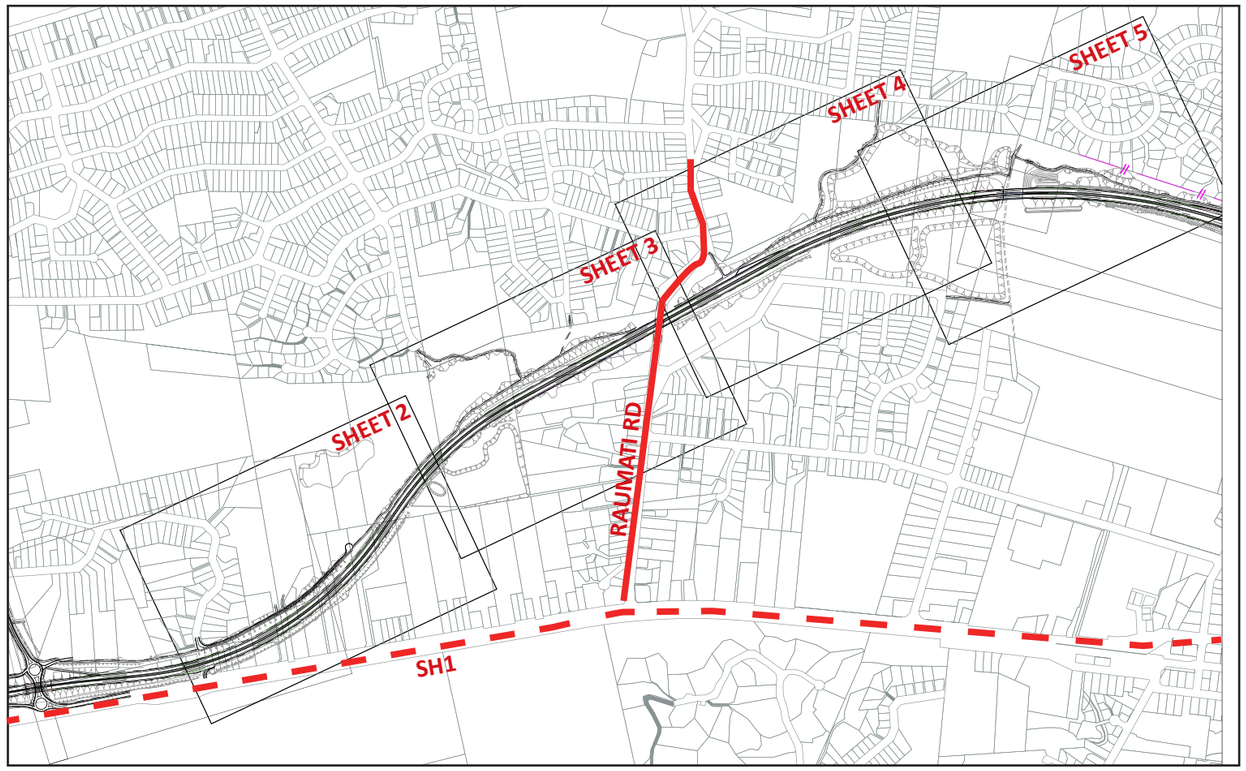
M2PP-121-D-PLNM-0002

Site Specific Management Plan 002- [sector 330-340-350]
MacKays to Peka Peka Expressway

17 DECEMBER 2014 - REV C - CERTIFIED ISSUE



NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

SITE SPECIFIC MANAGEMENT PLAN - RAUMATI NORTH [SSMP 2 - SECTOR 330, 340, 350]

For the purposes of the SSMP certification it is assumed that the consent conditions for the MacKays to Peka Peka Expressway, as determined by the Board of Inquiry under Section 149R of the Resource Management Act (1991) will be read in conjunction.

SSMP Exclusions or omissions:

- *If there are discrepancies between master plans and the detailed planting plans the detailed plans take precedence.*

1.0 SSMP REVISION HISTORY			
REVISION NO:	**DATE:**	**STATUS:**	**ISSUED TO:**
REV A	22.08.2014	Draft for review	KCDC
REV B	14.11.2014	Issue for certification	KCDC, GWRC
REV C	17.12.2014	Certification issue	KCDC, GWRC

2.0 SSMP CERTIFICATION DETAILS POSITION				
PREPARED BY M2PP ALLIANCE	**NAME:**	**POSITION:**	**SIGNATURE:**	**DATE:**
	Bron Faulkner	Landscape Architect		17.11.14
	Frazer Baggaley	Urban Design		17.11.14
	Vaughan Keesing	Ecologist		17.11.14
	Stephen Fuller	Ecologist		17.11.14
	Boyden Evans	Landscape Architect		17.11.14
M2PP ALLIANCE APPROVAL	**NAME:**	**POSITION:**	**SIGNATURE:**	**DATE:**
	Doug Stirrat	Sector Manager		14.11.14
	Peter Bradshaw	Design Manager		17.11.14
	Dean Herrmann	Technical Director	pp	17.11.14
	Malory Osmond	Consents/Compliance Manager		17.11.14
CERTIFICATION	**NAME:**	**POSITION:**	**SIGNATURE:**	**DATE:**
Reviewed by Julia Williams, Landscape, KCDC. Deyana Popova, Urban Design, KCDC and Adam Forbes , Ecology, GWRC	Andrew Guerin	KCDC		15.12.14
	Al Cross	GWRC		15.12.14

2.1 POST CERTIFICATION CHANGES							
DRAWING/PAGE TITLE:	**DRAWING NUMBER:**	**DRAWINGS STATUS:**	**REVISION NO:**	**DESCRIPTION OF CHANGE:**	**ISSUED TO:**	**CERTIFIED BY:**	**DATE:**
SSMP 2 [330-340-350] - SHEET 2 Master Plan	M2PP-121-D-DWG-8101	Revision/Update	D	Addition of reference note for footbridge and bund details - see Leinster Avenue Footbridge Addendum	KCDC		3.5.16
SSMP 2 [330-340-350] - SHEET 29 - CWB sign type summary	M2PP-121-D-DWG-8901	Revision/Update	D	Signs updated to include horse symbol - All CWB signs South of Fitcham to be updated as per this sheet	KCDC		3.5.16
SSMP 2[330-340-350]- Sheet 13 Noise Wall Locations	M2PP-121-D-DWG-8602	Revision/Update	D	Noise wall changed to bund. Noise Wall Location plan to supersedede relevant Masterplan wall design.	KCDC		3.5.16
Leinster Ave to Raumati Rd Vegetation to be Retained Plan SHEET 6	M2PP-33R-D-DWG-8706	Revision/Update	4	Altered to communicate areas of Vegetation removed for bund construction with agreement from neighbors.	KCDC		3.5.16
Raumati Rd to Wharemauku Planting Plan SHEET 1	M2PP-35R-D-DWG-8201	Revision/Update	3	Adjustment to planting to accomodate peat placement.	KCDC		3.5.16
SSMP 2 [330-340-350] - SHEET 31 - Type 1 CWB entrance detail	M2PP-121-D-DWG-8802	New Sheet added	A	CWB entrance structures- design change to precast units. To replace Type 1 on sheet 18	KCDC		3.5.16
SSMP 2 [330-340-350] - SHEET 32 - Type 2 CWB entrance detail	M2PP-121-D-DWG-8803	New Sheet added	A	CWB entrance structures- design change to precast units. To replace Type 2 on sheet 17, 18	KCDC		3.5.16
Wind Rain Bund Planting Plan	M2PP-33R-D-DWG-8221	New Sheet added	1	To show planting around wind rain house bund	KCDC		3.5.16
Leinster Avenue Footbridge Addendum	-	New document	A	Detail of the footbridge and ramps that were finalised after SSMP 2 had been certified. Separate Document.	KCDC		18.9.2015

SITE SPECIFIC MANAGEMENT PLAN RAUMATI NORTH DRAFT [SSMP2 – SECTORS 330, 340, 350]
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SITE SPECIFIC MANAGEMENT PLAN
RAUMATI NORTH [SSMP 2 – SECTORS 330, 340, 350]

For the purposes of the SSMP certification it is assumed that the consent conditions for the MacKays to Peka Peka Expressway, as determined by the Board of Inquiry under Section 149R of the Resource Management Act (1991) will be read in conjunction.

The pedestrian bridge over the Expressway that is located at the southern end of SSMP 2 is not addressed in this version of the SSMP; the bridge is still under development and will be covered in a subsequent issue of this SSMP. An indicative location and alignment of the pedestrian bridge is shown.

1. SSMP CERTIFICATION DETAILS		Signature	Date
A. PREPARED BY M2PP ALLIANCE:	Boyden Evans (Landscape Architect)		17-11-14
	Bron Faulkner (Landscape Architect)		17-11-14
	Stephen Fuller (Ecologist)		17.11.14
	Vaughan Keesing (Ecologist)		17-11-14
	Frazer Baggaley (Landscape Architect)		17/11/14
B. M2PP ALLIANCE APPROVAL	Doug Stirrat (Sector Manager)		14/11/14
	Peter Bradshaw (Design Manager)		17.11.14
	Dean Herrmann (Technical Director)	PP	17.11.14
	Malory Osmond (Consents Manager)		17.11.14
C. CERTIFICATION	Andrew Guerin (KCDC) [Reviewed by Julia Williams, Landscape, KCDC and Deyana Popova Urban Design, KCDC]		15/12/14
	Al Cross (GWRC) [Reviewed by Adam Forbes, Ecology, GWRC]		15/12/14

1A. REVISION HISTORY

REVISION No	DATE	STATUS	ISSUED TO
Rev A	22.08.2014	Draft for review	KCDC
Rev B	14.11.2014	Issue for certification	KCDC
Rev C	17.12.2014	Certified Issue	KCDC

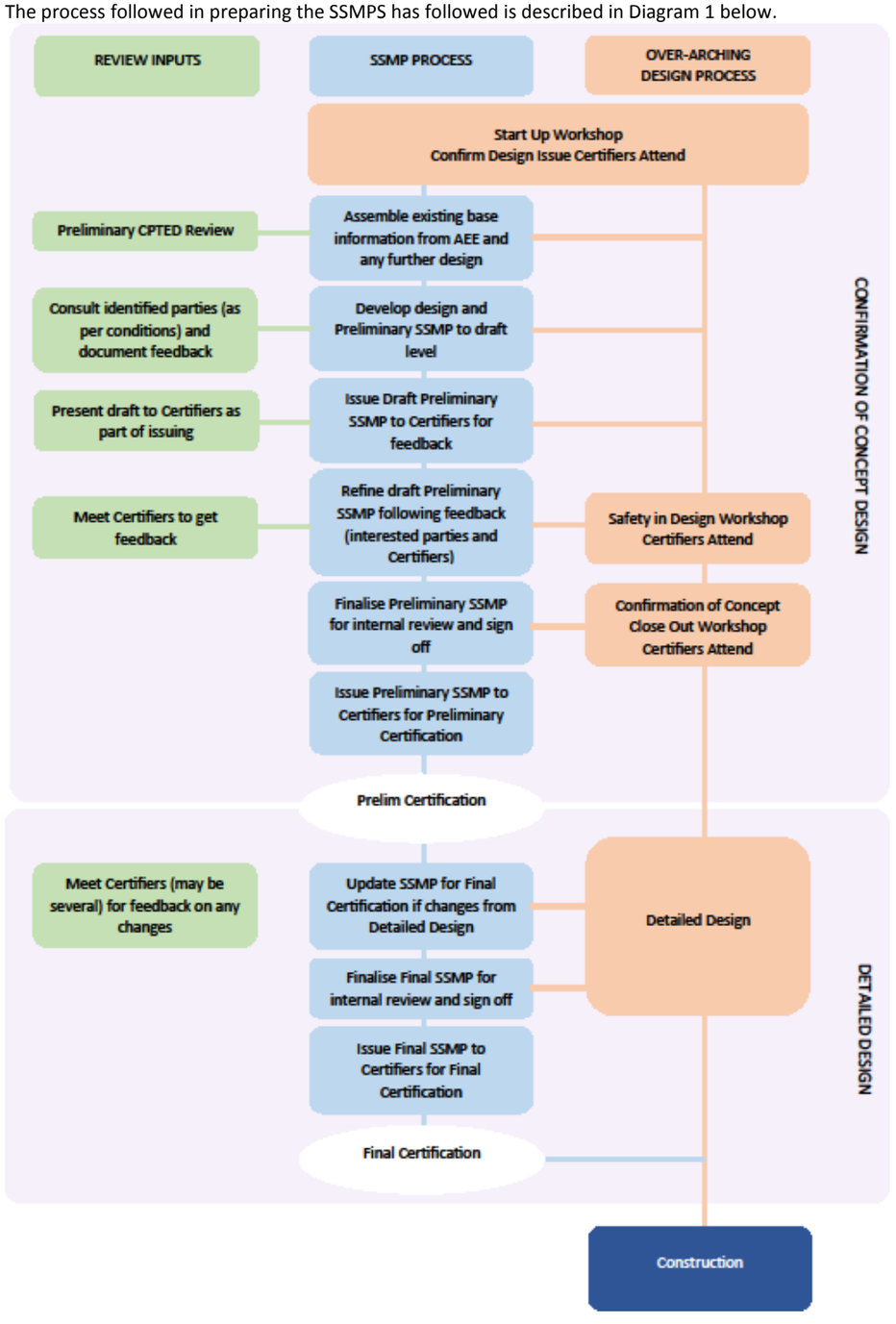
2. INTRODUCTION	
D. PURPOSE	The consent conditions for the MacKays to Peka Peka Expressway, as determined by the Board of Inquiry under Section 149R of the Resource Management Act (1991), set out the matters to be covered in the Site Specific Management Plans (SSMP). A total of 11 SSMPs will be prepared that address all the required sectors of the Expressway. The level of detail in the SSMP varies according to whether landscape, ecology or urban design aspects are being addressed and the nature of the environment the Expressway traverses at any particular point. The purpose of the SSMP is to assist the implementation of the applicable management plans by providing site specific detailed design and construction responses to address specific context and environmental conditions and circumstances of each applicable sector of the route and in accordance with the staging identified in the programme. Each SSMP must be consistent with, and be implemented in accordance with, the respective Management Plan and consent conditions. This document (including Appendix 1 Plans) incorporates four interrelated SSMPs, covering landscape, ecology, urban design, and cycle, walking and bridleway (CWB). The intention of combining these SSMPs is to ensure integration between all disciplines, maximise the benefits of mitigation works within each sector and to reduce reporting and monitoring requirements. The consent conditions (DC.64) also require the preparation of a Network Integration Plan (NIP). This SSMP shall address the requirements of DC.64 a) and b) ii) as they relate to the details of the CWB. SSMPs are to be prepared in consultation with various stakeholders including iwi, interest and residents' groups as directed by conditions. Appendix 2 describes the matters raised in consultation and the responses made. The SSMPs have been prepared through an iterative process to allow discussion between the Alliance and certifiers. This has included further advancement of design in response to feedback on the preliminary issue. The aim will be to establish and agree as much of the landscape, ecology, urban design and CWB design through the initial 'confirmation of design' phase to give the best possible definition to the Project design elements as early as possible.
E. GENERAL PROJECT DESCRIPTION REFER APPENDIX 1 SHEETS 1, 2, 3, 4, 5	This SSMP covers the area of the Expressway from Leinster Ave to the south side of the Wharemauku Bridge. It includes a pedestrian/cycle overbridge at Leinster Ave, the Expressway bridge at Raumati Road and a CWB bridge over the Wharemauku Stream. This does not include the Wharemauku Expressway Bridge and associated works which are in the SSMP 3 (area to the north). It includes the following main components: • Focus areas for ecological protection and mitigation planting, including wetland and riparian restoration. • New flood storage areas and stormwater treatment areas at Raumati South and south of Wharemauku Stream. • Retention of significant vegetation in the Raumati Manuka Wetland. • Retention of portions of significant vegetation that form part of an area called 'Drain 7 Mahoe Forest' • Retention of dune landforms and other dunes affected by earthworks to be reshaped to tie in with adjoining landforms. • Three span Expressway bridge over Raumati Road with a total width of 30.6 m from side to side with piers. • New CWB on the west side of the Expressway between Leinster Avenue and Wharemauku Stream, crosses Raumati Road on the Expressway bridge and continues to cross the Wharemauku Stream on a CWB bridge. • CWB bridge over the expressway at Leinster Ave (not part of this SSMP at this stage, design still in progress) • New CWB connections to Harry Shaw Way, Kiwi Road, Raumati Road and Rata Road, Bridleway link to Fincham Road.
F. SSMP EXISTING AREA DESCRIPTION REFER APPENDIX 1 SHEETS 2, 3, 4, 5 AND ULDF SECTION 3.10	• This area comprises a large extent of elevated remnant dunes interspersed with low-lying peatlands, a moderately-sized wetland (the Raumati Manuka Wetland) and a network of drains, including Drain 7, a tributary of the Wharemauku Stream. • Drain 7 is a tributary of the Wharemauku Stream. Wharemauku stream is identified in Appendix 3 of the Regional Freshwater Plan which lists 'Water Bodies with Nationally Threatened Indigenous Fish Recorded in the Catchment'. In the case of the Wharemauku Stream, the species identified as present is banded kokopu. • With the exception of the wetland and a few scattered mahoe and kanuka trees and regenerating shrubland, the vegetation is dominated by exotic vegetation (predominately gorse and blackberry south of Raumati Road to the residential properties of Leinster Ave and grazed pasture on the remnant dunes north of Raumati Road to the low-lying peat area south of the Wharemauku Stream. • Residential development is located in a small enclave (Conifer Court) south of Raumati Road and along Rata and Kiwi Roads to the north. These areas have been established up to the boundaries of the designation, leaving a corridor of open space on the dunes. The open space is used for horse grazing to the north with informal walking tracks across the dunes. • Raumati Road bisects this sector - an important secondary arterial road servicing Raumati South and linking SH1 to the coast.

	• North of Raumati Road there is another large area of remnant dunes covered in pasture, grazed by horses, with scattered exotic trees and some indigenous vegetation on dune slopes. • A seasonally wet area with rank pasture and scattered wetland plants known as 'Kiwi Pond' lies on the south bank of the Wharemauku Stream resulting from construction of the stop-bank. • Existing paths along the dune crests north and south of Raumati Road are identified by KCDC in their CWB Strategy.

G. PROCESS

DIAGRAM 1 – SSMP DEVELOPMENT PROCESS

The process followed in preparing the SSMPS has followed is described in Diagram 1 below.



H. CONDITIONS OF CONSENT [SUMMARY]	**General** • Requirement to develop Site Specific Management Plans (SSMPs) for landscape and urban design purposes (DC.7), ecological purposes (G.42C), and CWB (DC.59A g). **Landscape** • Condition DC57(f) lists the matters to be provided and in summary includes: - Vegetation to be retained; - Vegetation protection measures; - Proposed Planting (including methods and stages) - Fernbird habitat created; - Maintenance standards; - Detailed specifications; - A maintenance regime; - Landscape treatment of any noise barriers; - Landscape treatment for pedestrian and cycle facilities. **Ecology** • Condition G42 outlines the extent of ecological mitigation for which SSEMPs are to be prepared. • The areas of valued terrestrial vegetation and habitats are set out in Condition G41 i) - ii). Those areas of terrestrial and wetland habitat between Leinster Ave and south of Wharemauku Stream include: - Raumati Kanuka (comprising kanuka forest and mahoe on elevated dunes south of Raumati Road); - Mahoe vegetation along Drain 7; and - Raumati Manuka Wetland. - • Condition G.42C(c) lists the matters the SSEMP is to include. - Indigenous vegetation to be retained; - Indigenous vegetation protection measures; - Target Stream Ecological Valuation (SEV) scores for all areas of mitigation riparian planting (refer to Condition WS.8); - Plans of mitigation planting (terrestrial and riparian); - Full landscaping details; - Detailed specifications; - Maintenance processes and standards; - Monitoring and maintenance (including pest control) regime. **Urban Design** Condition DC.59A e) requires SSUDPs to be prepared for locations where the Expressway interacts with local vehicular and non-vehicular pedestrian/cyclist movement. For SSMP1, the locations include: (ii) Leinster Ave pedestrian bridge and for SSMP2 iii) Raumati Road. • Condition DC.59A f) lists the matters to be provided and in summary includes detailed design for the benefit of pedestrians, cyclists and others: - Lighting; - Footpath and on-road cycle lane design (Provision for minimum dimemsions of 1.5m on road and 2.0m footpaths); - Safe crossing points for CWB; - Visual treatment of structures and landscape (retaining walls, noise mitigation structures and landforms); - Local property access; - Landscape treatment (LMP and SSMLPs); - Bridge piers and abutment design (location of piers, scale and materials); - Signage;

	• Condition DC.59A g) requires preparation of a SSUDP for the Cycleway, Walkway and Bridal (CWB) path network and includes: - Final alignment and form of CWB. - Provision for a 3.0m wide two-way path - Connections to local street networks - Boardwalks; - Lighting, safety provisions for crossing of local roads - CPTED review. • In addition, SSMP2 shall consider the following in relation to Condition 59A i) ii): - *Leinster Ave pedestrian bridge - Integration with CWB links to Queen Elizabeth Park, SH1 and future link to Matai Road and; bridge design to use landforms to minimize structural ramps and address potential future vehicle bridge connection;* and for SSMP2 in relation to Condition 58A i) *iii)* - *Raumati Road - Pedestrian safety in relation to bridge piers* Network Integration Plan Condition DC.64 a) in relation to the CWB; Condition DC.64 b) ii) in relation to lighting.
3. CONSULTATION	• Condition DC.57A a) i) and iv) requires consultation with residents whose properties are located close to the Expressway in the following Landscape Focus Areas - Leinster Ave; and - Conifer Court • SSLMP, SSEMP and SSUDP (under Conditions DC.57 e), G42 d) and DC.59A j)) requires consultation with the following parties: - Te Āti Awa ki Whakarongotai; - Raumati South Residents' Association; - Friends of Wharemauku Stream; - Kapiti Coast District Council (KCDC); and - Greater Wellington Regional Council (GWRC). • The SSUDP condition (DC.59A j) viii) requires consultation with the following parties: - Kāpiti Cycling Incorporated and KCDC's CWB Advisory Group in respect of the CWB and any cycle or pedestrian connections.

4. URBAN DESIGN	CONDITIONS – URBAN DESIGN	RESPONSES – URBAN DESIGN
A. LIGHTING REFER APPENDIX 1 CPTED REVIEW COMMENTS ON SHEETS 2-5	DC.59 f) i) Lighting for the benefit of pedestrians and cyclists DC.64 a), b), ii)	No lighting is proposed on the Expressway except at the main interchanges. However, the underside of the Raumati bridge will be lit to accentuate the architectural form of the piers and bridge structure. Lighting will be installed along the CWB, and CWB links to local roads, including at the thresholds where it links into local roads at the Leinster Ave extension, Harry Shaw Way, Raumati Road and Kiwi Road. Lighting will be located at main access points to clearly signal the CWB junctions and act as orientation 'nodes'. Light poles will be evenly spaced between junctions to help with way finding and safety.
B. CWB REFER TO APPENDIX 1 SHEETS 2, 3, 4, 5, 6, 7, 8, 9, 17 & 18- ALSO REFER TO CPTED REVIEW COMMENTS ON SHEETS 2-5	DC.59A f) ii) and iii) and DC59A g), DC.59A i) xi) and DC.57 c) DC.64 a), b), ii). • Footpath and on road cycle lane on-road (2.0m and 1.5m) • Intersection of the CWB and Local Roads to be safe for crossing • Alignment of CWB • Provision for a 3.0 m wide two-way path that is generally parallel with Expressway • Locations for connections (immediate and future) • Boardwalks • Lighting and safety provisions for local road crossings • CPTED review	CWB parallel to Expressway on the west, comprised of a formed 3.0 m wide chipseal path and where practicable a grass verge of up to 1.0m wide for horse riders. The CWB is designed to provide access for maintenance vehicles, although this use will be infrequent. The CWB provides links to local roads - to Harry Shaw Way, at Raumati Road, Kiwi Road and to the Wharemauku Stream walkway; in addition, there will be a grassed bridleway link from the CWB to Fincham Road, south of Raumati Road An additional CWB link is provided at the north end of Rata Road, linking into the CWB at Wharemauku Stream. This link provides an alternative connection for cyclists wishing to head north on the CWB. It would encourage cyclists to turn right into Rata Road, thus avoiding the road crossing further along Raumati Road to access the CWB link at that point, where sight lines are not good. The CWB crosses Raumati Road on the Expressway bridge (western side). A 1.1m high concrete safety barrier separates the CWB from the carriageway. The bridleway link at Fincham Road is provided as an alternative access to divert horse-riders away from crossing the Raumati bridge (with appropriate signage). There is no safe access off the bridge prior to this point due to the steep terrain at the south-western abutment of the bridge, resulting in unsafe gradients where the CWB would meet Raumati Road. There are existing footpaths on both sides of Raumati Road and these run under the Raumati Road bridge. The CWB crosses the Wharemauku Stream on a bridge that spans approximately 18m. The bridge will accommodate the 3.0m wide CWB [SHEET 18]. The comments raised in the CPTED review of the Preliminary issue of this SSMP identified key design considerations. A subsequent CPTED assessment of this SSMP was undertaken (Frank Stoks, 8 September 2014) with items raised as follows. These have all been addressed through the design process. • No tall elements that could create 'outside rooms' or places to hide; • Clear sight lines at intersections; • Ensure clear views and lighting to exits of CWB; • Low planting adjacent to CWB (3-5m wide strip for the majority of the CWB) and bridge abutments ; • The 'tagability' of surface materials; • Minimise access to culverts from the CWB.
C. RETAINING WALLS AND NOISE MITIGATION STRUCTURES REFER TO APPENDIX 1 SHEETS 12-15 & 16	DC.59A f) iv) Retaining wall structures, in terms of their scale, and materials and noise mitigation structures and landforms in terms of their fit in the landscape and visual treatment.	There are noise mitigation structures at various locations: • There is an earth noise bund located on the western side of the Expressway, extending 450m from the Leinster Avenue extension to the new cul-de-sac to the north. • A 2.0m high concrete noise wall on the eastern side of the Expressway adjacent to the southern-most residential properties in Conifer Court extending through to the Raumati Road bridge.

		• A noise assessment is currently being carried out at one location where a house that was going to be removed is now remaining (The Wind Rain House). A noise wall or bund may be required. • A 2.0m high concrete noise wall on the western side of the Expressway extending from just north of the Raumati Road bridge. The concrete noise walls comprise of three components (refer SHEET 16): • TL4 fair-faced concrete Expressway barrier at the road edge; • Pre-cast 3.0m wide concrete panels with an exposed pattern on the Expressway side only; • Painted steel H-pile posts to support the offset precast panels. The residential-facing side of the precast panels will be fair-faced concrete and soil will be ramped up to about 1.0m against the lower section panels to provide for planting. There are no noise fences or retaining walls in this SSMP other than the noise walls described above.
D. LOCAL PROPERTY ACCESS REFER TO APPENDIX 1 SHEETS 2 & 8	DC.59A f) v) Local property access to provide for existing and future needs	A 470m long extension off the end of Leinster Ave provides access to properties with a SH1 address that have had access severed by the Expressway. The new extension will run north off the cul-de-sac arrangement at the end of Leinster Ave. Provision for future access is provided to one property to the south of Leinster Ave – refer SSMP1.
E. BRIDGE ABUTMENTS REFER TO APPENDIX 1 SHEET 10 AND APPENDIX 3	DC.59A f) iv) Bridge piers and abutments design to address the location of piers and the treatment of abutments to address their scale and materials	The Expressway bridge over Raumati Road is approximately 54m long with a 35 degree skew. It has a split deck with a gap of approximately 2.8m wide. The underside of the bridge is a minimum 6.0m above Raumati Road. There are two sets of bridge columns and spill-through abutments at either end. The bridge abutments will have precast panels with an exposed aggregate facing. The design approach is to show a transition from the smooth bridge forms to the abutment surface [SHEET 10]. The abutments are inclined to provide a wider and lighter space beneath the bridge than would be the case if there were vertical walls. The point at which the sloping abutments intersect with the local road at the back of the footpath shows a 1.0m high concrete toe wall which extends beyond the bridge abutment and ties in to the earth embankment <u>This is a change from the NOR and Consent Package.</u>

5. LANDSCAPE + ECOLOGY	CONDITIONS – LANDSCAPE + ECOLOGY	RESPONSES – LANDSCAPE + ECOLOGY
A. DUNES AND DRYLAND VEGETATION REFER TO APPENDIX 1 SHEETS 2, 3, 4, 5 AND APPENDIX 4	The Raumati Kanuka Forest (comprising scattered kanuka with mahoe on elevated dunes south of Raumati Road) and the Mahoe Vegetation along Drain 7 are identified as valued indigenous vegetation by Condition G.41 c). Condition DC.57 f) specifies exotic trees to be retained. Re-shaping of dune landforms disturbed by construction of the Expressway.	The Ecological Management Plan (EMP) outlines the loss of 0.35 ha of the Raumati Kanuka Forest (a small area of scatted kanuka forest and treeland with mahoe). Detailed design has resulted in additional loss of this area, which now totals 0.54 ha (as a result of increased embankment heights and noise wall requirements). Any residual kanuka or mahoe trees that can be retained through construction will be identified and protected during construction. <u>This is a change from the NOR and Consent Package.</u> Consent conditions allow for the loss of approximately 0.69 ha of the 0.85 ha area of the Drain 7 Mahoe Forest. As outlined in Appendix 4, detailed design has resulted in a slight reduction in vegetation loss than the consented Project Footprint, with 0.62 ha (6,200 m^2) of this mahoe area now being lost as a result of redesign. <u>This is a change from the NOR and Consent Package.</u> The remainder of the vegetation will be avoided. As outlined in the EMP (page 30), several scattered mahoe trees regenerating within gorse and blackberry just north of the Raumati Manuka Wetland and on the raised dune west of Rata Road will also be removed.

		All other indigenous vegetation shall be demarcated and suitably protected during construction. *Refer note below on surplus/shortfalls in ecological mitigation planting.* Exotic trees to be retained are identified on the 'Vegetation to be Retained' plans, which were certified by KCDC on 5th March 2014 [SHEETS M2PP-33R-D-DWG-8701 – 8706. Also refer M2PP-35R-D-DWG-8701 – 8705, yet to be certified]. Dune landforms are addressed under the Landform section below. Final contouring of disturbed dunes will be incorporated into earthworks to replicate natural dune forms.
B. STREAMS AND RIPARIAN WORKS REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G.42 b) requires specific lengths of stream mitigation.	This SSEMP covers two large ecological mitigation areas as set out in the consent conditions and Ecological Management Plan as follows: *SSEMP Raumati Manuka* • Approximately 2.07 ha of wetland formation and indigenous wetland planting mitigation requirements will be undertaken as part of the development of the Flood offset Storage Area OC. • The linear extent of the riparian mitigation planting along Drain 7 will total approximately 330 lineal metres (located on both sides of the Expressway). The riparian planting along Drain 7 will sum to approximately 1.14 ha. • Approximately 500 lineal metres of intermittent stream channel will be created within Flood offset Storage Area OC to assist with water movement and provide habitat. This is a change from the NOR and Consent Package with more detail below. • Approximately 1.15 ha of indigenous terrestrial planting will be undertaken in this area to buffer the Raumati Manuka Wetland and integrate the other areas of indigenous planting associated with Flood offset Storage Area OC and the Drain 7 riparian vegetation. This is a change from the NOR and Consent Package with more detail below. *SSEMP Drain 7* • Approximately 3.92 ha of wetland formation and indigenous wetland planting mitigation will be undertaken as part of the development of Flood offset Storage Areas 2 and 3A just south of the Wharemauku Stream. This wetland planting will include areas of open water to provide seasonal habitat and vegetation community diversity. • Approximately 1,560 lineal metres of perennial or intermittent stream will be developed with Offset Storage Areas 2 and 3A. • The riparian planting in the Drain 7 mitigation area sums to approximately 6.32 hectares (based on an average width of 20.0m either side of the watercourse along the approximately 1,560 lineal metres of created watercourse) – although this is subject to final detailed design and other property and service constraints within this area. • The SEV target score (validation of successful mitigation) for these tributaries are 0.67, as calculated in the AEE/evidence. • The riparian vegetation is to be planted as far as practical in 20m widths from the wetted bank edge and in some areas of the Flood offset Storage Area OC that riparian vegetation will sit on raised bunds (subject to property and/or service constraints). [REFER CS3 SHEET 6] • The vegetation densities within the first 5.0m (0.44ha) of the riparian planting areas should be at least 1.0m centers (10,000/ha) • The channel and flood plain structure of the developed waterways must not be straight and artificial in nature (see below). The performance standard for wetland and riparian vegetation planting success is the same as that for terrestrial vegetation (i.e. 80% canopy cover at time of Final Completion), as well as be sufficiently developed to affect the SEV measure. *Note: As outlined in earlier correspondence with GWRC, KCDC and Friends of Raumati South's consultant ecologist, Melanie Dixon, the Raumati Manuka SSEMP area has been modified in response to a combination of contaminated site issues, hydrological risks to wetlands and to improve long-term ecological outcomes for this area. This has resulted in the move of the proposed Flood offset Storage Area OB (and associated 2.07 ha of indigenous wetland habitat development) from the Western side of the Expressway to the Flood offset Storage Area OC on the Eastern side of the Expressway. As outlined further in this SSMP, this amendment has also allowed the development of an additional 500 lineal metres*

		located approximately within Flood offset Storage Area OC that was not incorporated within the original Flood offset Storage Area OB. *Consistent with the consent conditions, any ecological mitigation undertaken outside of the permanent designation will require associated covenants on Certificate of Title to ensure the permanent maintenance of these mitigation areas.*
C. WETLANDS REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G.42 b) requires specific areas of wetland mitigation.	Consent conditions and the EMP allow for the loss of approximately 0.03 ha of the approximately 2.0 ha large Raumati Manuka Wetland. As outlined in Appendix 4 detailed design has resulted in approximately 100 m^2 less vegetation loss than the consented Project Footprint, with approximately 0.02 ha (200 m^2) of the edge of the Raumati Manuka Wetland now being lost as a result of redesign of the CWB and associated embankments. This is a change from the NOR and Consent Package. Notably, the 0.02 ha of wetland being lost comprises predominantly young regenerating manuka with scattered sedges and gorse within an area regularly mown by KCDC contractors. The remainder will be avoided. The ongoing monitoring of hydrology within the Raumati Manuka Wetland will continue through the Groundwater Management Plan, which includes increased monitoring (data-loggers) on piezometers within this ecologically significant wetland as part of construction monitoring. The new constructed wetlands within Flood offset Storage Areas OC, 2 and 3A will be designed to incorporate the required wetland and riparian planting as follows: • Wetland planting will comprise predominantly sedges, rushes and areas of manuka with scattered enrichment plantings of appropriate primary wetland species such as kahikatea etc. • The new ecological mitigation wetlands within Flood offset Storage Areas OC, 2 and 3A will be designed to function as ecological wetlands (with riparian tributaries formed as outlined above), while recognising flood storage and landscape and visual mitigation requirements. *Note: The shortfalls and/or surplus of indigenous mitigation planting types will be addressed following detailed design in the other SSMP areas, focusing in particular on the extensive Kakariki / Smithfield Ecological Mitigation Areas.* *Note: As outlined in earlier correspondence with GWRC, KCDC and Friends of Raumati South's consultant ecologist, Melanie Dixon, the Raumati Manuka SSEMP area has been modified in response to a combination of contaminated site issues, hydrological risks to wetlands and a desire to improve the long-term ecological outcomes for this area. This has resulted in the move of the proposed Flood offset Storage Area OB (and associated 2.07 ha of indigenous wetland habitat development) from the Western side of the Expressway to the Flood offset Storage Area OC on the Eastern side of the Expressway. The extent of ecological mitigation proposed in this SSMP compared with that set out in the EMP are addressed in Appendix 4.*
D. SALVAGE	Conditions G.34 m) and G.41 c) i) 1 set out the salvage requirements for vegetation in SSMP 2.	As far as practicable, all kanuka trees that are felled within this SSMP area shall be identified and stored for use as lizard habitat within the ecological mitigation areas. There are no other salvage requirements within this SSMP area. Larger woody debris from peat excavation and stream works shall be salvaged to assist with stream habitat enhancement.
E. VEGETATION TO BE RETAINED REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8701-8706. ALSO REFER M2PP-35R-D-DWG-8701-8705, AND APPENDIX 5.	Conditions: DC.57 f) i) and DC.42C c) i) and G.34m) – identification of vegetation to be retained. Refer: Landscape Management Plan, sections 8.21 to 8.28 and Attachment 2: Principles, Methods and Procedures: Pre-construction. Ecological Management Plan, sections 7.1 to 7.18. Three sites have been identified within the SSMP where consent conditions require best endeavors to minimise vegetation loss / valued vegetation.	Identification of vegetation to be retained, including retention of as many significant trees as practicable and areas of regenerating indigenous vegetation and wetlands (see SHEETS M2PP-33R-D-DWG-8701 - 8706 for Sector 330, which were certified by KCDC on 5th March 2014 as part of the 'Vegetation to be Retained' plans). Plans for Sectors 340 and 350 are included in Appendix 1, (SHEETS M2PP-35R-D-DWG-8701 – 8705) yet to be certified by KCDC. Three sites where consent conditions require best endeavours to minimise vegetation loss of Valued Vegetation were identified as follows: 1. Raumati Kanuka Forest (comprising scattered kanuka with mahoe on elevated dunes south of Raumati Road). 2. Drain 7 Mahoe Vegetation (comprising mixed mahoe and tree lucerne and weedland along the raised dunes above Drain 7). 3. Raumati Manuka Wetland Indigenous and exotic vegetation to be retained shall be defined by surveyor as part of topographic survey carried out prior to any work commencing in SSMP 2 and the extent and boundaries checked and confirmed on site by Project

		Ecologist / Project Landscape Architect. Much of the exotic vegetation has already been removed as part of enabling works in this area, as well as some indigenous vegetation within the construction zone, consistent with the Vegetation to be Retained Plans certified by KCDC. Vegetation clearance boundaries shall be delineated by marker tape pegs or by marking perimeter trees. Temporary fences around these areas shall be subsequently erected prior to earthworks machinery being mobilised on site and construction commencing. Exposed vulnerable edges of Valued Vegetation to be retained following clearing of adjoining vegetation will be identified by Project Ecologist/Project Landscape Architect and temporary protection measures installed (e.g. wind cloth or similar). Temporary fences shall be erected around individual trees to be retained to prevent disturbance or damage; fences to be aligned outside the tree 'drip zone'. Large woody debris shall be salvaged for incorporation into the newly formed channel beds within the Flood offset Storage areas prior to livening. Machinery, materials, fuel, and chemicals to be stored, even temporarily, well away, from fenced vegetation and wetland areas to avoid accidental spillage, contamination, and compaction. All areas of indigenous and exotic vegetation to be retained within the Designation shall be photographed and details recorded to form part of baseline information.
F. VEGETATION TO BE CLEARED	Conditions: DC.57 f) i) and DC.42C c) i) identification of vegetation to be removed. Refer: Landscape Management Plan, sections 8.21 to 8.28 and Attachment 2: Principles, Methods and Procedures: Pre-construction. Ecological Management Plan, sections 7.1 to 7.18.	Project Ecologist and Project Landscape Architect to provide briefing to Constructors prior to vegetation clearance and protection work commencing; briefing to identify any hold points during vegetation clearance process. Vegetation to be mulched and stockpiled shall exclude aggressive weed species that could result in potential ongoing management problems (e.g. blackberry, gorse, Cape ivy, German ivy, *Convolvulus* and willows). Stored mulch to be periodically inspected for evidence of aggressive weed species and if present sprayed with appropriate herbicide. The Project Ecologist/Project Landscape Architect shall observe any removal or modification of indigenous vegetation. All kanuka trees to be removed shall be stockpiled with ecological supervision for future use as part of ecological mitigation requirements. Depending on the time of removal, kanuka branches shall be retained for use as slash to assist with natural kanuka regeneration as part of buffer planting. *Note: The Project Ecologist shall review the kanuka prior to clearance to determine whether there is any seed present. If seed is present, the kanuka slash shall be placed with ecological supervision in specific areas of kanuka planting to assist with natural regeneration.*
G. INDIGENOUS FAUNA	Conditions G.34 n) and the EMP (Appendix 3, section 7) - freshwater fish requirements for diversions and culverts in perennial and intermittent waterbodies (including drains). There is a requirement to avoid disturbance of at-risk bird species in this area, which includes the grey duck just south of the Wharemauku Stream. There are no other requirements for rare or threatened fauna within this SSMP.	Within this SSMP there are two culverts within perennial or intermittent streams that require consideration of fish passage/fish rescue. These culverts are as follows: • Culvert 10, Upper Drain 7 ; and • Culvert 11, Lower Drain 7; Immediately prior to any stream diversion / culvert installation, the section of stream to be reclaimed shall be isolated by coffer dams or bunds, and fish present will be safely captured for translocation by accepted methods as provided in the EMP. *Note: this includes installation of temporary culvert installation/upgrades.* Prior to livening of the temporary stream diversions and associated culverts, an extensive fish capture and removal will be required in accordance with the EMP. At least 5 working days prior to the livening of the new channel / culvert, a plan for capture and relocation of fish will be finalised and provided to GWRC in accordance with the EMP.

