RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir
Registrar-General
of Land

Identifier **1108868**

Land Registration District **North Auckland**

Date Issued 12 April 2024

Prior References

NA109/82 NA45/66

Estate Fee Simple

Area 18.3796 hectares more or less

Legal Description Lot 2 Deposited Plan 586331 and Part Allotment 172 Parish of Kawakawa

Registered Owners

Gray Andrew Phillips

Interests

Subject to a right of way over part Allotment 172 Parish of Kawakawa marked B on Plan 80633 created by Transfer 775349.1 - 25.9.1980 at 12.12 pm

D574559.1 Gazette Notice declaring the adjoining State Highway No.11 to be a limited access road - 25.1.2001 at 12.09 pm

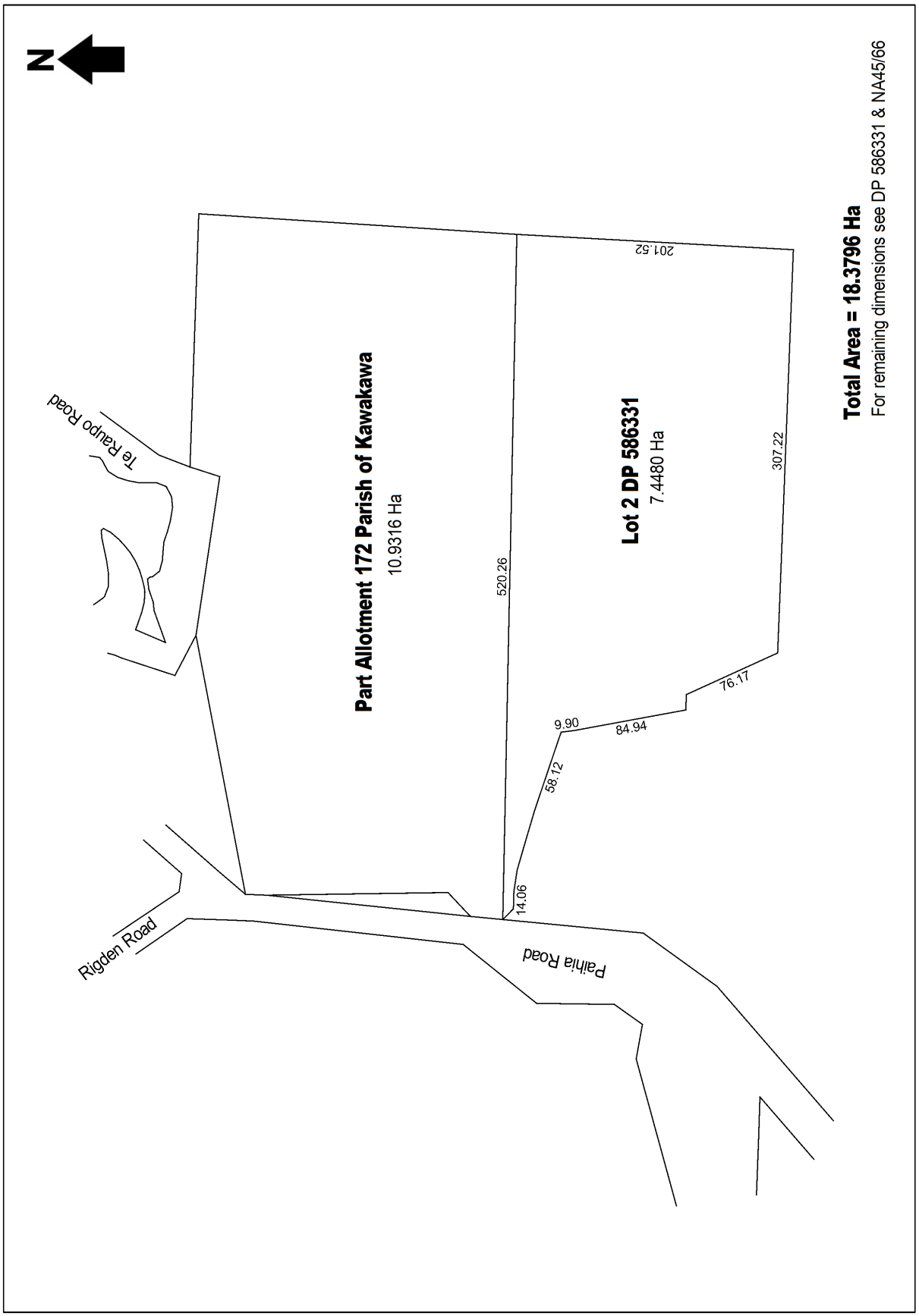
D574902.1 Notice pursuant to Section 91 Transit New Zealand Act 1989 - 25.1.2001 at 3.31 pm (affects Lot 2 DP 586331)

D574903.1 Notice pursuant to Section 91 Transit New Zealand Act 1989 - 25.1.2001 at 3.31 pm (Affects part Allotment 172 Parish of Kawakawa)

Subject to Section 241(2) Resource Management Act 1991 (affects DP 586331)

Appurtenant to Lot 2 DP 586311 herein is a right of way created by Easement Instrument 12837411.4 - 12.4.2024 at 4:29 pm

The easements created by Easement Instrument 12837411.4 are subject to Section 243 (a) Resource Management Act 1991


N
Total Area = 18.3796 Ha
For remaining dimensions see DP 586331 & NA45/66
Part Allotment 172 Parish of Kawakawa
10.9316 Ha
Lot 2 DP 586331
7.4480 Ha
201.52
307.22
520.26
76.17
84.94
9.90
58.12
14.06
Te Raupo Road
Rigden Road
Palmia Road

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Guaranteed Search Copy issued under Section 60 of the Land Transfer Act 2017

R.W. Muir
Registrar-General
of Land

Identifier **NA1656/3**

Land Registration District **North Auckland**

Date Issued 15 June 1959

Prior References
NA45/67

Estate Fee Simple

Area 6424 square metres more or less

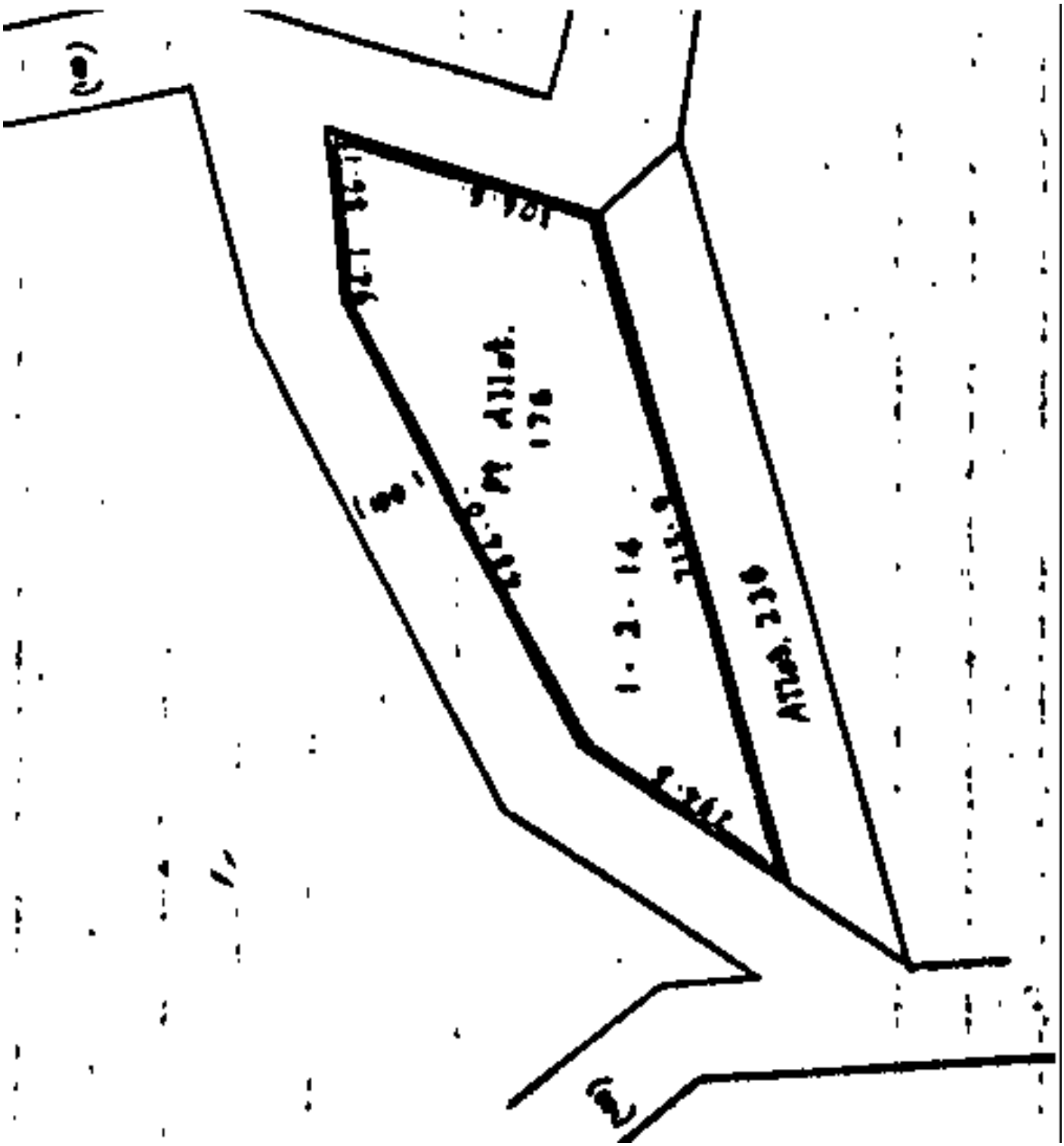
Legal Description Part Allotment 176 Parish of Kawakawa

Registered Owners
Gray Andrew Phillips

Interests

D574559.1 Gazette Notice (NZ Gazette No. 46 page 1021) declaring the entire length of State Highway No. 11 Far North District commencing at the intersection with State Highway No. 1 at Kawakawa and proceeding in a northerly direction to the southern boundary of Pahia township to be a Limited Access Road - 25.1.2001 at 12.09 pm

D574908.1 Notice pursuant to Section 91 Transit New Zealand Act 1989 - 25.1.2001 at 3.31 pm



Assessment of Environmental Effects

Te Raupo Road Bridge Replacement

17 June 2024

Letica Environmental Planning Ltd

Assessment Of Environmental Effects: Te Raupo Road Bridge Replacement

Project no:	LEP027
Project Name:	Te Raupo Road Bridge Replacement
Revision:	1
Date:	17 June 2024
Client name:	Far North District Council
Prepared by:	Martell Letica

Letica Environmental Planning Limited
PO Box 3153
Whangārei 0142

Document history and status

Rev	Date	Description	By	Review	Approved
1	5 June 2024	Client review and approval to lodge	Martell Letica	Simone Tongatule	13 June 2024

Distribution of copies

Rev	Date issued	Issued to	Comments
1	14 June 2024	Northland Regional Council	Lodged

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Abbreviations

Abbreviation	Term
AEE	Assessment of Environmental Effects
BOIVR / BOIVRT	Bay of Islands Vintage Railway / Bay of Islands Vintage Railway Trust
CEMP	Construction Environmental Management Plan
CTMP	Construction Traffic Management Plan
C-Trail / C-Trail Trust	Pou Herenga Tai Twin Coast Cycle Trail / Pou Herenga Tai Twin Coast Cycle Trail Trust
ESCMP	Erosion Sediment Control Management Plan
GPS 2021-31	Government Policy Statement on Land Transport 2021-2031
LGA	Local Government Act 2002
LTP	Long Term Plan 2021-2031 / Long Term Plan 2024-27
NESAQ	Resource Management (National Environmental Standards for Air Quality) Regulations 2004
NESCS	Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011
NESDW	Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007
NESFW	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
NESTF	Resource Management (National Environmental Standards for Telecommunication Facilities) Regulations 2016
NH-EMP	Ngāti Hine Iwi Environmental Management Plan 2008
NPSFM	National Policy Statement for Freshwater Management 2020
NPSIB	National Policy Statement for Indigenous Biodiversity 2023
NRC	Northland Regional Council
NTA	Northland Transport Alliance
NWCSA	Northland Walking and Cycling Strategy August 2018
NZAA	New Zealand Archaeological Association
PRPN	Proposed Regional Plan for Northland February 2024
RLTP	Northland Regional Land Transport Plan 2021-2027
RMA	Resource Management Act 1991
RPS	Regional Policy Statement for Northland 2016
SH11	State Highway 11

1 Introduction

The Far North District Council (the Applicant) proposes to upgrade the existing one-lane Te Raupo Road bridge which crosses the Whangae River at or about grid coordinate NZTM 1699346E 6089023N.

Te Raupo Road is located off State Highway 11 (SH11) between Kawakawa and Ōpua, near the intersection with Ridgen Road as shown generally in Figure 1-1 below. It is a metalled paper road which is mostly privately owned and maintained. The total length of the legal road is approximately 1700 metres (m) with a further 300 m of road on private property (Brown Family Trust).

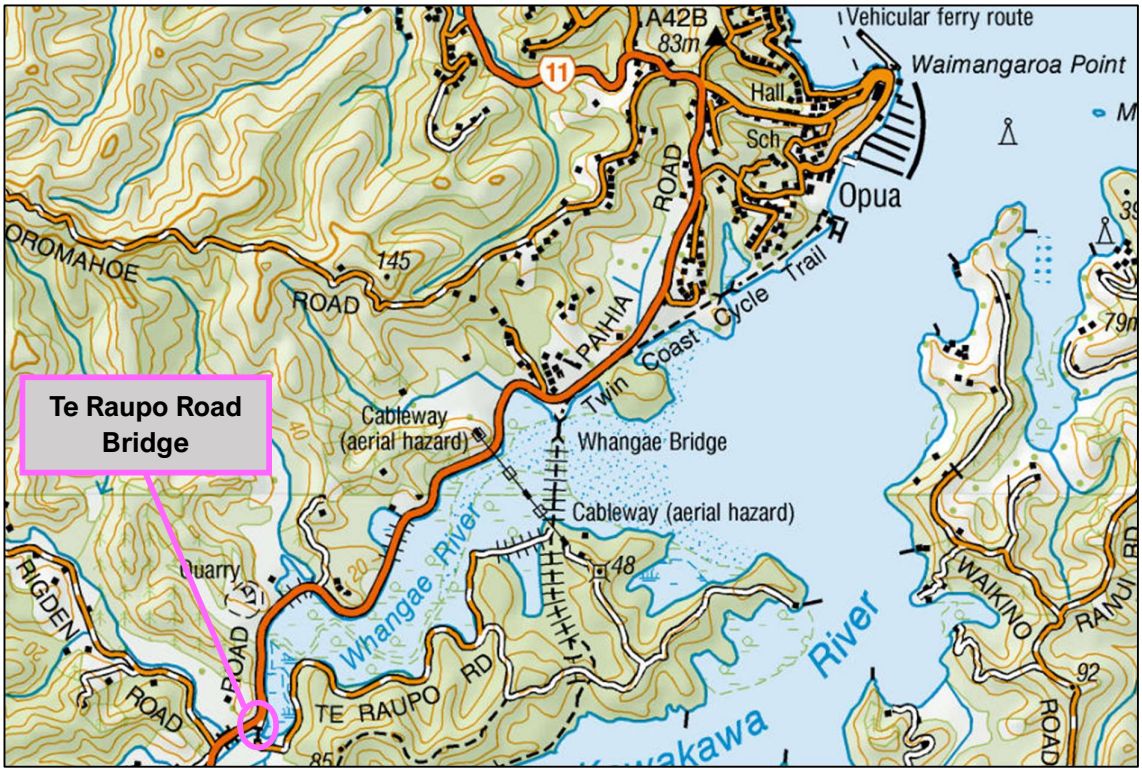

Figure 1-1: Site of Te Raupo Road bridge replacement (the Project).

Te Raupo Road services around seven properties and the Applicant has, in the past, taken access by agreement along the whole length of the Road for the construction of parts of the Pou Herenga Tai Twin Coast Cycle Trail (C-Trail)

The bridge upgrade involves replacing the existing wood construction bridge which was constructed by the Brown Family Trust with a new one-lane concrete beam construction single span bridge. The replacement bridge will allow heavier weight class vehicles to utilise Te Raupo Road as a weight restriction of 1800kg per axle was imposed in 2017 due to structural integrity issues, limiting the use of the bridge to vehicles no larger than an SUV. This has implications to the health and safety of residents of Te Raupo Road and for alternative access to the Bay of Islands Vintage Railway and the Taumarere to Ōpua extent of the PC-Trail.

The replacement of the current one-lane Te Raupo Road bridge requires resource consents from both the Far North District Council (FNDC) and Northland Regional Council (NRC) for;

- Land Use Consent for earthworks and vegetation clearance in a Natural Inland Wetland and Significant Wetland from NRC;
- Water and Discharge Permits to divert and discharge construction stormwater from NRC;
- Coastal Permit to place a bridge over the foreshore and to occupy that space from NRC; and
- Land Use Consents to clear indigenous vegetation and upgrade a road from FNDC.

Section 4 of this report contains further detail on the resource consent requirements while Appendix C contains in-depth analysis of resource consent requirements and associated permitted activities or other relevant rules of a plan or national environmental standard.

Overall, the Proposal has been assessed as a Non-complying activity. The consenting authorities may grant or decline consent, and if deciding to grant consent, can impose conditions they consider are reasonably necessary.

1.1.1 Purpose of Report

The Applicant seeks new resource consents (see Table 4-1) from NRC and FNDC to replace the current one-lane Te Raupo Road bridge with a new one-lane bridge as indicated in the Civil and Structural Drawing Suite for Project No. 21 328 by Haigh Workman Civil and Structural Engineers Ltd, dated 14 February 2024 (HW DWG) attached at Appendix A.

This report has been prepared for the Applicant's proposal by Letica Environmental Planning Limited in accordance with Section 88 and Schedule 4 of the Resource Management Act 1991 (RMA). Prescribed application forms preface this Report.

All matters required to be addressed under the RMA are contained in this Assessment of Environmental Effects (AEE), which includes:

- a description of the activity:
- a description of the site at which the activity is to occur:
- the full name and address of each owner or occupier of the site:
- a description of any other activities that are part of the proposal to which the application relates:
- a description of any other resource consents required for the proposal to which the application relates:
- an assessment of the activity against the matters set out in Part 2:
- an assessment of the activity against any relevant provisions of a document referred to in Section 104(1)(b).
- the information required by clause 6 of Schedule 4 of the RMA:
- addresses the matters specified in clause 7 of Schedule 4 of the RMA:
- includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

The following are documents referred to in Section 104(1)(b) RMA which are considered relevant to these resource consent applications;

- New Zealand Coastal Policy Statement 2010 (NZCPS);
- National Policy Statement for Freshwater Management 2020 (Revised December 2022) (NPSFM 2020);
- National Policy Statement for Indigenous Biodiversity 2023 (NPSIB);

- Resource Management (National Environmental Standards for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NESCS);
- Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (NESFM);
- Resource Management (National Environmental Standards for Air Quality) Regulations 2004 (NESAQ).
- Regional Policy Statement for Northland 2016 (RPS);
- Proposed Regional Plan for Northland Appeals (February 2024) (PRPN);
- Far North District Plan 2009 (FNDP); and
- Proposed Far North District Plan 2022 (pFNDP).

Regard has also been had to the following documents as other matters pursuant to Section 104(1)(c) RMA;

- Northland Walking and Cycling Strategy August 2018 (NWCS);
- Long Term Plan 2021-2031 (LTP).
- Ngāti Hine Iwi Environmental Management Plan 2022 (NH-EMP); and

While regard has been had to the above Iwi Management Plan, Ngāti Hine, Te Kapotai, Ngāti Manu, and Te Roroa who are all represented on the C-Trail Trust are recognised as mana whenua.

2 Description of the Receiving Environment

2.1 General

Te Raupo Road is located off of State Highway 11 between Kawakawa and Ōpua, near the intersection with Ridgen Road. It is a metalled road with a one-way bridge crossing known to the Application as bridge T49 constructed by the Brown Family Trust. The Road services a total of seven users:

- Three properties with access directly from the Road
- Two properties with access from the Road but also with alternative access, although not vehicular
- One property with no access from the Road and only legal water access, but with informal arrangements for access to the Road
- One road user (the Applicant) for access to the C-Trail.

According to records held by the Applicant, Te Raupo Road has been classified as a mix of paper and private road that has not been maintained by FNDC as it has not met FNDC Policy #4103, *Limits of Council Responsibility for Formation Maintenance of Roads*. Maintenance of Te Raupo Road has historically been carried out by FNDC up to but not including the bridge. However, due to the strategic importance of Te Raupo Road to the C-Trail, the bridge now forms the limit to the Applicants maintenance responsibilities hence the capability to upgrade it now. Therefore, Te Raupo Road up to and including the bridge is Regionally Significant and Specified Infrastructure in accordance with the RPS and NPSFM.

Appendix 5 of the FNDP states that the road network (including bridges) within the District for which the Applicant is responsible for maintaining, are all designated but that unformed roads are not designated. The Road is formed and maintenance responsibility is held by the FNDC up to and including the bridge now. As such, the Road (which includes the bridge) is designated.

No alteration to designation is proposed to address the formation of the bridge embankment which extends beyond the boundary of the road reserve on the true-left-hand bank of the Whangae River (see HW DWG No. PDP01) onto land legally described as Part Allotment 176 Parish of Kawakawa held in Record of Title NA1656/3 (attached at Appendix B). This means that this activity will be subject to Section 9(3) of the RMA and rules under the FNDP will apply. The zone underlying the designation is General Coastal zone as per the FNDP (Figure 2-1) and Rural Production as per the pFNDP (Figure 2-2). There are no special overlays applicable to the land environment of the Project site under the FNDP however the site is subject to Coastal and Flood Hazards[1] and Coastal Environment overlays under the pFNDP.

[1] See Figure 2-7 for mapping of hazards.

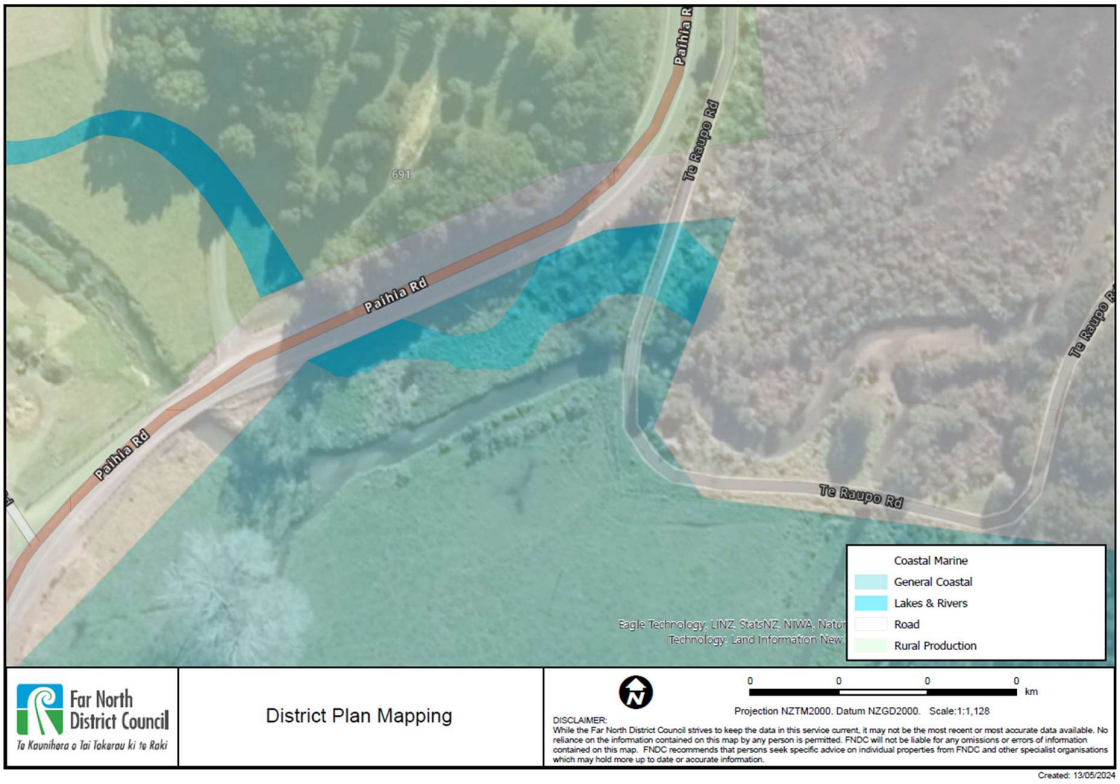

Figure 2-1: FNDP Zone and District Wide mapping.

Figure 2-2: pFNDP Zone and District Wide mapping [Source: farnorth.isoplan.co.nz].

2.2 Coastal Environment

The Project site is contained within the area demarcated as the "Coastal Environment" in the RPS and pFNDP.

The Project site is positioned within the Whangae River floodplain which is predominantly rural and riverine in character. The Whangae River is mapped in the PRPN as "Coastal Marine Area" (CMA) at the Project site and upstream to the State Highway 11 crossing (see Figure 2-5).

The Whangae River is classified as a "Tidal Creek" and is a "Coastal Water Quality Management Unit" in the PRPN (Figure 2-3). As such, the waterway area is "Coastal" and not a "River" while the riparian margins are considered to be "Coastal Riparian Management Areas" under the PRPN.

As is evident in Figure 2-4[2], the Whangae River estuary downstream of the Project site is identified as an Outstanding Natural Landscape (ONL).

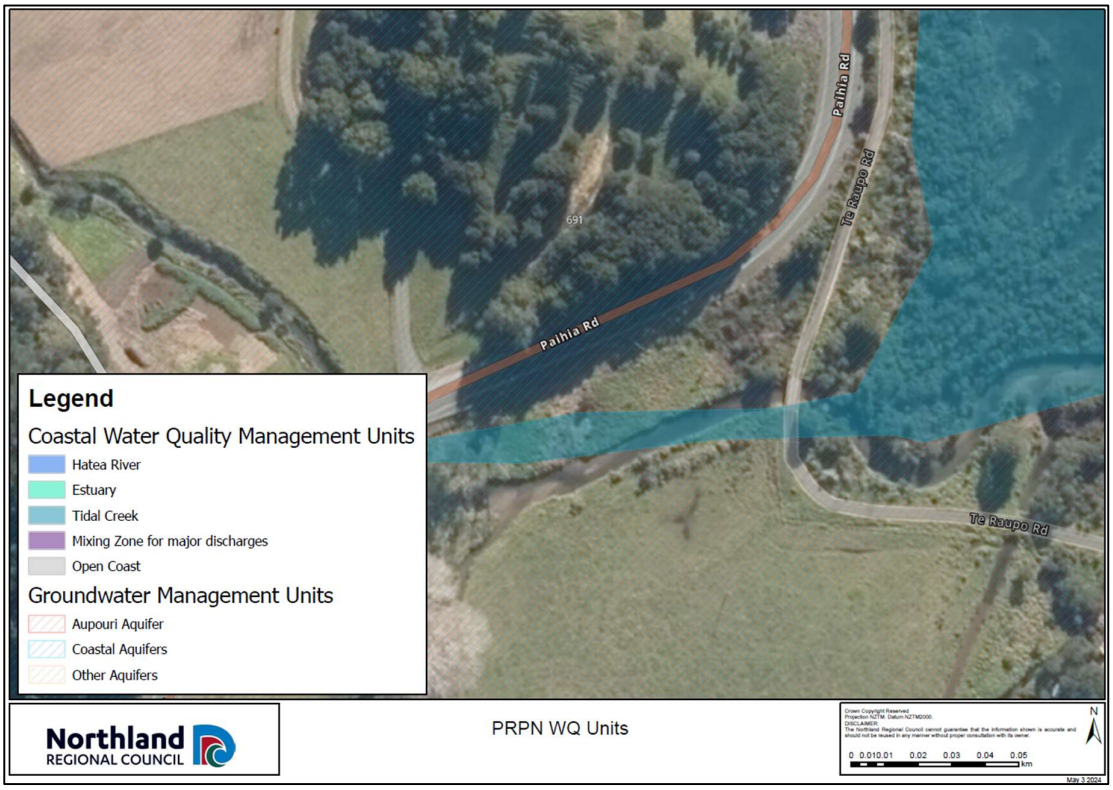

Figure 2-3: PRPN mapping of water management units.

