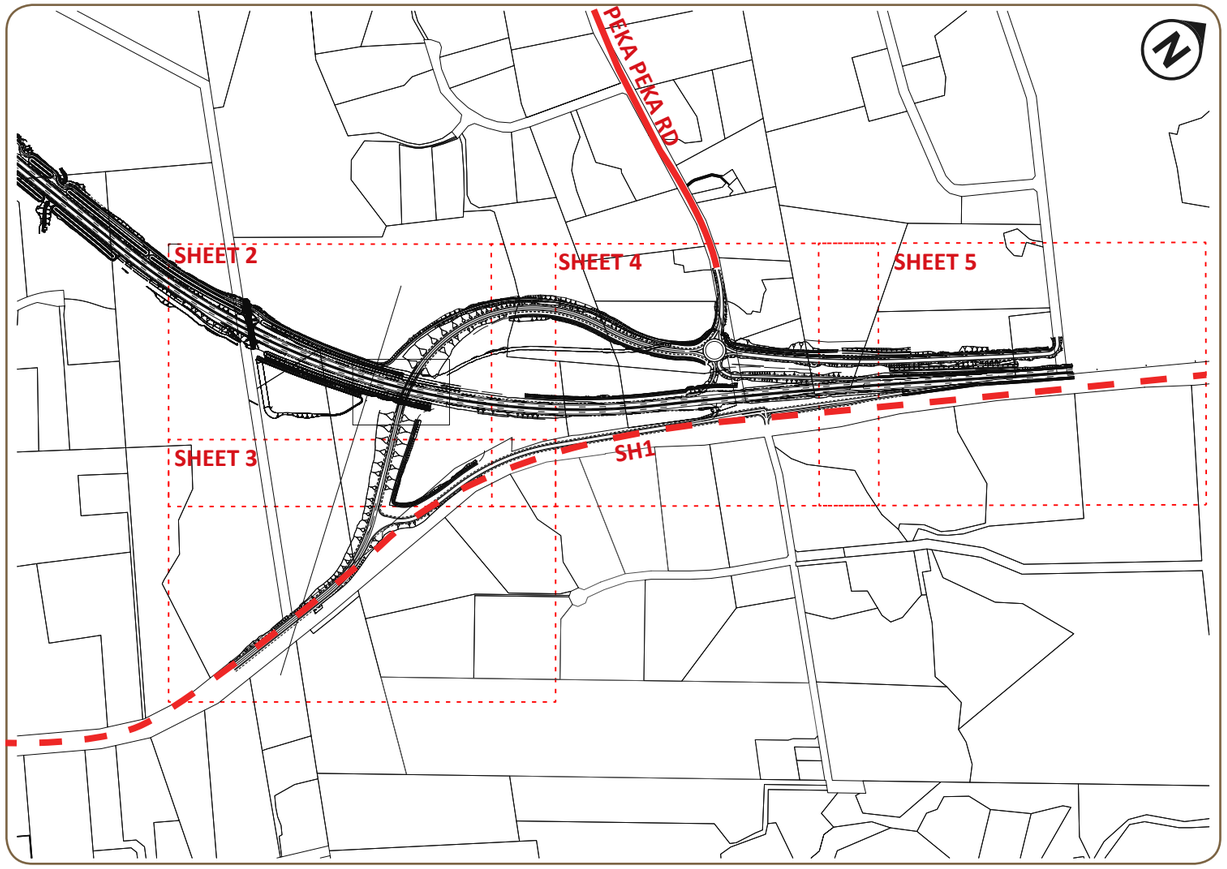
M2PP-121-D-PLNM-0011

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway

23 NOVEMBER 2015 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor



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SITE SPECIFIC MANAGEMENT PLAN
PEKAPEKA [SSMP 11 – SECTORS 560,570]

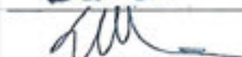
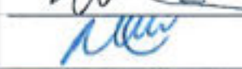
For the purposes of the SSMP certification it is assumed that the consent conditions for the MacKays to Peka Peka Expressway, as determined by the Board of Inquiry under Section 149R of the Resource Management Act (1991) will be read in conjunction.

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

1. REVISION HISTORY

REVISION No	DATE	STATUS	ISSUED TO
Rev A	25.09.2015	Draft for review	- KCDC , GWRC , Te Āti Awa ki Whakarongotai; - Ngā Hapū o Ōtaki (representing Ngati Raukawa)
Rev B	05.11.2015	Issue for Certification	- KCDC, GWRC
Rev C	23.11.2015	Certified Issue	- KCDC , GWRC , Te Āti Awa ki Whakarongotai; - Ngā Hapū o Ōtaki (representing Ngati Raukawa)

2. SSMP CERTIFICATION DETAILS

		Signature	Date
A. PREPARED BY M2PP ALLIANCE:	Bron Faulkner (Landscape Architect)		05.11.2015
	Dr Vaughan Keesing (Ecologist)		05.11.2015
B. M2PP ALLIANCE APPROVAL	Stuart Waters (Sector Manager)		05/11/2015
	Doug Stirrat (Design Manager)		5/11/15
	Dean Herrman (Technical Director)		5.11.15
	Malory Osmond (Consents Manager)		5/11/15
C. CERTIFICATION	Consents and Compliance Manager [Reviewed by Julia Williams- Landscape, Deyana Popova -Urban Design, John Perkins- Traffic engineer]		23/11/15 .
	Al Cross (GWRC) [Reviewed by Adam Forbes, Ecology, GWRC]		17/11/15

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). Additional consent conditions resulting from the current Notice of Requirement and regional consent applications for the realignment of the Peka Peka Link Road and bridge, the extension to the designation and change to stormwater design are also addressed in this 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 generally referred to as the Peka Peka partial Interchange; it covers the Expressway from immediately north of the Paetawa Drain in the south, the roundabout at Peka Peka Road, through to the northern end of the Expressway, including the new link roads. The designation in this part of includes all of the area between SH1 and the western edge of the Peka Peka Link Road. It includes the link road overbridge that crosses the Expressway and a section of road between the Peka Peka Link Road and Hadfield Road referred to as the Hadfield Link Road. The restoration of the network of drains and waterways that traverse this area are covered in this SSMP as is the substantial areas of riparian planting; this planting is a significant ecological mitigation measure. There are also substantial areas of revegetation and amenity planting comprising massed native planting with tree enrichment, exotic amenity and shelter tree species.

The Design includes the following main components:

- A 975m long link road from SH1 to Peka Peka Road.
- A prioritized T-intersection at SH1/ Hadfield Link Road.
- Expressway constructed on low, approximately 2.0m high embankment
- Earthworks footprint covering approximately 21.6ha.
- Single span, 26.6m long bridge crossing over the Expressway. Space for footpaths provided on both the northern and southern sides (formed footpath on north side only.
- Roundabout at junction of Peka Peka Road and Peka Peka Link Road.
- 687m long link road between Peka Peka Road and Te Kowhai Road.
- A link Road between SH1 and Hadfield Road (Hadfield Link Road).
- CWB located on the western side of the Expressway at the southern end of SSMP 11 and then aligned along the western side of the Peka Peka Link Road terminates at Te Kowhai Road.
- Footpaths provided on both the Peka Peka Link Road and the Hadfield Link Road (one side of road only).
- Approximately 16ha of ecological and visual amenity/screening mitigation planting.
- Areas of significant existing vegetation, primarily shelterbelts and amenity trees, being retained.
- Approximately 1,052m of stream channel retained untouched.
- Offset Flood Storage areas 13A and 13B.

F. SSMP EXISTING AREA DESCRIPTION

REFER APPENDIX 1 SHEETS 1- 5

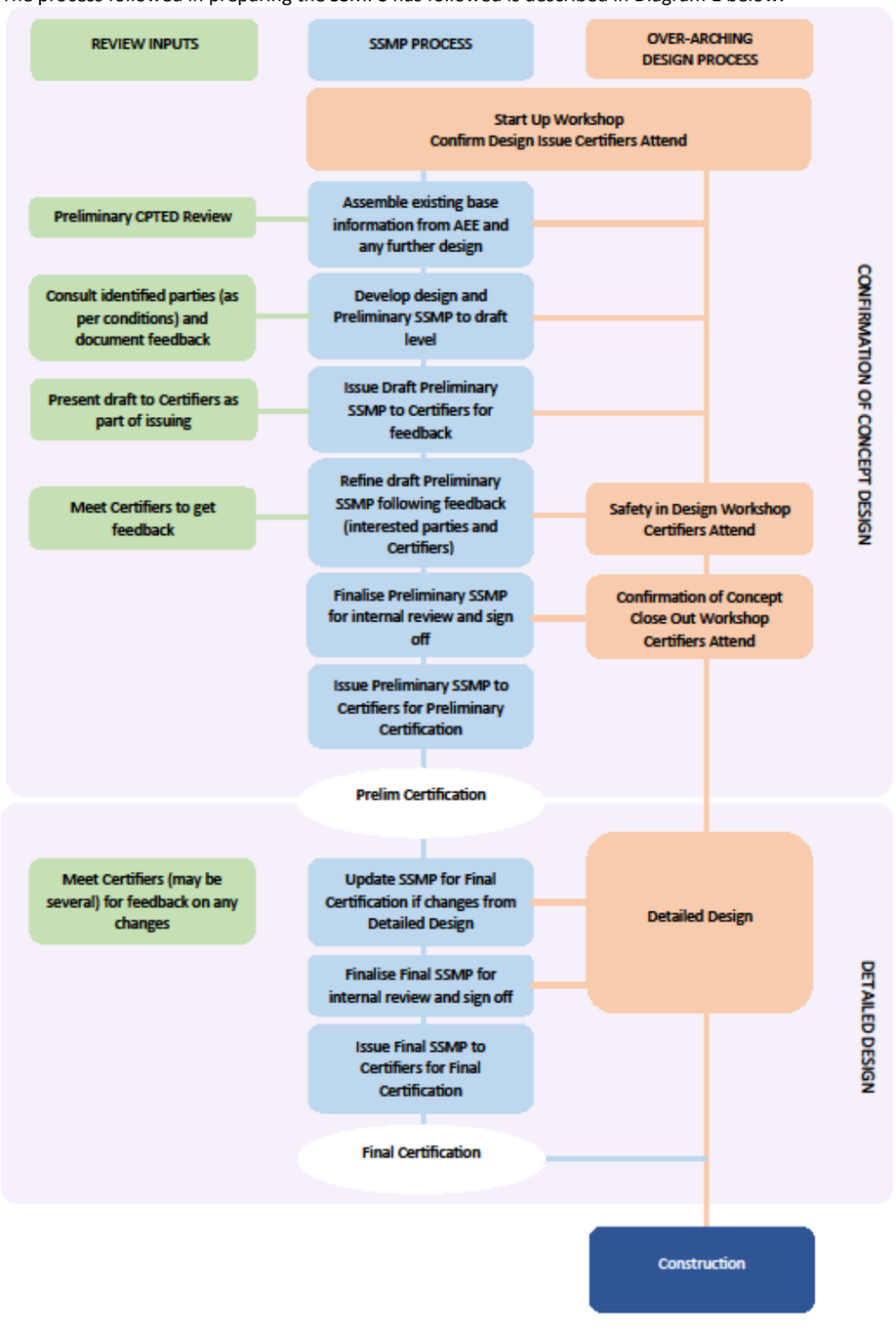
- Area located on the eastern edge of the Kapiti Sand Plain adjacent to the foothills of the Tararua Range. It includes the area in around the junctions of Peka Peka Road, Hadfield Road, and SH1 and the North Island main Trunk railway line (NIMT).
- Areas of low sand dunes to the south and west, elsewhere levelled paddocks delineated by shelterbelts.
- The Tararua foothills are a dominant feature and provide significant physical and visual enclosure to the east.

	• The SH1/NIMT transport corridor is also a significant element in this character area. • Working rural landscape, grazed with a mix of mostly small land holdings (lifestyle blocks) and larger rural blocks. • Lifestyle blocks concentrated on Peka Peka Road, Kensington Drive on the sand plain, and along Hadfield and Octavius Roads on the foothills. • Dwellings on dune crests and on the lower slopes of the foothills. • Harrisons Garden Centre, including a café, is located on Peka Peka Road. • Low lying and damp area with large areas of peat. • Majority of the area is located within the Paetawa Stream catchment and three unnamed tributaries of the Paetawa Drain are channelised drains. A small part of the site connects to the Hadfield Drain catchment. • Substantial areas of well-established, mature exotic trees – shelterbelts, woodlots amenity planting, creating a strong vegetation framework and visual subdivision.

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 G41c i) - ii). There no areas of terrestrial and wetland habitat in SSMP 11 that are specifically identified in the conditions. • Condition G41e) requires, where practicable, the avoidance of areas of fernbird habitat; there are no such areas within the SSMP 11 area. • 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 SSMP 11, the locations include: xiii) Peka Peka Interchange. • 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 dimensions 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 Bridle (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, SSMP11 shall consider the following in relation to Condition 59A i) xii) *Peka Peka Interchange* - *2. Legibility of the cycle and walking network and start of the Expressway CWB.* - *3. Signage locations to recognize the likely scale and number of signs necessary to identify and regulate movement around the intersection.* **Network Integration Plan** Condition DC.64 a) in relation to the CWB; Condition DC.64 b) ii) in relation to lighting.
NOTICE OF REQUIREMENT FOR THE ALTERATION OF AN EXISTING DESIGNATION: PEKA PEKA LINK ROAD (RM150126)	• The alteration to the designation (RM150126) confirmed design changes within this SSMP area, including changes to the designation boundary, design and alignment of the Peka Peka Link Road, bridge and CWB, and stormwater features. • As a result of the design changes additional areas of vegetation are identified to be retained, largely within the area between the Expressway and Peka Peka Link Road. During consultation with local residents, an existing Poplar Shelterbelt to the west of the Expressway was identified to be retained with the poplar trees located on Crown land to be protected by way of covenant. This covenant area is shown on drawing M2PP-121-D-DWG-8302. In addition two rows of evergreen trees (identified on 8302) are to be planted within the designation to provide additional screening for these residents. • This alteration resulted in a change to the SSMP designation conditions (DC.57 and DC.59A) to include consultation with Ngati Raukawa, as noted in the conditions summary above.
DRAFT CONDITIONS (NOVEMBER 2015)	**Draft consent conditions for WGN160025 [33613][33614]** Conditions 6,7& 8 are relevant to this SSMP **Ecological Mitigation Riparian Planting** 6. The Consent Holder shall undertake a combined total of at least 1,535 lineal metres of ecological mitigation riparian planting along existing waterways (approximately 702m), sections of constructed diversion channel (approximately 663m) and via constructed stream formed to drain low-lying land adjacent to the alignment (approximately 170m) (unless otherwise agreed with the Manager, Environmental Regulation, Wellington Regional Council). Note: The mitigation requirements in this condition are not additional to the mitigation requirements of MacKays to Peka Peka Expressway Board of Inquiry Condition G.42 (as referenced in Condition 15 of this consent). 7. In order to achieve the total ecological mitigation identified in Condition 6, the Consent Holder shall provide ecological mitigation riparian planting in general accordance with the 'Peka Peka Interchange Planting Plan' and certified Site Specific Ecological Management Plan (SSEMP) (unless otherwise agreed with the Manager, Environmental Regulation, Wellington Regional Council). 8. The ecological mitigation required in Condition 6, shall comprise, as far as practicable, mitigation that reflects the appropriate indigenous species and habitat types and ecological functioning for the location.
3 CONSULTATION	• Condition DC.57A a) requires consultation with residents in identified Landscape Focus Areas. There are no Landscape focus areas identified in SSMP 11 • SSLMP, SSEMP and SSUDP (under Conditions DC.57 e), G42C d) and DC.59A j)) requires consultation with the following parties: - Te Āti Awa ki Whakarongotai; - Kapiti Coast District Council (KCDC); and - Greater Wellington Regional Council (GWRC). - Ngā Hapū o Ōtaki (representing Ngati Raukawa). (Requirement of confirmed amendments to DC 57, DC.59A j) & draft G 42C - pending Resource Consent WGN160025 approval) • The SSUDP condition (DC.59A j) viii) requires consultation with the following parties: viii) 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 TO APPENDIX SHEETS 14-17.	DC.59 f) i) Lighting for the benefit of pedestrians and cyclists DC.64 a), b), ii)	Lighting is proposed along the Expressway only at the northern end where the Expressway merges with existing SH1. Road lighting is also proposed at both the southern end of the Peka Peka Link Road with SH1 and at the roundabout at Peka Peka Road. Road lighting is also proposed along the Hadfield Link Road. No lighting is proposed along the CWB. The road lighting will provide sufficient lighting at CWB/road intersections.
B. CWB REFER TO APPENDIX 1 SHEETS 2-13 & 19-20, APPENDIX 3; 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	At the southern end of SSMP the CWB runs parallel to Expressway on the west side; it then runs along the western side of the Peka Peka Link Road until the roundabout. After crossing Peka Peka Road, the CWB runs parallel to the Te Kowhai Link Road; the CWB terminates at Te Kowhai Road. The CWB comprises a formed 3.0 m wide compacted gravel 'Kapiti Blue' path and where practicable a grass verge of up to 1.0m wide for horse riders. Footpaths are provided on the Peka Peka Link Road bridge; the northern footpath will comprise 3.9/3.0m concrete footpath with kerb and the southern footpath 2.6/2.0m concrete footpath with kerb. There is also a footpath on the Peka Peka Link Road; the northern footpath will comprise 3.0/2.0m 'Kapiti Blue' path with a kerb and on the southern side a 2.0m wide grassed verge. There is a 'Kapiti Blue' footpath on the southern side of the Hadfield Link Road. The CWB is also designed to provide access for maintenance vehicles, although this use will be infrequent. The comments raised in the CPTED review of the Preliminary issue of this SSMP identified key design considerations 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. An SSMP 11 Specific CPTED review (July 2015) concluded that the design is low risk from a CPTED perspective. The review noted two points; 1. Ensure that clear sightlines are maintained in the long term on the curved section of CWB, at the foot of the Peka Peka Link Road overbridge embankment. The 3.0m wide strip of low planting adjacent to the CWB will ensure that vegetation on the inside of the curve adjacent to the CWB will not be taller than 1.0m, enabling more than 100m clear view of the path ahead. 2. CWB culvert crossings; while the safety risk to CWB users is low it is prudent to minimize the potential of people to lurk in the culverts unseen by CWB users. The culvert headwalls are approximately 8.0m from the edge of the CWB, this distance would make it difficult for anyone to spring out of hiding in the culvert to the CWB before they would be noticed. In addition the low planting (3.0m wide strip at 1.0m maximum height) also helps to make the element of surprise more difficult.
C. RETAINING WALLS AND NOISE MITIGATION STRUCTURES	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 no separate noise mitigation structures required in SSMP 11. However, there are concrete barriers on the Peka Peka Link Road bridge which provide noise mitigation.

D. LOCAL PROPERTY ACCESS REFER TO APPENDIX 1 SHEETS 4-5	DC.59A f) v) Local property access to provide for existing and future needs	Provision is being made for access to three local properties – at 20 Peka Peka Road, 23 Peka Peka Road (Harrisons Garden Centre) and to No. 401 State Highway, where access will be provided off the Te Kowhai Link Road.
E. BRIDGE ABUTMENTS REFER TO APPENDIX 1 SHEETS 2, 6, 9, 10 & 11 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 Peka Peka Link Road bridge in this sector is a single span (no columns), single deck bridge. It has vertical abutments clad with precast concrete panels with an exposed aggregate finish and bridge concrete barriers. The bridge is 26.6m long and 19.8m wide and at a minimum of 6.3m above the Expressway. The CWB does not pass under this bridge.

5. LANDSCAPE + ECOLOGY	CONDITIONS – LANDSCAPE + ECOLOGY	RESPONSES – LANDSCAPE + ECOLOGY
A. DUNES AND DRYLAND VEGETATION REFER TO APPENDIX 1 SHEETS 2- 5 AND APPENDIX 4	There are no areas of identified valued indigenous vegetation within SSMP 11. Condition DC.57 f) specifies exotic trees to be retained. Re-shaping of dune landforms disturbed by construction of the Expressway.	The area of land covered by SSMP 11 is entirely in pasture with shelterbelts of exotic trees and blackberry weedlands. No valued indigenous terrestrial vegetation or wetlands are located within this part of the alignment. Trees and other vegetation to be retained are identified on the 'Vegetation to be Retained' plans, [SHEETS M2PP-56R-D-DWG-8701 – 8705 & M2PP-57R-D-DWG-8701 – 8705] have been certified by KCDC for the purpose of enabling works. A full set of plans updated based on the altered Peka Peka Link Road alignment are included in appendix 1 for recertification. 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 and 12, DWGS M2PP-56R-D-DWG-8201-8207 & 8211, APPENDIX 4 & 5.	Condition G.42 b) requires specific lengths of stream mitigation.	The EMP identifies Paetawa and Hadfield Drain/Kowhai Streams from Chainage 16000 to 17350 as a focus area for ecological mitigation. The waterways south of Peka Peka Road are small tributaries of the Paetawa Drain that extend to the southern boundary of SSMP 11. The waterway to the north of Peka Peka Road is known as Hadfield-Kowhai Stream. All of the waterways within this SSEMP have been historically channelized through large areas of peats and consolidated sands. The existing waterways have a rhomboid cross section which is the result of ongoing excavation. The waterways have a pebbled sandy substrate in some locations (close to the eastern hills) and elsewhere have silty sediment deposits (where they overly peats and sands). The average channel width is 1.0 m (varying from 0.5m to 1.5m). The depth varies widely with season but is generally between 100 and 400mm but can be shallower during summer droughts and overtop banks flooding neighboring pasture during winter floods. All these waterways have been in open dairy farms for many decades and the effluent and a lack of riparian shading have influenced macrophyte build-up. This buildup is routinely removed by excavator to prevent blockage of flow. All of these waterways currently maintain a perennial or intermittent flow, receiving persistent small flows from the forested hills to the east of SH1. As a result of changes during detailed design approximately 1052m of stream channel will be retained untouched. <u>This is an increase to what was consented at the BoI (i.e. 745m).</u> *Streams* There will be 663m of stream reclamation. <u>This is a decrease to what was originally consented (i.e. 970m).</u> *Stream Diversions* Three stream diversions are proposed, totaling 458m, made up as follows: • 240m reclamation, which is diverted eastwards • 148m, reclamation diverted along the road embankment • 70m reclamation diverted to an adjacent waterway. <u>This is a decrease to what was consented (i.e. 840m).</u>