		All fish that are captured shall be transferred upstream to the nearest equivalent habitat to limit their exposure to any increased turbidity that is caused during the stream reclamation process / diversion / culvert installation. Any vegetation removal or disturbance within the Kiwi Pond area south of the Wharemauku Stream shall consider the EMP requirements to avoid disturbance of grey duck within the breeding season. *Note: much of this vegetation has already been searched for grey duck prior to clearance of vegetation as part of enabling works and will be reported as part of Annual Report.*
H. LANDFORMS REFER TO APPENDIX 1 SHEETS 1 – 7 and Standard details: Dune Rounding Detail M2PP-23R-D-DWG-8904	Condition DC.57 c) - SSLMPs shall be consistent with the Landscape Management Plan, ULDF (Technical Report 5), the Ecological Management Plan, the relevant Site Specific Urban Design Plan, and the Network Integration Plan as relevant.	SSMP 2 includes areas of relatively unmodified remnant dunes. Several of these dunes will be modified to enable construction of the Expressway, and will need to be re-shaped to help integrate the Expressway and CWB into the surrounding landforms. Organic material (i.e. the limited topsoil development on the dunes and peat in the interdunal hollows) shall be stripped and stockpiled separately for future use. Contract documentation and the Landscape Specifications (Appendix 5) provide details on topsoil stripping and storage. The Project Landscape Architect will be involved in the design of final shaping of dune profiles to ensure 'natural' appearance. (REFER drawing provided 'FOR CONSTRUCTION': M2PP-23R-D-DWG-8904) Where seasonal conditions prevail, exposed sand areas will be hydroseeded once re-shaping is completed. Alternative treatment will be applied to exposed sand areas where hydroseeding is not feasible (eg polymer, organic mulch, straw / brush). All exposed sand areas will be temporarily protected with straw or proprietary materials during re-shaping to limit erosion from wind and rain and also to minimise dust issues in adjoining properties. The extent of earthworks will be pegged on site prior to construction providing an opportunity for KCDC's Landscape Reviewer to inspect the area.
I. WETLAND CREATION AND RESTORATION REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G. 41 c) ii) 4 - ecological mitigation wetlands within Flood offset Storage Areas OC, 2 and 3A created to mitigate permanent loss of wetlands. .	The creation of the three new ecological mitigation wetlands within Flood offset Storage Areas OC, 2 and 3A requires large-scale earthworks and removal of topsoil/peat areas and weeds to ensure fluctuating seasonal water levels and support wetland plant species with the following design requirements to ensure requisite ecological functioning: • Semi-permanent water levels averaging between 50 - 100 mm deep during summer and up to 400 mm deep during winter (pending hydrology and geotechnical input and modeling). • Shall include the creation of predominantly *Carex* and *Baumea* sedgeland with open water and scattered manuka habitat to represent as far as practicable wetland habitat being lost. • Scattered enrichment planting of kahikatea, swamp maire and pukatea in specific areas to accelerate natural plant succession and habitat. • Shall be integrated with the adjacent areas of riparian habitat within Flood offset Storage Areas OC, 2 and 3A and landscape planting on Expressway embankments. • In addition to meeting ecological function, the final design and construction of the Flood offset Storage Areas OC, 2 and 3A shall consider hydrological, flood storage and landscape mitigation requirements. Wetland design and planting shall be supervised through the construction phase (and sign-off) by Project Ecologist, Project Landscape Architect and Project Hydrologist. Briefing at the outset of construction to contractors by Project Ecologist and Hydrologist. Briefings through final design, site layout and prior to final completion shall be undertaken with GWRC. This SSMP area also includes the development of a new stormwater treatment wetland within / adjacent to Flood offset Storage Area OC (SSMP 2), with pond depth and design to be developed in conjunction with Project Hydrologist. This does not form ecological mitigation requirements and has been designed to be separate to Flood offset Storage Area OC.

J. STREAM CREATION AND RESTORATION REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G.42 and G.42C - creation of large areas of new stream within the new Flood offset Storage Areas 2 and 3A.	Within this SSMP area, as part of the development of the new Flood offset Storage Areas 2 and 3A ecological wetlands, approximately 1,560 lineal metres of stream channel will be created and planted. In addition, approximately 500 lineal metres of new stream channel in Flood offset Storage Area OC will be created (This is a change from the NOR and Consent Package with more detail below.) This riparian habitat is integrated with the adjacent wetland planting as follows: • New stream channels will be formed with associated riparian planting. • The new stream channels shall maintain permanent water depth and shall form a 2.0m wide (average), 1.5m deep (average) straight sided water channel with an associated flood plain (as far as can be achieved with flood protection constraints) rising to the upper banks. • New stream channels shall have a 'wetted' bank of 1.0m depth prior to a flood plain (5.0m) with a sloping bund. • The riparian vegetation shall be established on both the flood plain and raising bund feature behind (see indicative cross section, SHEET 6). • As far as practicable, new hard substrate material and other salvaged debris (e.g. logs, trunks etc. from peat excavation in this area) shall be incorporated into the stream channel design. • The new channels shall incorporate a 'natural' meander with gentle curvature. • If practicable, the new stream channel design shall allow for the incorporation of armouring using larger cobble and boulders if required for flood protection works – e.g. on bunds and confluences. • The design of the Flood offset Storage Areas OC, 2 and 3A shall incorporate ongoing fish access for climbing species such as eel and banded kokopu into the adjacent Drain 7 and the Wharemauku Stream. • Existing drains that will be planted should be modified to create a floodberm to maintain flood conveyance. The current SEV score (Stream Ecological Value) of the Lower Drain 7 is 0.39. The SEV target for the approximately 1,560 lineal metres of new stream channels to be created in Flood offset Storage Area 2A and 3 is 0.58. The current SEV score of the Upper Drain 7 is 0.48. The SEV target for the approximately 500 lineal metres of new stream channels to be created in Flood offset Storage Area OC is 0.67. Sediment monitoring via in-stream loggers is required at diversion creation and livening as set out in the EMP. Fish migration movement is required to be monitored post diversion (as set out in the EMP). Stream design and planting shall be supervised through the construction phase (and sign-off) by Project Ecologist, Project Landscape Architect and Project Hydrologist. Briefing at the outset of construction to contractors by Project Ecologist and Hydrologist. Briefings through final design, site layout and prior to final completion shall be undertaken with Regional Council. *Note: following from amendments to Flood Offset Storage Area OB and OC described above, the new design of Flood Offset Storage Area OC has allowed the creation of an additional 500 lineal metres of new stream channel to assist with flood storage capacity within this area. This additional 500 lineal metres has been added to the ecological mitigation spreadsheet attached as Appendix 4.*
K. CULVERT INSTALLATION REFER TO APPENDIX 1 SHEETS 2-5	Drain 7 (upper and lower) is a tributary of the Wharemauku Stream, a regionally significant stream listed in the Regional Freshwater Plan. The Wharemauku Stream and the Drain 7 tributaries have several recorded freshwater fish species present. The following permanent culverts require fish passage and associated fish rescue: • Culvert 10 – a 1.8 m diameter culvert of 60 metres long installed in the upper Drain 7 adjacent to the Raumati Manuka Wetland (AEE design: 60 m)	Culvert installation shall require the following in all culverts that require fish passage: • Culverts shall not constrict the flow such that velocities are increased to more than 0.3m -1.0m per second to ensure fish passage for existing freshwater fish species is retained. • Entrance and exit of culverts shall be below the stream invert, and ensure any hard substrates (head wall, steps etc) do not affect flow and swimming passage. • During construction special attention shall be given to the protection of native fish within any section of stream being culverted. • Where the existing channel is to be lost or drained as part of culvert installation, fish capture and transfer will be required prior to water loss in accordance with the EMP (Appendix 3 of EMP). • All culverts in perennial or intermittent waterbodies shall be constructed either by installing a diversion around the work area and installing the culvert in the dry channel, or by constructing the culverts adjacent to the stream and then diverting water into the culvert on completion.

	• Culvert 11 – a 3.0 x 2.5 m box culvert of between 70 m length installed in the lower Drain 7 adjacent to Rata Road (AEE design: 100 m). A number of smaller culverts are also required to connect Flood offset Storage Areas OC, 2A and 3 to the adjacent watercourses (Drain 7 and the Wharemauku Stream) that will need to provide for fish passage. Several smaller flow balancing culverts are required in this SSMP area that do not have fish passage or fish rescue requirements.	Culvert installation shall be supervised through the construction phase (and sign-off) by Project Ecologist and Project Hydrologist. Briefing at the outset of construction to contractors by Project Ecologist and Hydrologist.
L. MITIGATION PLANTING REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Conditions G.42 and DC.57 f) - Landscape and ecological mitigation requirements -	There are five planting types within this SSMP required for landscape and visual and ecological mitigation as follows: ***Massed planting:*** Massed planting in this sector comprises two types- a general species mix that is used extensively on the embankments along the route. Plant grades will be a mix of 0.5 and 1.0 litre grades planted at 1.0m centres. In places where areas of kanuka will be removed because they are under the footprint kanuka-dominant massed planting is proposed (ie 60% kanuka). ***Massed planting with enrichment:*** comprises a significant proportion of the planting in SSMP 2. Enrichment planting will occur in the following planting season after massed planting; enrichment species plant grades shall be PB 18 or equivalent. In places where areas of kanuka will be removed because they are under the footprint kanuka-dominant massed planting is proposed (ie 60% kanuka). ***Ecological wetland and riparian mix:*** Planting around existing wetland areas that are being retained shall include *Carex secta, Coprosma propinqua*, *Coprosma tenuicaulis* and manuka. Plant grades will be a mix of 0.5 and 1.0 litre (or equivalent) planted at 0.75m centres. *Machaerina teretifolia* (syn.*Baumea teretifolia*) is proposed to be included in the species mix for the riparian planting along Drain 7 in areas where there is permanent water present. ***Trees and grass***: Planting various species of tall amenity tree species such as poplars, eucalypts and blackwoods are proposed along the Leinster Avenue extension to replace similar tall trees that have been removed in this area for construction of the Expressway. These fast-growing species will provide a buffer between the Expressway and the adjoining residential properties ***Swales***: will be planted exclusively in oioi (*Apodasmia similis*) Landscape and ecological success mitigation planting requirements and approvals are covered in Sections M - S below.
M. PLANTING METHODS AND SPECIFICATIONS REFER TO APPENDIX 4	DC 57 f) and G.42C c) - planting methods and specifications Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	Planting shall be undertaken during 3 month planting window only (beginning June until the end of August). Planting may be carried out during a 2- week shoulder period either side of this but it will depend on environmental conditions (*this is particularly likely for wetland and riparian planting to take account of high or low groundwater conditions*). With the exception of wetland and riparian planting which may need to coincide with low groundwater levels in late spring, no planting shall be undertaken outside the June-August planting window unless approved by Project Landscape Architect. Planting substrate shall be a minimum of 300mm deep, consolidated, and free from rilling and erosion before mulch placement. Organic mulch shall be placed over the area to be planted at least 2 weeks prior to planting to allow for settlement. *Note: organic mulch shall not be used within the areas of wetland, riparian planting and stormwater treatment planting that are subject to temporary or permanent inundation. For these areas, alternative plant protection techniques will be used (e.g. staking and proprietary matting mechanisms).* No planting shall be undertaken until site is approved by Project Landscape Architect and Project Ecologist (with regard to ecological mitigation planting) to be free of aggressive pest plant species. Planting shall be delayed in areas where aggressive pest plants are detected until these are removed or sufficiently controlled.

		Plant supplier to confirm all plants are well hardened off prior to planting. Species composition shall be in accordance with species percentages. All indigenous plant set out and groupings to be random, but reflecting natural assemblages as directed by Project Landscape and Ecologist for the relevant mitigation requirements. Plant selection shall take into account engineering and service constraints. All planted areas shall be temporarily fenced to assist with plant protection. Enrichment planting shall be undertaken in year 2 as directed by the Project Ecologist and Project Landscape Architect – and in response to mitigation success requirements as set out in the EMP and LMP.
N. WEED CLEARANCE REFER TO APPENDIX 4	Conditions: DC.57 f) vii) B and Condition G.35 - weed control and clearance. Refer: Landscape Management Plan, sections 8.16 to 8.20 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4	All invasive plants shall be controlled in planting areas prior to planting in accordance with the GWRC Regional Pest Management Strategy (2002-22) and as directed by the Project Landscape Architect and Project Ecologist in relation to ecological and landscape mitigation areas.
O. GROUND PREPARATION REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c) Refer: Landscape Management Plan, sections 8.35 to 8.40 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All areas to be planted shall be sprayed with a certified and approved herbicide. All areas to be planted shall be free of actively growing grass, weeds, and any extraneous material removed. Any localised rilling or erosion of planted areas shall be remedied prior to placement of approved soil mix. Project Landscape Architect to approve all finished earthwork areas prior to placement of approved soil mix. Approved soil mix comprising salvaged peat, stripped topsoil, sand and compost shall be placed and lightly compacted to a depth of 300mm over all areas to be planted.
P. MULCHING REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	100mm of organic mulch shall be placed lightly over all areas to be planted (with the exception of temporarily or permanently inundated areas as outlined above). Mulch shall be left for 2 weeks to settle prior to commencement of any planting.
Q. PLANT SUPPLY REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All indigenous plants shall be sourced from Manawatu Ecological Region, with a focus on the Foxton Ecological District. All plants shall be hardened off prior to planting.
R. PLANTING PROGRAMME / STAGING	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	Planting shall be staged according to completion of construction works. No planting shall be carried out in areas where there is a risk of damage from adjoining construction activities. Construction Manager shall confirm areas where construction is completed and area is ready for planting. Planting shall be completed only within June-August planting window unless otherwise approved by Project Landscape Architect. All areas to be planted shall be photographed and details recorded to form part of baseline information.

S. PLANT MAINTENANCE REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.60 – 8.62 and Attachment 2: Principles, Methods and Procedures: Post-Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All planted areas shall be photographed on completion of planting and details recorded to be included as part of baseline information. Wetland and riparian planting shall be maintained for 4 years. Terrestrial planting, both indigenous and exotic shall be maintained for 3 years. Planting shall be maintained according to the maintenance plan as set out in the Landscape specifications (Appendix 4). Monitoring reports on plant survival and establishment and the frequency and success of the maintenance regime shall be completed by the Project Landscape Architect (in consultation with the Project Ecologist in relation to riparian planting) as follows: • 1 month after planting completed and then • 3 months • 6 months • 12 months • 2 years; and • Twice yearly thereafter until the end of the maintenance period. Monitoring reports shall include dates of visits, condition of vegetation, condition of fencing, issues arising, actions required, together with photographs. Monitoring reports on completion shall be provided to KCDC Landscape Reviewer. Monitoring reports shall cease to be prepared for those areas where the performance standards have been met ahead of the maintenance period.
T. PEST PLANT MANAGEMENT REFER TO APPENDIX 4	DC.57 f), G.42C c) and G.43 d) – control of pest plants.	Weed surveys shall be carried out annually in spring to track the introduction of weeds and their spread and to recommend appropriate management in accordance with the GWRC Regional Pest Management Strategy (2002-22).
U. PEST ANIMAL MANAGEMENT REFER TO APPENDIX 4	DC.57 f), G.42C c) and G.43 d) – control of pest animals.	Pest monitoring shall be carried out annually in spring to track the introduction of browsing animal pests and their spread and to recommend appropriate management in accordance with the GWRC Regional Pest Management Strategy (2002-22).
V. PROTECTION REQUIREMENTS REFER TO APPENDIX 4	Condition DC.57 c) and G.43 d) – temporary and permanent protection.	Temporary fences shall be erected as part of the protection of valued vegetation to be retained. All areas of ecological and landscape mitigation planting within the operational designation shall be fenced following planting, maintained and protected in accordance with the consent conditions as outlined in the EMP and LMP.
W. LANDSCAPE AND ECOLOGICAL SUCCESS MONITORING – POST CONSTRUCTION	G.40, G.42C c), G.42A and DC. 57 c) - monitoring and adaptive management requirements to confirm landscape and ecological mitigation success has been achieved are as follows (as outlined in the EMP and LMP): DC.53 c), DC.57 f) and G.42 c) - 3 year Defects Liability and Maintenance Period for all terrestrial planting and a 4 year Defects Liability and Maintenance Period for wetland and riparian planting. Consistent with the EMP and LMP, monitoring of the success of wetland and stream formation will be undertaken in coordination by the Project Ecologist,	In relation to landscape and ecological mitigation planting, success measures are as follows: • 80% canopy closure at the time of Final Completion whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth. • The total area of wetland, terrestrial and riparian planting as far as practicable reflects the indigenous habitat types lost and ecological functioning and is based on development of similar representative vegetation communities (G.42A). • Invasive terrestrial weed species successfully controlled. • Natural colonisation by other non-planted indigenous species. Shelterbelts and amenity rural tree planting shall require 100% plant survival, with 100% of trees in full leaf at the time of Final Completion. In-stream surveys within the representative sections of the new constructed stream channels within the Flood offset Storage Areas OB, 2A and 3 to confirm hydrological success shall be undertaken, with follow up SEV process to confirm

	Landscape Architect, stormwater engineers and project hydrologist to ensure ecological remedial and mitigation works meet the project outcomes and objectives specified in conditions G.34 and G.38 c). DC. 57 c) and G.42C e) - at the completion of planting, each area of ecological mitigation will be reviewed by the Project Ecologist in conjunction with the Project Landscape Architect and a report prepared on the parameters above.	SEV score (condition) as specified in the EMP (Condition G42C c) ii). The target Stream Ecological Values (SEV) for mitigation riparian planting are as follows: • Combination of riparian vegetation establishment and correct substrate, depth, flow, macrophyte and in-stream cover development. • Post development of each diversion reach, a SEV measurement shall be undertaken to measure functional and biological condition. • Measurements undertaken at year 3 (one year before the end of plant maintenance) and 5 year time frames. • Once the SEV (and other metrics) meet the standard for success (baseline measures), no further mitigation success measurement in regard to the waterway diversions shall be required. Following construction (and in particular following the creation and livening of the new channel reaches within Flood offset Storage Areas 0B, 2A and 3), the success of the diversion created as aquatic habitat will require monitoring and potentially additional works to result in the anticipated aquatic biodiversity gains. As part of the SEV assessment, function shall be assessed via the SEV process which includes presence/absence of macro-invertebrates and fish as well as a range of physical habitat characteristics (including the success of the riparian re-vegetation). A Physical Habitat Assessment (PHA) shall be undertaken in accordance with Harding et al 2009 and the results compared to the original PHA scores and to a reference site of good quality. The new stream channels within the Flood offset Storage Areas OC, 2A and 3 identified in SHEETS 2-5 shall meet the forecast SEV potential between 0.67 and 0.58 outlined in the EMP (Appendix 4), but at least exceed the current SEV condition of the upper Drain 7 (0.48) and the lower Drain 7 (0.39).
X. ADAPTIVE MANAGEMENT – POST CONSTRUCTION	Condition G.40 – adaptive management and condition DC.57 c)	In the event that mitigation planting does not achieve the objectives within the consent timeframes, the Project Ecologist and Project Landscape Architect will prepare a report, including recommendations for remedial work or additional mitigation, and ongoing monitoring and reporting through the Adaptive Management process.

6. REFERENCES	• Ecological Management Plan (EMP), July 2013. • Landscape Management Plan (LMP), July 2013 • Urban and Landscape Design Framework, Technical Report 5, MacKays to Peka Peka Expressway • Assessment of Landscape and Visual Effects, including Appendices A and B, Technical Report 7 • Assessment of Ecological Impacts Report, including Technical Reports 27 – 31 (Terrestrial Vegetation and Habitats, Herpetofauna, Avifauna, Freshwater and Marine), • Assessment of Hydrology and Stormwater Effects, Technical Report 22.

M2PP-121-D-PLNM-0002

Appendix 1: DRAWING SET

Site Specific Management Plan 002 - [sector 330-340-350]
MacKays to Peka Peka Expressway

17 DECEMBER 2014 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Drawing Plotted:

SSMP#	SECTOR	NAME	NOTES
SSMP1	310/320	RAUMATI SOUTH	
SSMP2	330/340/350	RAUMATI NORTH	
SSMP3	360/370/380	WHAREMAUKU BASIN	
SSMP4	410/420	KAPITI MAZENGARB	
SSMP5&6	430/440/460	OTAIHANGA NORTH&SOUTH	
SSMP7	470	WAIKANAE RIVER	
SSMP8	480/510	TE MOANA	
SSMP9	520	NGARARA	
SSMP10	530/540/550/580	PEKA PEKA SOUTH	ISSUED IN TWO PARTS: -SSMP10-550 -SSMP10-530/540/580
SSMP11	560/570	PEKA PEKA NORTH	

LEGEND

ROAD
SSMP BOUNDARY
SSMP SHEET (ROAD)
CURRENT SSMP SHEET (ROAD)
SSMP SHEET (BRIDGE)
CURRENT SSMP SHEET (BRIDGE)
PARCEL BOUNDARIES
CONSTRUCTION BOUNDARY

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:25,000	Design			Approved For Construction*
	Drawn		22/08/14	
Reduced Scale (A3) 1:50,000	Dsg Verifier			
	Dwg Check			Date
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2 [330-340-350] - SHEET 1 LOCATION PLAN

Drawing No: M2PP-121-D-DWG-8001

Rev. C

Document No.

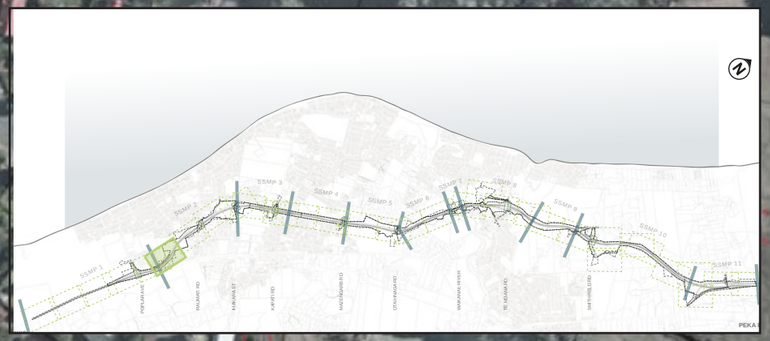
Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

KEY CPTED CONSIDERATIONS:

- NO TALL BARRIERS OR ELEMENTS THAT CREATE 'OUTSIDE ROOMS'/PLACES TO HIDE.
- CLEAR LINES OF SIGHT AT INTERSECTIONS.
- ENSURE CLEAR VIEWS TO THE EXITS OF CWB.
- REMOVE TALL VEGETATION FROM CWB INTERSECTIONS.
- THE 'TAGGABITLY' OF MATERIALS AND SURFACES.
- LOW PLANTING AT BRIDGE ABUTMENTS.



POTENTIAL PEAT PLACEMENT

RAUMATI WETLAND

SECTOR 320 SSMP 1

SECTOR 330

LEINSTER AVE

DRAIN 7

CS3 8507

CWB 3.0M

CULVERT 10 (60.0M)

TYPE 2 CWB INTERSECTION REFER TO SHEET 32

WETLAND 0A

REF. 8303 SHEET 8

CS2 8501

NORTH BOUND

SOUTH BOUND

CS1 8501

1.2M TRIANGLE TOP CYCLONE FENCE

M2PP PROPOSED ALIGNMENT

REFER TO M2PP-33R-D-DWG-8221 FOR WIND RAIN BUND DETAIL

DRAIN DIVERSION

LEINSTER AVE EXTENSION

NOISE BUND

REFER TO SSMP ADDENDUM FOR FOOTBRIDGE DETAIL

WIND RAIN HOUSE

EXISTING SH1

EXISTING RAILWAY LINE (NIMT)

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

General
- Designation Boundary
- Wire Barrier
- W-Barrier
- Barrier Transition
- Concrete Traffic Barrier
- Culvert
- Swale
- Planted Swale
- Flood Storage Area
- Visualisation Viewpoint

Urban Design
- Concrete Bridge Barrier
- Concrete Noise Wall
- Culvert Headwall
- Retaining Wall
- Bridge Deck
- Bridge Abutment
- Bridge Piers
- 2.0M Timber Noise Fence

Landscape
- Individual Retained Trees
- Retained Vegetation
- Grass
- Massed Planting
- with Tree Enrichment
- Wetland / Riparian Planting
- Massed planting low
- Specimen Tree

Ecology
- Retained Valued Terrestrial Vegetation
- Retained Valued Wetland Vegetation
- Planted Indigenous Terrestrial Habitat
- Planted Indigenous Wetland Habitat
- Stream Mitigation / Riparian Habitat
- Existing Water Body
- Batter Slope Tadpole

CWB
- Loose Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

No.	Revision	By	Chk	Chk.V	Appd	Date
E	POST CERTIFICATION AMMENDMENT	MP				22/02/16
D	POST CERTIFICATION AMMENDMENT	MP				01/09/15
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

			Approved For Construction*
Design			
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2 [330-340-350] - SHEET 2 MASTER PLAN

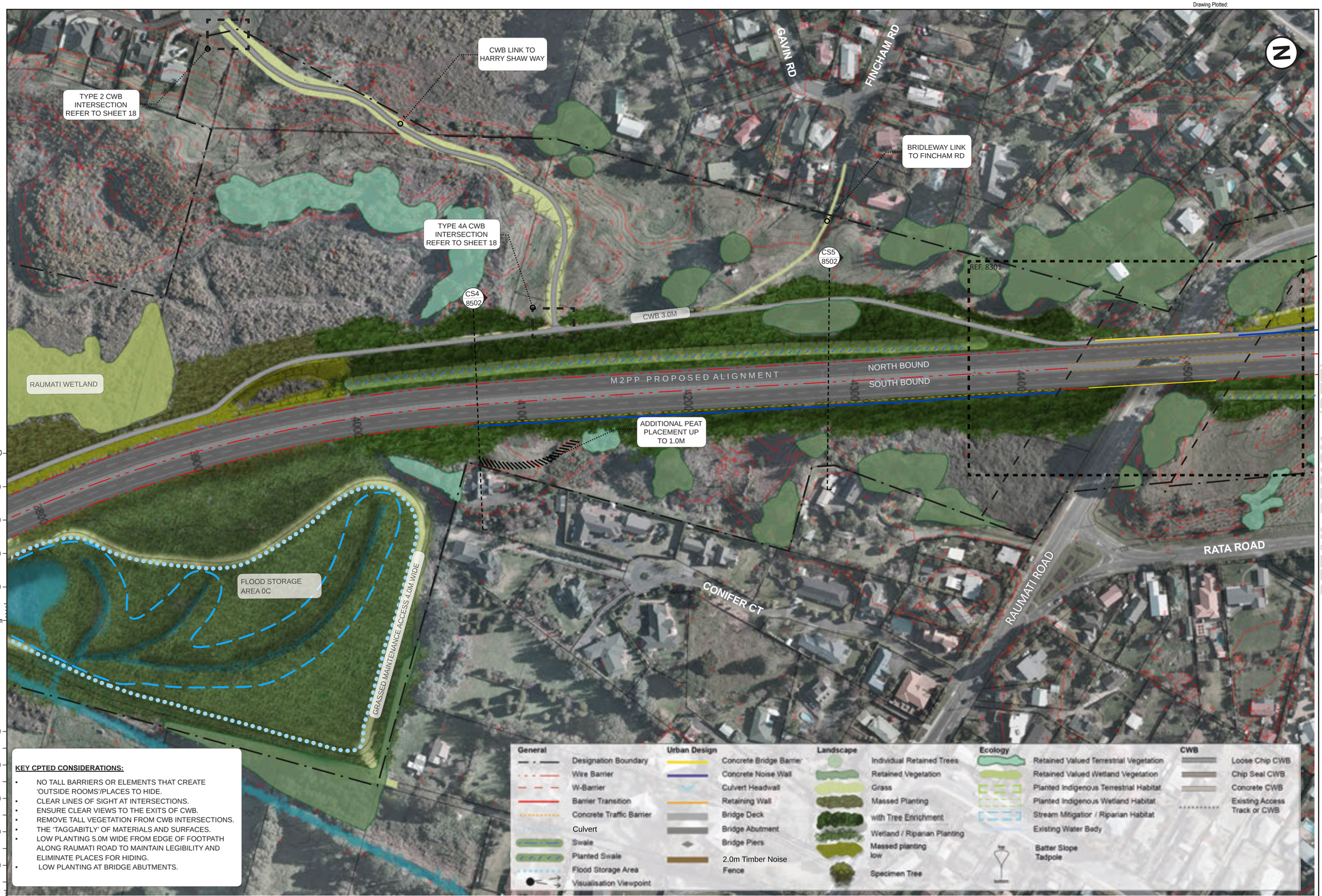
Drawing No: M2PP-121-D-DWG-8101

Rev. D

DETAIL DESIGN

Document No.

Drawing Plotted:



KEY CPTED CONSIDERATIONS:

- NO TALL BARRIERS OR ELEMENTS THAT CREATE 'OUTSIDE ROOMS'/PLACES TO HIDE.
- CLEAR LINES OF SIGHT AT INTERSECTIONS.
- ENSURE CLEAR VIEWS TO THE EXITS OF CWB.
- REMOVE TALL VEGETATION FROM CWB INTERSECTIONS.
- THE 'TAGGABITLY' OF MATERIALS AND SURFACES.
- LOW PLANTING 5.0M WIDE FROM EDGE OF FOOTPATH ALONG RAUMATI ROAD TO MAINTAIN LEGIBILITY AND ELIMINATE PLACES FOR HIDING.
- LOW PLANTING AT BRIDGE ABUTMENTS.

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
A	ISSUE FOR INFORMATION	VB				22/08/14

Original Scale (A1) 1:1000	Design	LK	22/08/14	Approved For Construction*
	Drawn	VB	22/08/14	
Reduced Scale (A3) 1:2000	Dsg Verifier			Date
	Dwg Check			

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 3 MASTER PLAN

Drawing No: M2PP-121-D-DWG-8102

Rev. A

Document No.

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DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

KEY CPTED CONSIDERATIONS:

- NO TALL BARRIERS OR ELEMENTS THAT CREATE 'OUTSIDE ROOMS'/PLACES TO HIDE.
- CLEAR LINES OF SIGHT AT INTERSECTIONS.
- ENSURE CLEAR VIEWS TO THE EXITS OF CWB.
- REMOVE TALL VEGETATION FROM CWB INTERSECTIONS.
- THE 'TAGGABITLY' OF MATERIALS AND SURFACES.
- LOW LEVEL ORIENTATION LIGHT AT MAZENGARB CROSSING POINT.
- ELIMINATE PLACES FOR HIDING.
- LOW PLANTING AT BRIDGE ABUTMENTS.

General
- Designation Boundary
- Wire Barrier
- W-Barrier
- Barrier Transition
- Concrete Traffic Barrier
- Culvert
- Swale
- Planted Swale
- Flood Storage Area
- Visualisation Viewpoint

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- Concrete Noise Wall
- Culvert Headwall
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- Bridge Abutment
- Bridge Piers
- 2.0m Timber Noise Fence

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- Existing Water Body
- Batter Slope Tadpole

CWB
- Loose Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

KIWI ROAD

TYPE 2 CWB INTERSECTION REFER TO SHEET 18

NUGGET GROVE

MATAI ROAD

RAUMATI ROAD

TYPE 2 CWB INTERSECTION REFER TO SHEET 18

TYPE 4A CWB INTERSECTION REFER TO SHEET 18

TALLER SCREEN PLANTING FOR NOISEWALL GRAFFITI PROTECTION

FLOOD STORAGE AREA 3A

TYPE 4 CWB INTERSECTION REFER TO SHEET 18

M2PP PROPOSED ALIGNMENT

NORTH BOUND

SOUTH BOUND

CULVERT 11 (70.0M)

FLOOD STORAGE AREA 2

CULVERT 11.4 (15.0M)

GRASSED MAINTENANCE ACCESS

RATA ROAD

CULVERT 11.5 (15.0M)

A1 REPRODUCTION SCALE: 100, 80, 60, 40, 20, 0mm

A3 REPRODUCTION SCALE: 50, 40, 30, 20, 10, 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
6	ISSUE FOR RISK ASSESSMENT	VB				22/08/14

Original Scale (A1) 1:1000	Design	LK	22/08/14	Approved For Construction*
	Drawn	VB	22/08/14	
Reduced Scale (A3) 1:2000	Dsg Verifier			
	Dwg Check			Date
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 4 MASTER PLAN

Drawing No: M2PP-121-D-DWG-8103

Rev. 6

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE

IF IN DOUBT ASK.

