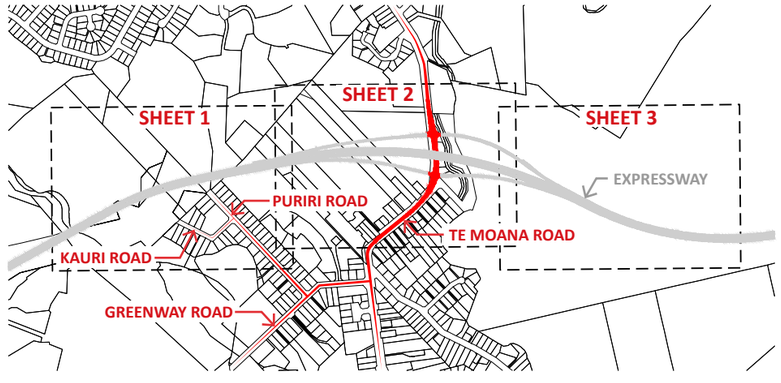
M2PP-121-D-PLNM-0008

Site Specific Management Plan 008 - [sectors 480/510]
MacKays to Peka Peka Expressway

31 MARCH 2015 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor



SITE SPECIFIC MANAGEMENT PLAN - TE MOANA [SSMP 8 - SECTOR 480, 510]

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

SSMP Exclusions or omissions:

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

1.0 SSMP REVISION HISTORY

REVISION NO:	DATE:	STATUS:	ISSUED TO:
REV A	10.12.2013	Draft for Review	KCDC
REV B	03.03.2015	Issue for certification	KCDC
REV C	31.03.2015	Certification issue	KCDC

2.0 SSMP CERTIFICATION DETAILS POSITION

PREPARED BY M2PP ALLIANCE	NAME:	POSITION:	SIGNATURE:	DATE:
	Bron Faulkner	Landscape Architect		03.03.15
	Frazer Baggaley	Landscape Architect		03.03.15
	Stephen Fuller	Ecologist		04.03.15
M2PP ALLIANCE APPROVAL	**NAME:**	**POSITION:**	**SIGNATURE:**	**DATE:**
	David Callan	Sector Manager		04.03.15
	Doug Stirrat	Design Manager		04.03.15
	Doug Stirrat	Technical Director		04.03.15
	Malory Osmond	Consents/Compliance Manager		10.03.15
CERTIFICATION	**NAME:**	**POSITION:**	**SIGNATURE:**	**DATE:**
Reviewed by Julia Williams, Landscape, KCDC. Deyana Popova, Urban Design, KCDC and John Perkins , Traffic Engineer, KCDC	Rita O'Brien	KCDC -Acting consents and compliance manager		31.03.15

2.1 POST CERTIFICATION CHANGES

DRAWING/PAGE TITLE:	DRAWING NUMBER:	DRAWINGS STATUS:	REVISION NO:	DESCRIPTION OF CHANGE:	ISSUED TO:	CERTIFIED BY:	DATE:
SSMP 8 [480-510] - SHEET 2 Master Plan	M2PP-121-D-DWG-8101	Revision/Update	D	Retaining wall- update reference note. Retaining wall details to be found in Retaining wall addendum to SSMP 8	KCDC		3.5.16
SSMP 8 [480-510] - SHEET 3 Master Plan	M2PP-121-D-DWG-8102	Revision/Update	D	Retaining wall- update reference note. Retaining wall details to be found in Retaining wall addendum to SSMP 8	KCDC		3.5.16
SSMP 8 [480-510] - SHEET 11 Puriri Road CWB Detail	M2PP-121-D-DWG-8801	Revision/Update	D	Revised CWB interface with Puriri Road.	KCDC		3.5.16
SSMP 8 [480-510] - SHEET 21 Type 1 CWB entrance	M2PP-121-D-DWG-8803	New Sheet added	A	CWB entrance structures Type 1 - design change to precast units. To replace 'gabions' on sheet 12	KCDC		3.5.16
SSMP 8 [480-510] - SHEET 22 Te Atiawa Column Design	M2PP-121-D-DWG-8804	New Sheet added	A	Page added to illustrate Te Atiawa design to be applied to bridge columns (sand blasted etching)	KCDC		3.5.16
Addendum Retaining wall (Landscape and Urban)		New Document	A	Includes the detail of the retaining wall that were finalised after SSMP 8 had been certified. Separate Document	KCDC		17.08.15

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SITE SPECIFIC MANAGEMENT PLAN TE MOANA [SSMP 8 – SECTORS 480, 510]

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

The retaining wall located at the southern end of the interchange is not addressed in this version of the SSMP; the wall is still under development and will be covered in a subsequent issue of this SSMP.

NZTA are working with the Tuku Rakau collective on other design elements in this sector. This work is on-going

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	10.12.2014	Draft for review	KCDC
Rev B	03.03.2015	Issue for certification	KCDC
Rev C	31.03.2015	Certified	KCDC

2. SSMP CERTIFICATION DETAILS		Signature	Date
A. PREPARED BY M2PP ALLIANCE:	Bron Faulkner (Landscape Architect)		3/3/2015
	Frazer Baggaley (Landscape Architect)		03/03/15
	Stephen Fuller (Ecologist)		04/3/15
B. M2PP ALLIANCE APPROVAL	David Callan (Sector Manager)		04/3/15
	Doug Stirrat (Design Manager)		4/3/15
	Doug Stirrat (Technical Director)		4/3/15
	Malory Osmond (Consenting Manager)		10/3/15
C. CERTIFICATION	Rita O'Brien (KCDC) Acting Consents and Compliance Manager [Reviewed by Julia Williams, Landscape, KCDC and Deyana Popova Urban Design, KCDC, John Perkins Traffic engineer]		31/3/15

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).

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 (refer to section G below) to give the best possible definition to the Project design elements as early as possible.

E. GENERAL PROJECT DESCRIPTION

REFER APPENDIX 1 SHEETS 1-8

This SSMP covers the area of the Expressway from the north side of the Waikanae River corridor to the northern extent of the Te Moana interchange. It does not include the Takamore Precinct area which is subject to a separate design and consenting process. SSMP 8 includes the following main components:

- Full interchange at Te Moana Road with a five span bridge over Te Moana Road and Waimeha Stream.
- On and off ramp bridges over Waimeha stream (one includes CWB)
- Retention of dune landforms and other dunes affected by earthworks to be reshaped to tie in with adjoining landforms.
- CWB on the east side of the Expressway north of Puriri Road. CWB on local road between the Waikanae River and the end of Puriri Road.
- Noise bund east of the expressway just north of Puriri Road
- Retaining walls where the expressway cuts through a dune at the southern extent of the interchange.(on-going design work with relevant iwi groups)
- Stormwater treatment wetlands and swales.
- Realignment of Waimeha Stream
- Retention of valued vegetation and wetland habitat.
- Construction of a flood bank and floodway south of Te Moana Road.
- Watercourse diversion to the west of the northbound off-ramp

F. SSMP EXISTING AREA DESCRIPTION

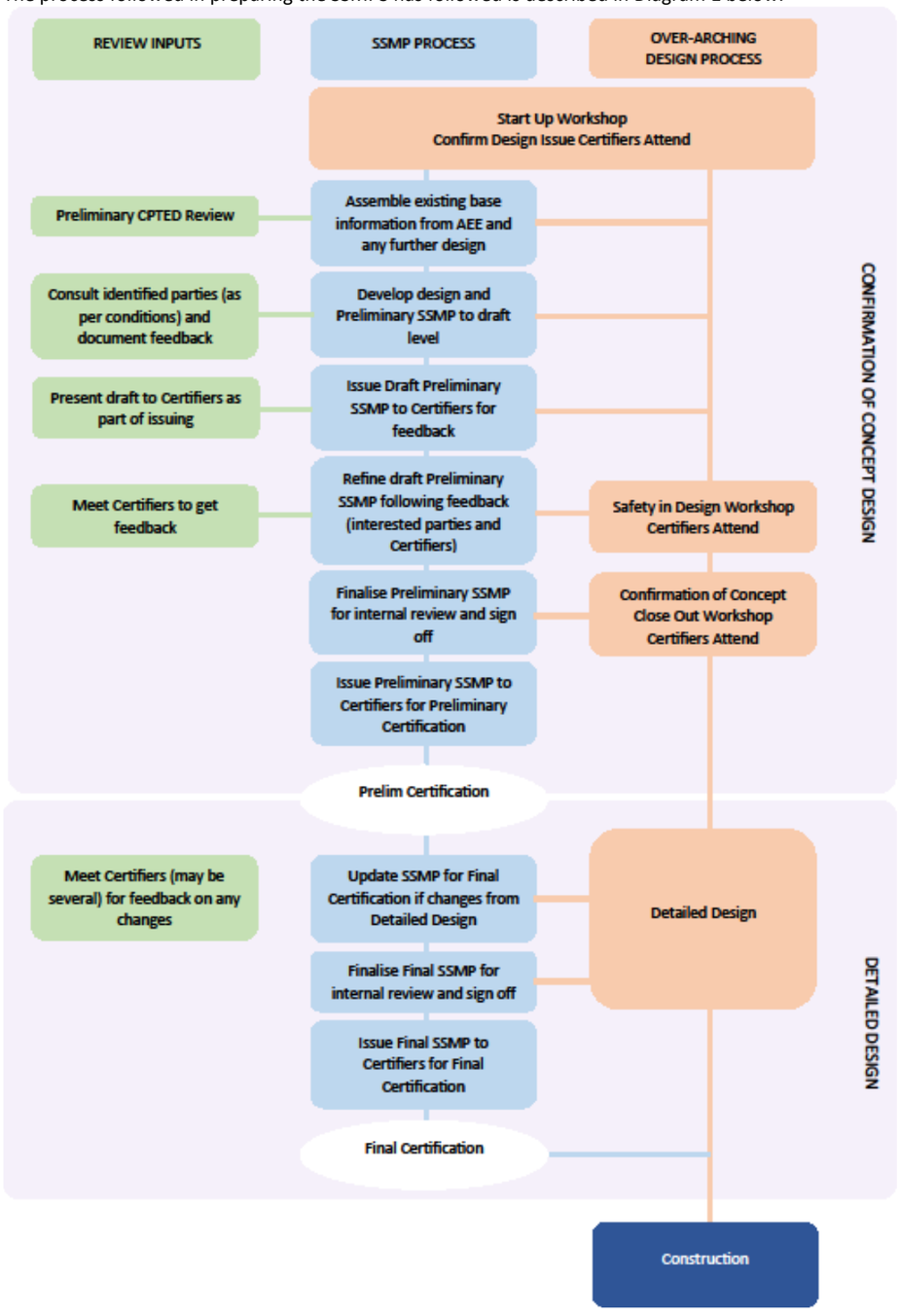
REFER APPENDIX 1 SHEETS 2-4 AND ULDF SECTION 3.10

- This is an area of high cultural significance for tangata whenua; in addition the alignment runs close to the Takamore urupa and the Maketu tree.
- The area comprises a mix of peri-urban rural and residential settlement, with a few intact dune landforms with areas of regenerating native vegetation. Residential areas of Te Moana, Puriri, Kauri, and Greenaway Roads fringe the eastern side of the alignment. The western side is bounded by Takamore Trust land (Takamore Precinct) rural land (soon to be developed), the Waikanae Golf Club, rural residential properties, small rural holdings and a market garden.
- The area has a substantial established tree structure of exotic and indigenous vegetation. The Te Moana Road corridor has a distinct 'Garden suburb' amenity.
- The Tuku Rakau Forest (regenerating broadleaved low forest east of Takamore Urupa) is identified as valued indigenous vegetation and the El Rancho Wetland (Weggery wetland) and Tuku Rakau Wetland are identified as valued wetland habitat.

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** - An SSEMP is not required for SSMP 8 - SSEMPs are to be prepared for each ecological mitigation area set out in Condition G42. - There are no ecological mitigation areas identified in this SSMP area. **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 8, the locations include: (ix) Te Moana Road. - Condition DC.59A f) lists the matters to be provided and in summary includes detailed design for the benefit of pedestrians, cyclists and others: - Lighting; - Footpath and on-road cycle lane design (Provision for minimum 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, SSMP 8 shall consider the following in relation to Condition 59A i) x): Te Moana Road Interchange: Safety and convenience of pedestrian and cycle crossing at the local road, including for horse riders - Any additional network analysis required to consider the implications of the changes to the intersection design

	- Future connection points to the Ngarara development areas - Potential utilisation of the Waimeha Stream as an alternative (optional) route to crossings at Te Moana Road Network Integration Plan Condition DC.64 a) in relation to the CWB; Condition DC.64 b) ii) in relation to lighting.
3. CONSULTATION	• SSLMP and SSUDP (under Conditions DC.57 e), G42 d) and DC.59A j)) requires consultation with the following parties: - Te Āti Awa ki Whakarongotai; - Takamore Trust, where the works are within or directly affect the area between Te Moana Road and Waikanae River; - Kapiti Coast District Council (KCDC); and - Relevant Landscape Focus Area Condition DC.57A a) SSMP 8 contains one Landscape Focus Area .*When developing landscape design solutions as part of preparing the SSLMPs, the Requiring Authority shall undertake consultation with residents whose properties are located close to the Expressway in the following Landscape Focus Areas (identified for their sensitivity to visual effects):* vi) Puriri and Kauri Roads (including El Rancho). • The SSUDP condition (DC.59A j) viii) requires consultation with the following parties: - Kāpiti Cycling Incorporated and KCDC's CWB Advisory Group in respect of the CWB and any cycle or pedestrian connections. • Consultation (not specified in the conditions) is being undertaken with the Tuku Rakua collective in relation to the retaining wall detailing and other design elements. Te Āti Awa ki Whakarongotai and Takamore Trust are also included in consultation regarding the surface finish of the retaining walls. • Consultation with Takamore Trust regarding the design of the Takamore Precinct is subject to a separate design and consenting process with NZTA and KCDC.

4. URBAN DESIGN	CONDITIONS – URBAN DESIGN	RESPONSES – URBAN DESIGN
A. LIGHTING REFER APPENDIX 1 CPTED REVIEW COMMENTS ON SHEETS 2-5	DC.59 f) i) Lighting for the benefit of pedestrians and cyclists DC.64 a), b), ii)	No lighting is proposed on the Expressway except at the main interchanges. Due to the configuration of the Te Moana interchange, lights will be required on the bridge as well as the on/off ramps. Lighting will not be installed along the CWB. Lighting will be located at main access points to clearly signal the CWB junctions at Te Moana and Puriri Roads; where street lighting is not sufficient additional lighting will be provided. Architectural lighting to be used to add additional interest and safety at night. It is proposed to softly up light the 4 columns (the two either side of Te Moana Road) to accentuate the form of the columns.
B. CWB REFER TO APPENDIX 1 SHEETS 2-12 & 19,20 - ALSO REFER TO CPTED REVIEW COMMENTS ON SHEETS 2-5	DC.59A f) ii) and iii) and DC59A g), DC.59A i) xi) and DC.57 c) DC.64 a), b), ii). • Footpath and on road cycle lane on-road (2.0m and 1.5m) • Intersection of the CWB and Local Roads to be safe for crossing • Alignment of CWB • Provision for a 3.0 m wide two-way path that is generally parallel with Expressway • Locations for connections (immediate and future) • Boardwalks • Lighting and safety provisions for local road crossings • CPTED review	CWB runs parallel to the eastern side of the Expressway, comprising a 3.0 m wide compacted gravel (Kapiti Blue) path and where practicable a grass verge of up to 1.0m wide for horse riders. The CWB is designed to provide access for maintenance vehicles, although this use will be infrequent. The CWB will cross Te Moana Road via a signalized pedestrian crossing integrated with traffic lights at the eastern on/off ramp intersection. The CWB north of Te Moana Road is adjacent to the south bound off ramp and crosses the Waimeha Stream in the off ramp bridge. The comments raised in the CPTED review of the Preliminary issue of this SSMP identified key design considerations. A subsequent CPTED assessment of this SSMP was undertaken 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. SSMP 8 Specific CPTED review (3 December 2014) concluded that the design is low risk from a CPTED perspective. The review suggests that a gabion style CWB entrance also be included at the south end of Kauri Road. This has been detailed in SSMP 7. The review also suggested the possibility to include a continuity device for CWB users at the corner of Kauri and Puriri Roads. The treatment of this on-road section of the CWB was discussed during consultation with CWB stakeholder groups (see Appendix 2). Provision of on road lanes or devices on local roads would be the responsibility of KCDC should they deem it necessary.
C. RETAINING WALLS AND NOISE MITIGATION STRUCTURES REFER TO APPENDIX 1 SHEETS 2-3 and 13	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.	The Expressway retaining walls at chainage 11350 are currently being designed, and will not be finalized as part of this revision of SSMP 8. The design of the retaining wall facing panels and finishes is being developed in consultation with the Tuku Rakua collective, Te Āti Awa ki Whakarongotai and Takamore Trust, with the next hui planned for 31 January 2015. A retaining wall in the Waimeha Stream, will have a terramesh® panel facing and provides flood protection to the bridge abutment, see details on Sheet 9. An earth noise bund will extend 340m north from Puriri Road to the retaining wall at 11350. The CWB will run along the top of the bund and the embankments either side will be planted. There are no noise walls in this SSMP.

D. LOCAL PROPERTY ACCESS	DC.59A f) v) Local property access to provide for existing and future needs	Access to the Takamore Urupa from the end of Puriri Road will be severed by the Expressway. An alternative access via Flaxmere Street is subject to a separate consenting process which is currently in progress. A potential access to the urupa off Te Moana Road, adjacent to the northbound off ramp as per AEE drawings, still remains as a possible link to land west of the expressway. Future connection points to the Ngarara development will be provided for outside the M2PP project designation.
E. BRIDGE ABUTMENTS REFER TO APPENDIX 1 SHEET 9&10 AND APPENDIX 3	DC.59A f) iv) Bridge piers and abutments design to address the location of piers and the treatment of abutments to address their scale and materials	The Expressway bridge over Te Moana Road and the Waimeha Stream is approximately 115 m long. The mainline bridge crosses Waimeha Stream, Te Moana Road as well as provision for a floodway. Two separate bridges for the northern on/off ramps cross the Waimeha Stream. The expressway bridge has 2 separate decks, each supported by 4 columns (8 in total). The columns have a splayed top (same as all bridge columns on the project) Both bridge abutments are vertical and will be faced with precast concrete panels with an exposed aggregate facing. Unlike most other bridges of the project, pedestrians and road users will not be close to the abutments, therefore the experience of passing under the Te Moana Bridge will be less enclosed than what occurs in places elsewhere along the expressway. Riprap will be installed under the bridge to a similar extent as the bridge decks, to suit the stream/floodplain/abutment arrangements and morphology. To improve the interface between the proposed riprap and 3m shared path on the north side of Te Moana Road a series of concrete 'transition' steps will be constructed. These provide increased visual amenity and a more inviting pedestrian experience. As mentioned above 4A. architectural lighting will be provided under the bridge deck.
F. OTHER URBAN DESIGN CONDITIONS	Condition 59A) x) Te Moana Road Interchange: Safety and convenience of pedestrian and cycle crossing at the local road, including for horse riders - Any additional network analysis required to consider the implications of the changes to the intersection design - Future connection points to the Ngarara development areas - Potential utilisation of the Waimeha Stream as an alternative (optional) route to crossings at Te Moana Road.	Roundabouts at this intersection (AEE design) have been replaced by two sets of traffic lights. The signalised pedestrian/cycle crossings will be integrated with the traffic lights on the northern side of Te Moana Road and at the CWB crossing of Te Moana Road. For pedestrian safety a 1.2m high 2 rail barrier fence will run along the north side of the Te Moana road shared path between the path and columns. There will be no formed footpath on the southern side of Te Moana Road, pedestrians and horse traffic will need to cross Te Moana to use the footpath on the northern side of the road. Provision for a future footpath on the southern side is provided. On-road cycle lanes (Te Moana Road) to be painted green in appropriate locations in accordance with KCDC standard practice and MOTSAM standards. Future connection points to the Ngarara growth areas have been achieved outside the project designation. This option was explored but was determined unfeasible with respect to providing space for pedestrians under the two ramp bridges.

5. LANDSCAPE + ECOLOGY	CONDITIONS – LANDSCAPE + ECOLOGY	RESPONSES – LANDSCAPE + ECOLOGY
A. DUNES AND DRYLAND VEGETATION REFER TO APPENDIX 1 SHEETS 2, 3, 4, 5 AND APPENDIX 4	Tuku Rakau Forest (regenerating broadleaved low forest east of Takamore Urupa) is identified as valued indigenous vegetation by Condition G.41 c). Condition DC.57 f) specifies exotic trees to be retained. Re-shaping of dune landforms disturbed by construction of the Expressway.	The Ecological Management Plan (EMP) outlines the loss 0.25 ha of the 0.9 ha Tuku Rakau Bush (a small area of scattered kanuka forest and treeland with mahoe). Detailed design has resulted in additional loss of this area, which now totals 0.54 ha (as a result of increased embankment heights and noise wall requirements). Any residual kanuka or mahoe trees that can be retained through construction will be identified and protected during construction. <u>This is a change from the NOR and Consent Package.</u> <u>This increase in loss of valued vegetation will be addressed as part of detailed design of other SSMP areas, in particular focusing on revegetation within the extensive Kakariki/Smithfield Ecological Mitigation Area.</u> All other indigenous terrestrial vegetation shall be demarcated and suitably protected during construction. All vegetation to be retained (exotic and indigenous) is identified on the 'Vegetation to be Retained' plans, [SHEETS M2PP-48R-D-DWG-8701 – 8702. and M2PP-51R-D-DWG-8701 – 8705 See section E Vegetation to be retained. The Maketu Dune landforms which are being disturbed are addressed under the Landform section below. Final contouring of disturbed dunes will be incorporated into earthworks to replicate natural dune forms.
B. STREAMS AND RIPARIAN WORKS REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G.42 b) requires specific lengths of stream mitigation.	*Note: no ecological mitigation works are proposed in this SSMP – While appropriate riparian mitigation will be established in the Waimeha Stream it is not ecological mitigation in terms of the Consent Conditions.* *The Waimeha Stream will be realigned to accommodate ground improvement and abutment construction works. This is subject to a separate consenting process with GW and KCDC. It is anticipated that any additional mitigation required as a result of stream realignment will be carried out within the realigned sections of Waimeha Stream and within the designation.*
C. WETLANDS REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Condition G.42 b) requires specific areas of wetland mitigation. El Rancho Wetland (Weggery wetland) and Tuku Rakau Wetland; are identified as valued wetland habitat.	There are no ecological mitigation requirements within this SSMP. Weggery Wetland: Consent Conditions allow for the loss of 0.38 ha of the 3.9 ha Weggery Wetland. No additional loss is anticipated. Mitigation for the consented loss is included in the quantum of mitigation that is being carried out at the Kakariki / Smithfield Ecological Mitigation Area. Tuku Rakau Wetland: this wetland will be avoided by works and no vegetation or habitat will be lost or directly affected. In additional to physical loss, these two wetlands are susceptible to groundwater changes. Ongoing monitoring of groundwater is being carried out as described in the "Groundwater Management Plan". This includes a number of piezometers located in close proximity to these wetlands and which are monitored continuously as part of construction monitoring.
D. SALVAGE	Conditions G.34 m) and G.41 c) i) 1 set out the salvage requirements for vegetation in SSMP 8.	As far as practicable, all large mahoe and kanuka trees that are removed shall be stockpiled under ecological supervision for future use as part of ecological mitigation requirements. Depending on the time of removal, kanuka branches shall be retained for use as slash to assist with natural kanuka regeneration as part of buffer planting along any cut edges of vegetation.
E. VEGETATION TO BE RETAINED REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8701-8706. ALSO REFER M2PP-35R-D-DWG-8701-8705, AND APPENDIX 5.	Conditions: DC.57 f) i) and DC.42C c) i) and G.34m) – identification of vegetation to be retained. Refer: Landscape Management Plan, sections 8.21 to 8.28 and Attachment 2: Principles, Methods and Procedures: Pre-construction. Ecological Management Plan, sections 7.1 to 7.18. Three sites have been identified within the SSMP where consent conditions require best endeavors to minimise vegetation loss / valued vegetation.	Identification of vegetation to be retained, including retention of as many significant trees as practicable and areas of regenerating indigenous vegetation and wetlands (see SHEETS M2PP-48R-D-DWG-8701 – 8702. and M2PP-51R-D-DWG-8701 – 8705. included in Appendix 1 Consent conditions require best endeavours to minimise vegetation loss of Valued Vegetation were identified as follows: Tuku Rakau Forest (regenerating broadleaved low forest east of Takamore Urupa) is identified as valued indigenous vegetation by Condition G.41 c). Indigenous and exotic vegetation to be retained shall be defined by surveyor as part of topographic survey carried out prior to any work commencing in SSMP 8 and the extent and boundaries checked and confirmed on site by Project Ecologist / Project Landscape Architect. Much of the exotic vegetation has already been removed as part of enabling

		works in this area, as well as some indigenous vegetation within the construction zone, consistent with the Vegetation to be Retained Plans certified by KCDC. Vegetation clearance boundaries shall be delineated by marker tape pegs or by marking perimeter trees. Temporary fences around these areas shall be subsequently erected prior to earthworks machinery being mobilised on site and construction commencing. Exposed vulnerable edges of Valued Vegetation to be retained following clearing of adjoining vegetation will be identified by Project Ecologist/Project Landscape Architect and temporary protection measures installed (e.g. wind cloth or similar). Temporary fences shall be erected around individual trees to be retained to prevent disturbance or damage; fences to be aligned outside the tree 'drip zone'. Machinery, materials, fuel, and chemicals to be stored, even temporarily, well away, from fenced vegetation and wetland areas to avoid accidental spillage, contamination, and compaction. All areas of indigenous and exotic vegetation to be retained within the Designation shall be photographed and details recorded to form part of baseline information.
F. VEGETATION TO BE CLEARED	Conditions: DC.57 f) i) and DC.42C c) i) identification of vegetation to be removed. Refer: Landscape Management Plan, sections 8.21 to 8.28 and Attachment 2: Principles, Methods and Procedures: Pre-construction. Ecological Management Plan, sections 7.1 to 7.18.	Project Ecologist and Project Landscape Architect to provide briefing to Constructors prior to vegetation clearance and protection work commencing; briefing to identify any hold points during vegetation clearance process. Vegetation to be mulched and stockpiled shall exclude aggressive weed species that could result in potential ongoing management problems (e.g. blackberry, gorse, Cape ivy, German ivy, *Convolvulus* and willows). Stored mulch to be periodically inspected for evidence of aggressive weed species and if present sprayed with appropriate herbicide. The Project Ecologist/Project Landscape Architect shall observe any removal or modification of indigenous vegetation. *Note: The Project Ecologist shall review the kanuka prior to clearance to determine whether there is any seed present. If seed is present, the kanuka slash shall be placed with ecological supervision in specific areas of kanuka planting to assist with natural regeneration.*
G. INDIGENOUS FAUNA	Conditions G.34 n) and the EMP (Appendix 3, section 7) - freshwater fish requirements for diversions and culverts in perennial and intermittent waterbodies (including drains). There are no other requirements for rare or threatened fauna within this SSMP.	Within this SSMP there is one culvert (Culvert 24.1) in perennial and intermittent streams that require consideration of fish passage/fish rescue. An aboreal lizard survey was undertaken in August 2014, prior to the clearance of vegetation in the El Rancho (Weggery) wetland as required in the Lizard Management Plan (EMP). The intention of the survey was to relocate lizards (if found) before the vegetation was removed. There were no lizards found.
H. LANDFORMS REFER TO APPENDIX 1 SHEETS 1 – 7 and Standard details: Dune Rounding Detail M2PP-23R-D-DWG-8904	Condition DC.57 c) - SSLMPs shall be consistent with the Landscape Management Plan, ULDF (Technical Report 5), the Ecological Management Plan, the relevant Site Specific Urban Design Plan, and the Network Integration Plan as relevant.	SSMP 8 includes several dunes which will be modified to enable construction of the Expressway, and will need to be re-shaped to help integrate the Expressway and CWB into the surrounding landforms. The Project Landscape Architect will be involved in the design of final shaping of dune profiles to ensure 'natural' appearance. (REFER drawing provided 'FOR CONSTRUCTION': M2PP-23R-D-DWG-8904) Retaining walls will be used to retain a cut through one large dune in order to avoid earthworks encroaching into a neighbouring property. 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 re-shaping is completed. Alternative treatment will be applied to exposed sand areas where hydroseeding is not feasible (eg polymer, organic mulch, straw / brush). All exposed sand areas will be temporarily protected with straw or proprietary materials during re-shaping to limit erosion from wind and rain and also to minimise dust issues in adjoining properties. The extent of earthworks will be pegged on site prior to construction providing an opportunity for KCDC's Landscape Reviewer to inspect the area.
I. WETLAND CREATION AND RESTORATION	Condition G. 41 c) ii) 4.	There are no ecological mitigation requirements within this SSMP. Note: Wetland 9 functions as a stormwater treatment wetland and is not included as an ecological offset wetland.
J. STREAM CREATION AND RESTORATION	Condition G.42 and G.42C - creation of large areas of new stream within the new Flood offset Storage Areas to mitigate permanent loss or modification of streams.	There are no ecological mitigation requirements within this SSMP. Note: The Waimeha Stream will be realigned to accommodate ground improvement and abutment construction works. This is subject to a separate consenting process with GW and KCDC. There are no areas of stream creation or restoration for ecological purposes.
K. CULVERT INSTALLATION REFER TO APPENDIX 1 SHEETS 2-3	Within this SSMP there are two culverts within perennial or intermittent streams that require consideration of fish passage/fish rescue. These culverts are as follows: • Culvert 24.1; and This culvert is located at the Waimeha end of the SSMP and lies within a drain formed within the area of historic market gardens. It is likely to contain indigenous fish and fish rescue will be required. In addition it will need to ensure continued fish passage. There are a number of smaller culverts that either perform a flow balancing function or connect stormwater treatment pond outlets to streams. These culverts do not have fish passage or fish rescue requirements.	Culvert installation shall require the following in all culverts that require fish passage (24.1): • Culvert shall not constrict the flow such that velocities are increased to more than 0.3m -1.0m per second to ensure fish passage for existing freshwater fish species is retained. • Entrance and exit of culvert shall be below the stream invert, and ensure any hard substrates (head wall, steps etc) do not affect flow and swimming passage. • During construction special attention shall be given to the protection of native fish within any section of stream being culverted. • Where the existing channel is to be lost or drained as part of culvert installation, fish capture and transfer will be required prior to water loss in accordance with the EMP (Appendix 3 of EMP). • All culverts in perennial or intermittent waterbodies shall be constructed either by installing a diversion around the work area and installing the culvert in the dry channel, or by constructing the culverts adjacent to the stream and then diverting water into the culvert on completion. Culvert installation shall be supervised through the construction phase (and sign-off) by Project Ecologist and Project Hydrologist. Briefing at the outset of construction to contractors by Project Ecologist and Hydrologist. There is one culvert outlet will be located in the Waimeha Stream.
L. MITIGATION PLANTING REFER TO APPENDIX 1 SHEETS 2-5, DWGS M2PP-33R-D-DWG-8201-8206. ALSO REFER M2PP-35R-D-DWG-8201-8205, AND APPENDIX 5.	Conditions G.42 and DC.57 f) - Landscape and ecological mitigation requirements -	There are no ecological mitigation requirements within this SSMP. There are four planting types within this SSMP required for landscape and visual mitigation as follows: ***Massed planting:*** Massed planting in this sector comprises two types- a general species mix that is used extensively on the embankments along the route. Plant grades will be a mix of 0.5 and 1.0 litre grades planted at 1.0m centres. In places where areas of kanuka will be removed because they are under the footprint kanuka-dominant massed planting is proposed (ie 60% kanuka). ***Massed planting with enrichment:*** comprises a significant proportion of the planting in SSMP 8. Enrichment planting will occur in the following planting season after massed planting; enrichment species plant grades shall be PB 18 or equivalent. In places where areas of kanuka will be removed because they are under the footprint kanuka-dominant massed planting is proposed where kanuka is the dominant species (ie 60% kanuka).