[2] Figure 2-4 is generated from the online RPS map. The spatial planning information is the same in the online PRPN map.

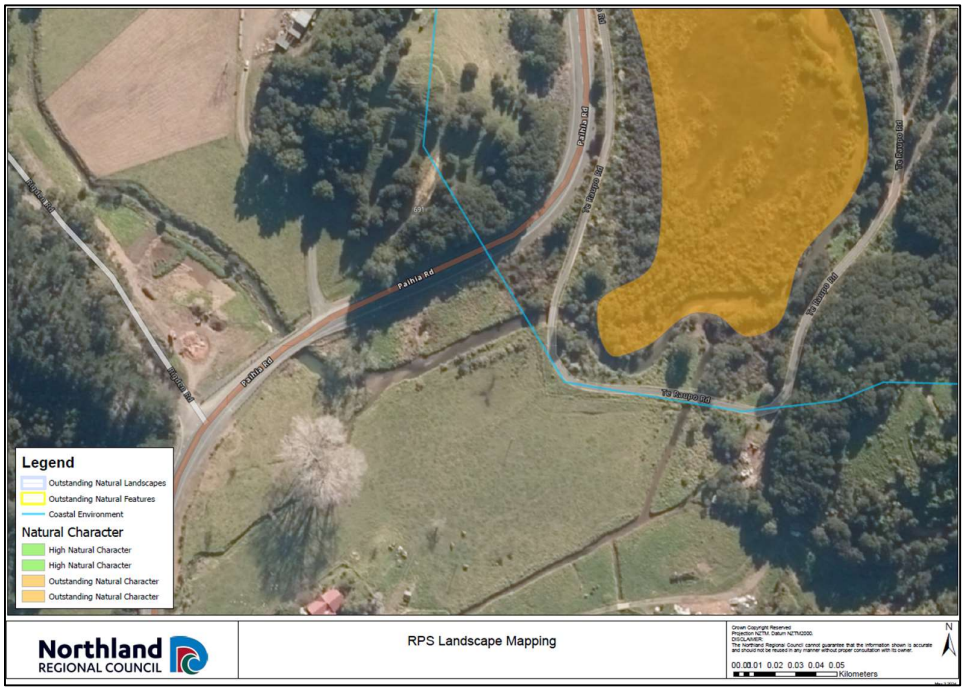

Figure 2-4: RPS mapping.

2.3 Ecology

The Project site is located within an area mapped as a Significant Bird Area (Figure 2-5) while wetland and coastal areas downstream of the bridge contain additional significant ecological values also shown in Figure 2-5.

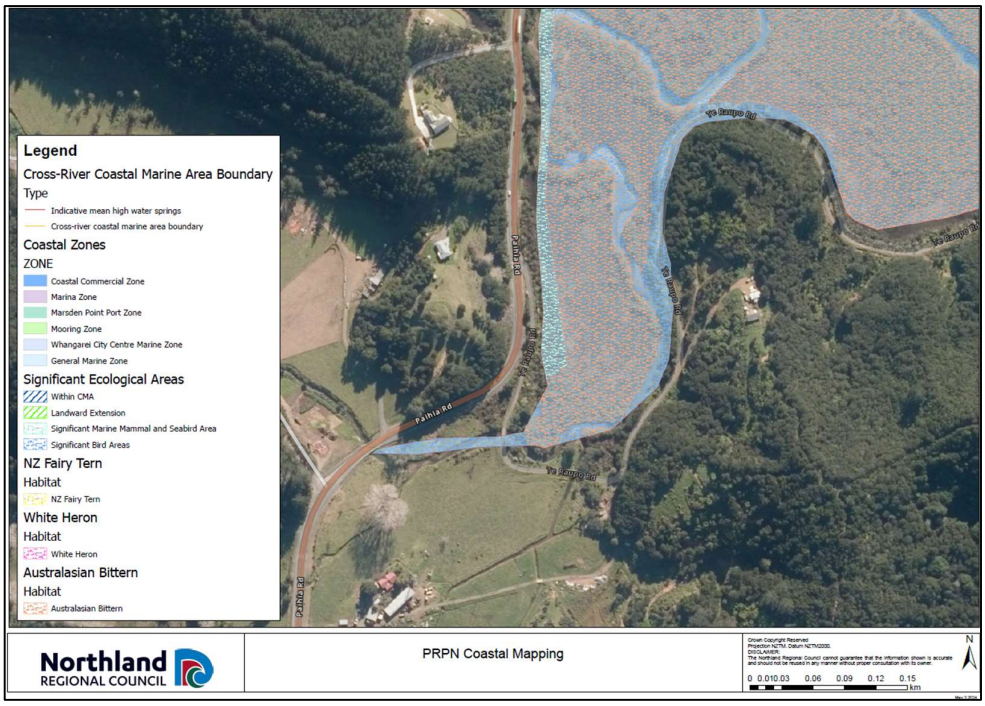

Figure 2-5: PRPN coastal area mapping.

According to NZ Environmental Management Ltd[3] (NZEM), the area of the bridge is bordered by a mixture of Mānuka-Mingimingi shrubland, Carex spp. sedgeland (wetland), and weedy shrubland (Figure 2-6 and Photo 2-2). The roadside drains, indicated in Figure 2-6 below, contain a mixture of exotic and indigenous wetland species.

The Carex spp. sedgeland is pasture dominated (see Photo 2-1), however, it is a wetland environment which will provide habitat for Threatened species, such as the Australsian Bittern, therefore it is a "Natural Inland Wetland" environment. Demarcation of roadside drains containing a mixture of exotic and indigenous wetland species are indicated in Figure 2-6 and shown in Photo 2-1. While these areas would not be defined as a "Natural Wetland" under the PRPN they would be classified as "Natural Inland Wetland" under the NPSFM.

The Mānuka-Mingimingi shrubland contains both freshwater and saltwater vegetation so is in the brackish edge between freshwater/terrestrial environment and marine/coastal environments. Out of an abundance of caution, these areas have been assessed as "Natural Inland Wetlands" under the NPSFM and "Natural Wetlands" under the PRPN.

[3] J. Unteregger (personal communication, 16 March 2024).

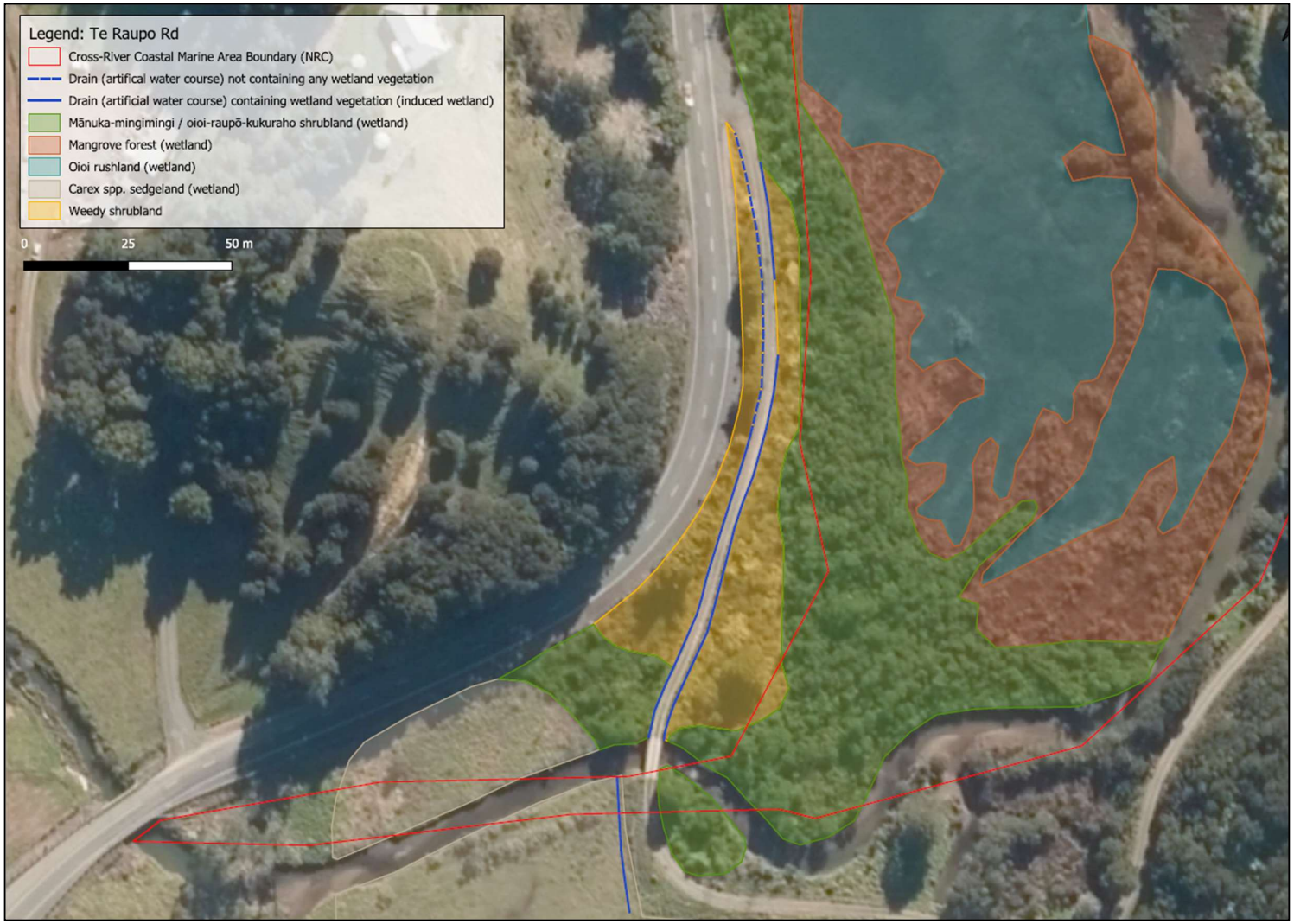

Figure 2-6: Mapping of vegetation in and around Project site [Source: NZ Environmental Management, 16 March 2024].

Photo 2-1: Carex spp. sedgeland (freshwater wetland) adjacent to Te Raupo Road bridge (M. Letica, 28 April 2024).

Photo 2-2: Mānuka-Mingimingi shrubland and weedy shrubland (M. Letica, 28 April 2024).

2.4 Natural Hazards

Landward areas of the Project site are affected by flood hazards including both the 100-year and 10-year Annual Return Interval flood (ARI) as shown in regional flood model mapping below (Figure 2-7).

Figure 2-7: Natural Hazard mapping.

2.5 Culture and Heritage

The relationship of mana i te whenua to their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga has not been fully expressed in relation to this particular Project. However, the FNDC has designed and planned the bridge upgrade work alongside the C-Trail work led by the Cycle Trail Trust with representatives of Ngāti Hine, Ngāti Manu, Te Kapotai and Te Roroa on the governance board.

There are four sites of archaeological interest recorded within a 300 m radius of the Project site as shown in Figure 2-8. New Zealand Archaeological Association (NZAA) Site Numbers Q05/1429 and Q05/903 are identified as terraces and midden of Māori origin while NZAA Site Numbers Q05/903 and P05/226 are identified as Pa. The accuracy of records of Sites Q05/1429 and P05/226 was queried with a Principal Archaeologist (Dr Andy Brown) who advises that "[i]*t looks as i*[f] *P05/226, P05/498 and Q05/1429 refer to the same site. It also looks like all these sites should be located on top of the hill where Q05/1429 is shown*"[4].

[4] Dr. A. Brown (personal communications, 6 June 2024).

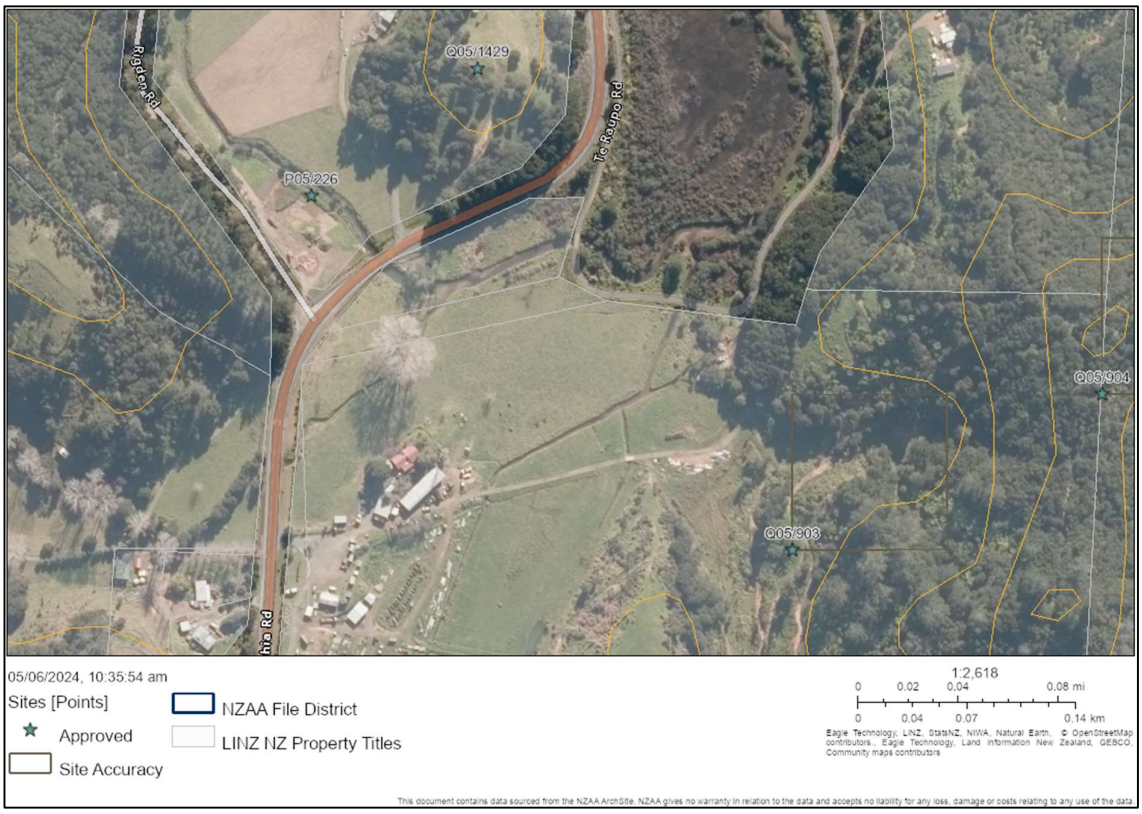

Figure 2-8: Recorded archaeological sites [Source: New Zealand Archaeological Association, May 2024].

3 Description of the Proposal

Currently, Te Raupo Road crosses the Whangae River via a one-lane bridge with a speed limit of 10km/hr and a weight limit of 1800 kg axles gross 80% of Class 1. It is proposed to replace this bridge with a single-span hollow-core concrete beam one-lane bridge as indicated in Figure 3-1 (Appendix A).

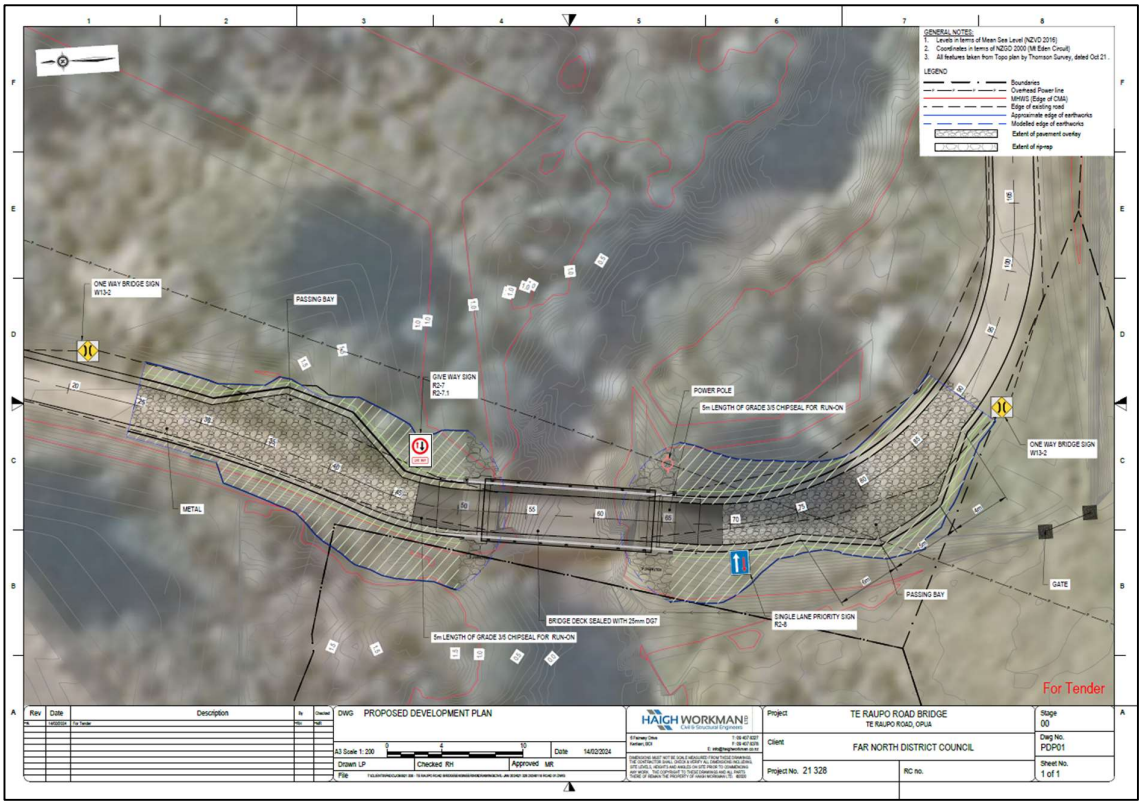

Figure 3-1: Layout plan of proposed bridge replacement construction (HW DWG No. PDP01).

The new bridge soffit will be about 0.5 m higher than the current bridge. Construction will start at the beginning of the next construction season with work anticipated to take between 4-6-months to complete. Diggers, excavators, trucks and rollers will be used for the earthworks. A piling rig (30-50 tonne) will be used for the bridging work with possibility of the use of a crane.

Establishment of the site will initially take place and includes formation of construction site access, laying down of equipment, and installing erosion and sediment control measures.

The existing one-lane road bridge will then be removed and up to 70 cubic metres (m^3) of cut made including stripping and stockpiling approximately 20 m^3 of topsoil for reuse and approximately 50 m^3 of cut to waste. The approach embankments will be formed with imported and site-won fill totalling up to 100 m^3 on both sides of the river. The approach embankments include the formation of the piles, abutment caps, and wing-walls. Riprap scour protection will be installed on the banks under the bridge as generally indicated below in Figure 3-2 (Appendix A).

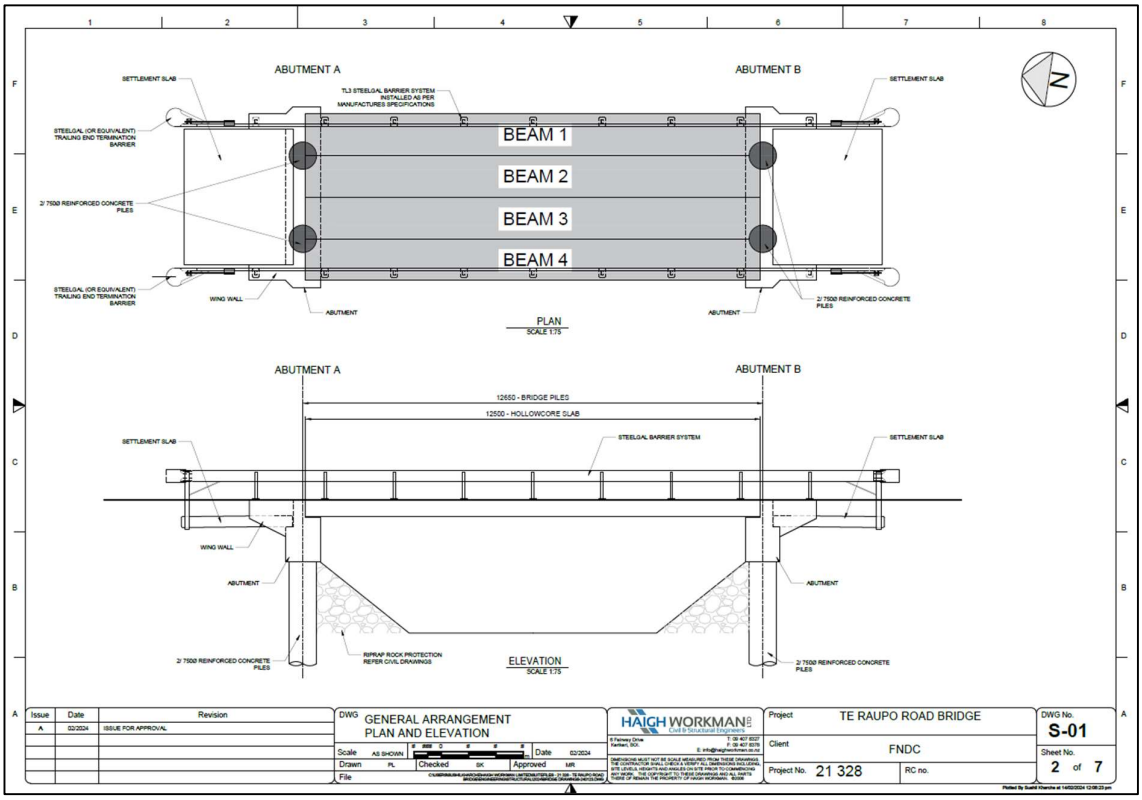

Figure 3-2: General arrangement plan and elevation (HW Dwg No. S-01).

The current bridge piles within the Whangae River will be extracted to alleviate any risk of erosion and scour or trapping of debris during flooding.

The bridge structure will be installed in parts starting with the erection of the precast single hollow cores, transverse post-tensioning, and barriers.

Road signage will be installed and the site erosion and sediment controls will be disestablished where possible.

3.1 Construction Site Controls

Written notification shall be given to the consenting authorities that work is intended to begin no less than 10 working days prior to commencement.

A comprehensive pre-start meeting with the Contractor, road controlling authority, and the consenting authorities is proposed to take place prior to the commencement of work on the site. The pre-start meeting shall confirm the practical parameters of the construction activities and allow all parties to discuss the adequacy of environmental avoidance and control methods and to support open communication.

A Construction Traffic Management Plan (CTMP) will be prepared for the Project by the Contractor and will be submitted to the FNDC's Development Engineer. The CTMP shall confirm the procedures, requirements and standards necessary for managing the traffic effects during construction of the Project so that safe, adequate and convenient facilities for local movements by all transport modes are maintained throughout the construction period.

Sediment control measures will be designed, constructed, and maintained by the Contractor in accordance with the principles and practices contained within the Auckland Council

document titled "*2016/005: Erosion and Sediment Control Guide for Land Disturbing Activities in the Auckland Region*" (GD05). Preliminary analysis of the site by the design engineers suggests that silt fences along the perimeter of the work area, especially in close proximity to the waterway areas, will be required to prevent sediment runoff.

A Construction Environmental Management Plan (CEMP) will be prepared by the Contractor and submitted to the consenting authorities for certification. As a minimum, the CEMP will include the following:

a) The expected duration (timing and staging) of earthworks, and details of locations of disposal sites for unsuitable materials, and clean water diversions if required;
b) Details of all erosion and sediment controls including diagrams and/or plans, of a scale suitable for on-site reference, showing the locations of the erosion and silt control structures/measures;
c) The commencement and completion dates for the implementation of the proposed erosion and sediment controls;
d) Details of surface revegetation of disturbed sites and other surface covering measures to minimise erosion and sediment runoff following construction;
e) Measures to minimise the discharge of contaminants from any non-clean fill material within the site during works and following construction including details of capping and revegetation of the managed fill disposal area;
f) Measures to minimise sediment being deposited on public roads but excluding the extent of construction activity within Te Raupo Road;
g) Measures to ensure dust discharge from the earthwork's activity does not create a nuisance on neighbouring properties not owned or occupied by the FNDC;
h) Measures to prevent spillage of fuel, oil and similar contaminants;
i) Contingency containment and clean-up provisions in the event of accidental spillage of hazardous substances;
j) Means of ensuring contractor compliance with the CEMP;
k) The name and contact telephone number of the person responsible for monitoring and maintaining all erosion and sediment control measures;
l) Contingency provisions for the potential effects of large/high intensity rain storm events.

An accidental discovery protocol is proposed stating that upon discovery of any suspected sensitive material, the Consent Holder must take the following steps:

1) Cease all works within 20 m of any part of the discovery immediately and secure the area, including:
   a) shutting down all earth disturbing machinery and stopping all earth moving activities; and
   b) establish a sufficient buffer area to ensure that all material remains undisturbed.
2) Within 24 hours of the discovery the owner of the site, tenant or the contractor must:
   a) inform the following parties of the discovery:
      i) The New Zealand Police if the discovery is of human remains or kōiwi;
      ii) The Consenting Authority in all cases;
      iii) Heritage New Zealand Pouhere Taonga if the discovery is an archaeological site, Māori cultural artefact, human remains or kōiwi; and
      iv) Tangata Whenua if the discovery is an archaeological site, Māori cultural artefact, or kōiwi.

3) No works shall recommence until the discovery area is inspected by the relevant authority or agency, this shall include:
    a) If the discovery is human remains or kōiwi the New Zealand Police are required to investigate the human remains to determine whether they are those of a missing person or a crime scene. The remainder of this process will not apply until the New Zealand Police confirm that they have no further interest in the discovery; or
    b) If the discovery is of archaeological material, other than evidence of contaminants, a site inspection for the purpose of initial assessment and response will be arranged by the Council in consultation with Heritage New Zealand Pouhere Taonga and appropriate Tangata Whenua representatives.
4) Recommencement of work:
    a) Heritage New Zealand has confirmed that an archaeological authority has been approved for the work or that none is required;
    b) Any required notification under the Protected Objects Act 1975 has been made to the Ministry for Culture and Heritage; and
    c) Resource consent has been granted to any alteration or amendment to the earthworks or land disturbance that may be necessary to avoid the sensitive materials that is not otherwise permitted under the plan or allowed by any existing resource consent.

3.2 Alternatives

No significant adverse effects were anticipated with the proposed bridge construction and operation therefore no alternatives were assessed except for not replacing the bridge at all. Not replacing the bridge would have been cost-effective to the FNDC however this option did not recognise the critical role that the bridge has in connecting people and communities to property and the C-Trail to meet the needs of current and future generations.