		Culverts There will be a total of 12 existing or new culverts within the SSEMP area as follows: Twelve culverts, either existing or new, will be located within SSMP 11 area. Of these: • 2 new culverts in existing channels (C38.5, & C50.1) • 2 large extensions of existing SH1 culverts (C.38.1, C40.1). • 4 are existing culverts beneath current SH1 alignment which will either be unaffected (C38.2, C38.4, C39) or will be shortened (C39.1 by 12m). • 2 will be a flow balancing culverts and will be formed in the dry (C40.4 and C38.6). C40.4 drains a small area of intermittently flooded land to the north of Peka Peka Road. C38.6 is being installed to supplement the capacity of C38.1. • 2 will be formed in the dry within new diversion channels (C38, C38.3). The total length of culverts in existing waterways will be 205m, which is a 75m increase to what was consented. There will be 24 linear m of armoring above and below culverts, nearly half the length consented (45m). Only the 2 new culverts and the extensions of C38.1 and C40.1 in existing or perennial or intermittent channels require consideration with regard to mitigation. All culverts will require consideration during installation to ensure they are fish friendly. <u>This an increase to what was consented.</u> *Mitigation* There will be 1,535 linear m of stream restoration necessary to mitigate the 663 m of reclamation. The reduced length of reclamation means that riparian mitigation has reduced by 103m from the consented design (1,375m). Riparian mitigation will be made up of the following: • 702m of restoration of existing waterways; • 663m of constructed and revegetated diversion channel; • 170m of constructed and revegetated waterways formed to drain low-lying land adjacent to the alignment. <u>This is a decrease to what was consented.</u>
	Draft consent conditions for WGN160025 [33613][33614] 6. undertake a combined total of at least 1,535 lineal metres of ecological mitigation riparian planting along existing waterways (approximately 702m), sections of constructed diversion channel (approximately 663m) and via constructed stream formed to drain low-lying land adjacent to the alignment (approximately 170m) 7. provide ecological mitigation riparian planting in general accordance with the 'Peka Peka Interchange Planting Plan' and certified Site Specific Ecological Management Plan (SSEMP) 8. The ecological mitigation required in Condition 6, shall comprise, as far as practicable, mitigation that reflects the appropriate indigenous species and habitat types and ecological functioning for the location.	Refer above <u>Refer above</u> <u>Confirmed- the Species mix is appropriate- Refer plant schedule</u> M2PP-56R-D-DWG-8211

C. WETLANDS REFER TO APPENDIX 1 SHEETS 2-5 AND APPENDIX 5	Condition G.42 b) requires specific areas of wetland mitigation.	There are no wetlands within SSMP 11.
D. SALVAGE	Conditions G.34 m) and G.41 c) i) 1 set out the salvage requirements for vegetation in SSMP 11.	Larger woody debris from peat excavation associated with formation of the flood storage area and associated 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-56R-D-DWG-8701-8705, M2PP-57R-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 7.1.8. Identification of vegetation to be retained, including retention of as many significant trees as practicable (see DWGS M2PP-56R-D-DWG-8701-8705, which were certified by KCDC as 'Vegetation to be Retained' for enabling works in January and February 2014. M2PP-57R-D-DWG-8701-8705 were certified by KCDC in September 2014.)	No indigenous vegetation is present within this SSEMP Area. Areas of the exotic vegetation have already been removed as part of enabling works in this area, consistent with the Vegetation to be Retained Plans certified by KCDC. Vegetation to be retained comprises several lengths of shelterbelts and groups of amenity trees; retention of this vegetation is key to the visual mitigation in relation to properties in Kensington Drive, Peka Peka Road, Hadfield Road and Ocatvius Road. For the reason noted above some of the trees identified within the areas of Vegetation to be Retained may be old and straggly and/or damaged but is important that no trees or other vegetation within the areas identified are removed. Remedial work such as thinning to remove unthrifty trees or pruning to remove dead, damaged or diseased branches may be required to some trees but the Project Landscape Architect will issue specific instructions for this work, which will be carried out by the landscape contractors. Vegetation clearance boundaries shall be delineated by marker tape pegs or by marking perimeter trees and checked by the Project Landscape Architect. Temporary fences around these areas shall be subsequently erected prior to earthworks machinery being mobilised on site and construction commencing. Exposed vulnerable edges of Vegetation to be Retained following clearing of adjoining vegetation will be identified by the Project Landscape Architect and temporary protection measures installed. 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'. 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 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 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.
G. INDIGENOUS FAUNA REFER TO APPENDIX 1, SHEETS 15,16	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 are no other requirements for rare or threatened fauna within this SSMP.	Within SSMP 11 all new culverts or extensions of existing culverts that lie in perennial or intermittent streams will require consideration of fish passage/fish rescue. These are as follows: • New culverts C38.5, & C50.1 • Extensions of existing culverts C.38.1, C40.1. • Shortening of existing culvert C39.1. The project ecologist and Constructors will meet prior to commencement of culvert installation and agree the methodology and staging of temporary diversions, culvert installation, livening and fish rescue.

		Prior to livening of temporary stream diversions and associated temporary culverts, and the livening of the permanent 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.
H. LANDFORMS REFER TO APPENDIX 1 SHEETS 2 – 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.	The Expressway within SSMP 11 traverses essentially flat low-lying land; the Expressway will be constructed on a 2.75m high embankment. The Peka Peka Link Road will also be constructed on embankments that will be formed to take the local road from existing SH1 and over the Expressway. The embankments will be planted. There are large areas of peat throughout this area. There are areas of low dunes which are outside the designation located to the south and also to the west along Kensington Drive. The Peka Peka Link Road is constructed on raised embankments in order for it to cross over the Expressway. The embankments formed for both the Expressway and for the Peka Peka Link Road will create new landform in what is an otherwise flat landscape. The lower edges of the embankments will be 'feathered' into the existing ground and this, together will massed planting will help to integrate them into the surrounding landscape. 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. Where seasonal conditions prevail, exposed sand areas will be hydroseeded once the embankments have been formed and shaped 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, AND APPENDIX 5	Condition G. 41 c) ii) 4 - ecological mitigation wetlands to mitigate permanent loss of wetlands.	There are no wetlands being created or restored in SSMP 11.
J. STREAM CREATION AND RESTORATION REFER TO APPENDIX 1 SHEETS 2-5 AND APPENDIX 5	Condition G.42 and G.42C - creation of large areas of new stream	Within SSMP 11 1,272 linear m of stream restoration will be carried out.. Mitigation will be made up of the following: • 702m of restoration of existing waterways; • 663m of constructed and planted diversion channel; • 170m of constructed and planted waterways formed to drain low-lying land adjacent to the alignment. Constructed channels will be formed with the following dimensions: • The new stream channels shall maintain permanent water • They shall be 1 to 1.5m wide (average), 0.3 to 0.5m deep (average). • The waterway will have a central channel, short banks at 1:1.5 rising to a benched flood plain of varying width, which then rises at 1:3 to the upper banks. • The floodberm / bench will be sized to maintain flood conveyance. • New channel form will generally mimic the linear nature of existing channels but with some gentle meanders where appropriate. New waterways will be have associated riparian planting: • The riparian vegetation shall be established on both the floodberm / bench immediately adjacent to the stream bank, and on the surrounding pasture out to a width of approximately 20m either side of the channel.

		• Plant selection will ensure species chosen can tolerate periods of inundation hat will be experienced from time to time in these flood storage sites. The current SEV score (Stream Ecological Value) of the Paetawa Stream is 0.49 and for the Hadfield/Kowhai is 0.4. The SEV target for the new stream channels to be created in the Paetawa and the Hadfield/Kowhai is 0.65. 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.
K. CULVERT INSTALLATION REFER TO APPENDIX 1 SHEETS 2-5	All of the permanent culverts require fish passage and associated fish rescue. There are 5 existing culverts beneath current SH1 alignment, which will be unaffected. Several flow balancing culverts are also required in this SSMP area. These also have fish passage requirements.	The design of both permanent and temporary culverts that are required to provide fish passage must include the following: • Culverts shall not constrict the normal base 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. Fish Capture: • 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 installation within this ecological mitigation area 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 &12, DWGS M2PP-56R-D-DWG-8201-8207 and M2PP-56R-D-DWG-8211 AND APPENDIX 5	Conditions G.42 and DC.57 f) - Landscape and ecological mitigation requirements –	The overall area of mitigation planting proposed in this sector has substantially increased since the BoI; from 12.8ha to 15.97 ha. Of this total amount 5.13 ha will be riparian mitigation planting and 4.89 ha will be terrestrial mitigation planting. Remaining planting is to meet stormwater treatment and landscape mitigation requirements. Plant selection for any plants used within the Flood Detention areas will ensure species can tolerate periodic inundation. There are four planting types within this SSMP required for landscape and visual and ecological mitigation as follows: ***Massed planting:*** comprises a range of fast-growing local native species. Plant grades will be a mix of 0.5 and 1.0 litre grades planted at 1.0m centres. ***Massed planting with enrichment:*** comprises a significant proportion of the planting in SSMP 11. Enrichment planting will occur in the following planting season after massed planting of local native species; enrichment species plant grades shall be PB 18 or equivalent.

Riparian mix: Planting around existing waterways and drains that are being retained and new lengths of waterway shall include *Coprosma areolata*, *Coprosma tenuicaulis,* manuka, kahikatea and pukatea. Plant grades will be a mix of 0.5 and 1.0 litre (or equivalent).

Swales: will be planted exclusively in oioi (*Apodasmia similis*).

Shelterbelts: During consultation with neighbours to the west of the site it was agreed that shelterbelts would be established to add additional visual mitigation of the expressway and link roads- refer SHEET 12. The new shelterbelt planting will reinforce the areas of existing shelterbelts that are being retained. Fast-growing, evergreen exotic species, Tasmanian Blackwood (*Acacia melanoxylon)* and poplar are proposed for this shelterbelt planting. The blackwoods will be 1.0 litre grade and planted at 5.0m spacings with 5.0m between offset rows.

Grass: is proposed in several areas between existing vegetation to be retained and areas of new planting between existing SH1 and the expressway and between the expressway and the eastern edge of the Peka Peka Access Road The grass will be a low grow mix as has been used elsewhere along the expressway.

Cultural Mitigation Planting
As a result of consultation with iwi four additional areas of planting are planned Refer to SHEETS 2-6. In addition two areas of enrichment planting will comprise plant species selected by Iwi that have medicinal, weaving and dying values. Refer SHEET 2 and planting plans

ADDITIONAL PLANTING FOR CULTURAL PURPOSES trees interplanted through massed planting	
Austroderia fulvida	syn Cortaderia, toetoe
Austroderia toetoe	syn Cortaderia, toetoe
Beilschmiedia tawa	Tawa
Fuchsia excorticata	Kotukutuku, Tree fuchsia
Knightia excelsa	Rewarewa
Metrosideros robusta	Rata
Pomaderris apetalus subsp maritima	Tainui
Pomaderris kumeraho	Kumarahou
Prumnopitys ferruginea	Miro
Rhopalostylis sapida	Nikau
Sophora microphylla	Kowhai
Syzygium maire	Maire, tawake, Swamp maire

Some of the plant mixes proposed have changed to those that were consented; the extent of mitigation planting and the mix of species is greater.

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 With the exception of 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, 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. Where existing roads are decommissioned the road formation will be removed and subsoil loosened before backfilling with approved soil mix.
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. 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.	Where required 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, 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	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 Area 11 to confirm hydrological success shall be undertaken, with follow up SEV process to confirm SEV score (condition) as specified in the EMP (Condition G42C c) ii) The SEV target for the new stream channels to be created in the Paetawa and the Hadfield/Kowhai is 0.65. SEV measurements for restored or constructed waterways will be carried out 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.

	the Project Landscape Architect and a report prepared on the parameters above.	• 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 Area 11), 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.
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-0011

Appendix 1: DRAWING SET

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway

23 NOVEMBER 2015 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) 1:25,000	Design		22/01/15	Approved For Construction*
	Drawn		22/01/15	
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 11 [560-570] - SHEET 1 LOCATION PLAN

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

Rev. C

Document No.

Drawing Plotted: 24 Nov 2015 12:31 PM

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
- Kapiti Blue Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

SIGNAGE FOR CULTURAL PLANTING INTERPRETATION

DOUBLE ROW OF TALL EVERGREEN TREES

MAINTENANCE ACCESS

CS4 8502

REFER TO PLANTING PLANS FOR CULTURAL PLANTING DETAIL

ADDITIONAL PLANTING FOR CULTURAL MITIGATION

CULVERT 38.3 (67M)

DESIGNATION BOUNDARY

DOUBLE ROW OF TALL EVERGREEN TREES

ENRICHMENT PLANTING ALONG EMBANKMENT AND ADJACENT TO THE CWB TO INCLUDE SPECIES SELECTED FOR THEIR CULTURAL VALUE

SECTOR 560

SECTOR 550 - SSMP 10

SIGNAGE FOR CULTURAL PLANTING INTERPRETATION

CULVERT 51 (70M)

NORTH BOUND

SOUTH BOUND

CS3 8502

REF: 8301

CULVERT 38 (45M)

M2PP PROPOSED ALIGNMENT

PAETAWA DRAIN

CS1 8501

FOOTPATH AND RAISED KERB ON THE NORTH SIDE OF PEKA PEKA LINK ROAD. FOOTPATH WIDTH VARIES. 2M WIDE OFF THE BRIDGE TAPERS TO 3M WIDE ON THE BRIDGE.

PEKA PEKA LINK ROAD

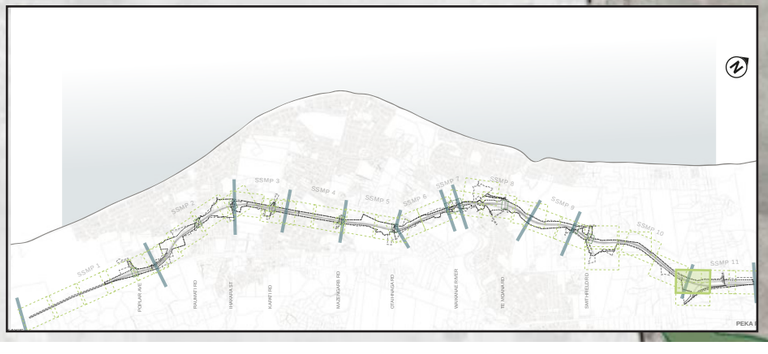
2M MIN GRASSED VERGE TO SOUTH SIDE OF PEKA PEKA

CS2 8501

HADFIELD LINK ROAD

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.



A1 REPRODUCTION SCALE: 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE: 0mm 10 20 30 40 50

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

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 11 [560-570] - SHEET 2 MASTER PLAN

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

Rev.: C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted: 24 Nov 2015 12:31 PM

2m MINIMUM GRASSED VERGE TO SOUTH SIDE OF PEKA PEKA

FOOTPATH AND RAISED KERB ON THE NORTH SIDE OF PEKA PEKA LINK ROAD. FOOTPATH WIDTH VARIES. 2M WIDE OFF THE BRIDGE TAPERS TO 3M WIDE ON THE BRIDGE

PAETAWA DRAIN

CULVERT 38.1
(EXISTING EXTENDED BY 62M)

CULVERT 38.6
(EXISTING EXTENDED BY 56M)

CULVERT 38.2
(EXISTING EXTENDED BY 12M)

2M WIDE MINIMUM KAPITI BLUE FOOTPATH NO KERB

DESIGNATION BOUNDARY

SECTOR 560

PEKA PEKA LINK ROAD

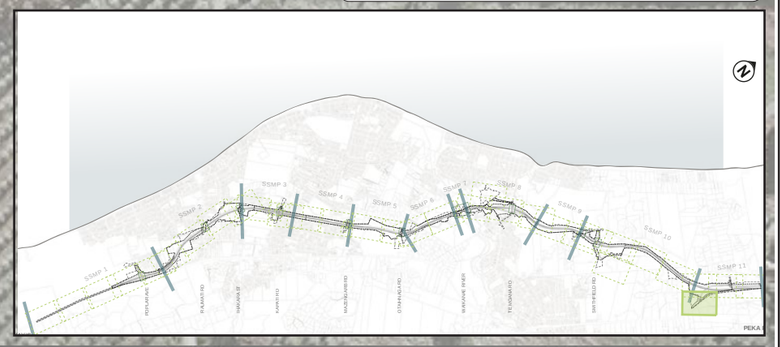
HADFIELD LINK ROAD

EXISTING SH1

DESIGNATION BOUNDARY

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.
- 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

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
- Kapiti Blue Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

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

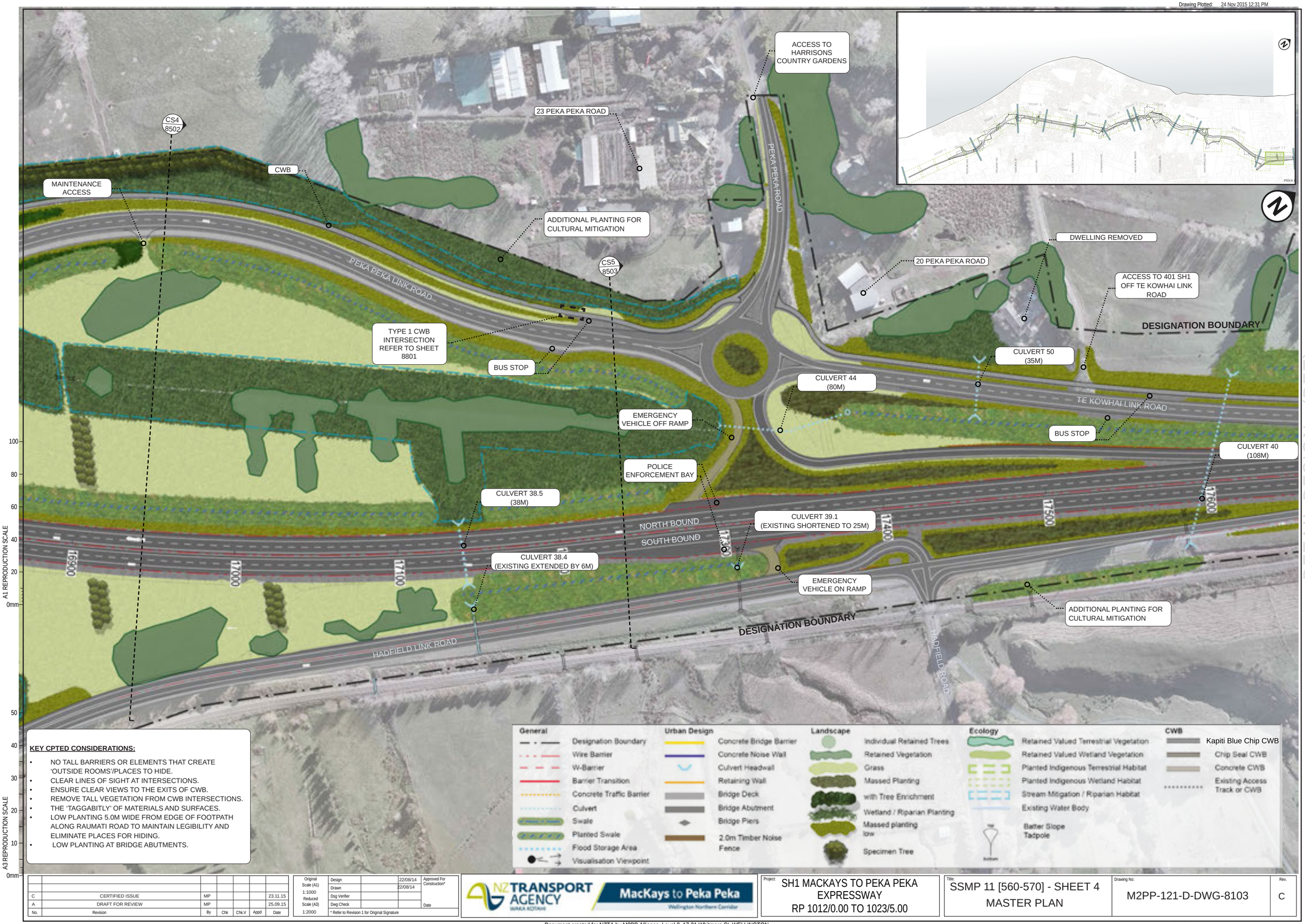
Title: SSMP 11 [560-570] - SHEET 3 MASTER PLAN

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

Rev. C

Document No.

Drawing Plotted: 24 Nov 2015 12:31 PM



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.

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
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- Bridge Abutment
- Bridge Piers
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- Retained Vegetation
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- with Tree Enrichment
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- Massed planting low
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- Planted Indigenous Wetland Habitat
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- Existing Water Body
- Batter Slope Tadpole

CWB
- Kapiti Blue Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

No.	Revision	By	Chk	Chk.V	Appd	Date
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Original Scale (A1) 1:1000
Reduced Scale (A3) 1:2000

Design		22/08/14	Approved For Construction*
Drawn		22/08/14	
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 11 [560-570] - SHEET 4 MASTER PLAN

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

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted: 24 Nov 2015 12:31 PM

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
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- Visualisation Viewpoint

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- 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
- Kapiti Blue Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB

DESIGNATION BOUNDARY

DWELLING HAS BEEN REMOVED

DWELLING HAS BEEN REMOVED

TE KOWHAI LINK ROAD

CS6
8503

EXTRA PLANTING AT CULVERT OUTLET FOR CULTURAL MITIGATION

CULVERT 40 (108M)

CWB

TE KOWHAI LINK ROAD TO TIE IN WITH PEKA PEKA TO OTAKI PROJECT

TE KOWHAI LINK ROAD

BUS STOP

M2PP PROPOSED ALIGNMENT

NORTH BOUND

SOUTH BOUND

17600

17700

17600

18000

18100

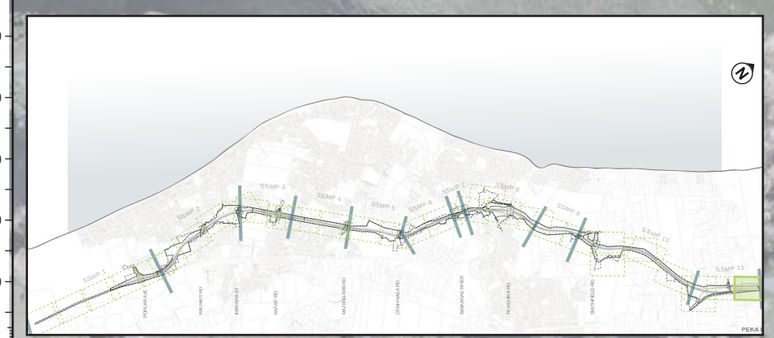
18200

18300

ROAD SIGN DIRECTING CYCLE TRAFFIC TO ALTERNATE ROUTE

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	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design	LK	22/08/14	"Approved For Construction" Date
	Drawn	VB	22/08/14	
	Dsg Verifier			
	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 11 [560-570] - SHEET 5 MASTER PLAN

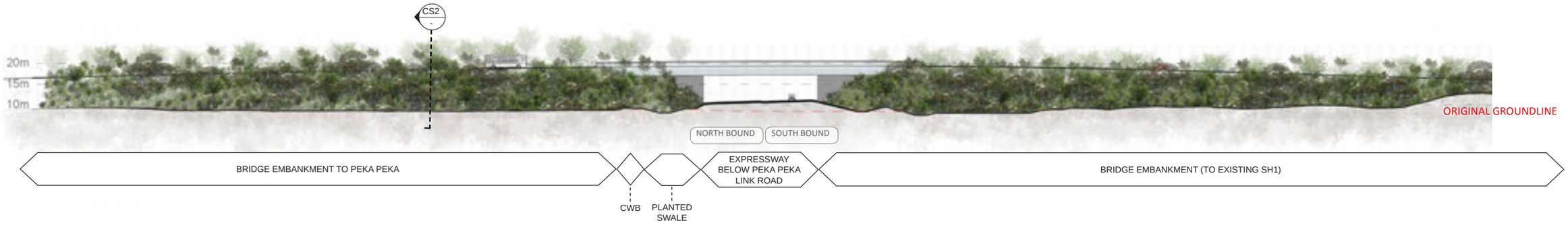
Drawing No: M2PP-121-D-DWG-8104

Rev. C

Document No.