		Stormwater wetland species mix: Refer planting details for layout and species mix. Plant grades will be a mix of 0.5 and 1.0 litre (or equivalent) planted at 0.75m centres. ***Specimen Trees and grass***: Various species of amenity tree species such as magnolia, flowering cherry, and kowhai along the Te Moana Road corridor and CWB. This design detail is still in progress and will be discussed with KCDC reviewers. ***Swales***: will be planted exclusively in oioi (*Apodasmia similis*) Landscape success mitigation planting requirements and approvals are covered in Sections M - S below.
M. PLANTING METHODS AND SPECIFICATIONS REFER TO APPENDIX 4	DC 57 f) and G.42C c) - planting methods and specifications Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	Planting shall be undertaken during 3 month planting window only (beginning June until the end of August). Planting may be carried out during a 2- week shoulder period either side of this but it will depend on environmental conditions (*this is particularly likely for wetland and riparian planting to take account of high or low groundwater conditions*). With the exception of wetland and riparian planting which may need to coincide with low groundwater levels in late spring, no planting shall be undertaken outside the June-August planting window unless approved by Project Landscape Architect. Planting substrate shall be a minimum of 300mm deep, consolidated, and free from rilling and erosion before mulch placement. Organic mulch shall be placed over the area to be planted at least 2 weeks prior to planting to allow for settlement. *Note: organic mulch shall not be used within the areas of wetland, riparian planting and stormwater treatment planting that are subject to temporary or permanent inundation. For these areas, alternative plant protection techniques will be used (e.g. staking and proprietary matting mechanisms).* No planting shall be undertaken until site is approved by Project Landscape Architect and Project Ecologist (with regard to ecological mitigation planting) to be free of aggressive pest plant species. Planting shall be delayed in areas where aggressive pest plants are detected until these are removed or sufficiently controlled. Plant supplier to confirm all plants are well hardened off prior to planting. Species composition shall be in accordance with species percentages. All indigenous plant set out and groupings to be random, but reflecting natural assemblages as directed by Project Landscape and Ecologist for the relevant mitigation requirements. Plant selection shall take into account engineering and service constraints. All planted areas shall be temporarily fenced to assist with plant protection. Enrichment planting shall be undertaken in year 2 as directed by the Project Ecologist and Project Landscape Architect – and in response to mitigation success requirements as set out in the EMP and LMP.
N. WEED CLEARANCE REFER TO APPENDIX 4	Conditions: DC.57 f) vii) B and Condition G.35 - weed control and clearance. Refer: Landscape Management Plan, sections 8.16 to 8.20 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4	All invasive plants shall be controlled in planting areas prior to planting in accordance with the GWRC Regional Pest Management Strategy (2002-22) and as directed by the Project Landscape Architect and Project Ecologist in relation to ecological and landscape mitigation areas.

O. GROUND PREPARATION REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c) Refer: Landscape Management Plan, sections 8.35 to 8.40 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All areas to be planted shall be sprayed with a certified and approved herbicide. All areas to be planted shall be free of actively growing grass, weeds, and any extraneous material removed. Any localised rilling or erosion of planted areas shall be remedied prior to placement of approved soil mix. Project Landscape Architect to approve all finished earthwork areas prior to placement of approved soil mix. Approved soil mix comprising salvaged peat, stripped topsoil, sand and compost shall be placed and lightly compacted to a depth of 300mm over all areas to be planted.
P. MULCHING REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	100mm of organic mulch shall be placed lightly over all areas to be planted (with the exception of temporarily or permanently inundated areas as outlined above). Mulch shall be left for 2 weeks to settle prior to commencement of any planting.
Q. PLANT SUPPLY REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All indigenous plants shall be sourced from Manawatu Ecological Region, with a focus on the Foxton Ecological District. All plants shall be hardened off prior to planting.
R. PLANTING PROGRAMME / STAGING	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.41 – 8.59 and Attachment 2: Principles, Methods and Procedures: Pre-construction and Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	Planting shall be staged according to completion of construction works. No planting shall be carried out in areas where there is a risk of damage from adjoining construction activities. Construction Manager shall confirm areas where construction is completed and area is ready for planting. Planting shall be completed only within June-August planting window unless otherwise approved by Project Landscape Architect. All areas to be planted shall be photographed and details recorded to form part of baseline information.
S. PLANT MAINTENANCE REFER TO APPENDIX 4	Condition DC.57 f) and G.42C c). Refer: Landscape Management Plan, sections 8.60 – 8.62 and Attachment 2: Principles, Methods and Procedures: Post-Construction. Ecological Management Plan sections 3.9 and 4 (Attachment 1)	All planted areas shall be photographed on completion of planting and details recorded to be included as part of baseline information. Wetland and riparian planting shall be maintained for 4 years. Terrestrial planting, both indigenous and exotic shall be maintained for 3 years. Planting shall be maintained according to the maintenance plan as set out in the Landscape specifications (Appendix 4). Monitoring reports on plant survival and establishment and the frequency and success of the maintenance regime shall be completed by the Project Landscape Architect (in consultation with the Project Ecologist in relation to riparian planting) as follows: • 1 month after planting completed and then • 3 months • 6 months • 12 months • 2 years; and • Twice yearly thereafter until the end of the maintenance period.

		Monitoring reports shall include dates of visits, condition of vegetation, condition of fencing, issues arising, actions required, together with photographs. Monitoring reports on completion shall be provided to KCDC Landscape Reviewer. Monitoring reports shall cease to be prepared for those areas where the performance standards have been met ahead of the maintenance period.
T. PEST PLANT MANAGEMENT REFER TO APPENDIX 4	DC.57 f), G.42C c) and G.43 d) – control of pest plants.	Weed surveys shall be carried out annually in spring to track the introduction of weeds and their spread and to recommend appropriate management in accordance with the GWRC Regional Pest Management Strategy (2002-22).
U. PEST ANIMAL MANAGEMENT REFER TO APPENDIX 4	DC.57 f), G.42C c) and G.43 d) – control of pest animals.	Pest monitoring shall be carried out annually in spring to track the introduction of browsing animal pests and their spread and to recommend appropriate management in accordance with the GWRC Regional Pest Management Strategy (2002-22).
V. PROTECTION REQUIREMENTS REFER TO APPENDIX 4	Condition DC.57 c) and G.43 d) – temporary and permanent protection.	Temporary fences shall be erected as part of the protection of valued vegetation to be retained. All areas of 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.53C 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 the Project Landscape Architect and a report prepared on the parameters above.	There are no ecological mitigation sites requiring success monitoring. There are no created or restored wetlands requiring success monitoring. There are no diversions or stream formations (with the exception of Waimeha Stream already discussed) which require success monitoring. There are two culverts in perennial streams which need to be installed to ensure fish passage. In both cases the culverts are required to be flat and embedded. Monitoring of during and immediately post installation will confirm that installation has met the required design parameters and that fish passage will be maintained. In relation to landscape mitigation planting, success measures are as follows: • 80% canopy closure for mass planting 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. • 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 relation to planting of specimen trees, successful planting shall require 100% tree survival, with 100% of trees in full leaf at the time of Final Completion, with trees to have a habit of growth that is normal to the species and are to be sound, healthy and vigorous with normal well-developed branch systems at time of Final Completion. • Invasive terrestrial weed species successfully controlled. • Natural colonisation by other non-planted indigenous species. Monitoring of the success of wetland and stream formation not relevant for this SSMP Ecological mitigation will be reviewed by the Project Ecologist- not relevant for this SSEMP
X. ADAPTIVE MANAGEMENT – POST CONSTRUCTION	Condition G.40 – adaptive management and condition DC.57 c)	In the event that landscape mitigation planting does not achieve the objectives within the consent timeframes, 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-0008

Appendix 1: DRAWING SET

Site Specific Management Plan 008 - [sectors 480/510]
MacKays to Peka Peka Expressway

31 MARCH 2015 - REV C - CERTIFIED ISSUE

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

Drawing Plotted:

SSMP#	SECTOR	NAME	NOTES
SSMP1	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 -SSMP10-580/540/530
SSMP11	560/570	[[PEKA PEKA NORTH]	

LEGEND

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

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) 1:25,000
Reduced Scale (A3) 1:50,000

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 1 LOCATION PLAN

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

Rev. C

Document No.

DETAIL DESIGN

Drawing Plotted:

EL RANCHO

EL RANCHO (WEGGERY) WETLAND (CONDITION G.41 C) ii) 5.)

TAKAMORE- NOT INCLUDED IN THIS SSMP

URUPA

TUKU RAKAU FOREST

TUKU RAKAU WETLAND CONDITION G.41 C) ii) 5.

SECTOR 480

SECTOR 470 SSMP 7

CS1 8501

CS2 8501

NORTH BOUND

SOUTH BOUND

M2PP PROPOSED ALIGNMENT

10900

11000

11100

11200

11300

REFER TO SSMP ADDENDUM FOR RETAINING WALL DETAIL

NOISE BUND

CWB OVER WAIKANAE RIVER BRIDGE

10800

10700

MAKETU TREE

REFER TO SHEET 11

PUKIRI ROAD

CWB INTERSECTION TYPE 2 (WITH BOLLARD) REFER SSMP 7

REFER KAURI ROAD END DETAIL (REFER SSMP 7 8304)

CWB CONTINUES ALONG EXISTING LOCAL ROAD NETWORK. DASHED ORANGE LINE INDICATES CIRCULATION ROUTE ONLY - NO WORK PROPOSED ON LOCAL NETWORK

KAURI 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 5.0M WIDE FROM EDGE OF FOOTPATH ALONG MAZENGARB 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
- 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 (top / bottom)

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

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
D	POST CERTIFICATION REVISION	VB				20.08.15
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design			Approved For Construction* Date
	Drawn	VB	10/12/14	
	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 8 [480-510] - SHEET 2 MASTER PLAN

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

Rev.: D

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

TAKAMORE- NOT INCLUDED IN THIS SSMP

WAIMEHA STREAM

CULVERT 24.1 - 40M LONG

WATERCOURSE DIVERSION

WATERCOURSE DIVERSION

CS3
8502

REF. SHEET 7

NORTHBOUND OFF RAMP

NORTHBOUND ON RAMP

NORTH BOUND

SOUTH BOUND

M2PP PROPOSED ALIGNMENT

11400

11500

11600

11700

11800

11900

12000

12100

SOUTHBOUND ON RAMP

REF. SHEET 8

WETLAND 9

RETAINING WALL

SOUTHBOUND OFF RAMP

REFER TO SSMP ADDENDUM FOR RETAINING WALL DETAIL

CWB

FLOODWAY

1M HIGH FLOOD PROTECTION BUND

CWB

TE MOANA ROAD

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

DETAIL DESIGN

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 MAZENGARB 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
- 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 (top / bottom)

CWB
- Loose Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB
- Traffic Signal Poles

No.	Revision	By	Chk	Chk.V	Appd	Date
D	POST CERTIFICATION REVISION	VB				01.09.15
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 3 MASTER PLAN

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

Rev. D

Document No.

Drawing Plotted:

WAIKANAE GOLF CLUB

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 Piers
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- Massed planting low
- Specimen Tree

Ecology
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- Planted Indigenous Wetland Habitat
- Stream Mitigation / Riparian Habitat
- Existing Water Body
- Batter Slope Tadpole (top / bottom)

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

12100
12200
12300
12400
12500
12600
12700
12800

CS4 8502

M2PP PROPOSED ALIGNMENT

NORTH BOUND
SOUTH BOUND

CWB

SECTOR 510
SECTOR 520 SSMP 9

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 4 MASTER PLAN

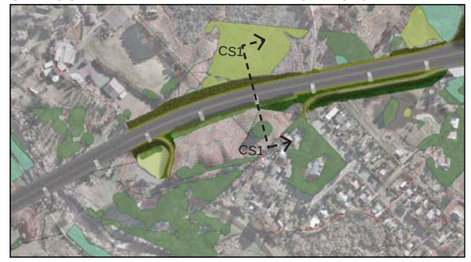
Drawing No: M2PP-121-D-DWG-8103

Rev. C

Document No.

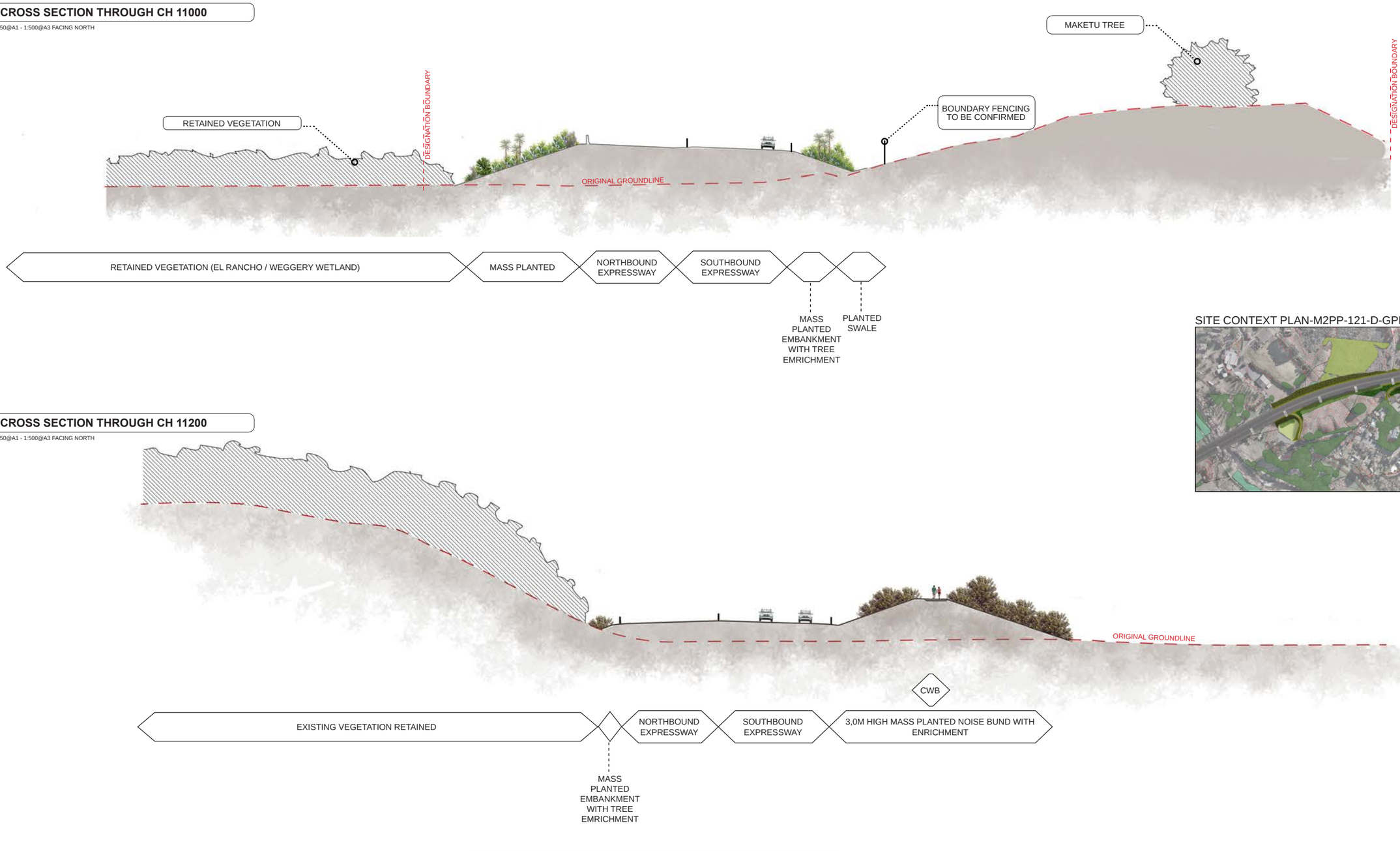
Drawing Plotted:

SITE CONTEXT PLAN-M2PP-121-D-GPH-8101



CS1 - CROSS SECTION THROUGH CH 11000

SCALE - 1:250@A1 - 1:500@A3 FACING NORTH



SITE CONTEXT PLAN-M2PP-121-D-GPH-8102

CS2 - CROSS SECTION THROUGH CH 11200

SCALE - 1:250@A1 - 1:500@A3 FACING NORTH

CS2

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) AS SHOWN	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 8 [480-510] - SHEET 5 SECTIONS

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

Rev. C

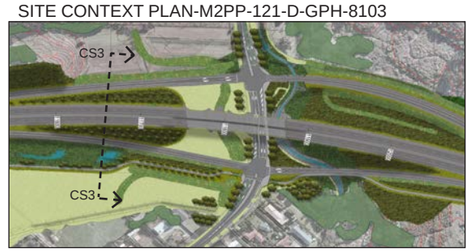
Document No.

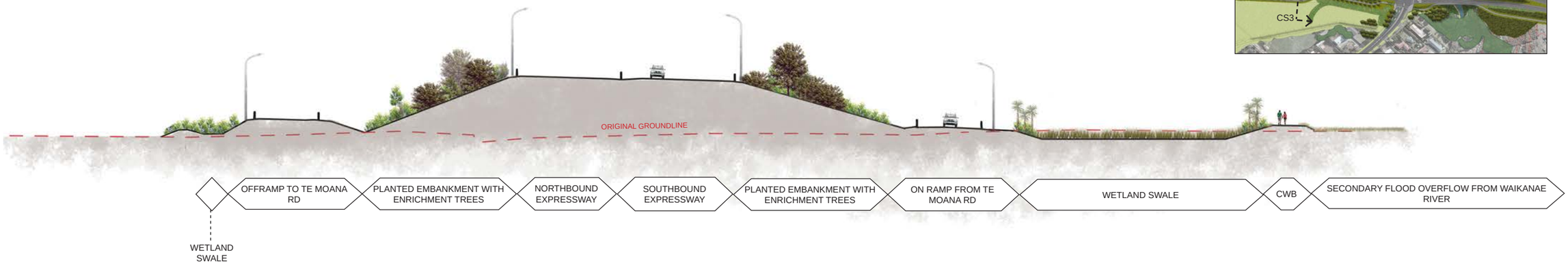
DETAIL DESIGN

CS3 - CROSS SECTION THROUGH CH 11660

FACING WEST SCALE - 1:250@A1 1:500@A3

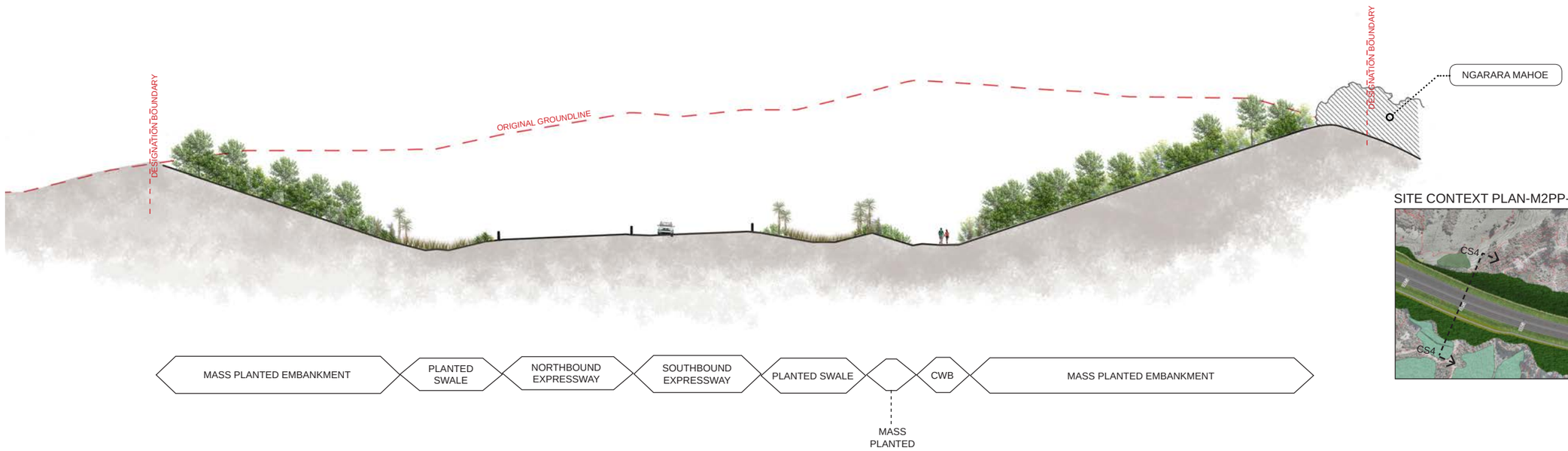
SITE CONTEXT PLAN-M2PP-121-D-GPH-8103



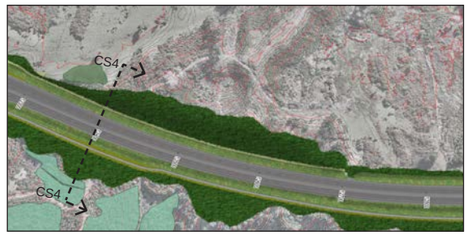


CS4- CROSS SECTION THROUGH CH 12400

FACING WEST SCALE - 1:250@A1 1:500@A3



SITE CONTEXT PLAN-M2PP-121-D-GPH-8104



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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 6 SECTIONS

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

Rev. C

Document No.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:

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 (top / bottom)

CWB
- Loose Chip CWB
- Chip Seal CWB
- Concrete CWB
- Existing Access Track or CWB
- Horse Mounting Block - Locations TBC
- Cycleway painted surface - non slip

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

Urban Design
- Concrete Bridge Barrier
- Concrete Noise Wall
- Culvert Headwall
- Retaining Wall
- Bridge Deck
- Bridge Abutment
- Bridge Piers
- 2.0m Timber Noise Fence
- Traffic Signal Poles

NORTHBOUND OFF RAMP

EXPOSED AGGREGATE AS PER KCDC STANDARDS

EXPOSED AGGREGATE AS PER KCDC STANDARDS

NORTHBOUND ON RAMP BRIDGE

RIP RAP DIRECTLY UNDER BRIDGE

PROVISION FOR FUTURE FOOTPATH

TE MOANA ROAD

3.0M WIDE SHARED PATH

WAIMEHA STREAM

CS6 8503

CS8 8504

NORTH BOUND

SOUTH BOUND

1.2M POWDER COATED (MATT BLACK), STEEL, TWO RAIL PANEL FENCE.

CS5 8503

RETAINING WALL

CS7 8503

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design		
Drawn	VB	10/12/14
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

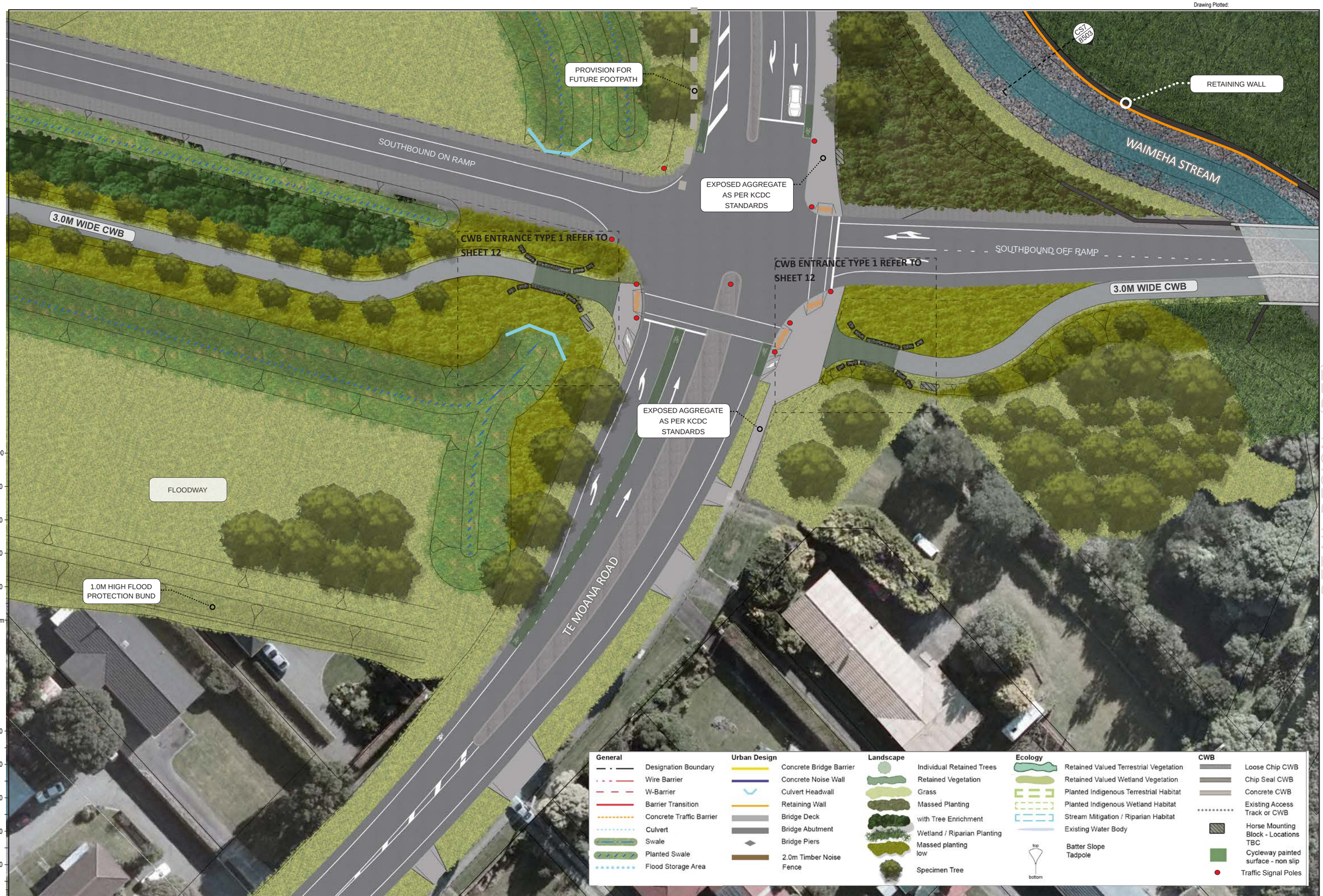
Title: SSMP 8 [480-510] - SHEET 7 BRIDGE MASTERPLAN

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

Rev.: C

Document No.