3.3 Consultation

3.3.1 Tangata whenua

The upgrade of Te Raupo Road bridge over the Whangae River is part of the C-Trail project to relocate the cycle trail off to the side of the tracks within the rail corridor between Ōpua and Kawakawa. This wider project is being led by the C-Trail Trust which has representation from Ngāti Hine, Ngāti Manu, Te Kapotai and Te Roroa. The C-Trail Trust has led the engagement with the 'Te Raupo Ahu Whenua Trust' who own the land at the end of Te Raupo Road[5].

The bridge replacement has been designed and planned in accordance with the Trust's expectations to facilitate the wider cycle trail amendment project and to provide safe and resilient access to SH11 for residents, including whenua Māori, along Te Raupo Road.

3.4 Landowners

Regular communication has been had with residents about the bridge replacement project including consultation on a detour route during construction.

An agreement has been reached with the landowner of Part Allotment 172 Parish of Kawakawa held in Record of Title 1108868 (see Appendix B) to utilise a farm track which has access from SH11 and egress onto Te Raupo Road past the one-lane bridge construction site as shown in Figure 3-3.

[5] K. Hoskin (personal communication, 23 May, 2023).

Figure 3-3: Proposed detour route (yellow line) during construction.

4 Resource Consent Requirements

There are duties and restrictions on persons seeking to use and develop natural and physical resources in the manner proposed pursuant to Sections 9, 12, 14, and 15 of the RMA.

Appendix C contains an in-depth analysis of all relevant regulations or rules within a relevant national environmental standard or plan for the Project. In summary, the Project is expected to require the following resource consents (Table 4-1).

Table 4-1: Resource consent requirements for the Project.

Activity	Rule/ Plan	Classification	Deciding Authority
The clearance of vegetation and earthworks within, or within 10 m setback of a natural inland wetland to construct specified infrastructure.	45(1) and (2) NES-F	Discretionary	NRC
Damage, destruction, disturbance, or removal of vegetation in a significant wetland.	C.2.2.6 PRPN	Non-complying	NRC
Erection of the bridge in the General Marine Zone and the occupation of the coastal area by the structure that is not permitted, controlled, restricted discretionary, or non-complying	C.1.1.22 PRPN	Discretionary	NRC
Earthworks within 10 m of a natural wetland and a high-risk flood hazard area.	C.8.3.4 PRPN	Discretionary	NRC
Vegetation clearance within coastal riparian management area.	C.8.4.3 PRPN	Discretionary	NRC
Clearance of a small area of indigenous vegetation within General Coastal zone that is within 20 m of the CMA.	12.2.6.3(b) FNDP	Discretionary	FNDC
This rule applies to all work outside of the designation and that does not take place over the bed of the Whangae River. Resource consent is being sought under this rule for ALL of the Road being upgraded and/or formed and the designation is to be disregarded. This is considered more efficient than submitting an Outline Plan of Works (OPW) plus a resource consent. The matters relevant to an OPW will be addressed through this resource consent application and any resource consent which may be granted.	17.2.6.4 FNDP	Discretionary	FNDC

5 Notification Assessment

5.1 Public Notification

A consent authority must follow the steps set out in Section 95A RMA, in the order given, to determine whether to publicly notify an application for a resource consent. This process is summarised below in Table 5-1, together with an assessment of this application against each step.

Table 5-1: Steps for determining whether to publicly notify resource consent applications.

Step	RMA Section	Response	Comment
ONE: **Mandatory public notification in certain circumstances**	95A(3)(a) the applicant requests public notification of the application.	No	The Applicant does not request public notification
	95A(3)(b) public notification is required after a s.92 request for further information as stipulated in section 95C.	No	Not relevant at this stage.
	95A(3)(c) an application is being jointly made to exchange recreational reserve land under section 15AA.	No	Not relevant to this application.
TWO: **Public notification precluded in certain circumstances**	95A(5)(a) the activity or activities are subject to a rule or national environmental standard which precludes public notification.	No	The activity is not subject to a rule or national environmental standard which precludes public notification.
	95A(5)(b)(i) the application is a controlled activity.	No	No application is made for a controlled activity.
	95A(5)(b)(ii)	-	Repealed as of 30 September 2020.
	95A(5)(b)(iii) the application is a restricted discretionary activity, or non-complying activity, but only if the activity is a boundary activity.	No	The proposal is not for a boundary activity.
	95A(5)(b)(iv)	No	Repealed as of 30 September 2020.
THREE: **Public notification required in certain circumstances**	95A(8)(a) the application is for a resource consent for one or more activities, and any of those activities is subject to a rule or national environmental standard that requires public notification	No	Public notification is not required by a rule or a national environmental standard.
	95A(8)(b) the consent authority decides, in accordance with section 95D, that the activity will have or likely to have adverse effects on the	No	The activity is not likely to have adverse effects on the environment that are more than minor (see

	environment that are more than minor.		assessment of effects at Section 6 of this report).
FOUR: **Public notification in special circumstances**	95A(9)	No	There is nothing exceptional or out of the ordinary with this proposal that would constitute a special circumstance to warrant public notification

The notification assessment provided above in Table 5-1confirms that it is appropriate for the applications to be processed without the need for public notification.

5.2 Limited Notification

A consent authority must follow the steps set out in Section 95B RMA, in the order given, to determine whether to limited notify an application for a resource consent. This process is summarised below in Table 5-2, together with an assessment of this application against each step.

Table 5-2: Steps for determining whether to limited notify resource consent applications.

Step	RMA Section	Response	Comment
ONE: **Certain affected groups and parties must be notified**	95B(2) there is an affected protected customary rights group or affected customary marine title group.	No	In accordance with Section 14 of the Marine and Coastal Area (Takutai Moana) Act 2011, unformed and formed roads are not part of the common marine area and coastal area.
	95B(3) whether the land is adjacent to, or may affect, land that is subject to a statutory acknowledgement.	No	There are no statutory acknowledgements active on the subject site or that will be affected by the proposal.
TWO: **Limited notification precluded in certain circumstances**	95B(6)(a) the activity or activities are subject to a rule or a national environmental standard which precludes limited notification.	No	The activity is not subject to a rule or national environmental standard which precludes limited notification.
	95B(6)(b) the application is for a controlled activity under a District Plan (excluding subdivision)	No	No resource consent is sought for a controlled activity.
THREE:	95B(7) in the case of a boundary activity, determine in accordance with section 95E whether an owner	No	The activity is not for a boundary activity.

Certain other affected persons must be notified	of an allotment with an infringed boundary is an affected person.		
	95B(8) in the case of any other activity, determine whether a person is an affected person in accordance with section 95E	No	No persons are considered to be adversely affected (in accordance with s95E of the RMA) as any actual or potential effects will be less than minor – refer to assessment in Section 6 below.
FOUR: **Further notification in special circumstances**	95B(10) determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined to be identified eligible for limited notification under this section.	No	There is nothing exceptional or out of the ordinary in this application that would constitute a special circumstance to warrant limited notification

5.2.1 Affected Persons

Section 95E of the RMA states that for the purpose of giving limited notification of an application for a resource consent for an activity to a person under section 95B(4) and (9) (as applicable), a person is an affected person if the consent authority decides that the activity's adverse effects on the person are minor or more than minor (but are not less than minor).

In assessing an activity's adverse effects on a person, the consent authority;

a) may disregard an adverse effect of the activity on the person if a rule or a national environmental standard permits an activity with that effect; and	Not relevant for this application.
b) must, if the activity is a controlled activity or a restricted discretionary activity, disregard an adverse effect of the activity on the person if the effect does not relate to a matter for which a rule or national environmental standard reserves control or restricts discretion; and	Not relevant for this application.
c) must have regard to every relevant statutory acknowledgement made in accordance with an Act specified in Schedule 11.	There are no known statutory acknowledgements over the subject site.

A person is not an affected person in relation to an application for a resource consent for an activity if—

a) the person has given, and not withdrawn, approval for the proposed activity in a written notice received by the consent authority before the authority has decided whether there are any affected persons then they are not an affected person in relation to an application for resource consent; or
b) the consent authority is satisfied that it is unreasonable in the circumstances for the applicant to seek the person's written approval.

5.2.1.1 Tangata Whenua

The PRPN prioritises notification of tangata whenua as affected persons as per Table 16 PRPN under Policy D.1.3, replicated below.

Person	Resource or activity
The tāngata whenua identified in an analysis of the effects undertaken in accordance with policy D.1.2 'Requirements of an analysis of effects on tāngata whenua and their taonga'.	Cultural resources or activities identified in an analysis of effects undertaken in accordance with Policy D.1.2.
The committee of management of a taiāpure.	Taiāpure
The Māori committee, marae committee or the kaitiaki with responsibility for the mataitai.	Mataitai
The tangāta kaitiaki / tiaki appointed by the provisions of the Fisheries (Kaimoana Customary Fishing) Regulations 1998 for the relevant rohe moana.	Non-commercial Māori fisheries.

The FNDP identifies that tangata whenua be consulted over the use, development, or protection of natural resources where these affect their taonga (Policy 2.8.2 FNDP).

The Trust has not raised concerns regarding the work and its actual or potential effects on cultural resources or activities[6]. The work will be implemented under the guidance of the C-Trail Trust to support its objectives in relation to the C-Trail project.

5.2.1.2 Adjacent Owner/Occupiers of Land

The Project Manager has consulted with Mr Gray Andrew Phillips on the bridge replacement proposal. Mr Phillips did not raise any issues with the proposal and has approved the use of a farm track contained within his property as a temporary detour route for Te Raupo Road residents.

5.2.1.3 Te Raupo Road Residents

The Project has the potential to disrupt the day-to-day activities of residents in the area. A detour route is being provided while Te Raupo Road is closed and while this can add additional time to resident's journey's creating an inconvenience, this would not be a minor or more than minor adverse effect.

Given the measures to be implemented with respect to possible disruptions to neighbouring residents, it is considered that adverse effects on these persons will be less than minor.

5.3 Notification Conclusions

Taking into account the Section 95 assessment above, and the actual and potential adverse effects (Section 6), there are no persons considered affected in a minor or more than minor manner.

The application can be processed on a non-notified basis.

[6] K. Hoskin (personal communication, 23 May, 2024).

6 Assessment of Environmental Effects

The following sections contain an assessment of the activity's effects on the environment that—

(a) includes the information required by Clause 6 of the RMA; and
(b) addresses the matters specified in Clause 7 of the RMA; and
(c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

Bundling resource consent activities is generally considered appropriate where the activities for which consents are being sought overlap to such an extent that they cannot be realistically or properly separated. When bundling applies, the activities are assessed together as a whole, based on the most stringent activity classification.

Bundling of the activities has been used as if all were Non-complying activities. However, equally, all relevant assessment criteria in a Plan (FNDP or PRPN) have been addressed in this Section also, including assessment criteria at Section 17.2.7 of the FNDP.

6.1 Positive effects

The upgrade of Te Raupo Road Bridge (known as bridge T49) will result in positive outcomes to the health, safety and wellbeing of residents and provides accessibility resilience for residents and emergency vehicle access to residents and the Pou Herenga Tai Twin Coast Cycleway.

According to available records, the bridge was built sometime after 1992. Despite the engineering design being approved by Council earlier, in 1995 it was inspected by Council and found not to be in conformance with Council engineering standards and was limited to a 1800 kg axle loading for safety reasons.

Feedback from residents during site visits conducted by Council in 2017 included reports that there had been heavy vehicle use of the bridge exceeding the weight restrictions posted. Additionally, there were concerns by residents of the frequency and types of vehicles used by Council maintenance staff using Te Raupo Road to access the Cycle Trail.

Increasing the loading restrictions on the bridge to higher axle loadings will bring the bridge up to an appropriate standard for the land use activities currently reliant on the bridge as well as future use such as alternative access for the Cycle Trail. Additionally, emergency services vehicles and maintenance vehicles would not be excluded.

Overall, the proposal contributes to the transport vision for the Far North as it will provide an appropriate level of transport resiliency to the affected residents and supports multi-modal tourism activity in the Cycle Trail.

6.2 Effects on natural character and visual amenity

The Project site is located within a riverine environment with the surrounding environment to the west being predominantly rural (pasture) and a forested coastal headland formation to the east. The construction activity will be briefly visible from SH11 for approximately 300 m. Two houses along SH11 will have generally unimpeded visibility of the construction site while one other house will have a view of the construction site through vegetation.

Construction of the new bridge will require the presence of heavy machinery for up to 6 months. This can be visually intrusive in areas with high natural character and landscape value irrespective of the duration of the work.

Although the immediate site of the bridge is high in natural character, the Te Raupo Road bridge essentially forms the transitional point of the landscape from natural riverine character to a more rural character heading back toward SH11. As such, some modification and human activity can be accommodated at this point without significant adverse effects. Provided the construction machinery is operated and stored within the road reserve area and is only present onsite for the time reasonably necessary to complete the work, adverse effects on the natural character of the site and surrounds will be avoided, remedied, or mitigated.

The operational aspect of the proposal will pose less than minor adverse effects given there has been a bridge present in this location for a number of years already. The new bridge will consist of similar material used for the SH11 bridge over the Whangae River located approximately 200 m upstream, including galvanized steel guard rails, concrete, and pavement and should therefore look tidier than the current bridge construction which has a very run-down look.

6.2.1 Noise, vibration, dust

Construction activities have the potential to emit noise, vibration, and dust beyond the boundary of the road reserve in a manner which may be unreasonable to people and results in adverse effects on the amenity that people expect within their neighbourhood.

The RMA does not contain a definition of "unreasonable" but does however define excessive noise at Section 326 as;

> *…any noise that is under human control and of such a nature as to unreasonably interfere with the peace, comfort, and convenience of any person (other than a person in or at the place from which the noise is being emitted), but does not include any noise emitted by any—*
>
> *(a) aircraft being operated during, or immediately before or after, flight; or*
>
> *(b) vehicle being driven on a road (within the meaning of section 2(1) of the Land Transport Act 1998); or*
>
> *(c) train, other than when being tested (when stationary), maintained, loaded, or unloaded.*
>
> *(2) Without limiting subsection (1), excessive noise—*
>
> *(a) includes noise that exceeds a standard for noise prescribed by a national environmental standard; and*
>
> *(b) may include noise emitted by—*
>
> *(i) a musical instrument; or*
>
> *(ii) an electrical appliance; or*
>
> *(iii) a machine, however powered; or*
>
> *(iv) a person or group of persons; or*

(v) an explosion or vibration.

There is no standard for noise prescribed in a national environmental standard, however, the FNDP requires compliance with NZS 6803:1984 while the PRPN contains General Conditions at C.1.8(22)-(23) PRPN for construction noise and environmental noise which, within the coastal marine area, are to be measured and comply with NZS 6803:1999 (Construction Noise), NZS 6801: 2008 (Environmental Sound) and NZS 6802:2008 (Environmental Noise).

NZS 6803:1984 is a provisional release of the standard which has since been superseded by the current NZS 6803:1999 version. As such, the criteria of the 1999 version has been used to assess the appropriateness of construction noise and environmental noise overall.

Given the geology of the site, distance to sensitive receptors, and types of machinery to be used, full compliance with the relevant standards in NZS6803:1999 is expected. Environmental noise should not perceptibly change from the current situation as a result of the use of the replacement one lane bridge. As such, adverse effects of construction and environmental noise will be less than minor.

Similarly, adverse effects of vibration are considered to be less than minor for the same reasoning as given for noise emissions as vibration will dissipate within the sedimentary geology with distance to the nearest sensitive receptors (residential buildings).

Lastly, the effects of dust will be mitigated through site management controls including avoiding dust generating work during high winds, covering exposed areas of earth or applying water to dampen the soil using high-rate applicators.

6.3 Effects on the life supporting capacity of the soil

Soil is the most important part of the geosphere for life on earth. It is the medium upon which plants grow and virtually all terrestrial organisms depend upon it for their existence. Therefore, losses of soil through erosion and scour of soil is an effect on life-supporting capacity. Additionally, life-supporting capacity is often viewed in terms of a soil units' ability to produce and sustain human life and are often recognised as high-producing or high-value soils.

The areas of soil affected by road construction are unproductive areas of land being road or riparian margins. However, soils within riparian areas play an important role in the maintenance of the quality of water and habitat for indigenous species.

It will be important to the maintenance of the life-supporting capacity of the soils that good erosion and scour protection measures are employed during the earthworks activity and that maintenance of excessive erosion occurs over the life of the roading asset. The ESCMP measures proposed have been developed in accordance with industry standards however this will be updated by the Contractor and a copy forwarded to the consenting authorities for certification prior to work commencing. It is expected that this will be included as a condition of consent.

Subject to the proposed mitigations, the adverse effects on the life supporting capacity of the receiving soils will be less than minor.

6.4 Effects on water quality from earthworks

The design philosophy for managing the site to avoid, remedy, or mitigate adverse effects of erosion and sediment in stormwater accounts for the quantity of earthworks proposed,

expected rainfall during the construction season, and topography. This approach is in accordance with *Erosion and Sediment Control Guidelines for Land Disturbing Activities in the Auckland Region 2016 (Auckland Council Guideline Document GD2016/005) (GD05)*.

The earthworks take place in a confined area and stormwater control measures can be established relatively quickly around the sites to be worked. Silt fences along the perimeter of the work area, especially in close proximity to the watercourse, are proposed as the primary means for minimising sediment runoff.

No adverse flooding of neighbouring properties will occur as a result of the stormwater generated from the earthworks as initial management protocols seek to contain excess stormwater generated onsite to allow sediment settlement to occur. Uniform discharge over land is proposed through the use of clean water diversions and decant facilities before entering the Whangae River.

For general land upkeep and erosion protection, temporary cleared land during construction shall either be revegetated or stabilised with aggregate until the final surface covering or wearing course is applied.

A final ESCMP will be prepared by the Contractor and will be implemented by them during construction. The ESCMP will be a revision of the methodology included in this application dependent on the Construction approach the Contractor will implement but it is noted that any revision would result in improvement to the management practices currently being proposed.

Using industry best practice controls will ensure adverse effects of sediment in stormwater are avoided, remedied, or mitigated. Therefore, any reduction in water quality in receiving waterbodies will be less than minor.

6.5 Effects on indigenous biodiversity

To enable the positive benefits of a bridge construction capable of conveying the 1 in 10-year flood, removal of small pockets of the Mānuka-Mingimingi shrubland will be required to form the bridge approach embankments further back from the river edge. It is noted that the size of the areas to be cleared would otherwise be permitted for the zone but for the proximity to the CMA.

The pockets of shrubland sit on the periphery of an extensive estuarine wetland environment to the east and pasture to the west. The pockets may provide important habitat for indigenous fauna from time to time however it is more than likely that fauna will seek the more optimal conditions available within the shrubland “major” or may prefer the habitat available within the other estuarine wetland complexes (Oioi and Mangroves). Consequently, there is a low likelihood that the cleared areas provide a major functional role for indigenous species which frequent the area and it is anticipated that they do not provide immediate life-supporting importance to indigenous fauna given the proximity to the road environment.

The Applicant accepts a condition of consent requiring the inspection of the affected shrubland environments and relocation of species should they be found within the worksite. Such a condition would ensure the avoidance of adverse effects on:

- indigenous taxa that are listed as “Threatened” or “At Risk” in the New Zealand Threat Classification System lists, and

- the values and characteristics of areas of indigenous vegetation and habitats of indigenous fauna that are assessed as significant using the assessment criteria in Appendix 5 of the RPS.

Such a condition would also ensure that significant adverse effects are avoided and that other adverse effects are avoided, remedied or mitigated on:

- areas of predominantly indigenous vegetation, and
- habitats of indigenous species that are important for recreational, commercial, traditional or cultural purposes, and
- indigenous ecosystems and habitats that are particularly vulnerable to modification.

6.6 Effects on flood hazard risks

Surface flooding in this low-lying area is known to occur and has been identified in region-wide modelling as being susceptible to both flood and high-risk flood events.

To avoid exacerbating the risk of surface flooding in the area, overland flow paths will be constructed to mimic existing catchment condition prior to the main earthworks commencing. This will ensure that stormwater flows from the site in a similar manner as what would have occurred prior to the earthworks commencing as described in the technical memorandum attached at Appendix D.

Contingency provisions for the potential effects of large/high intensity rainstorm events will be included in the CMP.

Overall, the effects of flood hazards both during work and once operational are expected to be less than minor subject to the mitigations proposed.

6.7 Effects on land instability and land subsidence

The earthworks occur on relatively flat land and the scale and nature of the earthworks takes into account the findings of the site-specific geotechnical investigations by HW.

Formation of the approach earth embankments will follow a 2:1 slope gradient on both sides.

No other aspects of the earthworks pose a risk to land instability or subsidence.

Provided the engineering design is followed, effects on the environment from land instability and subsidence are considered to be less than minor.

6.8 Effects on cultural values

Policy D.1.1 of the PRPN guides applicants as to when an analysis of effects on tangata whenua and their taonga is required and states that a resource consent application must include in its assessment of environmental effects an analysis of the effects of an activity on tangata whenua and their taonga if one or more of the following is likely:

1) *adverse effects on mahinga kai or access to mahinga kai, or*

2) *any damage, destruction or loss of access to wāhi tapu, sites of customary value and other ancestral sites and taonga with which Māori have a special relationship, or*

3) *adverse effects on indigenous biodiversity in the beds of waterbodies or the coastal marine area where it impacts on the ability of tangāta whenua to carry out cultural and traditional activities, or*

4) *the use of genetic engineering and the release of genetically modified organisms to the environment, or*

5) *adverse effects on tāiapure, mataitai or Māori non-commercial fisheries, or*

6) *adverse effects on protected customary rights, or*

7) *adverse effects on sites and areas of significance to tangāta whenua mapped in the Regional Plan (refer I Maps |Ngā mahere matawhenua).*

The FNDP identifies the following resource management issues of significance to tangata whenua at the time of its development;

2.5.1 The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga can be adversely affected by development that does not recognise this relationship.

2.5.2 The exercise of rangatiratanga and the practice of kaitiakitanga, as provided for by the principles of the Treaty of Waitangi and the Resource Management Act and involving the use of tikanga and other aspects of the Maori environmental management system, are able to contribute to the wellbeing of people and communities in the District but are not always recognised and provided for.

2.5.3 Subdivision, use and development of resources can adversely affect waahi tapu and other taonga.

2.5.4 Development of the natural and physical resources of the District that leads to a loss or degradation of the mauri of these resources.

It is anticipated that the proposal addresses these issues to the extent available through the RMA and consent process, including that;

- An accidental discovery protocol will be in place in accordance with Heritage New Zealand guidance documents. Adverse effects on waahi tapu and other taonga will be remedied, or mitigated;
- Although permanent clearance of indigenous flora is proposed, overall adverse effects on indigenous biodiversity will be less than minor given the small areas of clearance, their peripheral ecological value, and proposed management measures;
- Discharges of construction stormwater will not contain contaminants at concentrations that would be harmful to taonga species within the wetland; and
- The design and construction has been approved as meeting the objectives of the wider C-Trail amendment project being overseen by the C-Trail Trust.

6.9 Effects on Historic Heritage

Historic heritage resources are areas, places, sites, buildings, or structures either individually or as a group contribute to an understanding and appreciation of New Zealand's history and cultures, derived from any of the following qualities:

(i) archaeological:

(ii) architectural:

(iii) cultural:

(iv) historic:

(iv) scientific:

(vi) technological.

The importance of such resources varies as some contribute significantly to the tapestry of human history or archaeological research while others make smaller contributions to this understanding.

Four recorded archaeological sites are located within 300 m of the Project site, all of Māori origin. Given the potential for sites of archaeological significance to be uncovered during earthworks, an accidental discovery protocol will be in place at all times so that adverse effects on sites and features of historic heritage importance will be avoided, remedied, or mitigated.

7 Statutory Considerations

7.1 Part 2 of the RMA

The overriding purpose of the RMA is *"to promote the sustainable management of natural and physical resources"* (Section 5). The broader principles (Sections 6 to 8) are to inform the achievement of that purpose.

Section 104 of the RMA (considered below) is expressly subject to Part 2 of the RMA. Case law findings have directed that decision makers should now only have recourse to Part 2 of the RMA, including higher order policy documents, if it is determined that:

- Any part or the whole of the relevant plan(s) are invalid;
- The relevant plan(s) did not provide complete coverage of the Part 2 matters;
- There is uncertainty of the meaning of provisions as they affect Part 2.

In essence this means that decisions makers only need to 'go back to' Part 2 of the RMA if the relevant planning documents have not fully addressed the Part 2 matters. If a Regional or District Plan has not fully addressed the Part 2 matters, then decision makers can 'go up the tree' to the RPS and then any relevant NPS in relation to any Part 2 matters.

It is considered that the relevant regional and district plans give appropriate effect to the relevant higher order policy documents such that a separate Part 2 analysis is unlikely to add anything to the evaluative exercise. Based on the assessment of the proposal against the objectives and policies as set out in Section 7.2, the proposal is consistent with Part 2 of the RMA.

7.2 Section 104(1)(b) RMA

Schedule 4 of the RMA requires that an assessment of the activity is made against the matters set out in Part 2 of the RMA and any relevant provisions of a document referred to in Section 104(1)(b) RMA.

The following assessment fulfils these Schedule 4 matters.

7.2.1 National Policy Statement

7.2.1.1 National Policy Statement for Freshwater Management 2020

The NPSFM directs local authorities on how they are to manage freshwater under the RMA through their planning documents. It also contains an objective and several policies that are relevant to considering applications for resource consents in an integrated manner.

It contains one Objective (at Clause 2.1) and fifteen Policies (at Clause 2.2), which are preceded by an in-depth description of the fundamental concept of 'Te Mana o te Wai' that underpins freshwater management in New Zealand, including six principles relating to the roles of tangata whenua and the wider community in the management of freshwater.

Subpart 1 of Part 3 of the NPSFM contains the expected approaches towards the overall implementation of the NPSFM.

In managing freshwater through resource consent processes, Clause 3.2 construes that the implementation of Te Mana o Te Wai is the active involvement of tangata whenua (including decision-making, and which is also confirmed at Clause 3.4), enabling systems of values and knowledge such as Mātauranga Māori, and adopting an integrated approach (ki uta ki tai) (also confirmed at Clause 3.5).

Regarding bulk earthworks, minimisation of stormwater directly entering freshwater is proposed in the first instance through avoiding earthworks during high rainfall periods and employing stormwater detention and dispersion techniques onsite. At completion, all areas of exposed earth will be covered by pavement, grassed, or planted. The final ESCMP will be submitted to the NRC for certification as part of the larger CEMP prior to commencement of earthworks.

This Project seeks to retain similar overland flow and stormwater arrangements (open drains) as those that exist currently at this location therefore no net change in the quality or quantity of stormwater from the land use activity is expected.

It is considered that the proposal is not contrary to the NPSFM.

7.2.1.2 National Policy Statement for Indigenous Biodiversity 2023

The NPSIB provides direction to councils to protect, maintain and restore terrestrial indigenous biodiversity requiring at least no further reduction of indigenous biodiversity nationally. Given vegetation clearance is proposed and that this consists of indigenous vegetation and habitat of importance to indigenous fauna species, the NPSIB is relevant.

The NPSIB has a primary focus on identification and protection of Significant Natural Areas, however, Policy 8 of the NPSIB signals that maintenance of indigenous biodiversity outside SNA's is also important and must be provided for. Clause 3.16(1) NPSIB requires that significant adverse effects of new use or development must be managed by applying the effects management hierarchy while all other adverse effects must be managed to give effect to the objective and policies of the NPSIB under sub-clause (2). The assessment above in Section 6.5 demonstrates that adverse effects on indigenous biodiversity will be managed to give effect to the objectives and policies of the NPSIB.