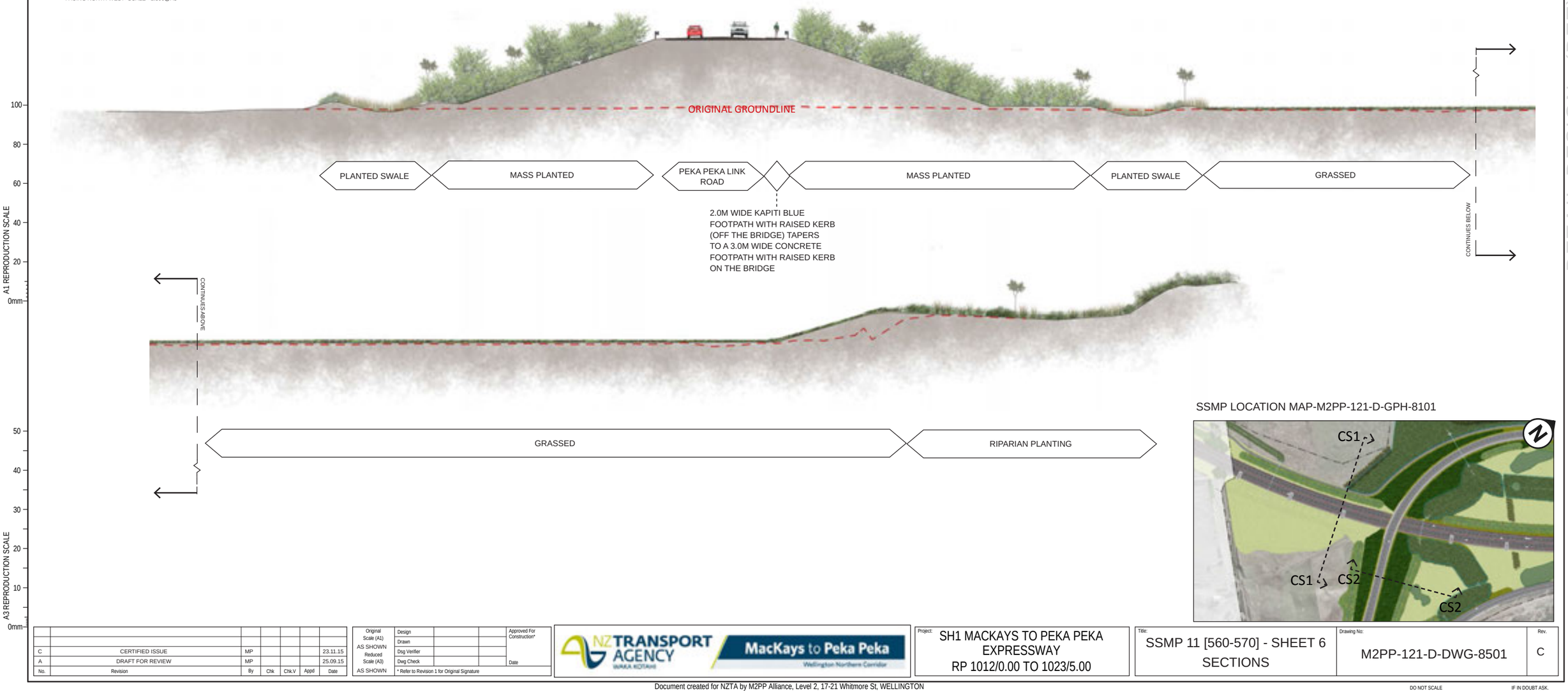
CS1 - CROSS SECTION THROUGH CH 16600

FACING NORTH EAST- SCALE - 1:1000@A3



CS2- CROSS SECTION THROUGH PEKA PEKA LINK ROAD

FACING NORTH WEST- SCALE - 1:500@A3



SSMP LOCATION MAP-M2PP-121-D-GPH-8101

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) AS SHOWN Reduced Scale (A3) AS SHOWN	Design			Approved For Construction* Date
	Drawn			
	Dsg Verifier			
	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 11 [560-570] - SHEET 6 SECTIONS

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

Rev. C

Document No.

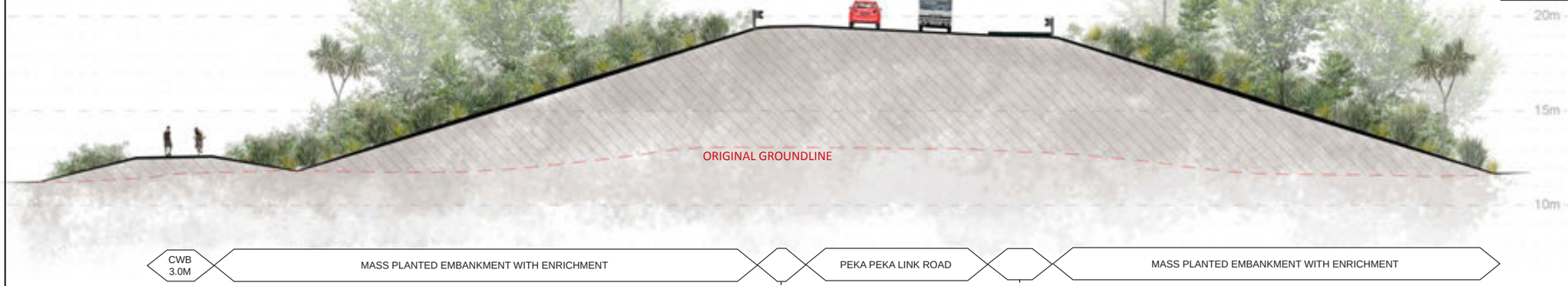
DETAIL DESIGN (DET)

DO NOT SCALE IF IN DOUBT ASK.

CS3 - CROSS SECTION THROUGH PEKA PEKA LINK ROAD

FACING NORTH - SCALE - 1:250@A3

SSMP LOCATION MAP-M2PP-121-D-GPH-8101



CWB 3.0M | MASS PLANTED EMBANKMENT WITH ENRICHMENT | PEKA PEKA LINK ROAD | MASS PLANTED EMBANKMENT WITH ENRICHMENT

2M MIN GRASS VERGE

2.0M WIDE KAPITI BLUE FOOTPATH WITH RAISED KERB (OFF THE BRIDGE) TAPERS TO A 3.0M WIDE CONCRETE FOOTPATH WITH RAISED KERB ON THE BRIDGE

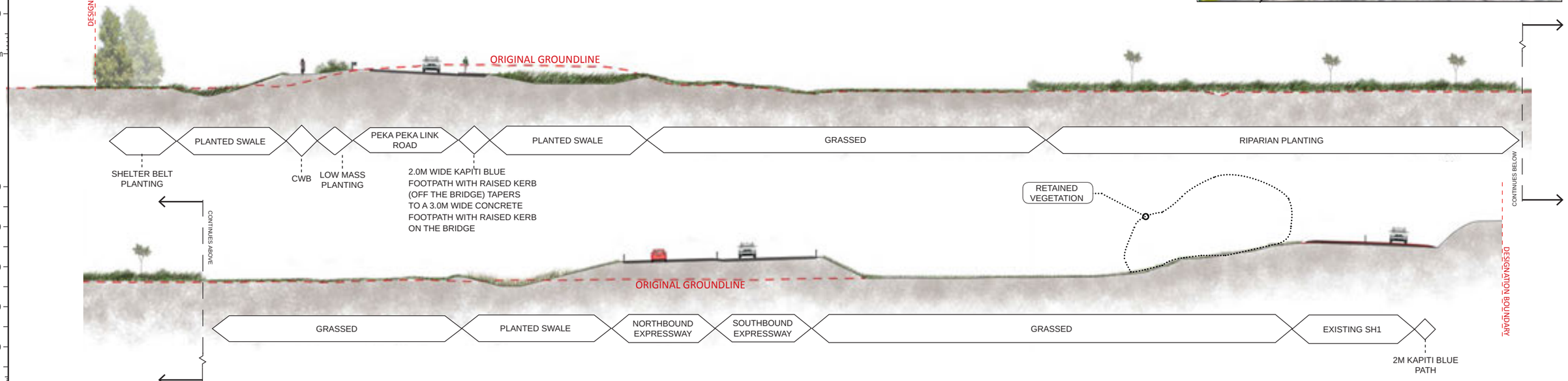
CS4- CROSS SECTION THROUGH CH 16961

FACING NORTH EAST- SCALE - 1:500@A3

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

A1 REPRODUCTION SCALE

A3 REPRODUCTION SCALE



No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) AS SHOWN Reduced Scale (A3) AS SHOWN	Design			Approved For Construction* Date
	Drawn			
	Dsg Verifier			
	Dwg Check			
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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 11 [560-570] - SHEET 7 SECTIONS

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

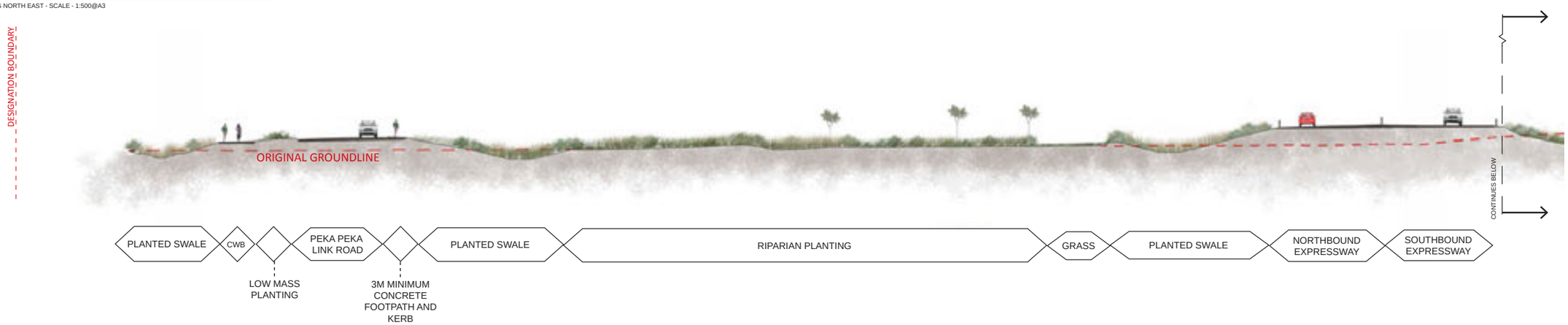
Rev.: C

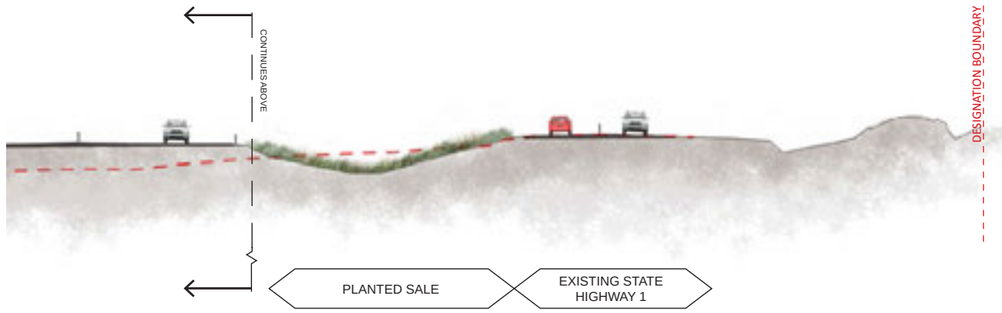
Document No.

DETAIL DESIGN (DET)

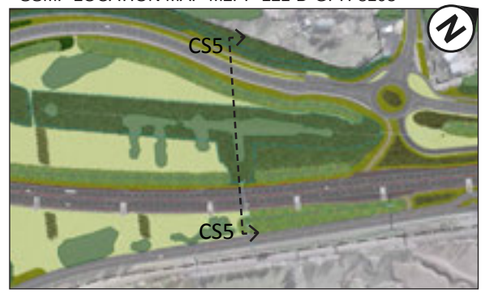
CS5- CROSS SECTION THROUGH CH 17236

FACING NORTH EAST - SCALE - 1:500@A3



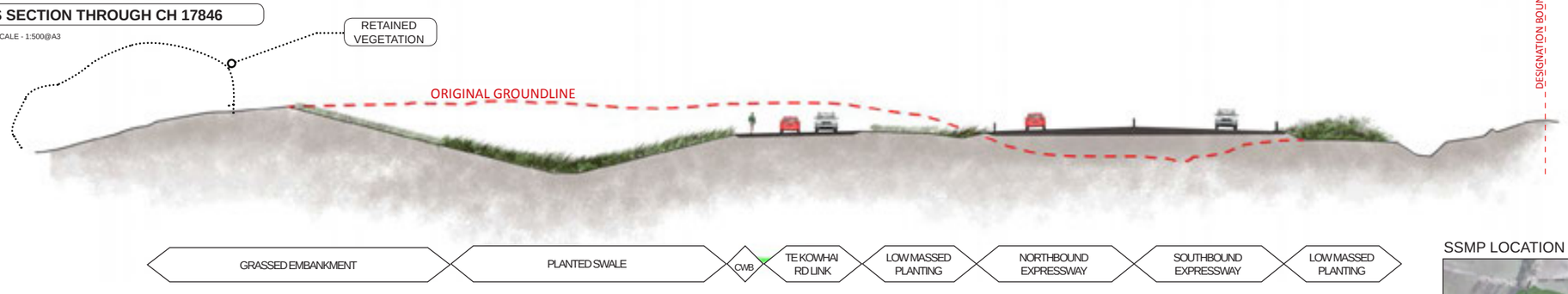


SSMP LOCATION MAP-M2PP-121-D-GPH-8103

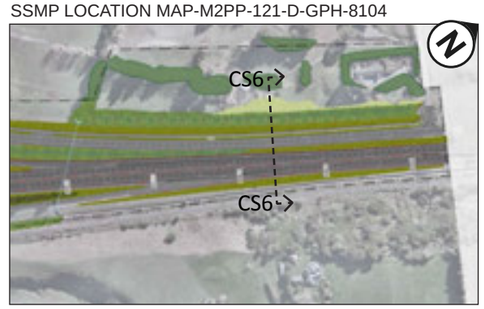


CS6- CROSS SECTION THROUGH CH 17846

FACING NORTH EAST - SCALE - 1:500@A3



SSMP LOCATION MAP-M2PP-121-D-GPH-8104



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	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) AS SHOWN Reduced Scale (A3) AS SHOWN	Design				Approved For Construction* Date
	Drawn				
	Dsg Verifier				
	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 11 [560-570] - SHEET 8 SECTIONS

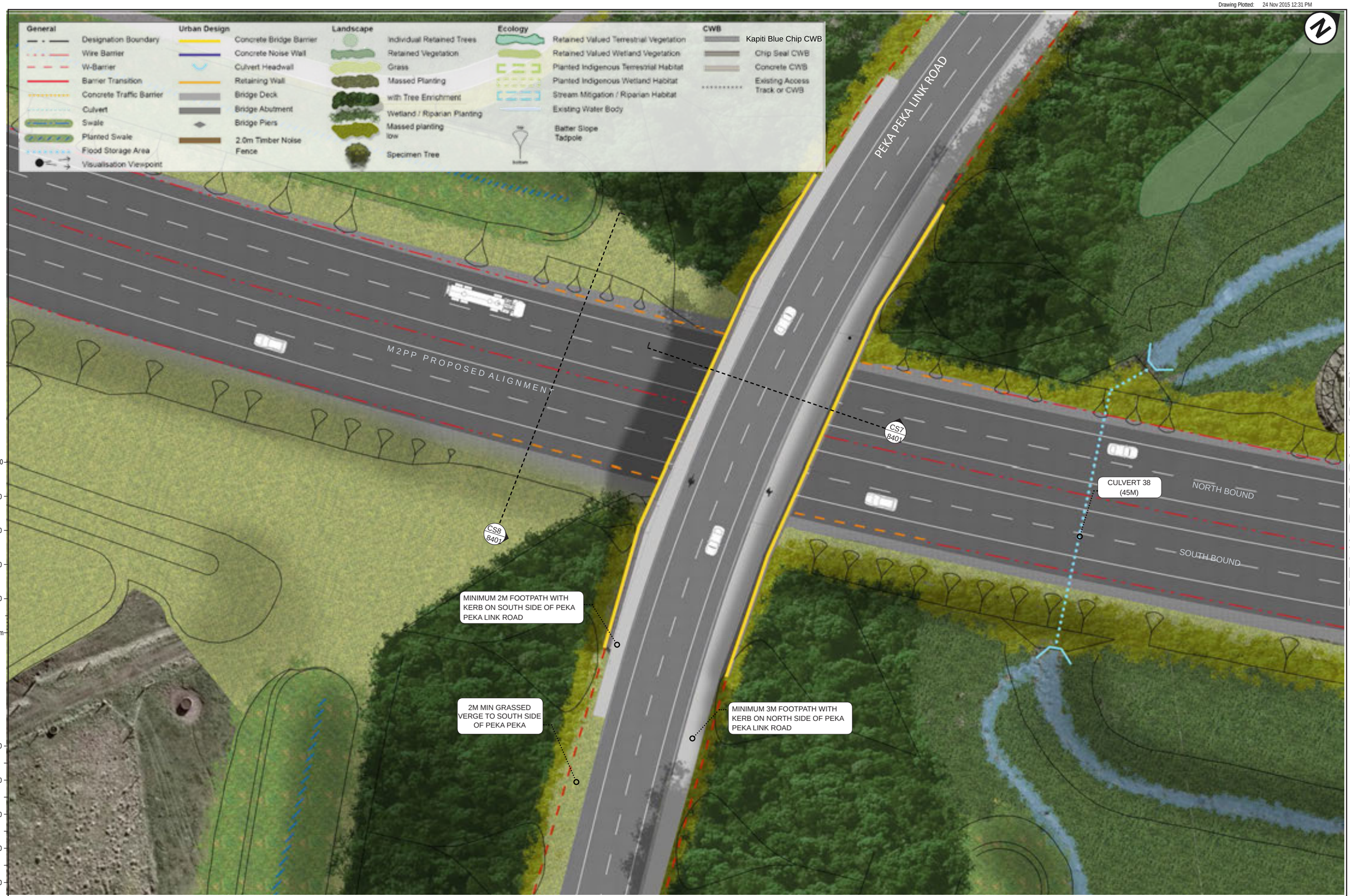
Drawing No: M2PP-121-D-DWG-8503

Rev. C

Document No.

DETAIL DESIGN

Drawing Plotted: 24 Nov 2015 12:31 PM



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
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Original Scale (A1) 1:250 Reduced Scale (A3) 1:500	Design			Approved For Construction*
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	Dwg Check			Date
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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 11 [560-570] - 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.

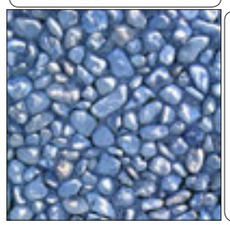
CS7- CROSS SECTIONAL ELEVATION - PEKA PEKA BRIDGE ABUTMENT

FACING EAST SCALE - 1:200@A3

MATERIAL A

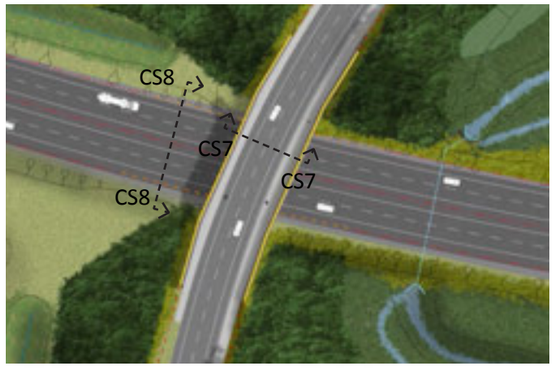
BRIDGE BARRIER: PRECAST CONCRETE WITH 2 COATS WHITE KIEM COATING & ANTI GRAFFITI PROTECTION- PENDING SAMPLE PANEL APPROVAL

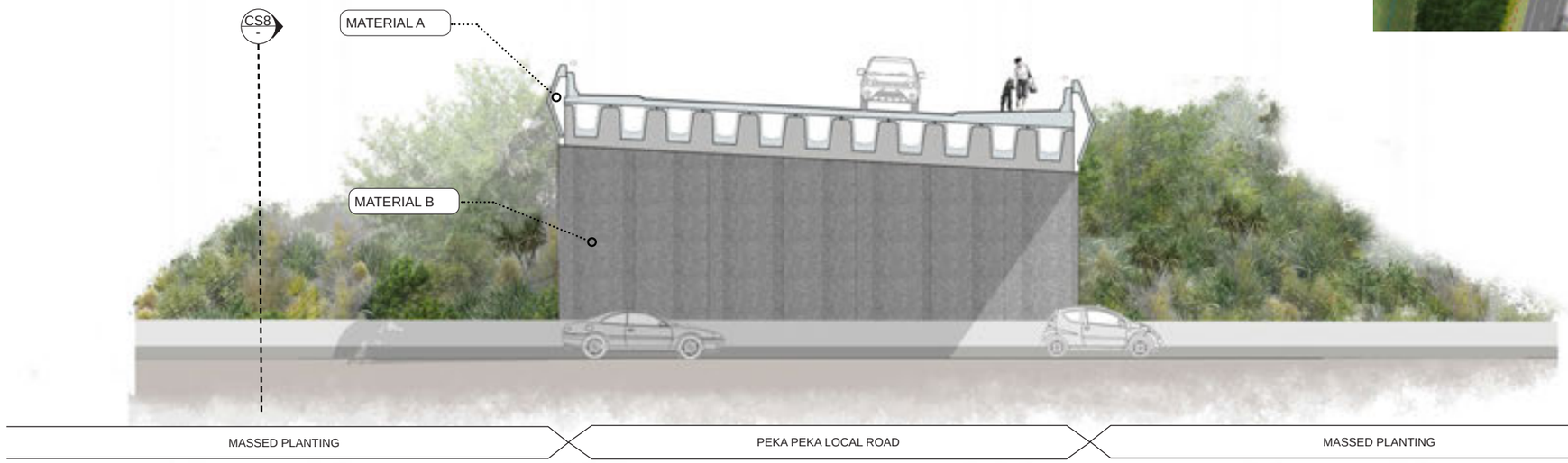
MATERIAL B



BRIDGE ABUTMENT: PRECAST CONCRETE PANEL WITH EXPOSED AGGREGATE FINISH AND MATT GRAFFITI PROTECTION

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

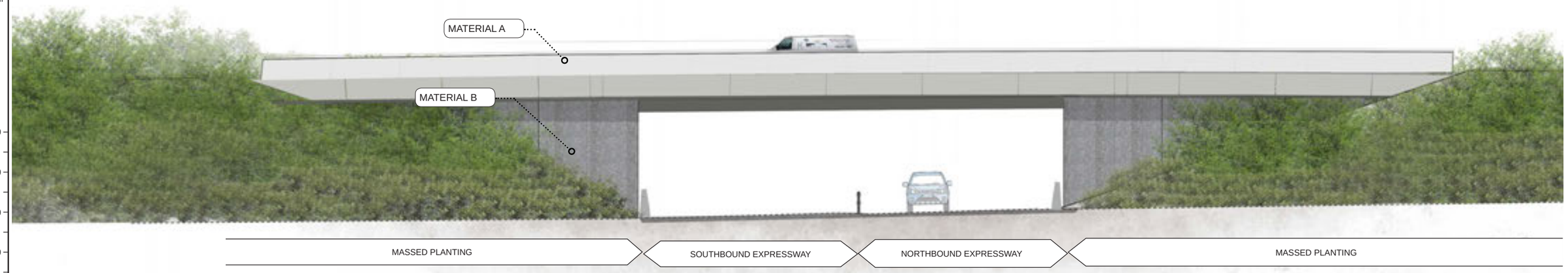




5 m

CS8-CROSS SECTIONAL ELEVATION - PEKA PEKA BRIDGE

FACING SOUTH 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
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Design			Approved For Construction*
Drawn			
Dsg Verifier			
Dwg Check			Date

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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 11 [560-570] - SHEET 10 BRIDGE SECTIONS

Drawing No: M2PP-121-D-DWG-8401

Rev. C

Document No.