Drawing Plotted:



A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) AS SHOWN	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 8 [480-510] - SHEET 8 BRIDGE MASTERPLAN

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

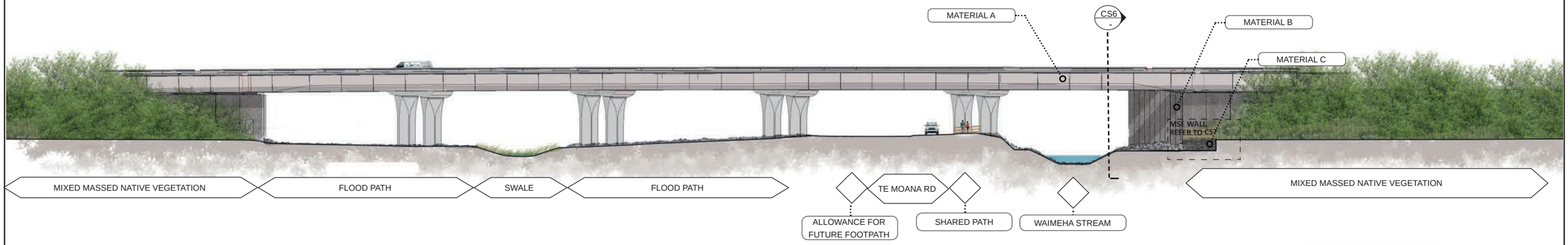
Rev. C

Document No.

Drawing Plotted:

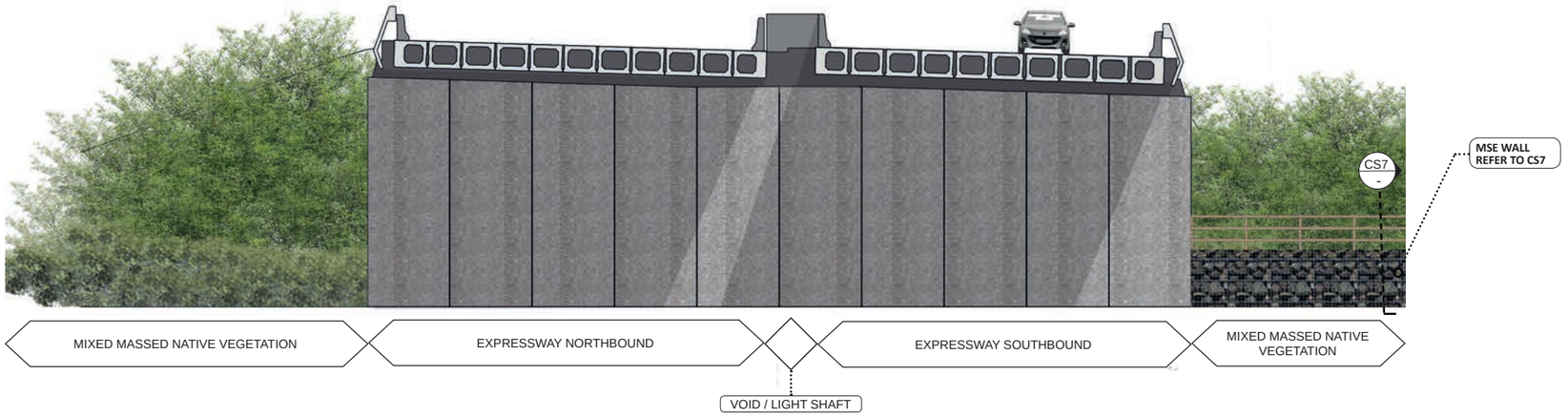
CS5 - CROSS SECTIONAL ELEVATION -TE MOANA ROAD BRIDGE

1:500@A3 FACING WEST



CS6- NORTH ABUTMENT

1:200@A3 FACING SOUTH



MATERIAL A

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

MATERIAL B

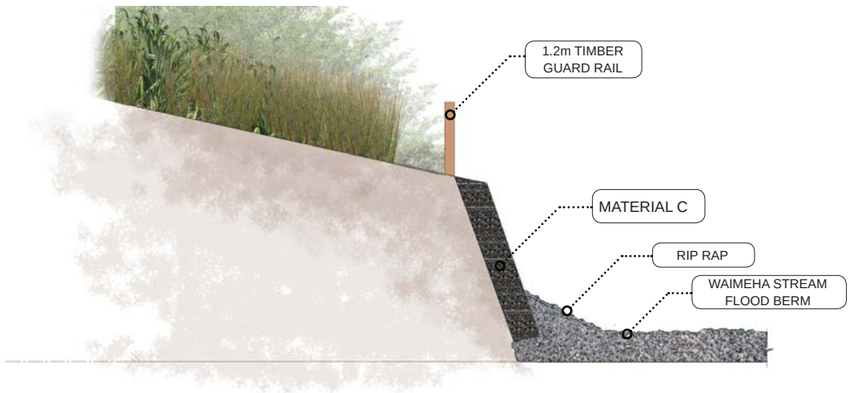
BRIDGE ABUTMENT: PRECAST CONCRETE PANEL WITH EXPOSED AGGREGATE FINISH AND MATT GRAFFITI PROTECTION- PENDING SAMPLE PANEL APPROVAL

MATERIAL C

TERRAMESH WALL

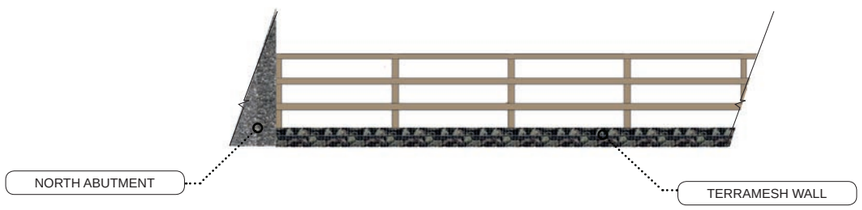
CS7- WAIMEHA STREAM MSE RETAINING WALL

1:100@A3 FACING WEST



TIMBER GUARD RAIL ELEVATION

1:100@A3



- 100X100 TIMBER POSTS - CENTERS TBC
- 100X100 RAILS NOTCHED INTO POSTS
- 1200MM HIGH WITH MAX. 300MM GAPS BETWEEN RAILS

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 9 BRIDGE SECTIONS

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

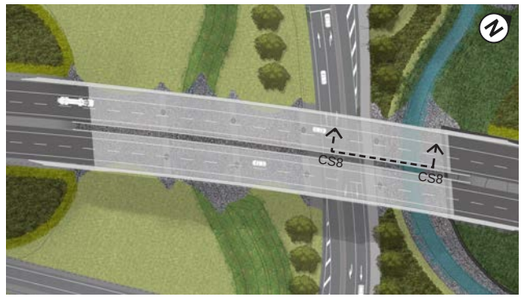
Rev. C

Document No.

Drawing Plotted:

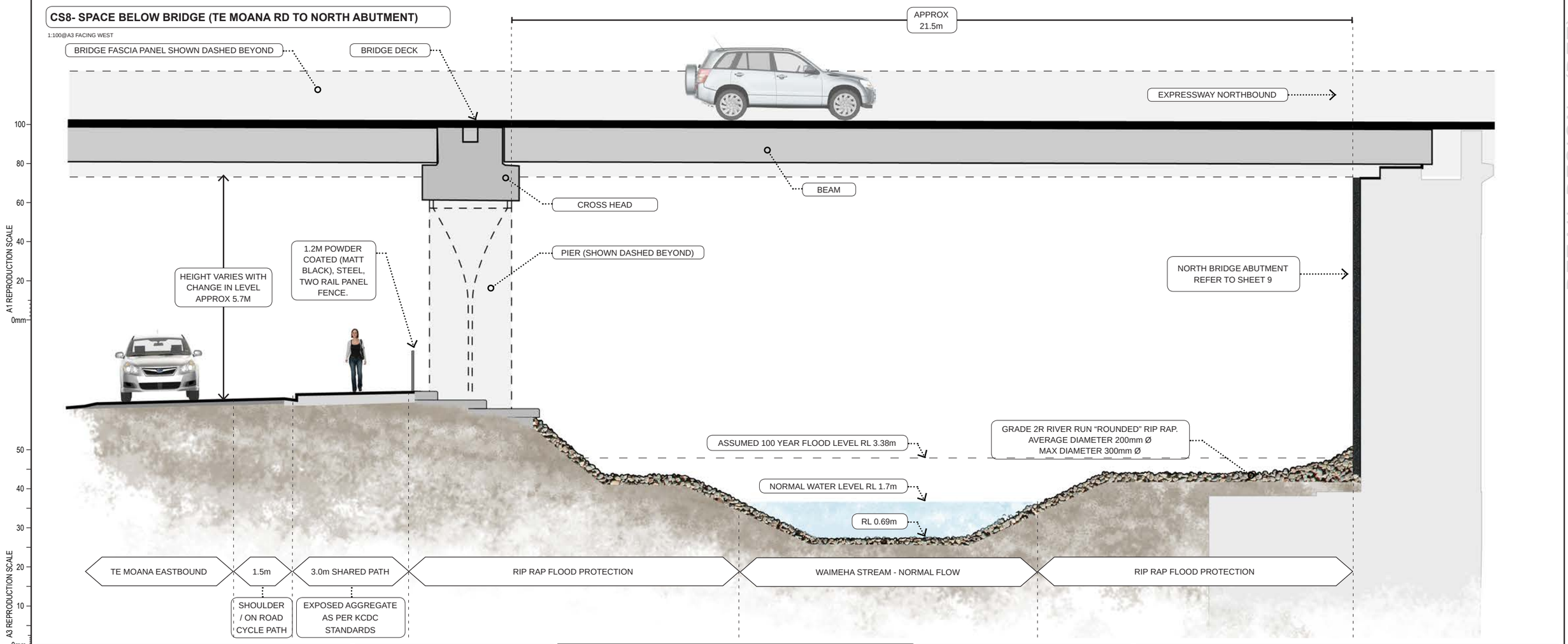
ARTIST'S IMPRESSION

LOCATION PLAN



CS8- SPACE BELOW BRIDGE (TE MOANA RD TO NORTH ABUTMENT)

1:100@A3 FACING WEST



No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 9A SECTION BELOW BRIDGE

Drawing No: M2PP-121-D-DWG-8504

Rev. C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

RIP RAP EXTENT PLAN

1:500@A3 FACING WEST

TE MOANA SOUTH BRIDGE ABUTMENT

DASHED LINE INDICATES INDICATIVELY THE EXTENTS OF THE RIP RAP FORM AROUND BRIDGE COLUMNS. REFER EXAMPLE AT TOP RIGHT OF PAGE

EXPRESSWAY NORTHBOUND

TE MOANA NORTH BRIDGE ABUTMENT

CS8 8504

SWALE

WAIMEHA STREAM

THE FORM OF THE RIP RAP AROUND THE BRIDGE COLUMNS SHALL RESEMBLE THE NATURAL BRAIDED RIVER ISLANDS FOUND NATURALLY IN WATERCOURSES IN THE REGION

PATH TO RIP RAP INTERFACE

1:100@A3 FACING WEST

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

APPROX 12500MM EDGE OF KERB TO EDGE OF STREAM (normal water)

25000

3000 3000 2500 3000

225mm THICK FAIR FACED CONCRETE STEP, WIDTH AND LENGTH VARIES

STEP LEVEL 1

STEP LEVEL 2

STEP LEVEL 3

3200

500 1350 900

1500 1500

3000

APPROX 14000 COLUMN CENTRES

CONCRETE BRIDGE COLUMN

1.2M HIGH, MATT BLACK, STEEL, TWO RAIL PANEL FENCE

A

KAPITI ROAD

3M SHARED PATH

KERB

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 9B
RIP RAP PLAN TE MOANA

Drawing No: M2PP-121-D-DWG-8303

Rev. C

DETAIL DESIGN (DET)

Document No.

Drawing Plotted:

INDICATIVE VISUALISATION - TE MOANA ROAD BRIDGE (WEST SIDE OF EXPRESSWAY LOOKING EAST) REFER TO PLANS FOR FINAL DETAILS

INDICATIVE NIGHT LIGHTING VISUALISATION - TE MOANA BRIDGE

TE MOANA BRIDGE - ARCHITECTURAL LIGHTING DESIGN PRINCIPLES.

1. ARCHITECTURAL LIGHTING TO BE USED TO ADD ADDITIONAL INTEREST AND SAFETY AT NIGHT.
2. SOFTLY UP LIGHT THE 4 COLUMNS (THE TWO EITHER SIDE OF TE MOANA ROAD) TO ACCENTUATE THE FORM OF THE COLUMNS.
3. WHITE - COOL WHITE LIGHT COLOURS/SHADES TO BE USED TO DIFFERENTIATE ARCHITECTURAL LIGHTING FROM ROAD LIGHTING. EXACT COLOURS TO BE CONFIRMED

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) AS SHOWN	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 8 [480-510] - SHEET 10
TE MOANA ROAD

Drawing No: M2PP-121-D-DWG-8800

Rev. C

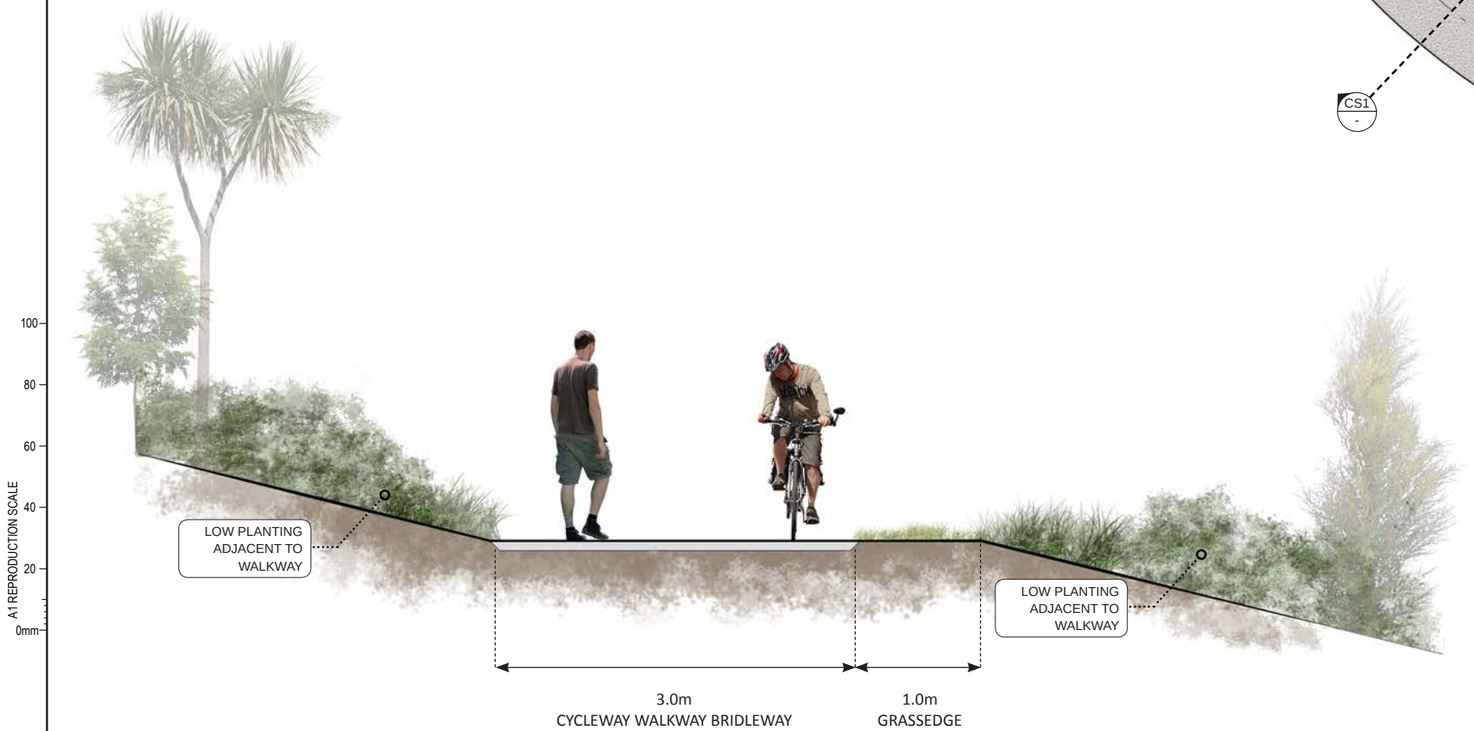
DETAIL DESIGN (DET)

Document No.

Drawing Plotted:

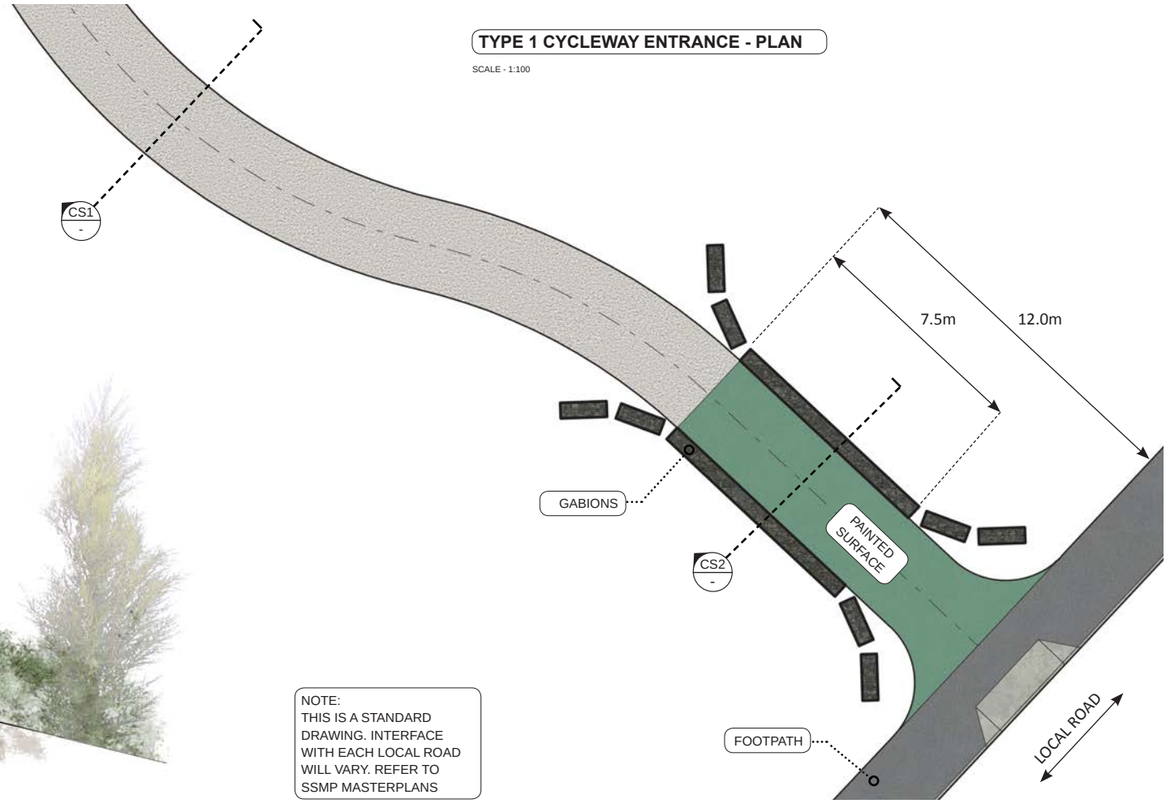
CS1 - TYPICAL CYCLEWAY SECTION

SCALE - 1:50



TYPE 1 CYCLEWAY ENTRANCE - PLAN

SCALE - 1:100



NOTE:
THIS IS A STANDARD DRAWING. INTERFACE WITH EACH LOCAL ROAD WILL VARY. REFER TO SSMP MASTERPLANS

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 12
CWB INTERSECTION - TYPE 1

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

Rev. C

Document No.

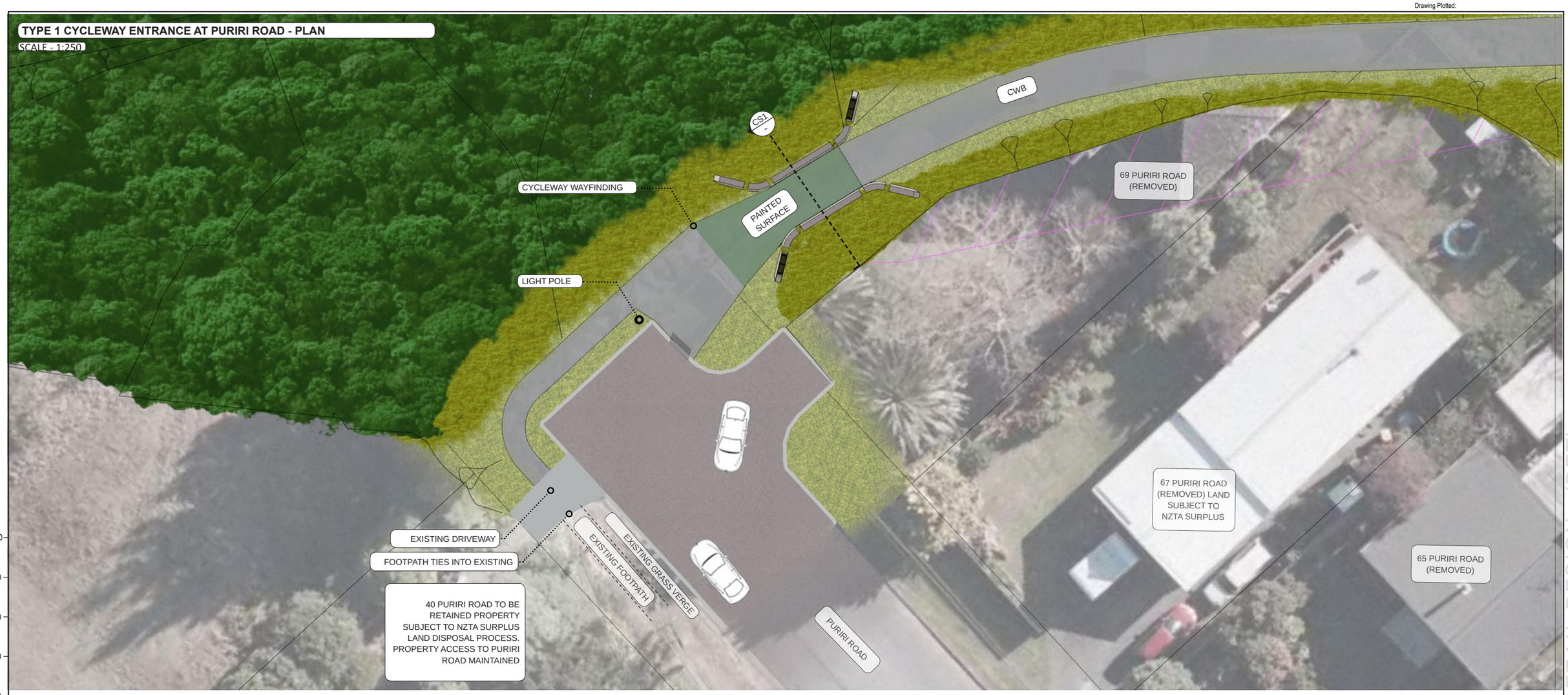
DO NOT SCALE

IF IN DOUBT ASK.