Policy 10 requires that activities that contribute to New Zealand's social, economic, cultural, and environmental wellbeing are recognised and provided for in a manner that is consistent with the NPSIB while Clause 3.5 states that the maintenance of indigenous biodiversity does not preclude land use and development in appropriate places and forms. It is considered that the land development proposed is in an appropriate place and form for the receiving environment as discussed in detail in Section 6.5.

The role of tangata whenua as partners to local authorities in the management of indigenous biodiversity as set out in Clauses 3.2 and 3.3 is acknowledged. It is anticipated that the structure of the Trust fulfils this obligation and therefore the proposal would not be inconsistent with Policies 1 and 2.

There are no other matters in the NPSIB that are considered particularly relevant to the proposal.

Overall, the adverse effects of the proposal will be managed to give effect to the objectives and policies of the NPSIB while contributing to the social and cultural wellbeing of the community.

7.2.2 New Zealand Coastal Policy Statement 2010

The NZCPS states policies in order to achieve the purpose of the RMA in relation to the coastal environment of New Zealand. Regional and local authorities must give effect to relevant provisions of the NZCPS in planning documents, and resource consent authorities must have regard to relevant provisions when considering consent applications.

The strategic intent of the NZCPS is to promote the sustainable management of the natural and physical resources of the coastal environment, including coastal land, foreshore and seabed, and coastal waters from the high tide mark to the 12 nautical mile limit. The proposal occurs within the area mapped as Coastal Environment under both the RPS and pFNDP.

The proposal will support mana whenua and their traditional and continuing relationship to this area of the coast as it provides a resilient transportation network to the coast and to whenua Māori which has otherwise been vulnerable to flooding and unable to be safely uses by heavy vehicles, such as emergency response vehicles.

The work will be implemented under the guidance of the Trust to support its objectives in relation to the cycle trail project, particularly the objectives of mana whenua represented.

The design of finished ground levels and bridge height takes into account the potential effects of climate change and coastal hazard risks on a precautionary basis.

The proposed change to the coastal environment recognises and provides for New Zealand's international obligations regarding the coastal environment, including the coastal marine area.

There is a functional need for the activities to take place in the coastal environment to provide resilient and safe transport infrastructure for residents and for C-Trail users and maintenance and repair crews.

The proposal safeguards the integrity, form, functioning, and resilience of the coastal environment and sustains its ecosystems, through minimisation of the disturbance of soils, consideration of the effects of climate change in design, and employment of best practise erosion and sediment control techniques.

Of the small areas of vegetation to be cleared, only Mānuka is At Risk under the New Zealand Threat Classification System (NZTCS) while all other flora species are Not Threatened (i.e., Mingimingi and Carex spp.). There is potential for At Risk and Threatened bird species to utilise the area as the vegetation and estuarine environment provide excellent habitat for such species.

Although Policy 11 of the NZCPS states that adverse effects on indigenous taxa that are listed as Threatened or At Risk in the NZTCS must be avoided, Policy 4.4.1(4) of the RPS follows that a minor or transitory effect may not be adverse. The assessment above in Section 6.5 concludes that the effect of clearing very minimal amounts of peripheral wetland vegetation will not be adverse and that mitigations are available through offset if effects are considered permanent and therefore possibly adverse.

A moderate change in character and amenity of the site and surrounds will occur as a result of the work proposed, including the presence and operation of construction traffic and exposure of earth at any one time however this will be temporary (a limited consent duration is proposed). Once completed, the proposal seeks to preserve the coastal environment's natural character and protect natural features and landscape values with minimal change to the use of the road environment as a result of the new bridge which will remain one-laned albeit with a greater weight class limit.

Overall, significant adverse effects on natural features and landscapes in the coastal environment will be avoided.

Given the presence of recorded archaeological sites nearby, accidental discovery protocol will be in place during construction.

A condition of consent may be imposed requiring this and would satisfy (g) of Policy 17.

The replacement of the bridge reflects the importance of the C-Trail to the promotion of recreation opportunities within the coastal environment as it will now allow maintenance vehicles to access the cycleway to ensure it is kept safe and tidy. Additionally, while it is not its primary purpose, the upgrade may have the effect of enhancing access linkages between public open space areas in the coastal environment with more resilient and adaptable transport options to access the coastal environment.

The current bridge design and alignment may exacerbate erosion and scour events at this location which will have cumulative sedimentation effects on receiving coastal waters. The alignment and geometry of the new bridge and the bank amendments, including the installation of rock rip rap, should result in less erosion and scour of the bed and banks of the Whangae River at this location during high-flow events and therefore reduce potential sediment inputs to receiving waters from the site.

The effect of the bridge construction and presence on river and coastal hazards has been assessed (see Appendix D) as indiscernible by comparison to the current bridge. The upgrade of the bridge serves a necessary purpose for providing a safe transport link for residents of Te Raupo Road and to the C-Trail. The bridge construction will also be more resilient to the impacts of flooding due to adherence with current engineering standards and use of more durable materials.

For the reasons above, the proposal is consistent with Policies 2, 3, 5, 6, 11, 13, 15, 17, 18, 22, and 25 and Objective 1 of the NZCPS.

7.2.3 National Environmental Standard

7.2.3.1 Resource Management (National Environmental Standard for Air Quality) Regulations 2004

The NESAQ was first introduced in 2004 to set guaranteed minimum level of health protection for all New Zealanders through setting standards regulating the emissions of PM10 and levels of carbon monoxide, nitrogen dioxide, sulphur dioxide and ozone, to protect ambient air quality.

The NESAQ standards were revised to address concerns regarding the perceived ‘stringency’ of the ambient standard levels for particulate matter less than 10 micrometres (PM10). The amended Regulations came into force on 1 June 2011.

The NESAQ uses ‘Airsheds’ to differentiate management areas where monitoring, reporting, and consent decision requirements require a more tailored approach due to known, or likely, levels of pollutants that exceed or would exceed the standards for air quality. These areas that are (or were) likely to exceed the standards for air quality were gazetted to be a separate airshed from the ‘regional’ airshed. The site is not within a gazetted airshed.

The discharge will not contravene the NESAQ as dust tends to consist of particulate matter greater than 10 microns which have mostly a nuisance effect to people and property.

There are no other relevant provisions contained in the NESAQ for which regard must be had.

7.2.3.2 Resource Management (National Environmental Standards for Sources of Human Drinking Water) Regulations 2007

Clauses 6, 7, 8, 12, and 13 of the NESDW apply to water and discharge permits issued by regional councils. There is no potential to affect a registered drinking-water supply as there are none located downstream of the proposed activities which require Discharge and Water permits.

7.2.3.3 Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2010

Resource consent under the NESCS is not required (see Appendix C for a full analysis). There are no other relevant provisions contained in the NESCS for which regard must be had.

7.2.3.4 Resource Management (National Environmental Standard for Freshwater) Regulations 2020

Resource consent under the NESFM is sought. There are no other relevant provisions contained in the NESFM for which regard must be had.

7.2.4 Other Regulations

There are no other Regulations with matters of relevance to this Proposal.

7.2.5 Regional Policy Statement & Plans

The RPS was made operative in 2016 and promotes sustainable management of Northland's natural and physical resources through policies and methods to achieve integrated management of the region's resource management issues. The RPS describes itself as enabling. It balances improving the economy and using resources wisely with managing and investing in the environment to achieve our future aspirations for improvement in Northland and our wellbeing. It is effects-based.

In September 2017, NRC notified the PRPN to replace three existing regional plans with provisions that were developed to give effect to the policies and methods of the RPS. As such, the policies and objectives of the RPS and PRPN respond to the same resource management issues and for this reason, the two documents are assessed in combination in this section.

While all appeals on the PRPN were resolved by February 2023, until such time as the PRPN is made fully operative by NRC, the objectives and policies of the operative Regional Plans must be considered where it is reasonable to do so. Determining whether and what weight to place on an operative plan policy framework relies on the coherence of the pattern of the framework in that plan compared to that which is presented in the proposed policy framework. In this respect, only provisions of the RPS and PRPN have been assessed in this AEE for the following reasons;

- The PRPN gives effect to the RPS, in particular its methods unlike predecessor Regional Plans which were prepared before the RPS was notified and made operative; and
- Turning to predecessor plans would not be of any benefit to this evaluative exercise and may in fact cause an incoherence of analysis of the key documents.

Policies 4.2.1, 4.4.1, 4.6.1, 4.7.2, 6.1.1 RPS and D.2.17, D.2.18, D.4.1, D.4.4, D.4.25, D.4.26, D.4.27, D.4.25, PRPN guide decision-makers to the general course of action as relates to the integrated management of freshwater, including managing the adverse effects of land and

water-based activities on water quality, indigenous biodiversity, and the natural character of waterbodies and their margins.

The extent of earthwork ad vegetation clearance is to be kept to the minimum to accommodate the footprint of the bridge approaches and abutment. Adverse effects with regard to indigenous biodiversity are not of a scale or level of significance where the effects management hierarchy needs to be initiated. The proposal therefore achieves the desired outcomes established under Objectives 3.1, 3.2, 3.4, 3.5, 3.14, and 3.15 of the RPS and F.1.2 and F.1.3 PRPN.

The margins of the Whangae River at this location are relatively unmodified except for the existing one-lane bridge and roading either side. The Proposal will increase the level of modification within the margins of the Whangae River however this is considered appropriate given that the modifications are for transportation which is the anticipated use of the land given its road reserve status. The Proposal therefore achieves the desired outcomes of Objectives 3.14, and 3.15 RPS and F.1.12 PRPN.

The benefits to be realised through the Proposal can be achieved alongside measures to avoid, remedy or mitigate adverse effects as has been demonstrated in the assessments above. The RPS and PRPN both direct decision-makers to recognise and promote the benefits of regionally significant infrastructure at Objective 3.6 and 3.7 RPS, and F.1.6 and F.1.11 of the PRPN. Policies 5.3.1, 5.3.2, and 5.3.3 RPS, and D.2.2, D.2.5, D.2.8, and D.4.26 PRPN specifically state how these are to be achieved and the proposal is consistent with these including that adverse effects during construction will not be significant, and that the adverse effects of the completed work will have a neutral to positive outcome for the receiving environment.

Subject to erosion and sediment control measures, soil conservation is achieved. The proposal is therefore consistent with Policies 5.1.1 RPS, and D.4.27 PRPN and Objective 3.6 RPS.

Objectives 3.12 RPS and F.1.9 PRPN require that tangata whenua kaitiaki role is recognised and provided for in decision-making over natural and physical resources. Policies 8.1.1 and 8.1.4 RPS prescribe that a consent applicant should clarify Māori concepts, values and practices through consultation to develop methodologies for recognising and providing for kaitiakitanga role of tangata whenua, although D.1.1 PRPN guides applicants that an analysis of effects on tangata whenua and their taonga is only required where adverse effects are likely on specific values or sites. Mana whenua representation on the Trust will.

Section 123 of the RMA defines the period for which consents may be granted. The proposed consent durations specified at Section 7.5 are consistent with Policy D.2.14 PRPN.

7.2.6 District Plans

The FNDP became fully operative in 2009 and has been subject to a number of plan changes. The objectives and policies of the FNDP which are relevant to the proposed activities are contained in Chapter 2, Chapter 8, Chapter 12 and Chapter 17.

Formal notification of the pFNDP was made on 27 July 2022 with an initial submission period ending 22 October 2022, followed by a further submission period between 7 August and 4 September 2023. Hearings started at the end of May 2024. At the date of formal notification (27 July 2022), objectives and policies contained in the PFNDP had legal effect, which means that for resource consenting purposes, these must be taken into account alongside the

existing objectives and policies contained in the FNDP. The objectives and policies of the pFNDP which are relevant to the proposed activities are contained in Part 1 (Tangata Whenua), Part 2 (Infrastructure, Transport, Natural Hazards, Ecosystems and indigenous biodiversity, Natural Character, Coastal Environment, Earthworks, Light, Noise, Signs) and Part 3 (Rural production).

All relevant matters of both the FNDP and pFNDP are addressed below in themes to cohesively assess resource management issues and opportunities for the District.

Tangata Whenua

The proposal is not contrary to Policies 2.8.2 and 2.8.3 of the FNDP and TW-P6 of the pFNDP as it has been designed and will be constructed under the guidance of the Trust, an accidental discovery has been proposed and will be held onsite during construction, and Te Raupo Road services whenua Māori therefore is an enabler to the development of that land. For these reasons, the proposal is consistent with Objectives 2.7.1, 2.7.3, and 2.8.2 of the FNDP and TW-O3, TW-O4, and TW-O5 of the pFNDP.

Indigenous Flora and Fauna

Only limited areas (permitted in other zones) of indigenous vegetation will be cleared and these areas are peripheral to the more ecologically significant areas within the interior of the shrubland area. Therefore, significant indigenous vegetation and significant habitats of indigenous fauna values as a functioning ecological unit will be protected. The proposal is therefore considered to be consistent with Policies 12.2.4.1, 12.2.4.2, 12.2.4.3, 12.2.4.4, 12.2.4.5, and 12.2.4.13 of the FNDP, and IB-P2, IB-P5, and IB-P10 of the pFNDP and does not contravene Objectives 12.2.3.1 and 12.2.4.1 of the FNDP and Objectives IB-O2, IB-O3, and IB-04 of the pFNDP.

Utility Services & Transport

The upgrading of Te Raupo Road bridge is necessary to meet existing needs of a small resident population as the current bridge is unsuitable for anything larger than a standard SUV. Additionally, the new bridge will enable maintenance and construction machinery to safely access the C-Trail which is regionally significant. The replacement bridge is a simple single span structure and utilizes similar, if not the same, materials as the SH11 Whangae River road bridge therefore it will maintain the qualities of the physical environment while also avoiding, remedying or mitigating potential adverse effects on the environment. The new bridge will not exacerbate the effects of flood and coastal hazards on other property according to analysis (see Appendix DAppendix D). The proposal is therefore considered to be consistent with Policies 17.2.4.2, 17.2.4.3, and 17.2.4.4 of the FNDP and TRAN-P1 and TRAN-P2 of the pFNDP and is not contrary to Objectives 17.2.3.1 of the FNDP and TRAN-O1, TRAN-O2, AND TRAN-O6 of the pFNDP.

7.2.7 Section 104(1)(c) RMA

In accordance with Section 104(1)(c) of the RMA, the consent authority must have regard to any other matter considered relevant and reasonably necessary to determine the application. To ensure a full and complete application is submitted, such matters are assessed as follows.

7.2.7.1 Long-Term Plans & Northland Walking and Cycling Strategy

The C-Trail currently holds ‘Great Ride’ status and is the only Great Ride north of the Hauraki Region. The Great Rides of the New Zealand Cycle Trail network are predominantly off-road

trails. They showcase the best of New Zealand landscapes, environment, culture, and heritage. The trails are located around the country from Northland to Southland.

Great Ride status has a national recognition and standards to ensure the cycling experience is offering world-class visitor experiences, and that the trails create ongoing job opportunities and economic, recreational and health benefits for New Zealanders.

The Northland Walking and Cycling Strategy August 2018 (NWCS) contains the tactical framework to support the development and implementation of the district council walking and cycling strategies and to place these within a regional context identifying actions that can be taken at a regional level. It reported that the C-Trail attracted an estimated $400,150 in revenue from domestic tourists and $116,649 in revenue from international tourists (total visits 14,517) in 2015, prior to the full opening of the trail.

FNDC committed funding in its 2021-31 Long Term Plan (LTP) to re-instate the Kawakawa to Ōpua section of the Great Ride and funding has been re-committed for the 2024/25 financial year in the LTP 2024-27 consultation document.

The upgrade of the bridge will support the capability of the Applicant to build and maintain the C-Trail which would be more efficiently accessed using Te Raupo Road and in turn this will contribute to the opportunities and strategic linkages identified in the NWCS.

7.2.7.2 Iwi/Hapū management plans

Ngāti Hine have an iwi/hapū environmental management plan (IHEMP) relevant[7] to the location of this activity. The granting of this consent is not contrary to the objectives and policies contained within Sections 2.2 (Water and Land) and 2.3 (Soils and Minerals).

Regarding Section 2.4 (Indigenous Biodiversity), the proposal is not inconsistent to the relevant objectives and policies of the IHEMP as ecosystems and ecosystem functions of the area will be protected as only limited peripheral areas (permitted in other zones) of indigenous vegetation will be cleared.

7.2.8 Section 104D RMA

Section 104D RMA applies to the resource consent application as it is being assessed as a non-complying activity. The application therefore needs to pass at least one of the two tests described at Section 104D(1)(a) or (b) being;

- the adverse effects of the activity on the environment will be no more than minor; or
- the application will not be contrary to the objectives and policies of the relevant plan.

In terms of the first legal test, case law[8] has confirmed the meaning of minor as being *"lesser or comparatively small in size or importance. Ultimately an assessment of what is minor must involve conclusions as to facts and the degree of effect. There can be no absolute yardstick or measure."*

The assessment at Section 6 of this report concludes that the effects on the environment will be minor at most. The application can meet this gateway test without resorting to limb (b) of Section 104D RMA. However, should the second test be applied, it can be passed as there is

[7] See Page 20 of the Ngāti Hine Environmental Plan 2022, *Ngā Tikanga mo te Taio o Ngāti Hine*.
[8] *Elderslie Park Limited v Timaru District Council* [1995] NZRMA 433 (HC) at 445-446.

no obvious reason why the proposal is contrary to the objectives and policies of the relevant plan[9] as assessed above in Section 7.2 of this report.

The consenting authorities can therefore be satisfied that resource consent may be granted.

7.2.9 Section 105 RMA

The discharge of stormwater (see Sections 3 and 4) contravenes Section 15 of the RMA, and therefore regard must be had to the matters outlined in Section 105 of the RMA.

The nature of and reasons for the discharges were described in Sections 2 and 3 above while the sensitivity of the receiving environment to adverse effects was described in Section 2.

Given the minor nature of earthworks and its proximity to water, there is no possible alternative method of discharging however the proposed nature and quantity of stormwater to be discharged is considered to be the best practicable option.

In concluding, these additional matters do not raise any impediment to the grant of the proposed discharge permits.

7.3 Section 107 RMA

Section 107 of the RMA restricts the granting of discharge permits if they would result in the following effects after reasonable mixing in the receiving waters:

> *(c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:*
>
> *(d) any conspicuous change in the colour or visual clarity:*
>
> *(e) any emission of objectionable odour:*
>
> *(f) the rendering of fresh water unsuitable for consumption by farm animals:*
>
> *(g) any significant adverse effects on aquatic life.*

The proposal will not result in such effects after reasonable mixing in receiving waters as has been assessed above (see Section 6.4).

7.4 Section 108 RMA

Section 108 RMA confirms that a resource consent may be granted on any condition that the consent authority considers appropriate, including any condition of a kind referred to in subsection (2).

The proposed site management and controls at Section 3.1 should form conditions of consent alongside any other standard conditions the consenting authorities would usually apply for activities of the scale and nature proposed.

7.5 Section 123 and 125 RMA

In accordance with Section 123(b) RMA, the period for which land use consent from FNDC may be granted may be unlimited. This is considered appropriate subject to a suitable lapse term pursuant to Section 125 RMA.

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[9] Under Section 43AA of the RMA a 'plan' is defined as 'a regional plan or a district plan' therefore the 'relevant plan' is the PRPN.

NRC may grant land use consent, and discharge and water permits for a period of no more than 35 years. While the work is expected to be completed within 6-months, a term of 3-years is proposed to accommodate any unforeseen delays.

8 Conclusion

Pursuant to Sections 104B and 104D of the RMA, the applications can be granted for the following summary reasons;

a) No person(s) have been considered to be affected in a manner that would define them as an affected person in terms of Section 95E of the RMA (see Section 5.2 of this report);
b) Any actual or potential effects on the environment are considered to be no more than minor (see Section 6 of this report);
c) Evaluation of the effects of the proposal against the relevant matters of Section 104 of the RMA and against the relevant objectives and policies of the applicable statutory documents demonstrates that the proposal is not contrary to the key provisions (see Section 7.2 of this report); and
d) There is no reason not to grant resource consents under Part 2 of the RMA as the proposal considers future generations and the need to preserve the life-supporting capacity of natural resources by ensuring the use and development implements measures to avoid, remedy, or mitigate any adverse effects on the environment.

Appendix A
Civil and Structural Drawings

Appendix B
Record of Title

Appendix C
Assessment of relevant requirements, conditions, or permissions of a Planning Document

Appendix D
Hydrology Memorandum

Te Raupo Road Bridge Replacement - Analysis of Consenting Requirements

Table 1: Analysis of resource consent requirements and management/mitigation measures.

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
Disturbing soil in the manner proposed and the ongoing use of land for roading.	Coal tar has been known to have been used in roading in New Zealand until the 1970's and road seal layers have been found to contain polycyclic aromatic hydrocarbons (PAHs). The road remains gravelled with no evidence of a hazardous activity or industry having taken place at the Project site. Disturbing soil in the manner proposed and the ongoing land use is not likely to contravene a regulation in the NESCS.	NESCS	9	Not regulated	WDC
Clearing vegetation within, or within 10m setback of a natural inland wetland to construct specified infrastructure.	The affected Mānuka-Mingimingi shrubland is brackish but there are distinctive classes of both freshwater/terrestrial and marine vegetation species present in the areas which will be stripped to form the embankments. Minor loss of very small areas (see HW Dwg. No. PDP01) of low-quality wetland habitat to construct embankments.	NESFM	45(1)	Discretionary	NRC
Earthworks within, or within a 10m setback of a natural inland wetland to constructed specified infrastructure.	The affected Mānuka-Mingimingi shrubland is brackish but there are distinctive classes of both freshwater/terrestrial and marine vegetation species present in the areas which will be stripped to form the embankments. Minor loss of very small areas (see HW Dwg. No. PDP01) of low-quality wetland habitat to construct embankments.	NESFM	45(2)	Discretionary	NRC

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
The diversion of water within, or within a 100m setback from a natural inland wetland to construct specified infrastructure.	There will be no change in the water level range or hydrological function of the wetland as a result of construction stormwater diversions. Diverted stormwater will be discharged to the roadside drain as would usually occur. Effects considered a part of the existing environment (not regulated).	NESFM	45(4)	Not regulated	NRC
The discharge of water into water within, or within a 100m setback from a natural inland wetland to construct specified infrastructure.	There will be no change in the water level range or hydrological function of the wetland as a result of construction stormwater discharge to the roadside drain as this would usually occur. Effects considered a part of the existing environment (not regulated)	NESFM	45(5)	Not regulated	NRC
Damage, destruction, disturbance, or removal of vegetation in a significant wetland.	Minor removal of very small areas (see HW Dwg. No. PDP01) of low-quality wetland vegetation to construct embankments is proposed. The activity cannot rely on; • permitted activity rule C.2.2.2 PRPN as the bridge is not being repaired or maintained nor is it Regionally Significant Infrastructure or Core Local Infrastructure at this time; and • discretionary activity rule C.2.2.4 PRPN as according to NZ Environmental Management Ltd[1], any area of wetland at this location would be "Significant" as it contains vegetation that supports one or more indigenous taxa that are "Threatened" or "At Risk".	PRPN	C.2.2.6	Non-complying	NRC
The removal or demolition of an existing structure in the coastal marine area and	The activity complies with the conditions of C.1.8 Coastal works general conditions, and the existing bridge is not a Historic Heritage Site. Effects	PRPN	C.1.1.10	Permitted	NRC

[1] J. Unteregger (personal communication, 16 March 2024).