DETAIL DESIGN

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 24 Nov 2015 12:31 PM

VISUALISATION CONTEXT

VISUALISATION - PEKA PEKA BRIDGE (EAST SIDE OF BRIDGE LOOKING WEST FROM EXPRESSWAY)

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	MP				23.11.15
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Original Scale (A1)
Reduced Scale (A3)

Design			Approved For Construction*
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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 11 [560-570] - SHEET 11
PEKA PEKA BRIDGE

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

Rev. C

Document No.

DETAIL DESIGN (DET)

PAETAWA DRAIN

EXISTING POPLAR SHELTERBELT ON PRIVATE LAND

SCREEN PLANTING ON NEIGHBORING PROPERTY AS AGREED WITH LANDOWNER

ADDITIONAL PLANTING FOR CULTURAL MITIGATION

EXISTING POPLAR SHELTERBELT ON PRIVATE LAND

DOUBLE ROW OF TALL EVERGREEN TREES

VEGETATION PROPOSED FOR PROTECTION BY WAY OF COVENANT

DOUBLE ROW OF TALL EVERGREEN TREES

ENRICHMENT PLANTING ALONG EMBANKMENT AND ADJACENT TO THE CWB TO INCLUDE SPECIES SELECTED FOR THEIR CULTURAL VALUE

KENSINGTON DR

PEKA PEKA RD

39 37 35 25 23 21 11 57 37 23 31 267 84 60 83 44 38 22 4 57

23 HARRISONS GARDEN CENTRE

PROPOSED EXTENDED DESIGNATION

ADDITIONAL PLANTING FOR CULTURAL MITIGATION

HADFIELD LINK ROAD

ADDITIONAL PLANTING FOR CULTURAL MITIGATION

NORTH ISLAND MAIN TRUNK

OCTAVIUS RD

HADFIELD RD

0 20 50 100 200m

LEGEND

- EXPRESSWAY DESIGNATION
- LAND PARCELS
- CULVERTS
- WATERCOURSE
- RETAINED VEGETATION
- KAPITI BLUE - CWB
- KAPITI BLUE - FOOTPATH

PLANTING LEGEND

- RIPARIAN MITIGATION PLANTING
- MASSED PLANTING
- MASSED PLANTING WITH TREE ENRICHMENT
- SHELTER BELTS
- GRASS
- SWALE PLANTING
- CULTURAL MITIGATION PLANTING

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

DETAIL DESIGN (DET)

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Design			Approved For Construction*
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Dwg Check			Date

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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 11 [560-570] - SHEET 12 CONTEXT PLAN-PLANTING

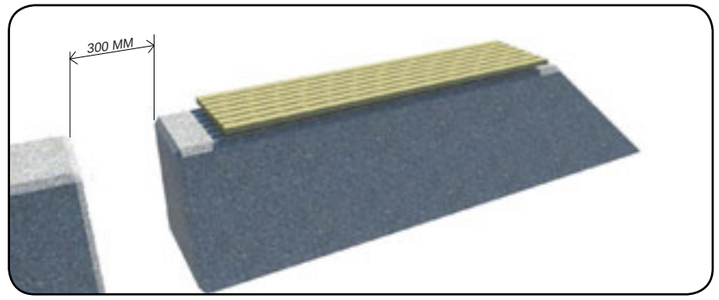
Drawing No: M2PP-121-D-DWG-8302

Rev. C

Document No.

CWB ENTRANCE TYPE 1 - TYPICAL PLAN

SCALE - 1:150 @ A3



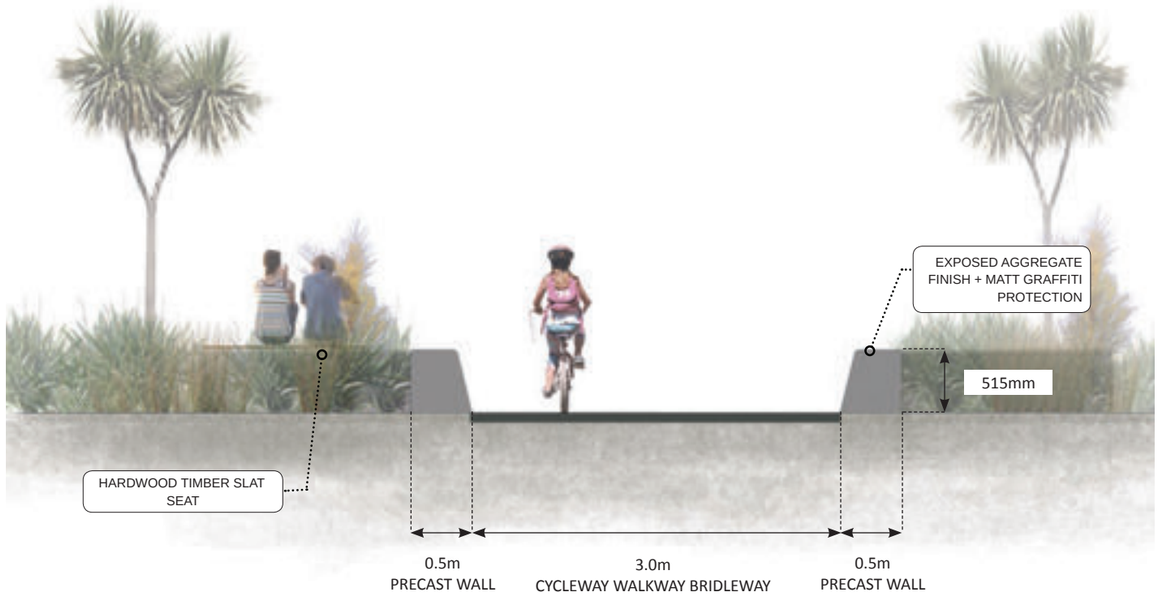
HARDWOOD TIMBER SLAT SEAT

HARDWOOD TIMBER SLAT SEAT EXAMPLE

GROUND LEVEL VIEW OF TYPICAL TYPE 1 CWB ENTRANCE

CS1 - CWB 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
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) / Reduced Scale (A3)

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 12 **CWB ENTRANCES TYPICAL DETAIL**

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

Rev. C

Document No.

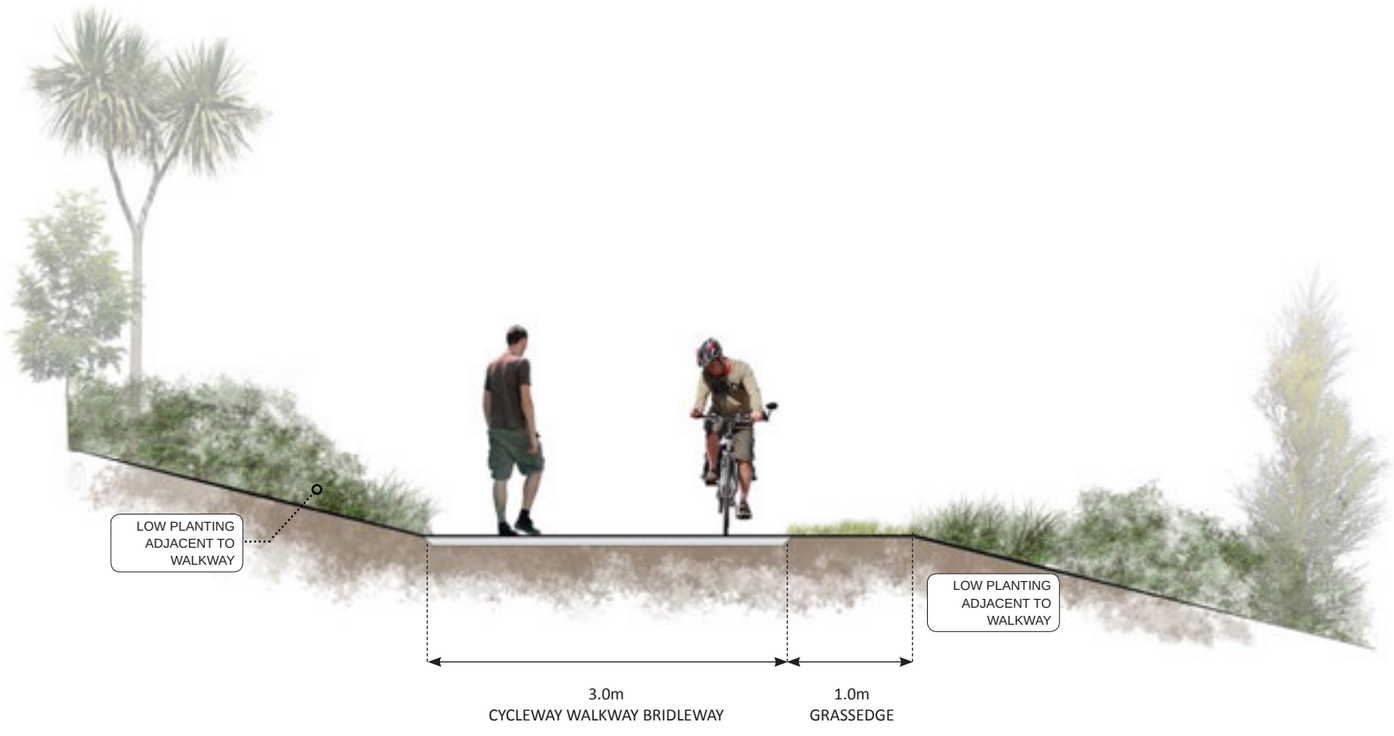
DETAIL DESIGN (DET)

CS1 - TYPICAL CWB SECTION

SCALE - 1:50

A1 REPRODUCTION SCALE

A3 REPRODUCTION SCALE



No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1)	Design			Approved For Construction*
	Drawn			
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: SHEET 13
INTERSECTIONS TYPICAL DETAIL

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

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted: 24 Nov 2015 12:31 PM

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	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design			Approved For Construction* Date
	Drawn			
	Dsg Verifier			
	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 11 [560-570] - SHEET 14 LIGHTING PLAN

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

Rev. C

Document No.

DO NOT SCALE

IF IN DOUBT ASK.

Drawing Plotted: 24 Nov 2015 12:31 PM

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
0mm 20 40 60 80 100

A3 REPRODUCTION SCALE
0mm 10 20 30 40 50

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design			Approved For Construction* Date
	Drawn			
	Dsg Verifier			
	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 11 [560-570] - SHEET 15 LIGHTING PLAN

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

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted: 24 Nov 2015 12:31 PM

PLAN OF LIGHTING LOCATIONS

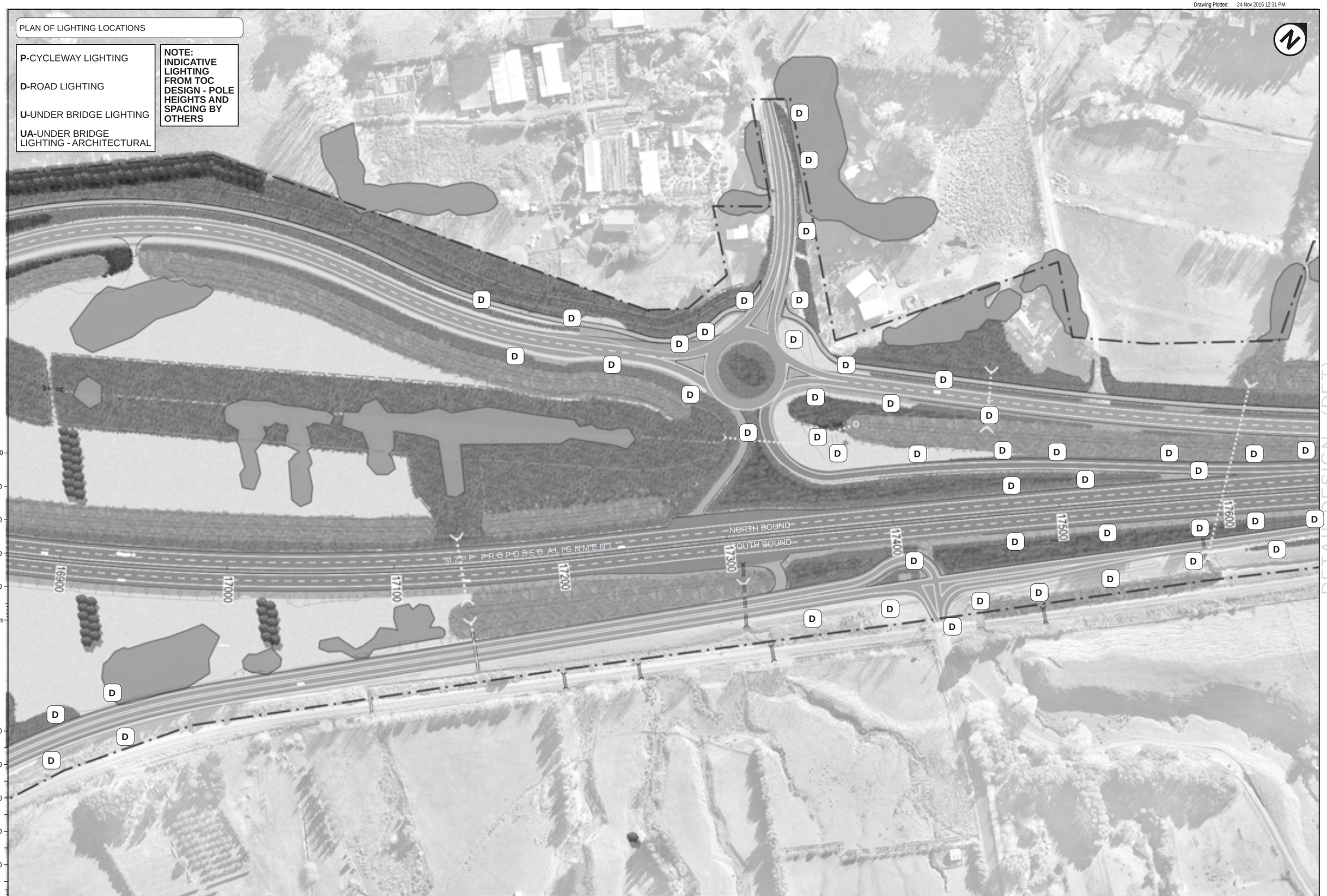
P-CYCLEWAY LIGHTING

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

DETAILED DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

				Approved For Construction*
Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	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 11 [560-570] - SHEET 16 LIGHTING PLAN

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

Rev. C

Document No.

Drawing Plotted: 24 Nov 2015 12:31 PM

PLAN OF LIGHTING LOCATIONS

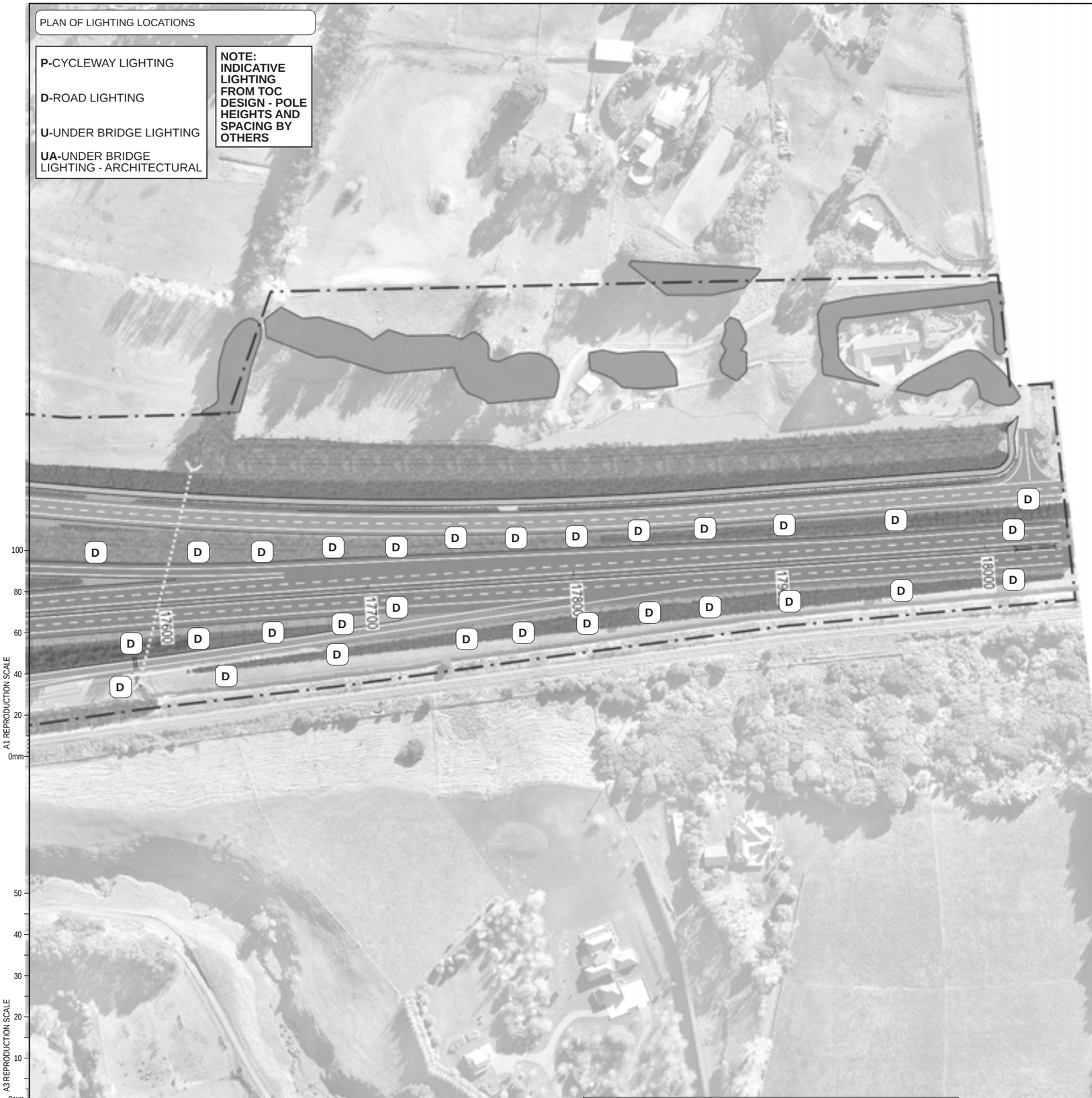
P-CYCLEWAY LIGHTING

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

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

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

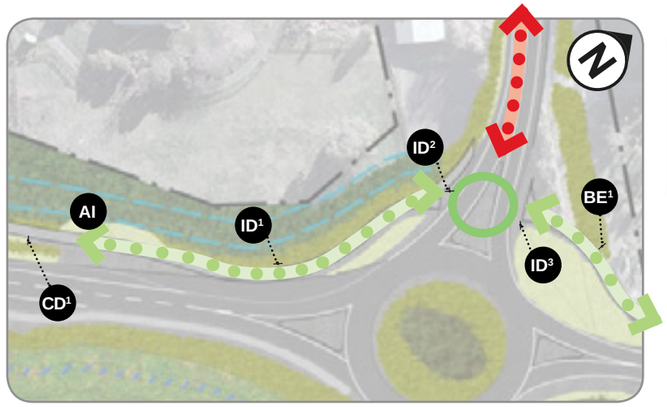
Title: SSMP 11 [560-570] - SHEET 17 LIGHTING PLAN

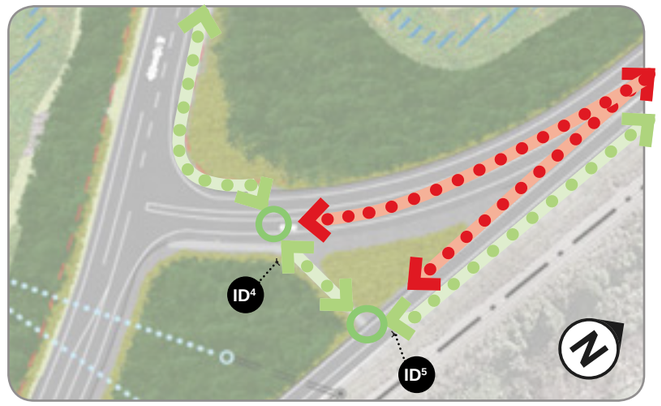
Drawing No: M2PP-121-D-DWG-8704

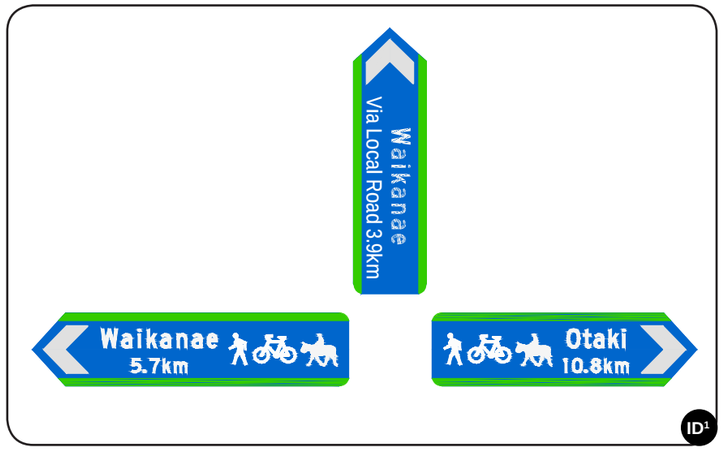
Rev. C

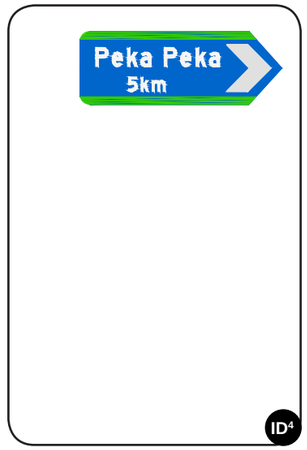
Document No.

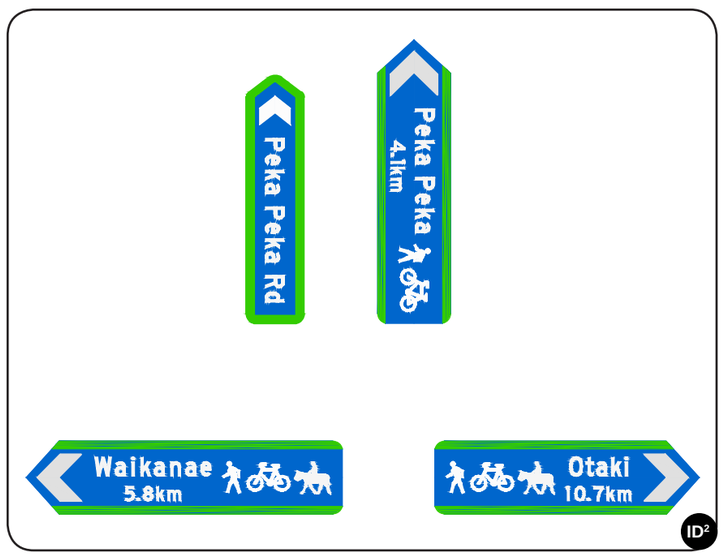
DETAIL D











LEGEND

- CYCLEWAY 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

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

Original Scale (A1) / Reduced Scale (A3)

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 11 [560-570] - SHEET 19
CWB SIGNS AND LOCATIONS

Drawing No: M2PP-121-D-DWG-8706

Rev. C

Document No.