Drawing Plotted:

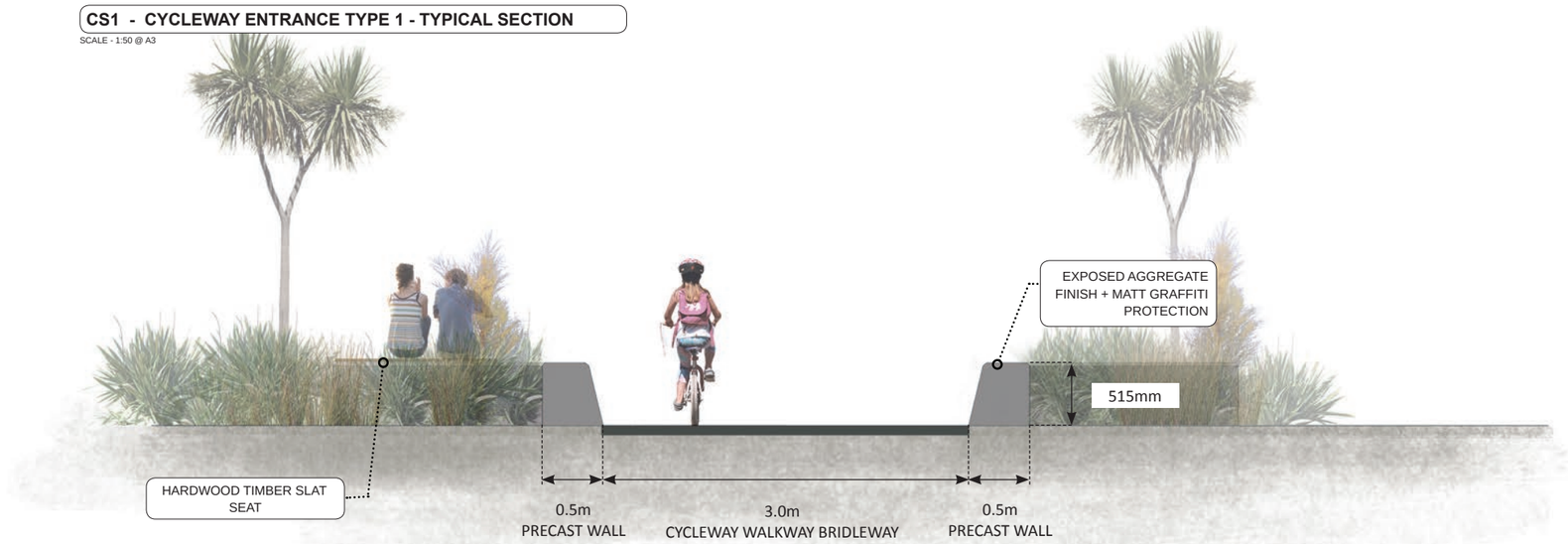
TYPE 1 CYCLEWAY ENTRANCE AT PURIRI ROAD - PLAN

SCALE - 1:250



CS1 - CYCLEWAY ENTRANCE TYPE 1 - TYPICAL SECTION

SCALE - 1:50 @ A3



A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
D	POST CERTIFICATION REVISION	VB				20.08.15
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

			Approved For Construction*
Design			
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 13 PURIRI ROAD CWB DETAIL

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

Rev. D

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

PLAN OF NOISE WALL LOCATIONS

- NB1- TL4, F-SHAPE BARRIER 1.1M HIGH
- NB2A- 2.0M HIGH, CONCRETE NOISE BARRIER, BACKFILLED ON OUTSIDE TO 1M ABOVE CARRIAGEWAY LEVEL
- NB2-2.0M HIGH, CONCRETE NOISE BARRIER, BESIDE EXPRESSWAY
- NB3- 2.5M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB4- 3.0M HIGH CONCRETE NOISE BARRIER BESIDE EXPRESSWAY
- NB5- 2.0M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB6- 3M HIGH CONCRETE NOISE BARRIER AWAY FROM EXPRESSWAY
- NB7- 2.0M HIGH TIMBER PROPERTY NOISE FENCE
- EARTH NOISE BUND (TOP) HEIGHT VARIES

SECTOR 480

SECTOR 470 SSMP 7

10700

10800

10900

11000

11100

11200

11300

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design			Approved For Construction* Date
	Drawn	VB	10/12/14	
	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 8 [480-510] - SHEET 13 NOISEWALL LOCATION PLAN

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

Rev.: C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

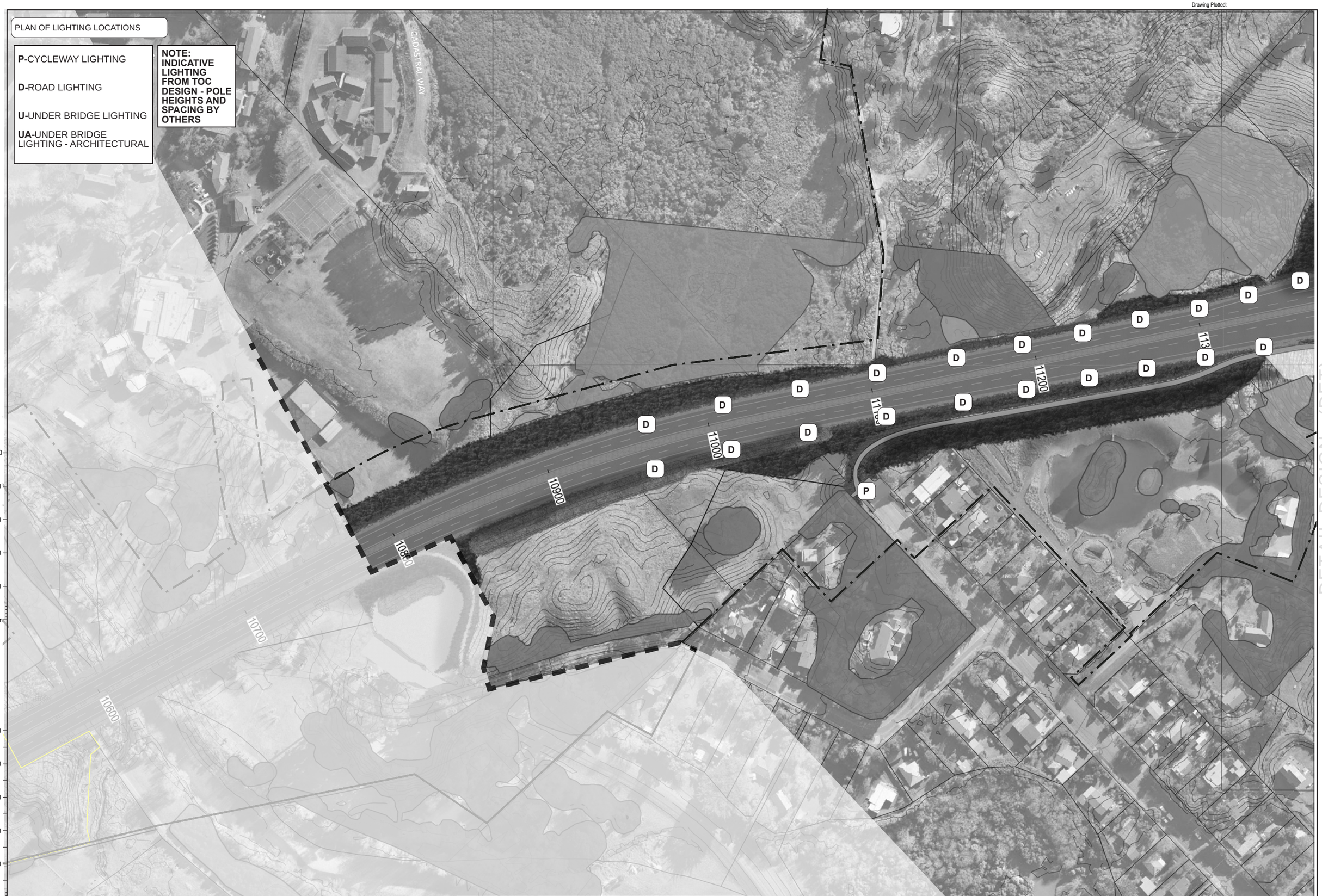
P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

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



A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) 1:1000	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) 1:2000	Dsg Verifier			Date
	Dwg Check			
	* Refer to Revision 1 for Original Signature			

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: SSMP 8 [480-510] - SHEET 14 LIGHTING LOCATION PLAN

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

Rev.: C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

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

A1 REPRODUCTION SCALE
100
80
60
40
20
0mm

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

DETAIL DESIGN (DET)

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 15 LIGHTING LOCATION PLAN

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

Rev. C

Document No.

Drawing Plotted:

PLAN OF LIGHTING LOCATIONS

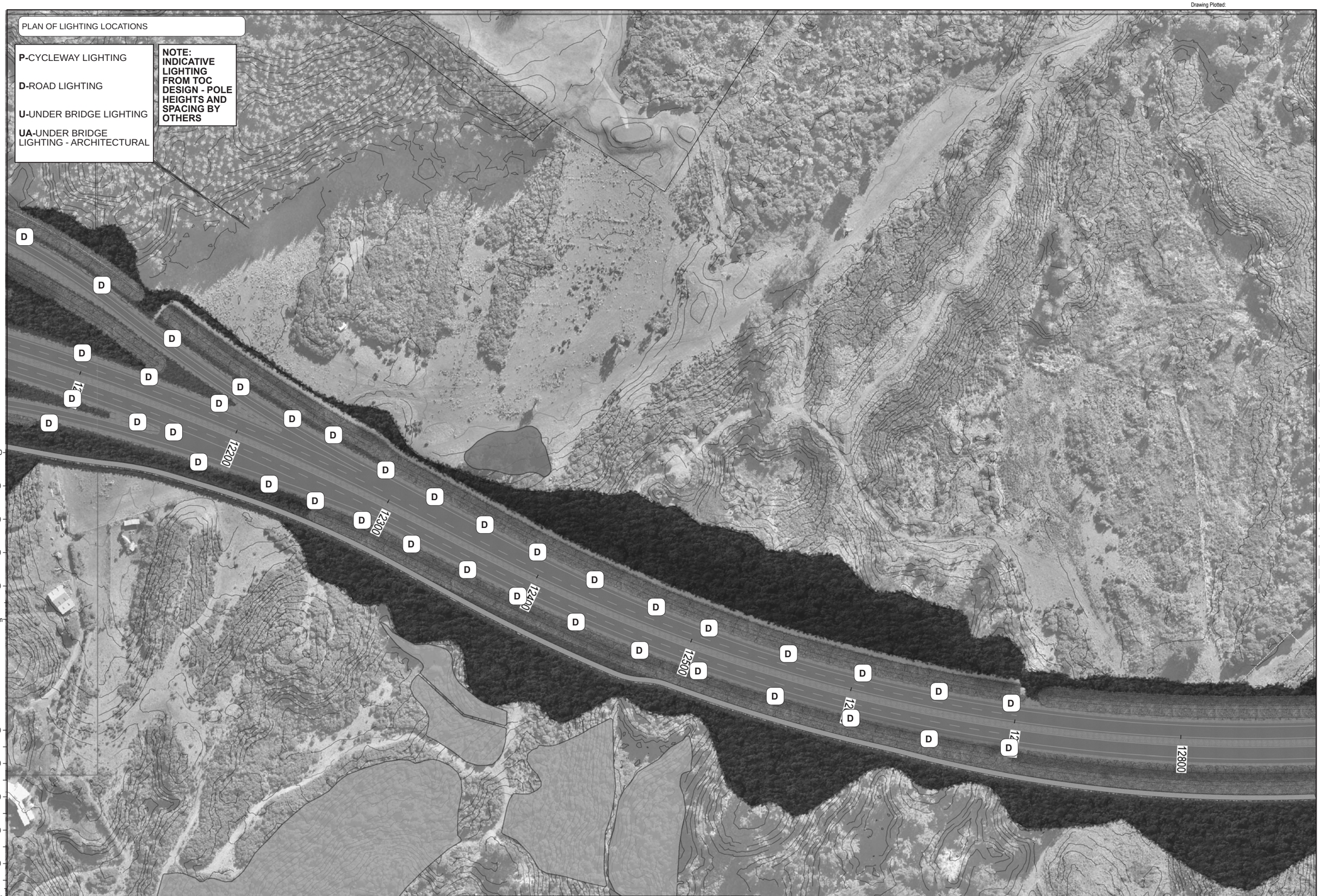
P-CYCLEWAY LIGHTING

D-ROAD LIGHTING

U-UNDER BRIDGE LIGHTING

UA-UNDER BRIDGE LIGHTING - ARCHITECTURAL

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



A1 REPRODUCTION SCALE
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80
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0mm

A3 REPRODUCTION SCALE
50
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30
20
10
0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) AS SHOWN	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 8 [480-510] - SHEET 16 LIGHTING LOCATION PLAN

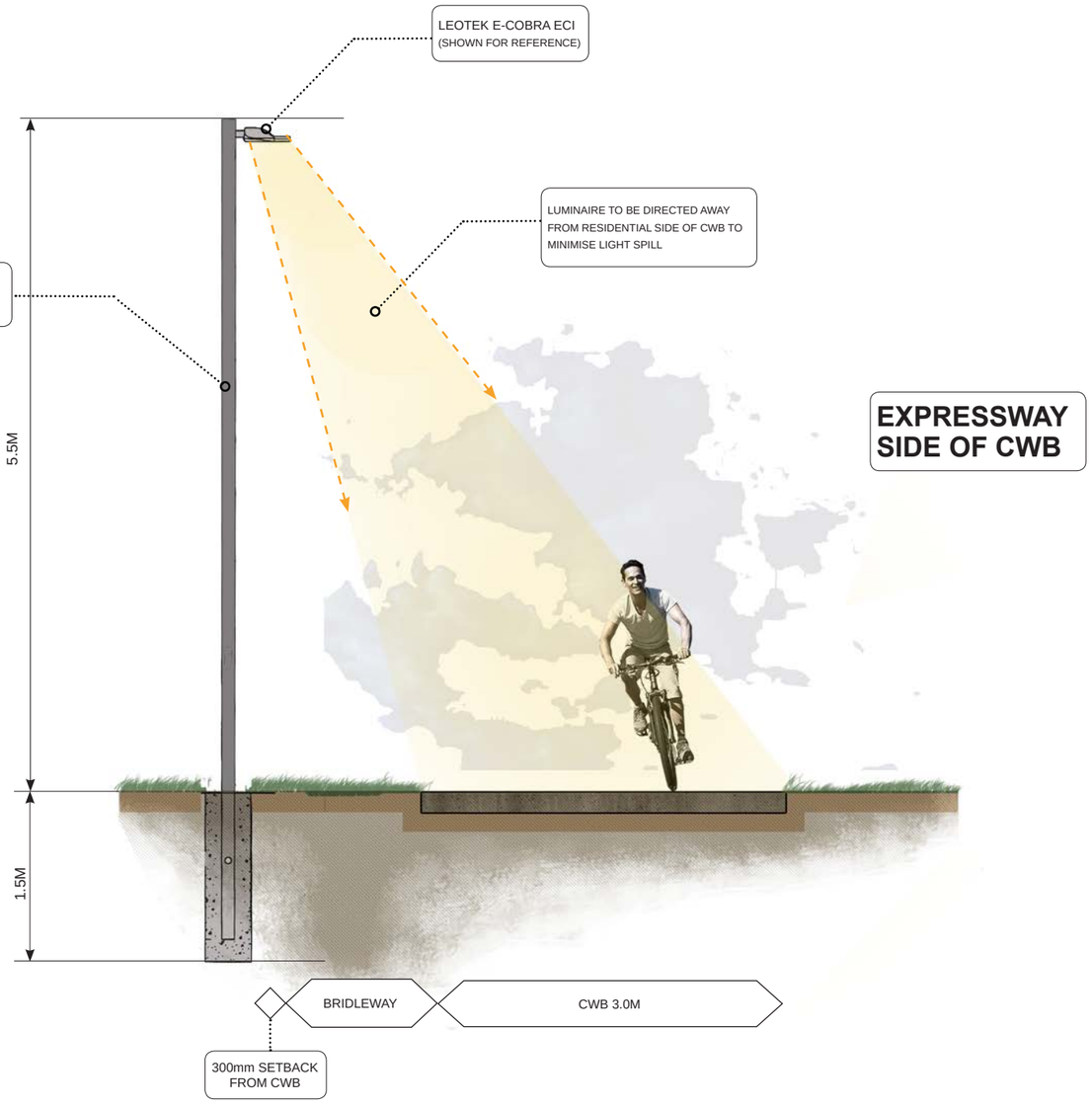
Drawing No.: M2PP-121-D-DWG-8703

Rev.: C

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:



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

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

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN
Reduced Scale (A3) AS SHOWN
Design
Drawn VB 10/12/14
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 8 [480-510] - SHEET 17
CWB LIGHTING

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

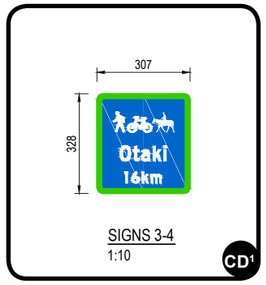
Rev. C

Document No.

DETAIL DESIGN

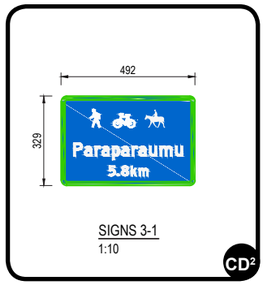
DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted:



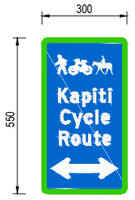
SIGNS 3-4
1:10

CD¹



SIGNS 3-1
1:10

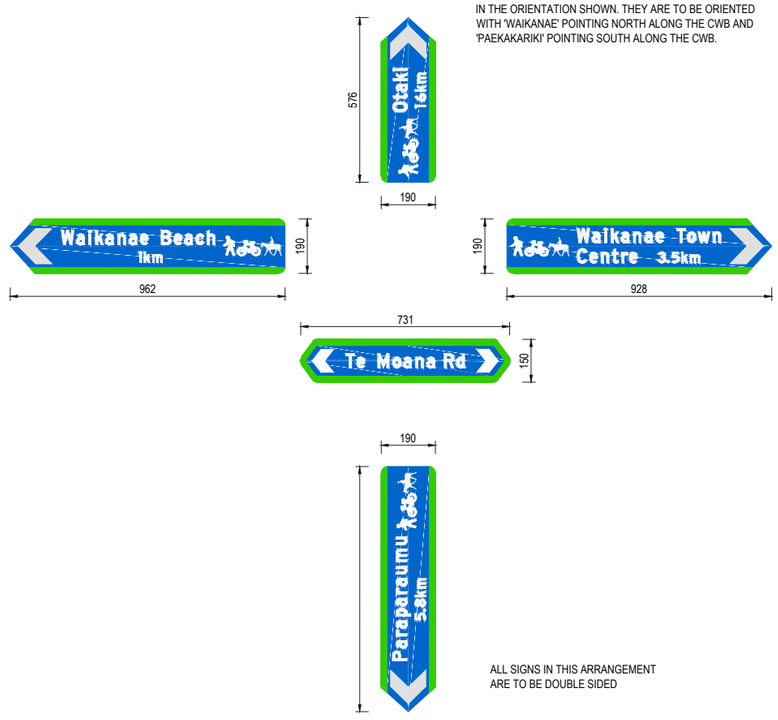
CD²



SIGNS 3-5, 3-6

AD

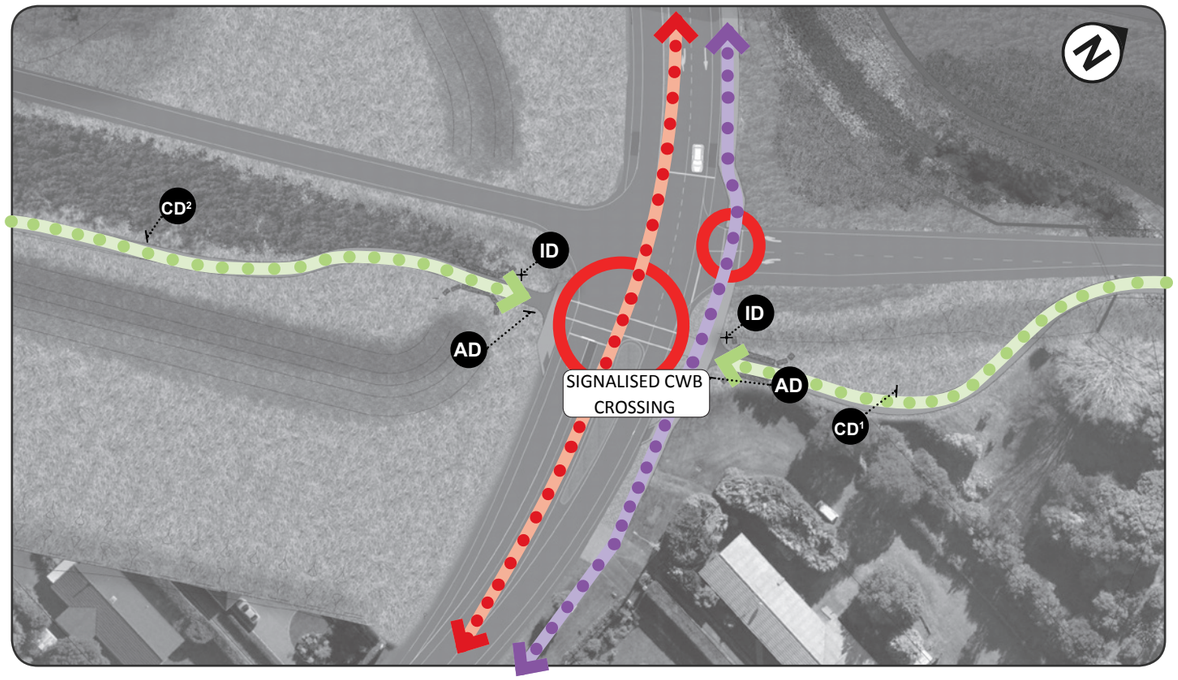
THESE SIGNS ARE TO BE ARRANGED ON A SINGLE POLE IN THE ORIENTATION SHOWN. THEY ARE TO BE ORIENTED WITH 'WAIKANAE' POINTING NORTH ALONG THE CWB AND 'PAEKAKARIKI' POINTING SOUTH ALONG THE CWB.



ALL SIGNS IN THIS ARRANGEMENT ARE TO BE DOUBLE SIDED

SIGN ARRANGEMENT 3-2, 3-3
1:10

ID



LEGEND

- CYCLEWAY WALKWAY BRIDLE-WAY
- EXISTING NETWORK
- LOCAL ROAD
- CROSSING POINT
- SIGNALISED CROSSING

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN

No.	Revision	By	Chk	Chk.V	Appd	Date
C	CERTIFIED ISSUE	MP				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
Dsg Verifier			
Dwg Check			Date

* Refer to Revision 1 for Original Signature

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

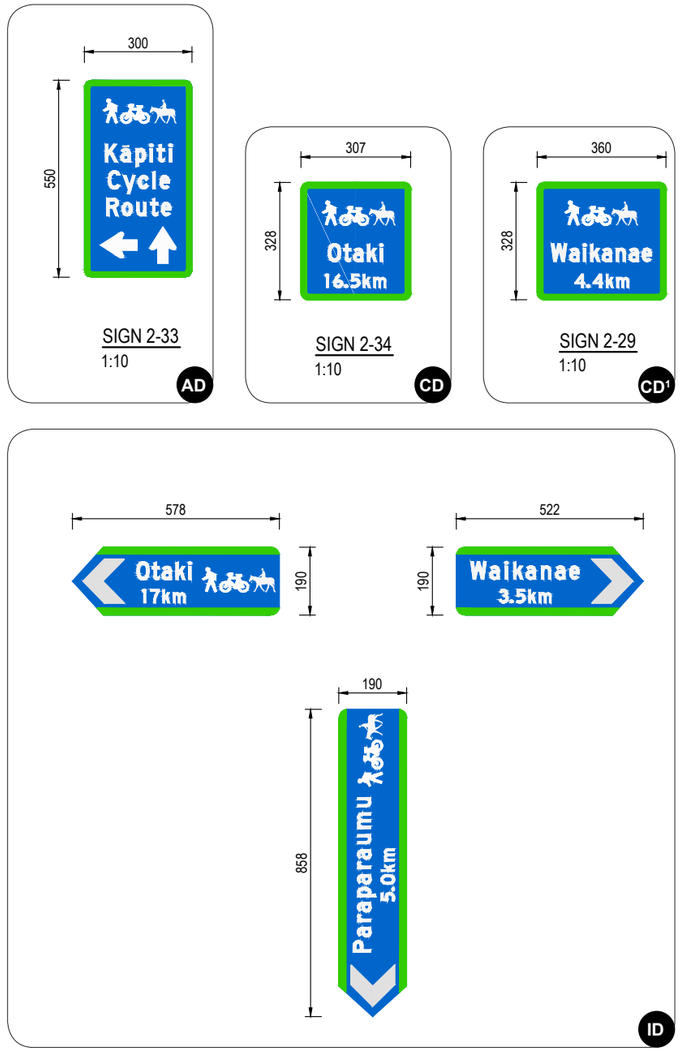
Project: SH1 MACKAYS TO PEKA PEKA EXPRESSWAY
RP 1012/0.00 TO 1023/5.00

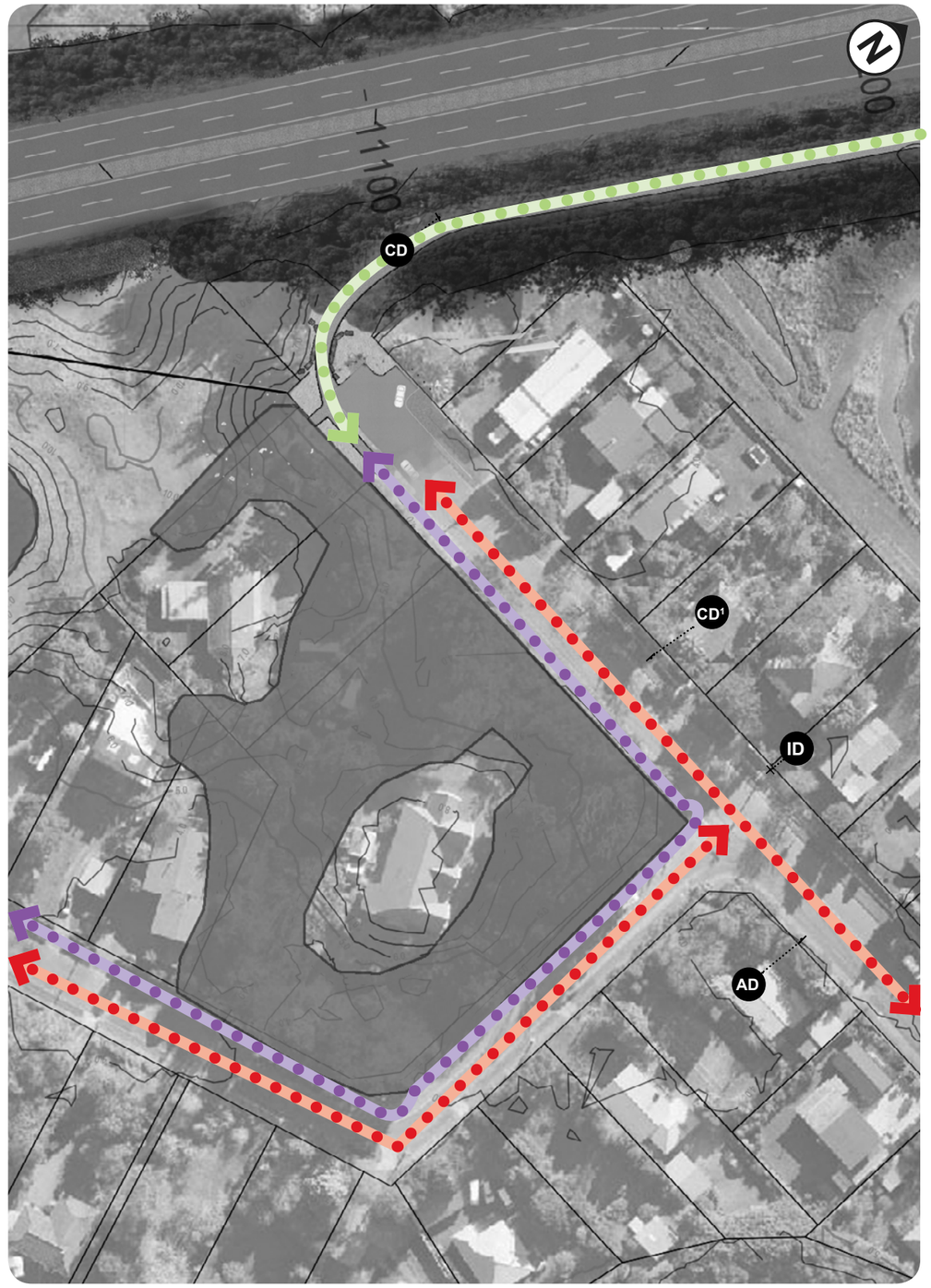
Title: SSMP 8 [480-510] - SHEET 18 CWB SIGNAGE

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

Rev.: C

Document No.





LEGEND

- CYCLEWAY WALKWAY BRIDLE-WAY
- EXISTING NETWORK
- LOCAL ROAD
- CROSSING POINT
- SIGNALISED CROSSING

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

Original Scale (A1) AS SHOWN	Design			Approved For Construction*
	Drawn	VB	10/12/14	
Reduced Scale (A3) AS SHOWN	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 8 [480-510] - SHEET 19
CWB SIGNAGE

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

Rev. C

Document No.