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
any incidental disturbance of the foreshore. For the avoidance of doubt this rule covers the following RMA activities: • Removal or demolition of a structure in, on, under, or over any foreshore and any incidental disturbance of the foreshore (s12(1)).	considered a part of the existing environment (i.e., permitted in a plan).				
Erection of the bridge in the General Marine Zone and the occupation of the coastal area by the structure that is not permitted, controlled, restricted discretionary, or non-complying.	The bridge will not be in a mapped • Nationally Significant Surf Break, • Regionally Significant Anchorage, • Outstanding Natural Feature, or • Area of Outstanding Natural Character, or • Site or Area of Significance to Tāngata Whenua, or • Outstanding Natural Landscape, Historic Heritage Area, or • Significant Ecological Area, or • Significant Bird Area – Critical Bird Habitats. There is no removal, demolition, partial demolition or replacement of a mapped Historic Heritage Site or part of a Historic Heritage Site and the structure has a functional need to be located in the coastal marine area.	PRPN	C.1.1.22	Discretionary	NRC
The placement of an obstruction (including a structure) in a flood hazard area (including a high-risk flood hazard area), an overland flow path, a river or an artificial watercourse that will, or is	Analysis has been provided by Trinekel Ltd (see Appendix C) advising that the embankments and/or bridge would not form a discernible obstruction to the flood hazard in this area.	PRPN	C.3.1.9	Relevant but not applicable	NRC

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
likely to, divert water onto other property. For the avoidance of doubt this rule covers the following RMA activities: • Placement of an obstruction (including a structure) in a flood hazard area (including a high-risk flood hazard area), an overland flow path, or an artificial watercourse that will, or is likely to, divert water onto other property (s9(2)). • Placement of an obstruction (including a structure) or deposition of an obstruction in, on, or under the bed of a river that will, or is likely to, divert water onto other property (s13(1)). • Damming and diversion of water within a flood hazard area (including a high-risk flood hazard area), an overland flow path, a river, or an artificial watercourse (s14(2)).					
Earthworks within 10 m of a natural wetland, coastal riparian management area, and a high-risk flood hazard area that is not a permitted or a controlled activity.	A total of 170 m^3 of earth will be moved or placed to form the embankments. Earthworks within the coastal riparian management area would be a permitted activity (<200 m^3 of earth exposed at any time) while earthworks within the high-risk flood hazard would be a controlled activity	PRPN	C.8.3.4	Discretionary	NRC

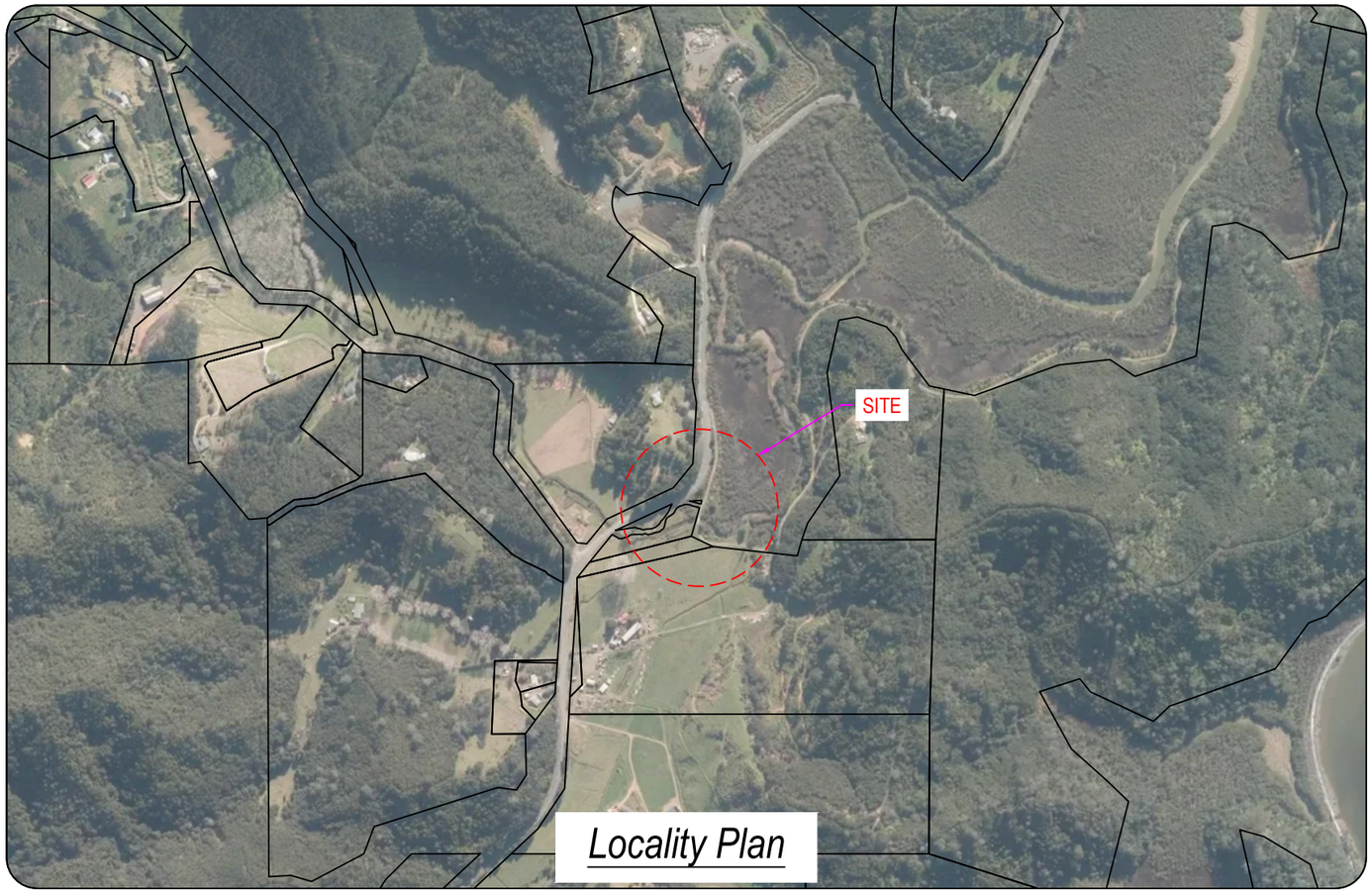
Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
For the avoidance of doubt this rule covers the following RMA activities: • Earthworks (s9(2)). • Damming and diversion of stormwater associated with earthworks (s14(2)). • Discharge of stormwater associated with earthworks into water or onto or into land where it may enter water (s15(1)).	(>50<1000 m^3). However, earthworks will take place within 10 m of a wetland which has a limit of 50 m^3 of earth moved or placed in any 12-month period.				
Vegetation clearance in Coastal Riparian Management Area. For the avoidance of doubt this rule covers the following RMA activities: • Vegetation clearance and coastal dune restoration (s9(2)). • Damming and diversion of stormwater associated with vegetation clearance and coastal dune restoration (s14(2)). • Discharge of stormwater associated with vegetation clearance and coastal dune restoration into water or onto or into land where it may enter water (s15(1)).	The definition of "Vegetation Clearance" in the PRPN excludes clearance alongside roads. However, according to the Section 42A Hearing Report on the PRPN (at Paragraph 50), "the definition does not apply to new structures". There are no permitted activities for Vegetation Clearance within the Coastal Riparian Management Area.	PRPN	C.8.4.3	Discretionary	NRC
Chapter 10: General Coastal Zone rules not applicable	In accordance with Chapter 3 of the FNDP, a bridge is defined as a "Building". However, equally, the	FNDP	NA	NA	FNDC

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
	bridge is defined as a "Road" because it is stated so at Section 315(1)(g) of the Local Government Act 1974. Given the main function of the bridge is as a roadway, this definition is more specific to the activity and its effects. As such, the bridge is not considered to be a "Building". As the best suited definition for the bridge is "Road" it cannot be defined as a "Site" either. As all zone rules rely on the term "site", the activity is not regulated under this Chapter of the FNDP.				
Chapter 12.1 Landscape & Natural Features	*The work does not take place in an outstanding landscape or landscape feature*				
Indigenous vegetation clearance in the general coastal zone	Clearance of a small area of indigenous vegetation within 20 metres of the CMA cannot rely on permitted activity rule 12.2.6.1.1 FNDP as the indigenous vegetation habitats are not likely to be less than 10-years old	FNDP	12.2.6.3(b)	Discretionary	FNDC
Excavation and/or filling, excluding mining and quarrying, in the rural general coastal zone	Total earthworks volumes are 70 m^3 cut, and 100 m^3 fill. No major cut faces will be formed as only topsoil stripping required.	FNDP	12.3.6.1.2	Permitted	FNDC
Nature of filling material in all zones	Fill will mostly be site-won and clean aggregate.	FNDP	12.3.6.1.4	Permitted	FNDC
Chapter 12.4 Natural Hazards	*The activity is not in a Coastal Hazard area.*				
Chapter 12.5 Heritage	*There are no; notable trees; historic sites, buildings or objects; Appendix 1 archaeological sites; or precincts affected by the proposal.*				
Chapter 12.7 Setback from lakes, rivers and the coastal marine area	*The setbacks in this chapter do not apply to bridges.*				
Preservation of indigenous wetlands	The indigenous wetlands in the area are greater than 200 m^2 in total. However, the area of wetland affected is very small (see HW Dwg. No. PDP01). As	FNDP	12.7.6.1.3	Permitted	FNDC

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
	such, the land use activity should not result in changes to the natural range of water levels or permanently change the natural ecosystem or flora and fauna of the entire wetland.				
Consent status indices for permitted activities	Substances are not anticipated to be held onsite. However, if they are they will be held in accordance with the permitted activities in Table 12.8.6.1 - specifically (i), (viii), (xiii). The Construction Environment Management Plan will include measures to prevent spillage of fuel, oil or similar contaminants and a contingency and containment protocol in the event of accidental spillage of hazardous substances.	FNDP	12.8.6.1.1	Permitted	FNDC
Chapter 15 Transportation	*Construction traffic associated with the establishment of the activity is exempt from this rule. No other rules in this chapter relate to the formation of roads by the road controlling authority.*				
Light spill & glare	No lighting is proposed for the work and no permanent fixed street lighting is to be installed.	FNDP	16.6.1.1	NA	FNDC
General requirements for all signs	Road signage will be installed and will conform with required standards (see HW Dwg. No. PDP01)	FNDP	16.6.1.2	Permitted	FNDC
Formation, maintenance and upgrading of roads	This rule applies to all work outside of the designation and that does not take place over the bed of the Whangae River. Resource consent is being sought under this rule for all of the Road being upgraded and/or formed and the designation is to be disregarded. This is considered more efficient than applying for an alteration to designation plus a resource consent. As the designation is not being relied upon, an Outline Plan of Works (OPW) is not required to be submitted as the matters relevant to an OPW will be addressed through this resource	FNDP	17.2.6.4	Discretionary	FNDC

Activity	Commentary	Relevant documents	Rule &/or Regulation	Likely overall classification	Deciding authorities
	consent application and any resource consent which may be granted.				
Indigenous vegetation clearance and any associated land disturbance within a Significant Natural Area	Although the work is for infrastructure, compliance is not achieved with PER-1 of IB-R1. However, compliance will be achieved with PER-1 of this rule as vegetation clearance will be <100 m^2 per site.	pFNDP	IB-R3	Permitted	FNDC
Earthworks and the discovery of suspected sensitive material	The earthworks complies with standard EW-S3 - Accidental Discovery Protocol.	pFNDP	EW-R12	Permitted	FNDC
Earthworks and erosion and sediment control	The earthworks complies with standard EW-S5 Erosion and sediment control.	pFNDP	EW-R13	Permitted	FNDC

TE RAUPO ROAD BRIDGE
TE RAUPO ROAD, OPUA
FAR NORTH DISTRICT COUNCIL



Locality Plan

Locality Map

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Civil Drawing Register

Dwg No	Title 01	Title 02	Revision No.	Revision Date
COV01	COVER PAGE		A	14/02/2024
REG01	REGISTER		A	14/02/2024
DWG01	DRAWING NOTES		A	14/02/2024
PDP01	PROPOSED DEVELOPMENT PLAN		A	14/02/2024
RDL01	ROAD	LONG SECTION	A	14/02/2024
RDC01	ROAD	CROSS SECTIONS 1/2	A	14/02/2024
RDC02	ROAD	CROSS SECTIONS 2/2	A	14/02/2024
RDD01	PAVEMENT	TYPICAL CROSS SECTION	A	14/02/2024
RDD02	ROCK REVETMENT	TYPICAL DETAIL	A	14/02/2024
RDD03	TRAFFIC DIVERSION PLAN		A	14/02/2024

Structural Drawing Register

Dwg No.	Title 01	Title 02	Revision No.	Revision Date
STD-01	STANDARD DETAILS		A	02/24
S-01	GENERAL ARRANGEMENT	PLAN AND ELEVATION	A	02/24
S-02	GENERAL ARRANGEMENT	PILE SETOUT & DETAILS	A	02/24
S-03	PILE DETAILS	REINFORCEMENT	A	02/24
S-04	ABUTMENT A & B	LAYOUT & SECTIONS	A	02/24
S-05	ABUTMENT A & B	REINFORCEMENT	A	02/24
S-06	WING WALL A & B	REINFORCEMENT	A	02/24
GR-WB-096	800mm RAMSHIELD NZ ASSEBLY WITH POSTS ON BASEPLATE		A	02/24
GR-WB-084	NZ RAMSHIELD ASSEMBLY CONNECTION TO CURVED RAIL TERMINAL		B	02/24

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NOTES:

1. GENERAL NOTES

1. ALL WORKS IN ACCORDANCE WITH FNDC ENGINEERING STANDARDS.
2. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND IDENTIFYING ALL SERVICES AND PROVIDING TEMPORARY PROTECTION AS NECESSARY.
3. CONTRACTOR TO BE RESPONSIBLE FOR ALL EARTHWORKS EROSION AND SEDIMENTATION CONTROL MEASURES TO SATISFACTION OF COUNCIL MONITORING OFFICER.
4. ALL SURPLUS AND WASTE MATERIALS TO BE REMOVED FROM SITE.

2. BULK FILL NOTES

1. CONTRACTOR TO PROOF ROLL SHOULDERS OF EXISTING ROAD. SOFT SPOTS TO BE REMOVED.
2. GRANULAR HARD FILL MATERIAL:

   THIS MATERIAL IS A NON-SPECIFIC QUARRY AGGREGATE SUITABLE FOR USE AS A SUBGRADE IMPROVEMENT LAYER. LIME ROCK IS NOT ACCEPTABLE AS A GRANULAR FILL.
   THIS SUB-BASE MATERIAL SHALL HAVE MINIMUM SOAKED CBR OF 20 AND A NOMINAL MAXIMUM SIZE.
   THE MATERIAL SHALL BE SUITABLY GRADED, MODERATE TO HIGHLY WEATHERED QUARRY ROCK WITH SUFFICIENT FINES TO AID COMPACTION. A MINIMUM OF 10% BY DRY MASS SHALL BE UNWEATHERED (BLUE) MATERIAL TO ENSURE A LEVEL OF DURABILITY.
   THE SOURCE OF SUPPLY OF ALL MATERIALS SHALL BE NOMINATED AND THE MATERIAL SHALL HAVE THE FOLLOWING PROPERTIES:
   - A CRUSHING RESISTANCE NOT LESS THAN 80kN
   - WELL GRADED WITH GRADING SUCH THAT 100% OF THE MATERIAL IS LESS THAN 75MM MAXIMUM SIZE WITH NO MORE THAN 65% PASSING A 19.0mmSIEVE AND 3%-18% PASSING A 1.18mm SIEVE.
   - A SAND EQUIVALENT EQUAL TO OR GREATER THAN VALUE OF 20
3. CLEGG TESTING AT EVERY 0.3m VERTICAL LIFT. CLEGG IMPACT VALUES TO BE NO LESS THAN 20.
4. SIDES OF EMBANKMENT TO BE GRASSED ON COMPLETION. CONTRACTOR TO BE RESPONSIBLE FOR ACHIEVING 85% GRASS STRIKE COVERAGE.
5. BATTERING SHALL BE UNDERTAKEN TO ENSURE ALL FILL MATERIAL IS PLACED ON A HORIZONTAL SURFACE.

3. ROADING NOTES

1. CONTRACTOR TO SUBMIT LABORATORY TESTING RESULTS FOR PAVEMENT AGGREGATES (COMPACTION CURVES, GRADING CURVES, SOLID DENSITY, CRUSHING, WEATHERING, CLAY AND PLASTICITY INDEX, AND CBR) FOR ENGINEERS APPROVAL PRIOR TO BRINGING MATERIAL TO SITE.
2. CONTRACTOR MAY PROPOSE ALTERNATIVE MODIFIED BASECOURSE MATERIAL SUBJECT TO APPROVAL BY ENGINEER.
3. ALL PAVEMENT COMPACTION TESTING BY ENGINEER EXPERIENCED IN CARRIAGEWAY TESTING.
4. FOR THE CONSTRUCTION OF PAVEMENT LAYERS, THE UNCOMPACTED LAYER THICKNESS SHALL NOT BE:
   - MORE THAN 200mm FOR ANY LAYER; OR
   - LESS THAN 2.5 TIMES THE MAXIMUM PARTICLE SIZE OF THE AGGREGATE, FOR ANY LAYER.
6. THE MAXIMUM DRY DENSITY AND OPTIMUM WATER CONTENT OF THE PROPOSED PAVEMENT AGGREGATES SHALL BE OBTAINED IN ACCORDANCE WITH NZS 4402:1986, TEST 4.1.3
7. COMPACTION OF PAVEMENT LAYERS SHALL BE AS FOLLOWS:
   - SUBBASE: AN AVERAGE OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY FOR SUBBASE LAYER AND BASECOURSE LAYER FOR AREAS TO REMAIN UNSEALED MUST BE ACHIEVED, MINIMUM RESULT OF 92%. CLEGG IMPACT VALUES TO BE NO LESS THAN 30.
   - BASECOURSE FOR SEALED AREAS: AN AVERAGE OF AT LEAST 98% OF THE MAXIMUM DRY DENSITY FOR THE FINAL BASECOURSE LAYER MUST BE ACHIEVED, MINIMUM RESULT OF 95%. CLEGG IMPACT VALUES TO BE NO LESS THAN 45. ALL TEST RESULTS ARE TO BE SUPPLIED PRIOR TO SEALING.
   - BASECOURSE FOR UNSEALED AREAS: AN AVERAGE OF AT LEAST 95% OF THE MAXIMUM DRY DENSITY FOR THE FINAL BASECOURSE LAYER MUST BE ACHIEVED, MINIMUM RESULT OF 92%. CLEGG IMPACT VALUES TO BE NO LESS THAN 30.

GENERAL NOTES:
1. Levels in terms of Mean Sea Level (NZVD 2016)
2. Coordinates in terms of NZGD 2000 (Mt Eden Circuit)
3. All features taken from Topo plan by Thomson Survey, dated Oct 21 .

LEGEND
- Boundaries
- Overhead Power line
- MHWS (Edge of CMA)
- Edge of existing road
- Approximate edge of earthworks
- Modelled edge of earthworks
- Extent of pavement overlay
- Extent of rip-rap

ONE WAY BRIDGE SIGN W13-2
PASSING BAY
GIVE WAY SIGN R2-7 R2-7.1
POWER POLE
5m LENGTH OF GRADE 3/5 CHIPSEAL FOR RUN-ON
ONE WAY BRIDGE SIGN W13-2
METAL
BRIDGE DECK SEALED WITH 25mm DG7
SINGLE LANE PRIORITY SIGN R2-8
5m LENGTH OF GRADE 3/5 CHIPSEAL FOR RUN-ON
PASSING BAY
GATE
4m
5m
6m

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG PROPOSED DEVELOPMENT PLAN

A3 Scale 1: 200 (0, 4, 10)

Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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Stage 00

Dwg No. PDP01

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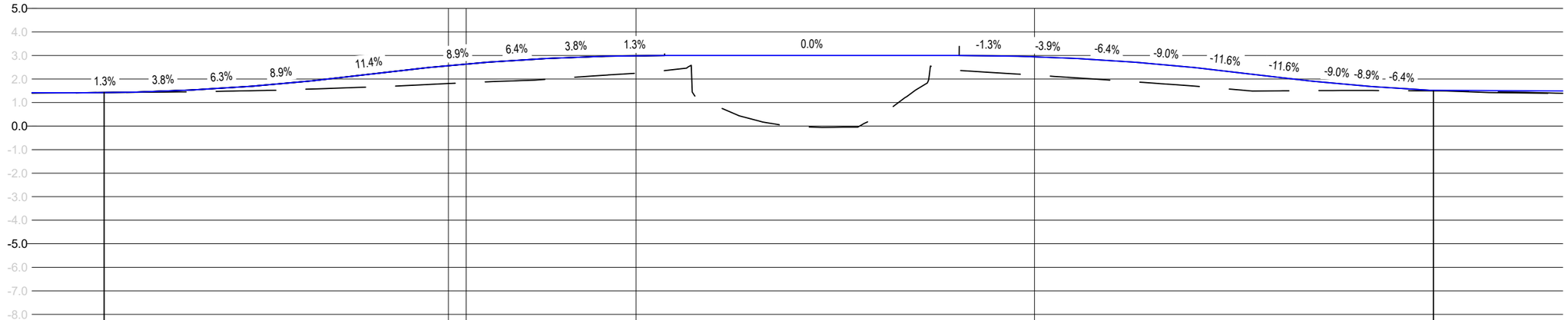

Vertical: 1:200
Horizontal: 1:200

Datum -10.0

Design Levels	1.419		1.466		1.753		2.278		2.754		2.976		3.000		3.000		2.992		2.831		2.412		1.850		1.517	1.490
Existing Levels	1.400		1.44		1.516		1.68		1.905		2.21		0.450		-0.05		2.324		2.00		1.647		1.51		1.491	1.393
Cut/Fill Depth	0.019		0.025		0.237		0.597		0.849		0.771		2.550		3.047		0.668		0.826		0.765		0.341		0.026	0.097
Vertical Geometry	L = 26.865 -0.493%	L = 2.500 1.272%	L = 2.432 3.816%	L = 2.568 6.292%	L = 2.500 8.904%	L = 5.000 11.448%	L = 2.500 8.904%	L = 2.500 6.360%	L = 2.500 3.816%	L = 2.500 1.272%	L = 12.503 0.000%						L = 2.500 -1.286%	L = 2.500 -3.859%	L = 2.500 -6.432%	L = 2.500 -9.005%	L = 2.500 -11.578%	L = 2.500 -11.578%	L = 2.003 -9.005%	L = 0.524 -8.873%	L = 2.473 -6.432%	L = 31.219 -0.539%
Horizontal Geometry			L = 18.192 R = 100.000				L = 0.758	L = 7.212 R = 20.000			L = 16.921								L = 36.479 R = 22.000							
Chainage	25.000		30.000		35.000		40.000		45.000		50.000		55.000		60.000		65.000		70.000		75.000		80.000		85.000	90.000

ROAD 01

Scale: Horizontal 1:200, Vertical 1:200

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG ROAD
LONG SECTION

A3 Scale 1: 200 (0 4 10)

Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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Stage 00

Dwg No. RDL01

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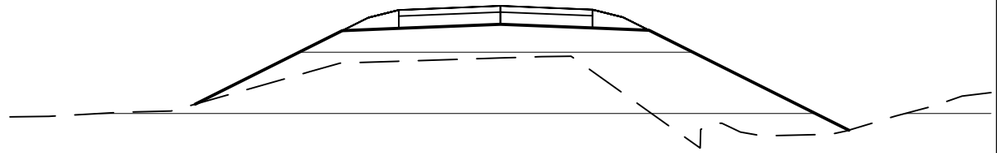
Datum: 0.000

Design Surface	1.114	1.298	1.453	1.393	0.673	
Existing Ground	1.114	1.247	1.516	1.539	0.673	
Level Difference	0.000	0.050	-0.063	-0.147	0.000	
Offset	-5.091	-3.874	0.000	1.500	3.789	

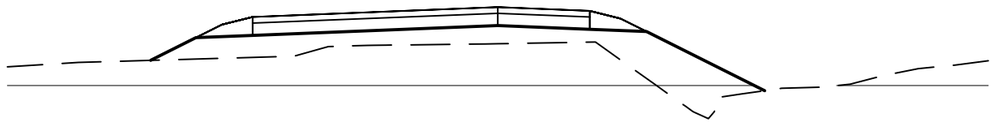
Chainage 35.000



Datum: 0.000

Design Surface	1.152	2.388	2.454	2.394	0.728	
Existing Ground	1.152	1.852	1.905	1.685	0.728	
Level Difference	0.000	0.536	0.549	0.709	0.000	
Offset	-4.979	-1.657	0.000	1.500	5.683	

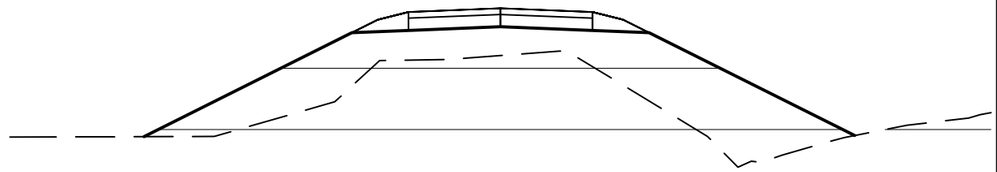
Chainage 45.000



Datum: 0.000

Design Surface	1.411	1.818	1.978	1.918	0.916	
Existing Ground	1.411	1.459	1.681	1.708	0.916	
Level Difference	0.000	0.359	0.297	0.210	0.000	
Offset	-5.664	-4.000	0.000	1.500	4.354	

Chainage 40.000



Datum: 0.000

Design Surface	0.884	2.616	2.676	2.616	0.902	
Existing Ground	0.884	2.131	2.206	2.026	0.902	
Level Difference	0.000	0.485	0.470	0.590	0.000	
Offset	-5.815	-1.500	0.000	1.500	5.779	

Chainage 50.000

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG ROAD
CROSS SECTIONS 1/2

A3 Scale 1: 100 (0 2 5) Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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Stage 00

Dwg No. RDC01

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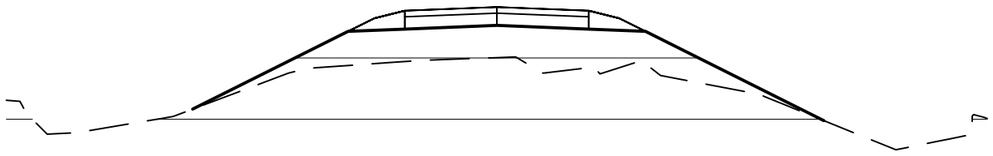
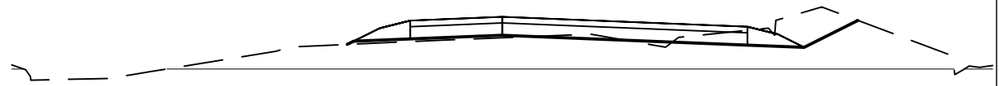


Datum: 0.000

Design Surface	1.166	2.471	2.531	2.471	0.978	
Existing Ground	1.166	1.942	2.005	1.842	0.978	
Level Difference	0.000	0.529	0.526	0.629	0.000	
Offset	-4.960	-1.500	0.000	1.500	5.335	

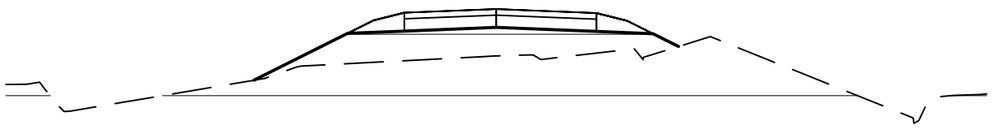
Chainage 70.000



Datum: 0.000

Design Surface	1.400	1.490	1.550	1.390	1.791	
Existing Ground	1.400	1.447	1.509	1.630	1.791	
Level Difference	0.000	0.043	0.041	-0.241	0.000	
Offset	-2.528	-1.500	0.000	4.000	5.801	

Chainage 80.000



Datum: 0.000

Design Surface	1.251	2.052	2.112	2.047	1.802
Existing Ground	1.251	1.569	1.647	1.693	1.802
Level Difference	0.000	0.483	0.465	0.354	0.000
Offset	-3.953	-1.500	0.000	1.633	2.973

Chainage 75.000

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG ROAD
CROSS SECTIONS 2/2

A3 Scale 1: 100 (0 2 5) Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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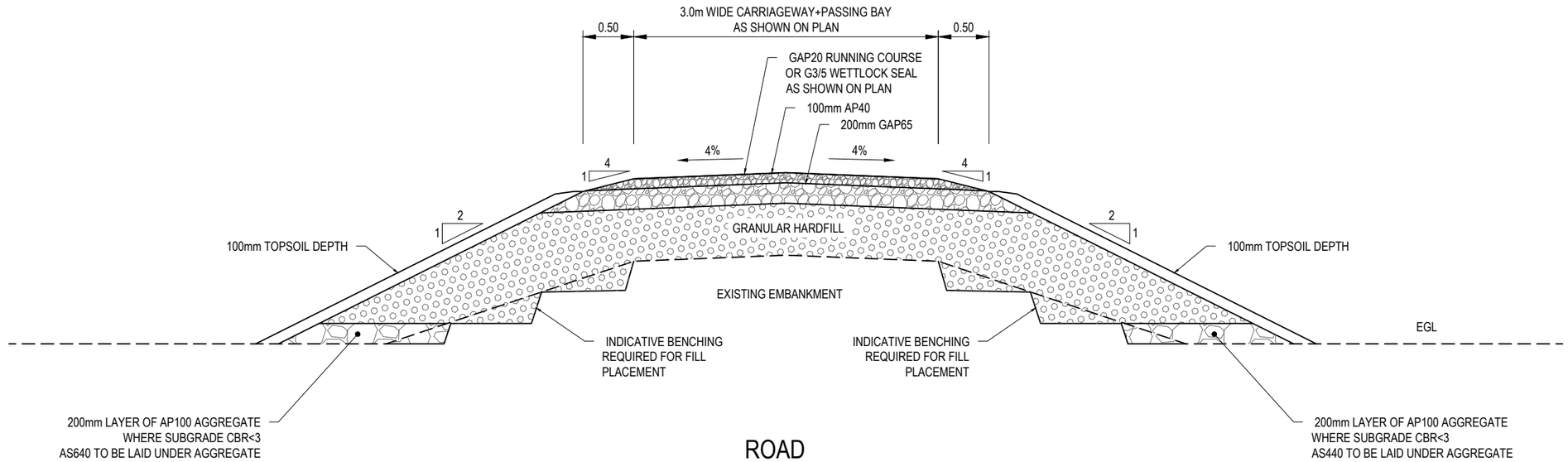
Project No. 21 328 | RC no.