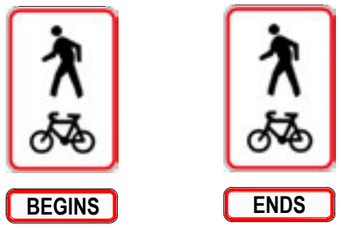
TYPICAL SIGN TYPES:

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



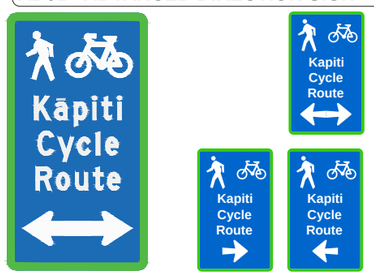
BE - Begins/Ends Signs are used to indicate the start and/or end point of a cycle route. They will include route specific information. Route Begins Signs should be installed on the left hand side of the CWB immediately beyond or adjacent to any advance information sign or at a logical starting point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

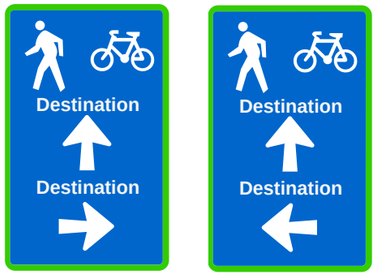
CD - CONFIRMATION DIRECTION

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

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				23.11.15
A	DRAFT FOR REVIEW	MP				25.09.15

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

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 20
CWB SIGN TYPE SUMMARY

Drawing No: M2PP-121-D-DWG-8707

Rev. C

Document No.

DO NOT SCALE IF IN DOUBT ASK.

- **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

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
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	Approved For Construction* P BRADSHAW Date 09.05.14
Reduced Scale (A3) NTS	Drawn	V BILLETT	24.04.14	
	Dwg Verifier	B EVANS	05.05.14	
	Dwg Check	G F-B	05.05.14	
	* 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: STANDARD DETAILS DUNE ROUNDING DETAIL

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

Rev. 2

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

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 12 Nov 2015 11:07 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.

550

560

16400

16600

16600

GR A 2 56R-8201

MS C 1 56R-8201

MS C 2 56R-8203

GR A 1 56R-8201

GL A 1 56R-8201

MS A 1 56R-8201

GR A 3 56R-8201

CV

CYCLEWAY WALKWAY BRIDLEWAY

DOUBLE OFFSET ROWS 5m APART TREES PLANTED @ 5m CENTRES

TF A 1 56R-8201

ALLOWANCE IN PLANTING FOR ACCESS

CP D 1 56R-8201

CP B 1 56R-8201

CP A 1 56R-8201

CP J 1 56R-8201

ML A 1 56R-8201

CP I 1 56R-8201

CP H 1 56R-8201

CP E 1 56R-8201

CP F 1 56R-8201

MT C 1 56R-8201

ML B 1 56R-8201

CP H 1 56R-8201

ALLOWANCE FOR DRAINAGE MATERIALS

ML B 2 56R-8201

MT C 2 56R-8201

RP L 2 56R-8201

RP L 1 56R-8201

CP L 2 56R-8201

CP J 2 56R-8201

CP F 1 56R-8201

CP L 1 56R-8201

CP G 1 56R-8201

CP I 2 56R-8201

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

PAETAWA DRAIN

OFFSET STORAGE AREA 13

MATCHLINE REFER: M2PP- 56R -D-DWG-8202

MATCHLINE REFER: M2PP- 56R -D-DWG-8204

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
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15
	Drawn	M. POWELL	11.02.15
	Dsg Verifier	B.EVANS	25.03.15
Reduced Scale (A3) 1:1000	Dwg Check	G.F-B	27.03.15
* Refer to Revision 1 for Original Signature			

Approved For Construction* D.STIRRAT Date 09.11.15

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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 1

Drawing No: M2PP-56R-D-DWG-8201

Rev. 1

560 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-56R-D-DWG-8201.DWG

Drawing Plotted: 12 Nov 2015 11:07 a.m.

MATCHLINE REFER: M2PP- 56R -D-DWG-8201

MAINTENANCE ACCESS STRIP UNPLANTED (MULCH ONLY)

OFFSET STORAGE AREA 13

GR A 1 56R-8202

16700

CV

CV

RP L 1 56R-8202

RP L 2 56R-8202

MATCHLINE REFER: M2PP- 56R -D-DWG-8205

OFFSET STORAGE AREA 13A

MT C 1 56R-8202

ML B 1 56R-8202

MS A 1 56R-8202

ML B 2 56R-8202

MT C 2 56R-8202

MS A 2 56R-8202

GR A 2 56R-8202

MAINTENANCE ACCESS

PEKA PEKA LINK ROAD

HADFIELD LINK LINK ROAD

PLANT SHRUBS AND GRASSES UNDER ELECTRICAL OVERHEAD WIRES MARKED AS ** ON SCHEDULE

MAINTENANCE ACCESS

MATCHLINE REFER: M2PP- 56R -D-DWG-8203

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
- OVERHEAD WIRES CLEARZONE
- 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

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15	Approved For Construction* D.STIRRAT Date 09.11.15
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.02.15	
	Dsg Verifier	B.EVANS	25.03.15	
	Dwg Check	G.F-B	27.03.15	
	*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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 2

Drawing No: M2PP-56R-D-DWG-8202

Rev. 1

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-56R-D-DWG-8202.DWG

Drawing Plotted: 12 Nov 2015 11:07 a.m.

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.

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15	Approved For Construction*
	Drawn	M. POWELL	11.02.15	D.STIRRAT
Reduced Scale (A3) 1:1000	Dsg Verifier	B.EVANS	25.03.15	
	Dwg Check	G.F-B	27.03.15	Date 09.11.15

* Refer to Revision 1 for Original Signature

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

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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

Title: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 3

Drawing No: M2PP-56R-D-DWG-8203

Rev. 1

Document No. M2PP-56R-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: 12 Nov 2015 11:06 a.m.

KEY

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

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.

MATCHLINE REFER: M2PP- 56R -D-DWG-8201

CP L 1 56R-8204
CP J 1 56R-8204
RP L 1 56R-8204
CP D 1 56R-8204
RP L 2 56R-8204
TF A 1 56R-8204
DOUBLE OFFSET ROWS 5m APART TREES PLANTED @ 5m CENTRES
MAINTENANCE ACCESS STRIP UNPLANTED (MULCH ONLY)
CP A 2 56R-8204
ML B 1 56R-8204
CP K 1 56R-8204
CP E 1 56R-8204
CP A 3 56R-8204
CP F 1 56R-8204
GL A 1 56R-8204
ML A 1 56R-8204
CP G 1 56R-8204
MS A 1 56R-8204
CP I 1 56R-8204
CP A 1 56R-8204
ML B 2 56R-8204
MT C 1 56R-8204
MT C 2 56R-8204
RP L 4 56R-8204
ML B 3 56R-8204
MS A 2 56R-8204
CYCLEWAY WALKWAY BRIDLEWAY
PEKA PEKA LINK ROAD
OFFSET STORAGE AREA 13B
GR A 1 56R-8204
RP L 5 56R-8204
RP L 3 56R-8204
RP L 6 56R-8204
MAINTENANCE ACCESS
DOUBLE OFFSET ROWS 5m APART TREES PLANTED @ 5m CENTRES
TF B 1 56R-8204
RP L 7 56R-8204
GR A 2 56R-8204
MAINTENANCE ACCESS STRIP UNPLANTED (MULCH ONLY)
MATCHLINE REFER: M2PP- 56R -D-DWG-8205
MAINTENANCE ACCESS

MATCHLINE REFER: M2PP- 56R -D-DWG-8206

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15
	Drawn	M. POWELL	11.02.15
Reduced Scale (A3) 1:1000	Dsg Verifier	B.EVANS	25.03.15
	Dwg Check	G.F-B	27.03.15

Approved For Construction* D.STIRRAT Date 09.11.15

* 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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 4

Drawing No: M2PP-56R-D-DWG-8204

Rev. 1

Document No. M2PP-56R-D-DWG-8204.DWG

Drawing Plotted: 12 Nov 2015 11:07 a.m.

MATCHLINE REFER: M2PP- 56R -D-DWG-8204

MATCHLINE REFER: M2PP- 56R -D-DWG-8202

MATCHLINE REFER: M2PP- 56R -D-DWG-8206

DOUBLE OFFSET ROWS 5m APART
TREES PLANTED @ 5m CENTRES
TF B 1 56R-8205

OFFSET STORAGE AREA 13B

MAINTENANCE ACCESS

GR A 1 56R-8205

RP L 4 56R-8205

RP L 5 56R-8205

RP L 6 56R-8205

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

ML B 1 56R-8205

ML B 2 56R-8205

MS A 1 56R-8205

PLANT SHRUBS AND GRASSES UNDER ELECTRICAL OVERHEAD WIRES MARKED AS ** ON SCHEDULE

16800

16900

17000

17100

RP L 1 56R-8205

RP L 2 56R-8205

CV

CV

OFFSET STORAGE AREA 13A

DOUBLE OFFSET ROWS 5m APART
TREES PLANTED @ 5m CENTRES
TF B 2 56R-8205

DOUBLE OFFSET ROWS 5m APART
TREES PLANTED @ 5m CENTRES
TF B 3 56R-8205

GR A 3 56R-8205

MAINTENANCE ACCESS

MS C 1 56R-8205

GR A 2 56R-8205

PLANT SHRUBS AND GRASSES UNDER ELECTRICAL OVERHEAD WIRES MARKED AS ** ON SCHEDULE

RP L 3 56R-8205

ML B 3 56R-8205

HADFIELD LINK LINK ROAD

MAINTENANCE ACCESS STRIP UNPLANTED (MULCH ONLY)

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
- OVERHEAD WIRES CLEARZONE
- 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.

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15
	Drawn	M. POWELL	11.02.15
Reduced Scale (A3) 1:1000	Dsg Verifier	B.EVANS	25.03.15
	Dwg Check	G.F-B	27.03.15

Approved For Construction* D.STIRRAT Date 09.11.15

* 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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 5

Drawing No: M2PP-56R-D-DWG-8205

Rev. 1

Document No. M2PP-56R-D-DWG-8205.DWG

Drawing Plotted: 12 Nov 2015 11:08 a.m.

MATCHLINE REFER: M2PP-56R-D-DWG-8204

MATCHLINE REFER: M2PP-56R-D-DWG-8207

MATCHLINE: SEE TO RIGHT

MATCHLINE: SEE ABOVE

KEY

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

- 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
- OVERHEAD WIRES CLEARZONE

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.

PEKA PEKA LINK ROAD

PEKA PEKA ROAD

ALLOWANCE FOR DRIVEWAY

ALLOWANCE FOR ACCESS BETWEEN FOOTPATH AND CWB

ALLOWANCE FOR GARDEN CENTRE DRIVEWAY

MAINTENANCE ACCESS

CYCLEWAY WALKWAY BRIDLEWAY

TE KOWHAI LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

HADFIELD LINK LINK ROAD

PLANT SHRUBS AND GRASSES UNDER ELECTRICAL OVERHEAD WIRES MARKED AS ** ON SCHEDULE

MAINTENANCE ACCESS STRIP UNPLANTED (MULCH ONLY)

COMPLETELY REMOVE ROAD FORMATION, RIP / LOOSEN SUBSOIL AND BACKFILL WITH LIGHTLY COMPACTED TOPSOIL AS SPECIFIED

ML A 1 56R-8206; GL A 1 56R-8206; RP L 1 56R-8206; GL A 2 56R-8206; ML B 1 56R-8206; GL A 3 56R-8206; GL A 4 56R-8206; GL A 5 56R-8206; ML C 1 56R-8206; GL A 6 56R-8206; GL A 8 56R-8206; GR A 1 56R-8206; MS A 1 56R-8206; MP S 1 56R-8206; ML S 1 56R-8206; RP L 2 56R-8206; ML B 2 56R-8206; WP N 1 56R-8206; MP C 1 56R-8206; ML B 4 56R-8206; ML C 2 56R-8206; ML B 5 56R-8206; RP L 3 56R-8206; MS A 2 56R-8206; ML B 3 56R-8206; GL A 7 56R-8206; MS C 2 56R-8206; MP C 2 56R-8206; ML C 3 56R-8206; ML B 6 56R-8206; ML B 7 56R-8206; MS C 1 56R-8206; MP C 3 56R-8206; MP C 4 56R-8206; ML B 8 56R-8206; GR A 2 56R-8206

17200 17300 17400 17500

100 80 60 40 20 0mm (A1 REPRODUCTION SCALE)

50 40 30 20 10 0mm (A3 REPRODUCTION SCALE)

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15
	Drawn	M. POWELL	11.02.15
Reduced Scale (A3) 1:1000	Dsg Verifier	B.EVANS	25.03.15
	Dwg Check	G.F-B	27.03.15

Approved For Construction* D.STIRRAT Date 09.11.15

* 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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 6

Drawing No: M2PP-56R-D-DWG-8206

Rev. 1

560 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

Document No. M2PP-56R-D-DWG-8206.DWG

Drawing Plotted: 12 Nov 2015 11:08 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
- OVERHEAD WIRES CLEARZONE
- 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.

INSET PLAN A

MATCHLINE: SEE MAIN PLAN BELOW

MS C 2 56R-8207

RAILWAY TRACK

NOTE: KIWIRAIL PERMIT TO ENTER FOR WORKS MUST BE SAUGHT AT LEAST 15 DAYS PRIOR TO WORKS COMMENCING. THIS WILL REQUIRE FINAL CONSTRUCTION PLANS AND METHODOLOGY BE SUPPLIED AND APPROVED BY KIWIRAIL IN RELATION TO WORKS WITHIN THE KIWIRAIL DESIGNATION

INSET PLAN A

GR A 1 56R-8207
MS A 1 56R-8207
GL A 1 56R-8207
ML C 1 56R-8207
ML B 1 56R-8207
ML B 6 56R-8207
ML B 7 56R-8207

MATCHLINE: SEE MAIN PLAN BELOW

COMPLETELY REMOVE ROAD FORMATION, RIP / LOOSEN SUBSOIL AND BACKFILL WITH LIGHTLY COMPACTED TOPSOIL AS SPECIFIED

MATCHLINE REFER: M2PP- 56R -D-DWG-8202

CYCLEWAY WALKWAY BRIDLEWAY

ML B 2 56R-8207
MS C 1 56R-8207
ML B 3 56R-8207
ML B 4 56R-8207
GL A 1 56R-8207
MS A 1 56R-8207
ML C 1 56R-8207
ML B 1 56R-8207
GR A 1 56R-8207

TE KOWHAI LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

MP C 1 56R-8207
ML B 5 56R-8207
GR A 2 56R-8207

HADFIELD LINK LINK ROAD

17600 17700 17800 17900

MAINTENANCE ACCESS

MATCHLINE: SEE INSERT PLAN A

MATCHLINE: SEE INSET PLAN B

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	NAB	DH	SW	09.11.15

Original Scale (A1) 1:500	Design	S. DUNN	11.02.15
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	11.02.15
	Dsg Verifier	B.EVANS	25.03.15
	Dwg Check	G.F-B	27.03.15

Approved For Construction* D.STIRRAT Date 09.11.15

* 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: PEKA PEKA SECTION 2 PLANTING PLAN SHEET 7

Drawing No: M2PP-56R-D-DWG-8207

Rev. 1

Document No.: M2PP-56R-D-DWG-8207.DWG

Drawing Plotted: 17 Nov 2015 10:47 a.m.

PLANT TYPE	PLANT SIZE	BOTANICAL NAME	COMMON NAME	GRADE	% Max	NOTES
MASSED LOW [illegible]						
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED LOW TREE PLANTING [illegible]						
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED LOW [illegible]						
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED LOW [illegible]						
ML	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED PLANTING [illegible]						
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

PLANT TYPE	PLANT SIZE	BOTANICAL NAME	COMMON NAME	GRADE	% Max	NOTES
MASSED PLANTING WITH TREE ENRICHMENT [illegible]						
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED PLANTING [illegible]						
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RIPARIAN PLANTING [illegible]						
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FREE FORESTRY GRADE						
FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED SWALE PLANTING						
MS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MASSED SWALE [illegible]						
MS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MS	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
WETLAND PLANTING [illegible]						
WP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GRASS						
GL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ADDITIONAL PLANTING FOR CULTURAL PURPOSES [illegible] interplanted through massed planting						
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
TOTAL						

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	SW	DS	SW	17.11.15

Original Scale (A1) NTS / Reduced Scale (A3) NTS			
Design	S DUNN	06.03.15	Approved For Construction*
Drawn	M POWELL	06.03.15	D STIRRAT
Dsg Verifier	B.EVANS	25.03.15	
Dwg Check	G.F-B	27.03.15	Date 17.11.15
* 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: PEKA PEKA SECTION 2 PLANTING SCHEDULE

Drawing No: M2PP-56R-D-DWG-8211

Rev. 1

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-56R-D-DWG-8211.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 Nov 2015 11:45 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.

N

MATCHLINE REFER: M2PP-56R-D-DWG-8705

EXTENDED DESIGNATION INCLUDED

550

560

PAETAWA STREAM

CYCLEWAY WALKWAY BRIDLEWAY

PEKA PEKA LINK ROAD

MATCHLINE REFER: M2PP-56R-D-DWG-8703

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

16400

16500

16600

MATCHLINE REFER: M2PP- 56R -D-DWG-8702

560

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, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
2	FOR CONSTRUCTION - DRAWING POSITION ALTERED	MP	BF	DH	SW	02.09.14
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	08.05.14

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

Design	S DUNN	06.12.13
Drawn	M POWELL	06.12.13
Dsg Verifier	B FAULKNER	05.05.14
Dwg Check	G F-B	05.05.14

Approved For Construction* P BRADSHAW Date 09.05.14

* 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

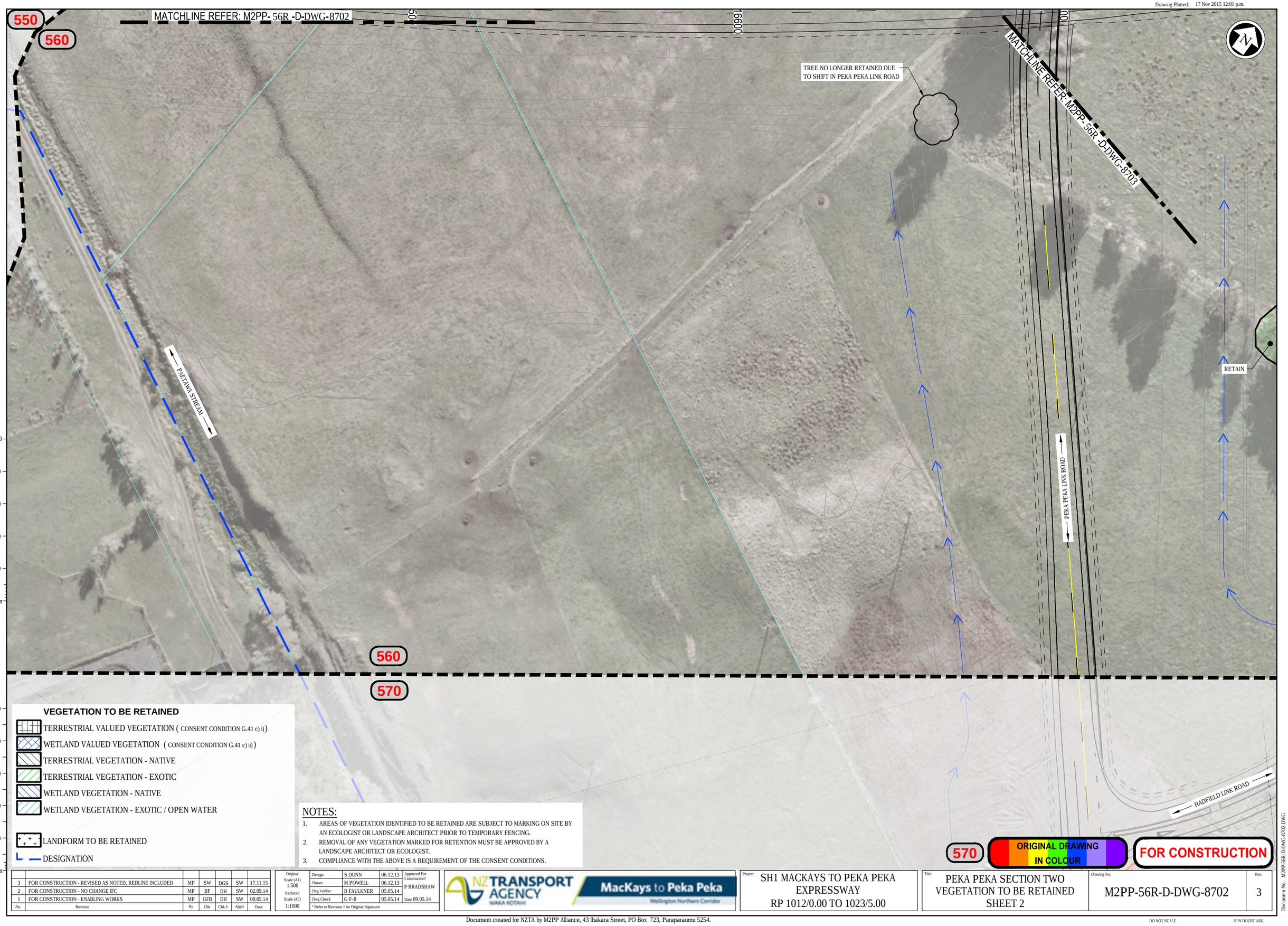
Title: PEKA PEKA SECTION TWO VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-56R-D-DWG-8701

Rev. 3

Document No.: M2PP-56R-D-DWG-8701.DWG

Drawing Plotted: 17 Nov 2015 12:01 p.m.



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.

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
2	FOR CONSTRUCTION - NO CHANGE IFC	MP	BF	DH	SW	02.09.14
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	08.05.14

Original Scale (A1) 1:500	Design	S DUNN	06.12.13	Approved For Construction* P BRADSHAW Date 09.05.14
Reduced Scale (A3) 1:1000	Drawn	M POWELL	06.12.13	
	Dsg Verifier	B FAULKNER	05.05.14	
	Dwg Check	G F-B	05.05.14	

* 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: PEKA PEKA SECTION TWO
VEGETATION TO BE RETAINED
SHEET 2

Drawing No: M2PP-56R-D-DWG-8702

Rev. 3

Document No. M2PP-56R-D-DWG-8702.DWG

Drawing Plotted: 17 Nov 2015 11:45 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

MATCHLINE REFER: M2PP- 56R -D-DWG-8705

MATCHLINE REFER: M2PP- 56R -D-DWG-8701

MATCHLINE REFER: M2PP- 56R -D-DWG-8702

MATCHLINE REFER: M2PP- 56R -D-DWG-8704

TREE NO LONGER RETAINED DUE TO SHIFT IN PEKA PEKA LINK ROAD

VEGETATION NO LONGER RETAINED DUE TO SHIFT IN PEKA PEKA LINK ROAD AND ALTERED STORMWATER DESIGN

VEGETATION NO LONGER RETAINED DUE TO SHIFT IN PEKA PEKA LINK ROAD

RETAIN

RETAIN

RETAIN

RETAIN

ADDITIONAL VEGETATION TO BE RETAINED

ADDITIONAL VEGETATION TO BE RETAINED

VEGETATION NO LONGER RETAINED DUE TO HADFIELD LINK ROAD OVERWIDENING

VEGETATION NO LONGER RETAINED DUE TO PRELOAD ACCESS TURNING BAY

16700

16800

16900

17000

PEKA PEKA LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

HADFIELD LINK ROAD

560

570

560

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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.

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
2	FOR CONSTRUCTION - REVISED AS NOTED	MP	BF	DH	SW	02.09.14
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	08.05.14

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	S DUNN	06.12.13
	Drawn	M POWELL	06.12.13
	Dsg Verifier	B FAULKNER	05.05.14
	Dwg Check	G F-B	05.05.14

Approved For Construction* P BRADSHAW Date 09.05.14

* 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: PEKA PEKA SECTION TWO VEGETATION TO BE RETAINED SHEET 3

Drawing No: M2PP-56R-D-DWG-8703

Rev. 3

Document No. M2PP-56R-D-DWG-8703.DWG

Drawing Plotted: 17 Nov 2015 11:46 a.m.

MATCHLINE REFER: M2PP- 56R -D-DWG-8705

MATCHLINE REFER: M2PP- 56R -D-DWG-8703

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

VEGETATION NO LONGER RETAINED DUE TO SHIFT IN PEKA PEKA LINK ROAD

CYCLEWAY WALKWAY BRIDLEWAY

EXTENDED DESIGNATION INCLUDED

RETAIN

RETAIN

RETAIN

RETAIN

PEKA PEKA LINK ROAD

PEKA PEKA ROAD

TE KOWHAI LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY ON-RAMP

HADFIELD LINK ROAD

ADDITIONAL VEGETATION TO BE RETAINED

TREES PREVIOUSLY RED-LINED TO BE RETAINED NO LONGER RETAINED DUE TO STORMWATER TIE-IN

17100

17200

17300

560

570

560

570

560

A1 REPRODUCTION SCALE: 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE: 0mm 10 20 30 40 50

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, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
2	FOR CONSTRUCTION - REVISED AS NOTED	MP	BF	DH	SW	02.09.14
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	08.05.14

Original Scale (A1) 1:500	Design	S DUNN	06.12.13
Reduced Scale (A3) 1:1000	Drawn	M POWELL	06.12.13
	Dsg Verifier	B FAULKNER	05.05.14
	Dwg Check	G F-B	05.05.14

Approved For Construction* P BRADSHAW Date 09.05.14

* 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: PEKA PEKA SECTION TWO VEGETATION TO BE RETAINED SHEET 4

Drawing No: M2PP-56R-D-DWG-8704

Rev. 3

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-56R-D-DWG-8704.DWG

Drawing Plotted: 17 Nov 2015 11:49 a.m.

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

MATCHLINE REFER: M2PP- 56R -D-DWG-8701

MATCHLINE REFER: M2PP- 56R -D-DWG-8703

MATCHLINE REFER: M2PP- 56R -D-DWG-8704

RETAIN

RETAIN

RETAIN

PEKA PEKA LINK ROAD

CYCLEWAY WALKWAY BRIDLEWAY

560

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
1	FOR CONSTRUCTION	MP	SW	DGS	SW	17.11.15

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

Design	S DUNN	28.08.14	Approved For Construction*
Drawn	M POWELL	28.08.14	D STIRRAT
Dsg Verifier	B FAULKNER	17.11.15	
Dwg Check	S WATERS	17.11.15	Date 17.11.15

*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: PEKA PEKA SECTION TWO VEGETATION TO BE RETAINED SHEET 5

Drawing No: M2PP-56R-D-DWG-8705

Rev. 1

Document No. M2PP-56R-D-DWG-8705.DWG

Drawing Plotted: 17 Nov 2015 11:55 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.

560

570

PAETAWA DRAIN

RETAIN

VEGETATION NO LONGER RETAINED DUE TO SHIFT IN PEKA PEKA LINK ROAD AND ALTERED SWALE DESIGN

PEKA PEKA LINK ROAD

HADFIELD LINK ROAD

MATCHLINE REFER: M2PP - 57R - D-DWG-8702

FOR CONSTRUCTION

ORIGINAL DRAWING IN COLOUR

570

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
2	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	23.09.14

Original Scale (A1) 1:500	Design	S DUNN	20.08.14	Approved For Construction* P BRADSHAW
Reduced Scale (A3) 1:1000	Drawn	M POWELL	20.08.14	
	Dsg Verifier	B FAULKNER	22.09.14	
	Dwg Check	G F-B	22.09.14	Date 23.09.14
	* 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: PEKA PEKA SECTION THREE VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-57R-D-DWG-8701

Rev. 2

Document No. M2PP-57R-D-DWG-8701.DWG

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.

16800

16900

17000

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

ADDITIONAL VEGETATION TO BE RETAINED

VEGETATION NO LONGER RETAINED DUE TO PRELOAD ACCESS TURNAROUND

ADDITIONAL VEGETATION TO BE RETAINED

RETAIN

RETAIN

VEGETATION NO LONGER RETAINED DUE TO HADFIELD LINK ROAD OVERWIDENING

HADFIELD LINK ROAD

560

570

MATCHLINE REFER: M2PP- 57R -D-DWG-8703

MATCHLINE REFER: M2PP- 57R -D-DWG-8701

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

570

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	23.09.14

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	S DUNN	20.08.14	Approved For Construction* P BRADSHAW Date 23.09.14
	Drawn	M POWELL	20.08.14	
	Dsg Verifier	B FAULKNER	22.09.14	
	Dwg Check	G F-B	22.09.14	
	* 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: PEKA PEKA SECTION THREE VEGETATION TO BE RETAINED SHEET 2

Drawing No: M2PP-57R-D-DWG-8702

Rev. 2

Document No. M2PP-57R-D-DWG-8702.DWG

Drawing Plotted: 17 Nov 2015 11:56 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:

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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.

CYCLEWAY WALKWAY BRIDLEWAY

PEKA PEKA LINK ROAD

PEKA PEKA RD

RETAIN

ADDITIONAL TREES TO BE RETAINED

CYCLEWAY WALKWAY BRIDLEWAY

TE KOWHAI LINK ROAD

ON-RAMP

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

17100

17200

17300

17400

ADDITIONAL VEGETATION TO BE RETAINED

TREES PREVIOUSLY RED-LINED TO BE RETAINED
NO LONGER RETAINED DUE TO STORMWATER TIE-IN

RETAIN

560

570

HADFIELD LINK ROAD

HADFIELD ROAD

MATCHLINE REFER: M2PP- 57R -D-DWG-8702

MATCHLINE REFER: M2PP- 57R -D-DWG-8704

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

570 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	23.09.14

Original Scale (A1) 1:500	Design	S DUNN	20.08.14
	Drawn	M POWELL	20.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULKNER	22.09.14
	Dwg Check	G F-B	22.09.14

Approved For Construction* P BRADSHAW Date 23.09.14

* 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: PEKA PEKA SECTION THREE VEGETATION TO BE RETAINED SHEET 3

Drawing No: M2PP-57R-D-DWG-8703

Rev. 2

Document No.: M2PP-57R-D-DWG-8703.DWG

Drawing Plotted: 17 Nov 2015 11:56 a.m.

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.
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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

RETAIN

RETAIN

EXOTIC VEGETATION NO LONGER RETAINED BASED ON AGREEMENT WITH LANDOWNER AND ELECTRA

RETAIN

EXOTIC VEGETATION NO LONGER RETAINED DUE TO ELECTRA WORKS

RETAIN

EXOTIC VEGETATION NO LONGER RETAINED DUE TO SWALE EMBANKMENT AND ELECTRA WORKS

TE KOWHAI LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

HADFIELD LINK ROAD

17500

17600

17700

17800

MATCHLINE REFER: M2PP- 57R -D-DWG-8703

MATCHLINE REFER: M2PP- 57R -D-DWG-8705

A1 REPRODUCTION SCALE: 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE: 0mm 10 20 30 40 50

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED, REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	23.09.14

Original Scale (A1) 1:500	Design	S DUNN	20.08.14
	Drawn	M POWELL	20.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULNKER	22.09.14
	Dwg Check	G F-B	22.09.14
	* Refer to Revision 1 for Original Signature		

Approved For Construction* P BRADSHAW Date 23.09.14

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: PEKA PEKA SECTION THREE VEGETATION TO BE RETAINED SHEET 4

Drawing No: M2PP-57R-D-DWG-8704

Rev. 2

570

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-57R-D-DWG-8704.DWG

Drawing Plotted: 17 Nov 2015 11:46 a.m.

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.
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VEGETATION TO BE RETAINED

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- 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

RETAIN

RETAIN

RETAIN

RETAIN

RETAIN

VEGETATION NO LONGER RETAINED DUE TO SWALE EMBANKMENT

VEGETATION NO LONGER RETAINED DUE TO SWALE EMBANKMENT

TE KOWHAI ROAD

CYCLEWAY WALKWAY BRIDLEWAY

TE KOWHAI LINK ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

17800

17900

18000

18100

MATCHLINE REFER: M2PP- 57R -D-DWG-8704

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

570

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
2	FOR CONSTRUCTION - REDLINE INCLUDED	MP	SW	DGS	SW	17.11.15
1	FOR CONSTRUCTION - ENABLING WORKS	MP	GFB	DH	SW	23.09.14

Original Scale (A1) 1:500	Design	S DUNN	20.08.14
	Drawn	M POWELL	20.08.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULKNER	22.09.14
	Dwg Check	G F-B	22.09.14

Approved For Construction* P BRADSHAW Date 23.09.14

* 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: PEKA PEKA SECTION THREE VEGETATION TO BE RETAINED SHEET 5

Drawing No: M2PP-57R-D-DWG-8705

Rev. 2

Document No. M2PP-57R-D-DWG-8705.DWG

Appendix 2: CONSULTATION, FEEDBACK AND RESPONSES

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-0011

23 NOVEMBER 2015 - 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 Pekapeka are:

- Te Āti Awa ki Whakarongotai;
- Ngā Hapū o Ōtaki (representing Ngati Raukawa)
- KCDC;
- GWRC;
- Kāpiti Cycling Incorporated;
- Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleway

COMMENTS ON DRAFT SSMP 11. Rev A 25 September 2015

KCDC REVIEWERS COMMENTS *[JW=Julia Williams- Landscape Architect; DP = Deyana Popova-Urban Designer; SK=Stuart Kilmister – Programme Manager CWB; JP = John Perkins – Senior Roading Engineer*

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*KCDC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
		SK	Plan shows Kapiti Blue CWB terminating at private driveway.	Appendix 1 Sheet 12	This was incorrectly drawn. The plan has been amended to show Kapiti Blue continuing Northwards.
59A i) xii)	SSMP11 shall consider the start of the Expressway CWB.	JW + SK	CWB Entrance shown at Te Kowhai Link Road. Suggestion that Peka Peka Road is a more suitable location.	Appendix 1 Sheet 19	The entrance being labelled at Te Kowhai was a drawing error. This has been corrected with the entrance detail (including a grassed congregation area) being adjacent to the bus stops on the Peka Peka Link Road. This is roughly 125m from Peka Peka Road in order to receive cycling traffic crossing the link road from the eastern side of the expressway. Directional signage to the CWB is also provided at Peka Peka Road.
		JW	Additional Directional sign required at Te Kowhai Road.	Appendix 1 Sheet 19	Following the completion of PP2O directional signage will likely be necessary here. However the design of this signage is best left until the design of PP2O has been resolved. In the interim signage beyond the local road signage has been deemed unnecessary as it is a no-exit street with less than 20 residences.
		JW	Suggestion that an additional sign will be necessary at the corner of Peka Peka Link Road and Hadfield Link Road to direct people from existing SH1 to CWB.	Appendix 1 Sheet 19	Directional signs are now shown at both the crossing point of Hadfield Link Road and that of the slip lane to SH1.
DC.57 f)		JW	Vegetation to be retained plans Revised plans yet to be signed off since change in link road alignment. This is contrary to the statement on page 10.	5.A Page 10	This statement has been amended to reflect that the plans have been amended with the shifted link road alignment and that changes made since are to be considered as a part of the review of this SSMP.
		JW	No indication whether there will be a pole light at the intersection of the CWB with Te Kowhai Road.	Appendix 1 Sheet 17	The base plan for Sheet 17 (M2PP-121-D-DWG-8704) was incorrect (it showed the previous plans base). This has been corrected. A road light on the corner of Te Kowhai link road and Te Kowhai road will provide light to the intersection.
		JP	Sheet 17 DWG 8704 seems misaligned	See Above	See Above
		JP	Absence of lighting over a section of Peka Peka Link road.	Appendix 1 Sheets 14-17	Ducting for further lighting has been provided, however currently lighting the full length of the road is not considered necessary.
		JP	Unsure of intention off ID3 signing cycle traffic to SH1.	Appendix 1 Sheet 19	Following the completion of PP2O this signage will need to be adjusted, however in the interim cycle traffic heading northbound will need to use the on-ramp to join SH1.

COMMENTS ON DRAFT SSMP 11. Rev A 25 September 2015 ***GWRC REVIEWERS COMMENTS*** *[AF – Adam Forbes, Ecologist]*				
Topic	*Reviewer/ commenter*	*KCDC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
Reduction in Mitigation Requirements based on Detailed Design	AF	It is stated that detailed design has reduced the reclamation length, which results in a 103m reduction in riparian mitigation requirement. I realise that M2PP have proposed to GWRC that the required mitigation should be recalculated based on detailed design dimensions, however, I believe this has not yet been agreed, and therefore it is unclear why the SSMP provides a mitigation quantity based on detailed design length, rather than the BOI agreed length.	5 B. p.11	The discussion with GWRC regarding recalculation of mitigation based on detailed design is specific to addressing any shortfalls for the purpose of meeting consent condition G.42. We have agreed with Richard Percy that the SSMP for Peka Peka can proceed with proposed mitigation independently of the recalculation discussions currently being had. All other SSEMP's have progressed and are considered in terms of requirements for the extent of riparian mitigation (were that occurs) at the detailed design phase and thus the reflection on requirements for ecological mitigation has been based on detailed design at SSEMP 11 and is therefore in keeping with the process as it has been to date.
Provision of 20m Mitiation on either side of water bodies.	AF	Condition requirements and the EMP specify that riparian restorative planting will be "a minimum width of 20m on each side of each water body, unless otherwise agreed by the Manager (for example, where the margin of a water body is close to a road or another property)". However, SSMP 11 proposes riparian planting widths of "approximately 20m either side of the channel". There is nothing provided to suggest that Manager's approval has been sought for areas of riparian mitigation width that may be less than 20m. Please clarify why a minimum of 20m either side of a given channel cannot be provided in this mitigation area, and how much of the mitigation length is affected in this way.	5 J. p.13	By placing these quanta in the SSEMP and submitting it for certification we are by default seeking the Managers agreement to any departures from conditions. Prior agreement is not a requirement of the SSMP process. This is the same process we have followed in other SSMP's. For information, other than "Swale 3" which is in fact a stream, the stream riparian restored linear length which has 20m both sides is 744m, the linear length that only achieves one side 20m and the other a small quanta (but near 20m) is 105m; and the linear length that achieves no side 20m wide is 16m. For "swale 3" the linear length that achieves 20m both sides is 0m; the linear length that achieves one side 20m is 16m, and the length that achieves some width but less than 20m on both sides is 548m. Swale 3 is very restricted in space by both the road and its batter and the designation. Typically along its length (548m) there is no more than 30m in which to achieve both the stream and riparian zones. Therefore it is not possible to achieve 40m of riparian. However, the 10 (or so) meters generally present will still provide all of the stream functional benefits of a wider planting. The only difference will be the likely level of weed incursion and the level of weed management into the future required (a 20m planting being more weed resistant). In the other places (predominantly at the northern most end of the main north-south running channel, the southern end of the main east-west channel and a small parts of the central eastern channel, the 20m both sides is not achieved. What is achieved is typically 16-19m on 1 side and 20m of the other. The restrictions are the position of maintenance tracks, road side batter or other infrastructure (electric wires) that restrict the total width. These minor short falls are not ecologically meaningful, being close to 20m. We note that the quoted condition goes on to provide an example where it would be appropriate for the Manager to agree to a reduction (highlighted in red): "… with riparian planting to have a minimum width of 20m on each side of each water body, unless otherwise agreed by the Manager (for example, where the margin of a water body is close to a road or another property);"

<table>
<tr>
<td>Measurement of Planting Success</td>
<td>AF</td>
<td>The first bullet point refers to canopy “closure”, yet G. 42C vii) refers to canopy “cover”. Canopy closure and cover are incompatible measures and this could lead to confusion in the future. All existing references to canopy "closure" should be changed to canopy "cover".</td>
<td>5.W p.17</td>
<td>
Condition DC.53C (Landscape and Vegetation Management) uses canopy closure: c) ii) states:
“In relation to mass planting, successful planting shall be defined as 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. “

Condition G.42B (SSEMP for ecological mitigation areas) uses canopy cover, and confusingly introduces massed planted areas as a somewhat ambiguous qualifier – 80% of 80%): c) vii) states:
“Standards to be met at the end of the maintenance period to demonstrate that the mitigation planting has successful achieved 80% canopy cover over 80% of massed planted areas.”

In order to be consistent with the LMP, the certified EMP used canopy closure exclusively in assessing planting success (terrestrial and wetland) and so is consistent with DC.53C and the LMP, but not with G.42B as follows:

Mitigation planting (G.43)
<table>
<tr><td>Total area of planted or restored terrestrial vegetation.</td><td>Area of re-vegetation does not meet consent requirements (G.42)</td><td>< 7.6 ha of terrestrial mitigation planting achieved</td></tr>
<tr><td>Plant survival</td><td>Survival of a minimum of 80% of plant species.</td><td>>20% loss of plants at 4 years</td></tr>
<tr><td>Indigenous canopy closure</td><td>Canopy closure of a minimum of 80% within the planted areas.</td><td>< 80% canopy closure at 4 years</td></tr>
</table>

All currently certified SSEMPs use canopy closure to be consistent with the EMP and LMP, noting the planting design and specification have been prepared by the project LA’s who have focused on meeting condition DC.53C. The Ecology team have no particular preference which measure is used and agree consistency is essential. Both closure and cover are valid scientific measures of vegetation recovery each with strengths and weaknesses and sometimes both are measured for that reason. Canopy cover is generally simpler to estimate, particularly in low stature vegetation and for the monitoring timeframes proposed it may be favoured. However, changing it here will also require changes to the EMP, LMP and all previous SSEMPs
</td>
</tr>
</table>

Existing Vegetation within Riparian Corridor	AF	This plan shows that vegetation existing within the proposed riparian planting treatment will be retained. It appears from the plan that an undefined length (plan has no scale) of the southern-most riparian zone of the waterway concerned (waterway name not given) would therefore feature cover by existing vegetation rather than restorative mitigation planting. Is this interpretation of the plan correct? If so, please confirm how this portion of the riparian zone is accounted for in the calculation of mitigation proposed to be provided. This query also applies to riparian zones shown on Sheets 5 and 6.	Appendix 1. 56R-8204	A scale is provided (1:1000 @ A3, in the titleblock at the bottom of the page. We assume the reference is to the eastern most (or bottom of the page, right hand corner) rather than southernmost? As this is where the green hatched riparian vegetation to be retained is? That aside the interpretation of the reviewer of the plans is partially correct. It is not the intention to remove existing riparian vegetation, either native or exotic (though the great majority is exotic). Any vegetation that flanks an existing waterway which is being retained (e.g. W.2, the piece in question above) will also be enhanced. The presence of such vegetation makes no difference to our mitigation calculations, as riparian mitigation planting must still occur in these areas because that current vegetation is insufficient in terms of plant material, density or functional value. Perhaps it too should have been shown in blue in the plans. The riparian values require enhancement, are planted, and so therefore form part of the improvements and so the mitigation quantum. That is to say this portion (remaining trees) is accounted for as with any other revegetated riparian zone (it width and linear meterage go to the linear length and area of riparian mitigation) because it is receiving riparian revegetation effort. This would only not be the case if the current riparian vegetation was suitably native and sufficiently dense – there are no such examples of that type.
Mitigation Table	AF	I note there is a mitigation shortfall in several aspects. This is the subject of current discussion and any approval of this SSMP should be coordinated to be consistent with those discussions.	Appendix 4	GWRC (Richard Percy in discussions with Malory Osmond) has agreed that the SSEMP for Peka Peka can be certified while the discussions relating to the quantum of Project wide mitigation is discussed. The discussions about recalculation relate specifically to compliance with condition G.42. On that basis approval of this SSMP can occur independent of those discussions.

COMMENTS ON DRAFT ISSUE SSMP 11, Rev A September 2015.

KAPITI CYCLING INC. Lynn Sleath
IMPLEMENTATION GROUP OF KCDC ADVISORY ON CYCLEWAYS, WALKWAYS AND BRIDLEWAYS: Jan Nisbet.

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
DC 59A j) viii	SSMP prepared in consultation with…	CWB Advisory Group & Kapiti Cyling Inc	Support the placement of the CWB entrance detail adjacent to bus stops.		
			Suggest CWB crossing at Peka Peka Road needs suitable safety transition eg. Painted Surface.		Drop kerbs and traffic islands are provided for those crossing Peka Peka Link Road. For Cycle traffic heading to and arriving from the west additional angled drop kerbs are provided leading in to the 2m shoulder. The use of painted surfacing has not been used on crossings of a similar scale elsewhere on the projects (eg. Nga Manu Road)
			Double crossing of Hadfield Link Road will need careful detailing to protect them.		The crossing of the two lane segment has a traffic island and is set back from the actual intersection with Peka Peka Link Road. Crossing the slip lane involves only one direction of motor vehicle traffic in a single lane. It is predicted that traffic on the Hadfield link road will be low as the majority of Waikanae traffic will continue to the Te Moana Interchange.
			Signage needs to be provided highlighting the opportunity for CWB users to return to Waikanae via the existing SH1.	Appendix 1 Sheet 19	An additional direction of signage has been added to ID1 directing cyclists to Waikanae via Local Roads.
			Signage needs to be provided for Cycle traffic heading south on SH1 / PP2O	Appendix 1 Sheet 5	A road sign before the southbound off-ramp indicates that people on bikes should use the ramp for an alternative route. This has been inset on the masterplan.

COMMENTS ON Draft ISSUE 28.09.2015 SSMP 11: PEKAPEKA **TE ATIAWA KI WHAKARONGATAI Representatives** Mahina-a-Rangi-Baker					
General comments to be applied to all SSMP's - confirmed by Te Atiawa at the design workshop on 5 December 2014 Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
57 e) i	SSMP to be prepared in consultation with Te Atiawa ki Whakarongatai General comment to be applied to SSMP 1 – SSMP 11	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 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		In addition, the Alliance design team are working with Te Atiawa ki Whakarongatai to develop design of some elements along the expressway and CWB 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. This process is on-going (at 5.12.14)
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, Ann-Maree Bukholt, Mahina a rangi Baker, 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		See previous comments
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, Ann-Maree Bukholt, Mahina a rangi Baker, 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)		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai and Takamore Trust	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker, 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		See previous comments

SSMP 11 Specific comments *COMMENTS FROM CONSULTATION*					
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	Mahina a rangi Baker Meetings: 25 August 2015 16 September 2015	Points discussed: Potential for planting species that represent traditional cultural resource for medicine, weaving, dying, and food for birds. Plantings to serve as a resource for harvest and education. Expression given to sites of cultural significance including interpretive signage on CWB relating to the cultural planting.		An area of enrichment planting, comprising the indigenous species list provided by iwi will be established in close proximity to the CWB to allow easy access for harvest and educational purposes. Groups of each species will be planted on the link road embankment and adjacent riparian planting (depending on the plants tolerance of damper or drier conditions). All plant material will be eco-sourced locally and the Alliance will work with iwi to locate suitable seed sources or vegetative plant stock if required. Indicative location of signage shown on the SSMP masterplan. Implementation of these signs and others will be considered at a project wide scale to ensure a legible 'family' of recognisable signage has a common theme along the whole of the CWB. (Details not included in the SSMPs). Further consultation will be undertaken with Te Atiawa to develop this further.
		Mahina a rangi Baker Additional comments provided 9 October 2015	Culverts: When the SEV monitoring sites are selected are the culverts excluded or accounted for in that assessment? Is bed material maintained in the bottom of the culverts? Are the Paetawa and Kowhai streams the only ones measured? Cultural Mitigation Planting: Need to be confident that the species listed for medicine are safe for human consumption.	Section K: Culvert Installation (p.13/14)	Culverts are accounted for in the assessment. It is expected that this material will be maintained throughout most of the year, however during flood events it may be washed out. As a result of the culverts being inset (their bases sit below the stream level), bedding material will quickly reform following these events. No, most affected waterways that are main streams have been assessed. Plant species were chosen because they have medicinal, weaving and dying values in consultation with Iwi. The Alliance was not confirming they would be used as such. It may be that the area is used for educational purposes rather than consumption, but this would be up to the Iwi.

COMMENTS FROM CONSULTATION SSMP 11: PEKAPEKA

Ngā Hapū o Ōtaki (representing Ngati Raukawa) Caleb Royal
Draft SSMP issued for review 25.09.2015

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 Ngā Hapū o Ōtaki (representing Ngati Raukawa)	Meetings 7 July 2015 15 July 2015 16 September 2015	Points discussed: Iwi preference for grassed areas to be planted with indigenous massed plantings in areas between Expressway and parallel roads and other areas adjacent to link roads and the roundabout. Removal of mature exotic trees within riparian mitigation areas. Potential for planting species that represent traditional cultural resource for medicine, weaving, dying, and food for birds. Plantings to serve as a resource for harvest and education. Additional riparian planting between the Kowhai stream and railway line north of the Hadfield Road intersection, and other 'left over' areas within designation.		Confirmed that grass areas adjacent to carriageways have been excluded from planting in order to meet sight line and traffic safety requirements, and need to be retained as mown grass. The larger grassed areas between the link roads and the expressway are too large to be planted. A co-management approach to management of the land will be developed with iwi and NZTA. The mature trees provide visual screening of the roads for residents on Hadfield and Octavius Roads, as described in the landscape and visual assessment for the consent application. In time when the new plantings have established to suitable heights the mature trees could be sequentially removed by ringbarking or similar rather than extraction. This would need to be agreed by NZTA at the time. An area of enrichment planting, comprising the indigenous species list provided by iwi will be established in close proximity to the CWB to allow easy access for harvest and educational purposes. Groups of each species will be planted on the link road embankment and adjacent riparian planting (depending on the plants tolerance of damper or drier conditions). All plant material will be eco-sourced locally and the Alliance will work with iwi to locate suitable seed sources or vegetative plant stock if required. Interpretive signage will also be included on the CWB. Confirm that four additional areas of planting will be undertaken, (refer SHEETS 2-6) • Between Kowhai Stream and the railway line • Wet swale W7 west of culvert 51 • Between CWB and Harrisons Boundary south of the roundabout • Outlet of culvert 40
		Caleb Royal 9.10.2015	Caleb Royal as the designated person reviewing this piece of work for NHoO, confirmed that he is satisfied that the SSMP adequately meets the expectations that NHoO have for how the completed work will look within the new NOR area. Within this regard we support the SSMP you have presented to NHoO.		

Appendix 3: BRIDGE DEVELOPMENT STUDY - PEKA PEKA LINK ROAD UNDERPASS

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-0011

22 JUNE 2015 - REV D - FOR INFORMATION

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

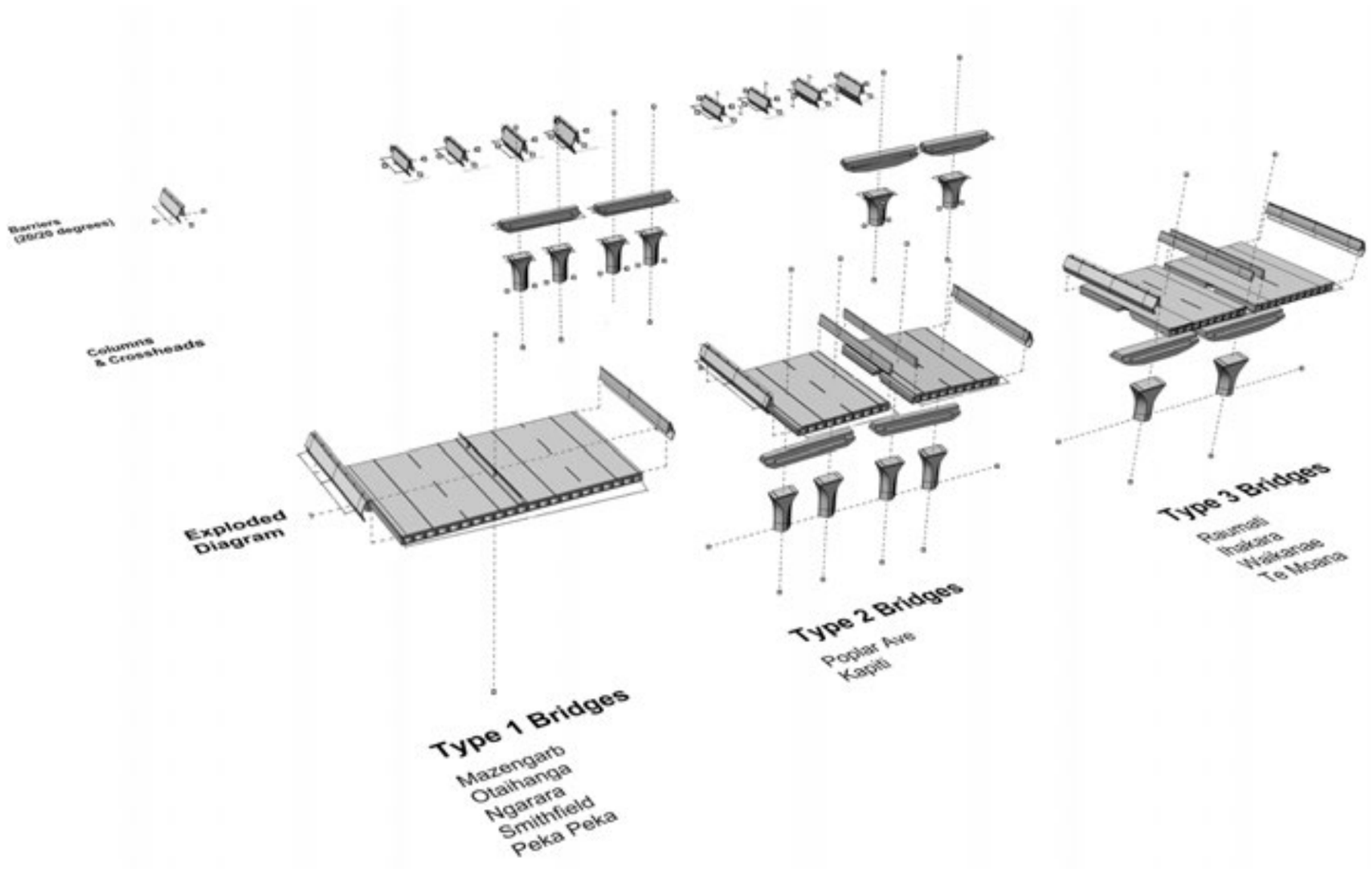
Bridge Development Study - Revision Table

M2PP-56R-D-REPG-001 – Peka Peka Road Underpass - Bridge Development Study

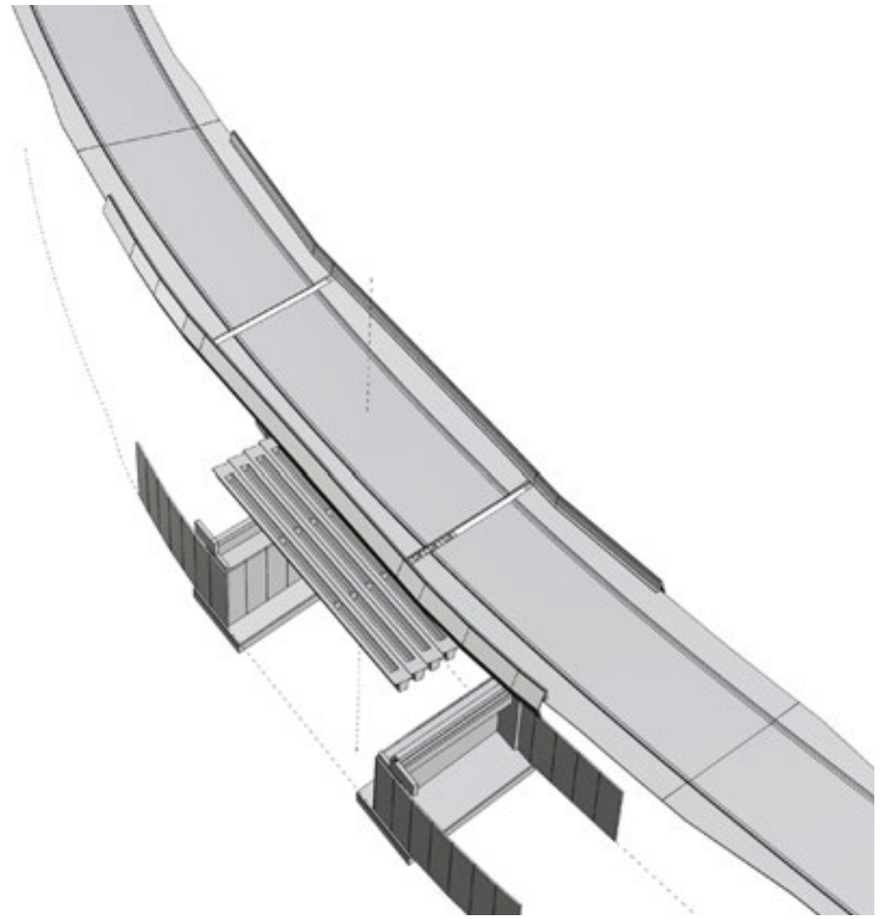
REVISION NO.	REVISION DATE:	STATUS:	REVIEWED BY:	NAME:	SIGNATURE:	DATE:
A	28/02/2014	FOR INFO				
B	08/07/2014	FOR INFO				
C	02/12/2014	FOR INFO				
D	18/05/2015	FOR INFO	PREPARED BY - M2PP ALLIANCE:	Frazer Baggaley (Urban Design)		
				Bron Faulkner (Landscape Architect)		
			CHECKED BY - M2PP ALLIANCE:	Alan Henderson (Structural Engineer – Lead)		
				Stuart Waters (Sector Manager)		
				Malory Osmond (Consents Manager)		
			APPROVED BY - M2PP ALLIANCE:	Doug Stirrat (Design Manager)		
				Dean Herrmann (Technical Director)		

M2PP Bridge Design Objectives

Bridges as a series of components



Proposed Peka Peka bridge 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.

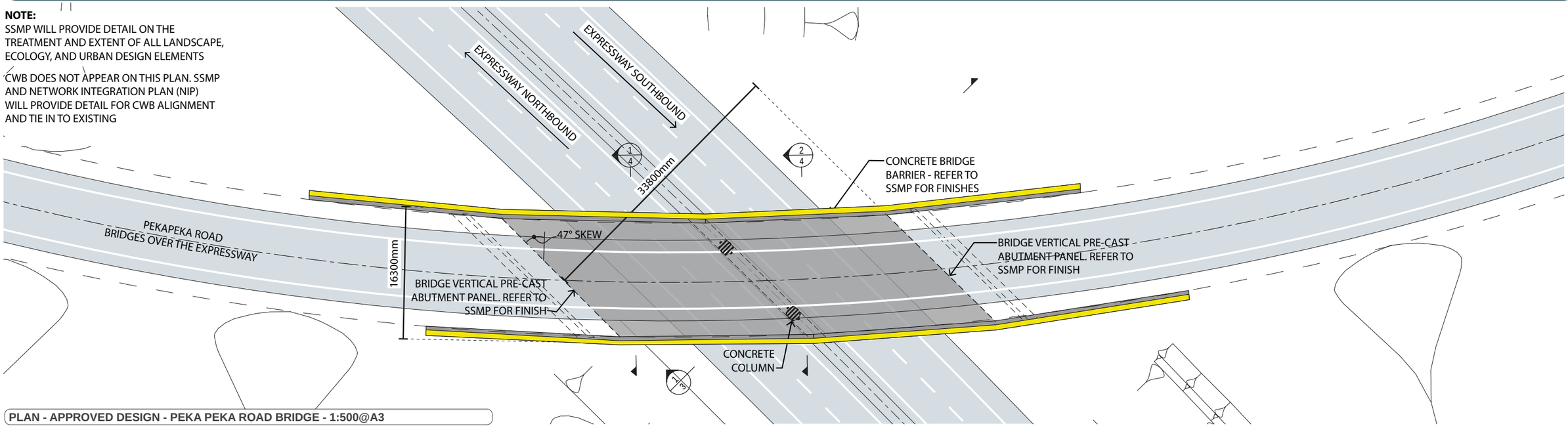
3. Bridges are formed as a whole from a single kit of parts, which allows the components to be repeated and a similar approach used at the multiple crossings to register as a ‘family’ of bridges because people will have multiple interactions day to day with the Expressway and this approach promotes simplicity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

Approved to Proposed Graphic Comparison

NOTE:
SSMP WILL PROVIDE DETAIL ON THE TREATMENT AND EXTENT OF ALL LANDSCAPE, ECOLOGY, AND URBAN DESIGN ELEMENTS

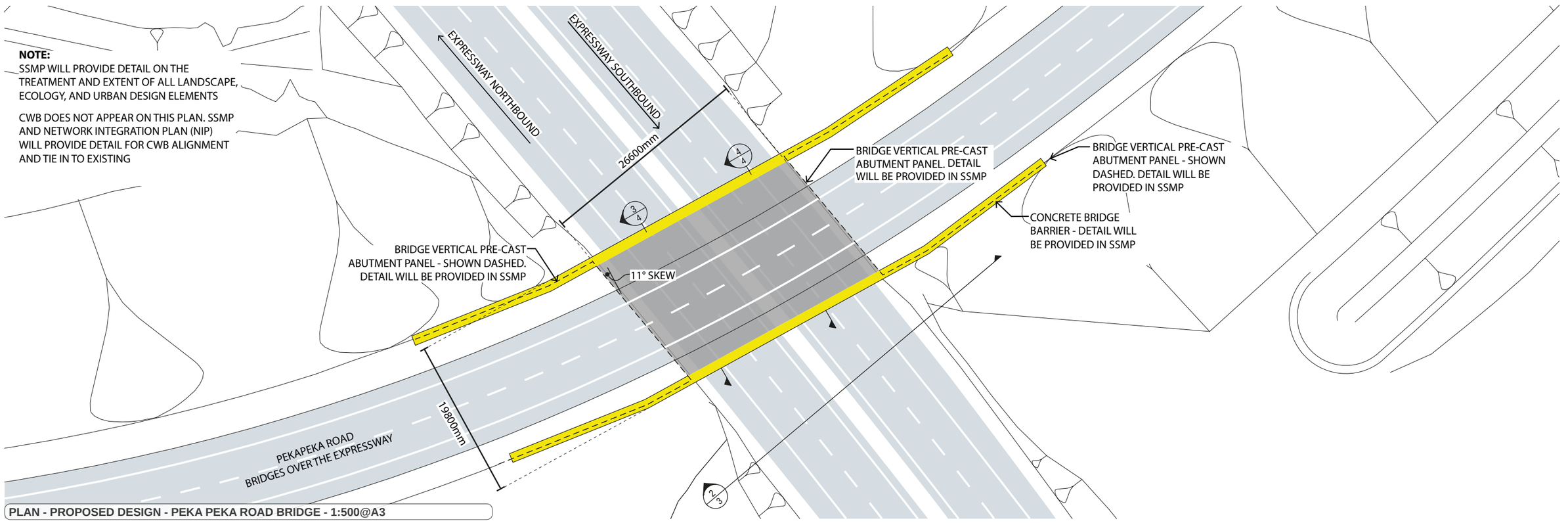
CWB DOES NOT APPEAR ON THIS PLAN. SSMP AND NETWORK INTEGRATION PLAN (NIP) WILL PROVIDE DETAIL FOR CWB ALIGNMENT AND TIE IN TO EXISTING



PLAN - APPROVED DESIGN - PEKA PEKA ROAD BRIDGE - 1:500@A3

NOTE:
SSMP WILL PROVIDE DETAIL ON THE TREATMENT AND EXTENT OF ALL LANDSCAPE, ECOLOGY, AND URBAN DESIGN ELEMENTS

CWB DOES NOT APPEAR ON THIS PLAN. SSMP AND NETWORK INTEGRATION PLAN (NIP) WILL PROVIDE DETAIL FOR CWB ALIGNMENT AND TIE IN TO EXISTING



PLAN - PROPOSED DESIGN - PEKA PEKA ROAD BRIDGE - 1:500@A3

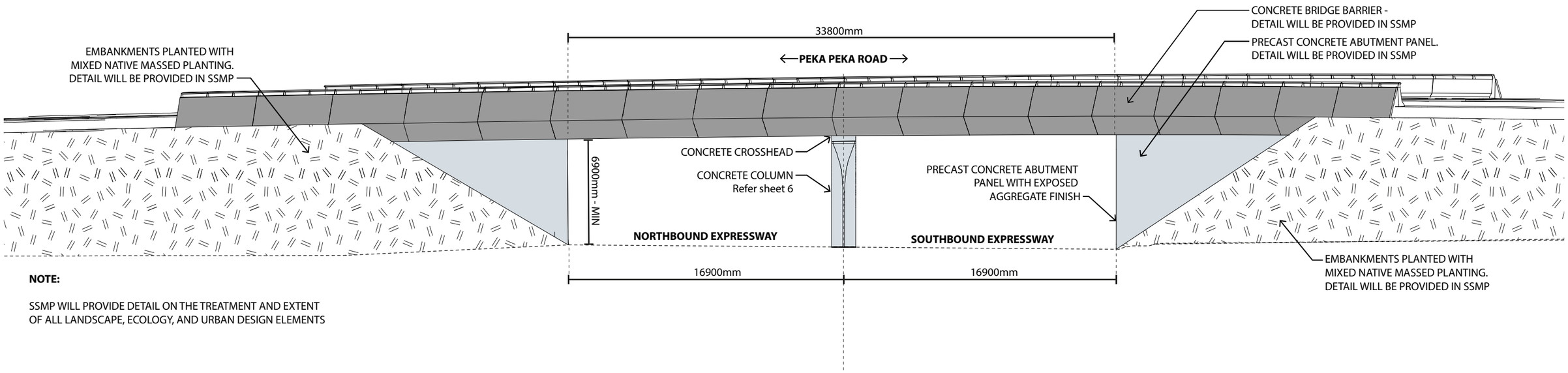
Design development

1. Reduced overall length of the bridge, reduced number of spans from 2 to 1.
2. Reduced abutment skew angle from 47 to 11 degrees
3. Columns removed
4. Bridge location moved south approx 90m and local road realigned

Rationale

1. The realignment of the local road reduces the clear span of the bridge. New length suitable for single span bridge.
2. The realignment of the local road helps to reduce the skew of the bridge abutment panels
3. Columns are no longer required with the reduced bridge length.
4. Peka Peka link road has been realigned to reduce the skew angle and span length of the bridge.

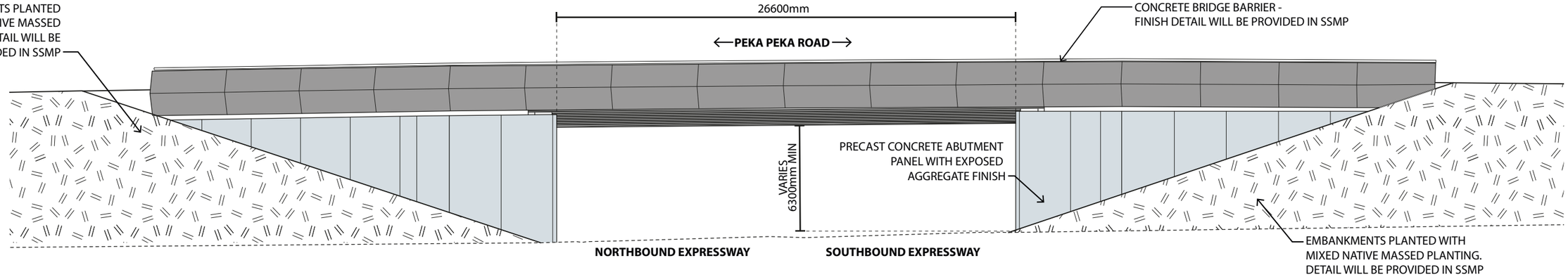
Approved to Proposed Graphic Comparison



NOTE:

SSMP WILL PROVIDE DETAIL ON THE TREATMENT AND EXTENT OF ALL LANDSCAPE, ECOLOGY, AND URBAN DESIGN ELEMENTS

1. ELEVATION - APPROVED - PEKA PEKA ROAD BRIDGE EAST ELEVATION - 1:250@A3



NOTE:

SSMP WILL PROVIDE DETAIL ON THE TREATMENT AND EXTENT OF ALL LANDSCAPE, ECOLOGY, AND URBAN DESIGN ELEMENTS

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

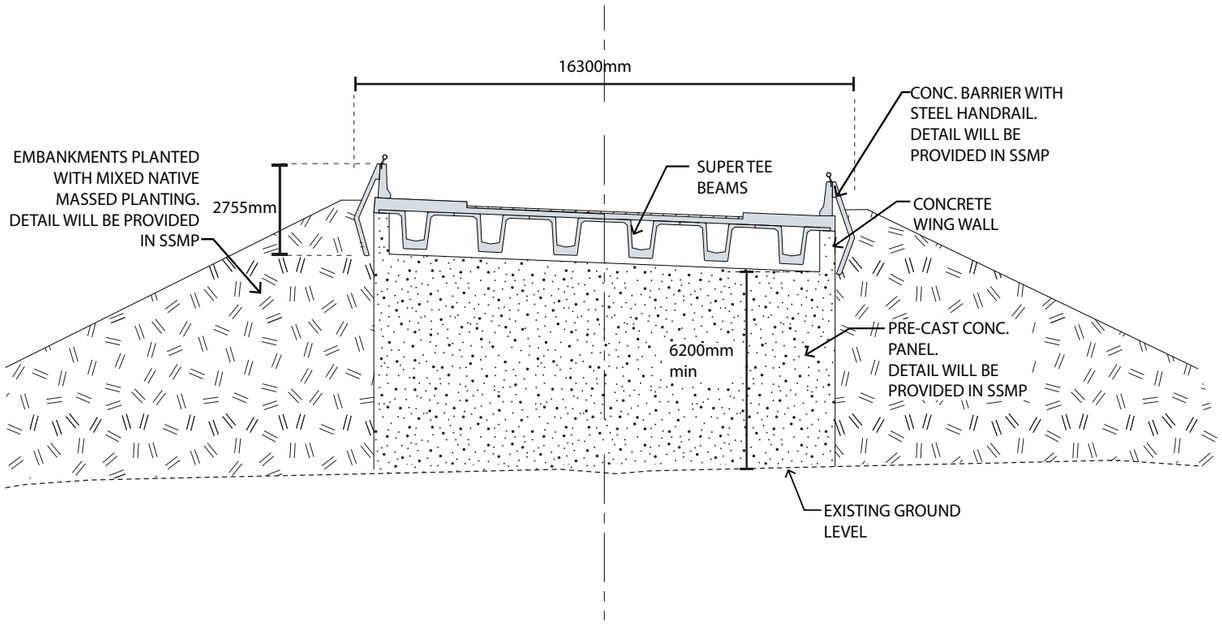
Design development

1. Reduced span length of the bridge, reduced number of spans from 2 to 1.
2. Columns removed
3. Increase to the size of the concrete bridge barrier/ fascia panel.