Drawing Plotted:

KIWI ROAD

REF. 8302

TYPE 4A CWB
INTERSECTION
REFER TO SHEET 18

CULVERT 11.4 (15.0M)

CULVERT 11.5 (15.0M)

CULVERT 11.6 (8.0M)

FLOOD
STORAGE
AREA 2

RATA ROAD

CWB LINK
TO RATA RD

TYPE 1 CWB
INTERSECTION
REFER TO SHEET 17

TYPE 4 CWB
INTERSECTION
REFER TO SHEET 18

WHAREMAUKU STREAM

SECTOR 350

SECTOR 360 SSMP 3

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

KEY CPTED CONSIDERATIONS:

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DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 5
MASTER PLAN

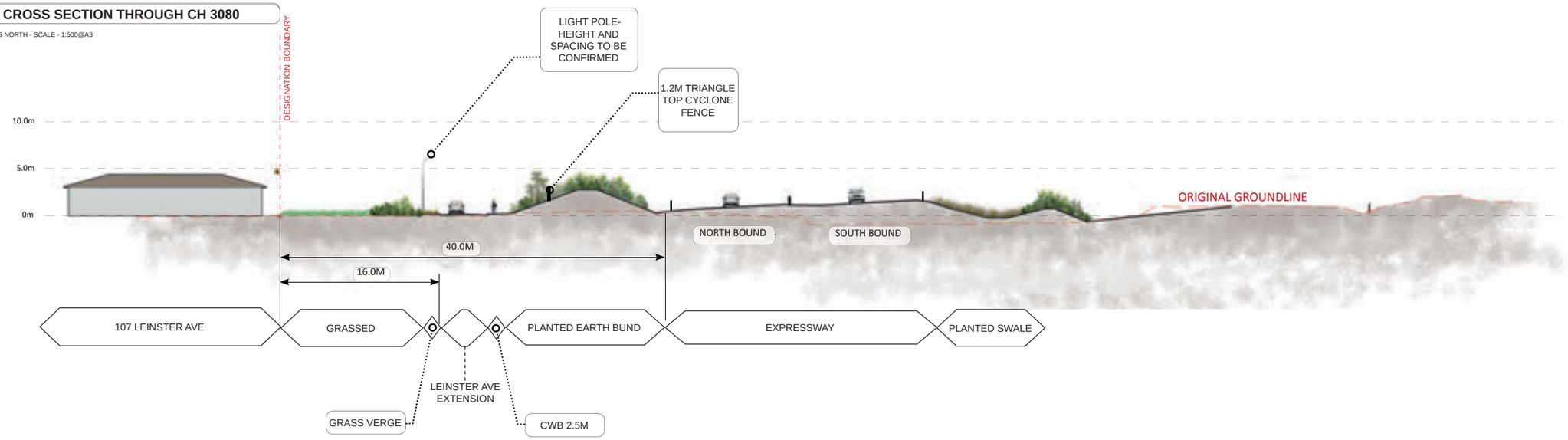
Drawing No: M2PP-121-D-DWG-8104

Rev. C

Document No.

CS1 - CROSS SECTION THROUGH CH 3080

FACING NORTH - SCALE - 1:500@A3



CS2- CROSS SECTION THROUGH CH 3440

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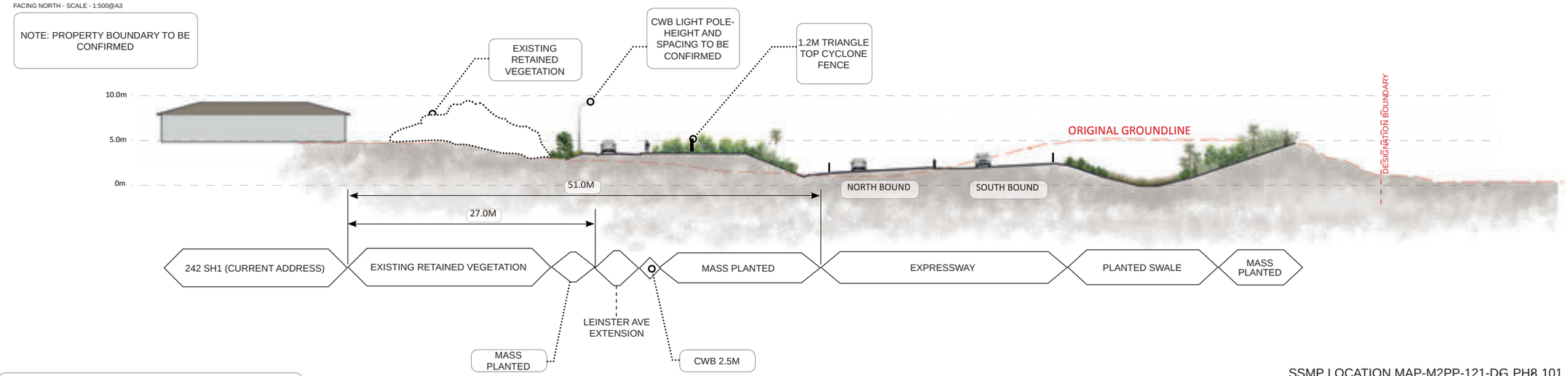
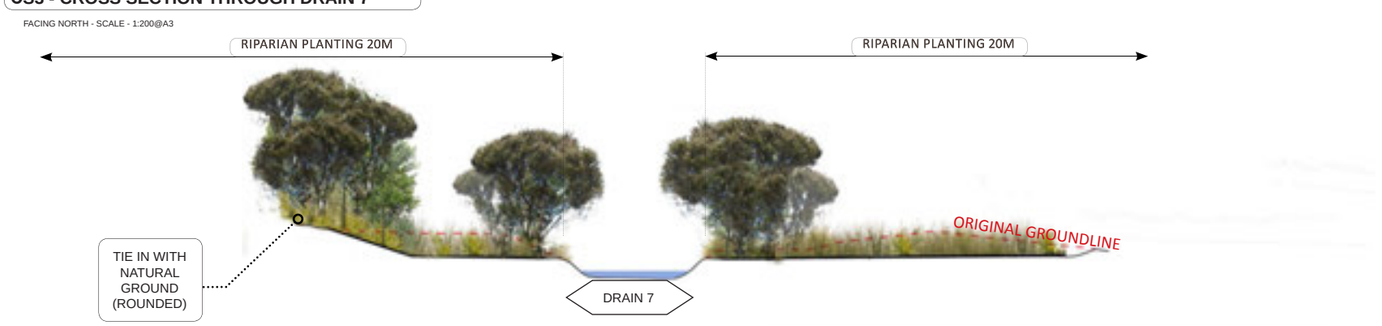


CS3 - CROSS SECTION THROUGH DRAIN 7

FACING NORTH - SCALE - 1:200@A3



SSMP LOCATION MAP-M2PP-121-DG PH8 101

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN
Design | Drawn | Dsg Verifier | Dwg Check
Approved For Construction* Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 6 SECTIONS

Drawing No: M2PP-121-D-DWG-8501

Rev. C

Document No.

DETAIL DESIGN

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

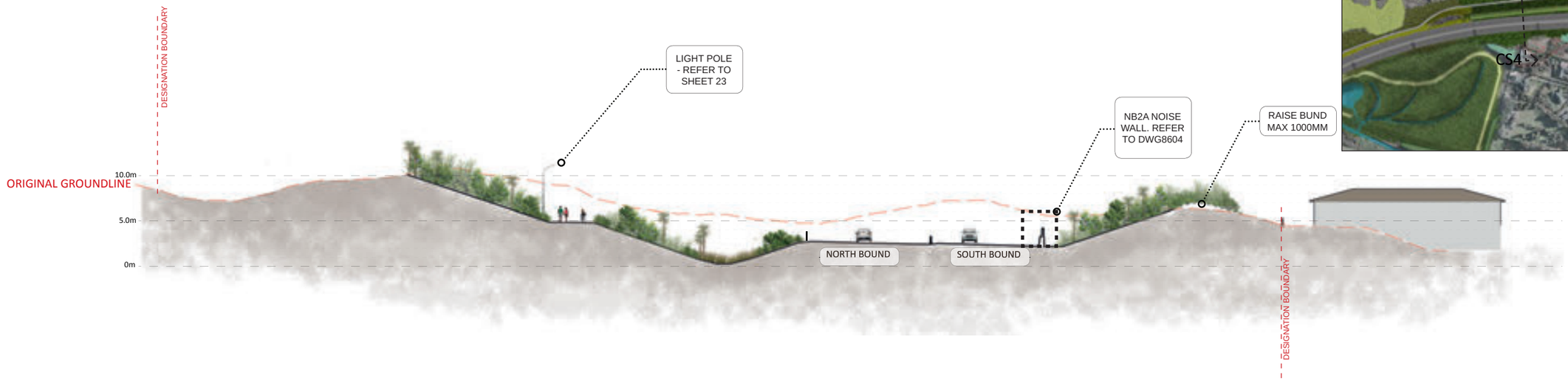
A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

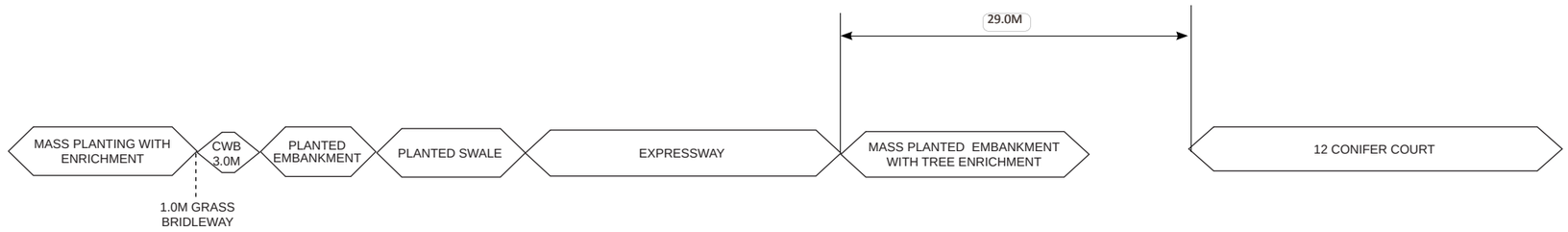
Drawing Plotted:

CS4 - CROSS SECTION THROUGH CH 4080

FACING NORTH - SCALE - 1:500@A3

SSMP LOCATION MAP-M2PP-121-D-GPH -8102





CS5- CROSS SECTION THROUGH CH 4280

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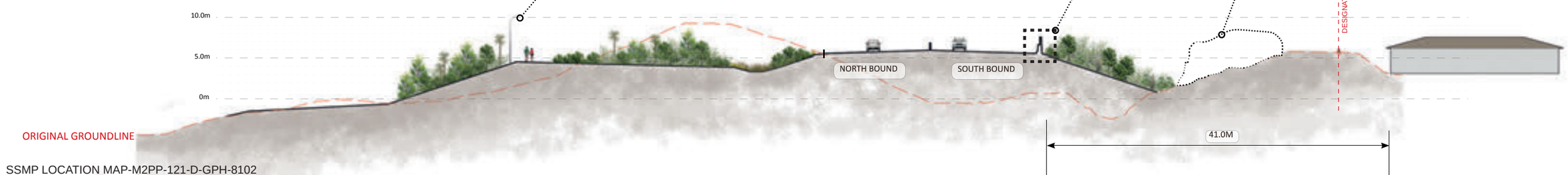
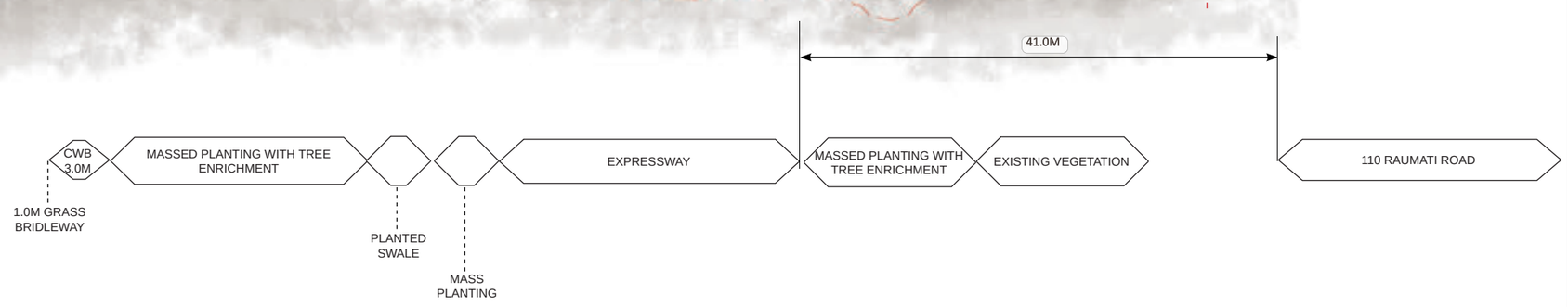




SSMP LOCATION MAP-M2PP-121-D-GPH-8102

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 7 SECTIONS

Drawing No: M2PP-121-D-DWG-8502

Rev. C

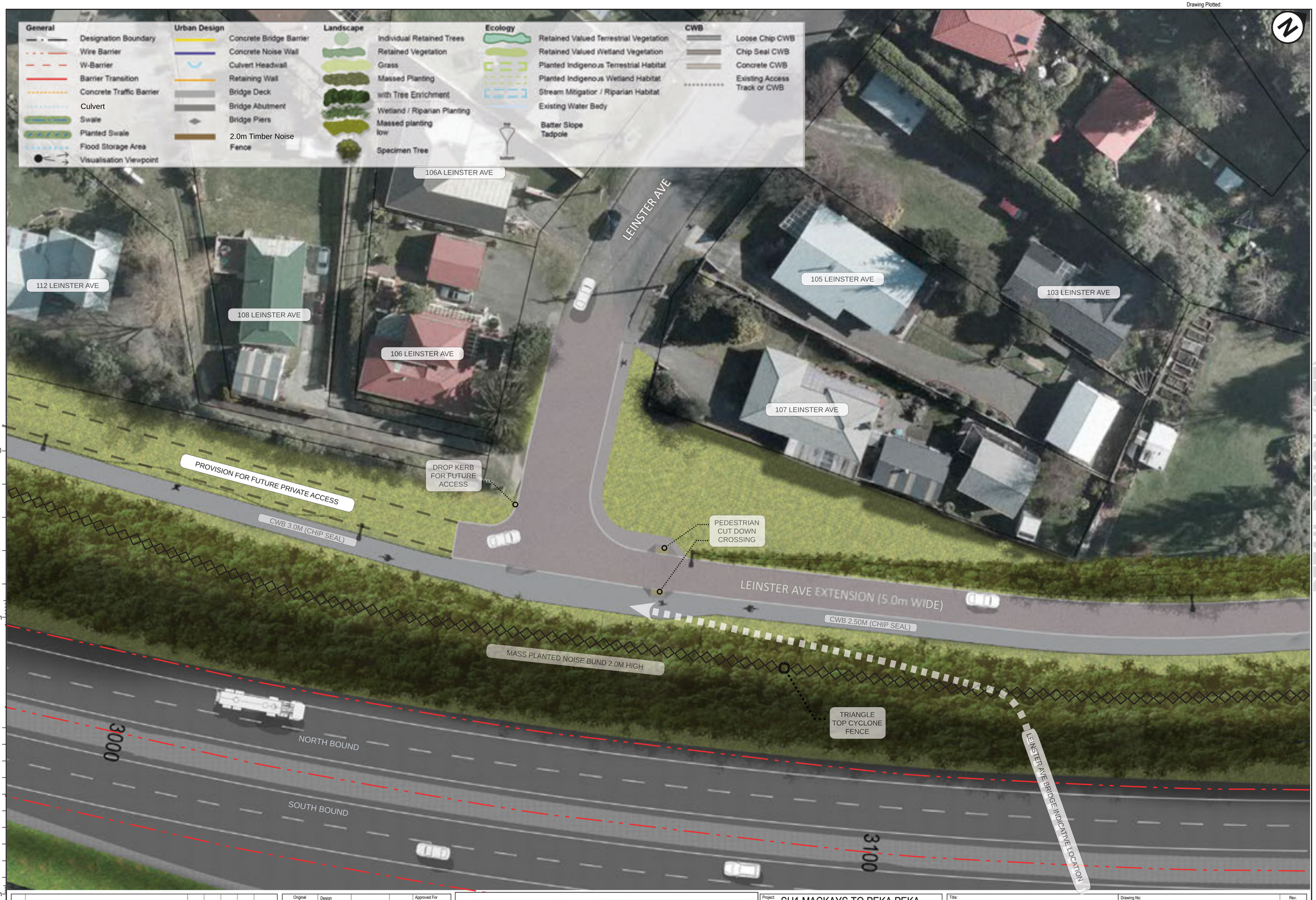
Document No.

DETAIL DESIGN (DET)

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:



No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 8 LEINSTER EXTENSION

Drawing No: M2PP-121-D-DWG-8302

Rev. C

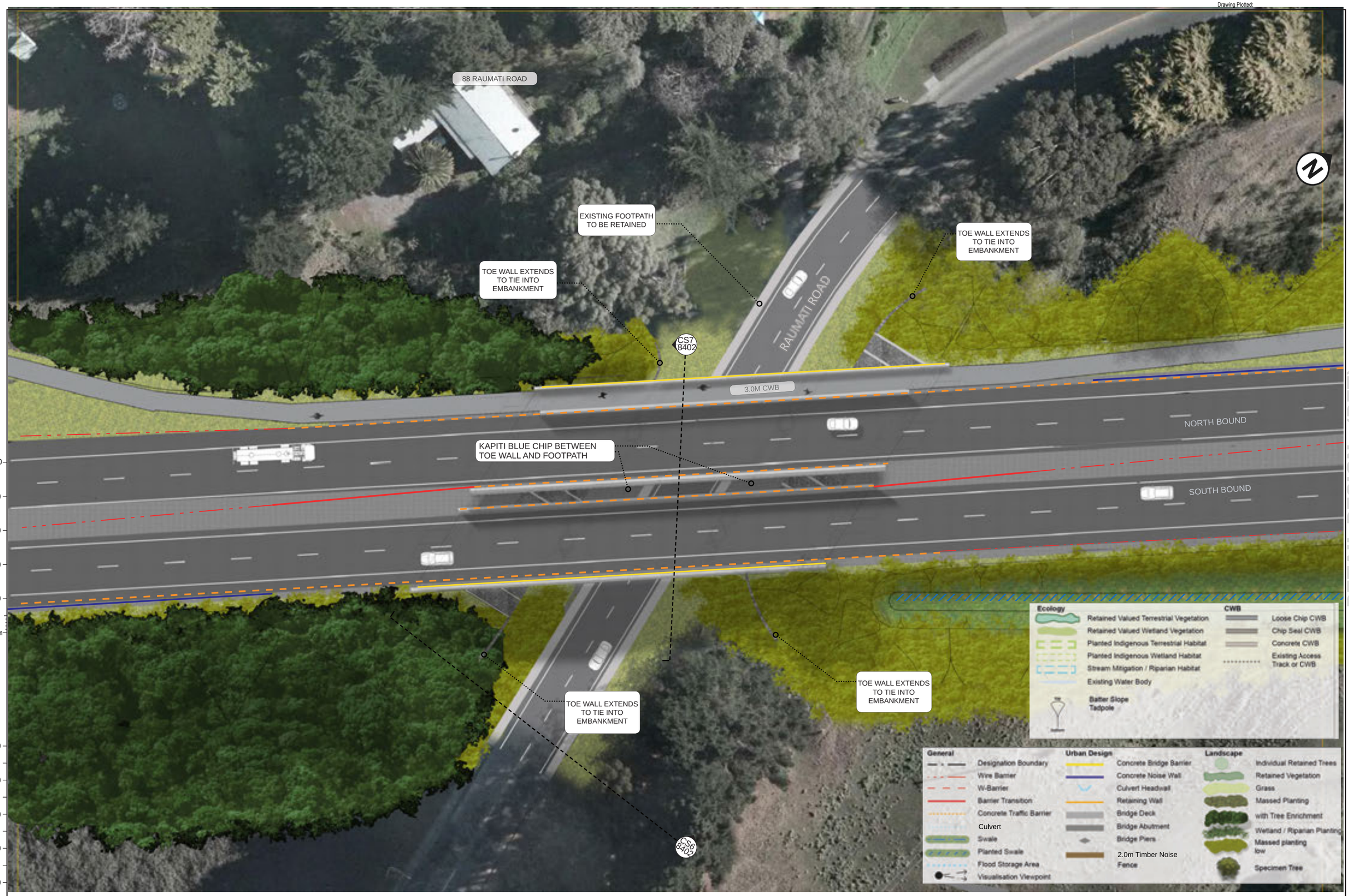
Document No.

DETAIL DESIGN (DET)

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:



A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 9 BRIDGE MASTERPLAN

Drawing No: M2PP-121-D-DWG-8301

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

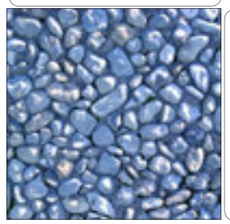
CS6- CROSS SECTIONAL ELEVATION- RAUMATI BRIDGE

FACING EAST SCALE - 1:250@A3

MATERIAL A

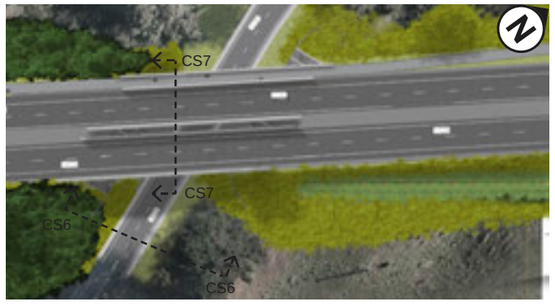
BRIDGE BARRIER: PRECAST CONCRETE WITH 2 COATS WHITE KIEM COATING & ANTI GRAFFITI PROTECTION- PENDING SAMPLE PANEL APPROVAL

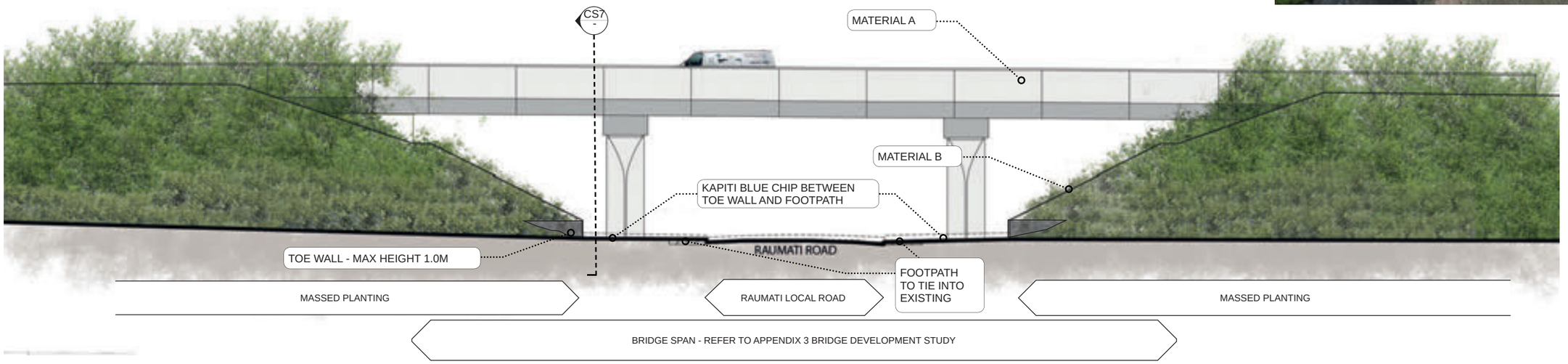
MATERIAL B



BRIDGE ABUTMENT: PRECAST CONCRETE PANEL WITH INLAID OTAKI PEB 20MM STONE AND MATT GRAFFITI PROTECTION- PENDING SAMPLE PANEL APPROVAL

SITE CONTEXT PLAN-M2PP-121-D-GPH-8301





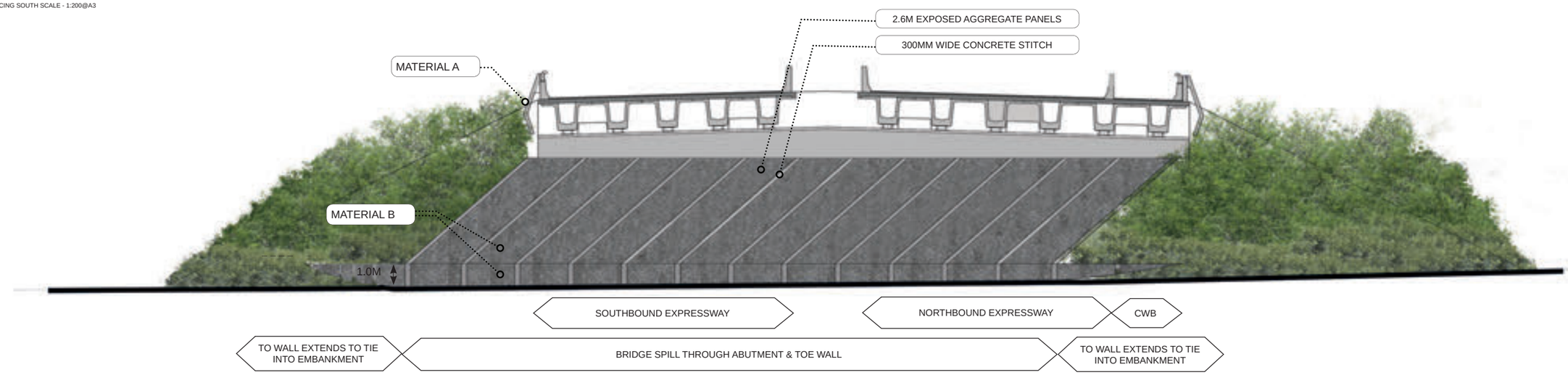
5 m

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

CS7-CROSS SECTIONAL ELEVATION-ABUTMENT

FACING SOUTH SCALE - 1:200@A3



A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350]- SHEET 10 BRIDGE ELEVATIONS

Drawing No: M2PP-121-D-DWG-8402

Rev. C

Document No.

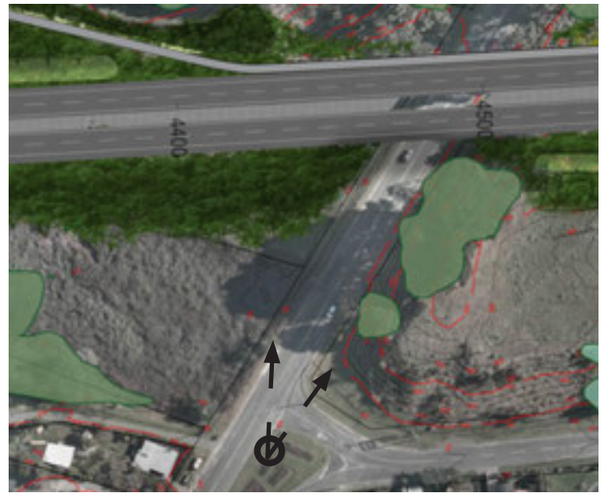
DETAIL DESIGN (DET)

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

VISUALISATION CONTEXT



100
80
60
40
20
0mm

A1 REPRODUCTION SCALE

VISUALISATION - RAUMATI BRIDGE (EAST SIDE OF BRIDGE LOOKING WEST FROM RAUMATI ROAD)

50
40
30
20
10
0mm

A3 REPRODUCTION SCALE

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] - SHEET 11
RAUMATI ROAD

Drawing No: M2PP-121-D-DWG-8801

Rev. C

DETAIL DESIGN (DET)

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF NOISE WALL AND GABION WALL LOCATIONS

- NB1- TL4, F-SHAPE BARRIER
- NB2A- 2.0M HIGH, CONCRETE NOISE BARRIER, BACKFILLED ON OUTSIDE TO 1M ABOVE CARRIAGEWAY LEVEL
- NB2-2.0M HIGH, CONCRETE NOISE BARRIER, BESIDE EXPRESSWAY
- NB3- 2.5M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB4- 3.0M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB5- 2.0M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB6- 3M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB7- 2.0M HIGH TIMBER PROPERTY NOISE FENCE
- EARTH NOISE BUND (TOP) HEIGHT VARIES

3100 3200 3300 3400 3500 3600 3700 3800

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350]- SHEET 12 NOISE WALL LOCATIONS

Drawing No: M2PP-121-D-DWG-8601

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF NOISE WALL AND GABION WALL LOCATIONS

- NB1- TL4, F-SHAPE BARRIER
- NB2A- 2.0M HIGH, CONCRETE NOISE BARRIER, BACKFILLED ON OUTSIDE TO 1M ABOVE CARRIAGEWAY LEVEL
- NB2-2.0M HIGH, CONCRETE NOISE BARRIER, BESIDE EXPRESSWAY
- NB3- 2.5M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB4- 3.0M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB5- 2.0M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB6- 3M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB7- 2.0M HIGH TIMBER PROPERTY NOISE FENCE
- EARTH NOISE BUND (TOP) HEIGHT VARIES

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk-V	Appd	Date
D	POST-CERTIFIED ALTERATION	MP				-
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350]- SHEET 13 NOISE WALL LOCATIONS

Drawing No: M2PP-121-D-DWG-8602

Rev. D

Document No.

DO NOT SCALE

IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF NOISE WALL AND GABION WALL LOCATIONS

- NB1- TL4, F-SHAPE BARRIER
- NB2A- 2.0M HIGH, CONCRETE NOISE BARRIER, BACKFILLED ON OUTSIDE TO 1M ABOVE CARRIAGEWAY LEVEL
- NB2-2.0M HIGH, CONCRETE NOISE BARRIER, BESIDE EXPRESSWAY
- NB3- 2.5M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB4- 3.0M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB5- 2.0M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB6- 3M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB7- 2.0M HIGH TIMBER PROPERTY NOISE FENCE
- EARTH NOISE BUND (TOP) HEIGHT VARIES

A1 REPRODUCTION SCALE
100
80
60
40
20
0mm

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000	Design				Approved For Construction*
	Drawn				
Reduced Scale (A3) 1:2000	Dsg Verifier				
	Dwg Check				Date
	* Refer to Revision 1 for Original Signature				

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00	Title: SSMP 2[330-340-350] -SHEET 14 NOISE WALL LOCATIONS	Drawing No: M2PP-121-D-DWG-8603	Rev. C

Document No.

Drawing Plotted:

PLAN OF NOISE WALL AND GABION WALL LOCATIONS

- NB1- TL4, F-SHAPE BARRIER
- NB2A- 2.0M HIGH, CONCRETE NOISE BARRIER, BACKFILLED ON OUTSIDE TO 1M ABOVE CARRIAGEWAY LEVEL
- NB2-2.0M HIGH, CONCRETE NOISE BARRIER, BESIDE EXPRESSWAY
- NB3- 2.5M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB4- 3.0M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB5- 2.0M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB6- 3M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB7- 2.0M HIGH TIMBER PROPERTY NOISE FENCE
- EARTH NOISE BUND (TOP) HEIGHT VARIES

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

Design | Drawn | Dsg Verifier | Dwg Check | Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] -SHEET 15 NOISE WALL LOCATIONS

Drawing No: M2PP-121-D-DWG-8604

Rev. C

Document No.

DETAIL DESIGN (DET)

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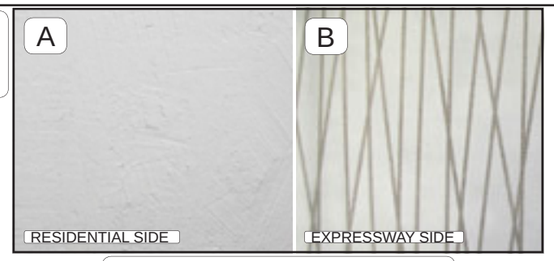
DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

RESIDENTIAL SIDE - MATERIAL TYPE A

EXPRESSWAY SIDE - MATERIAL TYPE B

FAIR FACED CONCRETE FINISH WITH MATT GRAFFITI GUARD

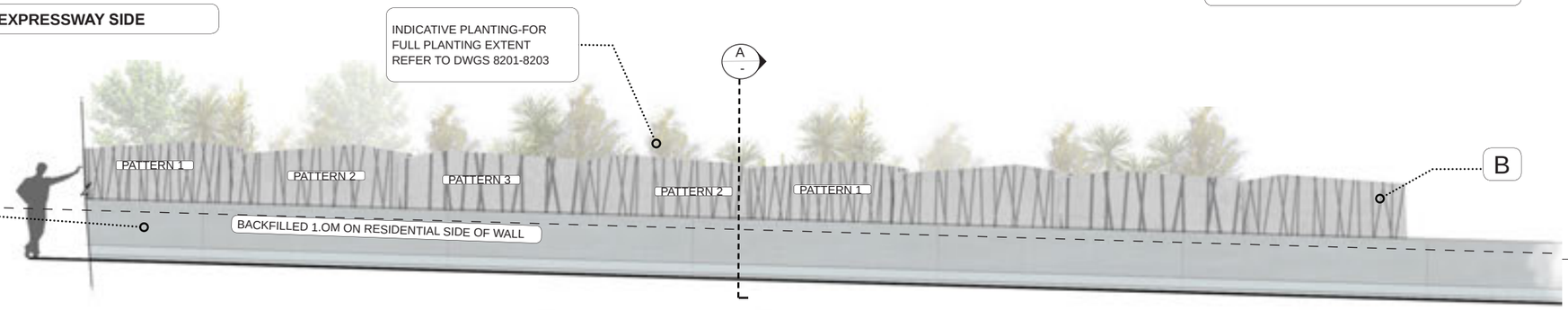


-FAIR FACED CONCRETE WITH ERROSED CONCRETE PATTERN.
-CONCRETE PATTERN: VEGETATED GRAPHIC CONCRETE
-3 PATTERN SIZES:
- PATTERN 1: SMALL
- PATTERN2: MEDIUM
- PATTERN 3: LARGE

MATERIALITY/FINISHES/EXAMPLES

ELEVATION 1 - NOISE WALL NB2A - EXPRESSWAY SIDE

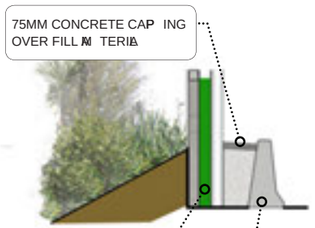
SCALE 1:100 @ A3



ELEVATION 2 - NOISE WALL NB2 - RESIDENTIAL SIDE

SCALE 1:100 @ A3

SECTION A - NOISE WALL NB2A - 2M



VISUALISATION-EXPRESSWAY SIDE

VISUALISATION-RESIDENTIAL SIDE

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN
Design | Drawn | Dsg Verifier | Dwg Check
Approved For Construction* Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 16
NOISE WALL NB2A - 2M BACKFILLED 1.0M

Drawing No: M2PP-121-D-DWG-8604

Rev. C

Document No.