Stage 00 | Dwg No. RDC02 | Sheet No. 2 of 2



ROAD
TYPICAL CROSS SECTION

SCALE 1:50 @ A3

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG PAVEMENT
TYPICAL CROSS SECTION

A3 Scale 1: 50 (0, 1, 3)

Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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Stage 00

Dwg No. RDD01

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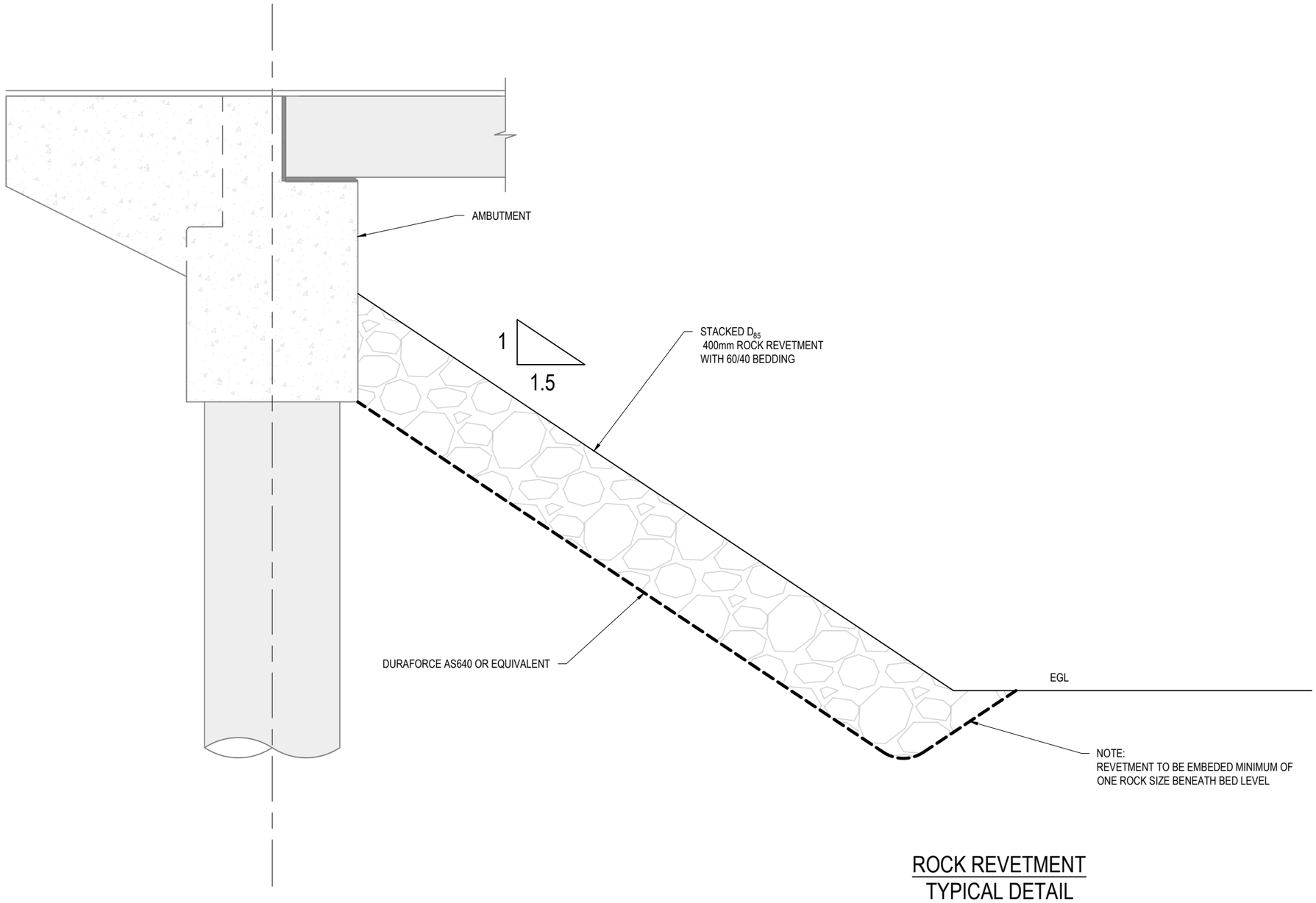

ROCK REVETMENT TYPICAL DETAIL

SCALE 1:25 @ A3

For Tender

Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG ROCK REVETMENT TYPICAL DETAIL

A3 Scale 1: 25 (0 1 1)

Date 14/02/2024

Drawn LP | Checked RH | Approved MR

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Project No. 21 328

RC no.

Stage 00

Dwg No. RDD02

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Rev	Date	Description	By	Checked
A	14/02/2024	For Tender	RH	MR

DWG TRAFFIC DIVERSION PLAN

A3 Scale 1: 10000 0 200 500

Date 14/02/2024

Drawn LP | Checked RH | Approved MR

File T:\CLIENTS\FNDCJOBS\21 328 - TE RAUPO ROAD BRIDGE\ENGINEERING\DRAWING\CIVIL-JAN 2024\21 328 20240213_TRAFFIC PLAN.DWG

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Project No. 21 328

RC no.

Stage 00

Dwg No. RDD03

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PRESTRESSING FORCE AT INITIAL TENSIONING

ALL SUPERSTRANDS SHALL BE 12.7mm SUPER 7 WIRE STRANDS, COMPLYING TO AS/NZS 4672 AND ASSUMED TO HAVE A MINIMUM BREAKING LOAD OF 184kN PER STRAND WITH PRESTRESS AS FOLLOWS:

- TOP TWO STRANDS TO BE PRESTRESSED TO 127KN PER STRAND
- OTHER STRANDS TO BE PRESTRESSED TO 130KN PER STRAND

STRANDS SHALL BE RELEASED SLOWLY AND AFTER RELEASE SHALL BE CUT AND GROUND FLUSH WITH THE CONCRETE AT THE END OF THE UNIT. A THICK COATING OF HIGH BUILD EPOXY PAINT SHALL BE APPLIED AFTER GRINDING BEFORE THE UNIT LEAVES THE CASTING YARD.

HANDLING

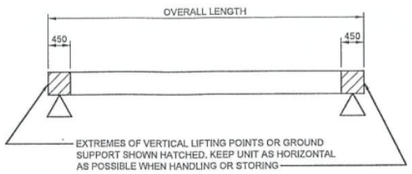


DIAGRAM B
N.T.S.

CONCRETE COVER

COVER TO ALL PRESTRESSING COMPONENTS	40mm
COVER TO ALL REINFORCING STEEL	40mm UNLESS SHOWN OTHERWISE
COVER ADJACENT TO VOIDS	30mm
COVER BETWEEN VOIDS AND SHEAR KEYS	24mm
COVER TO BARRIER FIXING STEEL (WITHIN BARRIER)	65mm

CONCRETE STRENGTH

MINIMUM COMPRESSIVE STRENGTH AT TRANSFER	30MPa
SPECIFIED COMPRESSIVE STRENGTH AT 28 DAYS	50MPa
INFILL CONCRETE BETWEEN UNITS	30MPa
MORTAR BACKFILL TO TRANSVERSE STRAND ANCHORAGE POCKETS	50MPa
NON-SHRINK GROUT TO TRANSVERSE PRESTRESSING STRAND DUCTS	40MPa

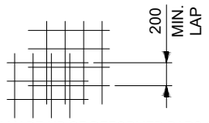
- CONCRETE COVER TO REINFORCEMENT: CAST IN-SITU
  MINIMUM CONCRETE COVER SHALL BE MEASURED TO THE EDGE OF CHAMFERS, RECESSES, REBATES, ETC. WHERE APPLICABLE.
  MINIMUM CONCRETE COVERS ARE GENERALLY SPECIFIED ON INDIVIDUAL DRAWINGS. WHERE NOT SPECIFIED, MINIMUM CONCRETE COVERS SHALL BE AS FOLLOWS:

EXPOSURE SITUATION	FOUNDATIONS	BEAMS AND COLUMNS		RIBS, SLABS, WALLS	
		MAIN BARS	STIRRUPS, TIES, SPIRALS	20mm DIA. & UNDER	25mm DIA. & OVER
CAST AGAINST & EXPOSED TO EARTH	75	75	75	75	75
EXPOSED TO EARTH OR WEATHER					
CAST-IN PLACE	50	50	45	45	45
PRECAST	45	45	45	40	40
NOT EXPOSED TO EARTH OR WEATHER					
CAST-IN PLACE	-	40	25	30	35
PRECAST	-	35	25	30	30

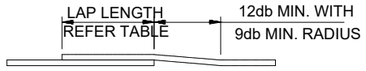
NOTES:
- TOLERANCES ON COVERS SHALL BE:
  FOR 20mm BAR DIAMETER & UNDER: +10, -0
  FOR BAR DIAMETER LARGER THAN 20mm: +15, -0
- PRECAST IN THE CONTEXT OF THIS TABLE MEANS CONCRETE CAST UNDER PLANT CONTROL CONDITIONS, UTILISING RIGID FORMWORK & INTENSE COMPACTION
- COVER VARIES DUE TO EXPOSURE CLASSIFICATION & CONCRETE STRENGTH. REFER TO NZS 3101 : PART 1

- PLACING & SPACING OF REINFORCEMENT - GENERAL
  - SPLICING OF REINFORCEMENT, WHETHER BY LAPPING, WELDING OR MECHANICAL SPLICE, SHALL ONLY BE CARRIED OUT AS SHOWN ON THE DRAWINGS OR AS SPECIFICALLY APPROVED BY THE DESIGNER, EXCEPT AS NOTED BELOW:
    WELDED WIRE MESH SHALL BE SPLICED AS REQUIRED, BUT NOT THROUGH SLAB JOINTS
    REINFORCEMENT IN SLABS ON GRADE AND IN TOPPINGS SHALL BE SPLICED AS REQUIRED, BUT NOT THROUGH SLAB JOINTS.
  - LAYERS OF BEAM REINFORCEMENT SHALL BE SEPARATED WITH R40 BARS AT 1500mm CENTRES
  - ALL HOOKS ON STIRRUPS & TIES MUST FIT CLOSELY AROUND MAIN BARS U.N.O. FIRST STIRRUP TO BE PLACED NOT FURTHER THAN THE LESSER OF HALF THE STIRRUP SPACING OR 50mm FROM SUPPORT FACE

- LAP SPLICES IN REINFORCEMENT
  - WELDED WIRE MESH MADE UP OF SMOOTH WIRES SHALL BE LAP SPLICED WITH A MINIMUM 200mm OVERLAP BETWEEN OUTERMOST CROSS WIRES THUS :



  - WELDED MESH MADE UP OF DEFORMED BARS SHALL BE LAP SPLICED
  - LAP LENGTHS FOR DEFORMED BARS SHALL BE AS SHOWN IN THE FOLLOWING TABLES WHERE SPACING OF ADJACENT BARS ARE EQUAL TO OR GREATER THAN 2.5 db
  - LAP LENGTHS FOR PLAIN ROUND BARS SHALL BE TWICE THOSE SHOWN IN THE FOLLOWING TABLES
  - ALL BEAM AND COLUMN MAIN REINFORCEMENT LAP SPLICES SHALL HAVE CRANKED LAPS UNLESS NOTED OTHERWISE
  - CRANKED LAPS SHALL BE AS FOLLOWS:



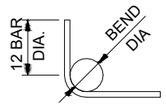
  - LAP LENGTHS ARE IN ACCORDANCE WITH NZS 3101

NOTE: USE OF FOLLOWING TABLES
TOP BAR FACTOR IS 1.0 FOR ALL VERTICAL BARS (COLUMNS, WALLS) AND FOR HORIZONTAL BARS WITH LESS THAN 300mm OF FRESH CONCRETE CAST BENEATH BAR (TYPICALLY BEAM BOTTOM BARS AND SLAB BARS).
TOP BAR FACTOR IS 1.3 FOR ALL HORIZONTAL BARS WITH MORE THAN 300mm OF FRESH CONCRETE CAST BENEATH THE BAR (TYPICALLY BEAM TOP BARS AND HORIZONTAL WALL BARS).

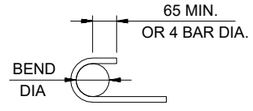
		BAR DIAMETER		
		10	12	16
CONCRETE 30 MPa STEEL GRADE 300 MPa	TOP BAR FACTOR = 1.3	360	430	570
	TOP BAR FACTOR = 1	300	360	480
CONCRETE 30 MPa STEEL GRADE 500 MPa	TOP BAR FACTOR = 1.3	600	720	950
	TOP BAR FACTOR = 1	500	600	800

- SPIRAL, SPLICES AND TERMINATIONS
  - SPLICING OF ADJACENT LENGTHS OF SPIRAL SHALL BE EITHER BY PROVIDING 135° STIRRUP HOOKS AS FOR CIRCULAR HOOPS, OR BY WELDED LAP SPLICES. ANCHORAGE OF A SPIRAL BAR AT THE TERMINATION OF THE LENGTH OF SPIRAL SHALL BE PROVIDED BY AN EXTRA ONE-HALF TURN OF THE SPIRAL PLUS EITHER A 135° STIRRUP HOOK OR A WELDED LAP SPLICE TO THE PREVIOUS TURN. WELDED SPLICES IN SPIRALS SHALL COMPLY WITH AS/NZS 1554.3 ALL WELDS SHALL BE CLASS SP

- BENDING OF REINFORCEMENT
  - BENDS FOR ALL BARS EXCEPT STIRRUPS AND TIES



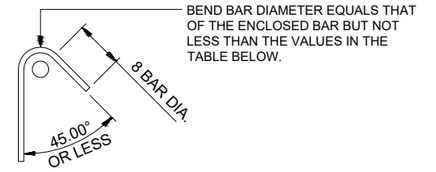
STANDARD HOOK



STANDARD 180° HOOK

STEEL GRADE	BAR DIAMETER	MINIMUM BEND DIAMETER
GRADE 300 & 500	6 TO 20	5 BAR DIAMETERS
	25 TO 40	6 BAR DIAMETERS
GRADE 300 & 500 GALVANISED BEFORE OR AFTER WELDING	6 TO 16	5 BAR DIAMETERS
	20 TO 40	8 BAR DIAMETERS

- BENDS FOR STIRRUPS AND TIES



STANDARD STIRRUP & TIE HOOK

STEEL GRADE	BAR DIAMETER	MINIMUM BEND DIAMETER	
		PLAIN BARS	DEFORMED BARS
GRADE 300 & 500	6 TO 20	2 BAR DIAMETERS	4 BAR DIAMETERS
	25 TO 32	3 BAR DIAMETERS	6 BAR DIAMETERS
GRADE 300 & 500 GALVANISED BEFORE OR AFTER WELDING	6 TO 16	2 BAR DIAMETERS	5 BAR DIAMETERS
	20 TO 32	3 BAR DIAMETERS	8 BAR DIAMETERS

- BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE SITE BENT UNLESS SHOWN ON THE PROJECT DRAWINGS OR SPECIFICALLY APPROVED BY THE DESIGNER.

- HOLD DOWN BOLTS LOCATION TO BE CONFIRMED PRIOR CONCRETE POURING, THE USE OF TEMPLATES IS RECOMMENDED

- ALL GROUTING TO BE RAMMABLE SHRINKAGE COMPENSATED HIGH STRENGTH CEMENTITIOUS GROUT

TOLERANCES

TOLERANCES ARE TO BE IN ACCORDANCE WITH NZS 3109:1997 TABLE 5.1 UNLESS STATED OTHERWISE BELOW.

DIMENSIONS AT TIME OF ERECTION

ACTUAL OVERALL LENGTH AND SQUARENESS.
THE UNIT END SURFACES SHALL LIE WITHIN THE TOLERANCE BOXES SHOWN IN DIAGRAM A.

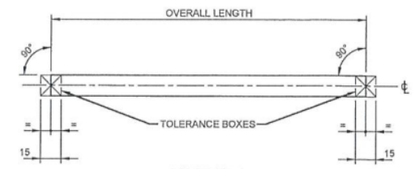


DIAGRAM A
N.T.S.

a. OVERALL LENGTH	±12mm
b. PLANE SURFACE DEVIATION FROM 1.5m STRAIGHT EDGE	±6mm
c. CROSS-SECTIONAL DIMENSION (OVERALL)	±8mm
d. DIFFERENCE IN LEVEL OF TOP SURFACE BETWEEN ADJACENT UNITS IN PLACE	±15mm
e. HORIZONTAL DEVIATION (SEE SPECIFICATION)	±6mm
f. SMALLEST WEB THICKNESS	+6mm,-4mm
g. SMALLEST FLANGE THICKNESS	±6mm
h. DIAPHRAGM THICKNESS	±12mm
j. HOGGING VARIATION (SEE SPECIFICATION)	±15mm
k. MAXIMUM HOG	25mm

LOCATION OF STEEL AND CAST-IN ITEMS

a. PRESTRESSING STRANDS IN ANY DIRECTION	±3mm
b. LOCATION OF AN ITEM IN RELATION TO ANY OTHER WITHIN ITS GROUP	±10mm
c. TRANSVERSE DUCT POSITION	±12mm
d. VOID FORMERS	±12mm

SPECIFICATION

THIS DESIGN IS BASED ON MATERIALS AND WORKMANSHIP IN ACCORDANCE WITH NZTA RR 364 STANDARD PRECAST CONCRETE BRIDGE BEAMS.

Issue	Date	Revision
A	02/24	ISSUE FOR APPROVAL

DWG STANDARD DETAILS

Scale 1:100 @A3 (1 0.5 0 1 2 3 m) Date 02/2024
Drawn PL Checked SK Approved JP
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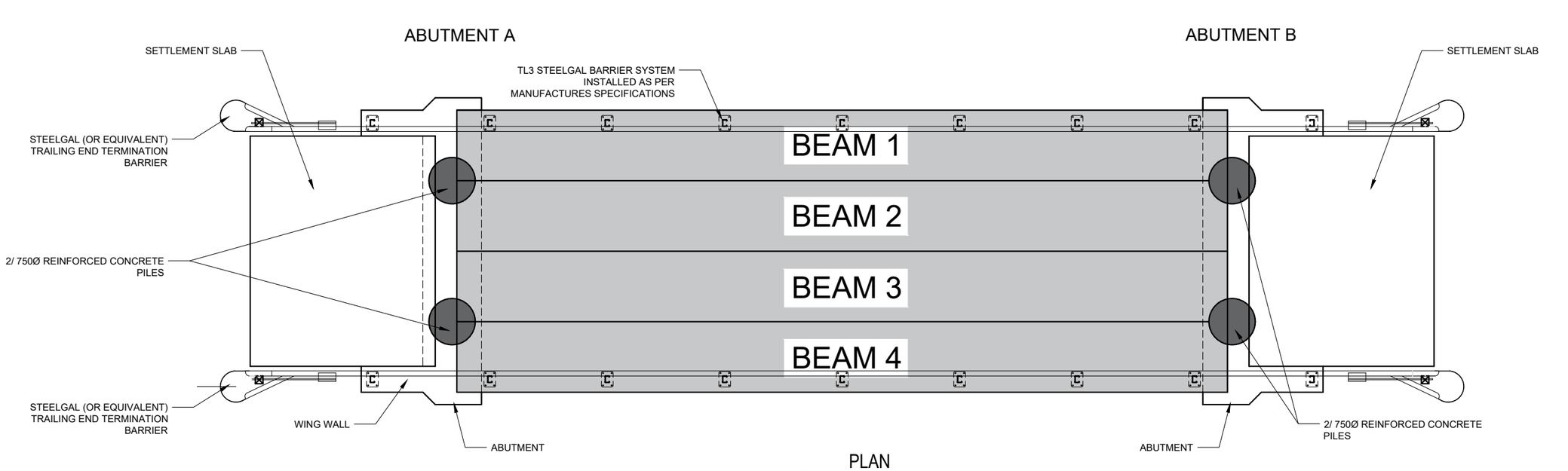
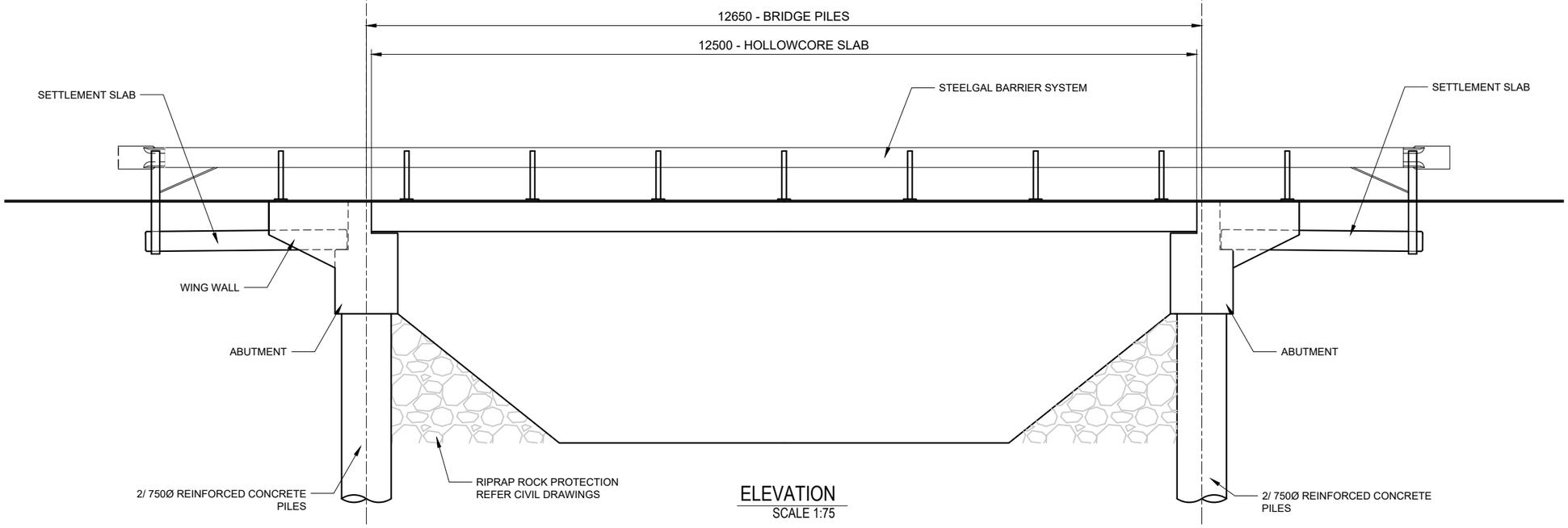
DWG No. **STD-01**
Sheet No. **1** of **7**

Plotted By Peter Land at 23/01/2024 11:07:55 am



PLAN
SCALE 1:75



ELEVATION
SCALE 1:75

Issue	Date	Revision
A	02/2024	ISSUE FOR APPROVAL

DWG GENERAL ARRANGEMENT PLAN AND ELEVATION

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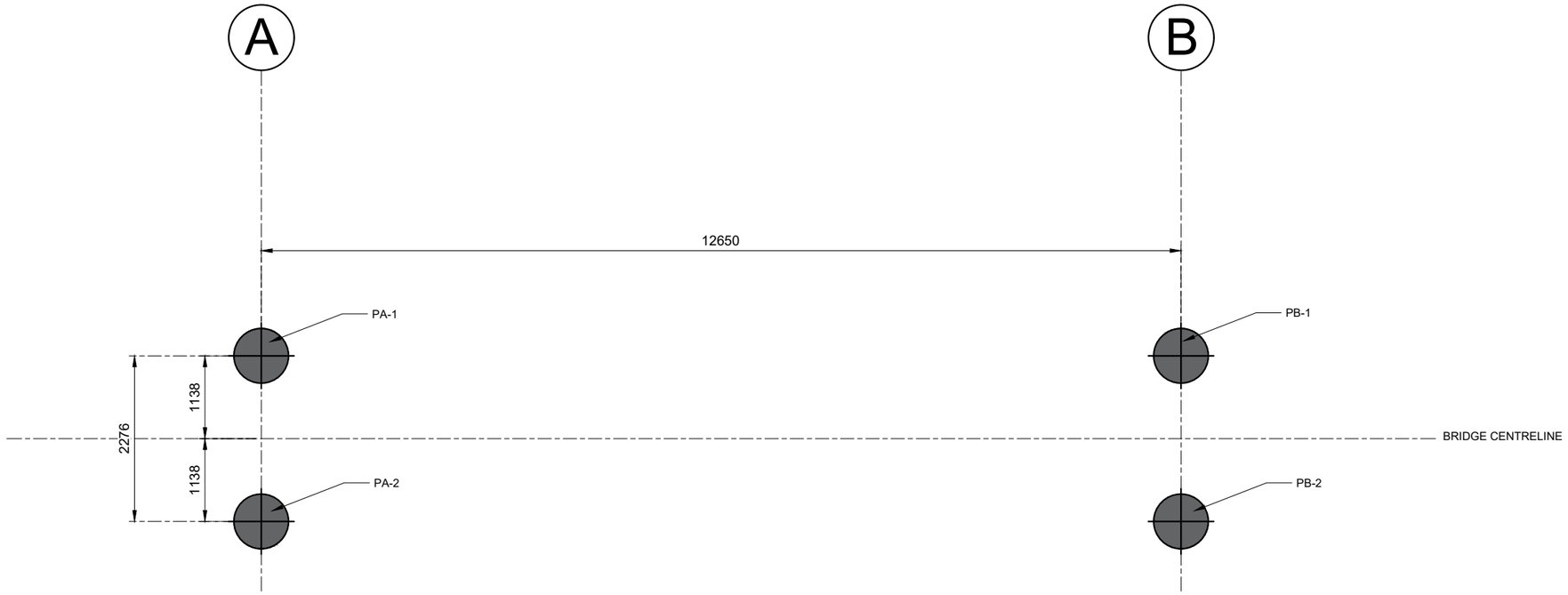
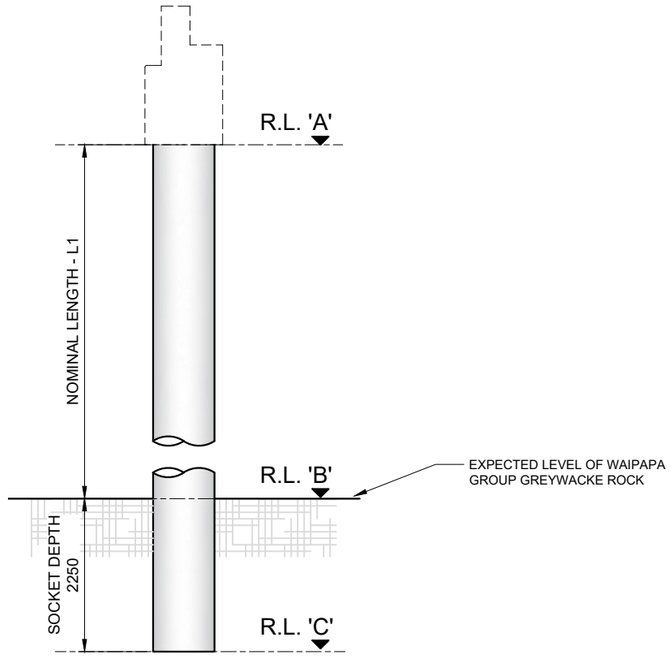
DWG No. **S-01**
Sheet No. **2** of **7**

Plotted By Sushil Kharche at 14/02/2024 12:06:23 pm





TYPICAL ABUTMENT PILE SECTION
SCALE: NTS

TABLE 1

PILE DATA (m)					
PILE ID	RL 'A'	RL 'B'	RL 'C'	NOMINAL LENGTH L1	NOMINAL LENGTH L2
PA-1	1.75	-2.75	-5.00	4.5	2.25
PA-2	1.75	-2.75	-5.00	4.5	2.25
PB-1	1.75	-10.75	-13.00	12.5	2.25
PB-1	1.75	-10.75	-13.00	12.5	2.25