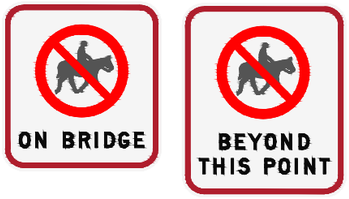
TYPICAL SIGN TYPES:

AI - ADVANCED INFO SIGNS

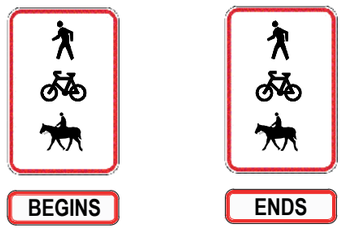
AT START OF ROUTE.
INCLUDES:
- MAP & INFO
- LENGTH & DURATION OF RIDE / WALK

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

EB - END OF BRIDLEWAY SIGNS



BE - BEGINNING AND ENDING SIGNS



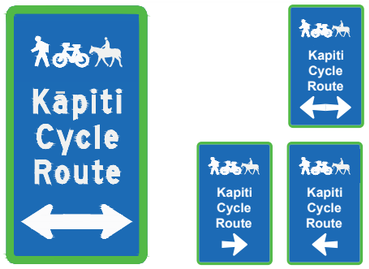
BE - Begins/Ends Signs are used to indicate the start and/or end point of a cycle route. They will include route specific information. Route Begins Signs should be installed on the left hand side of the CWB immediately beyond or adjacent to any advance information sign or at a logical starting point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

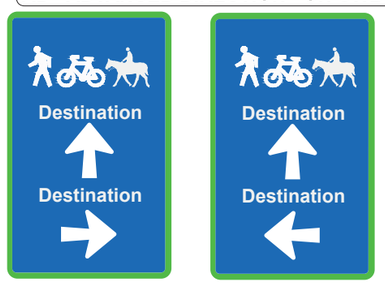
CD - CONFIRMATION DIRECTION

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				31/03/15
B	FOR CERTIFICATION	MP				03/03/15
A	PRELIMINARY ISSUE TO KCDC	VB				

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

Design			Approved For Construction*
Drawn	VB	10/12/14	
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 8 [480-510] - SHEET 20
TYPICAL SIGNAGE

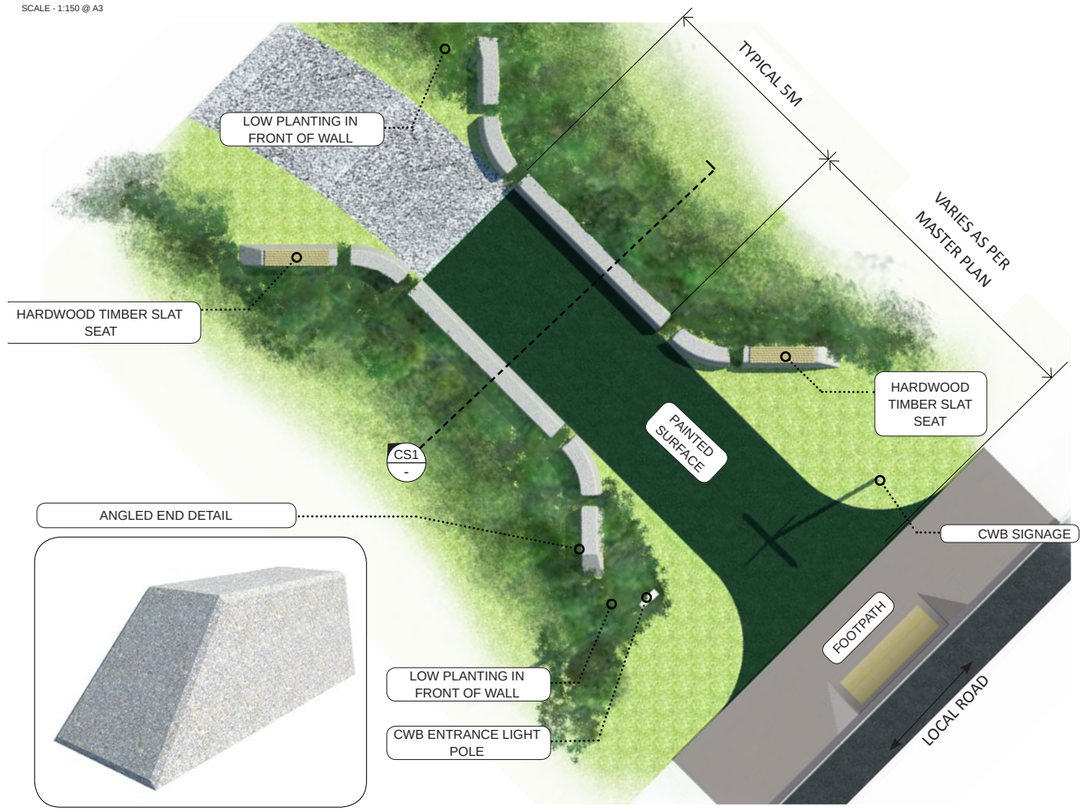
Drawing No: M2PP-121-D-DWG-8903

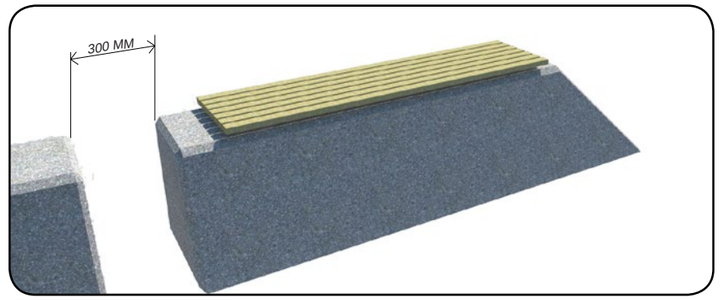
Rev. C

Document No.

CYCLEWAY ENTRANCE TYPE 1 - TYPICAL PLAN

SCALE - 1:150 @ A3





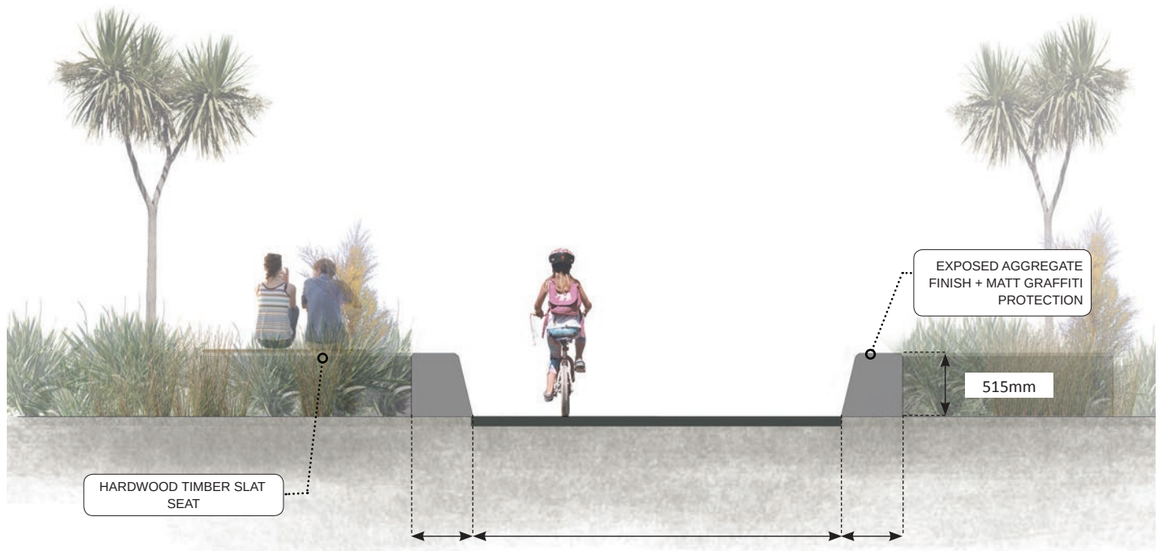
HARDWOOD TIMBER SLAT SEAT

HARDWOOD TIMBER SLAT SEAT EXAMPLE

GROUND LEVEL VIEW OF TYPICAL TYPE 1 CYCLEWAY ENTRANCE

CS1 - CYCLEWAY ENTRANCE TYPE 1 - TYPICAL SECTION

SCALE - 1:50 @ A3



A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

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

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

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: SSMP 8 [480-510]
SHEET 21 - TYPE 1
CWB ENTRANCE DETAIL

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

Rev. A

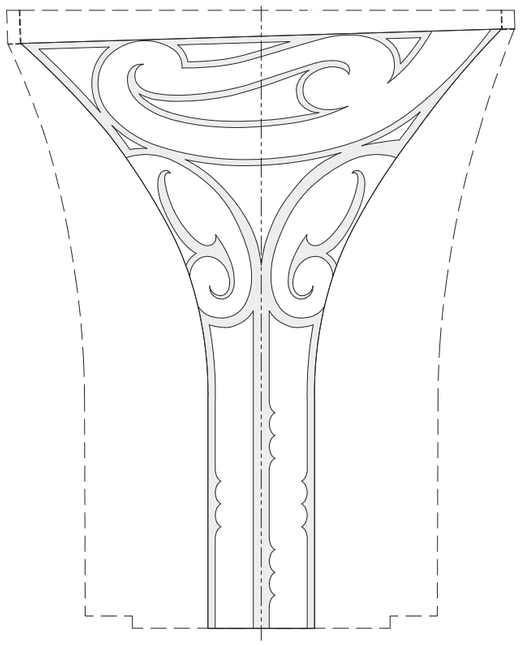
Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

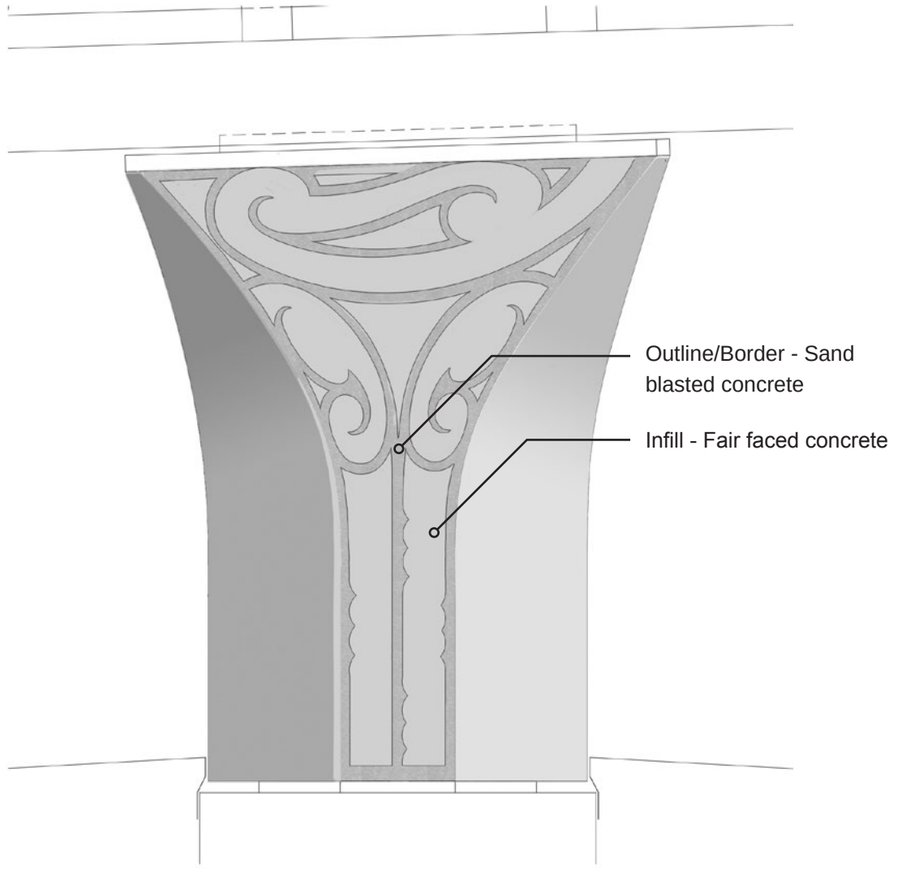
COLUMN TREATMENT - VECTOR DRAWING FOR STENCIL SETOUT

SCALE - 1:50 @ A3



COLUMN TREATMENT - RENDERED IMPRESSION

SCALE - 1:50 @ A3



A1 REPRODUCTION SCALE
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20
0mm

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

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

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

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: SSMP 8 [480-510]
SHEET 22
TE ATIAWA COLUMN DESIGN

Drawing No: M2PP-121-D-DWG-8804

Rev. A

Document No.

DETAIL DESIGN (DET)

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.

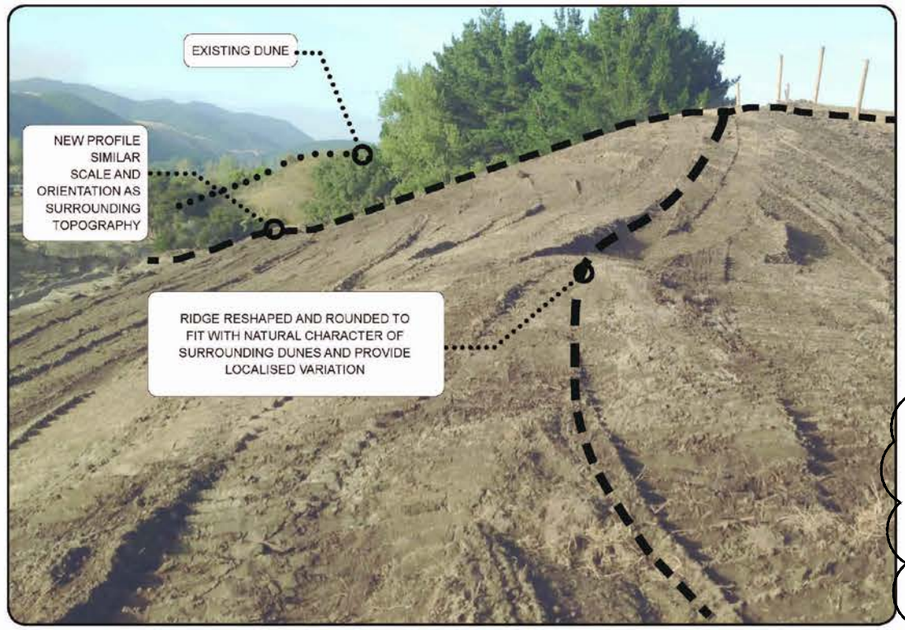
-Re-shaping of dunes to achieve a 'natural' appearance is likely to require extending earthworks into surrounding topography.

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

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
	Drawn	V BILLETT	24.04.14	
Reduced Scale (A3) NTS	Dsg 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

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

Drawing Plotted: 09 Apr 2015 02:45 p.m.

KEY

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

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

NOTES:

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

TAKAMORE AREA TO BE ADDRESSED SEPARATELY

EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND
CYCLEWAY WALKWAY BRIDLEWAY
PURIRI ROAD
KAURI ROAD

11100
11000
10900
10800

MP D 1 / 48R-8201
ML B 1 / 48R-8201
ML B 4 / 48R-8201
MT F 2 / 48R-8201
MT F 3 / 48R-8201
MS A 2 / 48R-8201
ML A 1 / 48R-8201
ML A 2 / 48R-8201
GL A 1 / 48R-8201
ML B 3 / 48R-8201
MT F 1 / 48R-8201
ML B 2 / 48R-8201
MP C 1 / 48R-8201
MS A 1 / 48R-8201
GR A 1 / 48R-8201

480
470

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

MATCHLINE REFER: M2PP- 48R -D-DWG-8202

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

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

Design	F. BAGGALEY	30.09.14	Approved For Construction* D STIRRAT Date 09.04.13
Drawn	M. POWELL	30.09.14	
Dsg Verifier	B EVANS	10.03.15	
Dwg Check	M MEERVELD	08.04.15	

*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: SECTOR 480 EXPRESSWAY PLANTING PLANS SHEET 1

Drawing No: M2PP-48R-D-DWG-8201

Rev. 1

Document No. M2PP-48R-D-DWG-8201.DWG

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 09 Apr 2015 02:45 p.m.

HOLD
PENDING MSE WALL DESIGN

TAKAMORE AREA TO BE ADDRESSED SEPARATELY

MATCHLINE REFER: M2PP- 51R -D-DWG-8201

MATCHLINE REFER: M2PP-48R -D-DWG-8201

MATCHLINE REFER: M2PP- 51R -D-DWG-8203

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY ON RAMP

CYCLEWAY WALKWAY BRIDLEWAY

WETLAND FOREBAY NOT PLANTED

WETLAND 9

HOLD
PENDING RETAINING WALL DESIGN

11200 11300 11400 1500

480 510

PURRI ROAD

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

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.

480 510 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	F BAGGALEY	30.09.14
	Drawn	M POWELL	30.09.14
	Dsg Verifier	B EVANS	10.03.15
	Dwg Check	M MEERVELD	08.04.15

Approved For Construction* D STIRRAT Date 09.04.13

* 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: SECTOR 480 EXPRESSWAY PLANTING PLANS SHEET 2

Drawing No: M2PP-48R-D-DWG-8202

Rev. 1

Document No. M2PP-48R-D-DWG-8202.DWG

Drawing Plotted: 09 Apr 2015 02:45 p.m.

KEY

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

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

NOTES:

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

TAKAMORE AREA TO BE ADRESSED SEPARATELY

MATCHLINE REFER: M2PP- 51R -D-DWG- 8202

MATCHLINE REFER: M2PP-48R -D-DWG-8202

MATCHLINE REFER: M2PP- 51R -D-DWG-8203

MP C 1 51R-8201

MP C 2 51R-8201

ML B 1 51R-8201

ML B 2 51R-8201

TS M 1 51R-8201

EXPRESSWAY OFF RAMP

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY ON RAMP

11300

11400

11500

11600

A1 REPRODUCTION SCALE 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE 0mm 10 20 30 40 50

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

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

Design	F BAGGALEY	30.09.14	Approved For Construction* D STIRRAT Date 09.04.13
Drawn	M POWELL	30.09.14	
Dsg Verifier	B EVANS	10.03.15	
Dwg Check	M MEERVELD	08.04.15	

* 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: TE MOANA INTERCHANGE PLANTING PLANS SHEET 1

Drawing No: M2PP-51R-D-DWG-8201

Rev. 1

Document No. M2PP-51R-D-DWG-8201.DWG

Drawing Plotted: 09 Apr 2015 02:46 p.m.

KEY

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

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

NOTES:

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

NOTE:
RIPARIAN PLANTING AT THE STREAM EDGE (RP-K-3 AND RP-K-5) HAVE LOWER GROWING SPECIES TO ALLOW DIGGER TO REACH OVER VEGETATION WHEN CLEARING THE STREAM. RIPARIAN PLANTING (RP-K-2, RP-K-4, RP-K-6 & RP-K-7) IS TO HAVE TALLER PLANTS NOTED BY * ON SCHEDULE, CLOSE TO THE STREAM EDGE TO GIVE SHADING TO THE STREAM.

MATCHLINE REFER: M2PP- 51R -D-DWG-8201

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

TAKAMORE AREA TO BE ADRESSED SEPARATELY

MAINTENANCE ACCESS

CLEAR OF PLANTING AT BASE OF CHANNEL

WAIMEHA STREAM

TE MOANA ROAD

EXPRESSWAY OFF RAMP

EXPRESSWAY ON RAMP

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

11700 11800 11900 12000

MATCHLINE REFER: M2PP- 51R -D-DWG-8203

MATCHLINE REFER: M2PP- 51R -D-DWG-8204

1 48R-8401

GL A 1 51R-8202; RP K 3 51R-8202; TS K 2 51R-8202; TS K 1 51R-8202; RP K 1 51R-8202; MS B 1 51R-8202; GL A 2 51R-8202; GL A 4 51R-8202; GR A 1 51R-8202; RP K 2 51R-8202; RP K 4 51R-8202; MS A 2 51R-8202; RP K 6 51R-8202; ML B 3 51R-8202; ML B 2 51R-8202; MP P 1 51R-8202; TS K 4 51R-8202; TS K 3 51R-8202; MS A 1 51R-8202; GL A 3 51R-8202; MP P 2 51R-8202; MS A 3 51R-8202; MP C 3 51R-8202; RP K 7 51R-8202; MP C 2 51R-8202; RP K 5 51R-8202; GR A 3 51R-8202; ML B 4 51R-8202; MP C 1 51R-8202; ML B 1 51R-8202; TS M 1 51R-8202

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

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

Design	F BAGGALEY	30.09.14	Approved For Construction*
Drawn	M POWELL	30.09.14	D STIRRAT
Dsg Verifier	B EVANS	10.03.15	
Dwg Check	M MEERVELD	08.04.15	Date 09.04.13

* 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: TE MOANA INTERCHANGE PLANTING PLANS SHEET 2

Drawing No: M2PP-51R-D-DWG-8202

Rev. 1

510 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-51R-D-DWG-8202.DWG

Drawing Plotted: 09 Apr 2015 02:46 p.m.

MATCHLINE REFER: M2PP- 51R -D-DWG-8201

MATCHLINE REFER: M2PP- 51R -D-DWG-8202

MATCHLINE REFER: M2PP- 48R -D-DWG-8202

MATCHLINE REFER: M2PP- 51R -D-DWG-8204

WETLAND 9

CYCLEWAY WALKWAY BRIDLEWAY

EXPRESSWAY ON RAMP

EXPRESSWAY OFF RAMP

ALLOWANCE FOR MAINTENENCE ACCESS

MAINTENANCE ACCESS

ALLOWANCE FOR DRIVEWAY ACCESS

ALLOWANCE FOR DRIVEWAY ACCESS

TE MOANA ROAD

11900

1
48R-8401

TS M 1 51R-8203
ML B 1 51R-8203
MP C 1 51R-8203
WP D 1 51R-8203
WP G 1 51R-8203
WP F 1 51R-8203
WP D 2 51R-8203
WP G 2 51R-8203
TS L 1 51R-8203
MT F 1 51R-8203
MS A 2 51R-8203
TS I 2 51R-8203
MS A 2 51R-8203
TS I 1 51R-8203
ML B 2 51R-8203
GL A 2 51R-8203
ML A 1 51R-8203
GL A 1 51R-8203
TS K 1 51R-8203
MS A 1 51R-8203
TS K 2 51R-8203
GR A 3 51R-8203
RP K 1 51R-8203
MP P 1 51R-8203
ML A 2 51R-8203
GL A 5 51R-8203
ML B 3 51R-8203
TS I 3 51R-8203
RP K 2 51R-8203
TS H 2 51R-8203
TS F 1 51R-8203
GR A 4 51R-8203
TS G 1 51R-8203
GR A 5 51R-8203
TS K 4 51R-8203
TS H 1 51R-8203
TS J 1 51R-8203
GR A 1 51R-8203
TS J 2 51R-8203
TS K 3 51R-8203
GL A 3 51R-8203
GL A 4 51R-8203
GL A 4 51R-8203
GR A 2 51R-8203

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

NOTE:
RIPARIAN PLANTING AT THE STREAM EDGE (RP-K-2) HAVE LOWER GROWING SPECIES TO ALLOW DIGGER TO REACH OVER VEGETATION WHEN CLEARING THE STREAM.
RIPARIAN PLANTING (RP-K-1) IS TO HAVE TALLER PLANTS NOTED BY * ON SCHEDULE, CLOSE TO THE STREAM EDGE TO GIVE SHADING TO THE STREAM.

KEY

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

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

DESIGNATION

NOTES:

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

510 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

Original Scale (A1) 1:500	Design	F BAGGALEY	30.09.14
Reduced Scale (A3) 1:1000	Drawn	M POWELL	30.09.14
	Dsg Verifier	B EVANS	10.03.15
	Dwg Check	M MEERVELD	08.04.15
	* Refer to Revision 1 for Original Signature		

Approved For Construction* D STIRRAT Date 09.04.13

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: TE MOANA INTERCHANGE PLANTING PLANS SHEET 3

Drawing No: M2PP-51R-D-DWG-8203

Rev. 1

Document No. M2PP-51R-D-DWG-8203.DWG

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted: 09 Apr 2015 02:46 p.m.

CLEAR OF PLANTING AT BASE OF CHANNEL

MATCHLINE REFER: M2PP- 51R -D-DWG-8202

MATCHLINE REFER: M2PP- 51R -D-DWG-8205

MATCHLINE REFER: M2PP- 51R -D-DWG-8203

ML B 1 51R-8204
MS A 1 51R-8204
MT F 1 51R-8204
GR A 1 51R-8204
MS A 3 51R-8204
MS C 4 51R-8204
MP C 1 51R-8204
MS A 2 51R-8204
ML B 3 51R-8204
ML B 2 51R-8204
ML B 4 51R-8204
MP C 2 51R-8204
ML B 5 51R-8204
RP K 1 51R-8204
MS A 5 51R-8204
MP C 3 51R-8204
MS A 6 51R-8204
ML A 1 51R-8204
GL A 1 51R-8204
RP K 2 51R-8204
ML A 2 51R-8204
MT F 2 51R-8204
MP C 4 51R-8204

MAINTENANCE ACCESS
EXPRESSWAY ON RAMP
EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND
EXPRESSWAY OFF RAMP
CYCLEWAY WALKWAY BRIDLEWAY
ALLOWANCE FOR BRIDGE WING WALL

12000 12100 12200 12300

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

KEY

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

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

NOTES:

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

510 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

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

Design	F BAGGALEY	30.09.14	Approved For Construction* D STIRRAT
Drawn	M POWELL	30.09.14	
Dsg Verifier	B EVANS	10.03.15	
Dwg Check	M MEERVELD	08.04.15	Date 09.04.13

* 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: TE MOANA INTERCHANGE PLANTING PLANS SHEET 4

Drawing No: M2PP-51R-D-DWG-8204

Rev. 1

Document No. M2PP-51R-D-DWG-8204.DWG

Drawing Plotted: 09 Apr 2015 02:46 p.m.

MATCHLINE REFER: M2PP-51R-D-DWG-8204

PLANT SPECIES WITH * TOWARDS BATTER TOPS
TO ENCOURAGE FLIGHT OVER EXPRESSWAY

510 520

HOLD
PENDING MAINTENANCE ACCESS TURNING BAY

MAINTENANCE ACCESS

MTF 1 51R-8205

GRA 1 51R-8205

MSA 1 51R-8205

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

12400 12500 12600 12700

MLB 51R-8205

MLA 1 51R-8205

MSA 2 51R-8205

CYCLEWAY WALKWAY BRIDLEWAY

GLA 1 51R-8205

MLA 2 51R-8205

MTF 2 51R-8205

PLANT SPECIES WITH * TOWARDS BATTER TOPS
TO ENCOURAGE FLIGHT OVER EXPRESSWAY

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 — 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.

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	F BAGGALEY	30.09.14
	Drawn	M POWELL	30.09.14
	Dsg Verifier	B EVANS	10.03.15
	Dwg Check	M MEERVELD	08.04.15
	* Refer to Revision 1 for Original Signature		

Approved For Construction* D STIRRAT Date 09.04.13

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: TE MOANA INTERCHANGE PLANTING PLANS SHEET 5

Drawing No: M2PP-51R-D-DWG-8205

Rev. 1

510 ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-51R-D-DWG-8205.DWG

Drawing Plotted: 15 Dec 2014 01:08 p.m.

VEGETATION TO BE RETAINED

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

NOTES:

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

EL RANCHO WETLAND (WEGGERY)
CONDITION G.41 c) ii) 5.

TAKAMORE AREA TO BE ADRESSED SEPARATELY

TAKU RAKAU FOREST
CONDITION G.41 c) i) 6.

RETAIN

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

CYCLEWAY-WALKWAY-BRIDLEWAY

11100

11000

10900

10800

480

470

RETAIN DUNEFORM

MAKATU TREE

MATCHLINE REFER: M2PP-48R -D-DWG-8202

A1 REPRODUCTION SCALE 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE 50 40 30 20 10 0mm

480

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - DRAWING POSITION ALTERED	MP				
2	FOR CONSTRUCTION - KCDC CERTIFICATION	MP	GFB	BF	PB	01.07.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DC	17.03.14

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

Design	F.BAGGALEY	31.01.14	Approved For Construction* P. BRADSHAW Date 19.03.14
Drawn	M.POWELL	31.01.14	
Dsg Verifier	B. FAULKNER	17.03.14	
Dwg Check	G. F-B	17.03.14	

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: SECTOR 480 EXPRESSWAY VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-48R-D-DWG-8701

Rev. 2+

Document No. M2PP-48R-D-DWG-8701.DWG

Drawing Plotted: 15 Dec 2014 01:10 p.m.

MATCHLINE REFER: M2PP- 51R -D-DWG-8701

MATCHLINE REFER: M2PP-48R -D-DWG-8701

MATCHLINE REFER: M2PP- 51R -D-DWG-8703

TAKAMORE AREA TO BE ADRESSED SEPARATELY

RETAIN

11200

11300

11400

1500

480

510

TAKU RAKAU FOREST
CONDITION G.41 c) i) 6.

PURRI ROAD

A1 REPRODUCTION SCALE
0mm 20 40 60 80 100

A3 REPRODUCTION SCALE
0mm 10 20 30 40 50

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.

480 510 ORIGINAL DRAWING IN COLOUR FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - DRAWING POSITION ALTERED	MP				
2	FOR CONSTRUCTION - KCDC CERTIFICATION	MP	GFB	BF	PB	01.07.14
1	FOR CONSTRUCTION - WEED CLEARANCE	MP	GFB	DH	DC	17.03.14

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

Design	F.BAGGALEY	31.01.14
Drawn	M.POWELL	31.01.14
Dsg Verifier	B. FAULKNER	17.03.14
Dwg Check	G. F-B	17.03.14

Approved For Construction* P. BRADSHAW Date 19.03.14

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: SECTOR 480 EXPRESSWAY VEGETATION TO BE RETAINED SHEET 2

Drawing No: M2PP-48R-D-DWG-8702

Rev. 3

Document No. M2PP-48R-D-DWG-8702.DWG

Drawing Plotted: 15 Dec 2014 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:

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.
4. EXTENT OF TAKU RAKAU FOREST BEING LOST HAS INCREASED FROM 0.25 ha TO 0.38 ha. THIS ADDITIONAL LOSS WILL BE ADDRESSED IN ONE OF THE SSMPs ONCE FINALISED

TAKAMORE AREA TO BE ADRESSED SEPARATELY

RETAIN

RETAIN

MATCHLINE REFER: M2PP-51R -D-DWG-8702

TAKU RAKAU FOREST
CONDITION G.41 c) i) 6.

TUKU RAKAU FOREST RETENTION REVERTS TO PREVIOUSLY CERTIFIED BOUNDARY (05.03.14)

TAKU RAKAU WETLAND
CONDITION G.41 c) ii) 6.