DETAIL DESIGN (DET)

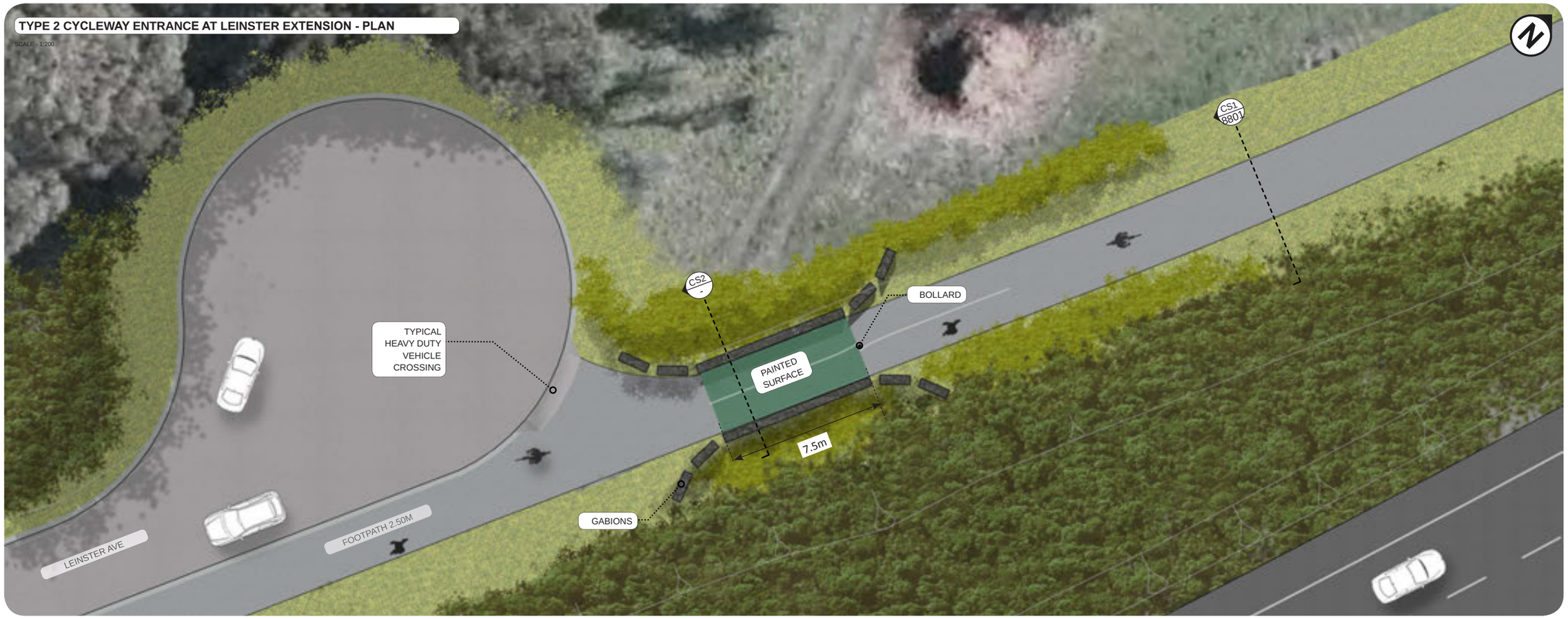
Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

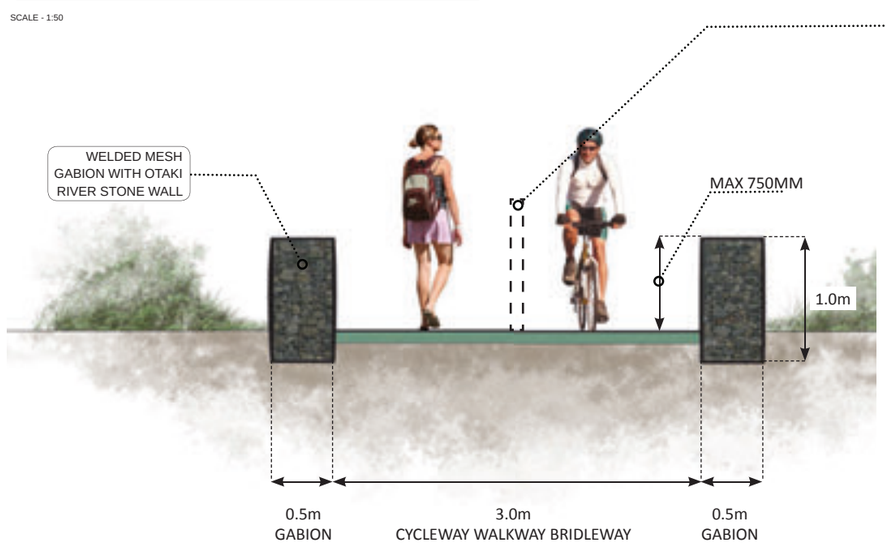
TYPE 2 CYCLEWAY ENTRANCE AT LEINSTER EXTENSION - PLAN

SCALE - 1:200



CS2 - TYPE 1 & TYPE 2 CYCLEWAY ENTRANCE

SCALE - 1:50



1.0M HIGH VISIBLE COLOUR BOLLARD (TYPE 2 ENTRANCE)

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 17
CWB INTERSECTIONS

Drawing No: M2PP-121-D-DWG-8801

Rev. C

DETAIL DESIGN (DET)

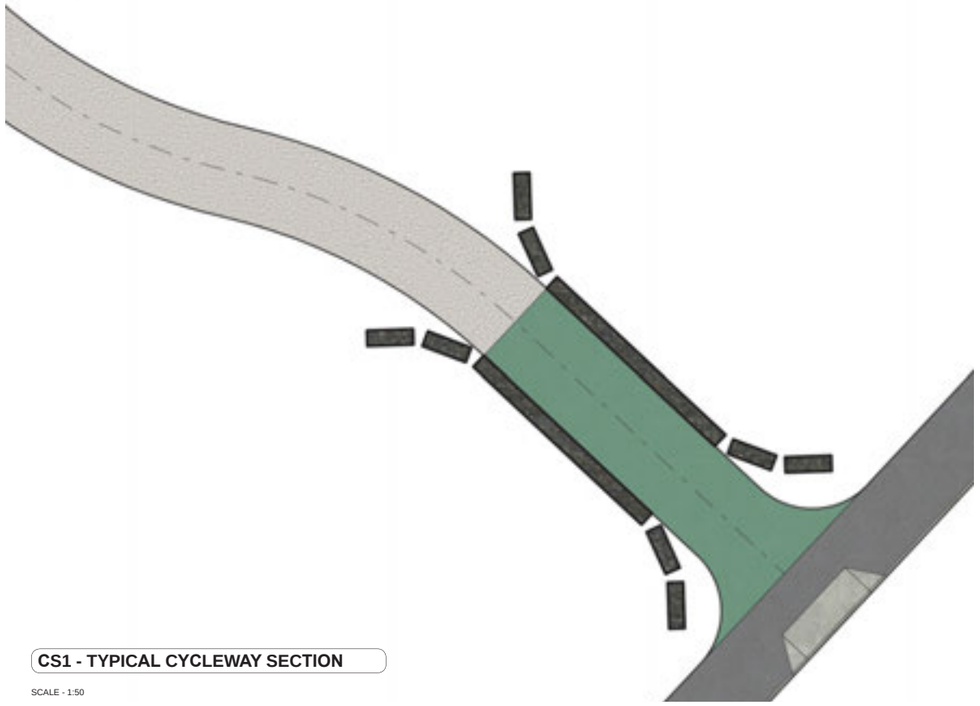
Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

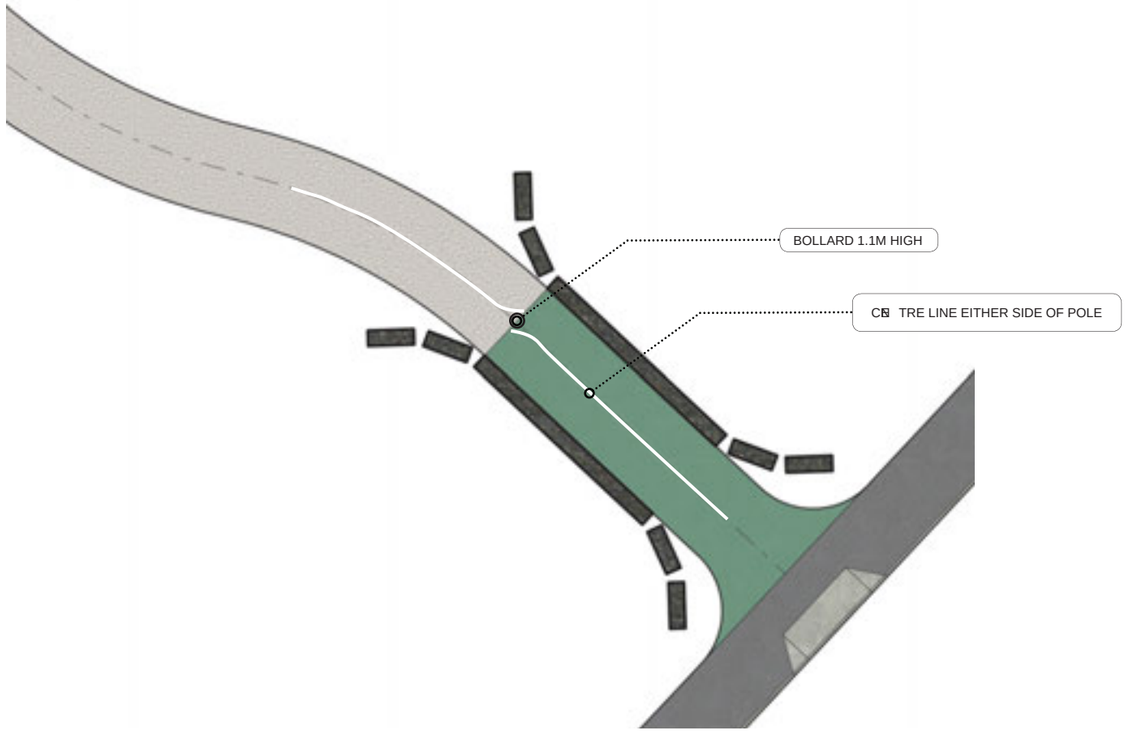
TYPE 1 TYPICAL CWB ENTRANCE - PLAN

SCALE - 1:200@A3



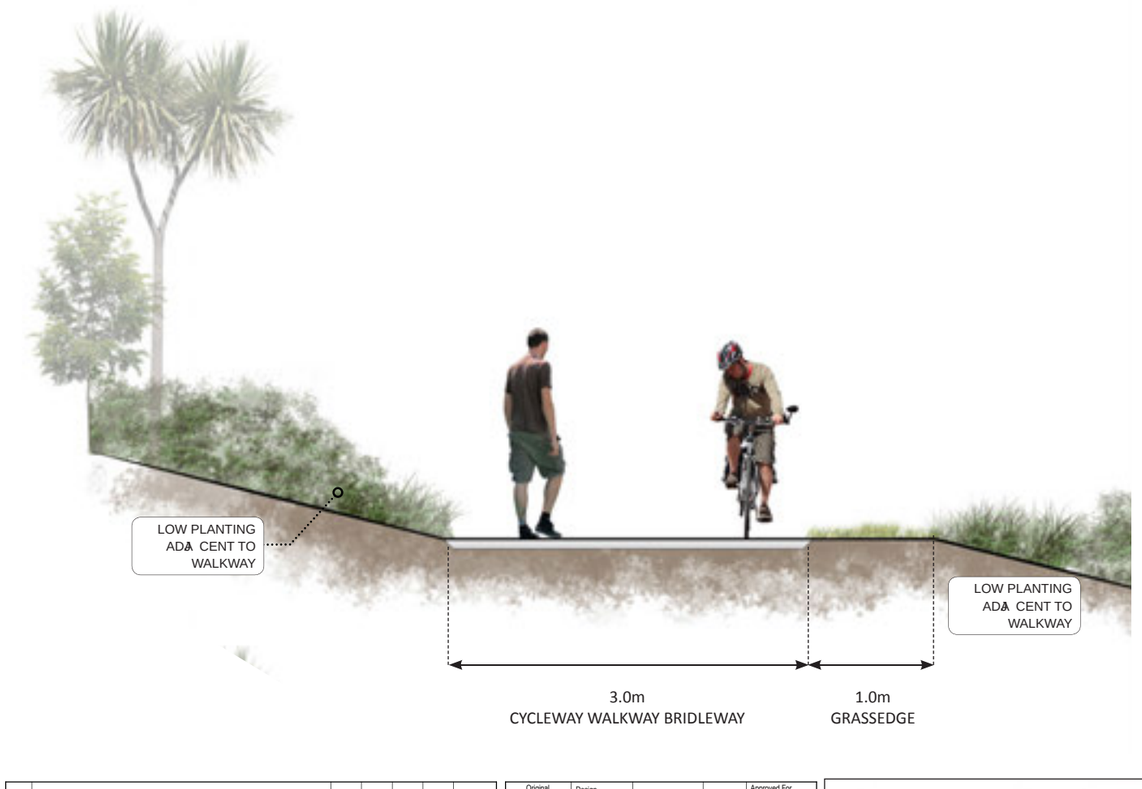
TYPE 2 TYPICAL CWB ENTRANCE - PLAN

SCALE - 1:200@A3



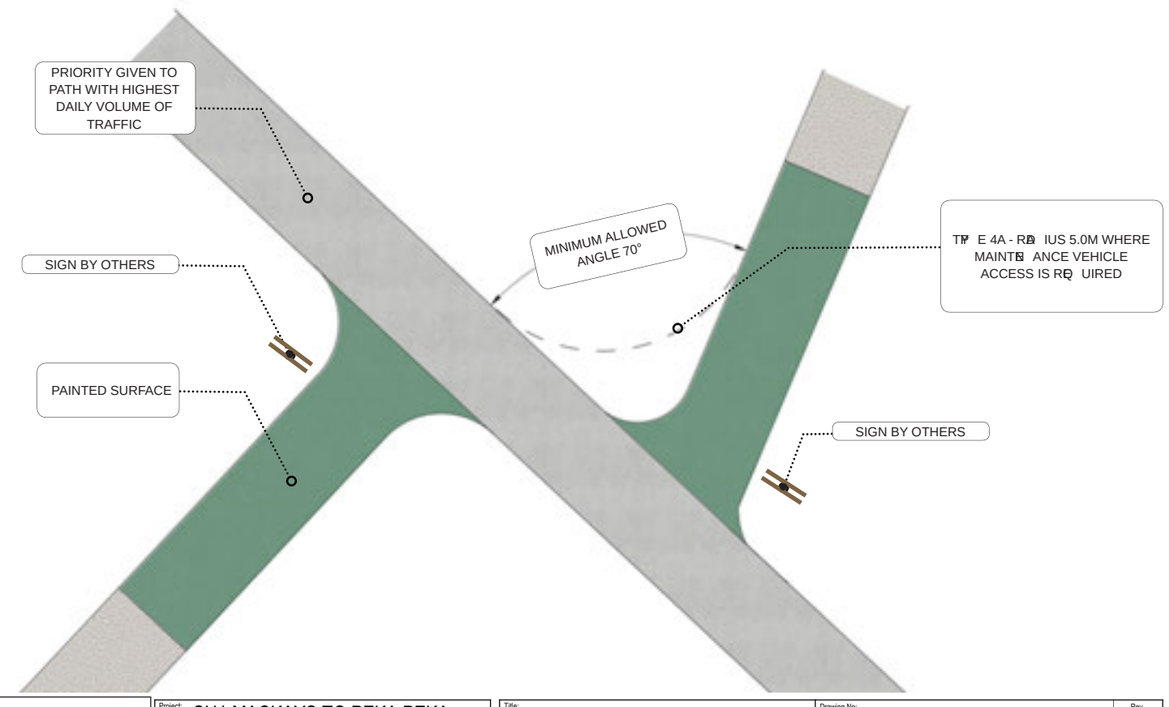
CS1 - TYPICAL CYCLEWAY SECTION

SCALE - 1:50



TYPE 4 AND 4A INTERSECTION - PLAN

SCALE - 1:200@A3



A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design				Approved For Construction*
Drawn				
Dsg Verifier				
Dwg Check				Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 18
CWB INTERSECTIONS

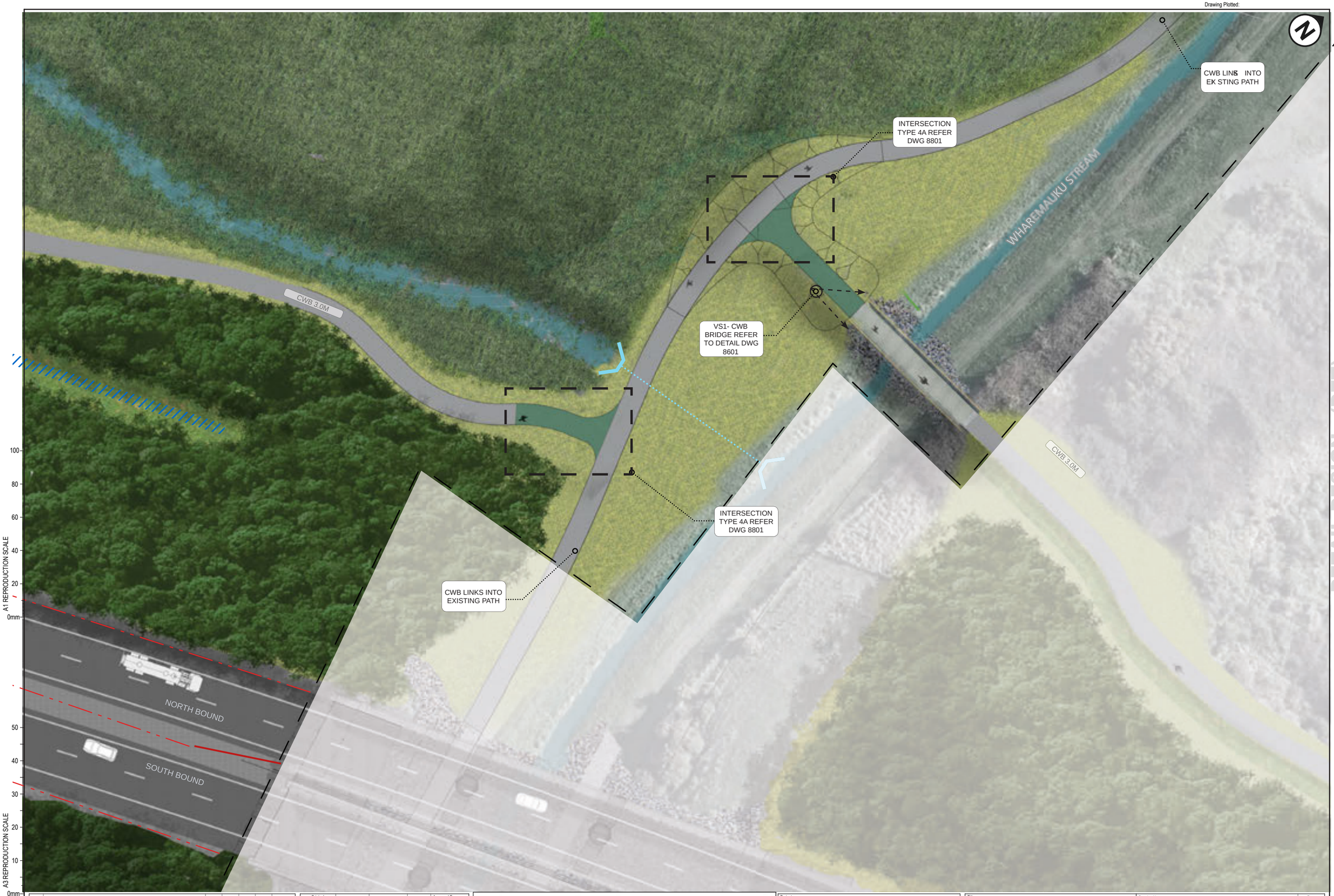
Drawing No: M2PP-121-D-DWG-8801

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:



A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SHEET 19 **CWB WHAREMAUKU CROSSING MASTERPLAN**

Drawing No: M2PP-121-D-DWG-8302

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

VS1- PERSPECTIVE OF CWB OVER THE WHAREMAUKU STREAM

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN Reduced Scale (A3) AS SHOWN	Design			Approved For Construction*
	Drawn			
	Dsg Verifier			
	Dwg Check			Date
* Refer to Revision 1 for Original Signature				

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] -SHEET 20 WHAREMAUKU CWB BRIDGE

Drawing No: M2PP-121-D-DWG-8601

Rev. C

Document No.

DETAIL DESIGN (DET)

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

NOTE: INDICATIVE LIGHTING FROM TOC DESIGN - POLE HEIGHTS AND SPACING BY OTHERS

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

				Approved For Construction*
Original Scale (A1) 1:250	Design			
	Drawn			
Reduced Scale (A3) 1:500	Dsg Verifier			
	Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] -SHEET 21 LIGHTING PLAN

Drawing No: M2PP-121-D-DWG-8701

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

NOTE: INDICATIVE LIGHTING FROM TOC DESIGN - POLE HEIGHTS AND SPACING BY OTHERS

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250 Reduced Scale (A3) 1:500	Design		Approved For Construction*
	Drawn		
	Dsg Verifier		
	Dwg Check		Date
	* Refer to Revision 1 for Original Signature		

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2[330-340-350] -SHEET 22 LIGHTING PLAN

Drawing No: M2PP-121-D-DWG-8702

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

NOTE: INDICATIVE LIGHTING FROM TOC DESIGN - POLE HEIGHTS AND SPACING BY OTHERS

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250
Reduced Scale (A3) 1:500

Design | Drawn | Dsg Verifier | Dwg Check

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 23
LIGHTING PLAN

Drawing No: M2PP-121-D-DWG-8703

Rev. C

Document No.

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

NOTE: INDICATIVE LIGHTING FROM TOC DESIGN - POLE HEIGHTS AND SPACING BY OTHERS

100
80
60
40
20
0mm
A1 REPRODUCTION SCALE

50
40
30
20
10
0mm
A3 REPRODUCTION SCALE

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) 1:250	Design			Approved For Construction*
	Drawn			
Reduced Scale (A3) 1:500	Dsg Verifier			
	Dwg Check			Date
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SHEET 24 LIGHTING PLAN

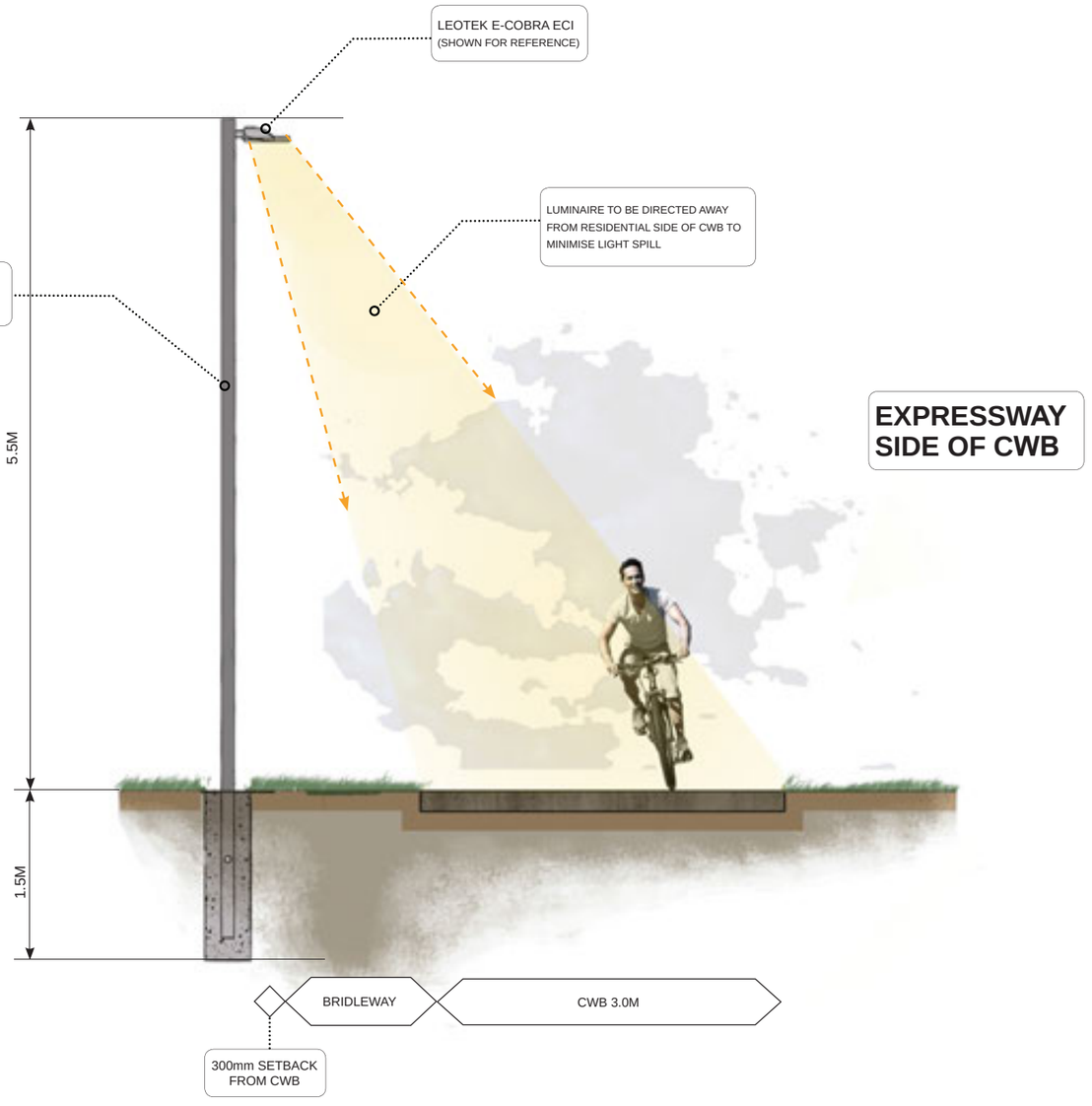
Drawing No: M2PP-121-D-DWG-8704

Rev. C

Document No.

Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

DO NOT SCALE IF IN DOUBT ASK.



POLE HEIGHT	POLE SPACING	EXTRAPOLATED PROJECT QUANTITY
4.5M	26M	135
5.0M	28M	126
5.5M	30M	117
6.0M	31M	114
6.5M	32M	110

OPTIMUM POLE SPACING - COLUMN HEIGHT RATIO WITH SUGGESTED LUMINR (LEOTEK E-COBRA ECI)

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design | Drawn | Dsg Verifier | Dwg Check | Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 25 - **INDICATIVE LIGHT POLE CONFIGURATION**

Drawing No: M2PP-121-D-DWG-8703

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

A1 REPRODUCTION SCALE
100
80
60
40
20
0mm

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

VISUALISATION - RAUMATI BRIDGE LIGHTING (EAST SIDE OF BRIDGE LOOKING WEST FROM RAUMATI ROAD)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 26 - **INDICATIVE BIRDGE LIGHTING**

Drawing No: M2PP-121-D-DWG-8703

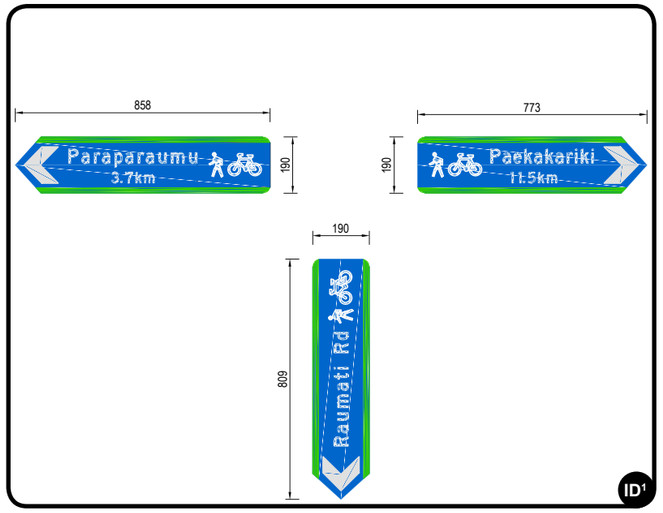
Rev. C

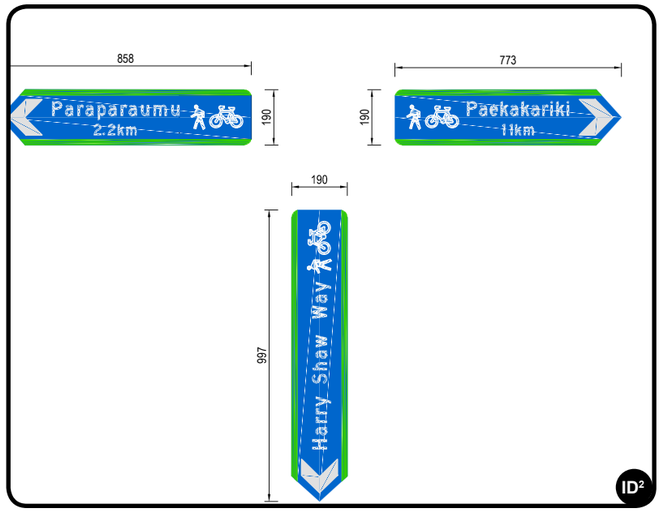
Document No.

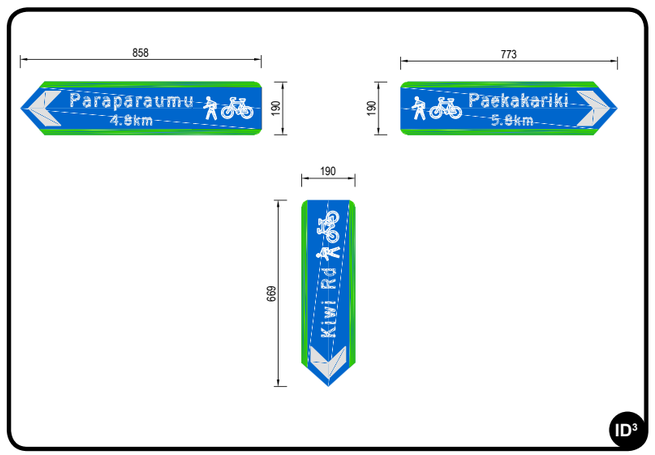
DETAIL DESIGN (DET)

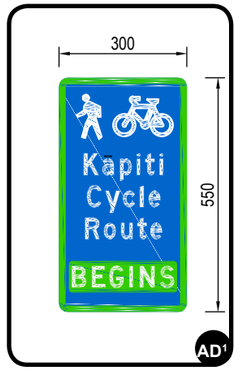
Document created for NZTA by M2PP Alliance, Level 2, 17-21 Whitmore St, WELLINGTON

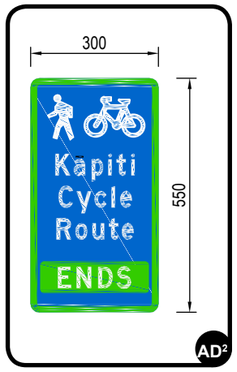
DO NOT SCALE IF IN DOUBT ASK.











100
80
60
40
20
0mm
A1 REPRODUCTION SCALE
50
40
30
20
10
0mm
A3 REPRODUCTION SCALE

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN
Design | Drawn | Dsg Verifier | Dwg Check
Approved For Construction* Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

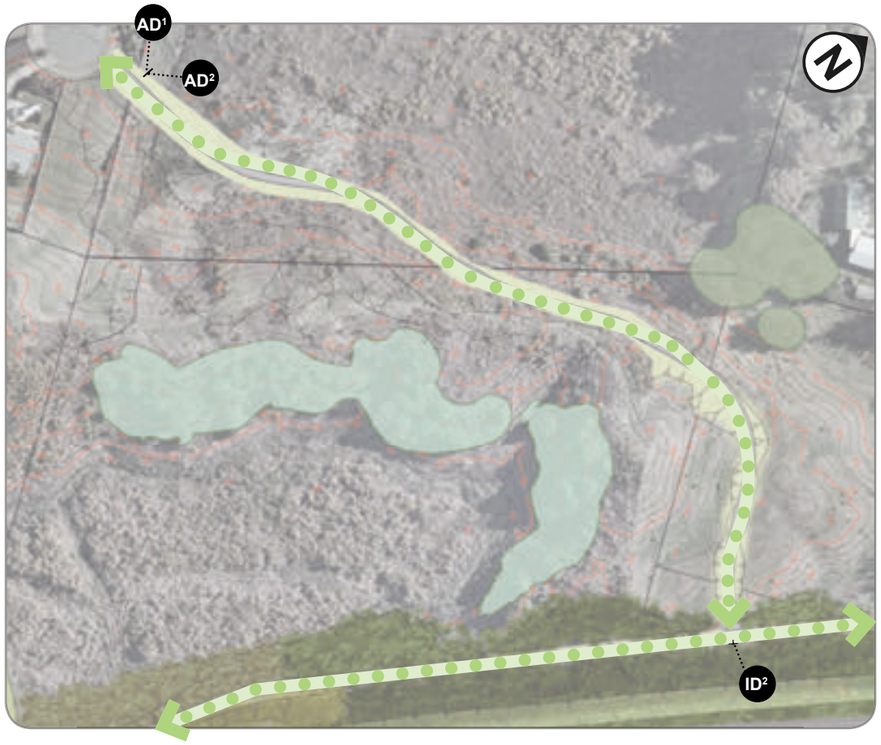
Title: SHEET 27 **INDICATIVE MAZENGARB BRIDGE LIGHTING**

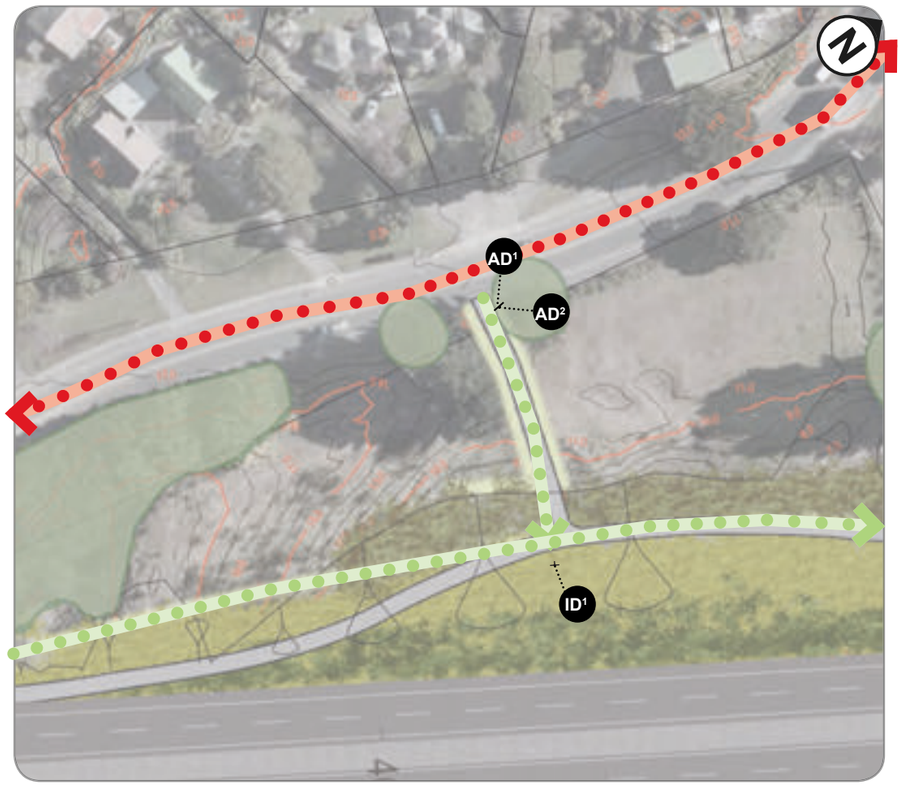
Drawing No: M2PP-121-D-DWG-8703

Rev. C

Document No.

Drawing Plotted:





LEGEND

- CYCLWAY WALKWAY BRIDLEWAY
- EXISTING NETWORK
- LOCAL ROAD
- CROSSING POINT

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN

			Approved For Construction*
Design			
Drawn			
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SHEET 28
SIGNAGE LOCATION PLAN

Drawing No: M2PP-121-D-DWG-8902

Rev. C

Document No.

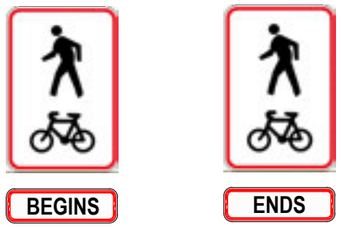
TYPICAL SIGN TYPES:

AI - ADVANCED INFO SIGNS

AT START OF ROUTE.
INCLUDES:
- MAP & INFO
- LENGTH & DURATION OF RIDE / WALK

AI - Advance Information Signs are not an essential requirement for public access tracks or cycle routes, nor are they standardised in terms of their design and layout. These signs may, if desired and appropriate, be installed at or near the start point of the route to provide detailed information, such as a map and information about the length and duration to ride etc. These signs should be clearly visible from the road, allowing cyclists and pedestrians a safe place to stop clear of the roadway or cycleway to read the information.

BE - BEGINNING AND ENDING SIGNS



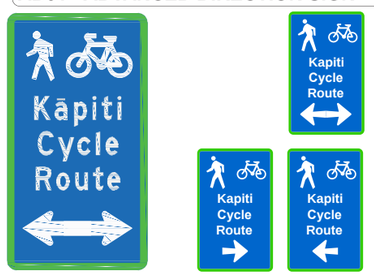
BE - Begins/Ends Signs are used to indicate the start and/or end point of a cycle route. They will include route specific information. Route Begins Signs should be installed on the left hand side of the CWB immediately beyond or adjacent to any advance information sign or at a logical starting point for the cycle route.

ID - INTERSECTION DIRECTION

ID - The Intersection Direction Sign is located at or as near as possible to the actual intersection. Should include both Information about the destination and the distance.

Multiple sighs and destinations to be on one post

AD01 - ADVANCED DIRECTION SIGN - ON LOCAL ROAD APPROACHING CWB



AD - The purpose of the Advance Direction Sign is to give cyclists prior warning, to enable them to make decisions and, if necessary, place themselves in the best position to make any change in direction required before they reach the intersection. These signs should be used in any situation where the cyclist could easily miss making a required turn at an approaching intersection.

To occur 40-60m in advance of an intersection and should only include Information about the destination, not the distance.

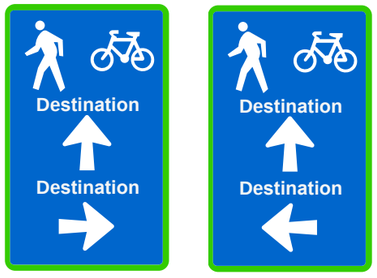
CD - CONFIRMATION DIRECTION

CD - The Confirmation Direction Sign is used to confirm the direction/ destination of travel after an intersection it is intended to provide assurance to cyclists. The CD sign features a straight ahead arrow and should include both Information about the destination and the distance.

As a general rule of thumb, these signs should be installed; between 20-50m beyond an intersection where an Advance Direction Sign has been used and should generally be visible from that intersection;

Cyclists should see a CD sign at least every 15-30 minutes of typical cyclist travel, or every 5-10 km.

AD - ADVANCED DIRECTION - ON CWB



AD - The purpose of the Advance Direction Sign is to give cyclists prior warning, to enable them to make decisions and, if necessary, place themselves in the best position to make any change in direction required before they reach the intersection. These signs should be used in any situation where the cyclist could easily miss making a required turn at an approaching intersection.

To occur 40-60m in advance of an intersection and should only include Information about the destination, not the distance.