Issue	Date	Revision
A	02/2024	ISSUE FOR APPROVAL

DWG GENERAL ARRANGEMENT
PILE SETOUT & DETAILS

Scale AS SHOWN | # ### 0 # # # m | Date 02/2024
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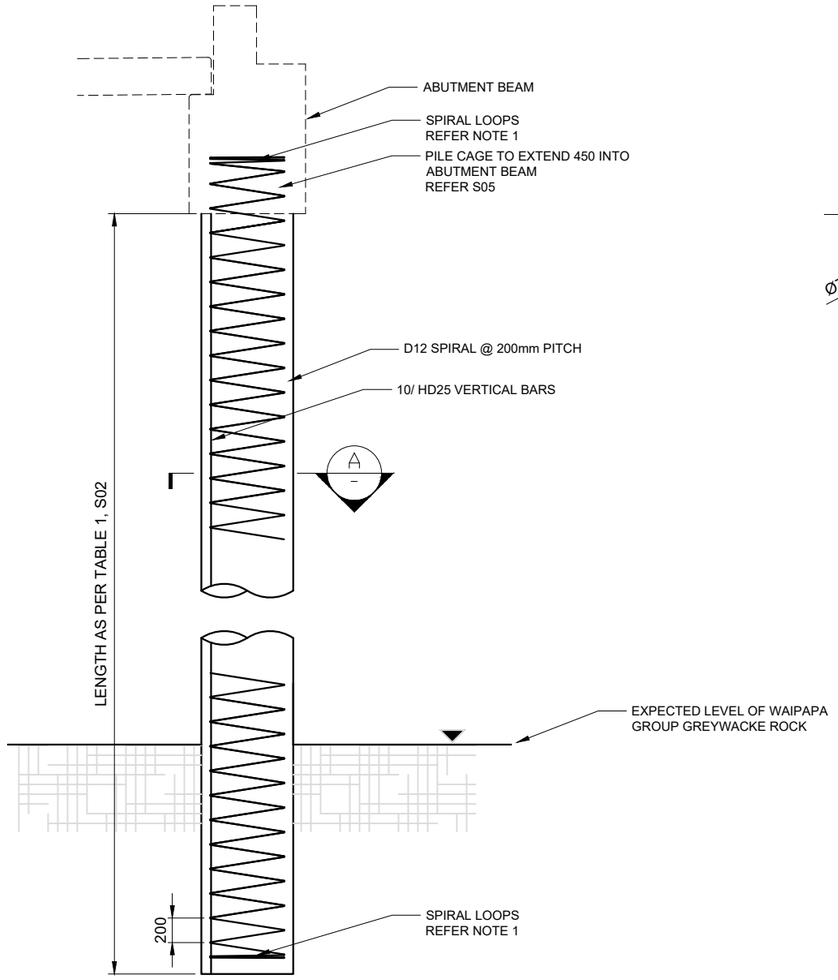
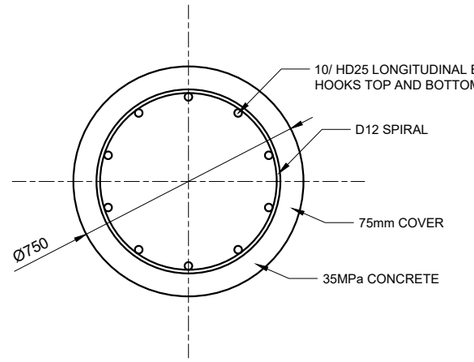
DWG No. **S-02**
Sheet No. **3** of **7**

Plotted By Sushil Kharche at 14/02/2024 12:06:42 pm



TYPICAL ELEVATION ABUTMENT PILE
SCALE: 1:50



SECTION A
SCALE: 1:50

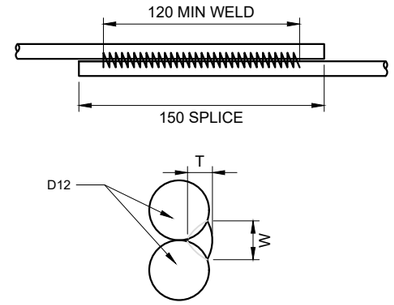


TABLE 2

SPIRAL (mm)			
REINFORCEMENT	W	T	L
D12 SPIRAL	8	5	120

SPIRAL SPLICE / END LOOP DETAIL

WELDING
- WELDING ONLY TO BE CARRIED OUT WITH THE EXPRESS APPROVAL OF THE ENGINEER
- WELDING COMPLIES WITH AS/NZS 1554.3
- CATEGORY SP (OR EQUIVALENT)
- TACK WELDING IS NOT PERMITTED

GENERAL
1. SPIRAL TIE TO TERMINATE AT TOP AND BOTTOM WITH ONE FULL TURN PLUS SINGLE FLARE VEE GROOVE WELD. SPIRALS SPLICES WITHIN THE CAGE LENGTH SHALL BE OVERLAPPED AND SIMILARLY WELDED. REFER TO SPIRAL SPLICE WELD DETAIL.
2. THE COLUMN CAGES SHALL BE HELD IN SHAPE USING PURPOSE MADE INTERNAL STEEL RINGS AND TEMPORARY BRACINGS AS REQUIRED, DESIGNED BY THE CONTRACTOR.
3. COLUMN CAGES SHALL BE CONSTRUCTED USING TIE WIRE ONLY, THERE SHALL BE ABSOLUTELY NO WELDING OR TACK WELDING TO THE LONGITUDINAL PILE REINFORCING, AND THE ONLY WELDING PERMITTED TO THE SPIRAL SHALL BE TO TERMINATE AND LAP THE SPIRAL SECTIONS
4. THE PILE REINFORCEMENT TO BE READ IN CONJUNCTION WITH THE BEAM REINFORCEMENT WITHIN THIS DRAWING SET TO AVOID CLASHING OF THE BEAM REINFORCEMENT WITH THE PILE REINFORCEMENT

Issue	Date	Revision
A	02/204	ISSUE FOR APPROVAL

DWG PILE DETAILS REINFORCEMENT

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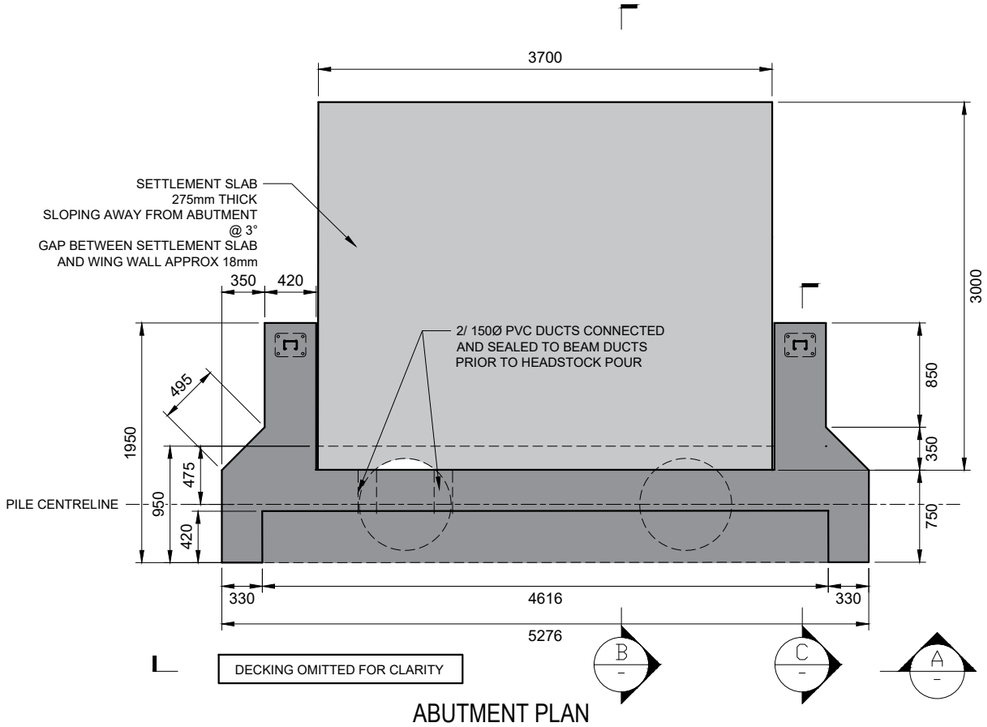
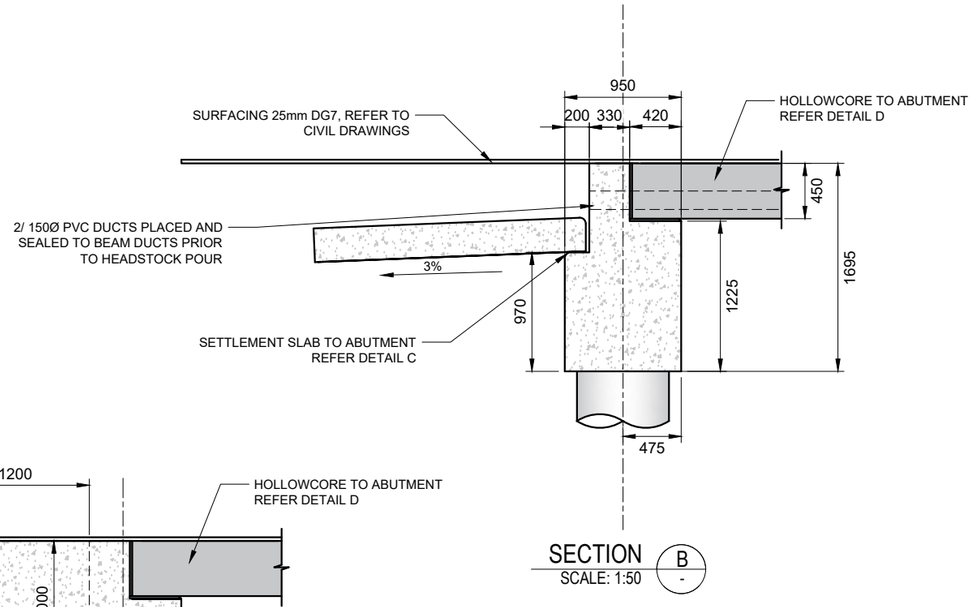
DWG No. **S-03**
Sheet No. **4** of **7**

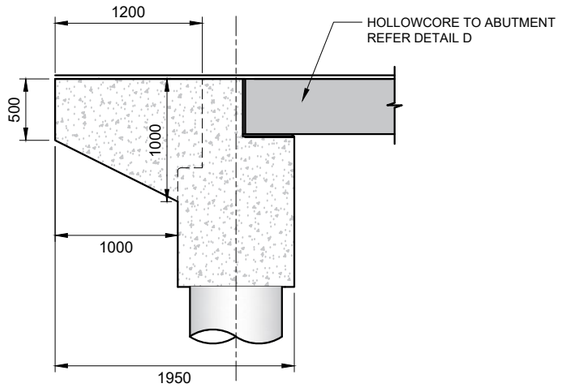
Plotted By Sushil Kharche at 14/02/2024 12:06:36 pm



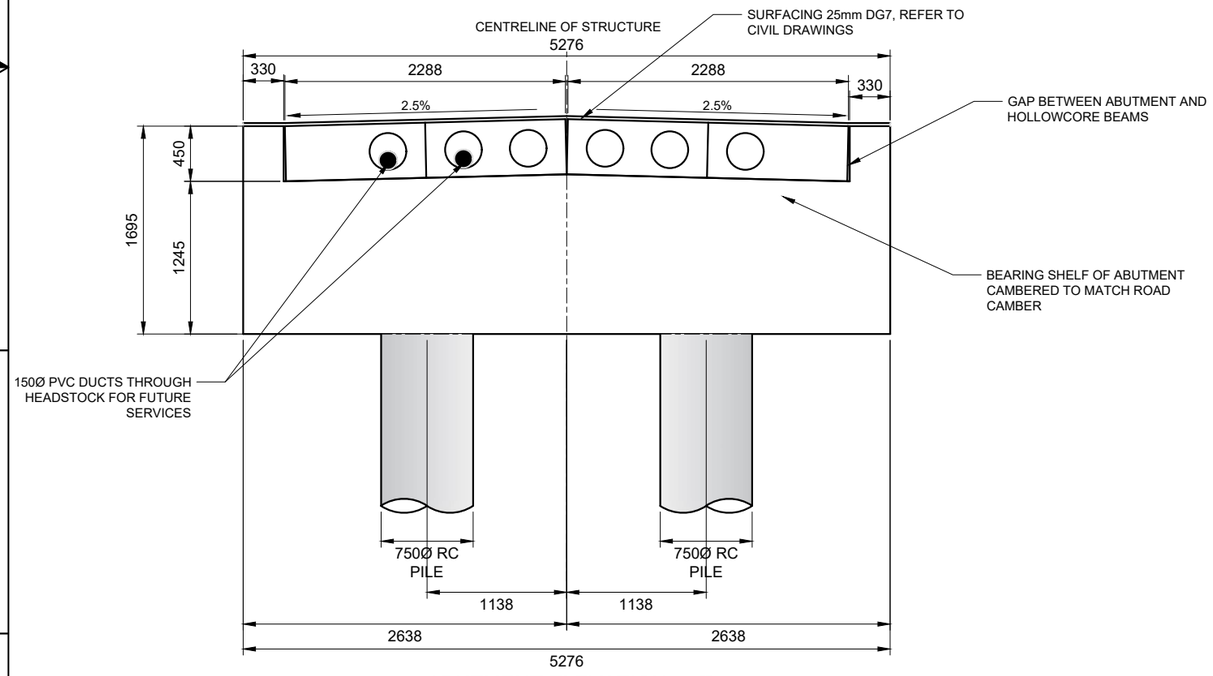
ABUTMENT PLAN
SCALE: 1:50



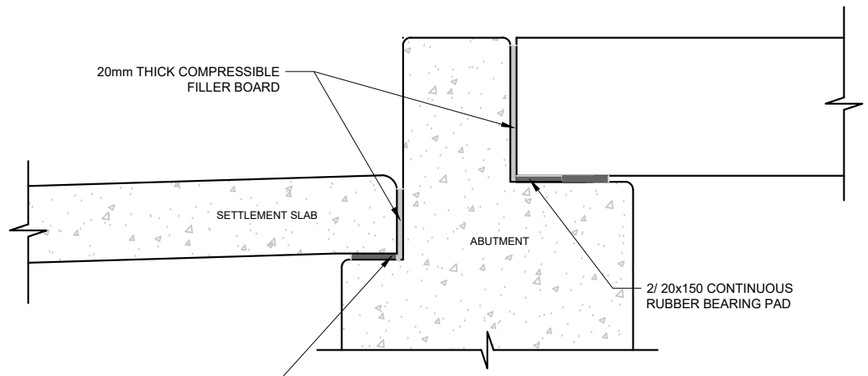
SECTION B
SCALE: 1:50



WING WALL DETAILS
SCALE: 1:50 (C)



ABUTMENT ELEVATION
SCALE: 1:50 (A)



ABUTMENT BEARING DETAILS
SCALE: 1:20 (D)

Issue	Date	Revision
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DWG: ABUTMENT A & B LAYOUT & SECTIONS

Scale: AS SHOWN | Date: 02/2024
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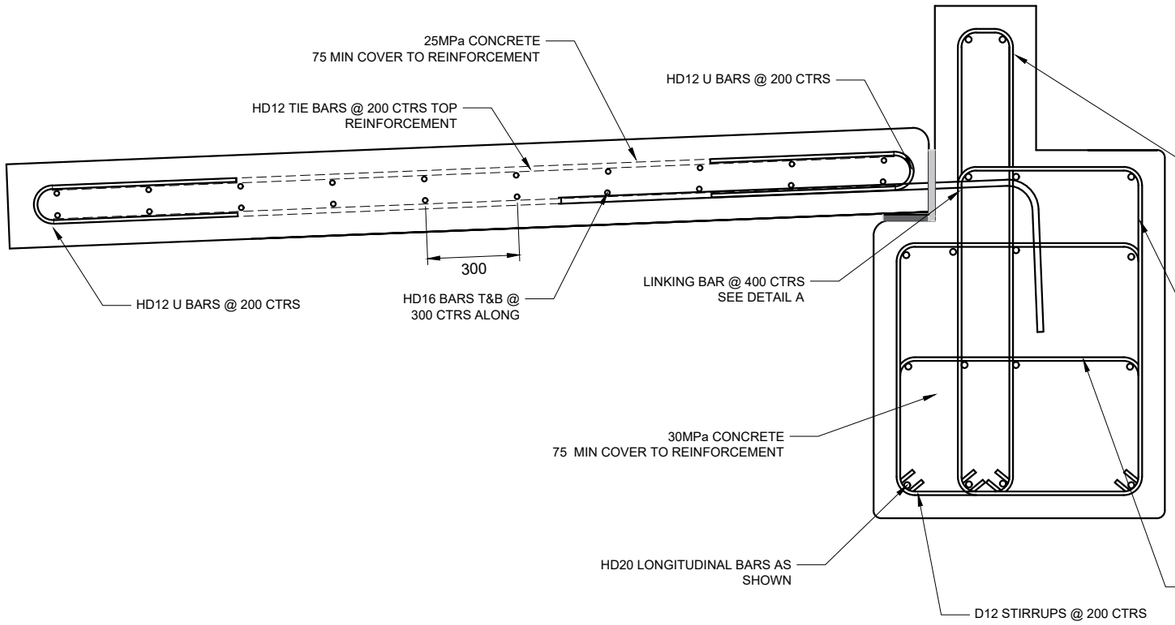
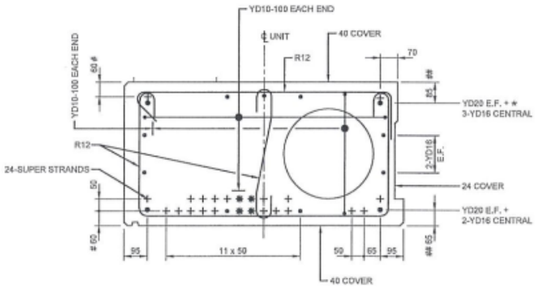
DWG No. **S-04**
Sheet No. **5** of **7**

Plotted By Sushil Kharche at 14/02/2024 12:06:30 pm

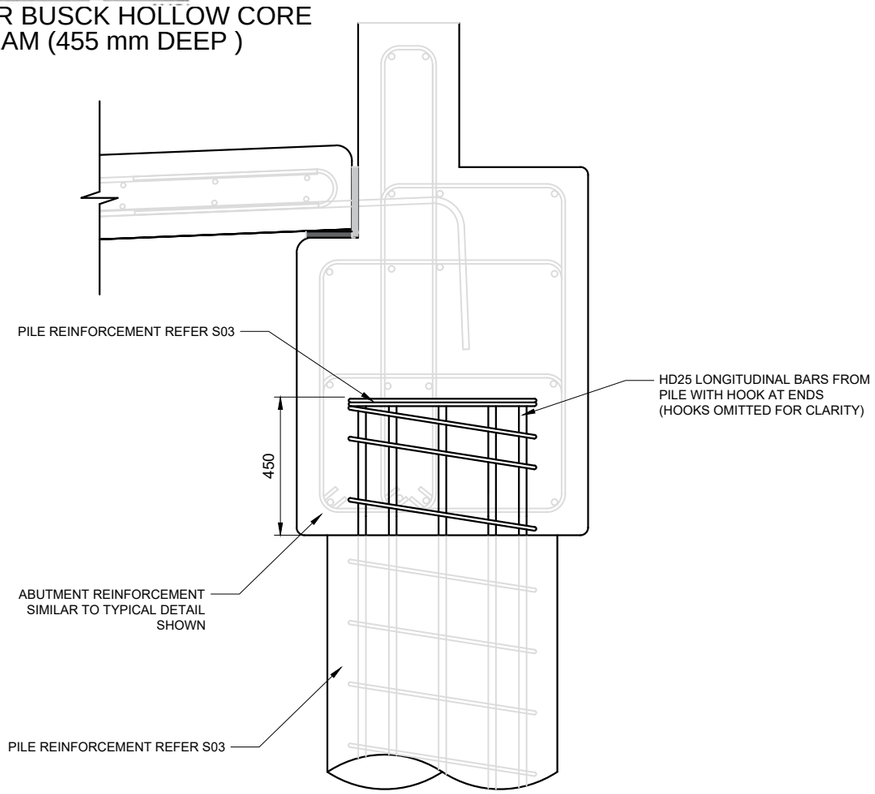


TYPICAL ABUTMENT REINFORCEMENT SECTION
SCALE: 1:20

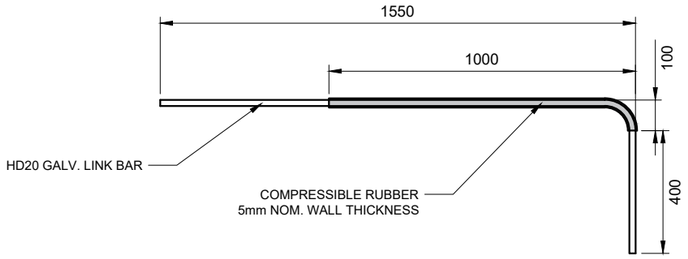


TYPICAL SECTION - OUTER UNIT

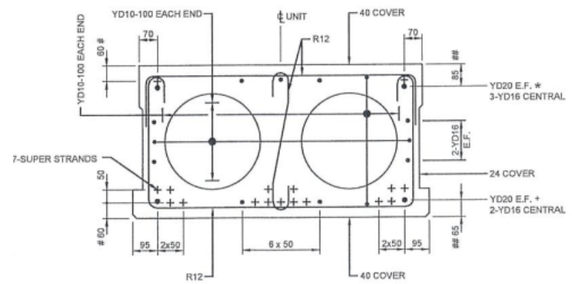
DETAIL AS PER BUSCK HOLLOW CORE BEAM (455 mm DEEP)



ABUTMENT REINFORCEMENT SECTION AT PILE
SCALE: 1:20



LINK BAR DETAILS (A)
SCALE: 1:20



TYPICAL SECTION - INNER UNIT
REINFORCEMENT & STRAND LAYOUT
1:10
NOTE: REINFORCEMENT SYMMETRICAL ABOUT ℄ UNIT.

DETAIL AS PER BUSCK HOLLOW CORE BEAM (455 mm DEEP)

Issue	Date	Revision
A	02/2024	ISSUE FOR APPROVAL

DWG: ABUTMENT A & B REINFORCEMENT

Scale: AS SHOWN | # ### 0 # # # m | Date: 10/2023
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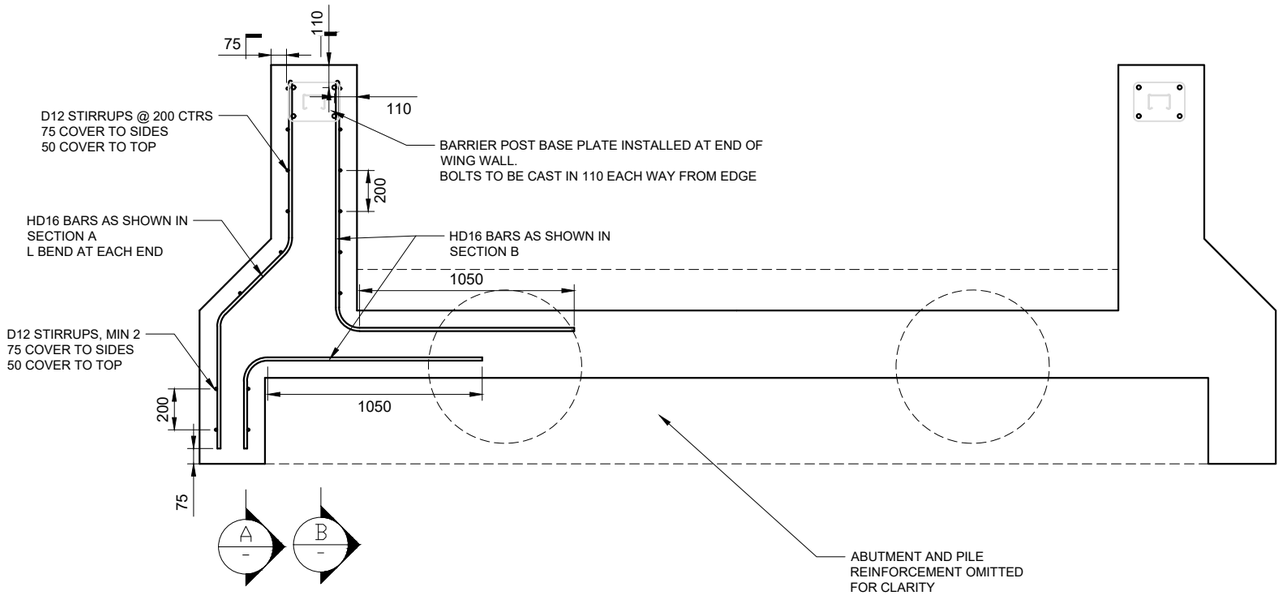
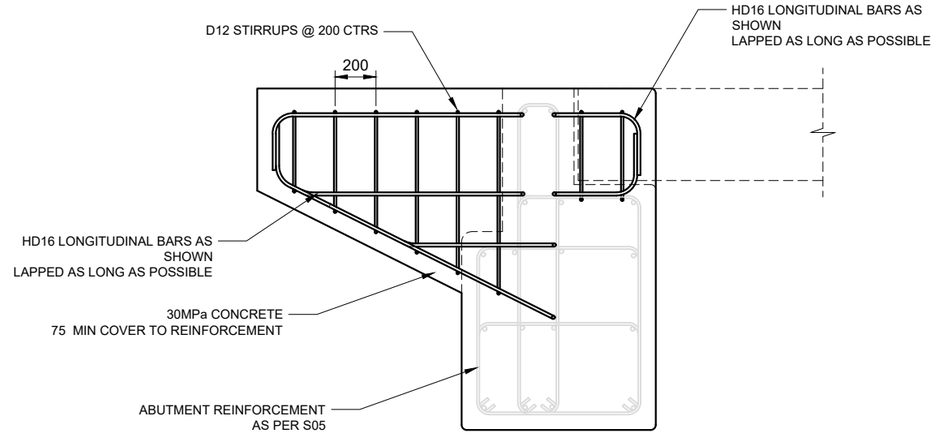
DWG No. S-05
Sheet No. 6 of 7

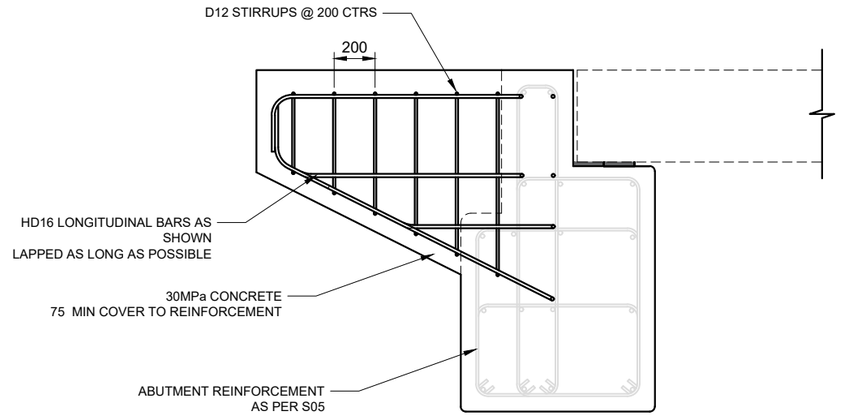
Plotted By Sushil Kharche at 14/02/2024 12:06:30 pm



TYPICAL WINGWALL REINFORCEMENT PLAN
SCALE: 1:30



SECTION A
SCALE: 1:30



SECTION B
SCALE: 1:30

Issue	Date	Revision
A	02/2024	ISSUE FOR APPROVAL

DWG: WING WALL A & B REINFORCEMENT

Scale: AS SHOWN | # ### 0 # # # m | Date: 02/2024

Drawn: PL | Checked: SK | Approved: MR

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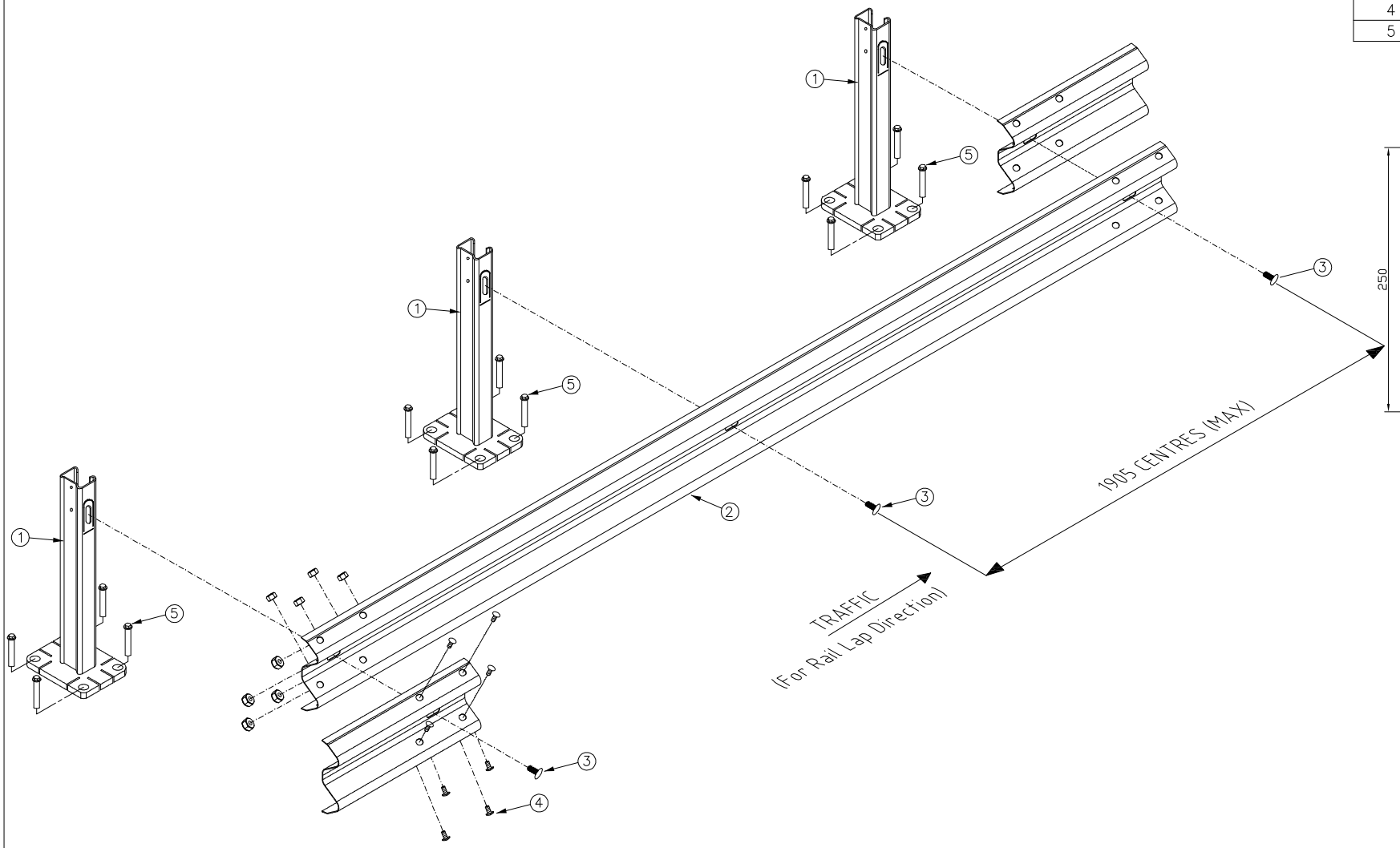
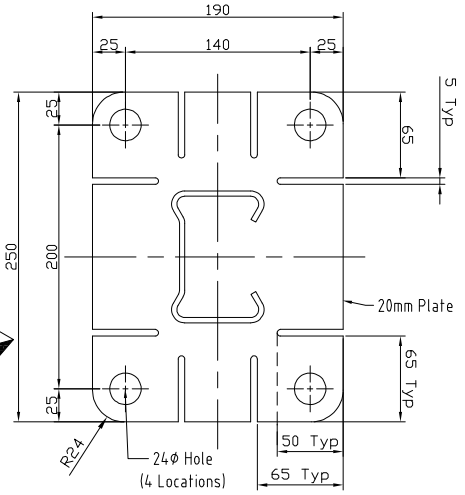
DWG No. **S-06**

Sheet No. **7** of **7**

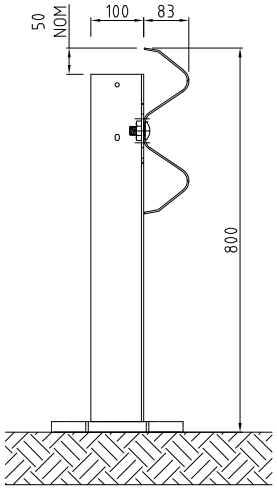
Plotted By Sushil Kharche at 14/02/2024 12:06:38 pm

BILL OF MATERIALS	
ITEM	DESCRIPTION
1	RAMSHIELD POST ON BASEPLATE
2	W-BEAM GUARDRAIL
3	M16 x 32 mm SPLICE BOLT & 24mm NUT
4	M16 x 32mm SPLICE BOLT & NUT
5	M20 x 160mm ANCHOR BOLT





POST PLAN

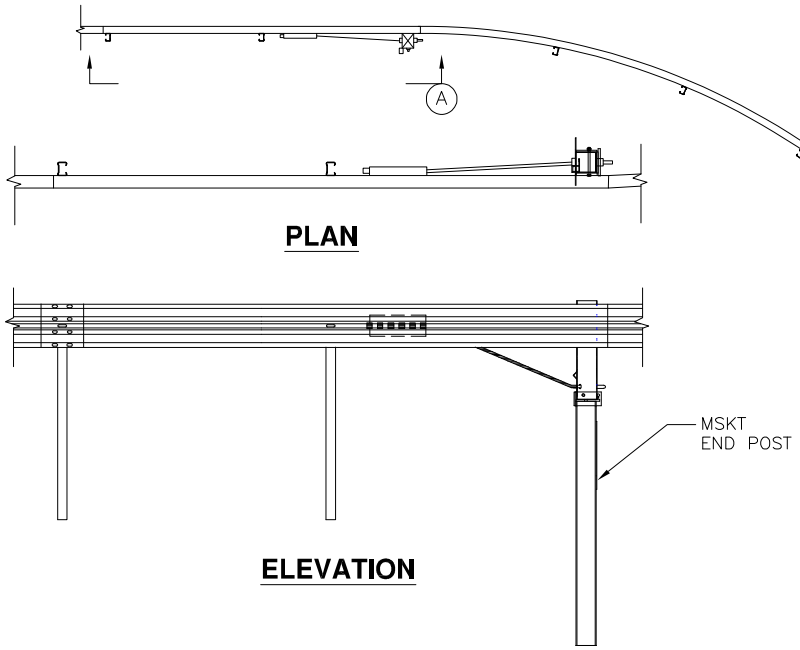


POST ELEVATION

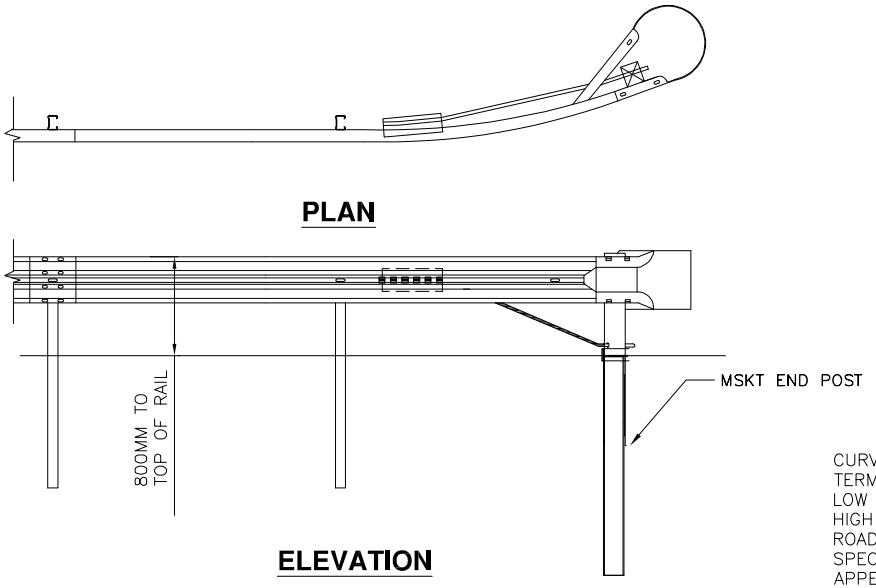
REVISIONS						REVISIONS					
REV	DATE	DESCRIPTION	DRAWN	APPRD.		REV	DATE	DESCRIPTION	DRAWN	APPRD.	
A	26.09.19	INITIAL ISSUE	MS	TC							

STEELGAL NZ LIMITED

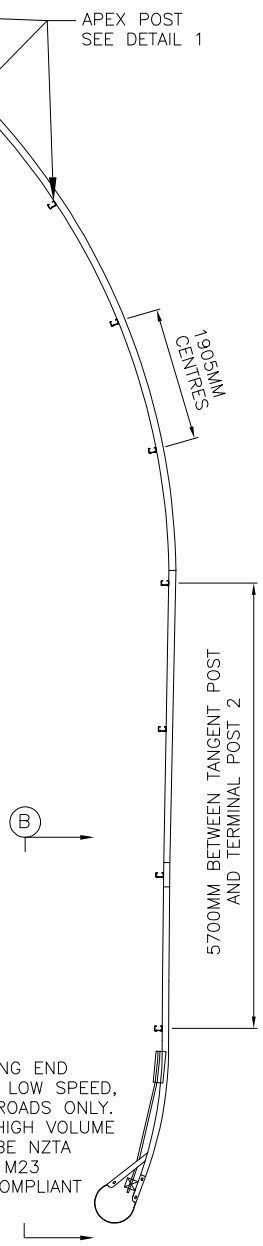
DRAWING DESCRIPTION	800mm RAMSHIELD NZ ASSEMBLY WITH POSTS ON BASEPLATE		
DRAWING REFERENCE	GR-WB-096	DRAWN BY: M. SEAL	DIMENSIONS: mm
		CHECKED: H. WALLACE	SCALE: NTS
		APPROVED: T. COLQUHOUN	

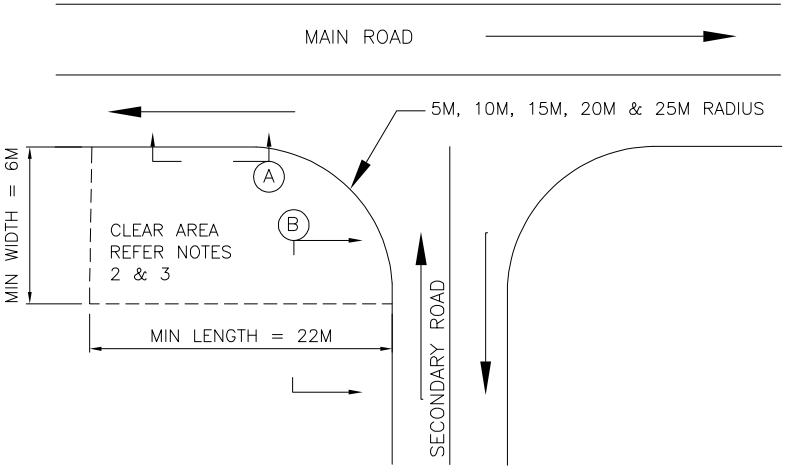


DETAIL A-A - CABLE ANCHORED W BEAM SECTION

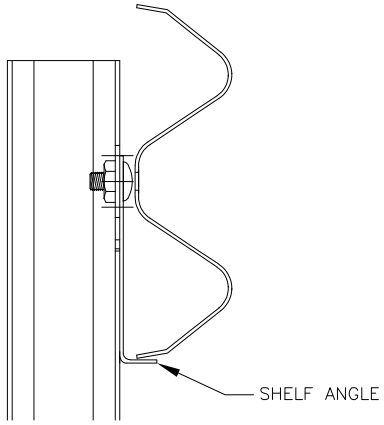


DETAIL B-B - TRAILING END TERMINAL CURVED





TYPICAL CURVED RAIL LAYOUT



DETAIL 1 - SHELF ANGLE AT APEX POST

NOTES:

1. APPROACH GRADING IS TO BE 10H: 1V OR FLATTER. MAINTAIN FREE OF OBSTRUCTIONS
2. A MINIMUM CLEAR AREA OF 22M X 6M TO BE PROVIDED BEHIND THE GUARDRAIL
3. CLEAR AREA BEHIND GUARDRAIL TO BE 6H: 1V OR FLATTER. MAINTAIN FREE OF OBSTRUCTIONS
4. NO WASHERS ARE TO BE USED WITH THE MUSHROOM HEAD BOLTS ON FACE OF RAIL
5. THE LOCATIONS OF THE 3 APEX POSTS WILL DEPEND ON MOST LIKELY IMPACT DIRECTIONS
6. RAIL ON SHELF ANGLE AT CURVE APEX. NO BOLT THROUGH RAIL.
7. RAMSHIELD GUARDRAIL HAS BEEN CRASH TESTED IN ACCORDANCE WITH MASH TEST LEVEL 3 AT RAIL HEIGHTS OF BETWEEN 730MM & 820MM
8. AN INSTALLED RAIL HEIGHT OF 800MM ± 20MM PROVIDES COMPATIBILITY WITH MASH GUARDRAIL END TERMINALS

REVISIONS

REV	DATE	DESCRIPTION	DRAWN	APPRD.
B	26.03.19	RAIL HEIGHT AMENDED	MS	TC
A	29.07.16	INITIAL ISSUE	MS	TC

REVISIONS

REV	DATE	DESCRIPTION	DRAWN	APPRD.

STEELGAL NZ LIMITED

DRAWING DESCRIPTION: NZ RAMSHIELD ASSEMBLY
CONNECTION TO CURVED RAIL TERMINAL

DRAWING REFERENCE: GR-WB-084

DRAWN BY	M. SEAL	DIMENSIONS	mm
CHECKED	H. WALLACE	SCALE	NTS
APPROVED	T. COLQUHOUN		

TRINEKEL
CIVIL ENGINEERING SOLUTIONS

88 Kerikeri Road
Kerikeri
0230

TECHNICAL MEMO

To:	Darren James – Project Manager	**Organisation:**	Hoskin Civil
From:	Liam He - Civil Engineer	**Organisation:**	Trine Kel Limited
Date:	2-April-2024		
Subject:	Te Raupo Road Bridge Floodplain Assessment_Rev01		

1. Introduction

Trine Kel Limited have been commissioned by the Hoskin Civil to conduct hydraulic modelling of the contributing catchments at Te Raupo Road Bridge. Please refer to ***Figure 1*** for the location of the site. This technical memorandum presents a high-level comparison of the floodplains before and after the proposed bridge upgrades using historical rainfall intensity data with a 1% Annual Exceedance Probability (AEP).

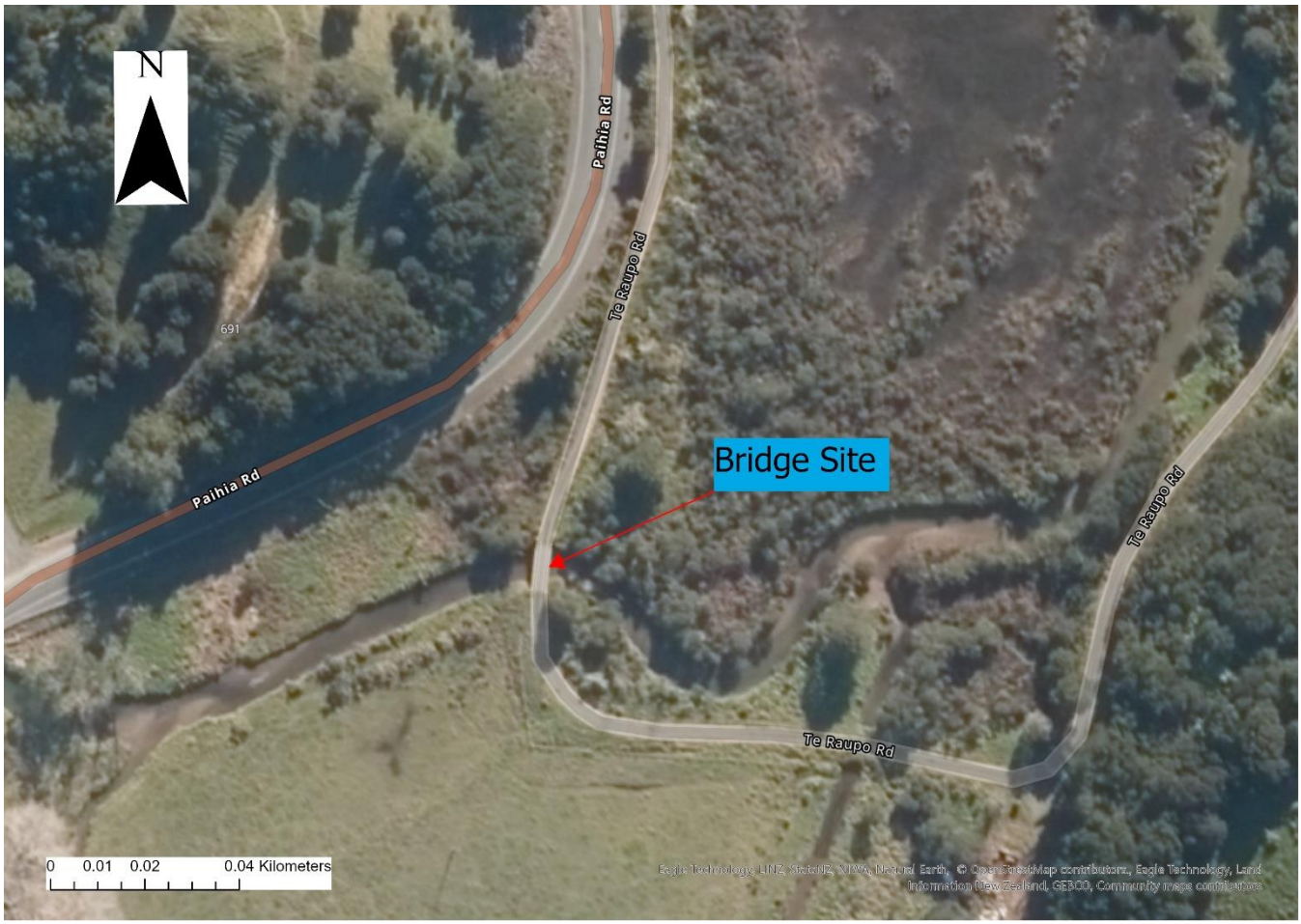


Figure 1 Te Raupo Road Bridge Location

2. Hydraulic Modelling

The hydraulic modelling was constructed using HEC-RAS version 6.4.1 software and utilising the nested hyetograph profile to simulate the 2D floodplain conditions. Note that the model is not calibrated or validated. A comparison was then made between the scenarios before and after the proposed bridge upgrades.

2.1 Model Parameters and Assumptions

The flood modelling is based on the following parameters and key assumptions:

- **Geometric Model:** The geometric model was built based on the data of the Northland LiDAR 1m DEM (2018-2020)
- **Rainfall Intensity:** Rainfall intensity values (mm/hr) were derived from the NIWA historical 1% rainfall intensity profile.
- **Bridge Geometry:** The bridge geometric data was sourced from the report titled "Proposed Replacement Bridge Te Raupo Road, Opua for Far North District Council" provided by Haigh Workman Ltd.

2.2 Existing Bridge Floodplain

The flood model results of the existing bridge condition are based on the specified parameters and assumptions; ***Table 1*** provides a summary of parameters related to the existing bridge. ***Figure 2*** illustrates the floodplain map for the existing bridge.

Rainfall Intensity	Bridge Span	Bridge width	Bridge RL
1% AEP (Historical)	8.78 m	2.62 m	2.5 m

Table 1: Existing Bridge parameters

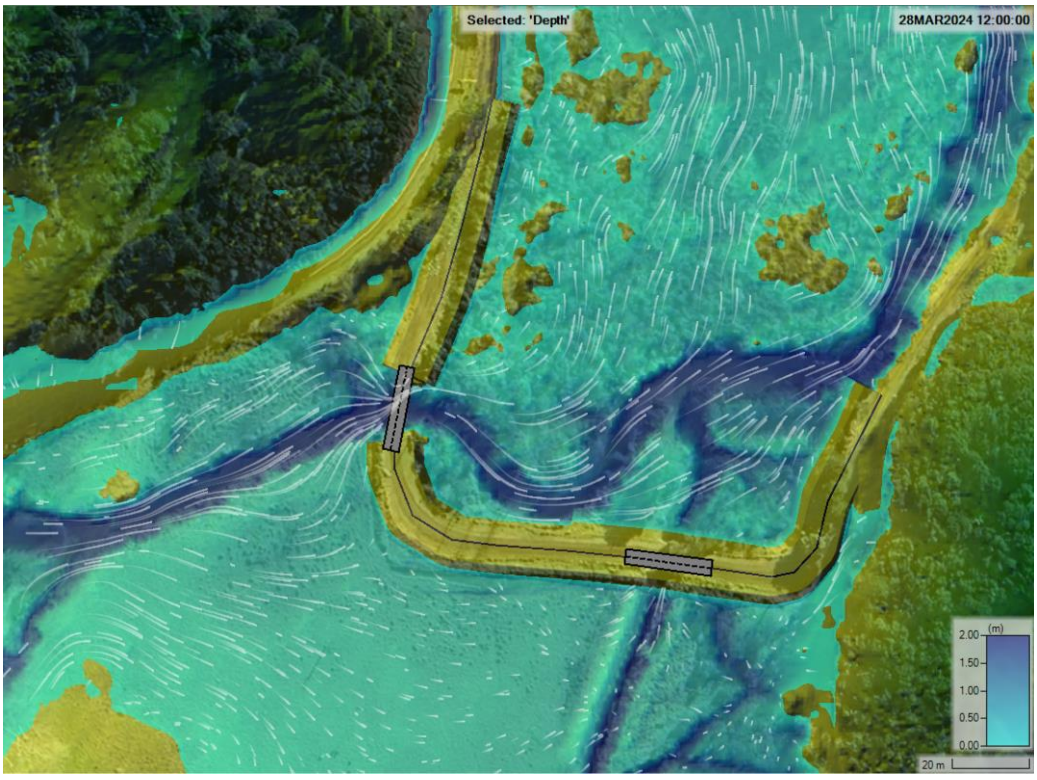


Figure 2: Floodplain Map - Existing Bridge Scenario

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2.3 Proposed Bridge Floodplain

The flood model results of the proposed bridge condition are based on the specified parameters and assumptions***, Table 2*** provides a summary of parameters for the proposed bridge. The ***Figure 2*** illustrates the floodplain map for proposed bridge.

Rainfall Intensity	Bridge Span	Bridge width	Bridge RL
1% AEP (Historical)	12.5 m	3.95 m	3 m

Table 2: Proposed Bridge Parameters

Figure 3: Floodplain Map - Proposed Bridge Scenario

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2.4 Floodplain Comparison

The floodplain layers for both the existing and proposed bridge dimensions are overlaid to highlight disparities. Given the variance in the existing and proposed bridge dimensions, the model anticipates an expansion of the downstream floodplain area, denoted by the supplementary red regions. Please see **Figure 4** for visual reference.

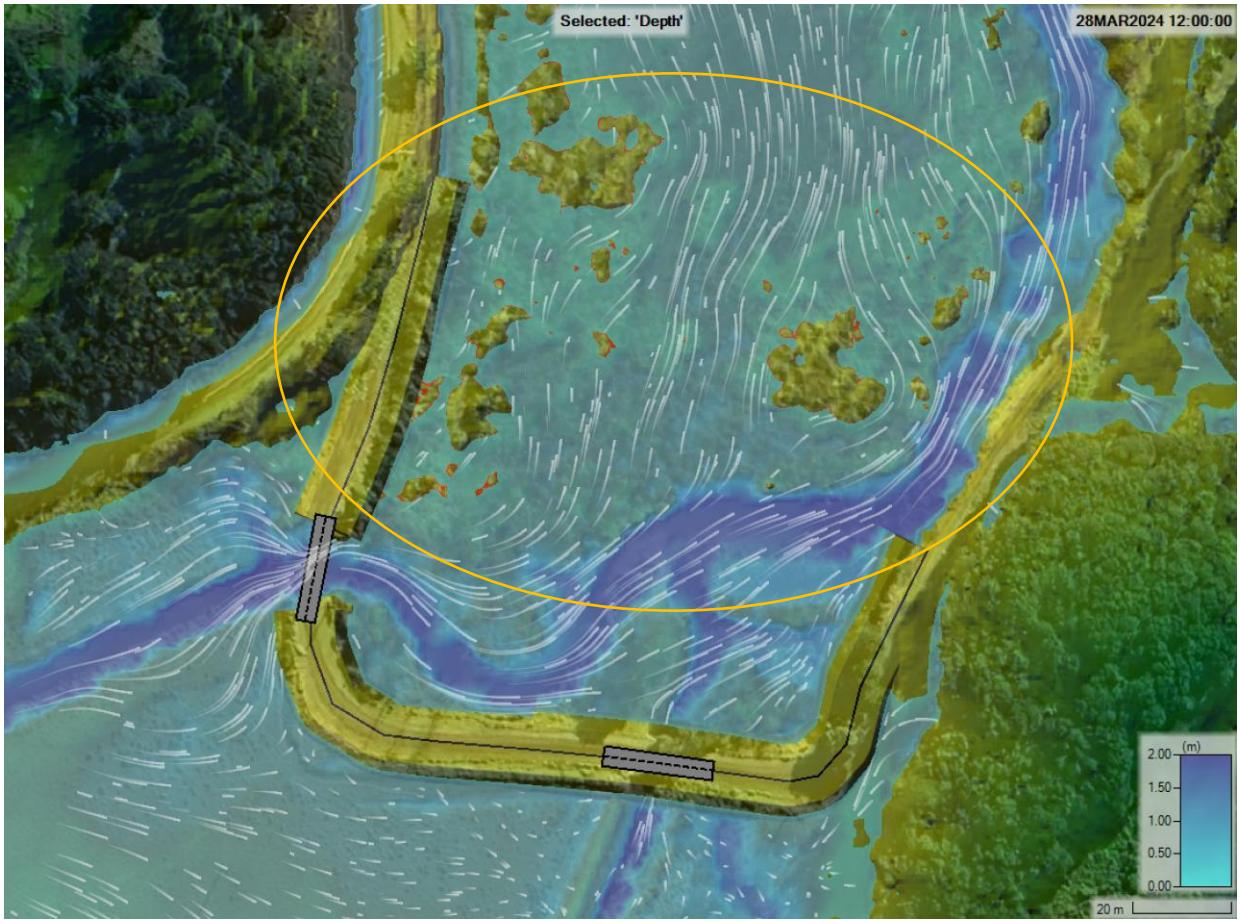

Figure 4: Floodplain Comparison

3. Conclusion

This technical memorandum offers a high-level conceptual comparison of the floodplain before and after the proposed bridge upgrades. The analysis is based on the historical 1% AEP rainfall intensity within the flood model. The model does not account for the influence of ocean tide levels. The comparison reveals only minor differences between existing and proposed bridge scenarios.

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