RETAIN

RETAIN

RETAIN

EXPRESSWAY OFF RAMP

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY ON RAMP

11600

11500

11400

11300

MATCHLINE REFER: M2PP-48R -D-DWG-8702

MATCHLINE REFER: M2PP- 51R -D-DWG-8703

A1 REPRODUCTION SCALE: 100 80 60 40 20 0mm

A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
3	FOR CONSTRUCTION - REVISED AS NOTED	MP				
2	FOR CONSTRUCTION - REVISED AS NOTED	MP	GFB	BF	PB	01.07.14
1	FOR CONSTRUCTION	MP	GFB	DH	DC	07.03.14

Original Scale (A1) 1:500 Reduced Scale (A3) 1:1000	Design	F. BAGGALEY	31.01.14
	Drawn	M. POWELL	31.01.14
	Dsg Verifier	B. FAULKNER	07.03.14
	Dwg Check	G. F-B	07.03.14

Approved For Construction* P. BRADSHAW Date 07.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: TE MOANA RD INTERCHANGE VEGETATION TO BE RETAINED SHEET 1

Drawing No: M2PP-51R-D-DWG-8701

Rev. 3

Document No. M2PP-51R-D-DWG-8701.DWG

Drawing Plotted: 15 Dec 2014 11:58 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.

TAKAMORE AREA TO BE ADRESSED SEPARATELY

RETAIN

WAIMEHA STREAM

RETAIN

ADDITIONAL CLEARANCE REQUIRED FOR TO STORMWATER CHANNEL

MATCHLINE REFER: M2PP- 51R -D-DWG-8701

EXPRESSWAY OFF RAMP

EXPRESSWAY ON RAMP

TE MOANA ROAD

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY ON RAMP

MATCHLINE REFER: M2PP- 51R -D-DWG-8703

MATCHLINE REFER: M2PP- 51R -D-DWG-8704

100 200 11700 11800 11900 12000

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	MP				
1	FOR CONSTRUCTION	MP	GFB	DH	DC	07.03.14

Original Scale (A1) 1:500	Design	F BAGALLEY	31.01.14
	Drawn	M POWELL	31.01.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULKNER	07.03.14
	Dwg Check	G F-B	07.03.14

Approved For Construction* P BRADSHAW Date 07.03.14

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

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

Title: TE MOANA RD INTERCHANGE VEGETATION TO BE RETAINED SHEET 2

Drawing No: M2PP-51R-D-DWG-8702

Rev. 2

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No. M2PP-51R-D-DWG-8702.DWG

Drawing Plotted: 15 Dec 2014 12:05 p.m.

MATCHLINE REFER: M2PP- 51R -D-DWG-8701

MATCHLINE REFER: M2PP- 51R -D-DWG-8702

MATCHLINE REFER: M2PP- 48R -D-DWG-8702

MATCHLINE REFER: M2PP- 51R -D-DWG-8704

EXPRESSWAY ON RAMP

EXPRESSWAY OFF RAMP

ADDITIONAL VEGETATION CLEARANCE FOR STREAM WORKS

RETAIN

RETAIN

300

400

TE MOANA ROAD

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

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.

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

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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

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

Design	F BAGGALEY	31.01.14	Approved For Construction* P BRADSHAW Date 07.03.14
Drawn	M POWELL	31.01.14	
Dsg Verifier	B FAULKNER	07.03.14	
Dwg Check	G F-B	07.03.14	

* Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

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

Title: TE MOANA RD INTERCHANGE VEGETATION TO BE RETAINED SHEET 3

Drawing No: M2PP-51R-D-DWG-8703

Rev. 2

Document No. M2PP-51R-D-DWG-8703.DWG

Drawing Plotted: 15 Dec 2014 12:07 p.m.

CABBAGE TREES TO BE RETAINED PENDING CONFIRMATION OF FINAL FOOTPRINT

RETAIN

NEIGHBORING PINE STAND REMOVED BY PROPERTY OWNER. PINES WITHIN DESIGNATION NO LONGER TO BE RETAINED

MATCHLINE REFER: M2PP- 51R -D-DWG-8702

MATCHLINE REFER: M2PP- 51R -D-DWG-8705

EXPRESSWAY ON RAMP

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

EXPRESSWAY OFF RAMP

CYCLEWAY WALKWAY BRIDLEWAY

12000

12100

12200

12300

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

ADDITIONAL VEGETATION CLEARANCE FOR STREAM WORKS

RETAIN

RETAIN

RETAIN

MATCHLINE REFER: M2PP- 51R -D-DWG-8703

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

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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

Original Scale (A1) 1:500	Design	S DUNN	31.01.14
	Drawn	M POWELL	31.01.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B FAULKNER	07.03.14
	Dwg Check	G F-B	07.03.14

Approved For Construction* P BRADSHAW Date 07.03.14

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

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

Title: TE MOANA RD INTERCHANGE VEGETATION TO BE RETAINED SHEET 4

Drawing No: M2PP-51R-D-DWG-8704

Rev. 2

Document No. M2PP-51R-D-DWG-8704.DWG

Drawing Plotted: 15 Dec 2014 12:01 p.m.

MATCHLINE REFER: M2PP- 51R -D-DWG-8704

CLEAR VEGETATION AS REQUIRED TO ENABLE FENCING

RETAIN

510

520

12400

12500

12600

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

CYCLEWAY WALKWAY BRIDLEWAY

RETAIN

ADDITIONAL CLEARANCE REQUIRED FOR FENCING

RETAIN

RETAIN

RETAIN

NGARARA MAHOE CONDITION G.41 c) i) 7.

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.

510

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
4	FOR CONSTRUCTION - DRAWING POSITION ALTERED	MP				
3	FOR CONSTRUCTION	MP	BF	DH	DC	01.09.14
2	FOR KCDC CERTIFICATION - REVISED AS NOTED	MP	SD	DH	DC	27.08.14
1	FOR CONSTRUCTION	MP	GFB	DH	DC	07.03.14

Original Scale (A1) 1:500	Design	F. BAGGALEY	14.01.14
Reduced Scale (A3) 1:1000	Drawn	M. POWELL	14.01.14
	Dsg Verifier	B. FAULKNER	07.03.14
	Dwg Check	G. F-B	07.03.14

Approved For Construction* P. BRADSHAW Date 07.03.14

*Refer to Revision 1 for Original Signature

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka Wellington Northern Corridor

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

Title: TE MOANA RD INTERCHANGE VEGETATION TO BE RETAINED SHEET 5

Drawing No: M2PP-51R-D-DWG-8705

Rev. 4

Document No. M2PP-51R-D-DWG-8705.DWG

							PLAN RE-FERENCE	TOTAL	
						AREA		133139	m^2
						AREA ADJUSTED FOR SLOPE		139796	m^2
						MT MIX – 1.0M CRS MASSED PLANTING, ENRICHMENT 10.0M CRS, PLANT CENTRES (METRES)			
						MULCH TYPE OM = ORGANIC MULCH, GM = GRADED GRAVEL MULCH, BC = BIOCOIR			
						N = NO MULCH (IN RIPARIAN / WETLAND ZONES), WM = WOOL MAT SQUARE (RIPAR AN EROSION)			
Plant type	**Plant mix**	**Botanical name**	**Common name**	**Grade**	**% mix**	**Notes**			
MASSED LOW EDGE PLANTING, ADJACENT TO CYCLEWAY /FERNBIRD HABITAT									
ML	A	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%	back		394	no
ML	A	Carex lessoniana	Cutty grass	1.0 litre	10%	front edge		787	no
ML	A	Coprosma acerosa	Sand Coprosma	1.0 litre	10%	front edge		787	no
ML	A	Coprosma propinqua	Mingimingi	1.0 litre	5%	mid back		394	no
ML	A	Coprosma rhamnoides	Coprosma rhamnoides	1.0 litre	10%	mid back		787	no
ML	A	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	1.0 litre	10%	front		787	no
ML	A	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	5%	front edge		394	no
ML	A	Hebe stricta	Koromiko	1.0 litre	10%	mid back		787	no
ML	A	Leptospermum scoparium	Manuka	1.0 litre	15%	back		1181	no
ML	A	Melicope simplex	Melicope simplex	1.0 litre	5%	mid back		394	no
ML	A	Muehlenbeckia complexa	Pohuehue, wire vine	1.0 litre	15%	front edge		1181	no
MASSED LOW EDGE PLANTING, ADJACENT TO EXPRESSWAY									
ML	B	Acaena novae-zelandiae	Red bidibidi	1.0 litre	10%			1375	no
ML	B	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	5%			687	no
ML	B	Carex dipsacea	Teasel sedge	1.0 litre	10%			1375	no
ML	B	Carex solanderi	Forest sedge, Solander's sedge	1.0 litre	10%			1375	no
ML	B	Carex virgata	Swamp sedge	1.0 litre	5%			687	no
ML	B	Coprosma acerosa	Sand Coprosma	1.0 litre	10%			1375	no
ML	B	Coprosma areolata	Thin leaved Coprosma	1.0 litre	5%			687	no
ML	B	Coprosma propinqua	Mingimingi	1.0 litre	5%			687	no
ML	B	Coprosma repens	Taupata	1.0 litre	5%			687	no
ML	B	Ficinia nodosa	Wiwi, Knobby club rush	1.0 litre	10%			1375	no
ML	B	Hebe stricta	Koromiko	1.0 litre	5%			687	no
ML	B	Muehlenbeckia complexa	Pohuehue, wire vine	1.0 litre	20%			2750	no
MASSED PLANTING - GENERA. MIX, MAHOE RICH WITH KOWHAI ENRICHMENT									
MP	C	Carpodetus serratus	Putaputaweta	1.0 litre	5%			1206	no
MP	C	Coprosma propinqua	Mingimingi	1.0 litre	5%			1206	no
MP	C	Coprosma robusta	Karamu	1.0 litre	10%			2412	no
MP	C	Cordyline australis	Ti kouka	1.0 litre	5%			1206	no
MP	C	Griselinia lucica	Puka, Broadleaf	1.0 litre	2%			482	no
MP	C	Hebe stricta	Koromiko	1.0 litre	8%			1929	no
MP	C	Kunzea ericoides	Kanuka	1.0 litre	12%			2894	no
MP	C	Melicytus ramiflorus	Mahoe	1.0 litre	25%			6029	no
MP	C	Melicope ternata	Wharangi	1.0 litre	3%			723	no
MP	C	Macropiper excelsum	Kawakawa	1.0 litre	5%			1206	no
MP	C	Myoporum laetum	Ngaio	1.0 litre	3%			723	no
MP	C	Myrsine australis	Mapou, Matipo	1.0 litre	4%			965	no
MP	C	Pittosporum tenuifolium	Kohuhu	1.0 litre	8%			2059	no
MP	C	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	2%			482	no
MP	C	Sophora microphylla	Kowhai	1.0 litre	3%			593	no
MASSED PLANTING - GENERA. MIX, MANUKA RICH, ADJOINS EL RANCHO / WEGGERY WETLAND									
MP	D	Myrsine australis	Mapou, Matipo	1.0 litre	5%			186	no
MP	D	Phormium tenax	Harakeke, Flax	1.0 litre	5%			186	no
MP	D	Aristotelia serrata	Makomako	1.0 litre	10%			373	no
MP	D	Coprosma propinqua	Mingimingi	1.0 litre	5%			186	no
MP	D	Coprosma robusta	Karamu	1.0 litre	5%			186	no
MP	D	Cordyline australis	Ti kouka	1.0 litre	5%			186	no
MP	D	Hebe stricta	Koromiko	1.0 litre	5%			186	no
MP	D	Kunzea ericoides	Kanuka	1.0 litre	5%			186	no
MP	D	Leptospermum scoparium	Manuka	1.0 litre	25%			932	no
MP	D	Pittosporum eugenioides	Tarata, lemonwood	1.0 litre	10%			373	no
MP	D	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	5%			186	no
MP	D	Melicytus ramiflorus	Mahoe	1.0 litre	5%			186	no
MP	D	Hebe stricta	Koromiko	1.0 litre	5%			186	no
MP	D	Carex lessoniana	Cutty grass	1.0 litre	5%			186	no
MASSED PLANTING - AMENITY AREA ADJOINING WAIMEHA STREAM									
MP	P	Apodasmia similis	Oioi	0.5 litre	5%			69	no
MP	P	Austroderia fulvida	syn Cortaderia, toetoe	0.5 litre	20%			274	no
MP	P	Carex lessoniana	Cutty grass	0.5 litre	23%			316	no
MP	P	Cordyline australis	Ti kouka	1.0 litre	5%			69	no
MP	P	Macropiper excelsum	Kawakawa	1.0 litre	10%			137	no
MP	P	Melicope ternata	Wharangi	1.0 litre	10%			137	no
MP	P	Pittosporum eugenioides	Tarata, lemonwood	1.0 litre	10%			137	no
MP	P	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	10%			137	no
MP	P	Rhopalostylis sapida	Nikau	1.0 litre	7%			96	no
AMENITY SPECIMEN TREES AT TE MOANA INTERCHANGE								0	no
TS	F	Magnolia grandiflora 'Little Gem'	Evergreen magnolia	Pb 40		speci		15	no
TS	G	Michelia doltsopa 'Silver Cloud'	Sweet Michelia	Pb 40		speci		3	no
TS	H	Magnolia 'Felix Jury'	Magnolia cambelli hybrid	Pb 40		speci		6	no
TS	I	Prunus yedoensis 'Awanui'	Flowering cherry	Pb 40		speci		32	no
TS	J	Agathis australis	Kauri	Pb 40		speci		13	no
STREET TREE - TE MOANA ROAD									
TS	K	Eucalyptus ficifolia	Flowering gum	Pb 40		speci		27	no
WETLAND SPECIMEN TREE									
TS	L	Dacrycarpus dacrydioides	Kahikatea	Pb 40		speci at waters edge		28	no
SPECIMEN TREE - TE MOANA ROAD INTERCHANGE EMBANKMENTS									
TS	M	Sophora microphylla	Kowhai	Pb40		speci		59	no

MASSED PLANTING +TREE ENRICHMENT (PLANT SPECIES WITH * TOWARD BATTER TOPS TO ENCOURAGE FLIGHT OVER EXPRESSWAY)									
MT	F	Austroderia fulvida	syn Cortaderia, toetoe	1.0 litre	2%			636	no
MT	F	Carpodetus serratus	Putaputaweta	1.0 litre	5%			1591	no
MT	F	Coprosma grandifolia	Kanono	1.0 litre	4%			1273	no
MT	F	Coprosma propinqua	Mingimingi	1.0 litre	5%			1591	no
MT	F	Coprosma robusta	Karamu	1.0 litre	5%			1591	no
MT	F	Griselinia lucida	Puka, Broadleaf	1.0 litre	5%			1591	no
MT	F	Hebe stricta	Koromiko	1.0 litre	5%			1591	no
MT	H	Kunzea ericoides	Kanuka	1.0 litre	15%			4772	no
MT	F	Leptospermum scoparium	Manuka	1.0 litre	5%			1591	no
MT	F	Macropiper excelsum	Kawakawa	1.0 litre	5%			1591	no
MT	F	Melicope simplex		1.0 litre	5%			1591	no
MT	H	Melicope ternata	Wharangi	1.0 litre	2%			636	no
MT	F	Melicytus ramiflorus	Mahoe	1.0 litre	5%			1591	no
MT	F	Myoporum laetum	Ngaio	1.0 litre	2%			636	no
MT	F	Myrsine australis	Mapou, Matipo	1.0 litre	5%			1591	no
MT	H	Phormium tenax	Harakeke, Flax	1.0 litre	15%			4772	no
MT	F	Pittosporum eugenioides	Tarata, lemonwood	1.0 litre	3%			954	no
MT	F	Pseudopanax arboreus	Whauwhaupaku, Fivefinger	1.0 litre	5%			1591	no
MT	F	Pseudopanax crassifolius	Horoeka, Lancewood	1.0 litre	2%			636	no
MT	F	Knightia excelsa*	Rewarewa	PB18	20%	enrich		636	no
MT	F	Podocarpus totara*	Totara	PB18	10%	enrich		318	no
MT	F	Prumnopitys taxifolia	Matai	PB18	10%	enrich		318	no
MT	F	Rhopalostylis sapica	Nikau	PB18	5%	enrich		159	no
MT	F	Alectryon excelsus*	Titoki	PB18	20%	enrich		636	no
MT	F	Hedycarya arborea	Porokawhiti, Pigeonwood	PB18	10%	enrich		318	no
MT	F	Elaeocarpus dentatus	Hinau	PB18	5%	enrich		159	no
MT	H	Dysoxylum spectabile*	Kohekohe	PB18	20%	enrich		636	no
MASSED SWALE PLANTING									
MS	A	Apodasmia similis	Oioi	0.5 litre	100%			43070	no
MASSED SWALE PLANTING - WITH WOODY PLANTS AT TOP EDGES									
MS	B	Apodasmia similis	Oioi	0.5 litre	50%			2520	no
MS	B	Corcyline australis	Ti kouka	1.0 litre	10%			504	no
MS	B	Leptospermum scoparium	Manuka	1.0 litre	25%			1260	no
MS	B	Phormium tenax	Harakeke, Flax	0.5 litre	15%			756	no
RIPARIAN PLANTING - WAIMEHA STREAM WITH ENRICHMENT, PLANT SPECIES MARKED * CLOSE TO STREAM EDGE OF CANOPY OVERHANG									
RP	K	Aristotelia serrata *	Makomako	1.0 litre	10%	low veg edge		473	no
RP	K	Carex geminata	Cutty grass	0.5 litre	5%	45%		405	no
RP	K	Carex lessoniana	Cutty grass	0.5 litre	5%	30%		349	no
RP	K	Coprosma lucida	Shining karamu	1.0 litre	10%			473	no
RP	K	Coprosma robusta	Karamu	1.0 litre	10%			473	no
RP	K	Cordyline australis	Ti kouka	1.0 litre	5%			237	no
RP	K	Leptospermum scoparium*	Manuka	1.0 litre	20%			947	no
RP	K	Melicytus ramiflorus *	Mahoe	1.0 litre	10%			473	no
RP	K	Pittosporum eugenioides*	Tarata, lemonwood	1.0 litre	10%			473	no
RP	K	Pittosporum tenuifolium*	Kohuhu	1.0 litre	10%			473	no
RP	K	Phormium tenax	Harakeke, Flax	0.5 litre	5%	25%		330	no
RP	K	Sophora microphylla*	Kowhai	Pb18	enrich			473	no
WETLAND PLANTING SLOPING BANK TO PERMANENT WATER, OCCASIONATION ON EXTREME EVENTS									
WP	D	Carex secta	Pukio, Purei	0.5 litre	65%	waters edge		2452	no
WP	D	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	17%	waters edge		641	no
WP	D	Dacrycarpus dacrydioides	Kahikatea	1.0 litre	1%			38	no
WP	D	Laurelia novae-zealandiae	Pukatea	1.0 litre	2%			75	no
WP	D	Phormium tenax	Harakeke, Flax	0.5 litre	10%			377	no
WP	D	Corcyline australis	Ti kouka	1.0 litre	5%			189	no
WETLAND PLANTING - EMERGENT 0.0 TO 0.3M WATER DEPTH									
WP	H	Carex secta	Pukio, Purei	0.5 litre	10%			600	no
WP	F	Carex virgata	Swamp sedge	0.5 litre	25%			1500	no
WP	F	Cyperus ustulatus	Toetoe upokotangata, Giant umbrella sedge	0.5 litre	25%			1500	no
WP	F	Machaerina rubiginosa (syn Baumea)		0.5 litre	15%			900	no
WP	H	Machaerina terebifolia (syn Baumea)	Common twig rush, pakihi sedge	0.5 litre	15%			900	no
WP	F	Phormium tenax	Harakeke, Flax	0.5 litre	10%			600	no
WETLAND PLANTING - 0.3 TO 0.6M WATER DEPTH									
WP	G	Bolboschoenus fluviatilis	Kukuraho, Marsh club rush	0.5 litre	30%			205	no
WP	G	Carex secta	Pukio, Purei	0.5 litre	10%			68	no
WP	G	Eleocharis acuta	Sharp spikee sedge	0.5 litre	25%			170	no
WP	G	Juncus edgariae (syn J gregiflorus)	Wiwi	0.5 litre	35%			239	no
GRASS									
GL	A	Grass low grow mix	sown, close mow to 100mm	sow				9215	m^2
GR	A	Grass rank - (low grow mix)	sown, allowed to grow rank,	sow				8408	m^2
TOTAL									

A1 REPRODUCTION SCALE: 0mm 20 40 60 80 100

A3 REPRODUCTION SCALE: 0mm 10 20 30 40 50

FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	MM	DH	SW	09.04.15

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

Design	F BAGGALEY	30.09.14	Approved For Construction*
Drawn	M POWELL	30.09.14	D STIRRAT
Dsg Verifier	B EVANS	10.03.15	
Dwg Check	M MEERVELD	08.04.15	Date 09.04.13

* 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: WAIKANAE TO TE MOANA RD PLANTING SCHEDULE

Drawing No: M2PP-48R-D-DWG-8211

Rev. 1

Document No. M2PP-48R-D-DWG-8211.DWG

Appendix 2: CONSULTATION, FEEDBACK AND RESPONSES

Site Specific Management Plan 008 -[Sectors 480-510] MacKays to Peka Peka Expressway

31 MARCH 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 are:

- Te Āti Awa ki Whakarongotai;
- Takamore Trust
- KCDC;
- Kāpiti Cycling Incorporated;
- Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleways
- Puriri St and Kauri Road Landscape Focus area.

COMMENTS ON DRAFT SSMP8: TE MOANA-
KCDC REVIEWERS COMMENTS *[JW=Julia Williams- Landscape Architect; DP = Deyana Popova-Urban Designer;*

Draft issue for review Rev A 10.12.2014

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*KCDC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
			C 'Retaining walls..' - paragraph 1– it is not clear which retaining walls this statement refers to and whether this also includes the planted retaining walls or just the retaining wall marked on Sheet 3? The planted retaining walls shown on Sheet 7 associated with the stream are important elements of the SSMP and not having any indication of their height/treatment does not allow a comprehensive assessment of the SSMP. See also comments under Sheet 7.	Text p.8 -	The Expressway retaining wall proposed on the eastern side of the expressway at chainage 11350 is currently being designed, and will not be finalized as part of this revision of SSMP 8. The design of the retaining wall facing panels and finishes is being developed in consultation with the Tuku Rakua collective, Te Āti Awa ki Whakarongotai and Takamore Trust, with the next hui planned for 31 January 2015. A retaining wall in the Waimeha Stream, between the north bridge abutment and south bound off ramp will be constructed with rock filled polymer coated steel mesh (Terramesh®) units / 'gabion' panel facing and provides protection to the bridge abutment, see details on Sheet 9. The wall will not be planted as a planted, soil filled unit does not provide adequate protection from flooding.
			E 'Bridge Abutments' • Paragraph 2 - Description of abutment treatment doesn't match description on Sheet 9 • Last Paragraph – says architectural lighting will be provided under the bridge – this isn't clearly indicated in Appendix 3: Bridge Summary, ULDF principles summary/ under principle 7. See also comment under sheet 15 below.	Text p.9 -	The text description on sheet 9 is incorrect and has been inadvertently copied from the SSMP 3 (Kapiti bridge). The abutment will be finished with an exposed aggregate finish. Architectural lighting to be used to add additional interest and safety at night. Softly up light the 4 columns (the two either side of Te Moana Road) to accentuate the form of the columns.

			F 'Other Urban Design Conditions' - second paragraph states 'there will be no formed footpath on the southern side of Te Moana Road'...Appendix 3: Bridge Summary, p.2 – the plan indicates provision for future footpath on southern side of Te Moana Rd – If this still is the intention it should be added to the written document under paragraph 2 to signal the intended possibility.	Text p.9	Text amended in SSMP to clarify, 'There will be no formed footpath on the southern side of Te Moana road. However space provision for a future footpath on the southern side has been allowed.'
			Where is Cross-section 2? (not on plan or in Sheet 5 & 6 cross-sections) There is no CS 2 Houses at 65, 67 Puriri Road to be removed and this is shown more clearly in Sheet 11. It is not clear whether the house at 64 Puriri Road is also to be removed. (It might be helpful to mark street numbers on Sheet 2.) What is happening to remediate these sites? Additional cross section required - about CH11160 to show effects for 63 Puriri Road plus noise bund.	Sheet 2	Cross section two reference marker has been added to sheet 2 at chainage 11200. Cross-section CS2 added to sheet 5 There is no 64 Puriri Road. You may be referring to 38 and 40 Puriri Road. There is no intention to remove these properties. These sites will be subject to NZTA surplus property disposal process, there is no remediation planned. This will be covered by the missing cross section CS2 noted above
			It appears from the dotted orange line on the plan that CWB between El Rancho and Puriri Road is located on the existing footpath on the western side of local roads, as requested by the CWB Advisory Group and Kapiti Cycling Inc. can this be confirmed?.	Sheet 2	The CWB uses the existing local road /footpath system. The Alliance will not be upgrading the local road network. If required KCDC would be responsible for constructing any additional separate off road alternatives
			Additional cross section required through 186 Te Moana Road backing onto flood protection bund. Is resident agreeable to bund or is planting required on outer edge of bund (facing neighbouring properties)	Sheet 3	No further cross section required. This is a 1m high grassed earth bund. The note on sheet 3 updated to give bund height. The bund is a stormwater requirement and is there to protect the neighbouring properties from potential flooding. As this is a low 1m high bund within grazed pasture planting is not required.
			Additional cross-section required somewhere between Ch11830m through to Ch11900 to illustrate retaining wall between Expressway and southbound off-ramp (assuming 'retaining wall' label on plan does not refer to Waimeha Stream MSE retaining wall)	Sheet 3	No further cross section required. This note does refer to the Waimeha Stream MSE/Terramesh retaining wall. The appropriate section CS7 on Sheet 9 This is clearly referenced on sheet 7 and 8
			Is CS6 in the correct location? It should be showing the south abutment according to actual cross-section on Sheet 9. Still have concerns re maintenance of riprap under the bridge between southern abutment and Te Moana Road. The site is partially screened from pubic gaze by proposed street trees but Council will scrutinise the long term maintenance plans that are required at the time of Final Completion. No detail is provided re: height and/or treatment of the planted retaining walls. It is also noted the planted retaining walls are marked on the plan Sheet 7 but there is no graphic reference included in the key on top of page.	Sheet 7	The CS6 reference marker on Sheet 7 is in the correct location. Cross section CS6 on sheet 9 labelled incorrectly. CS6 has been drawn correctly The riprap is a stormwater and structural design requirement. Not an urban design led response. Its purpose is to protect the bridge from flood damage, and scouring. The riprap design considers flood protection and maintenance requirements, including ability to withstand temporary inundation and flooding. Riprap shall be sized to minimise migration / movement downstream during flood conditions. As with the Waikanae river, the riprap design has taken into account ecological and visual mitigation requirements as far as practicable. Shaping of flood protection riprap around columns and abutments to resemble braided river island forms and to maintain existing flood flow paths.

			CS6 is labelled South abutment but actually shows northern abutment (check northbound and southbound traffic on cross-section). CS7 – Waimeha Stream – cross-section should be a mirror image (in terms of location of x-section line on Sheet 7). What does timber guard rail look like in elevation? Would like detail re the design of the fence along the northern edge of Te Moana Rd footpath and under the Te Moana bridge next to the riprap. Is it the same as the guardrail above? How will this section of the footpath look for local pedestrians?	Sheet 9	Label amended Cross section reference marker on sheet 7 rotated to accurately reflect cross section direction Elevation of guard rail provided on sheet 9 Extent of fence made clearer on sheets 7 and 8. Example of fence type introduced to sheet 9A
			No detail provided of CWB entry at Kauri Road (typical Type 2 detail) for resident consultation.	Sheet 11	This CWB intersection is covered by SSMP 7. Refer SSMP7
			Lighting required at CWB exit onto Kauri Road.	Sheet 14	As above. Refer SSMP7
			Is lighting required at CWB exits onto Te Moana Road or will standard street lighting be enough? No uplighting under bridge. Is this consistent with Appendix 3: Bridge summary ULDF Principle 6?. This is one of the most used urban routes in terms of local pedestrian and cycle use. The ULDF discussed techniques for 'lightening the space' under bridges. (See below). We are not suggesting that the piers should be painted but the large areas of riprap and new road configuration could turn this underbridge area into a rather bleak environment. We need more information on the local user experience within the underbridge landscape and expect to see specific mitigation options shown to create a positive environment for local pedestrian and cycle movement. Refer ULDF principles 4 & 13 in *Appendix 3 Bridge Summary.*	Sheet 15	The proposed Te Moana road street lighting provides enough light at the CWB intersection. Architectural lighting will be used to add additional interest and safety at night. Softly up light the 4 columns (the two either side of Te Moana Road) to accentuate the form of the columns. The bridge development study text will be updated to match this discription As with Poplar, Wharemauku Kapiti, Waikanae Bridge we are working with Te Ati Awa to realise their aspiration to have Te Ati Awa specific designs incorporated into the column finish. An example of the Te Ati Awa design concept for the Waikanae bridge has been included into the SSMP 8. We are proposing a similar approach for the Te Moana overpass bridge columns. The consultation on this design element is ongoing. The Te Ati Awa motif design may differ for Te Moana. The pedestrian experience under Te Moana Bridge will be more inviting than most other bridges on the expressway. The length of the bridge and the fact that the bridge abutments are separated from the road/pedestrian corridor (Pedestrian corridor consists of 3m shared path, separated from the live lane by a 1.5m on road cycle lane/shoulder) and the fact the ground falls away on both sides of Te Moana road (Refer Cross section CS5) will make Te Moana Road feel more open than most other bridges The orientation of the bridge in relation to the sun (north) will let plenty of natural light under the bridge between midday and late afternoon. The change to a split bridge will also let more natural light to the underside of the bridge

			No plans in draft SSMP. Will be interested in species list for large tree embankment planting on Sheet 2 and specimen trees at Te Moana Road interchange. I note that local consultation has provided feedback on plant species.	Planting Plans not included	Planting plans areincluded in Rev B issue for sertification.
			Resident at 109a Te Moana Road does not want a bund behind her property. Google earth shows 109 Te Moana to be west of Expressway (south of TE Moana Rd) but there do not appear to be any bunds shown on Sheet 3. Are there bunds in this location that are not shown in the plans?	Consultation	This was a Typo should be 190a Te Moana Road As mentioned above the bund is low/1m high and is design to protect residents including 190 Te Moana from flood waters in a 1 in a 100 year flood event
COMMENTS ON DRAFT SSMP8: TE MOANA- ***KCDC REVIEWERS COMMENTS*** *[JW=Julia Williams- Landscape Architect; DP = Deyana Popova-Urban Designer;* *Draft issue for review Rev A 10.12.2014* *Comments relate to the Te Moana Road underbridge environment – Comments received 18.12.2014*					
Date	*Detail*	*Reviewer/ commenter*	*KCDC Reviewer's comment*	*reference in SSMP*	*Management Plan Author's response*
18/12/2014	Email	JW, DP	**CPTED Issues:** No underbridge lighting has been shown and it is unclear what lighting levels will be at night.	Sheet 15	There will be 2 'road lighting' fixings attached to the underside/soffit of the bridge deck. Lighting to meet required road safety standards (category V4). This will adequately light Te Moana Shared Path. Architectural lighting to be used to add additional interest and safety at night. It is proposed to softly up light the 4 columns (the two either side of Te Moana Road) to accentuate the form of the columns.
18/12/2014	Email	JW, DP	**Safety Issues:** Safety issues for pedestrians as it is unclear if there is any barrier between the footpath and the stream bank	Sheet 7, 9A, 9B	1.2m high, matt black, steel, two rail panel fence added between Te Moanan Road shared path and stream bank
18/12/2014	Email	JW, DP	**Interface between Te Moana Road Footpath and Riprap:** The design of the interface between the footpath and the hard surface on the stream bank. It is unclear whether the riprap extends to the footpath, or whether the flatter berm between the footpath and stream bank is gravelled, and how the transition between materials is handled.	Sheet 9A, 9B	A series of 225mm precast concrete slab 'sculptural' steps (3 levels) create a visual transition between the Te Moana Road shared path and the riprap of the Waimeha Stream Bank. The sculptural steps create increased visual amenity and additional interest for users of the shared path. In some area the riprap will extend around the concrete steps and help the integration of the steps into streamside/bank landscape.

COMMENTS ON DRAFT ISSUE SSMP8: TE MOANA
PURIRI ST KAURI ROAD LANDSCAPE FOCUS AREA.

Community consultation information session held on 13 November 2014.
Draft circulated to owner neighbours 28 November for comments –Reponses back 12 December 2014

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
Condition DC.57A a) iv)	Consultation with relevant 'Landscape Focus Area'	Wendy Gibb 61 Puriri Road	Request that the pond and island on the ex Tocker property be retained.		NZTA currently own the land referred to as the Tocker property, and as a result of changes to the design the ponds are likely to remain unmodified. However in the long term, if not required for the project, future owners will determine what happens on the property.
Condition DC.57A a) iv)	Consultation with relevant 'Landscape Focus Area'	Monica Dearden 39 Puriri Rd	Requested that planting beside the expressway reflect the edge of natural forest with a tapestry effect and include; Whau, kowhai, Stephen's island kowhai lancewood, pittosporum, totara, Kahikatea.		The planting philosophy along the expressway corridor seeks to reflect natural plant associations that would typically occur in this location. All seed for native plants is being sourced from the Manawatu Ecological Region with a focus on the Foxton Ecological District. Maintenance requirement mean that planting close to the edge of the expressway and the cycleway will be low stature grading up to taller species in the core of the planting. Enrichment planting of tree species that require some shelter will occur a year after the initial planting. Refer species list in planting schedule Appendix 1. Whau and Stephen's Island kowhai do not occur naturally in this area so will not be included.
Condition DC.57A a) iv)	Consultation with relevant 'Landscape Focus Area'	Chris Dearden 39 Puriri Rd	Suggested plant species should be endemic to the area. The area at Te Moana Road crossing should include exotic tree species to reflect the established planting in the area. Such as flowering cherries, magnolia, and species that attract birds and provide food source for birds.		Re native plantings, refer above comments. Groups of exotic flowering trees will be included in the Te Moana Road berms.
		Gabrielle Rikihana 190a Te Moana Road	Does not want a bund behind her property. Would like to see a mix of native and exotic trees, and trees that can be harvested. Use banks of kowhai trees on both sides of the road. Suggest planting beside road be a chevron pattern with a mix of native and exotic Suggest pull-off areas so drivers can take in local views.		This is a flood bund that is necessary for the project to meet its flood management requirements. The species selection for the Te Moana Road corridor is yet to be finalised but exotic species as suggested are certainly an option – Productive tree species could be part of that. All the planting along the expressway will be a naturalistic design, there is some scope for structured planting at the interchanges and this will be considered for the Te Moana area. Pull-off areas are not permitted on an expressway.

Draft SSMP circulated to owner neighbours 28 November for comments –Reponses received 12 December					
Condition DC.57A a) iv b		Marie O'Sullivan	Questions suitability of access to Urupa		A new access road to the urupa will be provided from the west, off Flaxmere Road. The new access road has been design in consultation with Takamore Trust and is currently being consented with KCDC.
Condition DC.57A a) iv b		Chris Dearden 39 Puriri Rd	1. Questions the height of the noise bund and concrete barrier on the bridge. Note that sheet 13 states 'height varies" but fails to specify on what basis, or by how much. Discussion at the BOI, and subsequently, with a number of parties, was of a bund 3 metres above the height of the road. We would argue strongly that in this area that be the minimum height adhered to. 2. On the bridge over Te Moana Rd. there is the potential to spread traffic noise far and wide throughout Waikanae as the road is already elevated and without proper sound baffles, sound will affect a large number of people. The concrete walls there need to be of sufficient height to reduce that sound to a minimum. The need to reduce nuisance from the bridge also applies to lighting (see below). 3. The proposed lighting plan (sheet 14) provides for lights as far as the end of Puriri Road leading up to the on and off ramps for Te Moana road. Again this has been a matter of earlier discussion with the view previously taken that it would not be necessary to have lighting beyond the end of the sand dune that marks the furthest limit of the on and off ramps. Avoiding lighting further south than that point will have a number of advantages. First, it will protect the Urupa from being permanently lit at night which will help ease Maori concerns about damage to the ambience of the Urupa. Second, the ponds of Wetland 9 area haven for a wide variety of native (and other) birds, including spoonbills, herons, stilts, grebe etc. (and a fair number of Canada Geese). Providing them with a flight path in and out undisturbed by light and lighting towers will help preserve the sanctuary nature of the area as well as avoid the problems experienced around the Waikanae Estuary area where newly erected lights led to a number of deaths of spoonbills from flying into them. 4. Should it prove a requirement to have lights as far south as sheet 14 indicates, then it would be advantageous to have low level, focussed lighting (of the sort used at Tekapo to prevent light scatter) rather than the standard Expressway lighting. We are not clear whether the lighting indicated on sheet 14 is required only to illuminate the cycleway rather than the road, but if so, surely more discreet lighting could be used for that.		1. The height of the conc. barriers on Te Moana road is 1.1m above road surface. The noise bund has been designed to meet the required noise mitigation standards and minimum heights. Restrictions in designation width and the grades allowed on the CWB (which sits on top of the bund) mean the height does not vary more than approx. 1m. This height variation cannot be confirmed until detail design is complete 2. The road/noise barriers are designed to the standards established in the BoI 3. The lights are there to light the expressway and have been designed to meet the appropriate road safety standards. The Alliance are consulting with Takamore Trust regarding effects of the expressway on the urupa. With respect to effects on wildlife, many NZTA roads are required to be lit in areas where wildlife occur, unfortunately the roadway lighting standards are binding. No there will be no shielding on the lights here or at any location along the expressway. 4. As per above. Lighting shown with symbol (D) is required to light the expressway only. The light at the end of Puriri Road shown using symbol (P)indicates a smaller CWB specific light (5.5m high) this light is designed to illuminate the CWB entrance and help with way finding for CWB users traveling north (coming from Kauri Road). This light has also been thought of in regard to CPTED (crime prevention through environmental design) it location helps to indicate an egress/entry point for CWB users. 5. Trees along the drive are outside of the designation. No work or vegetation clearing is proposed in this area. 6. As above. No work or vegetation clearing is proposed in this area. 7. The area shown to be designated as "retain duneform" is the area of high cultural value- curtilage of the Maketu tree. The designation is purely there to ensure that the area is not disturbed during construction. NZTA currently own the ex Tocker property, and as a result of changes to the design the ponds are likely to remain unmodified. However in the long term, if the land is not required for the project, it will be sold and future owners will determine what happens on the property.

			5. On the vegetation sheets (Vegetation to be retained sheet 2) we note that most of the vegetation on ex Tocker's land is to be retained but not all, and we are not clear whether that is on oversight, simply that individual trees are too small to be identified or what. We are particularly interested in the trees by the side of the drive along the edge of their and our property where we would hope as much of the vegetation as possible could be preserved. It may be that this is not indicated as being preserved because this is the area in which the drain out into Puriri Road will go but as that seems not to be identified, it is hard to know. 6. We note too that on the plan most of the vegetation on our property is identified as being preserved but this fails to include the planting by the drive. 7. We note that on Vegetation to be Retained Sheet 1 a large area is designated as "retain duneform". No such designation appears on Sheet 2 for the ex Tocker property but we presume that it is the intention to preserve the present land forms?		
Condition DC.57A a) iv b		Alex and Wendy Gibb, 61 Puriri Road	Concerned about the end of Puriri Road becoming a popular place for CWB cyclists to park cars in order to access the CWB, and causing congestion at the end of the road.		The Puriri Rd entrance to the CWB is just one of many public road entrances along the 16km length of the CWB. We see no reason why Puriri Road entrance would attract the numbers of cars and bike riders that you suggest. The majority of CWB users will be local Kapiti Coast residents, commuting to work or school or using the CWB for recreational purposes, without the need for cars. The turning area shown on the SSMP plans has been designed in consultation with KCDC traffic engineers to meet local road design standards and provide turning space for vehicles. If in the future a proven need arises to warrant a designation for 'resident only' parking on Puriri Road, this would need to be negotiated with KCDC.
Condition DC.57A a) iv b		Jill Bolland,Allan Tichborne, John Green	The properties at 145 and 147 Te Moana Road adjoin a "paper road" (designated KCDC land) which shares a boundary with the new expressway. The only other entity with rights over this area Expressway Transport Agency through its designated, possible, future reserve areas which extend up to the Waimeha Stream and beyond. Our view as adjoining neighbours, is that the land labelled road reserve be lost, and the land be incorporated into the reserve-beautification of the expressway surrounds. As well, having a road coming from the new road would be dangerous and add a hazard which could be removed with a new designation for the possible future use of the area.		This query has been referred to the Alliance property experts. However we note the area of land in question is outside the M2PP project designation.

COMMENTS ON DRAFT ISSUE SSMP8: TE MOANA **KAPITI CYCLING INC.** Lynn Sleath **IMPLEMENTATION GROUP OF KCDC ADVISORY ON CYCLEWAYS, WALKWAYS AND BRIDLEWAYS:** Ruth Halliday, Joy Svendsen, Steve Lewis Combined meeting held 21 November 2014 also present; Stuart Kilmister					
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	Request button installed at each of traffic lights at the pedestrian crossing points that are at a height easily reached by a mounted equestrian.		Buttons will be provided, technical details still to be finalised. A design will be developed to allow equestrians to cross Te Moana Rd safely. The design will be informed by international standards as none exist in New Zealand for this type of crossing.
		CWB Advisory Group	That mounting blocks are installed in the vicinity of each traffic light pole with signals that are operated by pedestrians' cyclists and horse riders. A standard 3 step commercial mounting block has a base of 63x75cm with steps at 25cm, 40cm and 55cm. Any configuration of 2 or 3 steps up to 60cm would be suitable.		Mounting blocks to be provided in the vicinity of traffic crossing lights, final details to be confirmed.
		CWB Advisory Group	That signs be erected at each entrance/exit point showing that this is a shared path i.e. that users could meet any or all of, horses, cyclists, runners, walkers, dogs.		International horse motif to be provided on CWB directional signage. Specific signage would be provided by KCDC to address significant sharing issues if/when they occur.
		CWB Advisory Group & Kapiti Cyling Inc	Support the arrangements for cyclists to pass through the Te Moana Road Interchange via traffic signals with the following small amendments: • Smooth out the S curve on the two way shared pathway just west of the interchange southbound off ramp. • Extend the synthite markings on the on road cycle lanes as per the MOTSAM standard.		The s curve has been realigned refer Sheet 8 All cycle lane road markings will be consistent with MOTSAM standards.
		CWB Advisory Group & Kapiti Cycling Inc	We support the request from KCDC to have the shared two way pathway adjacent to the local roads between the El Rancho entrance and the end of Puriri Road located on the west side in order to be consistent and avoid road crossings.		The Alliance considers that the current route for CWB, utilizing existing Kauri and Puriri roads and footpaths are appropriate to this location/low traffic environment. Provision of a two way path on a local road would be KCDCs responsibility if it is deemed necessary.

COMMENTS ON Draft ISSUE SSMP 8: TE MOANA
TE ATIAWA KI WHAKARONGATAI Representatives- Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker

The comments below have been confirmed by Te Atiawa at the design workshop on 5 December 2014

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 10	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		Formal comment received for SSMPs 1-10 at the workshop held on 23 October 2014 In addition, the Alliance design team are working with Te Atiawa ki Whakarongatai to develop design of some elements along the expressway and CWB 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 ongoing (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 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 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

COMMENTS ON DRAFT ISSUE SSMP 8: TE MOANA
Takamore Trust *16.2.2015 Ben Ngaia*

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*reference in SSMP*	*Management Plan Author's response*
57 e) ii)		Ben Ngaia	Takamore Trust supports Āti Awa ki Whakarongotai's statements and Alliance Responses (above)		

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	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
	General comment to be applied to all SSMP's		Specific areas of interest, land use, planting type will be identified in individual SSMP comments.		
Condition Reference	**Condition Detail**	**Reviewer/ commenter**	**Comment**	**reference in SSMP**	**Management Plan Author's response**
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	The CWB entrance at the end of Puriri Road is a suitable location for interpretive signage to tell the story of the Makatu Tree and 'Weggery' (Tuku Rakau) wetland area. Refer to the Cultural Impact Assessment by Ben Ngaia Te Atiawa recommend future discussion with Takamore Trust on this matter		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	Tuku Rakau wetland (Weggery wetland) has significance to Takamore Trust Tuku Rakau wetland has had a strong historic connection to Takamore, Te Atiawa and the Urupa. Naming of wetland has significance to Takamore Trust and the Urupa to acknowledge this connection. Refer to the Cultural Impact Assessment by Ben Ngaia Te Atiawa recommend future discussion with Takamore Trust on this matter.		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	The expressway cuts through the historical crescent shaped approach to the urupa at approx. chainage 11400m. There is an opportunity to use pou whenua on coinciding sides of the expressway as a way to signify the connection between the separated lands. Interpretive signage to tell the story of the urupa and the historic access route. Te Atiawa recommend future discussion with Takamore Trust and Te Atiawa ki Whakarongatai on this matter		See previous comments

	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	Te AtiAwa expressed an interest in being involved in the design of the retaining wall facing panels in Sector 510, with the understanding that this would need to be in collaboration with Takamore Trust and the Tuku Rakau collective.		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	South of Te Moana Road - Interpretive signage to tell the story of : • Kawewai cultivation ground • Tuku Rakau settlement and Wi Parata • Moving of the Whare • Moving of the church after the railway		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	Potential for a Wahi Tapu area to the north west of the Proposed Te Moana Road bridge. (Te Atiawa ki Whakarongatai have been working with KCDC to obtain recognition in the – District Plan). North of Te Moana Road - Interpretive signage to tell the story of : • Taewapirau, (Settlement, cultivation site, burial ground) • Te Maumaupurapura cultivation ground • Upokotekaia Pa • Waimeha Stream • Totara Lagoon		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	Interpretive signage to tell the story of the Waimeha Stream, its significance to Te Atiawa for: • Mahinga Kai • Planting for medicinal use rongoā māori • Maori customary practice, kaupapa Māori		See previous comments
57 e) i	SSMPs to be prepared in consultation with Te Atiawa ki Whakarongatai SSMP 8 specific comment 23/10/2014	Hemi Sundgren, Ann-Maree Bukholt, Mahina a rangi Baker	Interpretive signage to tell the story of the ecology of the lagoon system. Link to Iwi Values: Reason for settlement in the area • Mahinga Kai • Planting for medicinal use rongoā māori • Maori customary practice, kaupapa Māori		See previous comments

Appendix 3: BRIDGE SUMMARY- TE MOANA

Site Specific Management Plan 008 -[Sectors 480-510] MacKays to Peka Peka Expressway

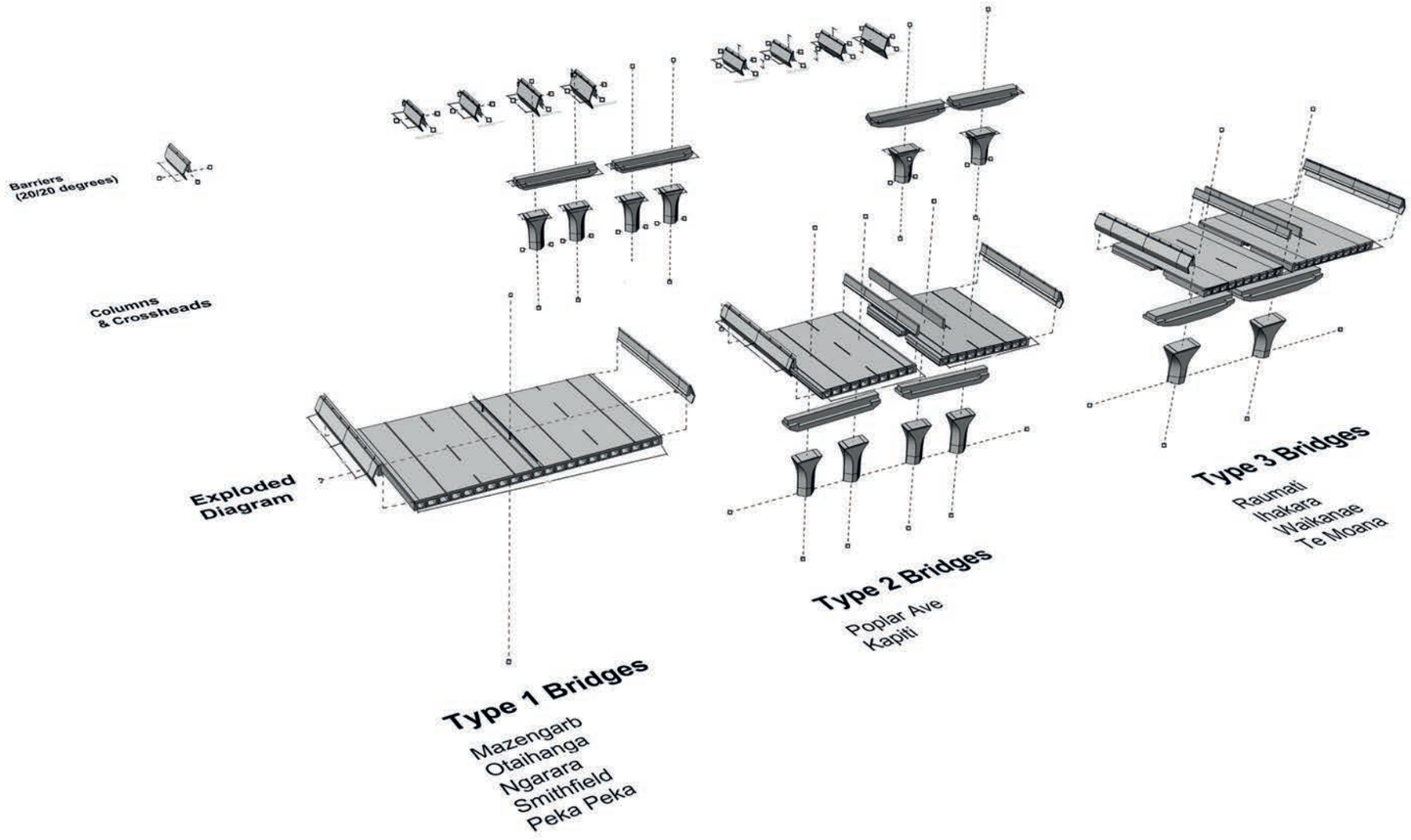
17 APRIL 2015 - REV C - FOR INFO

NZ TRANSPORT AGENCY WAKA KOTAHI

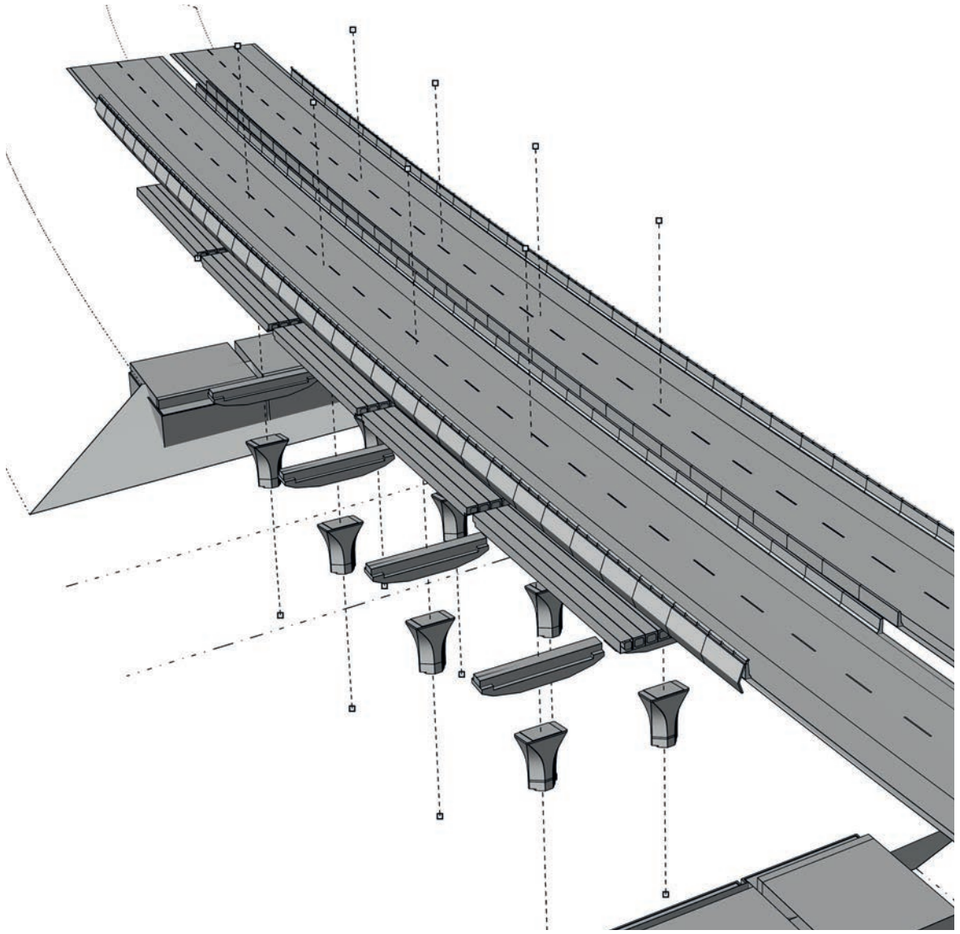
MacKays to Peka Peka
Wellington Northern Corridor

M2PP Bridge Design Objectives

Bridges as a series of components



Proposed Te Moana exploded isometric



Design Objectives

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

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

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

Design Objectives:

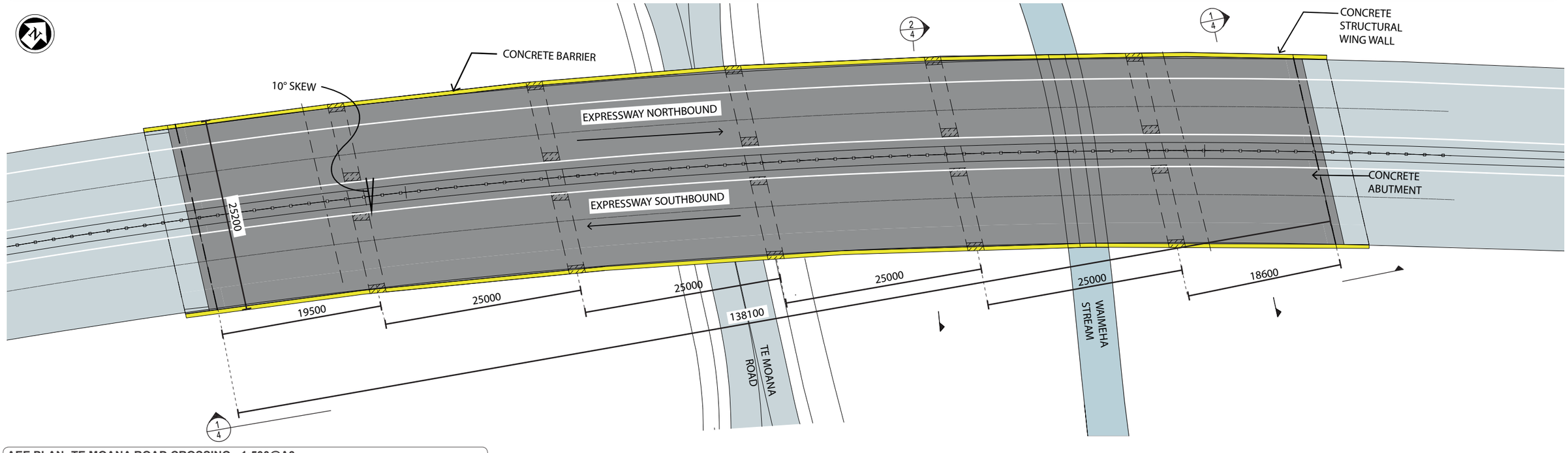
1. The public spaces of the roads and streets take primacy over the experience of the Expressway users. Local people will be making slower movements and as a consequence the bridges will be more visually apparent to them than to people travelling along the Expressway.