LOCAL ROAD INTERSECTION SIGNS

LR + GW - Local road (LR) and Giveway (GW) signs should to be used where the CWB crosses a local road. These are to be located at or as near as possible to the actual intersection. Where possible the LR should be kept to one per intersection and be able to be read by people on either side of the intersection. Both the LR and GW should share the same post and or be incorporateted onto an existing post.

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm
A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	VB				17/12/14

Original Scale (A1) AS SHOWN NTS
Reduced Scale (A3) AS SHOWN NTS
Design | Drawn | Dsg Verifier | Dwg Check
Approved For Construction* Date
* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SHEET 29 CWB SIGN TYPE SUMMARY

Drawing No: M2PP-121-D-DWG-8901

Rev. C

Document No.

DETAIL DESIGN (DET)

- **This guidance does not negate the requirement for the landscape architect to sign off these works prior to spreading topsoil.**
- The obligation to round earthwork cuts in the dune country, avoiding a geometric engineered finish, is a requirement of the consent conditions, the UDLF and the LMP (see below).
- Ideally, this shaping should have been incorporated into the earthworks design model, for implementation on site via the Trimble system. However, inclusion of flowing contours proved unworkable in the MX model so it was agreed that 'on site' instruction by the Design Team with the Construction Team was the best approach.
- Earthworks in sector 460 have been completed to a standard that meets the consent design requirements. Consequently, the dune shaping in 460 (depicted at right) is the design standard for 'dune rounding' for the entire M2PP project.

Consent Conditions

Condition DC.57 b) The purpose of each SSLMP shall be to help ensure detailed landscape design of the Project accords with the principles set out in the Urban and Landscape Design Framework (Technical Report 5) in order to achieve the outcomes and standards required under Condition DC.53C, having regard to the local character and context and ecological conditions within each sector or stage of the route. SSLMPs are required for all sectors/stages of the Expressway.

Condition DC.57 f) Each SSLMP shall include details of landscape design, including the following matters:
xi) Consideration of:
A. The landforms and character, including streams;

UDLF(Urban Design and Landscape Framework)

The dunes are the 'signature' landforms encountered along the Expressway corridor. In the first instance the route alignment seeks to avoid significant dunes if possible. However, loss or modification of some dunes will be inevitable in places given the confined corridor available and the scale of the Expressway footprint. Integrating the Expressway linear form into the dune landforms is a key design objective.

Design Concept
The dune forms and other natural landform features have been avoided as best they can in the alignment of the Expressway. However, the Expressway will create change to landforms and the approach will be to 'naturalise' the changes as far as practicable, to integrate those changes with local topographical patterns.

Design Principles
The following principles will apply to the landform design:

3. Design or modify landforms to acknowledge and reflect the local topographical pattern (scale, orientation, profile).

5. Shape (roll off) the tops of cut/ fill faces so the faces integrate with the existing dune profiles as far as practicable and minimise risk of water and wind erosion.

6. Shape visual and noise mitigation bunds to appear as 'natural' landform, avoiding engineered appearances unless these forms are a component of a designed 'land art' formation.

LMP(Landscape Management Plan)

Attachment 2: Principles, Methods and Procedures (pg.6)

Ensure finished earthworks physically and visually relate to adjoining landforms and that they reflect the Design Principles as set out in the Urban and Landscape Design Framework.

-Shape noise and visual mitigation bunds to appear as 'natural' landforms where practicable.

- Avoid unnecessary disturbance to natural landforms.

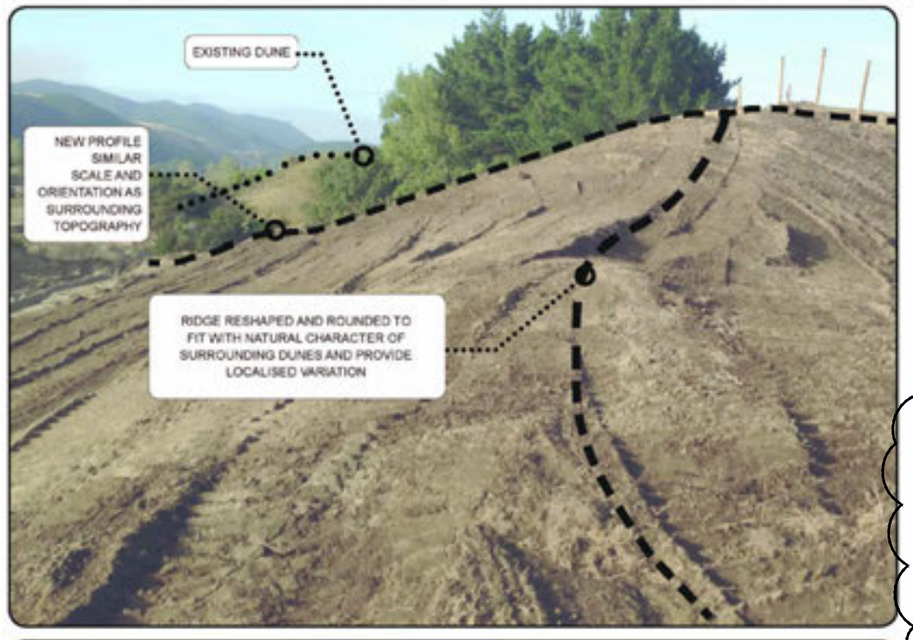
-Re-shaping of dunes to achieve a 'natural' appearance is likely to require extending earthworks into surrounding topography.

Best Practice Examples from Sector 460

Below are examples of successful dune rounding conducted in sector 460 (western side of alignment between approx. chainage 9700-10,000).

-Seamless blending with landforms beyond designation

-Rounding and gradients are a continuation of adjoining landforms



-Dune rounding at edge of boundary fits with existing profile

-Rounding and gradients are at a similar character and scale to surrounding landforms

-Horizontal shaping and undulation with similar character to surrounding dune context

-During dune rounding, form a positive fall across the earthworks and ensure there are no ruts, sags or ground depressions to avoid water collecting and potentially destabilising the slope.

-Natural appearance. Avoid uniform, engineered profiles.

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk'd	Appd	Date
2	REVISED BASED ON GEOTECHNICAL INPUT	MP	MP	BF	DS	07.08.14
1	FOR CONSTRUCTION	MP	GFB	DH	DC	07.05.14

Original Scale (A1)	NTS	Design	B FAULKNER 24.04.14
Reduced Scale (A3)	NTS	Drawn	V BILLETT 24.04.14
		Dsg Verifier	B EVANS 05.05.14
		Dwg Check	G F-B 05.05.14
		* Refer to Revision 1 for Original Signature	

Approved For Construction* P BRADSHAW Date 09.05.14

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: STANDARD DETAILS DUNE ROUNDING DETAIL

Drawing No: M2PP-23R-D-DWG-8904

Rev. 2

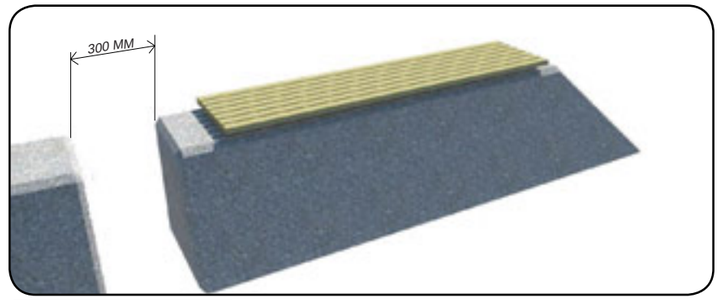
Document No. M2PP-23R-D-DWG-8904.DWG

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

CYCLEWAY ENTRANCE TYPE 1 - TYPICAL PLAN

SCALE - 1:150 @ A3



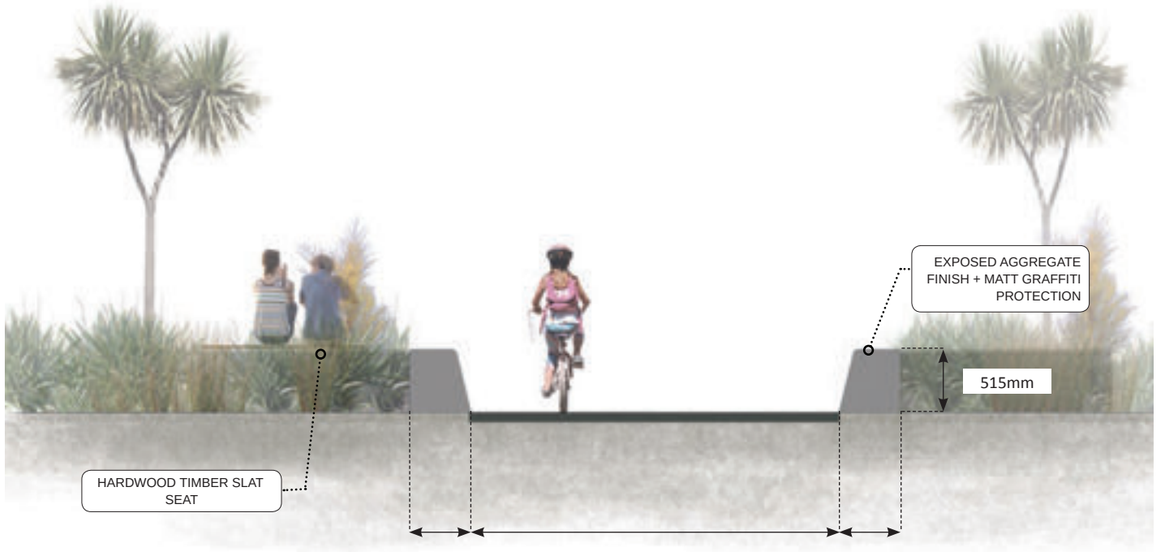
HARDWOOD TIMBER SLAT SEAT

HARDWOOD TIMBER SLAT SEAT EXAMPLE

GROUND LEVEL VIEW OF TYPICAL TYPE 1 CYCLEWAY ENTRANCE

CS1 - CYCLEWAY ENTRANCE TYPE 1 - TYPICAL SECTION

SCALE - 1:50 @ A3



A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk V	Appd	Date
A	POST CERTIFICATION ISSUE	FB				01.09.15

Original Scale (A1)	Design	FB	01.09.15	Approved For Construction*
	Drawn	MP	01.09.15	
Reduced Scale (A3)	Dsg Verifier			
	Dwg Check			Date
* Refer to Revision 1 for Original Signature				

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: SSMP 2 [330-340-350]
SHEET 31 - TYPE 1
CWB ENTRANCE DETAIL

Drawing No: M2PP-121-D-DWG-8802

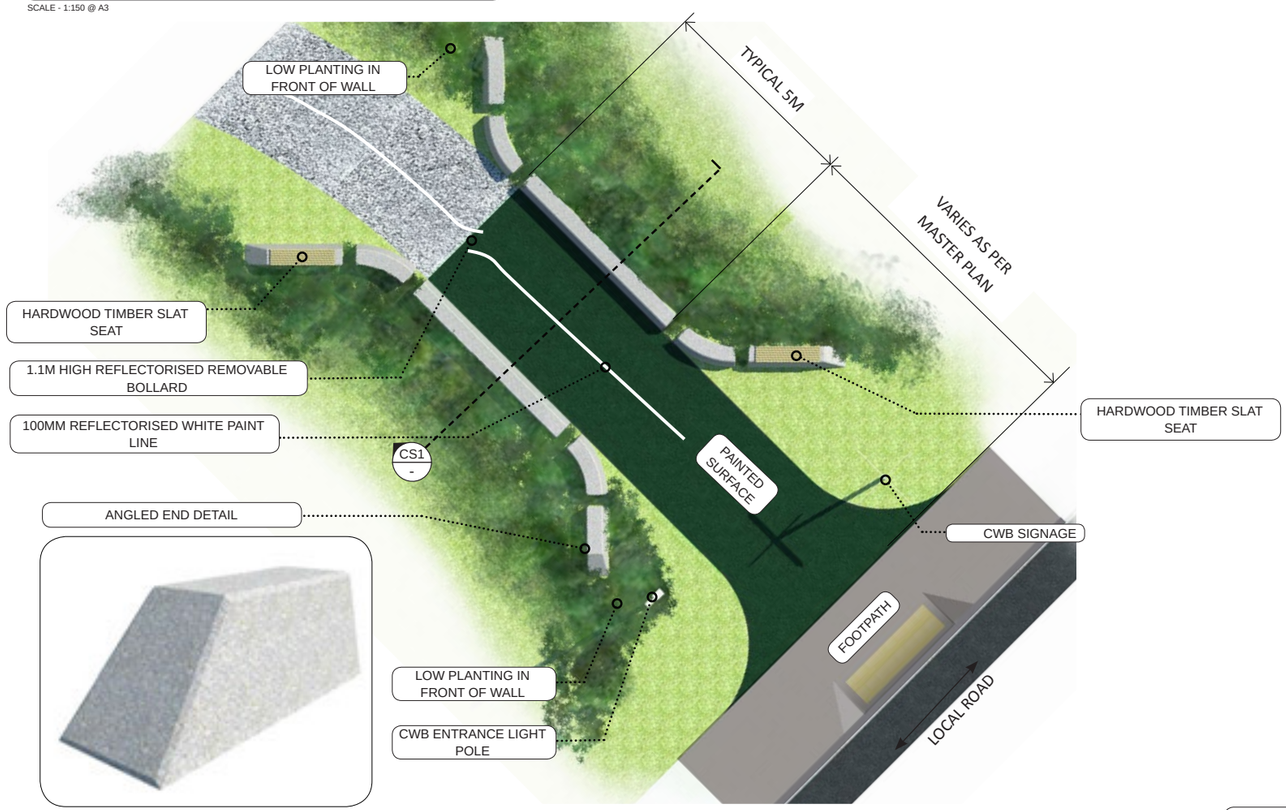
Rev. A

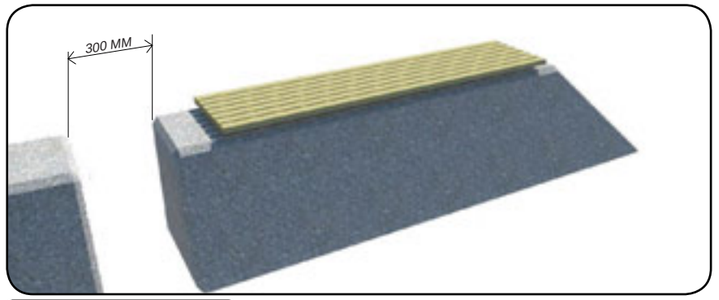
Document No.

DETAIL DESIGN (DET)

CYCLEWAY ENTRANCE TYPE 2 - TYPICAL PLAN

SCALE - 1:150 @ A3





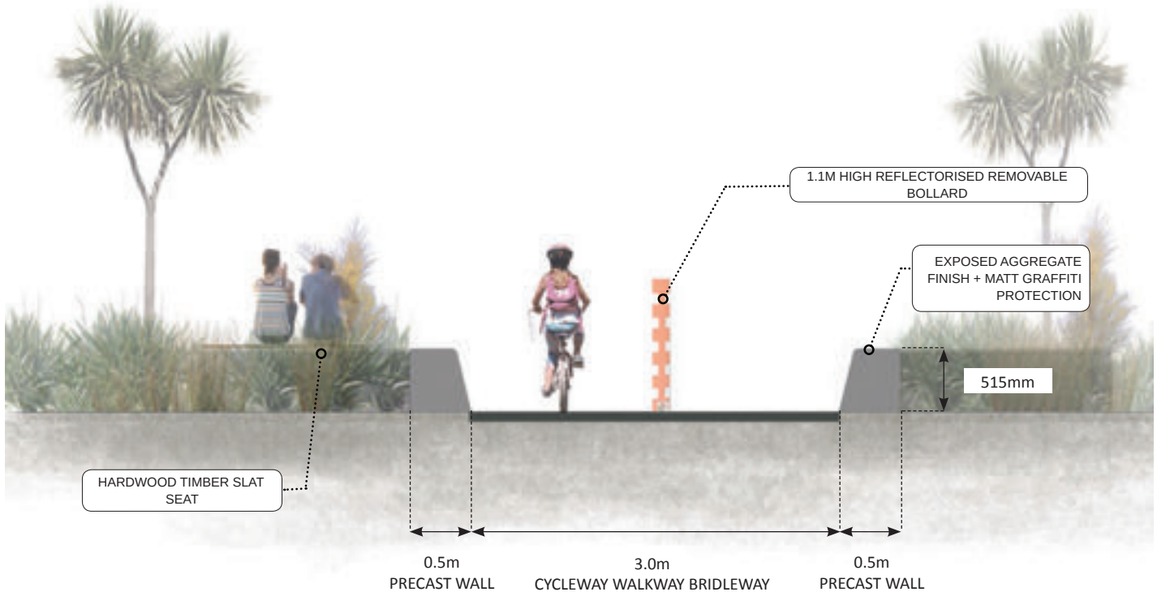
HARDWOOD TIMBER SLAT SEAT

HARDWOOD TIMBER SLAT SEAT EXAMPLE

GROUND LEVEL VIEW OF TYPICAL TYPE 2 CYCLEWAY ENTRANCE

CS1 - CYCLEWAY ENTRANCE TYPE 2 - TYPICAL SECTION

SCALE - 1:50 @ A3



A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
A	POST CERTIFICATION ISSUE	FB				01.09.15

Original Scale (A1)	Design	FB	01.09.15
	Drawn	MP	01.09.15
Reduced Scale (A3)	Dsg Verifier		
	Dwg Check		

Approved For Construction* Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: SSMP 2 [330-340-350] SHEET 32 - TYPE 2 CWB ENTRANCE DETAIL

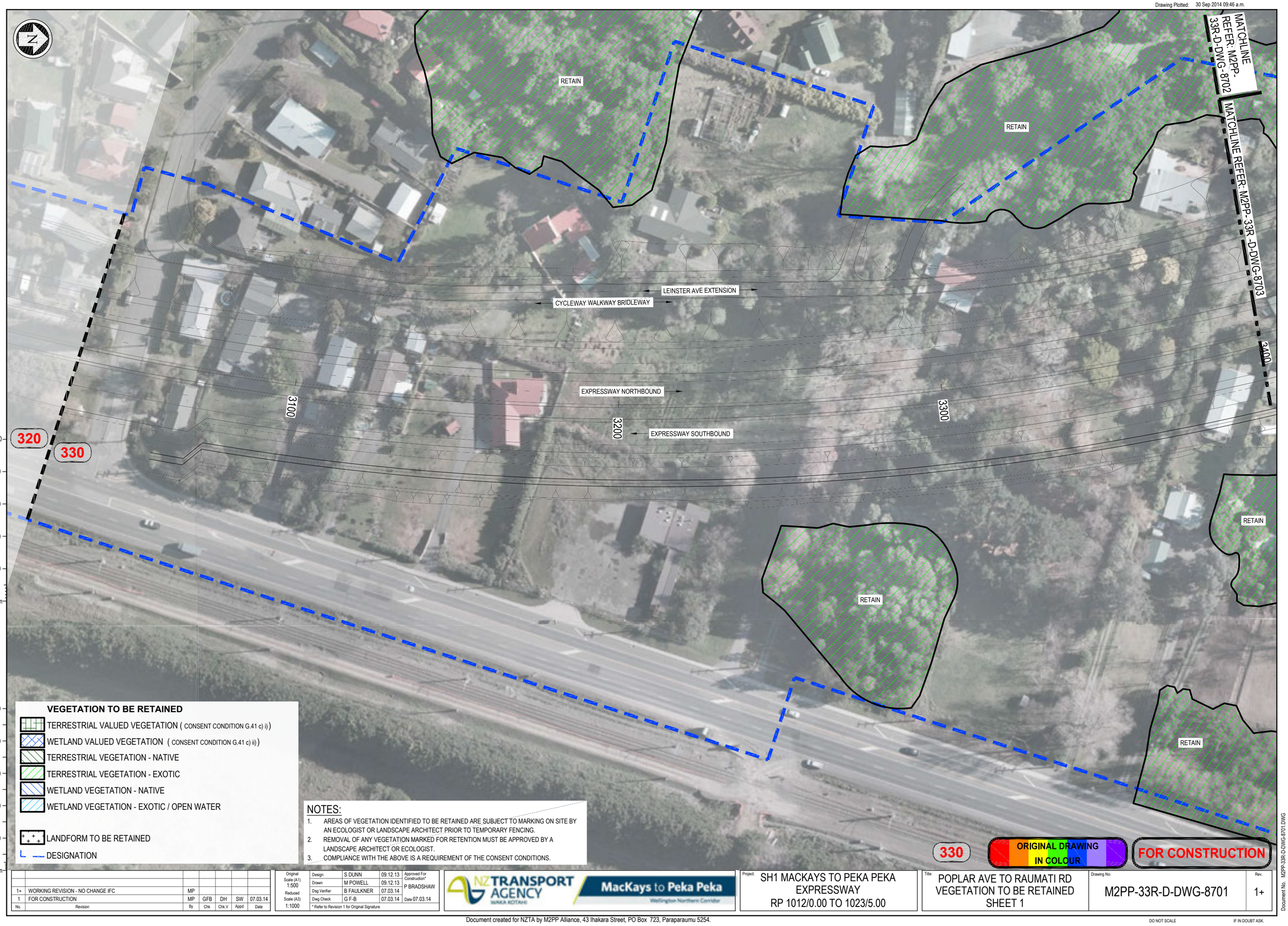
Drawing No: M2PP-121-D-DWG-8803

Rev. A

Document No.

DETAIL DESIGN (DET)

Drawing Plotted: 30 Sep 2014 09:46 a.m.



VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1+	WORKING REVISION - NO CHANGE IFC	MP				
1	FOR CONSTRUCTION	MP	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	S DUNN	09.12.13	Approved For Construction* P BRADSHAW
Drawn	M POWELL	09.12.13	
Dsg Verifier	B FAULKNER	07.03.14	
Dwg Check	G F-B	07.03.14	Date 07.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: POPLAR AVE TO RAUMATI RD VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-33R-D-DWG-8701

Rev. 1+

Document No. M2PP-33R-D-DWG-8701.DWG

Drawing Plotted: 30 Sep 2014 09:47 a.m.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

MATCHLINE REFER: M2PP- 33R -D-DWG-8704

RETAIN

RETAIN

RETAIN

RETAIN

RETAIN

RETAIN

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RETAIN

DRAIN 7

CYCLEWAY WALKWAY BRIDLEWAY

MATCHLINE REFER: M2PP- 33R -D-DWG-8703

MATCHLINE REFER: M2PP-33R-D-DWG-8701

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1+	WORKING REVISION - NO CHANGE IFC	MP	GFB	DH	SW	07.03.14
1	FOR CONSTRUCTION	MP	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500	Design	S DUNN	09.12.13
	Drawn	M POWELL	09.12.13
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULKNER	07.03.14
	Dwg Check	G F-B	07.03.14

Approved For Construction* P BRADSHAW Date 07.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: POPLAR AVE TO RAUMATI RD VEGETATION TO BE RETAINED SHEET 2

Drawing No.: M2PP-33R-D-DWG-8702

Rev.: 1

Document No. M2PP-33R-D-DWG-8702.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 02:43 p.m.

MATCHLINE REFER: M2PP- 33R -D-DWG- 8702

MATCHLINE REFER: M2PP- 33R -D-DWG- 8701

MATCHLINE REFER: M2PP- 33R -D-DWG- 8705

RETAIN

LEINSTER AVE EXTENSION

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

3400

3500

3600

3700

REMOVE SMALL CONFERS TO PROVIDE ACCESS FOR HOUSE REMOVAL

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED	MP				15.12.14
1	FOR CONSTRUCTION	MP	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500	Design	S. DUNN	09.12.13	Approved For Construction* P. BRADSHAW Date 07.03.14
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	09.12.13	
	Dsg Verifier	B. FAULKNER	07.03.14	
	Dwg Check	G. F-B	07.03.14	
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD VEGETATION TO BE RETAINED SHEET 3

Drawing No: M2PP-33R-D-DWG-8703

Rev. 2

Document No. M2PP-33R-D-DWG-8703.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 02:41 p.m.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

MATCHLINE REFER: M2PP- 33R -D-DWG-8702

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

ACCESS TO HARRY SHAW WAY

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

RETAIN

RAUMATI MANUKA WETLAND
CONDITION G.41 ii) 1.

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

MATCHLINE REFER: M2PP- 33R -D-DWG-8706

CYCLEWAY - WALKWAY - BRIDLEWAY

EXPRESSWAY NORTHBOUND

MATCHLINE REFER: M2PP- 33R -D-DWG-8705

EXPRESSWAY SOUTHBOUND

3900

4000

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED	MP				15.12.14
1	**FOR CONSTRUCTION**	**MP**	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500	Design	S. DUNN	09.12.13	Approved For Construction* P. BRADSHAW
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	09.12.13	
	Dsg Verifier	B. FAULKNER	07.03.14	
	Dwg Check	G. F-B	07.03.14	Date 07.03.14
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD VEGETATION TO BE RETAINED SHEET 4

Drawing No: M2PP-33R-D-DWG-8704

Rev. 2

Document No. M2PP-33R-D-DWG-8704.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 24 Nov 2014 11:17 a.m.

MATCHLINE REFER: M2PP- 33R -D-DWG-8702

CYCLEWAY - WALKWAY - BRIDLEWAY

MATCHLINE REFER: M2PP- 33R -D-DWG-8704

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

3800

3900

4000

4100

RAUMATI KANUKA
CONDITION G.41 c) i) 1.

RETAIN

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

WETLAND 0B

MATCHLINE REFER: M2PP- 33R -D-DWG-8706

MATCHLINE REFER: M2PP- 33R -D-DWG-8703

RETAIN

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1+	WORKING REVISION - REVISED AS NOTED	MP				
1	FOR CONSTRUCTION	MP	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	S. DUNN	09.12.13	Approved For Construction* P. BRADSHAW Date 07.03.14
Drawn	M. POWELL	09.12.13	
Dsg Verifier	B. FAULKNER	07.03.14	
Dwg Check	G. F-B	07.03.14	

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD
VEGETATION TO BE RETAINED
SHEET 5

Drawing No: M2PP-33R-D-DWG-8705

Rev. 1+

Document No. M2PP-33R-D-DWG-8705.DWG

Drawing Plotted: 14 Apr 2016 11:07 a.m.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- "EXISTING VEGETATION TO BE RETAINED" AS AT AEE LODGEMENT
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

N

MATCHLINE REFER: M2PP- 33R -D-DWG-8704

MATCHLINE REFER: M2PP- 35R -D-DWG-8701

MATCHLINE REFER: M2PP- 33R-D-DWG-8705

RETAIN

BRIDLEWAY CONNECTION TO FINCHAM ROAD

RAUMATI KANUKA
CONDITION G.41 c) i) 1.

CYCLEWAY - WALKWAY - BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

4200

4300

4400

4500

RAUMATI KANUKA REMOVED FOR BUND CONSTRUCTION

EXOTIC VEGETATION REMOVED FOR BUND CONSTRUCTION AS AGREED WITH ADJACENT LANDOWNER

RAUMATI ROAD

330

340

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3+	FOR KCDC CERTIFICAITON - REVISED AS NOTED	MP				11.04.16
3	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION	MP	GFB	DH	SW	07.03.14

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	S. DUNN	09.12.13	Approved For Construction* P. BRADSHAW
Drawn	M. POWELL	09.12.13	
Dsg Verifier	B. FAULKNER	07.03.14	
Dwg Check	G. F-B	07.03.14	Date 07.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD VEGETATION TO BE RETAINED SHEET 6

Drawing No: M2PP-33R-D-DWG-8706

Rev. 3+

Document No. M2PP-33R-D-DWG-8706.DWG

Drawing Plotted: 04 Nov 2014 11:21 a.m.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

MATCHLINE REFER: M2PP- 33R -D-DWG-8706

MATCHLINE REFER: M2PP- 35R -D-DWG-8702

RAUMATI ROAD

RETAIN

RETAIN

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED SOME TRIMMING MAY BE NECESSARY FOR PLANT ACCESS

CONNECTION TO RAUMATI ROAD

CYCLEWAY - WALKWAY - BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

340

350

4500

4600

4700

4800

RETAIN

MAHOE VEGETATION ALONG DRAIN 7 CONDITION G.41 c) i) 2.

RETAIN

RETAIN

RETAIN

VEGETATION REMOVED TO ALLOW FOR DIVERSION OF WATERWAY

MATCHLINE REFER: M2PP- 35R -D-DWG-8703

340

350

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DS	17.03.14

Original Scale (A1) 1:500	Design	S DUNN	09.12.13	Approved For Construction*
	Drawn	M POWELL	09.12.13	P. BRADSHAW
Reduced Scale (A3) 1:1000	Dsg Verifier	B. FAULKNER	17.03.14	Date 19.03.14
	Dwg Check	G. F-B	17.03.14	
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAKAU VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-35R-D-DWG-8701

Rev. 3

Document No. M2PP-35R-D-DWG-8701.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 17 Dec 2014 11:27 a.m.

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER

- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

ADDITIONAL VEGETATION TO BE RETAINED

RETAIN

RETAIN

RETAIN

RETAIN

CONNECTION TO KIWI ROAD

REMOVAL OF ROWS TO ALLOW FOR LOWERING OF FLOOD WATER STORAGE AREA

MATCHLINE REFER: M2PP- 35R -D-DWG-8701

MATCHLINE REFER: M2PP- 35R -D-DWG-8704

MATCHLINE REFER: M2PP- 35R -D-DWG-8703

CYCLEWAY - WALKWAY - BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

500

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

350

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DS	17.03.14

Original Scale (A1) 1:500	Design	S DUNN	09.12.13
Reduced Scale (A3) 1:1000	Drawn	M POWELL	09.12.13
	Dsg Verifier	B. FAULKNER	17.03.14
	Dwg Check	G. F-B	17.03.14

Approved For Construction* P. BRADSHAW Date 19.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAKAU VEGETATION TO BE RETAINED SHEET 2

Drawing No: M2PP-35R-D-DWG-8702

Rev. 3

Document No.: M2PP-35R-D-DWG-8702.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 04 Nov 2014 11:24 a.m.

MATCHLINE REFER: M2PP- 35R -D-DWG-8704

RETAIN

CYCLEWAY - WALKWAY - BRIDLEWAY

5000

MATCHLINE REFER: M2PP- 35R -D-DWG-8702

4900

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

VEGETATION REMOVED TO ALLOW FOR WETLAND / RIPARIAN HABITAT CREATION

VEGETATION REMOVED TO ALLOW FOR DIVERSION OF WATERWAY

RETAIN

RETAIN

RETAIN

RETAIN

MATCHLINE REFER: M2PP- 35R -D-DWG-8701

MATCHLINE REFER: M2PP- 35R -D-DWG-8705

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DS	17.03.14

Original Scale (A1) 1:500	Design	S DUNN	09.12.13
Reduced Scale (A3) 1:1000	Drawn	M POWELL	09.12.13
	Dsg Verifier	B. FAULKNER	17.03.14
	Dwg Check	G. F-B	17.03.14

Approved For Construction* P. BRADSHAW Date 19.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAKAU VEGETATION TO BE RETAINED SHEET 3

Drawing No: M2PP-35R-D-DWG-8703

Rev. 3

350

ORIGINAL DRAWING IN COLOUR

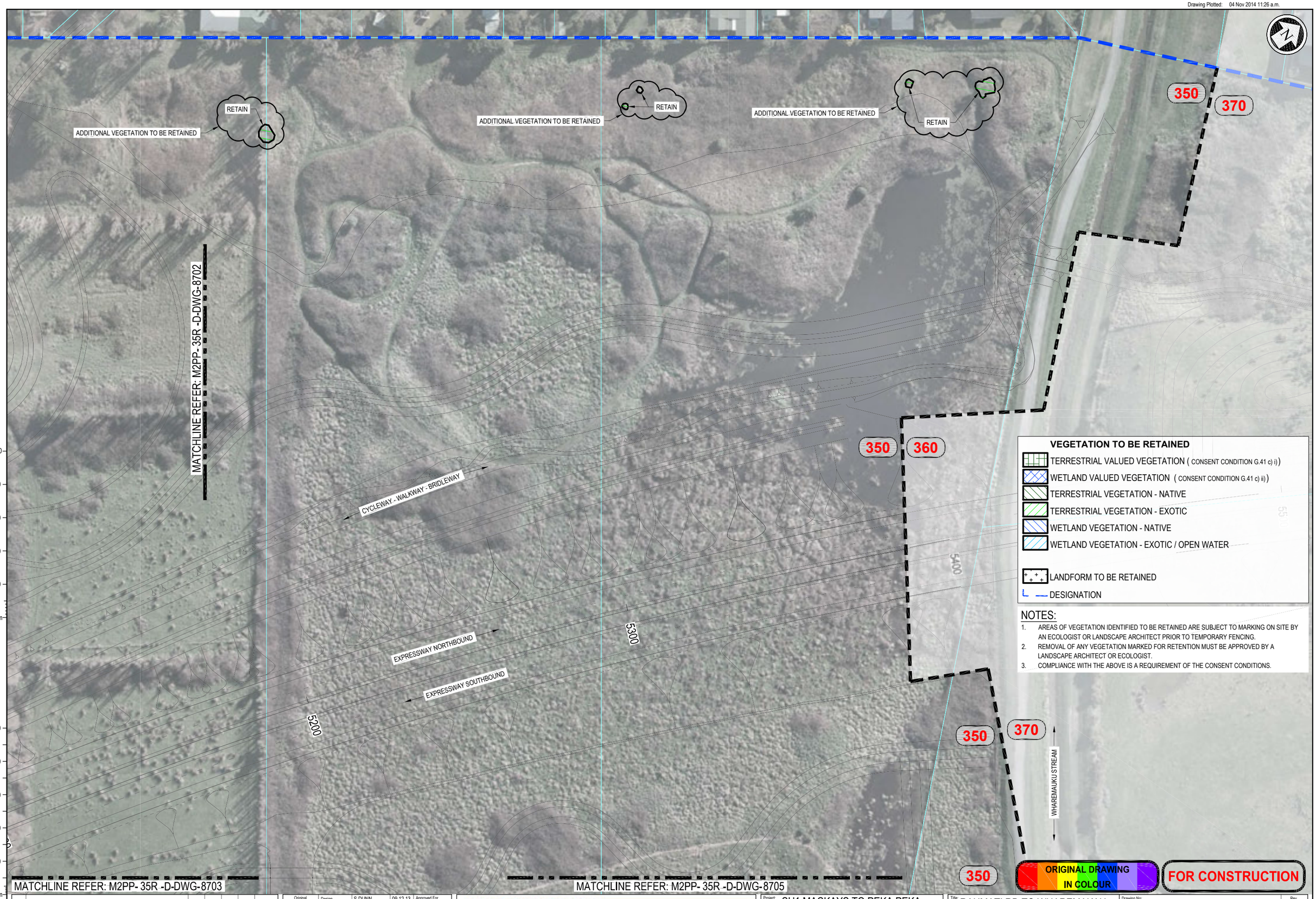
FOR CONSTRUCTION

Document No. M2PP-35R-D-DWG-8703.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 04 Nov 2014 11:26 a.m.



VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DS	17.03.14

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	S DUNN	09.12.13
	Drawn	M POWELL	09.12.13
	Dsg Verifier	B. FAULKNER	17.03.14
	Dwg Check	G. F-B	17.03.14

Approved For Construction* P. BRADSHAW Date 19.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAKAU VEGETATION TO BE RETAINED SHEET 4

Drawing No: M2PP-35R-D-DWG-8704

Rev. 3

Document No. M2PP-35R-D-DWG-8704.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 02:45 p.m.

MATCHLINE REFER: M2PP- 35R -D-DWG-8704

MATCHLINE REFER: M2PP- 35R -D-DWG-8703

350

370

WHAREMAUKU STREAM

WHAREMAUKU STREAM WALKWAY

A1 REPRODUCTION SCALE
100
80
60
40
20
0mm

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

VEGETATION TO BE RETAINED

- TERRESTRIAL VALUED VEGETATION (CONSENT CONDITION G.41 c) i))
- WETLAND VALUED VEGETATION (CONSENT CONDITION G.41 c) ii))
- TERRESTRIAL VEGETATION - NATIVE
- TERRESTRIAL VEGETATION - EXOTIC
- WETLAND VEGETATION - NATIVE
- WETLAND VEGETATION - EXOTIC / OPEN WATER
- LANDFORM TO BE RETAINED
- DESIGNATION

NOTES:

1. AREAS OF VEGETATION IDENTIFIED TO BE RETAINED ARE SUBJECT TO MARKING ON SITE BY AN ECOLOGIST OR LANDSCAPE ARCHITECT PRIOR TO TEMPORARY FENCING.
2. REMOVAL OF ANY VEGETATION MARKED FOR RETENTION MUST BE APPROVED BY A LANDSCAPE ARCHITECT OR ECOLOGIST.
3. COMPLIANCE WITH THE ABOVE IS A REQUIREMENT OF THE CONSENT CONDITIONS.