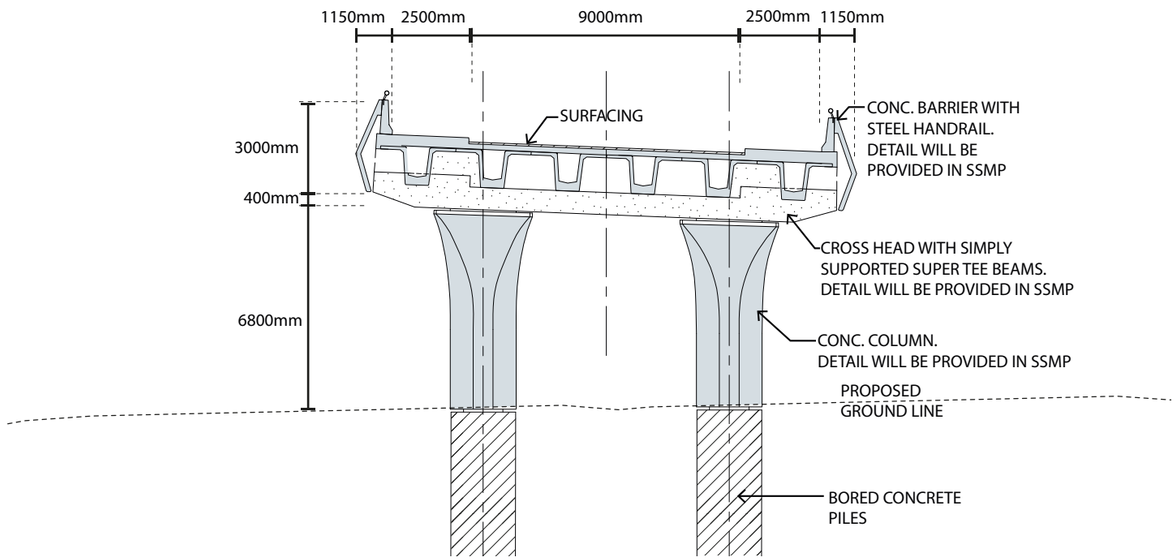
Rationale

1. The realignment of the local road reduces the skew of the bridge and the required bridge span length.
2. Columns are no longer required with the reduced span length.
3. Change to bridge deck thickness on the southern side. Increased barrier size better conceals the underside of bridge

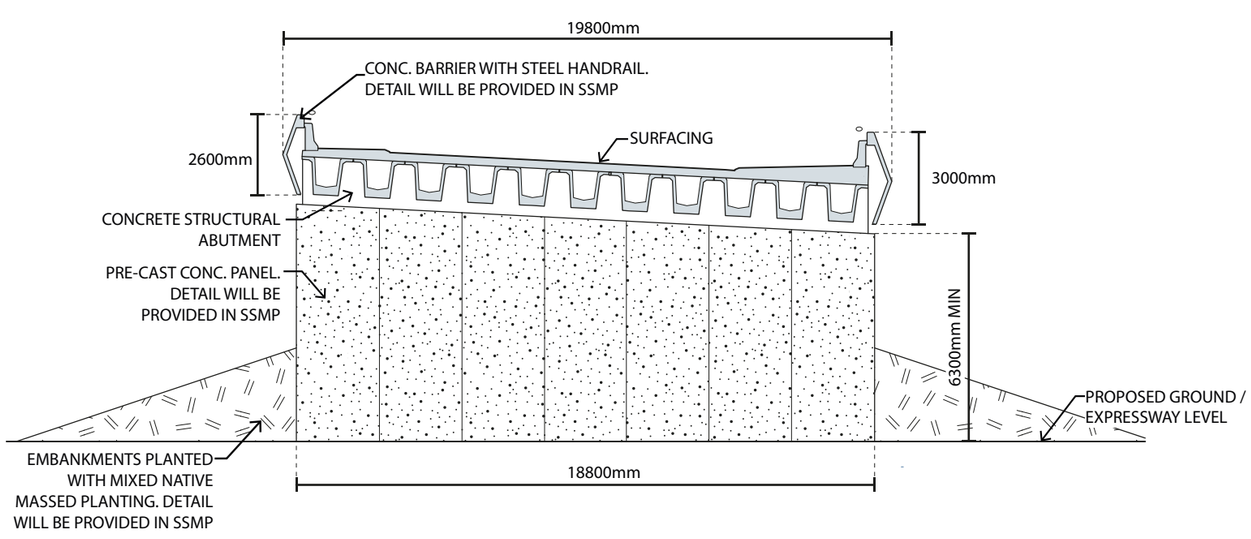
Approved to Proposed Graphic Comparison



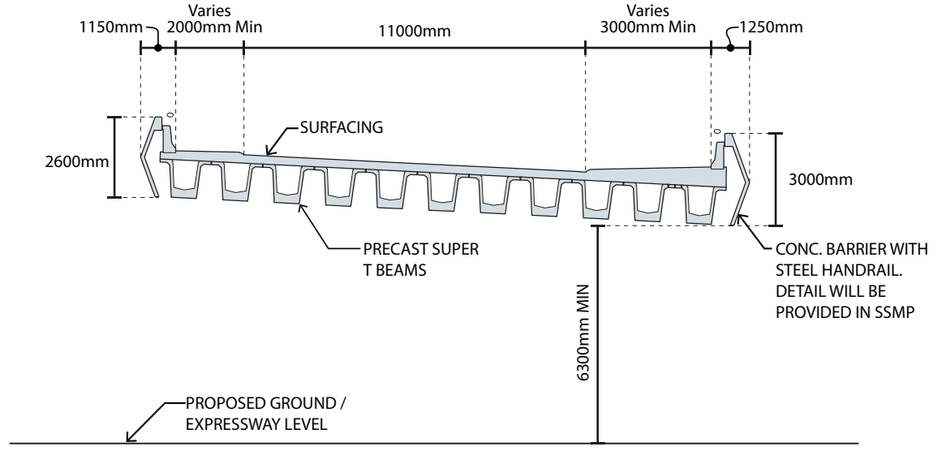
1. SECTIONAL ELEVATION - APPROVED - PEKA PEKA ROAD BRIDGE NORTH ABUTMENT - 1:200@A3



2. SECTIONAL ELEVATION - APPROVED- PEKA PEKA ROAD BRIDGE (LOOKING NORTH) - 1:200@A3



3. SECTIONAL ELEVATION - PROPOSED - PEKA PEKA ROAD BRIDGE NORTH ABUTMENT - 1:200@A3



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

Design development

1. Increased bridge width
2. Columns removed
3. Increase to the size of the concrete bridge barrier/ fascia panel.

Rationale

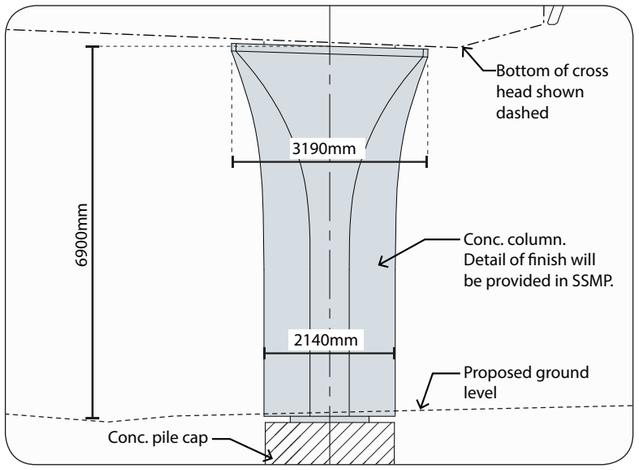
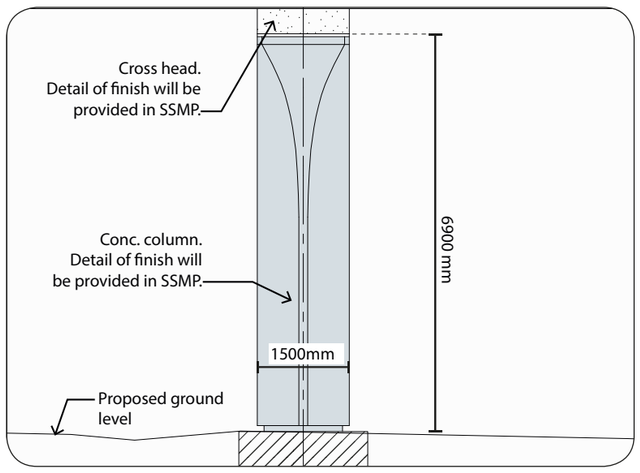
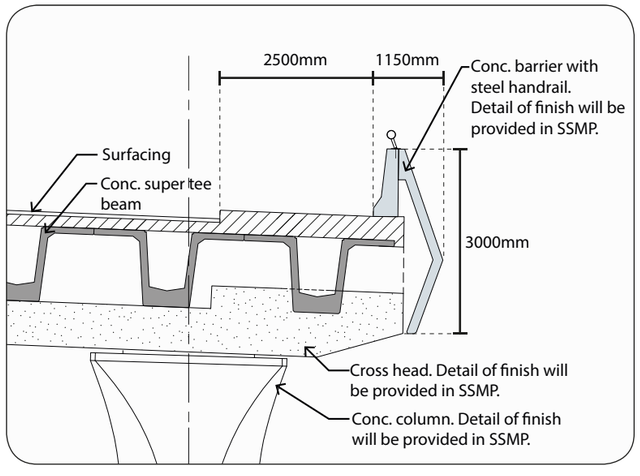
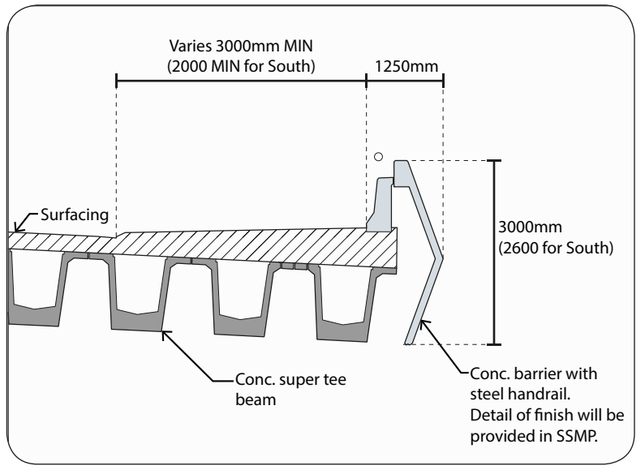
1. Increase to width of road corridor for improved sightlines increased footpath width on the north side of bridge
2. Columns are no longer required with the reduced bridge span length.
3. Change to bridge deck thickness on the southern side, this ensures the footpath drains towards the road, the Increased barrier size better conceals the underside of bridge

Approved to Proposed Graphic Comparison

VISUALISATION - APPROVED - PEKA PEKA LINK ROAD UNDERPASS (LOOKING AT THE EASTERN SIDE OF PEKA PEKA BRIDGE FROM THE SOUTH BOUND LANE OF THE PROPOSED EXPRESSWAY)

VISUALISATION - PROPOSED - PEKA PEKA LINK ROAD BRIDGE (LOOKING AT THE EASTERN SIDE OF PEKA PEKA BRIDGE FROM THE SOUTH BOUND LANE OF THE PROPOSED EXPRESSWAY)

Approved to Proposed Graphic Comparison

Elements	Approved Design	Proposed Design	Developments	Why?	ULDF Principles
Column front elevation 1:100@A3			1. Columns and crosshead removed	1. Columns are no longer required with the reduced bridge length.	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle numbers; 1, 2, 3, 8, 11 and 13
Column side elevation 1:100@A3			1. Columns and crosshead removed	1. Columns are no longer required with the reduced bridge length.	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle numbers; 1, 2, 3, 8, 11 and 13
Cross Head & barrier junction 1:100@A3			1. Column and crosshead removed 2. Increase to the size of the concrete bridge barrier/fascia panel. 3. Change to bridge deck thickness on southern side of the bridge	1. Columns are no longer required with the reduced bridge length. 2. Change to bridge deck thickness on the southern side. Increased barrier size better conceals the underside of bridge 3. To drain the footpath towards the road	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle numbers; 1, 2, 3, 8 and 13

ULDF PRINCIPLES SUMMARY

ULDF principle	Assessment of the Proposed Design against 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	The Proposed Peka Peka Link Road Bridge is different from the Consented/Approved Design, but the barrier remains consistent with other proposed expressway bridges. The vertical abutment and abutment finish is consistent with Ngarara, Waikanae, Te Moana and the stream sides of Wharemauku and Smithfield.
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 simple vertical abutments and barrier form are at a scale and proportion that is consistent with other expressway bridges.
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 from the Consented/Approved Design in that the piers have been removed. The removal of the pier and crosshead makes for a much cleaner, less complex bridge aesthetic. The lack of a vertical element in the middle of the bridge further accentuates the horizontality of the bridge fascia panel. The bridge fascia panel form is consistent with other proposed bridges. The reduction in bridge components helps to maintain the perception of 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	As Peka Peka Link Road bridge crosses over the expressway, the underside of bridge is not viewed from the local road.
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)	Not relevant
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	Not relevant
7. Use architectural lighting to emphasise the sculptural forms of the bridges and light units that are readily serviceable from the ground	Not proposing to light the expressway underpass
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 Consented/Approved Design, remains of the same systematised 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 Peka Peka Link Road Bridge barriers will be fair faced concrete with a white wash, applied concrete coating to ensure colour and tonal uniformity between panels. The bridge abutment will be constructed with precast concrete panels with an exposed Otaki pebble finish. The underside of the deck will be 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. Detail of finishes will be provided in the SSMP.
10. Repeat the bridge design concepts within the design of pedestrian 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	The proposed Peka Peka Link Road bridge piers have been removed and therefore differ from the Consented/Approved Design. As Peka Peka Link Road bridge crosses over the expressway, the underside of bridge is not viewed from the local road. The reduction in span and the removal of the piers is appropriate to the location considering the viewing audience. Removal of the piers helps to offset the reduction in bridge span.
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	The design of the bridge forms at Peka Peka Link Road has seen the consideration of all the contributing factors of visual amenity, structural design in high seismic zone, and constructability

VISUALISATION - PROPOSED DESIGN - PEKA PEKA LINK ROAD UNDERPASS

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Appendix 4: ECOLOGICAL MITIGATION TABLE

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-0011

23 NOVEMBER 2015 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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 1A: Predicted Habitat Loss by Site / Stream	Indigenous **Terrestrial** Habitat (ha)	Indigenous **Wetland** Habitat (ha)	Stream Habitat - **Freshwater** (linear m)		
i) Valued terrestrial vegetation and habitats:					
1. Raumati Kanuka (comprising kanuka forest and	0.05	-	-		
2. Mahoe vegetation along Drain 7;	0.35	-	-		
3. Otaihanga Mahoe (comprising dry vegetation in	0.00	-	-		
4. Otaihanga Kanuka (Kanuka Forest west of Soutl	0.17	-	-		
5. Waikanae River riparian vegetation;	0.13	-	-		
6. Tuku Rakau Forest (regenerating broadleaved lo	0.25	-	-		
7. Ngarara Mahoe (regenerating broadleaved low f	0.86	-	-		
8. Kakariki Stream riparian vegetation.	0.18	-	-		
9. Scattered remnant cabbage trees	1.80	-	-		
ii) Valued wetland vegetation and habitats:			-		
1. Raumati Manuka Wetland;	-	0.03	-		
2. Northern Otaihanga Wetland;	-	0.53	-		
3. Southern Otaihanga Wetlands;	-	0.55	-		
4. New wetland adjacent to Wastewater Treatment	-	0.00	-		
5. El Rancho Wetland (Weggery);	-	0.38	-		
6. Tuku Rakau Wetland; and	-	0.30	-		
7. Ngarara Wetland.	-	0.01	-		
iii) Freshwater habitats					
Culverts	-	-	802		
Culvert rip rap (U/S & D/S)	-	-	317		
Diversions (Reclamation)	-	-	1,525		
Bridges (armouring)	-	-	389		
Loss Allowed by Consent (G.42)	**3.8**	**1.8**	**3,033**		

EcIA Table 25 Table 25 VK Evidence

As progressively updated by Detailed Design

Table 1B: Actual Habitat Loss by Site / Stream	Indigenous **Terrestrial** Habitat (ha)	Indigenous **Wetland** Habitat (ha)	Stream Habitat - **Freshwater** (linear m)	Difference (m) ("-" = reduction)	Reference
i) Valued terrestrial vegetation and habitats:					
1. Raumati Kanuka	0.51			0.46	Updated 2015-06-25 MP
2. Mahoe vegetation along Drain 7;	0.69			0.34	Updated 2015-06-25 MP
3. Otaihanga Mahoe	0.00			0.00	Updated 2015-06-25 MP
4. Otaihanga Kanuka	0.06			-0.11	Updated 2015-06-25 MP
5. Waikanae River riparian vegetation;	0.22			0.09	Updated 2015-06-25 MP
6. Tuku Rakau Forest	0.43			0.18	Updated 2015-06-25 MP
7. Ngarara Mahoe	0.40			-0.46	Updated 2015-06-25 MP
8. Kakariki Stream riparian vegetation.	1.12			0.94	Updated 2015-06-25 MP
Scattered remnant cabbage trees	1.80			0.00	Updated 2015-06-25 MP
ii) Valued wetland vegetation and habitats:					
1. Raumati Manuka Wetland;		0.02		-0.01	Updated 2015-06-25 MP
2. Northern Otaihanga Wetland;		0.41		-0.12	Updated 2015-06-25 MP
3. Southern Otaihanga Wetlands;		0.45		-0.10	Updated 2015-06-25 MP
4. New wetland adjacent to WWTPD		0.00		0.00	Updated 2015-06-25 MP
5. El Rancho Wetland (Weggery);		0.34		-0.04	Updated 2015-06-25 MP
6. Tuku Rakau Wetland; and		0.06		-0.24	Updated 2015-06-25 MP
7. Ngarara Wetland.		0.00		-0.01	Updated 2015-06-25 MP
iii) Freshwater habitats					
Culverts			668	-134	Updated 2015-07-15 IS
Culvert rip rap (U/S & D/S)			154	-163	Updated 2015-07-15 IS
Diversions (Reclamation)			1,565	40	Updated 2015-07-15 IS
Bridges (armouring)			429	40	Updated 2015-07-15 IS
Revised Total Loss	**5.2**	**1.3**	**2,816**		
Difference consented and actual	**1.4**	**-0.5**	**-217**		

Table 2A: Calculated Ecological Mitigation Requirements (BOI)	Indigenous **Terrestrial** Habitat (ha)	Indigenous **Wetland** Habitat (ha)	Stream Habitat - **Freshwater** (linear m)	Stream Habitat - **Riparian** (ha)	Combined Total of at least
Total Mitigation Required	**7.6**	**5.4**	**5,240**	**17.7**	**-**
+ Flood storage areas 2A & 3	**0**	**4.1**	**1,400**	**5.9**	**-**
Combined Total (G.42)	**7.6**	**9.5**	**6,640**	**23.6**	**40.7**
Mitigation Sites (EMP/BOI Design)					
1. Raumati Manuka	1.2	2.1	330	1.1	-
2. Drain 7	0.0	3.9	1,560	6.3	-
3. Otaihanga Wetlands	4.3	1.1	440	1.8	-
4. Muaupoko	0.0	0.0	75	0.5	-
5. Kakariki / Smithfield	4.3	2.3	2,350	8.8	-
6. Hadfield / Paetawa	1.7	0.0	1,375	5.3	-
Total Predicted Mitigation Area/Length	**11.46**	**9.46**	**6,130**	**23.7**	**45**
Surplus / Shortfall	**3.86**	**-0.04**	**-510**	**0.14**	**-**
Situation	Surplus	Shortfall	Shortfall	Surplus	-

Table 2B: Designed Ecological Mitigation	Indigenous **Terrestrial** Habitat (ha)	Indigenous **Wetland** Habitat (ha)	Stream Habitat - **Freshwater** (linear m)	Stream Habitat - **Riparian** (ha)	
Total Mitigation Required	**7.6**	**5.4**	**5,240**	**17.7**	
+ Flood storage areas 2A & 3	**0**	**4.1**	**1,400**	**5.9**	
Combined Total (G.42)	**7.6**	**9.5**	**6,640**	**23.6**	
Mitigation Sites					
1. Raumati Manuka	1.25	1.39	579	2.13	Updated 2015-08-12 MP
2. Drain 7		4.48	1,714	6.52	Updated 2015-08-12 MP
3. Otaihanga Wetlands	3.34	1.70	438	1.68	Updated 2015-08-12 MP
4. Muaupoko			72	0.25	Updated 2015-08-12 MP
5. Kakariki / Smithfield	4.37	1.40	2,013	6.23	Updated 2015-08-12 MP
5a. Kakariki West					Updated 2015-08-12 MP
6. Hadfield / Paetawa	4.89		1,535	5.13	Updated 2015-08-12 MP
Total Available Mitigation Area/Length	**13.85**	**8.97**	**6,351**	**21.94**	
Surplus / Shortfall	**6.25**	**-0.53**	**-289**	**-1.66**	
Revised Situation	Surplus	Shortfall	Shortfall	Shortfall	

The final quantum of mitigation required to meet the actual effects of this project are under discussion with GWRC.

Appendix 5: LANDSCAPE SPECIFICATION

Site Specific Management Plan 0011- [sector 560-570]
MacKays to Peka Peka Expressway
M2PP-121-D-PLNM-0011

SEE SEPARATE A4 BOUND DOCUMENT.

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor