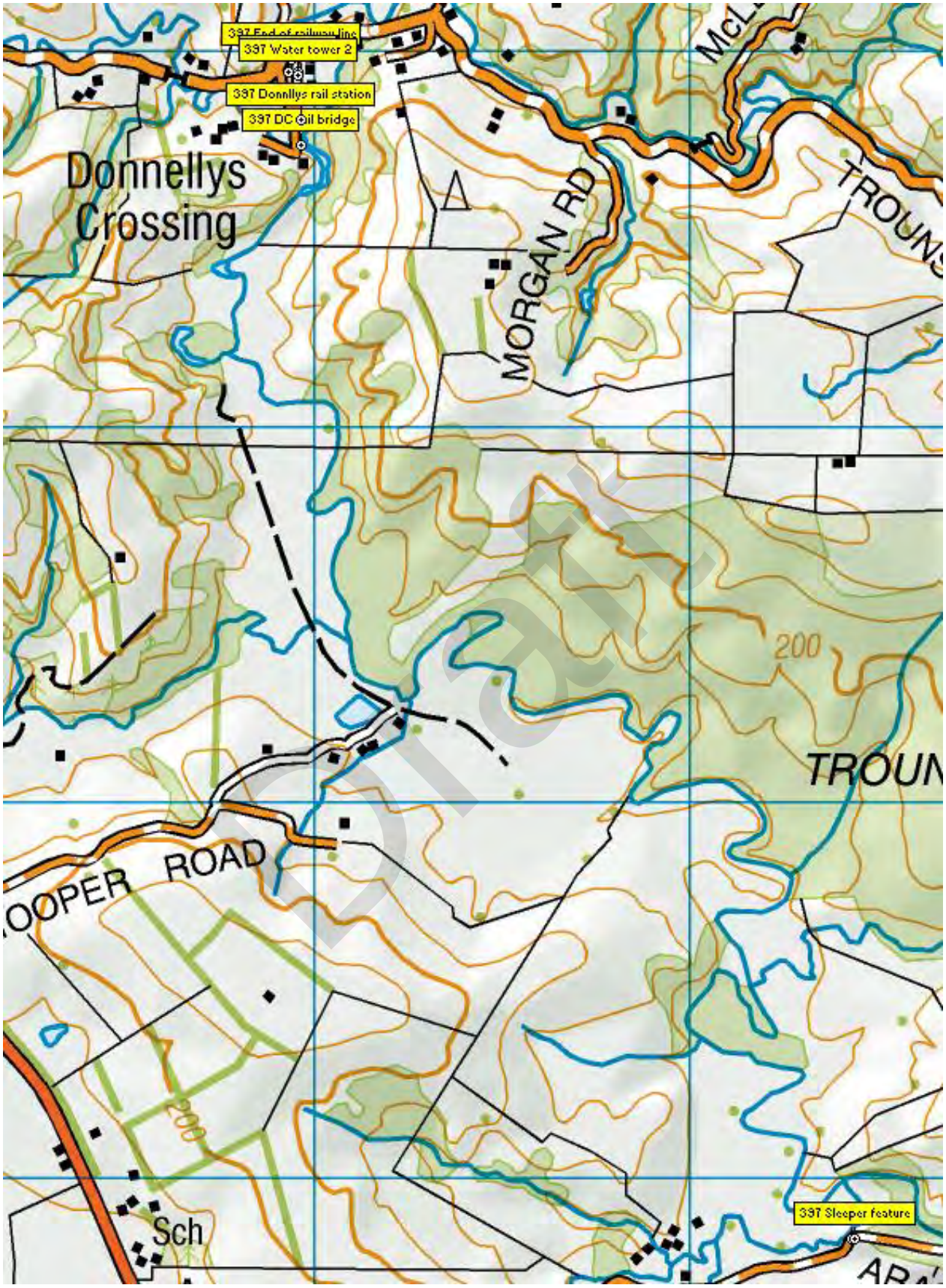
Looking south (towards Dargaville) along the railway embankment from near to the Kaihu River where the railway once crossed the river (located to the north behind the photographer).
Image taken by T. Kronqvist, 7 May 2021.

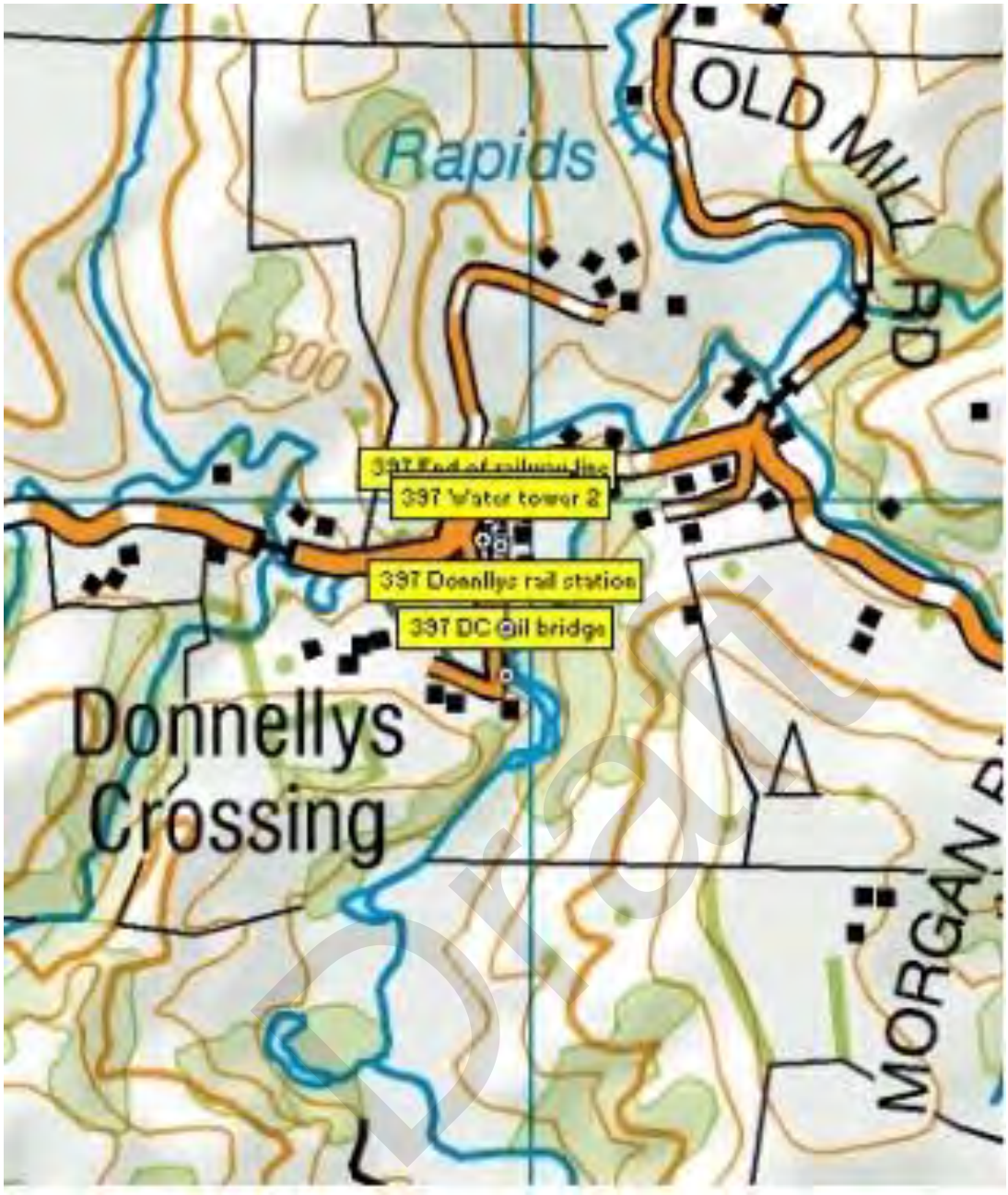
Information up-loaded by Michael Taylor, Archaeology North Ltd., 2 June 2021.

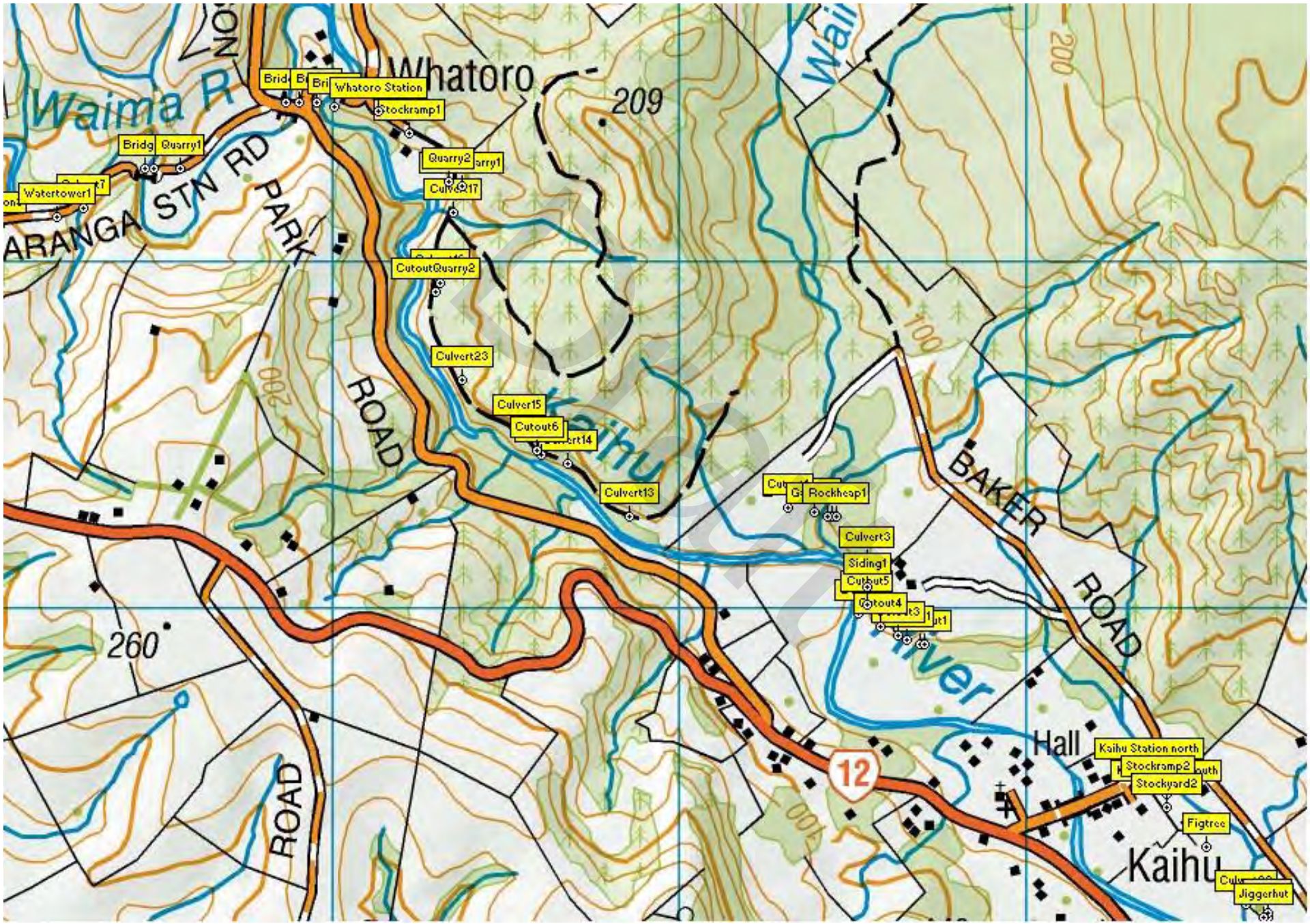
Appendix 9

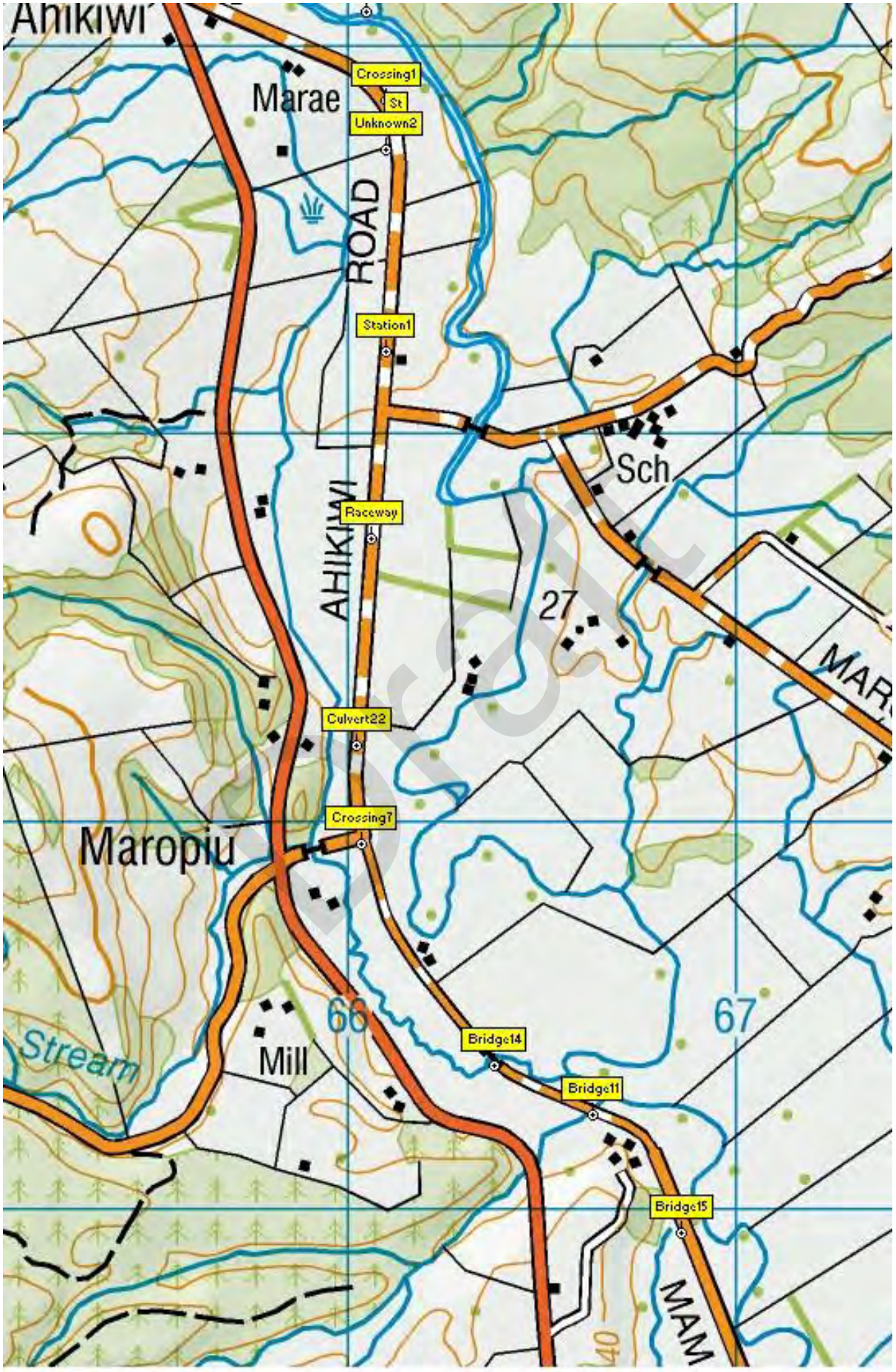
Draft Field Records Showing Locations of Features & Sites

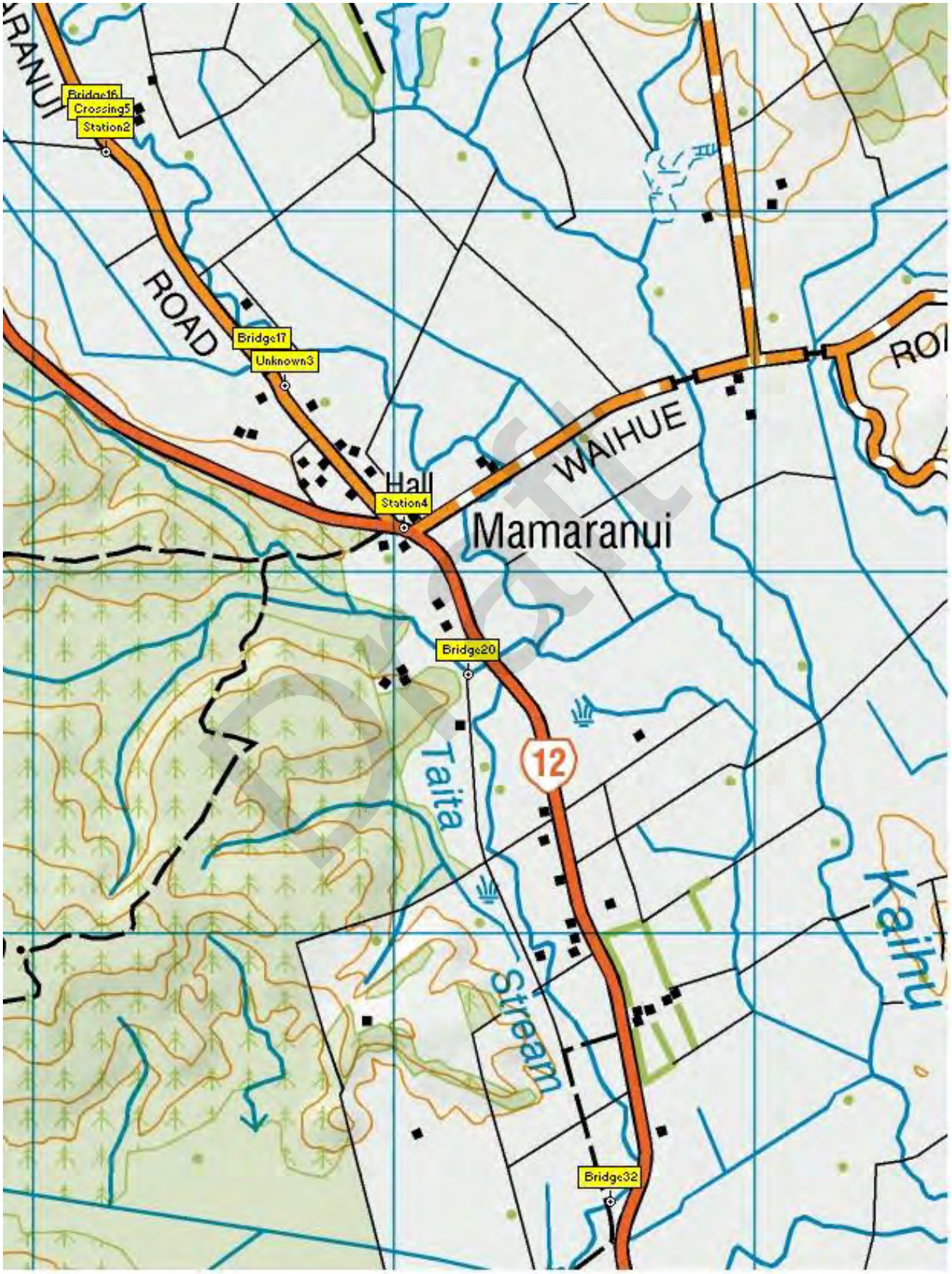
P07/92 Kaihu Valley Railway

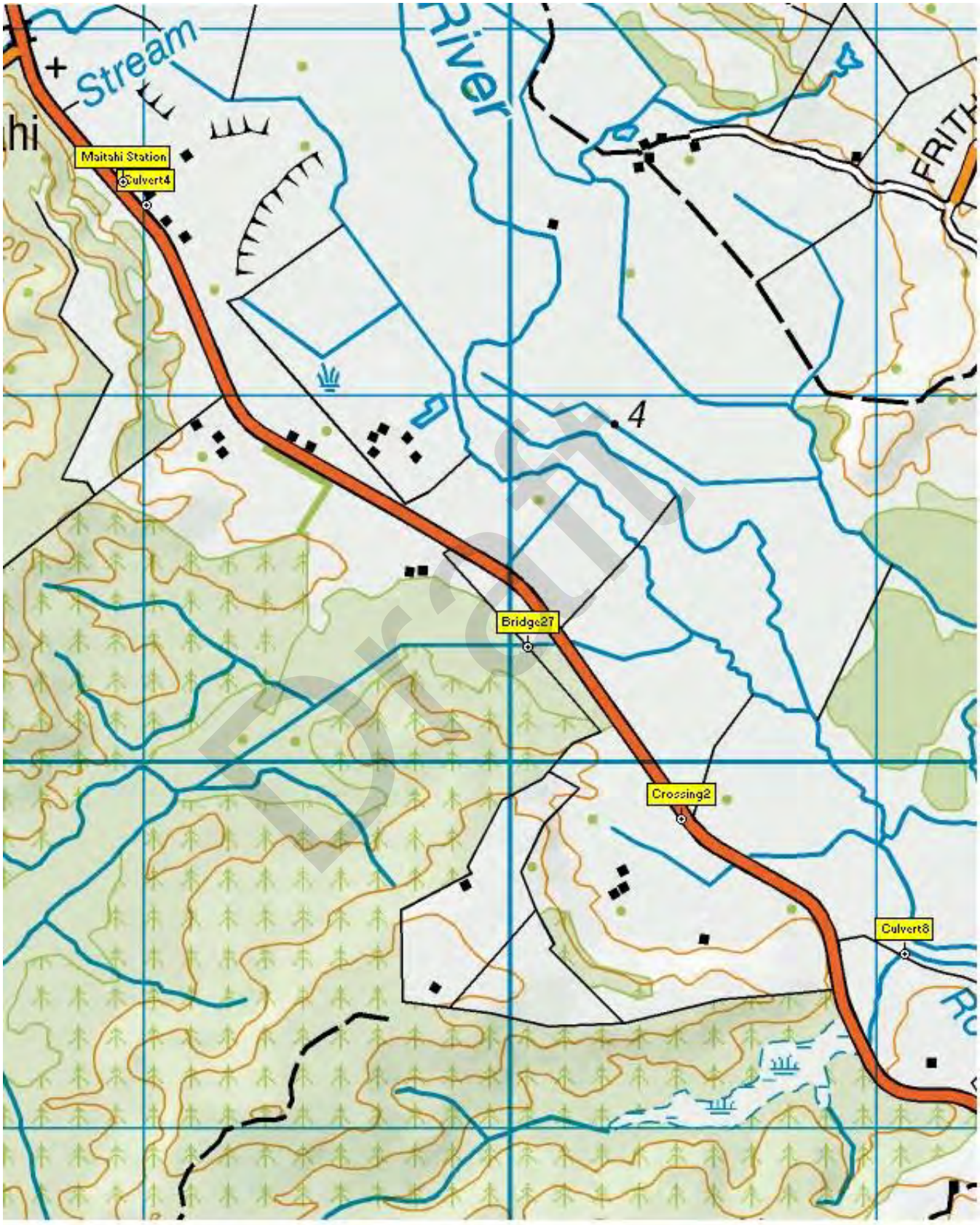

337 Water tower 2
337 Donnllys rail station
337 DC oil bridge
Donnellys Crossing
MORGAN RD
200
ROAD
200
Sch
337 Sleeper feature

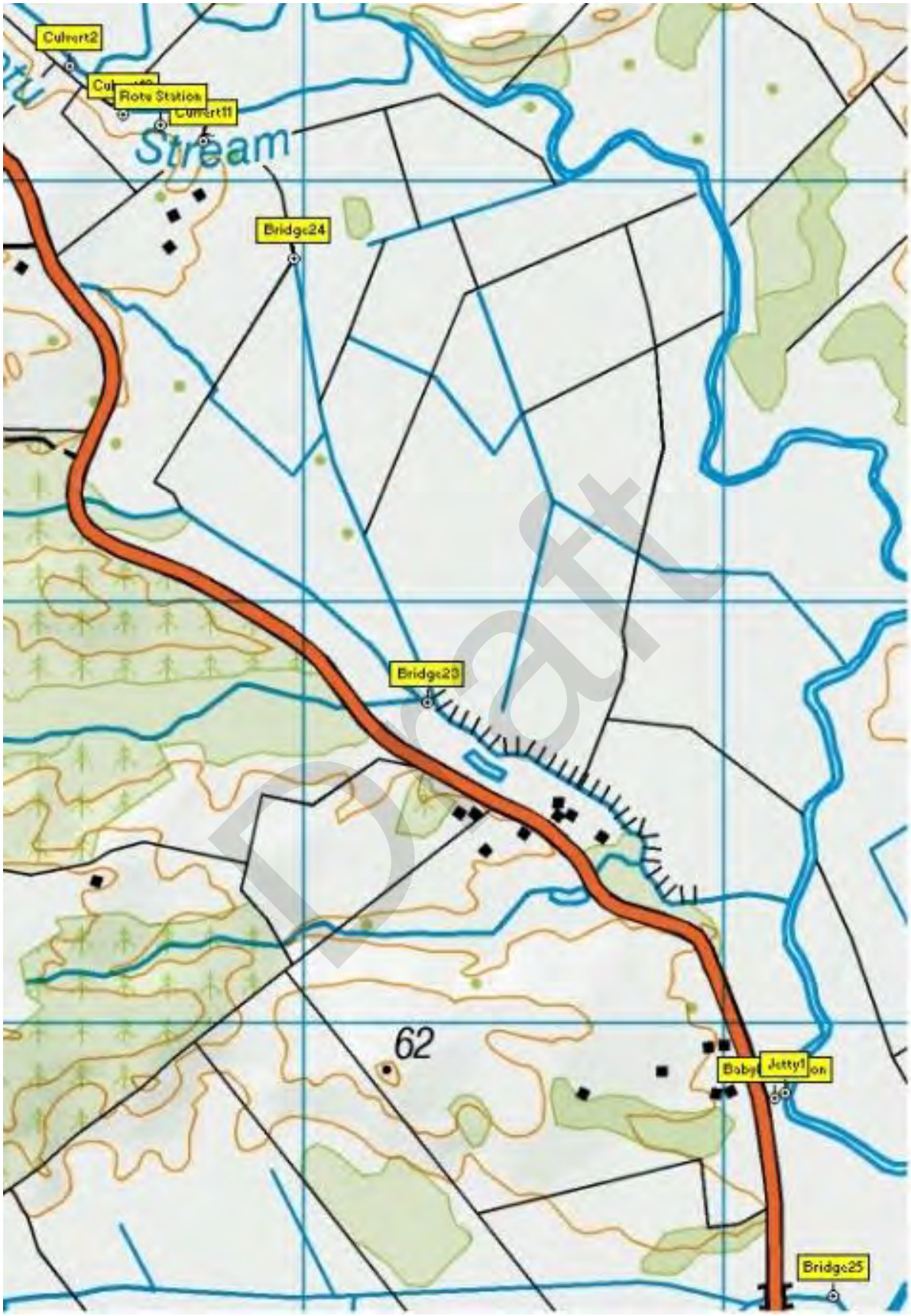

Rapids
OLD MILL RD
200
337 Water tower 2
337 Donellys rail station
337 DC rail bridge
Donnellys
Crossing
MORGAN

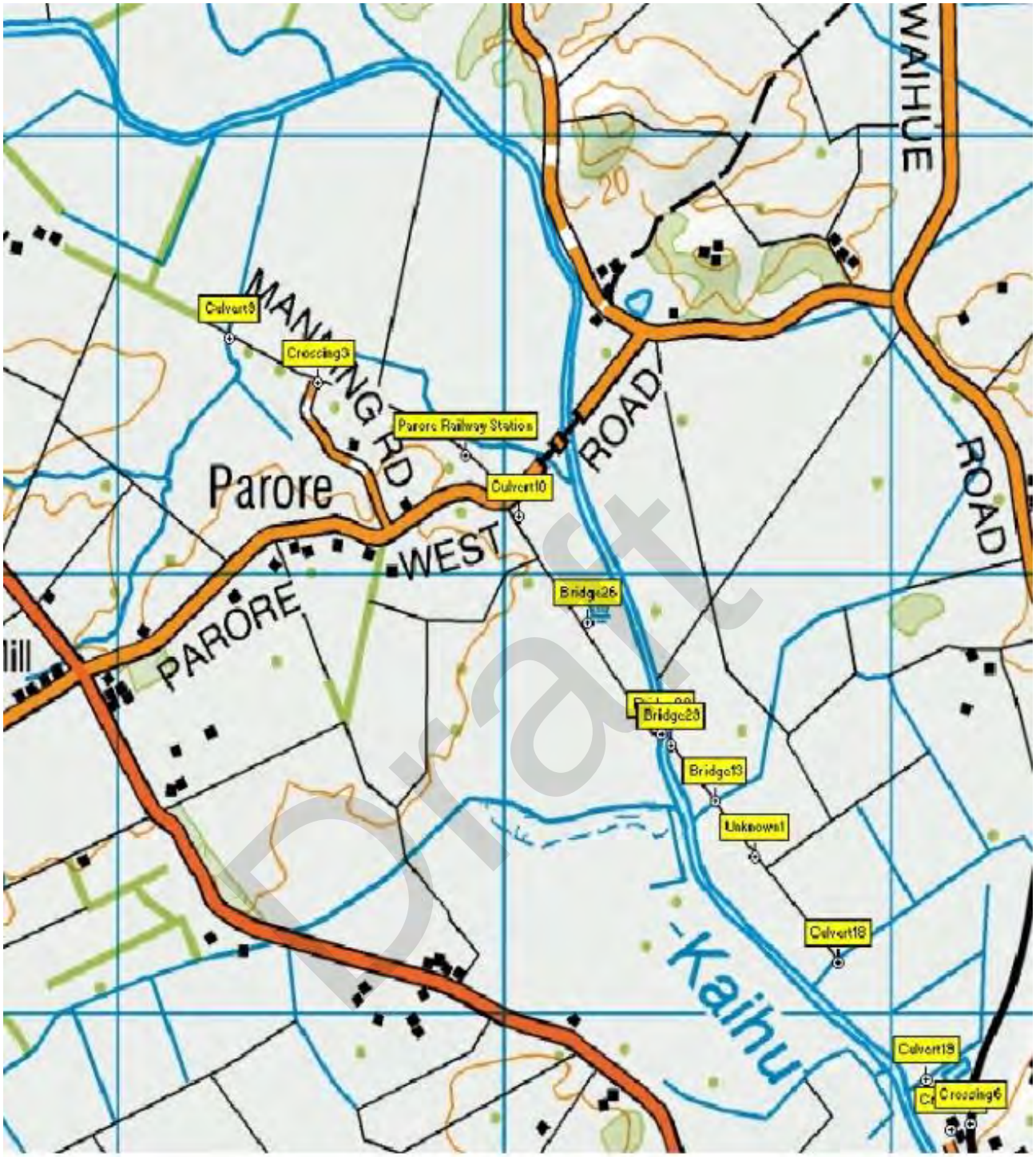

Whatoro
Waima R
Whatoro Station
Stockramp1
Quarry1
Quarry2
Watertower1
ARANGA STN RD
PARK ROAD
CutoutQuarry2
Culvert23
Culver15
Cutout6
Culvert13
Kaihu River
Rockheap1
Culvert3
Siding1
Cutout5
Cutout4
BAKER ROAD
ROAD
209
200
100
260
12
Hall
Kaihu Station north
Stockramp2
Stockyard2
Figtree
Kaihu
Jiggerhut


Ahikiwi
Marae
Crossing1
St
Unknown2
ROAD
Station1
AHIKIWI
Raceway
Sch
27
Culvert22
Crossing7
Maropiu
66
67
Stream
Mill
Bridge14
Bridge11
Bridge15
MAM
40


Bridge16
Crossing5
Station2
ROAD
Bridge17
Unknown3
WAIHUE
Hall
Station4
Mamaranui
Bridge20
12
Taita
Stream
Kaihu
Bridge32


Stream
River
Maitahi Station
Culvert4
Bridge27
Crossing2
Culvert8
4


Culvert2
Rote Station
Culvert11
Stream
Bridge24
Bridge23
62
Jetty1
Bridge25


WAIHUE
ROAD
MANNING RD
Culvert9
Crossing3
Parore Railway Station
Culvert10
Parore
WEST
PARORE
ROAD
Bridge26
Bridge23
Bridge13
Unknown1
Culvert18
Kaihu
Culvert19
Crossing6