350 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION	MP	GFB	BF	DS	05.11.14
2	FOR KCDC CERTIFICATION	MP	GFB	BF	DS	29.10.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DS	17.03.14

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	S DUNN	09.12.13	Approved For Construction* P. BRADSHAW Date 19.03.14
Drawn	M POWELL	09.12.13	
Dsg Verifier	B. FAULKNER	17.03.14	
Dwg Check	G. F-B	17.03.14	

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAKAU VEGETATION TO BE RETAINED SHEET 5

Drawing No: M2PP-35R-D-DWG-8705

Rev. 3

Document No. M2PP-35R-D-DWG-8705.DWG

Drawing Plotted: 15 Dec 2014 09:58 a.m.

320 330

GL A 1 33R-8201
GL A 2 33R-8201
ML A 1 33R-8201
TF G 1 33R-8201
MT N 1 33R-8201
TF A 1 33R-8201
TF B 1 33R-8201
GL A 3 33R-8201
GL A 4 33R-8201
TF B 2 33R-8201
MT N 2 33R-8201
TF A 2 33R-8201
ML B 1 33R-8201
MT C 1 33R-8201
ML B 2 33R-8201
MT C 2 33R-8201
ML B 3 33R-8201
MS A 1 33R-8201
MT C 3 33R-8201

LEINSTER AVE EXTENSION
CYCLEWAY WALKWAY BRIDLEWAY
EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND

3100 3200 3300 3400

MATCHLINE REFER: M2PP-33R-D-DWG-8202
MATCHLINE REFER: M2PP-33R-D-DWG-8203

HOLD
PEDESTRIAN FOOTBRIDGE EMBANKMENTS

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm
A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

KEY

PLANTING TYPE
PLANTING MIX
AREA CODE
PLANTING BOUNDARY
MT A 1 43R-8201
ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14	Approved For Construction*
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.08.14	
	Dsg Verifier	B EVANS	18.11.14	
	Dwg Check	G F-B	18.11.14	Date 15.12.14
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI
MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 1

Drawing No: M2PP-33R-D-DWG-8201

Rev. 1

Document No. M2PP-33R-D-DWG-8201.DWG

Drawing Plotted: 15 Dec 2014 09:58 a.m.

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE — e.g. MT A 1 / 43R-8201 — PLANTING BOUNDARY — ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

MATCHLINE REFER: M2PP- 33R -D-DWG-8204

DRAIN 7

1 / 33R-8402

RP D 2 / 33R-8202

RP D 1 / 33R-8202

ML A 1 / 33R-8202

CYCLEWAY WALKWAY BRIDLEWAY

ML B 1 / 33R-8202

GL A 1 / 33R-8202

MATCHLINE REFER: M2PP- 33R -D-DWG-8203

MATCHLINE REFER: M2PP- 33R-D-DWG-8201

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.08.14
	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 2

Drawing No: M2PP-33R-D-DWG-8202

Rev. 1

Document No. M2PP-33R-D-DWG-8202.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 09:59 a.m.

MATCHLINE REFER: M2PP- 33R -D-DWG-8202

MATCHLINE REFER: M2PP- 33R -D-DWG-8201

MATCHLINE REFER: M2PP- 33R -D-DWG-8205

1 33R-8401

LEINSTER AVE EXTENSION

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

CV

CV

MAINTENANCE ACCESS

2 33R-8402

3700

3600

3500

GL A 1 33R-8203

GL A 2 33R-8203

ML A 1 33R-8203

ML A 2 33R-8203

ML B 1 33R-8203

ML B 2 33R-8203

ML B 3 33R-8203

MT N 1 33R-8203

TF A 1 33R-8203

TF G 1 33R-8203

MT C 1 33R-8203

MT C 2 33R-8203

MT C 3 33R-8203

MS A 1 33R-8203

RP D 1 33R-8203

RP D 2 33R-8203

WP D 1 33R-8203

WP G 1 33R-8203

WP F 1 33R-8203

WP D 2 33R-8203

GR A 1 33R-8203

HOLD

WIND RAIN HOUSE BUND

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

KEY

PLANTING TYPE
PLANTING MIX
AREA CODE
PLANTING BOUNDARY
MT A 1
43R-8201
ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE

- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED

- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH

- WP WETLAND PLANTING
- RP RIPARIAN PLANTING

- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
	Drawn	M. POWELL	11.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 3

Drawing No: M2PP-33R-D-DWG-8203

Rev. 1

Document No. M2PP-33R-D-DWG-8203.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 09:59 a.m.

KEY

PLANTING TYPE
PLANTING MIX
AREA CODE
PLANTING BOUNDARY
MT A 1
43R-8201
ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

MATCHLINE REFER: M2PP- 33R -D-DWG- 8202

GR A 1 33R-8204

CONNECTION TO HARRY SHAW WAY

MATCHLINE REFER: M2PP- 33R -D-DWG-8206

MT C 1 33R-8204

GR A 2 33R-8204

ML A 2 33R-8204

ML A 1 33R-8204

ML B 1 33R-8204

CYCLEWAY WALKWAY BRIDLEWAY

MS A 1 33R-8204

GL A 1 33R-8204

MATCHLINE REFER: M2PP- 33R -D-DWG-8205

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

3900

4000

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

Design	F BAGGALEY	11.08.14	Approved For Construction*
Drawn	M. POWELL	11.08.14	
Dsg Verifier	B EVANS	18.11.14	
Dwg Check	G F-B	18.11.14	Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 4

Drawing No: M2PP-33R-D-DWG-8204

Rev. 1

Document No. M2PP-33R-D-DWG-8204.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 10:00 a.m.

MATCHLINE REFER: M2PP- 33R -D-DWG-8204

MATCHLINE REFER: M2PP- 33R -D-DWG-8203

MATCHLINE REFER: M2PP- 33R -D-DWG-8206

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

3800

3900

4000

4100

2 33R-8401

ML A 1 33R-8205

MT C 1 33R-8205

GR A 1 33R-8205

MP D 1 33R-8205

WP D 1 33R-8205

WP G 3 33R-8205

WETLAND FOREBAY (UNPLANTED)

3 33R-8402

2 33R-8402

WP G 2 33R-8205

WP F 1 33R-8205

WP G 1 33R-8205

WETLAND 0A

WP F 2 33R-8205

WP G 4 33R-8205

WP F 2 33R-8205

WP G 5 33R-8205

WP D 3 33R-8205

OFFSET STORAGE AREA 0C

WP F 2 33R-8205

RP D 1 33R-8205

WP F 2 33R-8205

WP D 2 33R-8205

WP D 4 33R-8205

MAINTENANCE ACCESS

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

KEY

PLANTING TYPE
PLANTING MIX
AREA CODE
MT A 1
43R-8201
PLANTING BOUNDARY
ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	F BAGGALEY	11.08.14
	Drawn	M. POWELL	11.08.14
	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 5

Drawing No: M2PP-33R-D-DWG-8205

Rev. 1

Document No. M2PP-33R-D-DWG-8205.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 15 Dec 2014 10:00 a.m.

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE — e.g. MT A 1 / 43R-8201 — PLANTING BOUNDARY — ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

MATCHLINE REFER: M2PP- 33R -D-DWG-8204

GR A 1 / 33R-8206

BRIDLEWAY CONNECTION TO FINCHAM ROAD

ML A 2 / 33R-8206

MT B 1 / 33R-8206

ML A 1 / 33R-8206

TALLER GROWING VEGETATION MARKED WITH * IN SCHEDULE PLANTED CLOSE TO CWB EDGE TO FORM A BARRIER

CYCLEWAY WALKWAY BRIDLEWAY

MS A 1 / 33R-8206

GL A 1 / 33R-8206

EXPRESSWAY NORTHBOUND

4200

4300

4400

4500

EXPRESSWAY SOUTHBOUND

ML / 33R-8206

MT B 2 / 33R-8206

CARE TO BE TAKEN NOT TO ENCROACH ON TRUNKS OF EXISTING VEGETATION

RAUMATI ROAD

330

340

MATCHLINE REFER: M2PP- 35R -D-DWG-8201

MATCHLINE REFER: M2PP- 33R -D-DWG-8205

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

330 340 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
	Drawn	M. POWELL	11.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI — MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI RD PLANTING PLAN SHEET 6

Drawing No: M2PP-33R-D-DWG-8206

Rev. 1

Document No.: M2PP-33R-D-DWG-8206.DWG

Drawing Plotted: 25 Nov 2015 03:52 p.m.

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE — e.g. MT A 1 / 43R-8201 — PLANTING BOUNDARY — ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

N

MATCHLINE REFER: M2PP- 35R -D-DWG-8202

340

350

RAUMATI ROAD

CONNECTION TO RAUMATI ROAD

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

4500

4600

4700

4800

MT B 1 35R-8201

MP C 1 35R-8201

ML A 1 35R-8201

GL A 2 35R-8201

GL A 1 35R-8201

ML B 1 35R-8201

MP C 2 35R-8201

ML A 2 35R-8201

MS B 1 35R-8201

ML B 2 35R-8201

MT B 2 35R-8201

MS A 1 35R-8201

MP C 3 35R-8201

GR A 2 35R-8201

GR A 1 35R-8201

EXTENT OF PEAT PLACEMENT

ALTERED PLANTING FOOTPRINT TO ACCOMODATE CONTAMINATED PEAT PLACEMENT

MATCHLINE REFER: M2PP- 33R -D-DWG-8206

MATCHLINE REFER: M2PP-35R-D-DWG-8203

A1 REPRODUCTION SCALE: 100, 80, 60, 40, 20, 0mm

A3 REPRODUCTION SCALE: 50, 40, 30, 20, 10, 0mm

340 350 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED, INCLUDES REDLINE	MP	SW	DGS	SW	25.11.15
2	FOR CONSTRUCTION - REVISED AS NOTED, INCLUDES REDLINE	MP	AJP	DGS	DGS	27.07.15
1	FOR CONSTRUCTION	MP	GFB	DH	DGS	15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.08.14
	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* P. BRADSHAW Date 15.12.14

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI — MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAUKU PLANTING PLAN SHEET 1

Drawing No: M2PP-35R-D-DWG-8201

Rev. 3

Document No. M2PP-35R-D-DWG-8201.DWG

Drawing Plotted: 15 Dec 2014 10:13 a.m.

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE / PLANTING BOUNDARY

MT A 1 — 43R-8201

ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

A1 REPRODUCTION SCALE: 100, 80, 60, 40, 20, 0mm

A3 REPRODUCTION SCALE: 50, 40, 30, 20, 10, 0mm

MATCHLINE REFER: M2PP- 35R -D-DWG-8201

MATCHLINE REFER: M2PP- 35R -D-DWG-8203

MATCHLINE REFER: M2PP- 35R -D-DWG-8204

CONNECTION TO KIWI RD

REALIGNED DRAIN 7

OFFSET STORAGE AREA 3A

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

CYCLEWAY WALKWAY BRIDLEWAY

GR A 2 — 35R-8202

ML A 3 — 35R-8202

ML A 4 — 35R-8202

WP G 2 — 35R-8202

WP G 1 — 35R-8202

RP D 1 — 35R-8202

RP D 2 — 35R-8202

WP D 2 — 35R-8202

GL A 2 — 35R-8202

MP C 1 — 35R-8202

ML A 1 — 35R-8202

WP D 1 — 35R-8202

WP G 3 — 35R-8202

ML A 2 — 35R-8202

GL A 1 — 35R-8202

MP C 2 — 35R-8202

WP H 1 — 35R-8202

MS B 1 — 35R-8202

ML B 1 — 35R-8202

MS B 2 — 35R-8202

MP C 3 — 35R-8202

4900

5000

350 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
	Drawn	M. POWELL	11.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

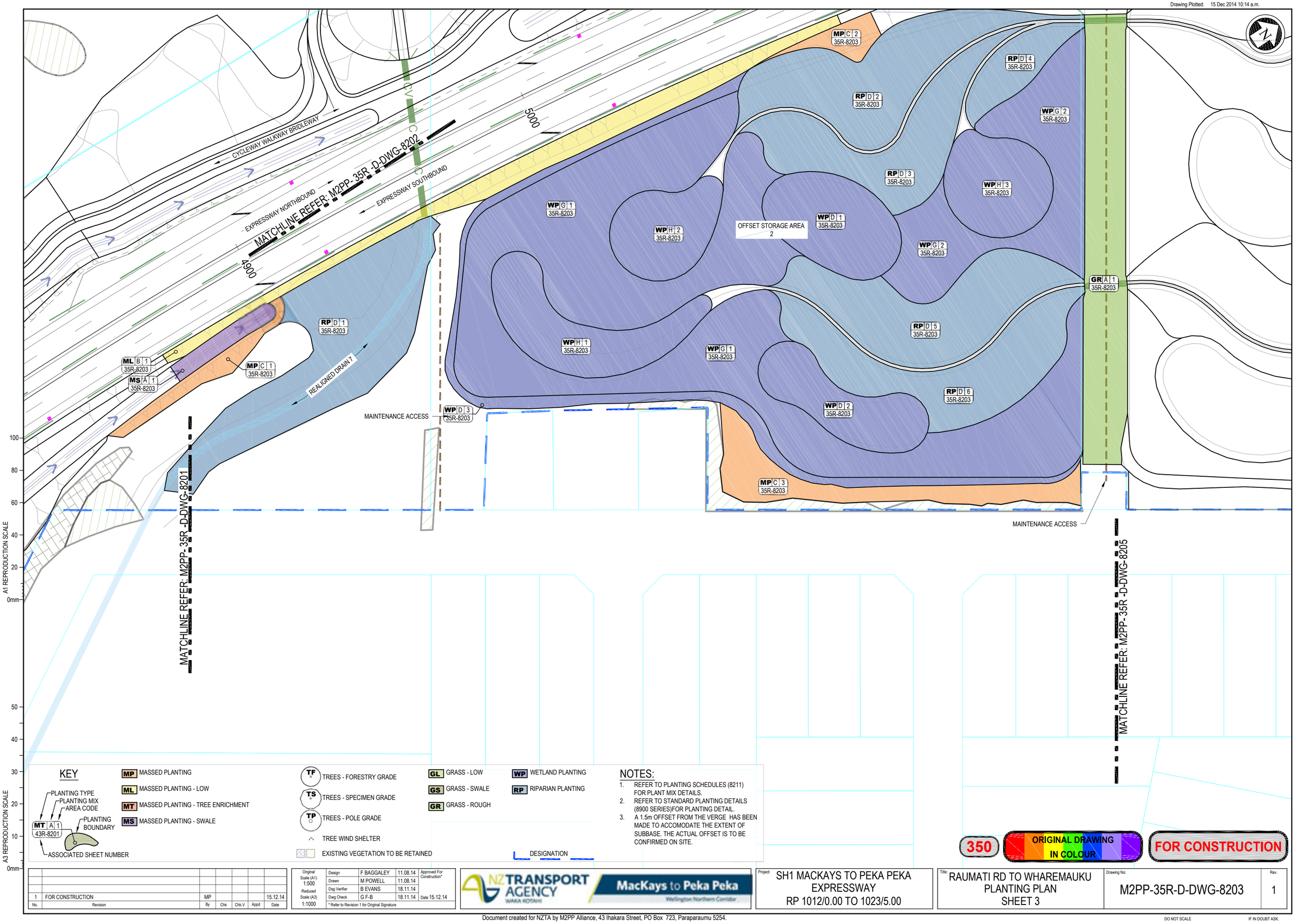
Title: RAUMATI RD TO WHAREMAUKU PLANTING PLAN SHEET 2

Drawing No: M2PP-35R-D-DWG-8202

Rev. 1

Document No. M2PP-35R-D-DWG-8202.DWG

Drawing Plotted: 15 Dec 2014 10:14 a.m.



KEY

PLANTING TYPE / PLANTING MIX / AREA CODE — e.g. MT A 1 / 43R-8201 — PLANTING BOUNDARY — ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

350

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
	Drawn	M POWELL	11.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI — MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAUKU PLANTING PLAN SHEET 3

Drawing No: M2PP-35R-D-DWG-8203

Rev. 1

Document No. M2PP-35R-D-DWG-8203.DWG

Drawing Plotted: 15 Dec 2014 10:14 a.m.

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE / PLANTING BOUNDARY / ASSOCIATED SHEET NUMBER

Example: MT A 1 / 43R-8201

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

MAINTENANCE ACCESS

MATCHLINE REFER: M2PP- 35R -D-DWG-8202

OFFSET STORAGE AREA 3A

OFFSET STORAGE AREA 2

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

WHAREMAUKU STREAM

EXISTING WHAREMAUKU WALKWAY

MATCHLINE REFER: M2PP- 35R -D-DWG-8205

350 370 350 360

5200 5300 5400 5500

RP D 1 35R-8204
MT A 1 43R-8201
WP G 1 35R-8204
WP G 2 35R-8204
WP G 3 35R-8204
ML C 1 35R-8204
ML A 1 35R-8204
GR A 1 35R-8204
GR A 2 35R-8204
RP D 2 35R-8204
RP D 3 35R-8204
WP G 5 35R-8204
GR A 3 35R-8204
MP C 1 35R-8204
WP G 4 35R-8204
MS B 1 35R-8204
MP C 2 35R-8204
ML B 1 35R-8204
GL A 1 35R-8204
ML B 7 35R-8204
GR A 4 35R-8204
MP C 3 35R-8204
WP G 7 35R-8204
RP D 4 35R-8204
WP G 6 35R-8204
RP D 5 35R-8204
RP D 6 35R-8204
RP D 7 35R-8204

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Original Scale (A1) 1:500	Design	F BAGGALEY	11.08.14
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.08.14
	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAUKU PLANTING PLAN SHEET 4

Drawing No: M2PP-35R-D-DWG-8204

Rev. 1

Document No. M2PP-35R-D-DWG-8204.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

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Drawing Plotted: 15 Dec 2014 10:15 a.m.

MATCHLINE REFER: M2PP- 35R -D-DWG-8204

370

350

WP G 1 35R-8205

WP D 1 35R-8205

WP G 2 35R-8205

WP D 2 35R-8205

WP G 3 35R-8205

RP D 1 35R-8205

RP D 4 35R-8205

RP D 3 35R-8205

RP D 2 35R-8205

OFFSET STORAGE AREA 2

WP G 4 35R-8205

WP D 3 35R-8205

WP H 1 35R-8205

WP G 4 35R-8205

WP H 2 35R-8205

WP G 4 35R-8205

WP D 3 35R-8203

MP C 1 35R-8205

WHAREMAUKU STREAM

CONNECTION TO RATA RD

MAINTENANCE ACCESS

MATCHLINE REFER: M2PP- 35R -D-DWG-8203

EXISTING WHAREMAUKU STREAM WALKWAY

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

KEY

PLANTING TYPE / PLANTING MIX / AREA CODE — MT A 1 — 43R-8201 — PLANTING BOUNDARY — ASSOCIATED SHEET NUMBER

- MP MASSED PLANTING
- ML MASSED PLANTING - LOW
- MT MASSED PLANTING - TREE ENRICHMENT
- MS MASSED PLANTING - SWALE
- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE
- TREE WIND SHELTER
- EXISTING VEGETATION TO BE RETAINED
- GL GRASS - LOW
- GS GRASS - SWALE
- GR GRASS - ROUGH
- WP WETLAND PLANTING
- RP RIPARIAN PLANTING
- DESIGNATION

NOTES:

1. REFER TO PLANTING SCHEDULES (8211) FOR PLANT MIX DETAILS.
2. REFER TO STANDARD PLANTING DETAILS (8900 SERIES)FOR PLANTING DETAIL.
3. A 1.5m OFFSET FROM THE VERGE HAS BEEN MADE TO ACCOMODATE THE EXTENT OF SUBBASE. THE ACTUAL OFFSET IS TO BE CONFIRMED ON SITE.

350 ORIGINAL DRAWING IN COLOUR

DETAILED DESIGN NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk V	Appd	Date
1	FOR CONSTRUCTION	MP				15.12.14

Design	F BAGGALEY	11.08.14	Approved For Construction*
Drawn	M. POWELL	11.08.14	
Dsg Verifier	B EVANS	18.11.14	
Dwg Check	G F-B	18.11.14	Date 15.12.14

Original Scale (A1) 1:500 — Reduced Scale (A3) 1:1000

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka — Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI RD TO WHAREMAUKU PLANTING PLAN SHEET 5

Drawing No: M2PP-35R-D-DWG-8205

Rev. 1

Document No. M2PP-35R-D-DWG-8205.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 10 Jul 2015 09:45 a.m.

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

MT - MASSED PLANTING WITH TREE ENRICHMENT
REFER: M2PP-33R-D-DWG-8203

92 x *Sophora 'Dragon's Gold'* @ 1.0m CENTRES

105 x *Macropiper excelsum* @ 1.0m CENTRES

RP - RIPARIAN PLANTING
REFER: M2PP-33R-D-DWG-8203

60 x *Pseudopanax laetus* @ 1.5m CENTRES

233 x *Coprosma* 'POOR KNIGHTS' @ 1.0m CENTRES

40 x *Melicope ternata* @ 1.5m CENTRES

26 x *Muehlenbeckia astonii* @ 1.5m CENTRES

87 x *Raphiolepis indica 'Cosmic White'* @ 1.0m CENTRES

ML - LOW MASS PLANTING
REFER: M2PP-33R-D-DWG-8203

5 x *Cordyline australis*

DESIGNATION

296 x *Coprosma* 'TAIKO' @ 1.0m CENTRES

28 x *Pseudopanax laetus* @ 1.5m CENTRES

MS - MASSED SWALE PLANTING
REFER: M2PP-33R-D-DWG-8203

7 x *Cordyline australis*

33 x *Macropiper excelsum* @ 1.0m CENTRES

49 x *Astelia nervosa* @ 1.0m CENTRES

26 x *Muehlenbeckia astonii* @ 1.5m CENTRES

30 x *Astelia nervosa* @ 1.0m CENTRES

WIND RAIN HOUSE

GL - LOW MOW GRASS
REFER: M2PP-33R-D-DWG-8203

MT - MASSED PLANTING WITH TREE ENRICHMENT
REFER: M2PP-33R-D-DWG-8203

RETAINED VEGETATION

RETAINED VEGETATION

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

REFER: M2PP-33R-D-DWG-8203 FOR LARGER SCALE PLANTING DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP				.07.15

Original Scale (A1) 1:200
Reduced Scale (A3) 1:400

				Approved For Construction*
Design				
Drawn				
Dsg Verifier				
Dwg Check				Date

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

Title: WIND RAIN HOUSE BUND PLANTING PLAN

Drawing No: M2PP-33R-D-DWG-8221

Rev. 1

330

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-33R-D-DWG-8221.DWG

							PLAN REFERENCE	TOTAL	
						AREA		93136	m^2
						AREA ADJUSTED FOR SLOPE		97648	m^2
			MT MIX = 1.0M CRS MASSED PLANTING, ENRICHMENT 10.0M CRS, PLANT CENTRES (METRES)						
			MULCH TYPE OM = ORGANIC MULCH, GM = GRADED GRAVEL MULCH, BC = BIOCOIR						
			N = NO MULCH (IN RIPARIAN / WETLAND ZONES), WM = WOOL MAT SQUARE (RIPARIAN EROSION)						
PLANT TYPE	**PLANT MIX**	**BOTANICAL NAME**	**COMMON NAME**	**GRADE**	**% MIX**	**NOTES**			
MASSED LOW EDGE PLANTING - ADJACENT TO CYCLEWAY									
ML	A	Acaena novae-zelandiae	Red bidibidi	1.0 litre	10%	front edge		621	No
ML	A	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%	back		310	No
ML	A	Carex dipsacea	Teasel sedge	1.0 litre	10%	front edge		621	No
ML	A	Carex solandri	Forest sedge, Solander's sedge	1.0 litre	10%	front edge		621	No
ML	A	Carex virgata	Swamp sedge	1.0 litre	5%	mid back		310	No
ML	A	Coprosma areolata*	Thin leaved Coprosma	1.0 litre	3%	back		186	No
ML	A	Coprosma propinqua*	Mingimingi	1.0 litre	5%	mid back		310	No
ML	A	Coprosma repens	Taupata	1.0 litre	10%	mid back		621	No
ML	A	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	10%	front edge		621	No
ML	A	Hebe stricta*	Koromiko	1.0 litre	10%	back		621	No
ML	A	Melicope simplex*	Poataniwha	1.0 litre	2%	mid		124	No
ML	A	Muehlenbeckia complexa	Pohuehue, wire vine	1.0 litre	20%	front edge		1241	No
MASSED LOW EDGE PLANTING - ADJACENT TO EXPRESSWAY									
ML	B	Acaena novae-zelandiae	Red bidibidi	1.0 litre	10%	front edge		788	No
ML	B	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%	back		394	No
ML	B	Carex dipsacea	Teasel sedge	1.0 litre	15%	front edge		1182	No
ML	B	Carex solandri	Forest sedge, Solander's sedge	1.0 litre	10%	front edge		788	No
ML	B	Carex virgata	Swamp sedge	1.0 litre	5%	mid back		394	No
ML	B	Coprosma acerosa	Sand Coprosma	1.0 litre	10%	front mid		788	No
ML	B	Coprosma areolata	Thin leaved Coprosma	1.0 litre	2%	back		158	No
ML	B	Coprosma propinqua	Mingimingi	1.0 litre	10%	mid back		788	No
ML	B	Coprosma repens	Taupata	1.0 litre	8%	mid back		631	No
ML	B	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	15%	front edge		1182	No
ML	B	Melicope simplex	Poataniwha		5%	mid		394	No
ML	B	Hebe stricta	Koromiko	1.0 litre	5%	back		394	No
MASSED PLANTING + ENRICHMENT SHELTERED FROM NORTHERLY, ADJOINS A WETLAND WITH ENRICHMENT									
MP	D	Aristotelia serrata	Makomako	1.0 litre	10%			249	No
MP	D	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%			125	No
MP	D	Coprosma tenuicaulis	Hukihuki, swamp Coprosma	1.0 litre	10%			249	No
MP	D	Cordyline australis	Ti kouka	1.0 litre	10%			249	No
MP	D	Cyperus ustulatus	Toetoe upokotangata, Giant umbrel	1.0 litre	5%			125	No
MP	D	Leptospermum scoparium	Manuka	1.0 litre	30%			748	No
MP	D	Melicytus ramiflorus	Mahoe	1.0 litre	5%			125	No
MP	D	Myrsine australis	Mapou, Matipo	1.0 litre	5%			125	No
MP	D	Phormium tenax	Harakeke, Flax	1.0 litre	10%			249	No
MP	D	Pittosporum eugenioides	Tarata, lemonwood	1.0 litre	5%			125	No
MP	D	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	5%			125	No
MP	D	Syzygium maire	Maire, tawako, Swamp maire	Pb18	20%	enrich		50	No
MP	D	Rhopalostylis sapida	Nikau	Pb18	50%	enrich		125	No
MP	D	Alectryon excelsus	Titoki	Pb18	30%	enrich		75	No
MASSED PLANTING + TREE ENRICHMENT - EXPOSED TO NORTHERLY, KANUKA DOMINANT									
MT	B	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%			423	No
MT	B	Carex lessoniana	Cutty grass	1.0 litre	10%			847	No
MT	B	Coprosma rhamnoides		1.0 litre	5%			423	No
MT	B	Cordyline australis	Ti kouka	1.0 litre	10%			847	No
MT	B	Kunzea ericoides	Kanuka	1.0 litre	30%			2540	No
MT	B	Melicytus ramiflorus	Mahoe	1.0 litre	10%			847	No
MT	B	Myrsine australis	Mapou, Matipo	1.0 litre	15%			1270	No
MT	B	Pittosporum tenuifolium	Kohuhu	1.0 litre	15%			1270	No
MT	B	Podocarpus totara	Totara	Pb18	40%	enrich		339	No
MT	B	Alectryon excelsus	Titoki	Pb18	60%	enrich		508	No
MASSED PLANTING + TREE ENRICHMENT									
MT	C	Aristotelia serrata	Makomako	1.0 litre	5%			685	No
MT	C	Carex lessoniana	Cutty grass	1.0 litre	5%	front		685	No
MT	C	Carpodetus serratus	Putaputaweta	1.0 litre	5%			685	No
MT	C	Coprosma propinqua	Mingimingi	1.0 litre	7%			960	No
MT	C	Coprosma robusta	Karamu	1.0 litre	10%			1371	No
MT	C	Cordyline australis	Ti kouka	1.0 litre	5%			685	No
MT	C	Griselinia lucida	Puka, Broadleaf	1.0 litre	2%			274	No
MT	C	Hebe stricta	Koromiko	1.0 litre	8%	front		1097	No
MT	C	Kunzea ericoides	Kanuka	1.0 litre	12%			1645	No
MT	C	Macropiper excelsum	Kawakawa	1.0 litre	5%			685	No
MT	C	Melicytus ramiflorus	Mahoe	1.0 litre	5%			685	No
MT	C	Melicope ternata	Wharangi	1.0 litre	3%			411	No
MT	C	Myoporum laetum	Ngaio	1.0 litre	3%			411	No
MT	C	Myrsine australis	Mapou, Matipo	1.0 litre	7%			960	No
MT	C	Olearia solandri	Coastal tree daisy	1.0 litre	5%			685	No
MT	C	Pittosporum tenuifolium	Kohuhu	1.0 litre	8%			1097	No
MT	C	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	2%			274	No
MT	C	Sophora microphylla	Kowhai	1.0 litre	3%			411	No
MT	C	Alectryon excelsus	Titoki	Pb18	40%	enrich		548	No
MT	C	Dysoxylum spectabile	Kohekohe	Pb18	40%	enrich		548	No
MT	C	Knightia excelsa	Rewarewa	Pb18	15%	enrich		206	No
MT	C	Podocarpus totara	Totara	Pb18	5%	enrich		69	No
MASSED PLANTING + TREE ENRICHMENT (EXOTIC) LEINSTER ROAD EXTENSION									
MT	N	Aristotelia serrata	Makomako	1.0 litre	5%			90	No
MT	N	Carex lessoniana	Cutty grass	1.0 litre	5%			90	No
MT	N	Coprosma propinqua	Mingimingi	1.0 litre	10%			181	No
MT	N	Coprosma robusta	Karamu	1.0 litre	10%			181	No
MT	N	Griselinia lucida	Puka, Broadleaf	1.0 litre	2%			36	No
MT	N	Hebe stricta	Koromiko	1.0 litre	20%			362	No
MT	N	Kunzea ericoides	Kanuka	1.0 litre	12%			217	No
MT	N	Melicope ternata	Wharangi	1.0 litre	3%			54	No
MT	N	Macropiper excelsum	Kawakawa	1.0 litre	5%			90	No
MT	N	Myrsine australis	Mapou, Matipo	1.0 litre	8%			145	No
MT	N	Olearia solandri	Coastal tree daisy	1.0 litre	5%			90	No
MT	N	Pittosporum tenuifolium	Kohuhu	1.0 litre	15%			271	No
		EXOTIC TREE ENRICHMENT							
TF	A	Acacia melanoxylon	Blackwood	o/g - 1.0 litre		enrich		14	No
TF	B	Alnus cordata	Italian alder	o/g - 1.0 litre		enrich		10	No
TF	G	Eucalyptus ficifolia	Flowering gum	1.0 litre		enrich		47	No
RIPARIAN PLANTING									
RP	D	Alectryon excelsus	Titoki	1.0 litre	5%			660	No
RP	D	Coprosma robusta	Karamu	1.0 litre	35%			4621	No
RP	D	Austroderia fulvida	syn Cortaderia, toetoe	0.5 litre	10%			1320	No
RP	D	Dysoxylum spectabile	Kohekohe	1.0 litre	5%			660	No
RP	D	Hedycarya arborea	Porokawhiri, Pigeonwood	1.0 litre	5%			660	No
RP	D	Leptospermum scoparium	Manuka	1.0 litre	20%			2641	No
RP	D	Melicope ternata	Wharangi	1.0 litre	10%			1320	No
RP	D	Phormium tenax	Harakeke, Flax	0.5 litre	10%			1320	No
WETLAND PLANTING - SLOPING BANK AND HUMMOCKS TO PERMANENT WATER, OCCASIONAL INUNDATION									
WP	D	Carex secta	Pukio, Purei	0.5 litre	50%	waters edge		6893	No
WP	D	Cordyline australis	Ti kouka	1.0 litre	5%			689	No
WP	D	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	15%	waters edge		2068	No
WP	D	Dacrycarpus dacrydioides	Kahikatea	1.0 litre	2%			276	No
WP	D	Laurelia novae-zealandiae	Pukatea	1.0 litre	3%			414	No
WP	D	Leptospermum scoparium	Manuka	1.0 litre	15%			2068	No
WP	D	Phormium tenax	Harakeke, Flax	0.5 litre	10%			1379	
WETLAND PLANTING - EMERGENT 0.0 TO 0.3M WATER DEPTH									
WP	F	Carex secta	Pukio, Purei	0.5 litre	10%			2397	No
WP	F	Carex virgata	Swamp sedge	0.5 litre	25%			5993	No
WP	F	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	25%			5993	No
WP	F	Machaerina rubiginosa (syn Baumea)		0.5 litre	15%			3596	No
WP	F	Machaerina teretifolia (syn Baumea)	Common twig rush, pakihi sedge	0.5 litre	15%			3596	No
WP	F	Phormium tenax	Harakeke, Flax	0.5 litre	10%			2397	No
WETLAND PLANTING - 0.3 TO 0.6M WATER DEPTH									
WP	G	Bolboschoenus fluviatilis	Kukuraho, Marsh club rush	0.5 litre	30%			2318	No
WP	G	Carex secta	Pukio, Purei	0.5 litre	10%			773	No
WP	G	Eleocharis acuta	Sharp spiked sedge	0.5 litre	25%			1932	No
WP	G	Juncus edgariae (syn J gregifolius)	Wiwi	0.5 litre	35%			2705	No
MASSED SWALE PLANTING									
MS	A	Apodasmia similis	Oioi	0.5 litre	100%	no mulch		18039	No
GRASS									
GL	A	Grass low grow mix	sown, close mow to 100mm	sow				2235	m^2
GR	A	Grass rank - (low grow mix)	sown, allowed to grow rank,	sow				5913	m^2
TOTAL									

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

330 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	GFB	DH	DGS	15.12.14

Original Scale (A1) NTS	Design	S DUNN	18.11.14
	Drawn	M POWELL	18.11.14
Reduced Scale (A3) NTS	Dsg Verifier	B EVANS	18.11.14
	Dwg Check	G F-B	18.11.14

Approved For Construction* P. BRADSHAW Date 15.12.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI — MacKays to Peka Peka, Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: LEINSTER AVE TO RAUMATI PLANTING SCHEDULE

Drawing No: M2PP-33R-D-DWG-8211

Rev. 1

Document No. M2PP-33R-D-DWG-8211.DWG

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PLANT TYPE	PLANT MIX	BOTANICAL NAME	COMMON NAME	GRADE	% MIX	NOTES		PLAN REFERENCE	TOTAL	
								AREA	160167	m^2
								AREA ADJUSTED FOR SLOPE	168115	m^2
								MT MIX = 1.0M CRS MASSED PLANTING, ENRICHMENT 10.0M CRS, PLANT CENTRES (METRES)		
								MULCH TYPE OM = ORGANIC MULCH, GM = GRADED GRAVEL MULCH, BC = BIOCOIR		
								N = NO MULCH (IN RIPARIAN / WETLAND ZONES), WM = WOOL MAT SQUARE (RIPARIAN EROSION)		
MASSED LOW EDGE PLANTING - ADJACENT TO CYCLEWAY										
ML	A	Acaena novae-zelandiae	Red bidibidi	1.0 litre	10%	front edge			450	No
ML	A	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%	back			225	No
ML	A	Carex dissacea	Tease sedge	1.0 litre	10%	front edge			450	No
ML	A	Carex solandri	Forest sedge, Solander's sedge	1.0 litre	10%	front edge			450	No
ML	A	Carex virgata	Swamp sedge	1.0 litre	5%	mid back			225	No
ML	A	Coprosma areolata	Thin leaved Coprosma	1.0 litre	3%	back			135	No
ML	A	Coprosma propinqua	Mingimingi	1.0 litre	5%	mid back			225	No
ML	A	Coprosma repens	Taupata	1.0 litre	10%	mid back			450	No
ML	A	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	10%	front edge			450	No
ML	A	Hebe stricta	Koromiko	1.0 litre	10%	back			450	No
ML	A	Melicope simplex	Poataniwha	1.0 litre	2%	mid			90	No
ML	A	Muehlenbeckia complexa	Pohuehue, wire vine	1.0 litre	20%	front edge			900	No
MASSED LOW EDGE PLANTING - ADJACENT TO EXPRESSWAY										
ML	B	Acaena novae-zelandiae	Red bidibidi	1.0 litre	10%	front edge			829	No
ML	B	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%	back			415	No
ML	B	Carex dissacea	Tease sedge	1.0 litre	15%	front edge			1244	No
ML	B	Carex solandri	Forest sedge, Solander's sedge	1.0 litre	10%	front edge			829	No
ML	B	Carex virgata	Swamp sedge	1.0 litre	5%	mid back			415	No
ML	B	Coprosma acerosa	Sand Coprosma	1.0 litre	10%	front mid			829	No
ML	B	Coprosma areolata	Thin leaved Coprosma	1.0 litre	2%	back			166	No
ML	B	Coprosma propinqua	Mingimingi	1.0 litre	10%	mid back			829	No
ML	B	Coprosma repens	Taupata	1.0 litre	8%	mid back			663	No
ML	B	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	15%	front edge			1244	No
ML	B	Melicope simplex	Poataniwha	1.0 litre	5%	mid			415	No
ML	B	Hebe stricta	Koromiko	1.0 litre	5%	back			415	No
MASSED LOW EDGE PLANTING, ADJACENT TO WETLAND										
ML	C	Austroderia toetoe	syn Cortaderia, toetoe	0.5 litre	10%				246	No
ML	C	Carex dissacea	Tease sedge	0.5 litre	20%				492	No
ML	C	Carex secta	Pukio, Purei	0.5 litre	15%				369	No
ML	C	Carex virgata	Swamp sedge	0.5 litre	15%				369	No
ML	C	Coprosma propinqua	Mingimingi	0.5 litre	15%				369	No
ML	C	Cordyline australis	Ti kouka	1.0 litre	10%				246	No
ML	C	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	10%				246	No
ML	C	Phormium tenax	Harakeke, Flax	0.5 litre	5%				123	No
MASSED PLANTING + TREE ENRICHMENT - EXPOSED TO NORTHERLY, KANUKA DOMINANT										
MT	B	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%				101	No
MT	B	Carex lessoniana	Cutty grass	1.0 litre	10%				201	No
MT	B	Coprosma rhamnoides		1.0 litre	5%				101	No
MT	B	Cordyline australis	Ti kouka	1.0 litre	10%				201	No
MT	B	Kunzea ericoides	Kanuka	1.0 litre	30%				604	No
MT	B	Melicytus ramiflorus	Mahoe	1.0 litre	10%				201	No
MT	B	Myrsine australis	Mapou, Matipo	1.0 litre	15%				302	No
MT	B	Pittosporum tenuifolium	Kohuhu	1.0 litre	15%				302	No
MT	B	Podocarpus totara	Totara	Pb18	40%	enrich			80	No
MT	B	Alectryon excelsus	Titoki	Pb18	60%	enrich			121	No
MASSED PLANTING - GENERAL MIX EXPOSED TO NORTHERLY, MAHOE RICH										
MP	C	Aristotelia serrata	Makomako	1.0 litre	5%				1270	No
MP	C	Carpodetus serratus	Putaputaweta	1.0 litre	5%				1266	No
MP	C	Coprosma propinqua	Mingimingi	1.0 litre	5%				1266	No
MP	C	Coprosma robusta	Karamu	1.0 litre	10%				2532	No
MP	C	Cordyline australis	Ti kouka	1.0 litre	5%				1266	No
MP	C	Griselinia lucida	Puka, Broad leaf	1.0 litre	2%				506	No
MP	C	Hebe stricta	Koromiko	1.0 litre	8%	front			2026	No
MP	C	Kunzea ericoides	Kanuka	1.0 litre	12%				3039	No
MP	C	Melicytus ramiflorus	Mahoe	1.0 litre	20%				5065	No
MP	C	Melicope ternata	Wharangi	1.0 litre	3%				760	No
MP	C	Macropiper excelsum	Kawakawa	1.0 litre	5%				1266	No
MP	C	Myoporum laetum	Ngaio	1.0 litre	3%				760	No
MP	C	Myrsine australis	Mapou, Matipo	1.0 litre	4%				1013	No
MP	C	Pittosporum tenuifolium	Kohuhu	1.0 litre	8%				2026	No
MP	C	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	2%				506	No
MP	C	Sophora microphylla	Kowhai	1.0 litre	3%				760	No
RIPARIAN PLANTING										
RP	D	Alectryon excelsus	Titoki	1.0 litre	5%				2816	No
RP	D	Coprosma robusta	Karamu	1.0 litre	35%				19710	No
RP	D	Austroderia fulvida	syn Cortaderia, toetoe	0.5 litre	10%				5631	No
RP	D	Dysoxylum spectabile	Kohekohe	1.0 litre	5%				2816	No
RP	D	Hedycarya arborea	Porokawhiri, Pigeonwood	1.0 litre	5%				2816	No
RP	D	Leptospermum scoparium	Manuka	1.0 litre	20%				11263	No
RP	D	Melicope ternata	Wharangi	1.0 litre	10%				5631	No
RP	D	Phormium tenax	Harakeke, Flax	0.5 litre	10%				5631	No
WETLAND PLANTING - SLOPING BANK AND HUMMOCKS TO PERMANENT WATER, OCCASIONAL INUNDATION										
WP	D	Carex secta	Pukio, Purei	0.5 litre	50%	waters edge			10773	No
WP	D	Cordyline australis	Ti kouka	1.0 litre	5%				1077	No
WP	D	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	15%	waters edge			3232	No
WP	D	Dacrycarpus dacrydioides	Kahikatea		2%				431	No
WP	D	Laurelia novae-zealandiae	Pukatea		3%				646	No
WP	D	Leptospermum scoparium	Manuka		15%				3232	No
WP	D	Phormium tenax	Harakeke, Flax	0.5 litre	10%				2155	No
WETLAND PLANTING - EMERGENT 0.0 TO 0.3M WATER DEPTH										
WP	F	Carex secta	Pukio, Purei	0.5 litre	10%				1677	No
WP	F	Carex virgata	Swamp sedge	0.5 litre	25%				4192	No
WP	F	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	25%				4192	No
WP	F	Machaerina rubiginosa (syn Baumea)		0.5 litre	15%				2515	No
WP	F	Machaerina teretifolia (syn Baumea)	Common twig rush, pacific sedge	0.5 litre	15%				2515	No
WP	F	Phormium tenax	Harakeke, Flax	0.5 litre	10%				1677	No
WETLAND PLANTING - 0.3 TO 0.6M WATER DEPTH										
WP	G	Bolboschoenus fluviatilis	Kukuraho, Marsh club rush	0.5 litre	30%				15984	No
WP	G	Carex secta	Pukio, Purei	0.5 litre	10%				5234	No
WP	G	Eleocharis acuta	Sharp spiked sedge	0.5 litre	25%				13086	No
WP	G	Juncus edgariae (syn J gregifolius)	Wiwi	0.5 litre	35%				18320	No
WETLAND PLANTING - 0.6M TO 1.0M WATER DEPTH										
WP	H	Typha orientalis	Raupo	limited use	20%				2337	No
WP	H	Machaerina articulata (syn Baumea)	Jointed baumea or twig rush		80%				9350	No
MASSED SWALE PLANTING										
MS	A	Apodasmia similis	Oioi	0.5 litre	100%	no mulch			3845	No
MASSED SWALE PLANTING - WITH WOODY PLANTS AT TOP EDGES										
MS	B	Apodasmia similis	Oioi	0.5 litre	50%	base and lower sides			4628	No
MS	B	Cordyline australis	Ti kouka	1.0 litre	10%	top slope and outer edges			521	No
MS	B	Leptospermum scoparium	Manuka	1.0 litre	25%	top slope and outer edges			1302	No
MS	B	Phormium tenax	Harakeke, Flax	0.5 litre	15%	top slope and outer edges			781	No
GRASS										
GL	A	Grass low grow mix	sown, close mow to 100mm	sow					1515	m^2
GR	A	Grass rank - (low grow mix)	sown, allowed to grow rank,	sow					2158	m^2

A1 REPRODUCTION SCALE: 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE: 0mm 10 20 30 40 50

350 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk V	Appd	Date
1	FOR CONSTRUCTION	MP	GFB	DH	DGS	15.12.14

Original Scale (A1) NTS
Reduced Scale (A3) NTS

Design	S DUNN	18.11.14	Approved For Construction* P. BRADSHAW Date 15.12.14
Drawn	M POWELL	18.11.14	
Dsg Verifier	B EVANS	18.11.14	
Dwg Check	G F-B	18.11.14	

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI — MacKays to Peka Peka, Wellington Northern Corridor

Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY RP 1012/0.00 TO 1023/5.00

Title: RAUMATI TO WHAREMAUKU PLANTING SCHEDULE

Drawing No: M2PP-35R-D-DWG-8211

Rev. 1

Document No.: M2PP-35R-D-DWG-8211.DWG

Document created for NZTA by M2PP Alliance, 43 Ihakara Street, PO Box 723, Paraparaumu 5254.

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Appendix 2: CONSULTATION, FEEDBACK AND RESPONSES

Site Specific Management Plan 002 [Sectors 330-340-350]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-002

17 DECEMBER 2014 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

The following tables set out the responses to comments raised by reviewers and those parties consulted in regard to the preliminary SSMP. The project responses are either reflected in the certification issue to which this Appendix pertains, or have been directed to other processes for action, or have been considered but for the reasons noted not agreed to. The parties consulted are those identified by the consent conditions and for Raumati are:

- Te Āti Awa ki Whakarongotai;
- Kāpiti Coast District Council (KCDC).
- Greater Wellington Regional Council (GW)
- Kāpiti Cycling Incorporated and the Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleways in respect of the CWB and any cycle or pedestrian connections.
- Raumati South Resident's Association
  Relevant Landscape focus areas (Leinster Avenue& Conifer Court)

COMMENTS ON DRAFT ISSUE SSMP2: RAUMATI
KCDC REVIEWERS COMMENTS *[JW=Julia Williams- Landscape Architect; DP = Deyana Popova-Urban Designer*

Draft issue for comment 26.9.14, follow up feedback meeting 03.10.14, Draft comments received 9/10/14

Page		*Reviewers Comments*	*Management Plan Author's response*
		Note that the Noise wall for Wind Rain house still to be designed.	Noise walls are not required, however earth bunding is being designed to enhance the curtilage of the house.
		No underbridge lighting shown yet	Now shown in Appendix 2
		Leinster Ave pedestrian bridge still to be designed.	Correct, this will be a separate design process.
		Require clarification on the following relating to the future ownership and management of leftover land inside the current designation: • Land within designation surrounded by retained & valued vegetation areas where weeds have not been treated. • Question planting & maintenance of areas west of Expressway (within designation) left between patches of retained vegetation eg just north of noise bund. These look as if they will have to be included within the final designation. What is ideal for these areas? Will weeds be killed off? How will it be maintained? Should the Council have some input? Concerns are reinforced by consultation comments from Conifer Court residents	The Kapiti Coast District Council will be contacted about land that is not needed for the operation of the Expressway. Owners of land next to the expressway may also be contacted if proposed changes trigger Council planning processes. The Alliance are still designing the expressway. When the design is complete (early 2015) the Transport Agency will know how much land is needed for roading operations and how much is left-over. Laws in New Zealand (Public Works Act 1981) set out how the Transport Agency must deal with land not required for the project. Before land can come to the market to be sold to an adjoining owner or the general public it must be firstly be offered to a number of parties such as but not limited to Council, former owner and Iwi. If none of the parties pick the property up, only then can it be sold on the open market. If an adjoining property owner is interested in purchasing the property they need to make an offer through the open market sale process. On average, the entire disposal process takes approximately two to four years.

			Until mid 2016, the M2PP Alliance is responsible for all land within the project site. After this time the Transport Agency takes over responsibility. The Transport Agency will sometimes agree to temporary occupation of land where this is formalised through a licence to occupy. The Alliance are keeping a register of neighbours that are interested in left-over land parcels.

COMMENTS RELATING TO SSMP2; MEETING with Adam Forbes 7.11.2014 **GWRC REVIEWERS COMMENTS** IN RELATION TO SSEMP MATTERS [Adam Forbes]					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*GWRC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
	B. Streams and Riparian Works. Note.	Flood offset storage area	Does the 'additional 500 lineal metres' referred to here, relate to riparian revegetation treatment length? Please clarify in text.		The stream is primarily provided as stated, *"Approximately 500 lineal metres of intermittent stream channel will be created to assist with water movement and provide (in-stream) habitat"*. In essence, the wetland will fluctuate seasonally but the deeper stream channels will provide persistent in-stream habitat through the year. In addition the stream channels will weave through dense wetland vegetation, this vegetation providing a diversity of riparian habitat from open pools, permanently wet wetlands, and ephemeral wetlands. However, there will not be raised areas with terrestrial vegetation within this Offset Storage area. Note that the length in the draft SSMP was based on an early design and is likely to be less than 500m. The final length will be detailed in the lodged SSMP and included in the mitigation tables.
	C. Wetlands. Note.	Mitigation shortfalls	Would like to discuss how current mitigation shortfalls can be accommodated within other ecological mitigation areas, in particular the Kakariki/Smithfield area.		As discussed in previous correspondence (dated Wed 8-Oct-2014) this table does not yet include SSMP 2, 8, 10, or 11 which will contribute in the order of 80 to 90% of all mitigation.
	I. Wetland Creation and Restoration	GWRC briefings	Approximate timeframe for final design briefing?		Because of the significant changes that have occurred to the layout in this sector our detailed design is running behind programme. If we can provide information prior to lodgement we will endeavour to do so. But there is a chance we will have to discuss once lodged.
	J. Stream Creation and Restoration	Fish access for climbing species	What will fish access for climbing species (ref. bullet 8) entail?		This relates to ensuring connectivity between the formed channels within these constructed wetland systems to the drain 7 channel.
	J. Stream Creation and Restoration	GWRC briefings	Approximate timeframe for final design briefing?		This may not be until the week of lodgement.

	O. Ground Preparation	Approval of soil mix	Who will approve the soil mix, at which stage, based on which criteria/advice/evidence?		Details for topsoil (salvaged and/or manufactured) are in the landscape specification and must be signed off by the project landscape architect.
	W. Landscape and Ecological Success Monitoring	Target SEV scores	Re. last paragraph – if mitigation success *shall* meet the forecast SEV score, then the second statement regarding 'at least exceed the current SEV condition…' is redundant and should be deleted.		Yes we are trying to meet the EMP target. However, If we cannot achieve the EMP ratio at all sites within the SSMP for whatever reason, the mitigation must at least achieve the current SEV score so that we return at least as good a system as currently exists (no net loss). Any shortfall would then be considered in the context of the wider mitigation requirements for the SSMP and project, just as any surplus would. In effect we are trying to ensure there is some flexibility in how the targets are achieved that allow for unforeseen outcomes.
	X. Adaptive Management – Post Construction	Report	Please clarify whether this report will be submitted to any external party (i.e., council(s)) for consultation or approval?		The EMP requires that any time an adaptive management process is triggered the remedial action required will be determined in consultation with the relevant council
	M – V.	Reference to Appendix 4.	For all of these sections should reference to Appendix 4 actually be to Appendix 5 instead?		Thanks for picking this up.
	Appendix 1 – Poplar Ave to Raumati Road Vegetation to be Retained – Sheet 6	Terrestrial valued vegetation to be retained	It appears the roughly hour-glass shaped area of terrestrial valued vegetation to be retained is located within the construction footprint. Please clarify this vegetation's location with regard to the construction footprint and its status regarding retention.		This is a small patch of kanuka that may be able to be retained by tweaking the shared path. This is consistent with condition G.41 d) requiring detailed design to seek to minimise effects as far as practicable. The anticipated loss of this small group of trees is included in the overall mitigation package.
	Appendix 1 – Poplar Ave to Raumati Rd Planting Plan Sheet 4	Ecological mitigation planting on engineered batter slope	Does the comment here mean ecological mitigation planting (to mitigate loss of Raumati Kanuka) on batter slope? Or is this area not part of the terrestrial revegetation mitigation treatment? If being counted as terrestrial ecology mitigation, was this ecological mitigation always intended to occur on engineered soils?		The use of kanuka in this general area is to mitigate loss of the Raumati Kanuka and extend the local vegetation character. The focus of mitigation planting is around Raumati Road (sheet 6) but the vegetation type is extended further south to integrate this with the other vegetation; so it is a landscape response that is tied into the mitigation requirement. Yes; this terrestrial mitigation was always intended. No; the batter slopes will not be formed of engineered soils, but of consolidated sands. There is no practical reason that kanuka would not survive and thrive on these batter slopes any differently than they would on a consolidated dune face.
	Appendix 4 – Ecological Mitigation Table	Ecological mitigation provision vs. requirements	Re. indigenous terrestrial habitat requirements, where (and on which substrates) will the additional 1.18 ha of terrestrial mitigation be located?		See earlier response (dated Wed 8-Oct-2014) regarding completeness of the mitigation table.

			Re. Table 1A – have culvert lengths shortened since BoI design? Re. Tables 2 & 2A – Row "Combined Total (G.42)", Column Wetland Habitat: what is rationale for reducing 9.5 ha to 9.2 ha? Where will the shortfalls in stream habitat freshwater (514.8 m) and riparian (0.32 ha) mitigation be made up?		
	-	Planting plans and species lists/schedules	Only very generic planting plan details are provided and species lists/schedules are not included. Inclusion of more detailed planting plans and species schedules would be preferable.		They will be provided to GWRC when available.

COMMENTS ON PRELIMINARY ISSUE SSMP2: RAUMATI – draft issued for review feedback meeting 29.8.14
KAPITI CYCLING INC.[LS= Lyn Sleath]
IMPLEMENTATION GROUP OF KCDC ADVISORY ON CYCLEWAYS, WALKWAYS AND BRIDLEWAYS: [JN= Jan Nisbet]
KCDC- CWB PLANNER [SK Stuart Kilmester]

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
		LS	Further to my previous comments, we are happy to accept the revised details involving lower gabions and with the pathway width maintained at 3.00 m.		No response required
		LS	Suggest that at road crossings the design should follow the model used by KCDC at the Otaihanga Road crossing near Southwards, with grab rails, audible surfacing, and markings.		There are no road crossings in SSMP 2. The Alliance considers the CWB design, where it meets local roads, adequately signals to cyclists that a crossing is imminent. NZTA and M2PP traffic safety auditors strongly oppose the use of bollards or barriers on cycleways that can cause harm to cyclists.
		SK	Ensure that the southern entrance to the CWB (near Poplar Ave) has sufficient space for signage and for groups to gather. No further comments (email 2.9.2014)		Relates to SSMP1

LANDSACPE FOCUS AREA- DC 57A A) **Conifer Court & Leinster Ave**

COMMENTS ON DRAFT DESIGN DETAIL TABLED AT DROP IN SESSION 1.9.2014

FOLLOW UP ON-SITE MEETING WITH RESIDENTS AT THE END OF LEINSTER AVE 3.9.2014

DRAFT SSMP ISSUED TO IMMEDIATE OWNERS OF NEIGHBOURING PROPERTIES FOR COMMENT 27.11.2014

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*GWRC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
DC 57A A) iv)		Eric & Betty Cornick 12 Conifer Court	Requested an additional 6-800mm high noise bund to provide more separation between house and Expressway. (Currently perceive that finished road level will be similar to upper floor level of house.)		To further reduce the visual impact of the expressway, up to 1m of fill to be placed on the ridge line opposing 12 Conifer Court that extends towards the expressway. The current eathworks have been designed to meet the noise mitigation requirements agreed at the Board of Inquiry (BoI) by noise experts. No changes required for noise mitigation.
	G.42C v) A & EMP 4.2	Eric & Betty Cornick 12 Conifer Court	Concern about 'climbing asparagus' weed in bush to be retained adjacent to their south boundary on NZTA land. Offered to keep it under control if Alliance did initial clearance.		AEE conditions & EMP methodology require identification and monitoring of existing weeds to determine any spread of weeds into newly disturbed areas and levels of control required. There is no requirement to remove existing weeds on NZTA land beyond the construction zone.
	G.42C v) A & EMP 4.2	Eric & Betty Cornick 12 Conifer Court	Request that recently cleared gorse/blackberry is sprayed to control weed growth at western boundary.		There is no requirement to control weeds or to plant areas beyond the immediate construction zone or what was shown on the plans discussed at the BoI. NZTA owned land surplus to the Expressway requirement may be sold once the Expressway is built.
		Eric & Betty Cornick 12 Conifer Court	Safety concern about fencing wire being cut and flung across adjacent properties by mulcher clearing vegetation. Requested area be checked for fence remains prior to commencing work to avoid recurrence.		Issue referred to H & S team for further action to avoid recurrence.
		Eric & Betty Cornick 12 Conifer Court 7.11.2014	Regarding the bund that is being created west of our property. We would like to see a covenant put on this area preventing any future earthworks that might take place on the sale of the land that is surplus to requirements by NZTA, compromising the effect of said bund. Preferably we would like first option on the sale/disposal of this land following the offer back to the previous owners if that is necessary.		NZTA have provided comments related to surplus land in response to KCDC questions (please refer to these in the tables above)

			Also it would be in our best interests to extend the 2.0m high noise wall further to the south as there will be a slight incline towards the bridge over Raumati Road in that area. We are also pleased to see GWRC are going to monitor any noxious weeds that are likely to spread into the newly planted areas. This has virtually addressed our concerns previously noted – G.42C v) A and EMP 4.2.		The design (location length, height) meets the noise mitigation standards required in the project consent conditions. The noise wall will be built as it has been designed.
	G.42C v) A & EMP 4.2	Michelle & Chris Mc Donald 10 Conifer Court	Concern that existing vegetation is being removed right up to boundary with no allowance for replanting in this area. Requested mass planting near boundary that is dense and high (3-5m).		There is no requirement to control weeds or to plant areas beyond the immediate construction zone or what was shown on the plans discussed at the BoI. NZTA owned land surplus to the Expressway requirement may be sold once the Expressway is built. The existing macrocarpa hedge along this property boundary provides visual screening from the expressway, and in time the enrichment planting will add to this.
		Michelle & Chris Mc Donald 10 Conifer Court	Concern about dangerous situation with wire fence being flung beyond boundary by mulcher doing veg clearance.		Issue referred to H & S team for further action to avoid recurrence.
	G.42C v) A & EMP 4.2	David & Velma Knight 8 Conifer Court	Request planting on adjacent land now that area has been cleared. Request for tree planting and control of blackberry regrowth.		Vegetation within the designation adjacent to this boundary is being retained (refer vegetation retention plan sheet 8706) There is no requirement to control weeds or to plant areas beyond the immediate construction zone or what was shown on the plans discussed at the BoI. NZTA owned land surplus to the Expressway requirement may be sold once the Expressway is built.
		Caren Ashford 107 Leinster Ave	Would like to see cul-de-sac at end of Leinster Ave for turning vehicles before the Leinster Ave extension. Does not want extension to be a full road that extends off end of Leinster. Requests for traffic calming measures (speed bump) at start of Leinster Road extension to deter boy racers Request vegetation selection at end of Leinster to be attractive to native birds.		A turning area has been provided at the end of Leinster Ave rather than a cul-de-sac. This is the preference of KCDC who consider rounded cul-de-sacs encourage 'boy racer' behaviour. Traffic calming intervention was not considered necessary by KCDC. Leinster Ave extension is considered a narrow road which self manages traffic to drive slowly. Speed bumps or narrowing of the entrance into the road extension was also considered unnecessary, and KCDC note that these measures create more traffic noise with vehicles breaking and accelerating.

			Is the wire fence /trees beside driveways 108,110,112 staying/being upgraded /replaced?		The vegetation at the end of Leinster will be a mixture of native planting, designed with the objective of improving the local biodiversity. Refer to planting plans. The existing fence and vegetation will remain as is, no upgrading is planned.
		Diane Benge 7/260 SH1	Would like taller trees included in the Planting on both a) the noise bund itself; and b) on the western side of the proposed 'Lane' (Leinster Ave extension). Would like to see some already mature trees planted in these two areas (to give quick cover), along with trees that will ultimately grow to be tall and substantial, capable of reaching sufficient height (in a fairly short time-frame) to replicate the noise-abating qualities of the trees that have been removed in preparation for the road construction		Currently the planning of the noise bund and western side of the new Leinster Road extension is shown as massed planting which consists of a mixture of native species that would reach 3-5m heights. We agree that some taller tree species, as suggested could be incorporated into the planting to provide more height. This has been conveyed to the design team for inclusion during the detailed design process. 'Already mature trees' would not be planted, instead the typical grade of plants being used throughout the project would be used. While these are small when planted they have a much better success rate than large grade trees.
		Martin Sutherland 108 Leinster Road 6.11.2014	There is no comment about the meeting held on site with the residents of Leinster Ave about the cul-de-sac, and planting. Would like the end of Leinster Ave to be a cul-de-sac, with Leinster Ave extension coming off the end Is the wire fence/trees beside the driveways of 108, 110, 112 Leinster Ave staying? Being replaced? Being upgraded? Overall plan, details look great. Thank you		Reference to the site meeting has been added at the top of this table. The issues raised by residents at the meeting have been covered in the individual responses in this table. Request for cul-de-sac and traffic calming measures, inquiries about the type of planting and fences) A turning area has been provided at the end of Leinster Ave rather than a cul-de-sac. This is the preference of KCDC who consider rounded cul-de-sacs encourage 'boy racer' behaviour. The existing fences and vegetation will remain as is with no further upgrading.
		Rachel Palmer 101 Leinster Ave 8.11.2014	In reply to recent publications sent to neighbours of this section of m2pp; Q.1 Turning roundabout at the end of Leinster Avenue and a turning roundabout at the end of Leinster Extension (Lane). In affect does this mean there will be two roundabouts?		The turning area at the end of Leinster Ave is being provided by a 'T' turning arrangement rather than a round turning head (see Sheet 8 in the Management Plan). There is a turning head at the end of the Leinster Road extension (see detail on sheet 17). Yes, 2.5m wide see sheet 8 detail

			Q.2 Will there be a footpath beside the new Leinster Extension Road? Q.3 How long (in distance) will the Leinster Extension be? Does RETAIN = Land form to be Retained? What is the idth of Walkways, Cycleways and Bridlepaths? Is there a standard width?		Approximately 500m long (Assume this question refers to the 'vegetation retention plans') in which case 'Retain' refers to vegetation that will be retained. The main CWB (cycle walkway bridleway) is 3m wide along the entire length of the Expressway, some of the CWB links to local roads are 2.5m wide . Footpath widths vary depending on their location and have been approved by KCDC.

RAUMATI SOUTH RESIDENT'S ASSOCIATION, meeting with Mary Campbell-Lee 26.8.14 and *Information drop-in session 1.9.14*					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*GWRC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
			Raised questions about the area of offset mitigation planting from area OB (West of expressway near Raumati Manuka) to area OC on the eastern side of the expressway (FWS OC)		Detailed design has confirmed that there will be no wetland 0B (west of the Expressway). Instead the ecological off set mitigation planned for this area will be located on Wetland OC. Greater Wellington Regional Council have agreed that this will achieve the required consent conditions.
			Wanted to know more about planting on noise bund beside Leinster extension		Information now included in SSMP

COMMENTS ON SSMP2: **TE ATIAWA KI WHAKARONGATAI**					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
GENERAL COMMENTS - TO BE APPLIED TO ALL SSMP'S					
57 e) i	SSMP to be prepared in consultation with Te Atiawa ki Whakarongatai	M2PP Alliance	A workshop was held with Te Atiawa on the 23 October 2014. The workshop had two key focus areas: 1. Te Atiawa to review and comment on the SSMPs. Provide formal comment. 2. Identify key opportunities for input into the design of the elements within the expressway with a focus on the		Formal comment received for SSMPs 1-10 at the workshop held on 23 October 2014 In addition, the Alliance design team are working with Te Atiawa ki Whakarongatai to develop design of some elements along the expressway and CWB

	General comment to be applied to SSMP 1 – SSMP 10		CWB and interpretation signage. Agree a methodology, deliverables and program. 3. Alliance to prepare a draft design framework by the end of November 2014 and hold a second workshop with Te Atiawa		corridor. This work considers the whole Expressway route. The first stage, currently underway, will identify the particular locations of significance to Te Atiawa. If these locations occur within this SSMP area, landscape elements or features will be designed and incorporated into the CWB corridor, in consultation with Te Atiawa.
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai and Takamore Trust General comment to be applied to all SSMPs	Hemi Sundgren, Te Atiawa ki Whakarongatai	Te Atiawa request that in general terms the design of the expressway meets tangata whenua values. There is to be a particular focus on water bodies, terrestrial and wetland planting, however It is important to Te Atiawa that iwi expectations are also met in regards to: • Design/aesthetic values of built elements • Ecological values • Landuse and the physical environment • Cultural and historical values		
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai and Takamore Trust General comment to be applied to all SSMP's	Hemi Sundgren, Te Atiawa ki Whakarongatai	Te Atiawa request input into the naming of new waterbodies created as part of the project. (such as the new wetlands to the south of the Wharemauku Stream currently referred to as flood storage area 2)		
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai and Takamore Trust General comment to be applied to all SSMP's	Hemi Sundgren, Te Atiawa ki Whakarongatai	Where possible planting within the expressway is to consider Iwi values in regards but not limited to: • Maori customary practice, kaupapa Māori • Flax cultivation (pā harakeke) • Mahinga kai • Planting for medicinal use rongoā māori Specific areas of interest, land use, planting type will be identified in individual SSMP comments.		

SSMP 2 SPECIFIC COMMENTS

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 2 specific comment 23/10/2014	Hemi Sundgren, Te Atiawa ki Whakarongatai	Wharemauku named after a Pa Site at the mouth of the Wharemauku Stream. Te Atiawa would like to be involved with the naming of the CWB stream bridge. The name 'Wharemauku' could be included in the design of the Wharemauku CWB Stream bridge to acknowledge the importance of the Wharemauku Stream to Te Atiawa.		

57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 2 specific comment 23/10/2014	Hemi Sundgren, Te Atiawa ki Whakarongatai	There is a good opportunity to provide interpretive signage that identifies the numerous layers new and old within this area • Ecology/wetland restoration, biodiversity, species protection • Historical • Cultural • Iwi Values • Land use		
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 2 specific comment 23/10/2014	Hemi Sundgren, Te Atiawa ki Whakarongatai	Te Atiawa would like to have input into the planting of the wetlands south of the Wharemauku to ensure there are groupings/ areas of planting that meet iwi expectations/values with regard to: • Flax cultivation (pā harakeke) • Mahinga Kai • Planting for medicinal use rongoā māori • Maori customary practice, kaupapa Māori		
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 2 specific comment 23/10/2014	Hemi Sundgren, Te Atiawa ki Whakarongatai	Te Atiawa request input into the naming of the wetlands south of the Wharemauku Stream.		

Appendix 3: BRIDGE SUMMARY- RAUMATI BRIDGE

Site Specific Management Plan 002 [Sectors 330-340-350]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-002

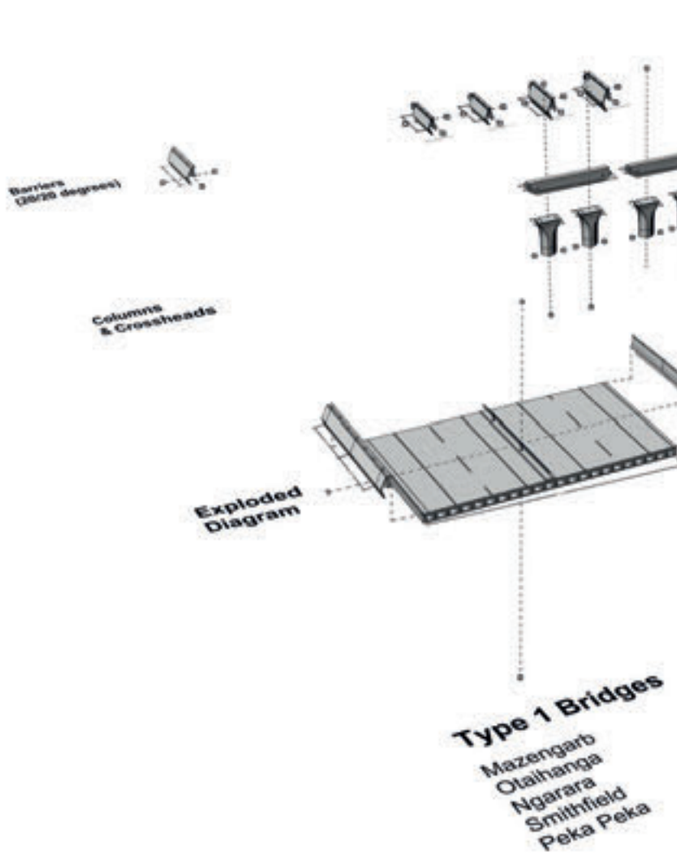
02 September 2014 - REV C

NZ TRANSPORT AGENCY
WAKA KOTAHI

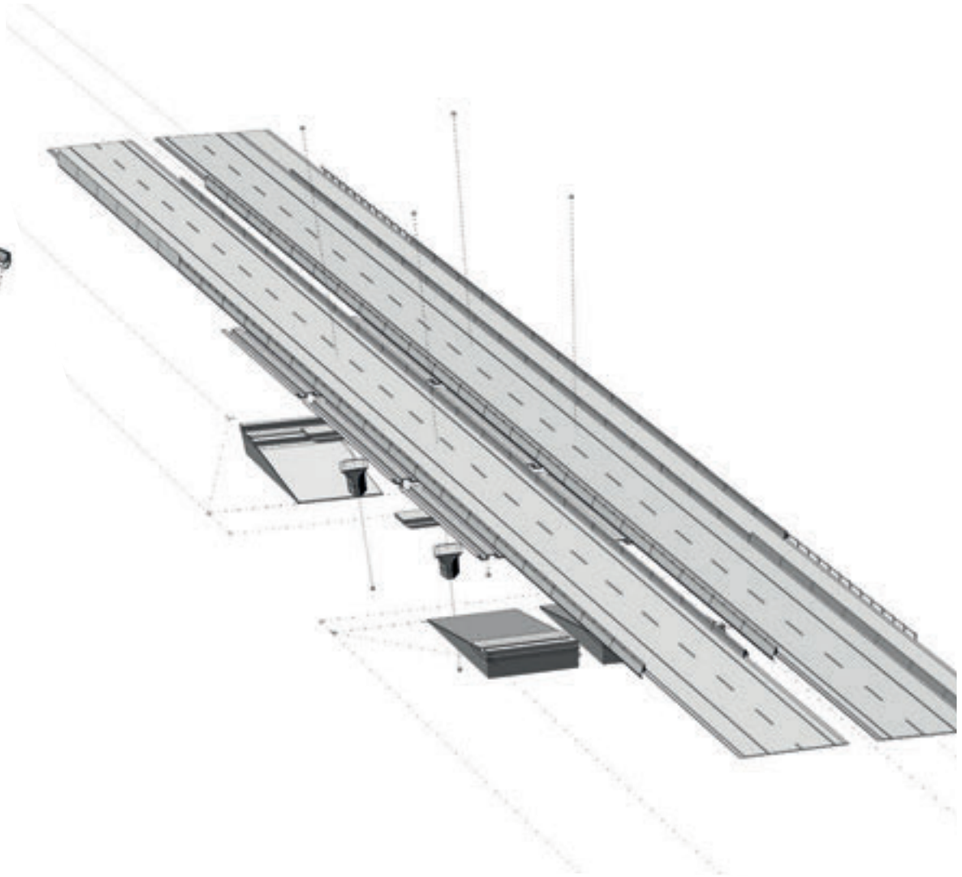
MacKays to Peka Peka
Wellington Northern Corridor

M2PP Bridge Design Objectives

Bridges as a series of components



Proposed Raumati exploded isometric



Design Objectives

With reference to the Urban and Landscape Design Framework (Technical Report 5) (ULDF) there are four design objectives for the bridges and their respective contexts. These four objectives are overarching aims for the project and have been extracted from the Design Concept statements in two sections of the ULDF: Local Road Interface Design (section 5.7) and Bridge Design (section 5.8).

The purpose of extracting these objectives is to enable any changes to bridge structures and their context made through the concept and detailed design process to be considered at the highest level of the design intent. There are design principles in each of the sections as noted above and these too form a basis for considering the development of the designs for the bridges and their context.

As is typical in a design evaluation process, any aspects of design that do not align with the design principles would be elevated to consideration against the design objectives.

Design Objectives:

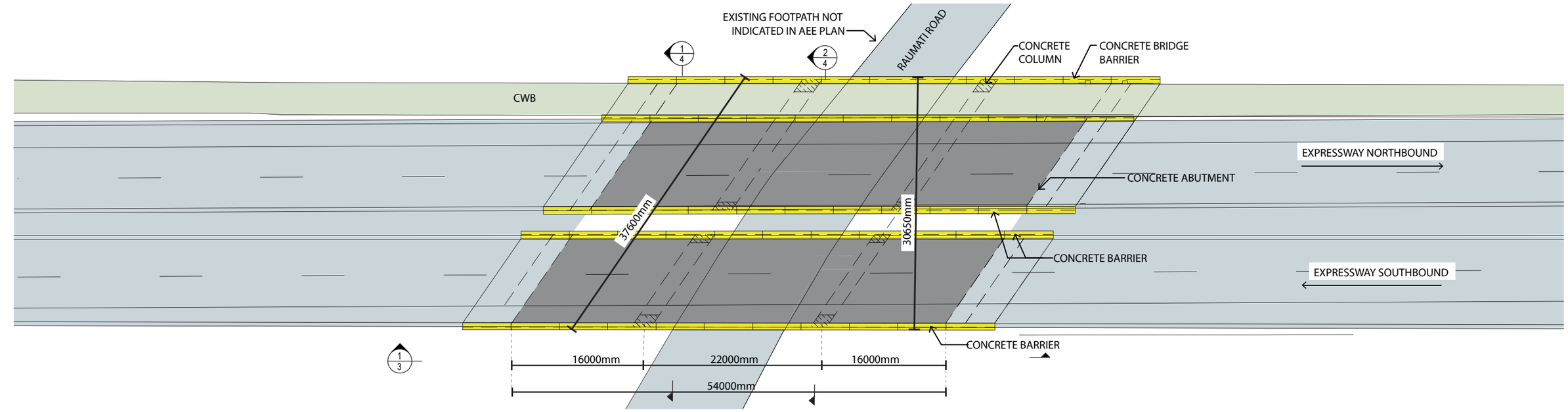
1. The public spaces of the roads and streets take primacy over the experience of the Expressway users. Local people will be making slower movements and as a consequence the bridges will be more visually apparent to them than to people travelling along the Expressway.

2. As a new element in the landscape, the bridges respect the surrounding landscape and are expressed in terms of their horizontality, fluidity and simplicity because the landscape is relatively low key and low in scale; having several ‘feature’ bridges would become both visually complex and overwhelming in scale.

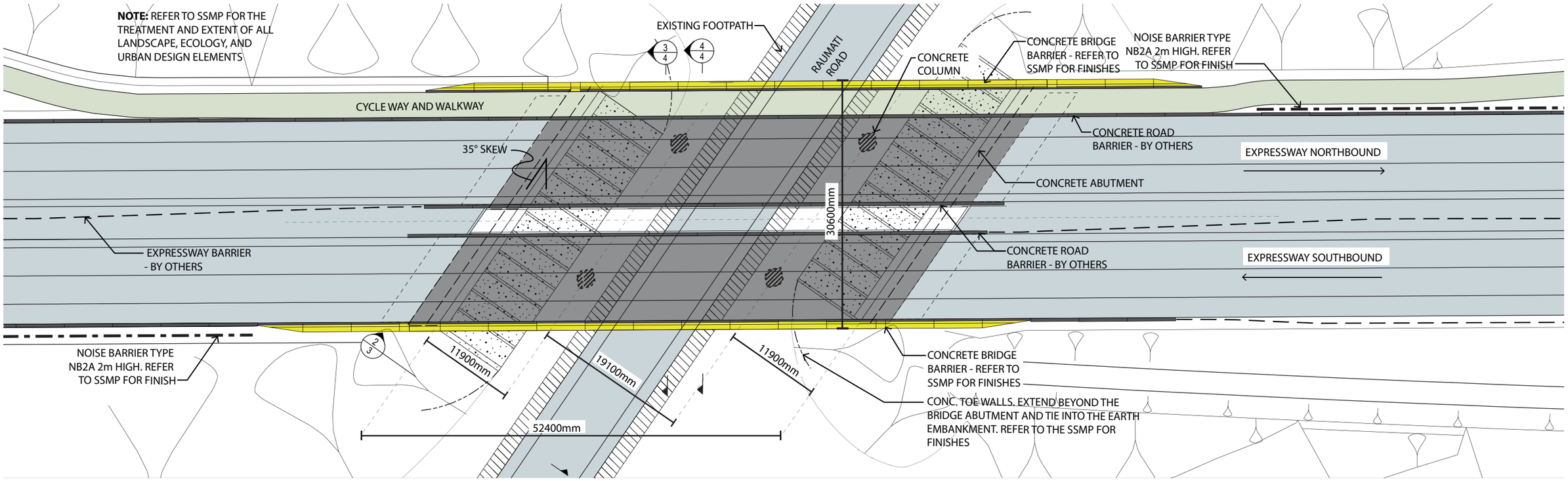
3. Bridges are formed as a whole from a single kit of parts, which allows the components to be repeated and a similar approach used at the multiple crossings to register as a ‘family’ of bridges because people will have multiple interactions day to day with the Expressway and this approach promotes simplicity and visual continuity

4. Utilise concrete prefabricated parts because this allows fine levels of quality control, cost benefits and significant improvements in construction time at the crossings and reduces disturbance to the area.

AEE Consented to DET Proposed Graphic Comparison



AEE PLAN- RAUMATI ROAD BRIDGE - 1:500@A3



PROPOSED PLAN- RAUMATI ROAD BRIDGE - 1:500@A3

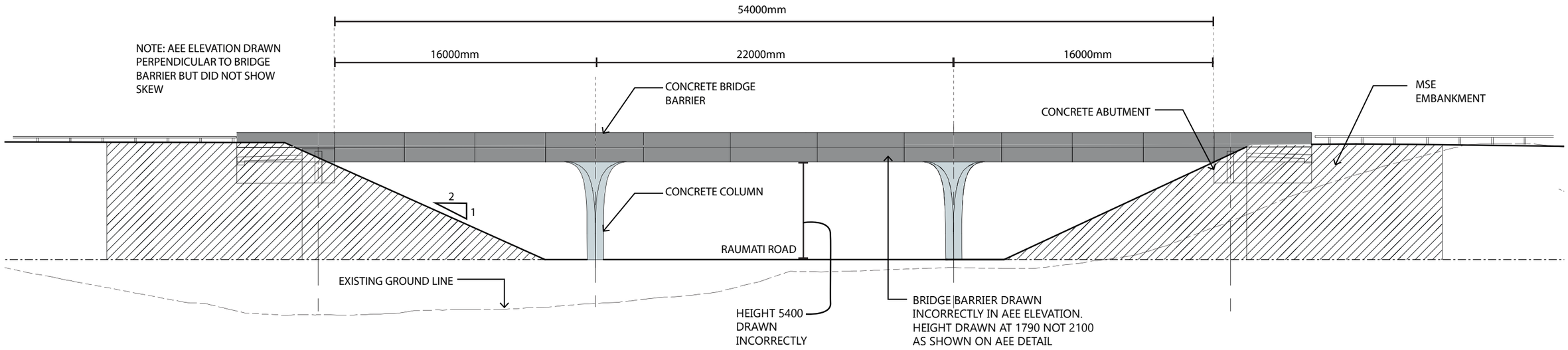
Design development

1. Further detail provided for abutment treatment.
2. Column shape and location changed.
3. Local road drawn correctly.
4. Reduced overall length of the bridge.

Rationale

1. Spill through abutment design developed to better integrate the abutment panels with the expressway embankments and local road
2. Moving the columns inboard resolves the issue with the bridge skew angle and the interface between columns and the bridge barrier/fascia panels.
3. No change to local road proposed - Proposed plan indicates optimum local road design (17m corridor).
4. Change from Hollow Core to Super T beams.

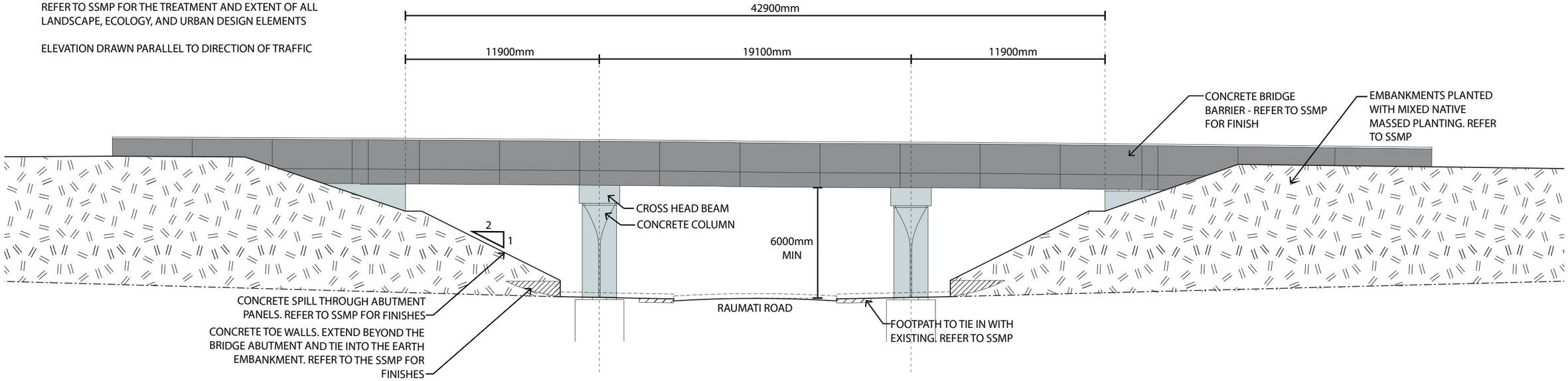
AEE Consented to DET Proposed Graphic Comparison



1. AEE ELEVATION - RAUMATI ROAD BRIDGE EAST ELEVATION - 1:250@A3

NOTE:
REFER TO SSMP FOR THE TREATMENT AND EXTENT OF ALL LANDSCAPE, ECOLOGY, AND URBAN DESIGN ELEMENTS

ELEVATION DRAWN PARALLEL TO DIRECTION OF TRAFFIC



2. PROPOSED ELEVATION - RAUMATI ROAD BRIDGE EAST ELEVATION - 1:250@A3

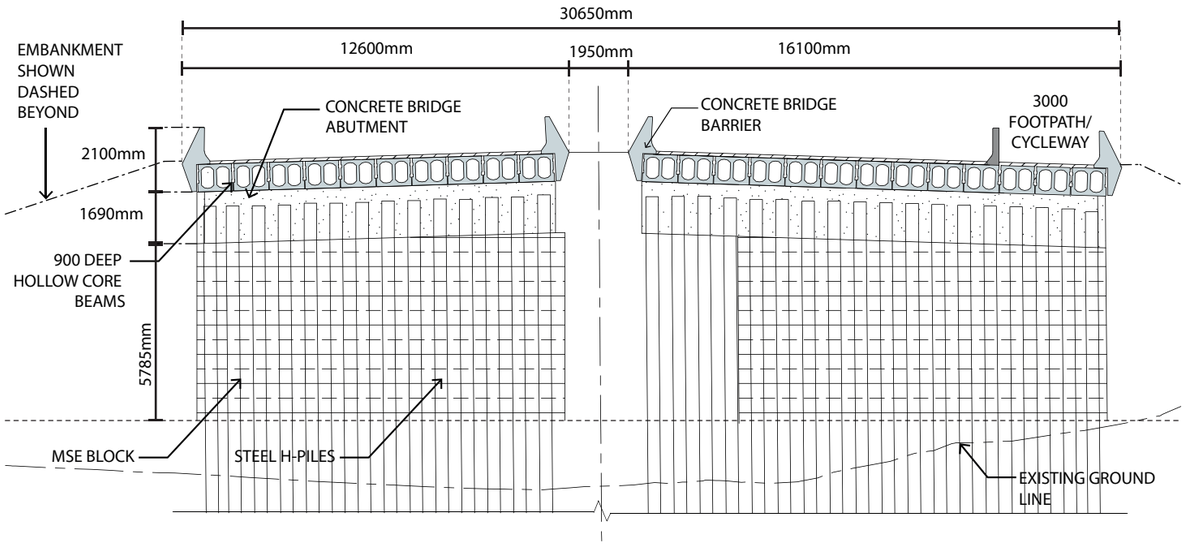
Design development

1. Bridge barrier/fascia panel drawn higher
2. Reduced overall length of the bridge
3. Bridge abutment appears to be steeper
4. Column profile developed

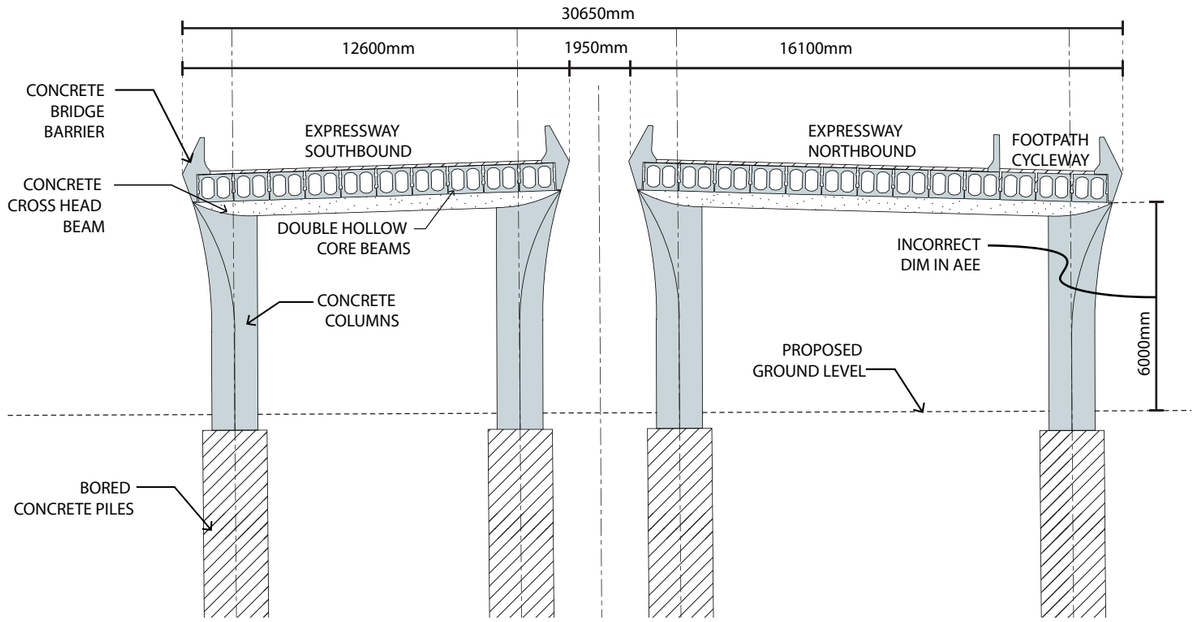
Rationale

1. Barrier drawn incorrectly in AEE elevation. Change to beam size and type to suit structural requirements of the high skew
2. The AEE elevation was drawn incorrectly. It was drawn perpendicular to the barrier but did not show the skew of the columns. Change from Hollow Core to Super T beams
3. Due to the angle that each elevation has been drawn and the skew of the bridge the abutment will appear steeper no change proposed.
4. Increased structural core based on geotech investigations carried out post AEE, while still providing the sculptural outer.

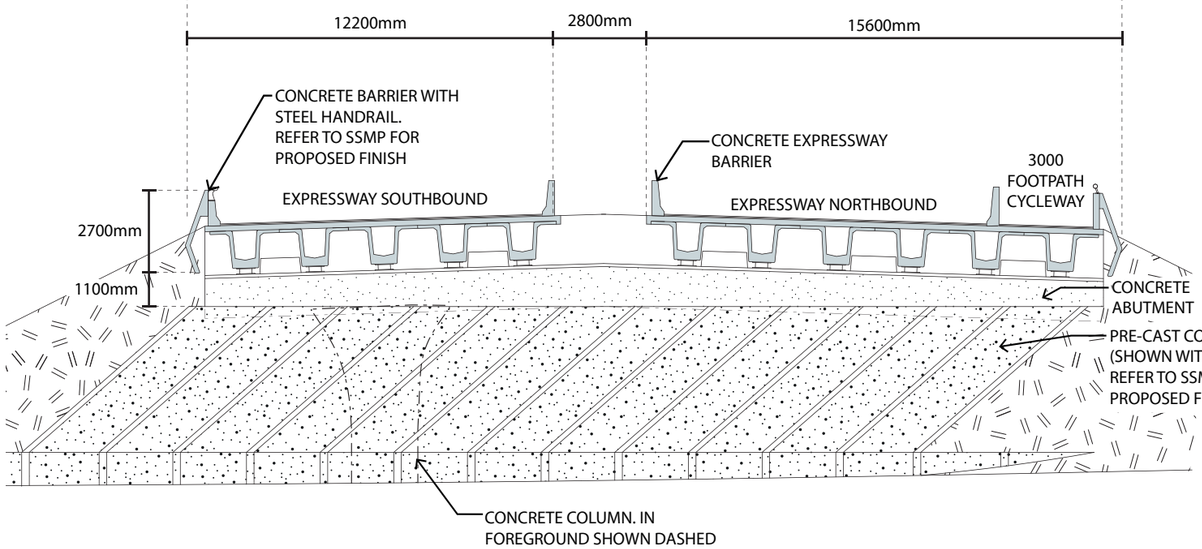
AEE Consented to DET Proposed Graphic Comparison



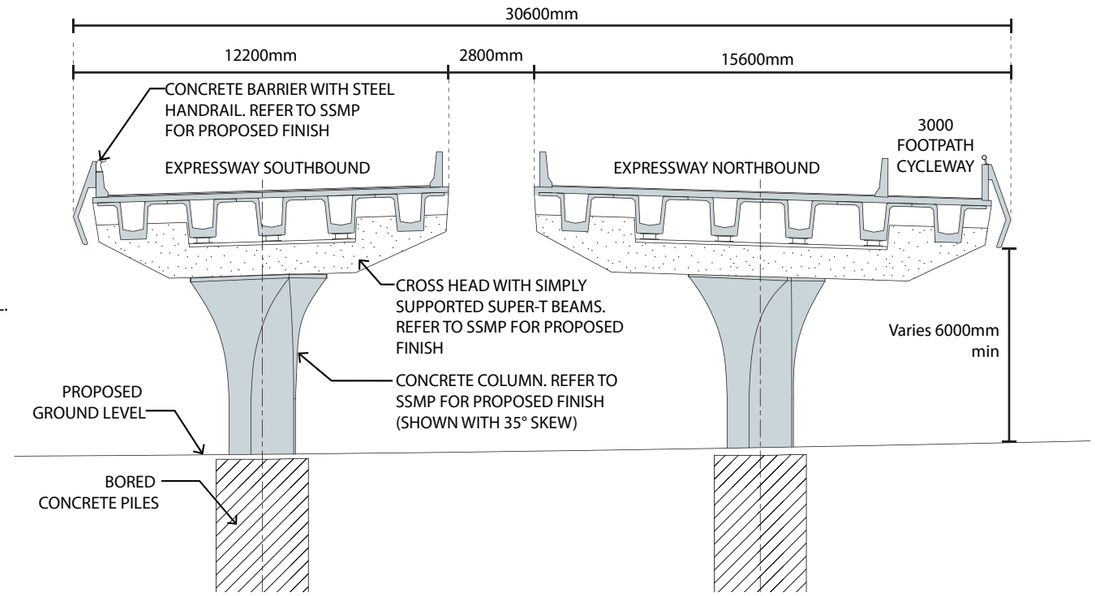
1. AEE SECTIONAL ELEVATION - RAUMATI ROAD BRIDGE SOUTH ABUTMENT - 1:200@A3



2. AEE SECTIONAL ELEVATION - RAUMATI ROAD BRIDGE (LOOKING SOUTH) - 1:200@A3



3. PROPOSED SECTIONAL ELEVATION - RAUMATI ROAD BRIDGE SOUTH ABUTMENT - 1:200@A3



4. PROPOSED SECTIONAL ELEVATION - RAUMATI ROAD BRIDGE (LOOKING SOUTH) - 1:200@A3

Design development

1. Reduced number of columns; 2 columns to 1 column for each cross head
2. More detail provided for abutment treatment
3. Cross head form changed
4. Column profile developed
5. Change to beam size and type. Change to simply supported structure.

Rationale

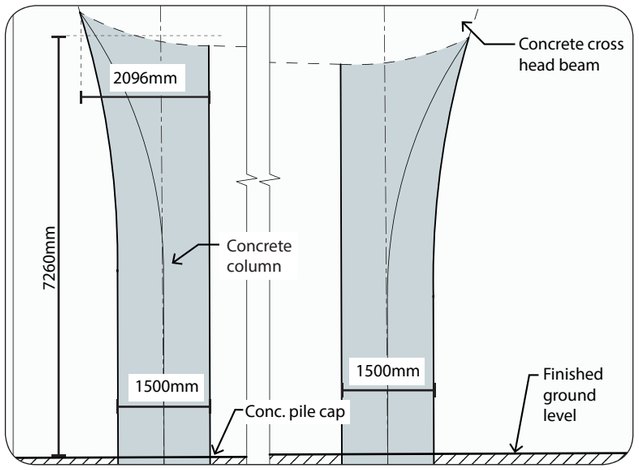
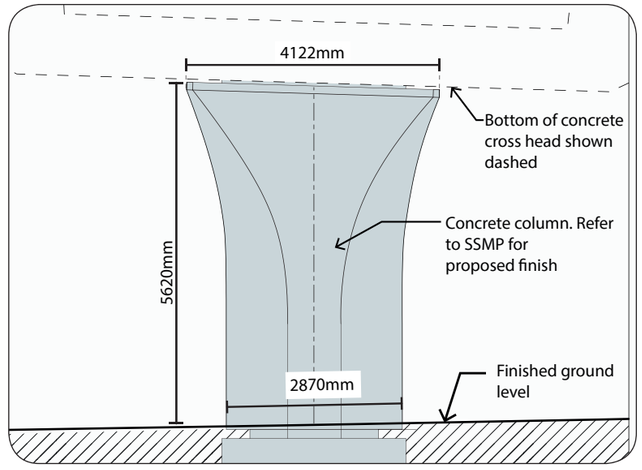
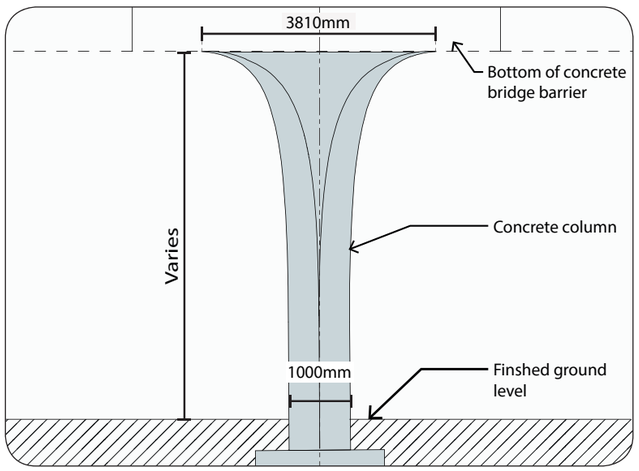
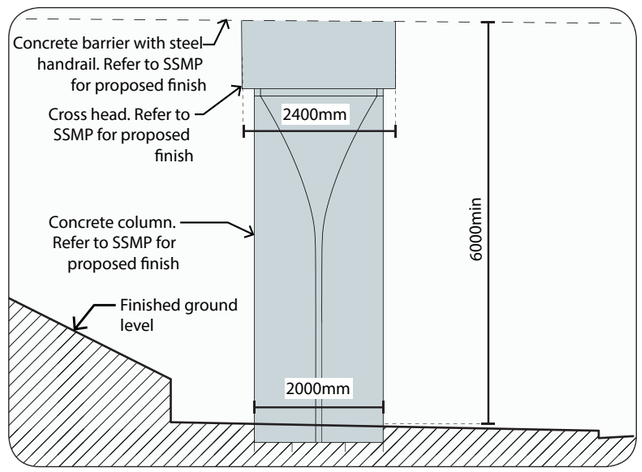
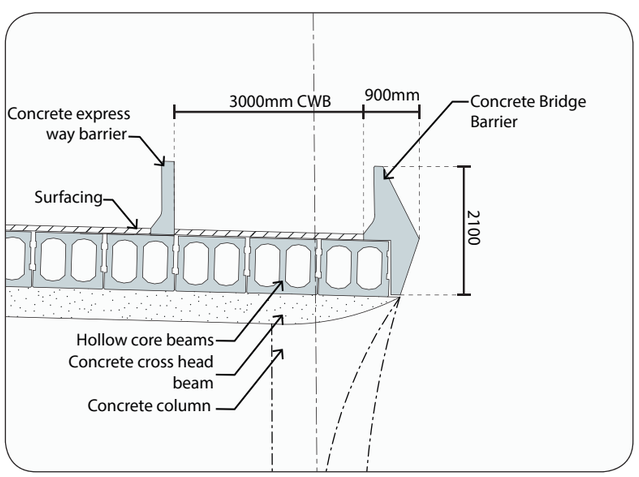
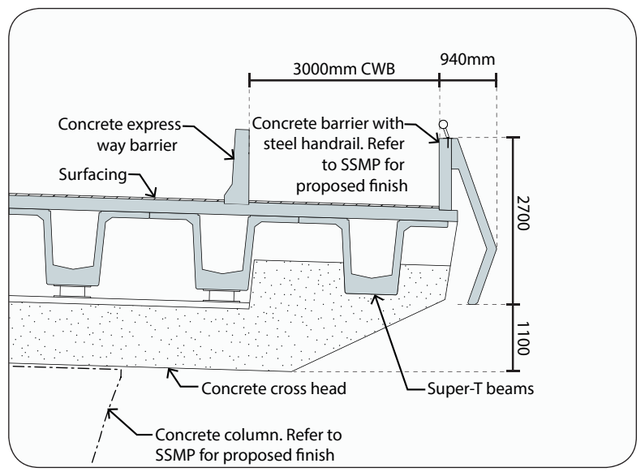
1. Improved visual permeability when considering bridge skew. Total column width when combined is reduced
2. Lack of resolution in AEE. Abutment design developed
3. Simply supported structure requires platform to seat beams
4. Increased structural core based on geotech investigations
5. carried out post AEE, while still providing the sculptural outer. Constructability issues because of seismic requirements. Integral connections difficult to build without increasing structural element sizes further.

AEE Consented to DET Proposed Graphic Comparison

AEE VISUALISATION - RAUMATI ROAD BRIDGE (NORTH SIDE OF RAUMATI LOOKING EAST)

PROPOSED VISUALISATION - RAUMATI ROAD BRIDGE (NORTH SIDE OF RAUMATI LOOKING EAST)

Bridge Development Matrix

Elements	AEE Design	Current Design	Developments	Why?	ULDF Principles
Column Front elevation 1:100@A3			1. Column base width increase, hexagonal column rather than flattened diamond 2. Reduced number of columns 3. Columns moved inboard	1. To provide increased structural core to the column based on geotech investigations carried out post AEE, while still providing the sculptural outer. 2. The total width of columns when combined is reduced for 1 column vs 2 column solution 3. Resolves issues with the bridge skew and the bridge barrier to column interface	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number; 1, 2, 3, 5, 8, 11 and 13
Column Side elevation 1:100@A3			1. Column base width increase, hexagonal column rather than flattened diamond at base of column 2. Column height (reduced approx 300mm)	1. To provide increased structural core to the column based on geotech investigations carried out post AEE, while still providing the sculptural outer. 2. Development of local road levels	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number 1, 2, 3, 5, 8, 11 and 13
Cross Head & barrier junction 1:100@A3			1. Barrier depth increased 2. Addition of handrail 3. Columns moved inboard	1. Change to beam size and type to suit structural requirements of the high skew 2. Safety. Handrail not shown in AEE details 3. Reduced number of columns from two columns per crosshead to one centrally placed column. Resolves issues with the bridge skew and the bridge barrier to column interface.	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number 1, 2, 3, 4, 8 and 13

ULDF PRINCIPLES SUMMARY

ULDF principle	Assessment of ULDF principles
1. Make the bridges generally consistent in their form so they register as a 'family' and provide some visual continuity within the local environment	Proposed Raumati Road bridge is different from the AEE bridge, but the form remains consistent with other proposed bridges. The consistency across the bridges overall has become even more consistent as there is less variation in types from that shown in AEE. Accordingly this helps achieve visual continuity.
2. Express the bridges as simple forms that sit across the changes in landscape and are not seen as strong statement in their own right	Proposed bridge form remains a visually simple structure and sits across the landscape as an horizontal element. The bridge is not seen as making a statement in its own right. The bridge appears 'heavier' in that the piers have doubled in width and the depth of the deck has increased as changes from hollow core to super tee construction. However, it is noted that the number of piers has been halved, albeit that they are larger in width.
3. Unite the bridge elements of pier, cross head, deck and barrier as one sculptural form and ensure services are concealed from view	Proposed bridge form is different than the AEE in that the piers have been repositioned to sit beneath the bridge deck. However, the principle of united piers, cross head, deck and barrier remains upheld, albeit in a new pier configuration. The profile from the crease of the barrier to the sloping cross head end to the shaped pier continues to show the bridge as a united single form.
4. Ensure the form of the bridges from the underside is visually appealing to recognise the primacy of the local roads user's experience in design consideration	The space beneath the bridge will be no less visually appealing than the AEE bridge and maybe perceived as better given there is now proposed to be a reduced number of piers (albeit that those being proposed are larger in size). It is noted also that at the Raumati Road bridge the angle of the local road in relation to the expressway bridge is relatively acute. The angle that the piers are viewed from the local road is important. The piers should be placed parallel to the local road alignment. The AEE 'co-planar' pier (being square to the bridge and barrier) would have revealed (because of the angle of the cross head that follows the local road) an awkward arrangement beneath the bridge between the cross head and the pier. The new proposed design separates the pier from the bridge and barrier and provides a more visually simple arrangement in relation to bridge under-structure.
5. Design the intersection of the piers with the ground in concert with the local road interface design of abutment forms and materials (refer to local road interface design principles)	Proposed bridge piers are located to provide good clearance for local road movements and the abutments continue to be set at a slope that provides for light penetration. The reduced number of piers (albeit that they are larger) increases the openness of the space beneath. The abutments remain as 'spill through' slopes and these will be treated in a consistent way with the other local road abutments.
6. Light the spaces beneath local road over bridges to enhance the quality of the space including the use of natural light penetration where the local road has a higher frequency of pedestrian cycling and other non-vehicular users	There is lighting to be provided under the bridge to recognise the relatively high level of usage by cyclists, walkers and others. This lighting can be used to enhance the architectural forms. The split in the bridge deck, sloping abutment and no piers means there is some natural light penetration to the space beneath the bridge.
7. Use architectural lighting to emphasise the sculptural forms of the bridges and light units that are readily serviceable from the ground	The opportunity remains to light the bridge external barrier and/or pier shapes architecturally. This will be addressed in detail design, Refer to SSMP for bridge lighting.
8. Utilise the opportunity provided by multiple bridges to make a system of parts that can be repeated at each location and improve efficiency of construction	Proposed bridge, as in the AEE, remains of the same systematic approach to allow repetition of parts at other locations and improves the efficiency of construction.
9. Use textured finishes within the bridge elements surfaces' to provide a crafted finish – avoid printed forms	The proposed finish on the Raumati Bridge barriers will be fair faced concrete with a white wash, applied concrete coating to ensure colour and tonal uniformity between panels. The other elements – columns, cross head and deck will be simple, fair faced concrete without the applied white wash coating to help make these elements visually recessive relative to the barrier. Matt graffiti protection to be applied to all bridge elements surfaces. The material for the bridge abutments is to be developed. Refer to the SSMP for further detail on the proposed finishes.
10. Repeat the bridge design concepts within the design of pedestrians bridges recognising that these may be able to utilise lighter weight materials	Not relevant
11. Develop each bridge crossing design considering the piers types best suited to the location	Proposed Raumati Road bridge piers are different than those in AEE design, but as noted above, the new location beneath the bridge is better suited to the specific condition of that road location with its skew relative to the expressway bridge.
12. Locate bridge piers associated with bridge watercourse crossings away from riparian edges to prevent need to armour stream edges	Not relevant.
13. Ensure that the integrity and significance of the bridge forms as important to the amenity of the community is not accorded any less priority than the other design requirements of the project	Proposed bridge form at Raumati Road has considered all the contributing factors of visual amenity, safe CWB crossing, structural design in high seismic zone, and constructability.

RAUMATI ROAD CROSSING - SIMULATION

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Appendix 4: ECOLOGICAL MITIGATION TABLE

Site Specific Management Plan 002 [Sectors 330-340-350]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-002

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B
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M2PP Explanation of Changes to Mitigation Requirements and Availability

These tables compare consented habiatat loss and mitigation requirements, with the locations and quantums resulting from Detailed Design
Table 1 and 1A compare the amount of habitat loss and its location. Table 2 and 2A compare the amount of mitigation to be provided and its location.
Note that habitat loss is measured at 17 discrete sites (AEE). Mitigation is provided for in a 6 broad mitigation areas (SSEMP).
The final rows identify if there is a surplus or shortfall in available mitigation sites necessary to meet the updated calculations.
This worksheet will be updated as each SSEMP is developed and will guide design of subseqent SSEMPs to ensure mitigation requirements are met.

Source - AEE and EMP Calculations				
Table 1: Habitat Loss by Site / Stream	Indigenous **Wetland** Habitat (ha)	Indigenous **Terrestrial** Habitat (ha)	Stream Habitat **Freshwater** (linear m)	
Raumati Manuka Wetland	0.03			
Southern Otaihanga Wetland	0.55			
Northern Otaihanga Wetland	0.53			
El Rancho Wetland	0.38			
Unnamed Sites 1 - 7	0.01	1.80		
Tuku Rakau Forest	0.30	0.25		
Ngarara Mahoe		0.86		
Otaihanga Kanuka Forest		0.17		
Mahoe Vegetation Along Drain 7		0.35		
Raumati Road Kanuka		0.35		
Waikanae River Riparian (planted)		0.13		
Kakariki Stream Riparian (planted)		0.18		
Culverts (inc armouring)			1,119	
Diversions			1,525	
Bridges (armouring)			327	
Loss Allowed by Consent (G.42)	**1.8**	**4.09**	**2,971**	

As progressively updated by Detailed Design					
Table 1A: Habitat Loss by Site / Stream	Indigenous **Wetland** Habitat (ha)	Indigenous **Terrestrial** Habitat (ha)	Stream Habitat **Freshwater** (linear m)		**Reference**
Raumati Manuka Wetland	0.02				Updated by Detailed Design
Southern Otaihanga Wetland	0.86				Updated by Detailed Design
Northern Otaihanga Wetland	0.41				Updated by Detailed Design
El Rancho Wetland	0.34				Updated by Enabling Works
Scattered cabbage trees	0.01	1.80			AEE Calc
Tuku Rakau Forest	0.06	0.47			Updated by Enabling Works
Ngarara Mahoe		0.92			Updated by Enabling Works
Otaihanga Kanuka Forest		0.06			Updated by Detailed Design
Mahoe Vegetation Along Drain 7		0.62			Updated by Detailed Design
Raumati Road Kanuka		0.54			Updated by Detailed Design
Waikanae River Riparian		0.22			Updated by Detailed Design
Kakariki Stream Riparian		0.64			Updated by Enabling Works
Permanent Culverts (inc armouring)			1,119		AEE Calc
Diversions			1,525		AEE Calc
Bridges (armouring)			327		AEE Calc
Revised Total Loss	**1.70**	**5.27**	**2,971**		
Difference consented and actual	**-0.10**	**1.18**	**0.00**		

Table 2: Ecological Mitigation Requirements	Indigenous **Wetland** Habitat (ha)	Indigenous **Terrestrial** Habitat (ha)	Stream Habitat **Freshwater** (linear m)	Stream Habitat **Riparian** (ha)	
Total Mitigation Required	**5.4**	**7.6**	**5,240**	**17.7**	
+ Flood storage areas 2A & 3	**4.1**	**0**	**1,400**	**5.9**	
Combined Total (G.42)	**9.5**	**7.6**	**6,640**	**23.6**	
Raumati Manuka	2.07	1.15	330	1.14	
Otaihanga Wetlands	1.14	4.34	440	1.77	
Muaupoko	0	0	75	0.46	
Kakariki / Smithfield	2.33	4.32	2,350	8.8	
Hadfield / Paetawa	0	1.65	1,375	5.25	
Drain 7	3.92	0	1,560	6.32	
Total Available Mitigation Area/Length	**9.46**	**11.46**	**6,130**	**23.74**	
Surplus / Shortfall	**-0.04**	**3.86**	**-510**	**0.14**	
Situation	Shortfall	Surplus	Shortfall	Surplus	

Table 2A: Ecological Mitigation Areas	Indigenous **Wetland** Habitat (ha)	Indigenous **Terrestrial** Habitat (ha)	Stream Habitat **Freshwater** (linear m)	Stream Habitat **Riparian** (ha)	
Revised Mitigation Requirements	**5.1**	**9.1**	**5,240**	**17.7**	**Recalculated**
+ Flood storage areas 2A & 3	**4.1**	**0**	**1,400**	**5.9**	
Combined Total (G.42)	**9.2**	**9.1**	**6,640**	**23.6**	**Updated total**
Raumati Manuka	2.43	1.15	317	1.2	Updated by Detailed Design
Otaihanga Wetlands	1.81	3.57	438	1.55	Updated by Detailed Design
Muaupoko	0	0	72	0.22	Updated by Detailed Design
Kakariki / Smithfield	2.33	4.32	2,350	8.8	EMP calc
Hadfield / Paetawa	0	1.65	1,375	5.25	EMP calc
Drain 7	5.48	0	1712	5.36	Updated by Detailed Design
Total Available Mitigation Area/Length	**12.05**	**10.69**	**6264.20**	**22.38**	
Surplus / Shortfall	**2.85**	**1.56**	**-375.8**	**-1.22**	
Revised Situation	Surplus	Surplus	Shortfall	Shortfall	

Appendix 5: LANDSCAPE SPECIFICATION

Site Specific Management Plan 002 [Sectors 330-340-350]
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SEE SEPARATE A4 BOUND DOCUMENT.

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