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

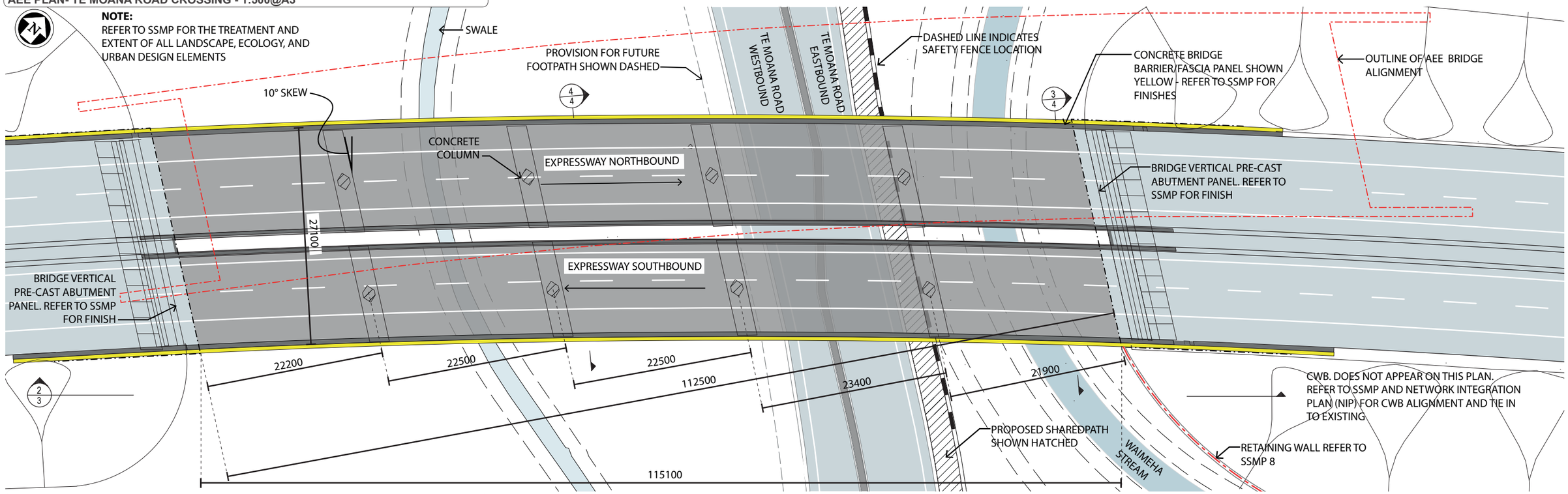
3. Bridges are formed as a whole from a single kit of parts, which allows the components to be repeated and a similar approach used at the multiple crossings to register as a ‘family’ of bridges because people will have multiple interactions day to day with the Expressway and this approach promotes simplicity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

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

AEE Consented to DET Proposed Graphic Comparison



AEE PLAN- TE MOANA ROAD CROSSING - 1:500@A3



PROPOSED PLAN- TE MOANA ROAD CROSSING - 1:500@A3

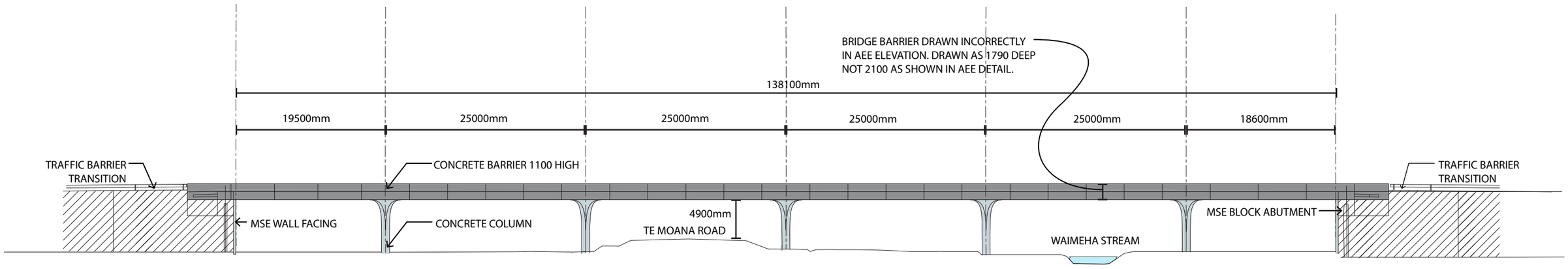
Design development

1. Split bridge (1m gap)
2. Remove end span at northern end
3. Column shape and location changed, abutment details refined
4. Reduced number of spans from six to five
5. Expressway alignment changed
6. Change to traffic signals

Rationale

1. Allows light penetration and better seismically
2. Reduced need for multiple stream diversions, less ecological impact
3. Reduced number of columns (20 to 8) and more open beneath
4. Reduced spans reduces cost. Avoids extra stream diversion.
5. Improved sight distance and safety for expressway drivers
6. KCDC request to allow easier movement for sight pedestrians and cyclists

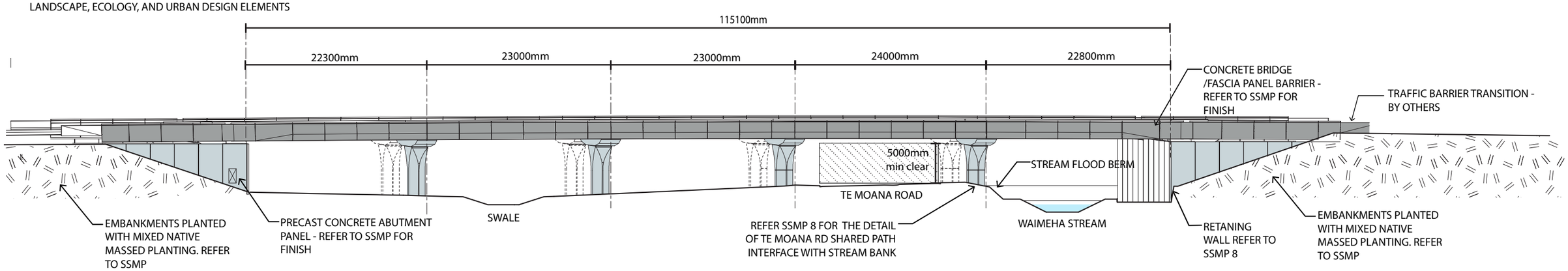
AEE Consented to DET Proposed Graphic Comparison



1. AEE ELEVATION - TE MOANA ROAD CROSSING EAST ELEVATION - 1:500@A3

NOTE:
PROPOSED ELEVATION DRAWN DIFFERENTLY TO THE AEE ELEVATION ABOVE. PROPOSED ELEVATION DRAWN PERPINDICULAR TO BRIDGE BARRIER. REFER TO THE PLANS ON SHEET 2 FOR COMPARATIVE DIMENSIONS

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



2. PROPOSED ELEVATION - TE MOANA ROAD CROSSING EAST ELEVATION - 1:500@A3

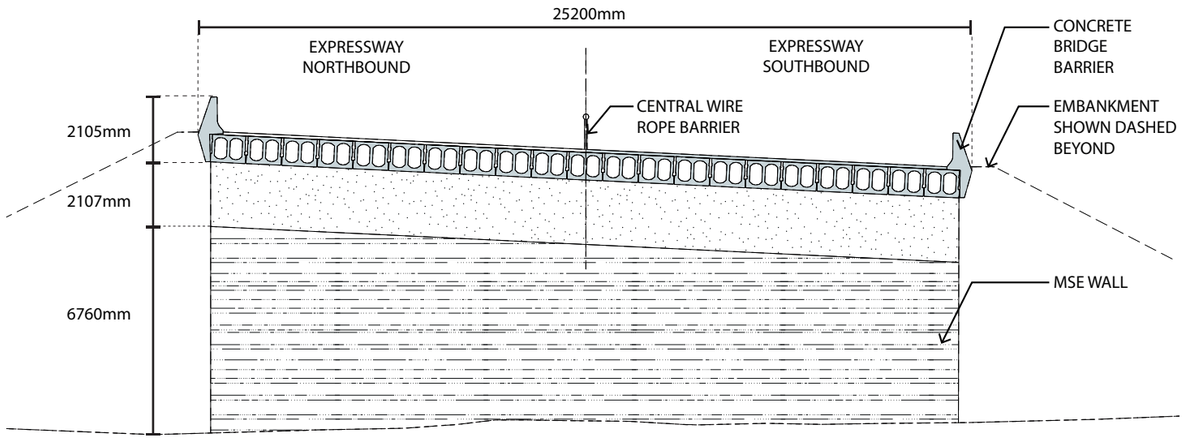
Design development

1. Column locations adjusted
2. Column profile developed
3. Reduced overall length of bridge

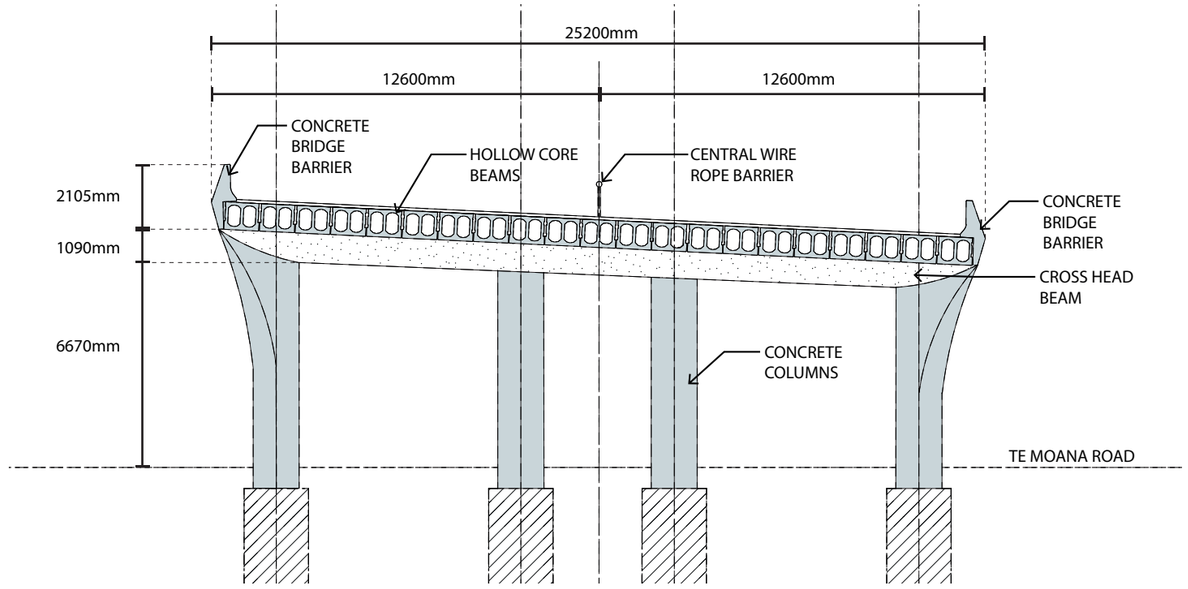
Rationale

1. More consistent span lengths, uniformity of structure
2. Increased structural core based on geotech investigations carried out post AEE, while still providing the sculptural outer.
3. Less stream diversions, removal of northern end span

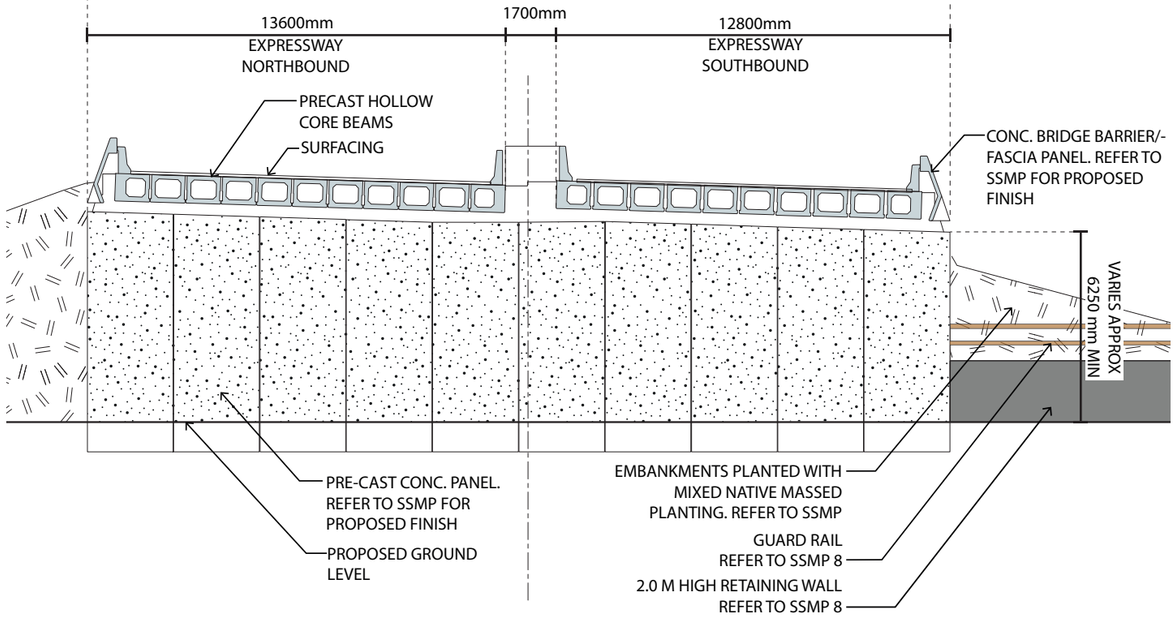
AEE Consented to DET Proposed Graphic Comparison



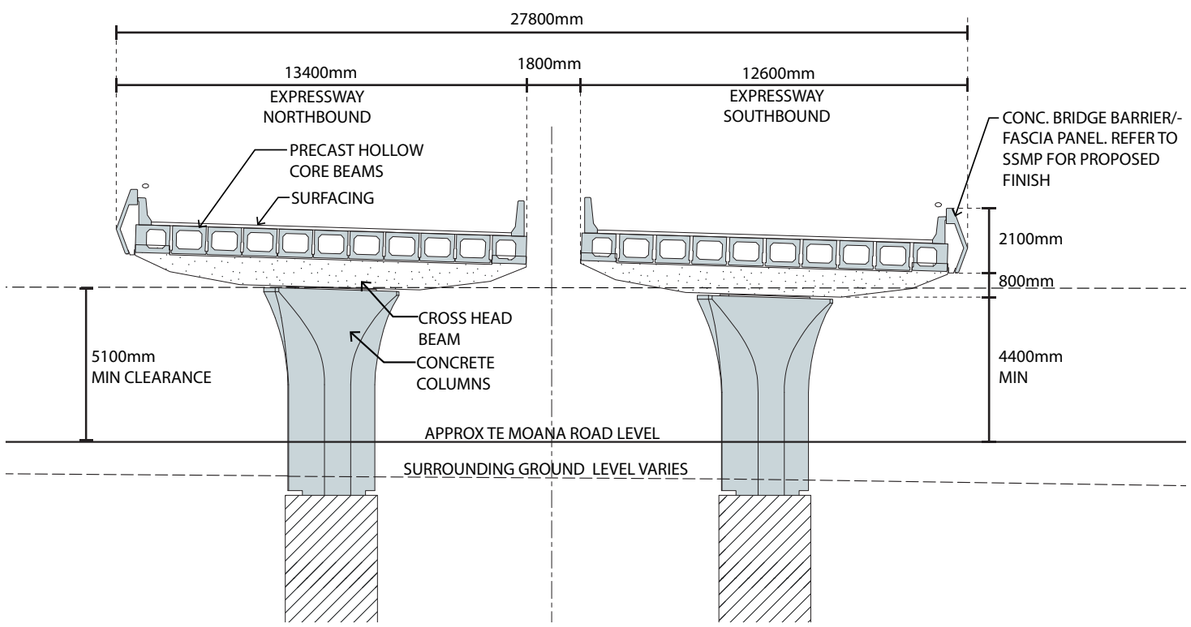
1. AEE SECTIONAL ELEVATION - TE MOANA BRIDGE PIERS (LOOKING NORTH) - 1:200@A3



2. AEE SECTIONAL ELEVATION - TE MOANA BRIDGE ABUTMENT (LOOKING NORTH) - 1:200@A3



3. PROPOSED SECTIONAL ELEVATION - TE MOANA BRIDGE PIERS (LOOKING NORTH) - 1:200@A3



4. PROPOSED SECTIONAL ELEVATION - TE MOANA BRIDGE ABUTMENT (LOOKING NORTH) - 1:200@A3

Design development

1. Reduced number of columns; 4 columns to 1 column each cross head
2. More detail provided for abutment treatment
3. Split bridge
4. Cross head form changed
5. Column profile developed
6. Simply supported structure

Rationale

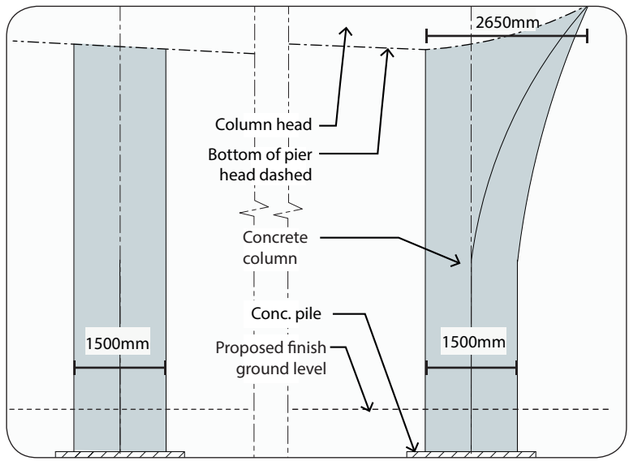
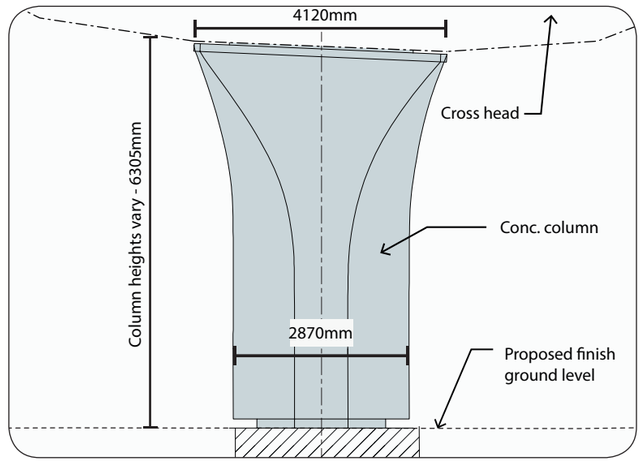
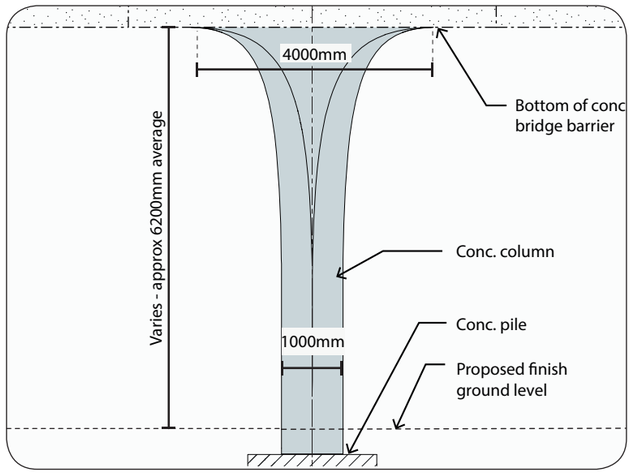
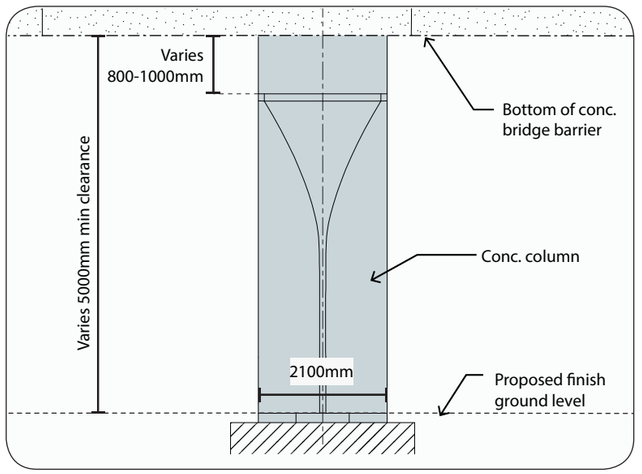
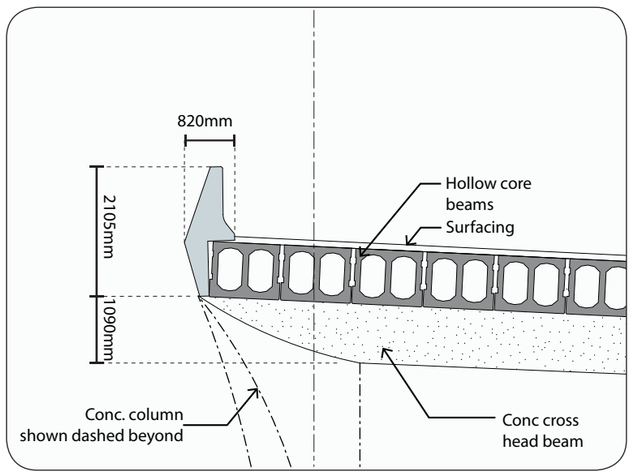
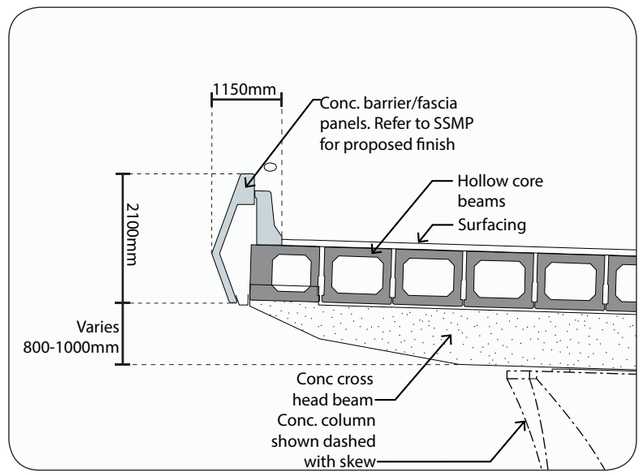
1. Improved visual permeability when considering bridge skew. Total column width when combined is reduced
2. Lack of resolution in AEE Abutment. Design developed
3. Breaks up overhead structure, reduced beam numbers
4. Simply supported structure requires platform to seat beams
5. Increased structural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

AEE Consented to DET Proposed Graphic Comparison

AEE VISUALISATION - TE MOANA ROAD CROSSING (NORTH SIDE OF TE MOANA LOOKING EAST) SITUATION 10 YEARS FOLLOWING CONSTRUCTION

PROPOSED VISUALISATION - TE MOANA ROAD CROSSING (NORTH SIDE OF TE MOANA LOOKING EAST)

Bridge Development Matrix

Elements	AEE Design	Current Design	Developments	Why?	ULDF Principles
Column Front elevation 1:100@A3			1. Column base width increase hexagonal column rather than flattened diamond 2. Reduced number of columns 3. Columns moved in board	1. To provide increased structural core to the column based on geotech investigations carried out post AEE, while still providing the sculptural outer. 2. Overall width reduced for 1 column vs 2 column solution 3. Resolves skew visuals	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number; 1, 2, 3, 5, 8, 11 and 13
Column Side elevation 1:100@A3			1. Column base width increase hexagonal column rather than flattened diamond at base of column 2. Column moved in-board. Cross head lower (approx 300mm) 3. Column height reduced	1. To provide increased structural core to the column based on geotech investigations carried out post AEE, while still providing the sculptural outer. 2. Simply supported structure requires platform to seat beam, and new arrangement helps resolve issues with bridge skew 3. To allow for the changes to the cross head. Development of local road levels	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number 1, 2, 3, 5, 8, 11 and 13
Cross Head & barrier junction 1:100@A3			1. Columns moved in-board 2. Cross head form changed	1. Reduced number of columns 2. Simply supported structure requires platform to seat beams	1. Please refer to ULDF principles summary on sheet; 7 of this document. With particular reference to principle number 1, 2, 3, 4, 8 and 13

ULDF PRINCIPLES SUMMARY

ULDF principle	Assessment of ULDF principles
1. Make the bridges generally consistent in their form so they register as a 'family' and provide some visual continuity within the local environment	Proposed Te Moana Road bridge is different from the AEE bridge, but the form remains consistent with other proposed bridges, including at Waikanae River nearby. The consistency across the bridges overall has become even more consistent as there is less variation in types from that shown in AEE. Accordingly there is enhanced consistency in the local environment.
2. Express the bridges as simple forms that sit across the changes in landscape and are not seen as strong statement in their own right	Proposed bridge form remains a visually simple structure and sits across the landscape as an horizontal element. The bridge is not seen as making a statement in its own right. The bridge appears 'heavier' in that the piers have doubled in width. However, the number of piers has also reduced by half.
3. Unite the bridge elements of pier, cross head, deck and barrier as one sculptural form and ensure services are concealed from view	Proposed bridge form is different than the AEE in that the piers have been repositioned to sit beneath the bridge deck (similar to the Waikanae River bridge). However, the principle of united piers, cross head, deck and barrier remains upheld, albeit in a new pier configuration. The profile from the crease of the barrier to the sloping cross head end to the shaped pier continues to show the bridge as a united single form.
4. Ensure the form of the bridges from the underside is visually appealing to recognise the primacy of the local roads user's experience in design consideration	Proposed Te Moana Road bridge interchange will be configured differently from AEE to enable traffic light controls rather than a roundabout which assists local road users. The space beneath the bridge will be no less visually appealing than the AEE bridge and maybe perceived as better given a simpler reduced number of piers (albeit that those being proposed are larger in size) and the light penetration provided by a split deck.
5. Design the intersection of the piers with the ground in concert with the local road interface design of abutment forms and materials (refer to local road interface design principles)	Proposed bridge piers are located to provide good clearance for local road movements and the traffic light controls as noted above. The abutments are located well back from the position of the footpaths and CWB location. These will be treated in a consistent way with the other local road abutments.
6. Light the spaces beneath local road over bridges to enhance the quality of the space including the use of natural light penetration where the local road has a higher frequency of pedestrian cycling and other non-vehicular users	Proposed bridge is different than the AEE in that it has a split form that allows some natural light penetration to the local road and space below.
7. Use architectural lighting to emphasise the sculptural forms of the bridges and light units that are readily serviceable from the ground	Architectural lighting to be used to add additional interest and safety at night. It is proposed to softly up light the 4 columns (the two either side of Te Moana Road) to accentuate the form of the columns.
8. Utilise the opportunity provided by multiple bridges to make a system of parts that can be repeated at each location and improve efficiency of construction	Proposed bridge, as in the AEE, remains of the same 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 Te Moana Road Bridge barriers/fascia panels 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 other elements – columns, cross head and underside of the bridge deck will be simple, fair faced concrete without the applied white wash coating to help make these elements visually recessive relative to the bridge fascia panels. Matt graffiti protection to be applied to all bridge elements surfaces. Refer to the SSMP for further detail on the proposed finishes.
10. Repeat the bridge design concepts within the design of pedestrians bridges recognising that these may be able to utilise lighter weight materials	Not relevant
11. Develop each bridge crossing design considering the piers types best suited to the location	Proposed Te Moana Road bridge piers are different than those in AEE design. The AEE design did have bridge types where piers were located beneath the bridge and others where the piers were co-planar to the barrier and on the outside edge. Piers under the bridges were a response to the location. At Waikanae River the piers beneath the bridge recognised the hydrological constraints. At Raumati Road the piers beneath the bridge recognised the local road skew. Piers under the bridge at Te Moana Road are now considered to be best suited to this location as they provide more consistent span lengths for greater uniformity in the structure as well as reducing impacts on the Waimeha Stream. The skew and curve on the Te Moana Road bridge would also have made co-planer piers (on the outside of the bridge) more difficult to construct. Throughout the project the seismic design of the structures has had the consistent effect of increasing the size of the piers.
12. Locate bridge piers associated with bridge watercourse crossings away from riparian edges to prevent need to armour stream edges	Riprap will be installed under the bridge to a similar extent as the bridge decks, to suit the stream/floodplain/abutment arrangements and morphology. To improve the interface between the proposed riprap and 3m shared path on the north side of Te Moana Road a series of concrete 'transition' steps will be constructed. These provide increased visual amenity and a more inviting pedestrian experience while helping to improve the relationahip bwtween peir and the Waimeha stream bank
13. Ensure that the integrity and significance of the bridge forms as important to the amenity of the community is not accorded any less priority than the other design requirements of the project	Proposed bridge form at Te Moana Road has seen the consideration of all the contributing factors of visual amenity, safe CWB crossing, structural design in high seismic zone, and constructability.

TE MOANA ROAD CROSSING - SIMULATION

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka

Wellington Northern Corridor

Appendix 4: LANDSCAPE SPECIFICATION

Site Specific Management Plan 008 -[Sectors 480-510] MacKays to Peka Peka Expressway

SEE SEPARATE A4 BOUND DOCUMENT.

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor