M2PP-121-T-PLNM-0010

Site Specific Management Plan 010 - Peka Peka South - [Sector 550]
MacKays to Peka Peka Expressway

18 JUNE 2014

NZ TRANSPORT AGENCY WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

SITE SPECIFIC MANAGEMENT PLAN
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SITE SPECIFIC MANAGEMENT PLAN 10
PEKA PEKA SOUTH [SECTORS 530, 540, 550, 580]

SSMP Certification means complete to the point of the end of ***confirmation of concept design (refer to Diagram 1)*** *within the project's design phases. The aim of Certification is to enable detailed design to proceed with certainty in regard to the concept design. Changes in design from that described in the NOR/AEE are also identified.*

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.

Note: This draft issue of SSMP 10 covers Sector 550 only; Sectors 530, 540 and 580 will be added to this document at a later stage and re-issued.

1. SSMP CERTIFICATION DETAILS

		Signature	Date
PREPARED BY M2PP ALLIANCE:	Boyden Evans (Landscape Architect)		19/06/2014
	Frazer Baggaley (Urban Designer)		19.06.2014
	Matiu Park (Ecologist)		19/06/2014
	Steve Dunn (Landscape Architect)		19.06.2014
M2PP ALLIANCE APPROVAL	Stuart Waters (Sector Manager)		19.06.2014
	Peter Bradshaw (Design Manager)		19.06.2014
	Dennis Hunt (Technical Director)		19 June 2014
	Malory Osmond (Compliance Manager)		19.06.2014
CERTIFICATION	Andrew Guerin (KCDC) [Reviewed by Julia Williams, Landscape Architect & Deyana Popova, Urban Designer]		19 June 2014

2. INTRODUCTION

A. 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 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.

SSMP 10 covers the Expressway north of Smithfield Road to the Paetawa Drain; it comprises four sectors (Sectors 530, 540, 550 and 580). As a result of differences in timing of design in each of these three sectors, this issue of SSMP 10 focuses on Sector 550, which is the first of these three sectors to be addressed.

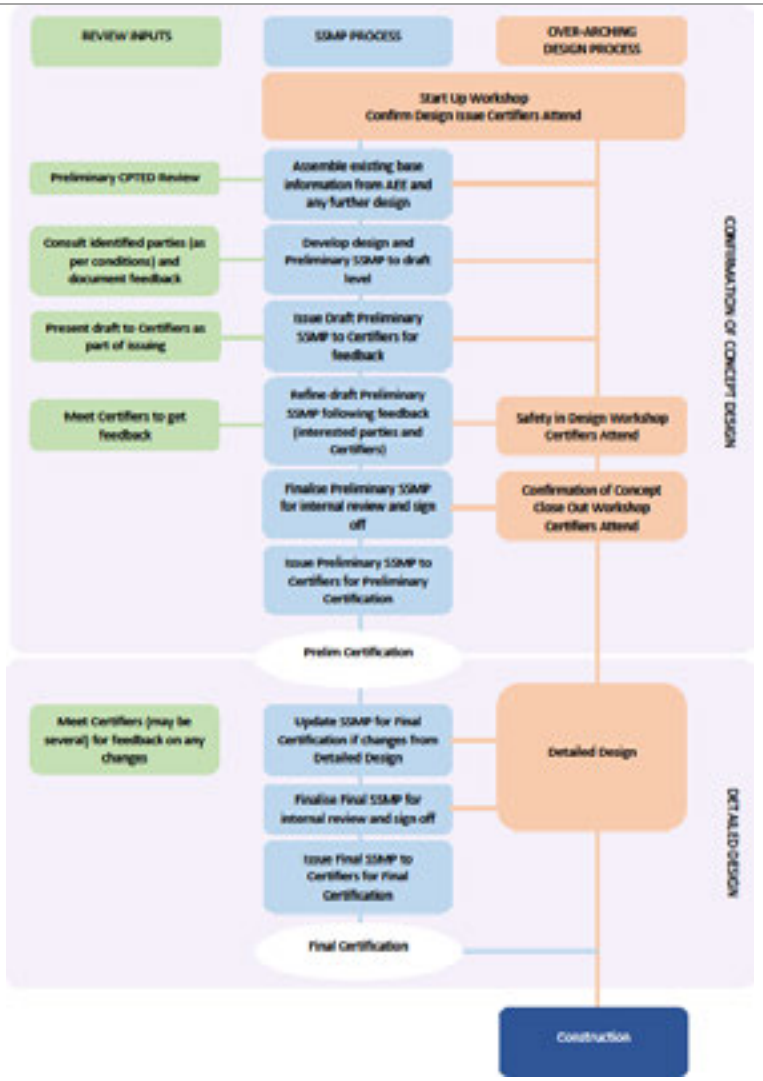
This document covering Sector 550 incorporates three interrelated SSMPs, covering landscape, ecology, and cycle, walking and bridleway (CWB). The intention of combining these SSMPs is to ensure integration between all disciplines, maximise the benefits of mitigation works within each sector and to reduce reporting and monitoring requirements. Note: a Site Specific Ecological Management Plan (SSEMP) is not required as part of consent conditions for Sector 550.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, and CWB design through the initial 'confirmation of design'

	phase (refer to section D below) to give the best possible definition to the Project design elements as early as possible.
B. SSMP PROJECT DESCRIPTION REFER APPENDIX 1 SHEETS 1, 2, 3	SSMP 10 comprises a tract of mostly low–lying open rural land north of Smithfield Road; Sector 550 sits in middle of this SSMP area and extends to immediately north of the Paetawa Drain. Most of the Expressway through this sector will sit on a low embankment 2.0 to 3.0m high. Construction of the Expressway in this sector comprises the following: • Low embankments on both the eastern and western sides of the Expressway; • 13.8m long, 24.8m wide expressway bridge over the Paetawa Drain (final dimensions subject to structural and hydraulic design); • Rip rap placed in main channel of drain below the Paetawa Drain bridge and CWB bridge (sediment will be allowed to accumulate in the rip rap naturally); • Three culverts installed. Two in open drains that cross the Expressway and one to drain a catchment that was severed by the Expressway; • Minor re-shaping of low dunes affected by earthworks to tie in with adjoining landforms and to provide flow paths; • Planted stormwater swales; • Low planting around culverts to identify CWB change in direction and protection from people falling; • CWB (3.0m wide and surfaced with 'Kapiti blue') located on the western side of the Expressway, with 1.0m wide grass verge to provide for horses; • 3.0m wide pedestrian and cycle bridge over the Paetawa Drain as part of the CWB; • Wire rope barrier along both sides of Expressway and through the median; • Thrie beam barrier and 1.1m high hand rail is included on the edge of the vehicle bridge over Paetawa Drain; • Removal of small areas of indigenous vegetation, shelterbelts and amenity trees located in the footprint of the Expressway; • Retention of existing shelterbelts and amenity trees within designation outside the construction footprint; • Low riparian planting along both sides of the Paetawa Drain extending to the width of the Expressway designation. (Note: this is not part of ecological mitigation requirements); • Embankments mostly grassed with trees in places ; • Maintenance tracks allowed for on the eastern side of the Expressway requiring a culvert and rock reinforced ford across local drain; • Farm fences located close to the Expressway wherever possible to enable grassed embankments to be grazed (or deer fencing where agreed with landowner); • Planting of small groups of rural-scale exotic trees at various locations along both sides of the Expressway to reflect the existing pattern and landscape character.

C. SSMP EXISTING AREA DESCRIPTION REFER APPENDIX 1 SHEETS 2, 3, 4 AND ULDF SECTION 3.10	• An area of low dunes, the highest of which is approximately 6.0m, interspersed with flat, low-lying peat land. • Low dunes in improved pasture and grazed, while low-lying inter-dunal areas are a combination of improved and rough pasture (identified as providing potential habitat for an At-risk bird species, the NZ pipit). • Network of steep-sided open drains traverse the area. • Paetawa Drain is the largest of these; it is steep-sided, 1.5m wide, banks often undercut and water depth varying from 200-400mm, with pastoral weeds growing along the edge with occasional *Carex geminata*. • Occasional small stands of kanuka/manuka within and adjacent to the Designation. • Trees in Sector 550 comprise tall shelter and rural amenity species, mostly, poplar, macrocarpa, eucalypts. • The shelterbelts and groups of amenity trees subdivide the landscape and are important elements in creating the character of this low, open landscape. • Paetawa is an important area for Te Atiawa ki Whakarongatai; it was said to have taken its name from the tawa berries that attracted many pigeons to the area. Paetawa was well known as a 'mahinga kai' (food gathering site) with fish species found in the small Paetawa stream and fertile cultivation areas on the edge of the extensive Ngāpara wetland towards the coast. The Ngāpara wetland and associated Kawakahia Lake also provided an abundance of eels that were harvested regularly from the Paetawa stream. Paetawa now is known by a trig station which takes its name from the kainga (small village area) and surrounding area.
D. PROCESS	DIAGRAM 1 – SSMP DEVELOPMENT PROCESS The process followed in preparing the SSMPs has followed is described in Diagram 1 on the next page.


REVIEW INPUTS
SSMP PROCESS
OVER-ARCHING DESIGN PROCESS
Start Up Workshop
Confirm Design Issue Certifiers Attend
Preliminary CPTED Review
Assemble existing base information from AEE and any further design
Consult identified parties (as per conditions) and document feedback
Develop design and Preliminary SSMP to draft level
Present draft to Certifiers as part of issuing
Issue Draft Preliminary SSMP to Certifiers for feedback
Meet Certifiers to get feedback
Refine draft Preliminary SSMP following feedback (interested parties and Certifiers)
Safety in Design Workshop Certifiers Attend
Finalise Preliminary SSMP for internal review and sign off
Confirmation of Concept Close Out Workshop Certifiers Attend
Issue Preliminary SSMP to Certifiers for Preliminary Certification
Prelim Certification
CONFIRMATION OF CONCEPT DESIGN
Meet Certifiers (may be several) for feedback on any changes
Update SSMP for Final Certification if changes from Detailed Design
Detailed Design
Finalise Final SSMP for internal review and sign off
Issue Final SSMP to Certifiers for Final Certification
Final Certification
DETAILED DESIGN
Construction

E. 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 the 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** • SSEMPs are to be prepared for each ecological mitigation area set out in Condition G42; • No ecological mitigation areas occur in Sector 550 and SSMP 10 does not include any specific ecological mitigation works or planting required by resource consent. • Several resource consent conditions restricting construction works within and adjacent to water bodies, including design, fish rescue and construction monitoring. **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. • 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 (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 SSLMPs); - Bridge piers and abutment design (location of piers, scale and materials); - Signage; • ConditionDC.59A g) requires preparation of a SSUDP for the Cycleway, Walkway and Bridleway • (CWB) path network and include: - Final alignment and form of CWB. - Provision for a 3.0m wide two-way path - Connections - Boardwalks; - Lighting, safety provisions for crossing of local roads - CPTED review. **Network Integration Plan** Condition DC.64 a) in relation to the CWB; Condition DC.64 b) ii) in relation to lighting.
3. CONSULTATION	• This is not a Landscape Focus Area so there are no consent requirements for SSLMP consultation with residents. • SSLMP and SSUDP (under Conditions DC.57 e), DC.57A, G42 d) and DC.59A j)) requires consultation with the following parties: - Te Āti Awa ki Whakarongotai; Kapiti Coast District Council (KCDC). • SSUDP condition (DC.59A j) viii) requires consultation with the following parties:

	- Kāpiti Cycling Incorporated and the Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleways in respect of the CWB and any cycle or pedestrian connections.	
4. URBAN DESIGN	CONDITIONS – URBAN DESIGN	RESPONSES – URBAN DESIGN
A. LIGHTING REFER APPENDIX 1 CPTED REVIEW COMMENTS ON SHEET 3	DC.59 f) i) Lighting for the benefit of pedestrians and cyclists DC.64 a), b), ii)	No lighting is proposed on the CWB or on the Expressway itself in this rural location. It is anticipated that cyclists using the CWB at night will have lights for their own safety and to light their way ahead.
B. CWB REFER TO APPENDIX 1 SHEETS 2, 3, 4, 5; ALSO REFER TO CPTED REVIEW COMMENTS SHEET 3	DC.59A f) ii) and iii) and DC59A g), DC.59A i) xi) and DC.57 c) DC.64 a), b), ii). • Footpath and cycle lane provision 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 over wetlands (where necessary) • Lighting and safety provisions for local road crossings • CPTED review	The CWB is located on the western side of the Expressway in SSMP 10. The CWB crosses Paetawa Drain on a cycle/pedestrian bridge. The bridge is an arched steel 'through truss' structure with an exposed precast concrete deck. The clear width of the bridge will be 3.0m and the balustrade 1.4m from the top of the bridge deck. A steel mesh will be fixed to the inside of the trusses to satisfy balustrade/barrier safety requirements. CWB parallel to Expressway, comprises a formed 3.0 m wide (Kapiti Blue) section and where practicable, a 1.0m wide grass verge furthest from the Expressway, for horse riders. Groups of trees planted close to the CWB are positioned to maintain sightlines. Oioi is planted in the swales because swale gradients are shallow and some ponding is expected. A formal CPTED review of the plans and drawings was carried out; comments are included on SHEET 3. A key issue raised was to minimise access to the culverts from the CWB; this has been achieved by dense planting.
C. RETAINING WALLS AND NOISE MITIGATION STRUCTURES	DC.59A f) iv)	There are no retaining walls or noise mitigation structures in Sector 550.

	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.	
D. LOCAL PROPERTY ACCESS	DC.59A f) v) Local property access to provide for existing and future needs.	No additional provision for local property access is required in Sector 550.
E. BRIDGE ABUTMENTS REFER TOAPPENDIX 1,4 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 the Paetawa Drain is supported at either end by vertical concrete bridge abutments spanning the width of the Expressway. Rock-filled gabion baskets with geogrid tiebacks up to 5.5m above water level step down from the ends of the abutments. The design and treatment of the bridge abutments are considered appropriate given the rural location and the character and condition of the Paetawa Drain.

5. LANDSCAPE + ECOLOGY	CONDITIONS – LANDSCAPE + ECOLOGY	RESPONSES – LANDSCAPE + ECOLOGY
A. DUNES AND DRYLAND VEGETATION REFER TO APPENDIX 1 SHEETS 2, 3, 4, 6,7, 8, 9, 10, 16	Condition G.41 c) identifies valued indigenous vegetation. Condition DC.57 f) specifies exotic trees to be retained. Re-shaping of dune landforms disturbed by construction of the Expressway.	The dunes in Sector 550 are relatively low (up to 6.0m high in places) and the Expressway is constructed on a low embankment up to 3.0m high. There is some disturbance of the low dunes in places; some dunes located close to the Expressway will be modified and re-shaped as part of construction; others have been identified to be retained (SHEETS 6, 7, 16). Other than a small portion of this SSMP area identified as providing potential habitat for NZ pipit, there are no areas of valued terrestrial vegetation and habitats within this Sector 550.

		There are two small stands of kanuka and manuka and a solitary kahikatea tree located in the Expressway alignment that have been removed. This material will be salvaged and mulched for use around planted areas. There will be removal of groups of exotic shelter and amenity trees as part of site preparation during construction of the Expressway and associated works. The extent of this tree removal within the designation corridor is shown on the 'Vegetation To be Retained' plans, which have been certified by KCDC. Dune landforms are addressed under the Landform section below. Final contouring of disturbed dunes will be incorporated into earthworks to tie in with adjoining natural dune forms.
B. STREAMS AND RIPARIAN WORKS REFER TO APPENDIX 1 SHEETS 2, 3, 4, 10, 14	Condition G.38D a) iii) Condition G.42 b) requires specific lengths of stream mitigation.	Several existing watercourse crossings are affected in this SSMP area. The main stem of the Paetawa Drain will be bridged and several subsidiary drains are culverted or re-aligned. There are stream works associated with the Paetawa Drain diversion works and associated small tributary drains; 150m of Paetawa Drain is located within the designation in Sector 550. The Paetawa Drain is an important tributary with a number of freshwater fish and habitat requirements that need ecological input and consideration during construction. Two smaller drain tributaries of the Paetawa Drain will also be culverted in this SSMP area, including Culverts 34,35 and 35.1, which require fish passage considerations and fish rescue/salvage. No fish passage is required for Culvert 33, which serves to connect a severed catchment to the floodplain. Erosion and sediment control in this sector is important to minimise effects on the Te Harakeke / Kawakahia Wetland downstream (which is the ultimate receiving environment of these water courses).

C. WETLANDS	N/A	There are no wetlands within this SSMP area.
D. SALVAGE	Condition G.34 m) sets out the salvage requirements for vegetation.	Two small areas of kanuka and manuka located in the Expressway footprint have been removed and salvaged for re-use as mulch around planting. Several logs and stumps excavated from peat as part of construction works shall be set aside to be used as part of the ecological mitigation requirements in adjacent Sectors.
E. VEGETATION TO BE RETAINED REFER TO APPENDIX 1 SHEETS 2, 3, 6, 7, 8, 9, 10	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.	Vegetation to be Retained plans were certified by KCDC on 16th January 2014. This vegetation comprises short lengths of exotic shelterbelts and small groups or individual rural amenity trees. This vegetation shall be defined by surveyors as part of topographic survey carried out prior to any work commencing in SSMP 10 and boundaries checked and confirmed on site by the Project Landscape Architect (and Project Ecologist in relation to indigenous vegetation). 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 and construction commencing. Temporary fences comprising flags on tape, which is being used in lieu of plastic fencing has been erected around individual trees to prevent disturbance or damage; fences are aligned outside the tree 'drip zone'. Machinery, materials, fuel, and chemicals to be stored, even temporarily, well away, from fenced vegetation to avoid accidental spillage, contamination, and compaction.
F. VEGETATION TO BE CLEARED REFER TO APPENDIX 1, SHEETS 6-10.	Conditions: DC.57 f) i) and DC.42C c) i) identification of vegetation to be removed.	Trees and woody vegetation to be cleared shall be mulched and stockpiled. This will comprise mostly exotic tree species but as noted above in Section D Salvage, there are two small patches of

	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.	kanuka and manuka have been mulched and stockpiled. Care shall be taken to exclude aggressive weed species from vegetation to be removed and mulched that could result in potential ongoing management problems (e.g. blackberry, gorse, *Convolvulus*, and willows). Stored mulch to be periodically inspected for evidence of aggressive weed species and if present sprayed with appropriate herbicide.
G. INDIGENOUS FAUNA	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).	This SSMP area has been identified as potentially providing breeding habitat for the NZ pipit, an At-Risk species that has protection requirements under the Wildilfe Act. Construction staging and management shall consider potential effects on pipit during the breeding season each year (1 August – 31 March). NZ pipit is a ground-nesting species and so if initial vegetation clearance in the form of rough pasture habitat is to occur between Chainage 13600 and 15200 during the breeding season, then this area shall be grazed during the non-breeding season. If works are to occur in this area outside of the pipit breeding season, no management actions are required. The brown mudfish survey, which had to be undertaken prior to the commencement of any diversion work in the Paetawa Drain and other waterways was carried out between December 2012 and January 2013; no mudfish were trapped or recorded as documented in the EMP.
H. LANDFORMS REFER TO APPENDIX 1 SHEETS 2, 3, 4, 6, 7, 16.	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.	There are a series of low dunes throughout SSMP 10. Several of these dunes will be modified to enable construction of the Expressway and the overland flow path, and in places these shall be re-shaped to help integrate the Expressway and CWB into the surrounding landforms. Dune landforms that have been identified as being desirable to be retained are shown on the 'Vegetation to be Retained' plans (SHEETS 6-10), which have been certified by KCDC.

		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 4) provides details on topsoil stripping and storage. Project Landscape Architect to be involved in the design and final shaping of dune profiles to ensure 'natural' appearance. A standard detail has been developed explaining and illustrating how this shaping should be carried out (Reference: M2PP-23R-D-DWG-8904 (SHEET 16) Where seasonal conditions prevail hydroseeding of exposed sand areas once re-shaping is completed. Alternative treatment to exposed sand areas where hydroseeding not feasible (eg organic mulch, straw / brush). All exposed sand areas shall be temporarily protected during re-shaping to limit erosion from wind and rain and also to minimise dust issues in adjoining properties. Temporary watering for dust control, if needed, is proposed. The extent of earthworks shall be pegged on site prior to construction providing an opportunity for KCDC's Landscape Reviewer and GWRC's Ecological Reviewer to inspect the area.
I. WETLAND CREATION AND RESTORATION		No wetland creation will be undertaken in Sector 550 or SSMP 10.
J. STREAM WORKS REFER TO APPENDIX 1 SHEETS 3, 4, 14 AND APPENDIX 3.		An approximately 150m long section of the Paetawa Drain that lies within the designation in Sector 550 will be disturbed where the Expressway bridge and the adjoining CWB bridge crosses the drain with bridge piles, rip rap and associated embankment works. The Paetawa Drain has been cut through peat as part of a substantial network of drains in this area; the drain in this

		location is typically steep-sided with occasional pools and slow runs. Much of the banks are undercut. Depths range between 200-400mm with mixed substrates of deep muds over sand. Current vegetation is almost entirely exotic, comprising rank pasture grasses with occasional *Carex geminata*. Through the summer months, much of the stream channel is covered in pasture weeds, including monkey musk and *Isolepis*. The stream channel will be modified in the vicinity of the vehicle and CWB bridges (see indicative cross section, SHEET 4). The design intent is to minimise stream disturbance through the bridge construction and to revegetate the constructed banks to improve habitat. This includes approximately 150 m of riparian planting along both sides of the drain within the designation with the following species: *Carex geminata, Carex lessoniana* and occasional *Cordyline australis*, the latter will be planted outside the flood zone. Sediment monitoring via in-stream logger is required at diversion creation and livening as set out in the EMP. Fish migration movement is required to be monitored post diversion (as set out in the EMP). Stream design and planting shall be supervised through the construction phase (and sign-off) by Project Ecologist, Project Landscape Architect and Stormwater Engineer. Briefing at the outset of construction to contractors by Project Ecologist and Stormwater Engineer. Briefings through final design, site layout and prior to final completion shall be undertaken with Regional Council.
K. CULVERT INSTALLATION REFER TO APPENDIX 1 SHEETS 2, 3, 11, 12, 13, 14	The Paetawa Drain is the main stem of a network of drains that traverse the area. It is a channelized waterway, sourced from within a predominantly plantation pine catchment east of SH1. The drain	Detailed design work on the permanent culverts in the perennial and intermittent water courses in this SSMP area have reduced the length of culverts. These reductions will be incorporated into the ecological mitigation work spreadsheet.

	runs through pasture, is partially fenced from stock but stock access is apparent. Paetawa Drain and associated drains are regularly cleared by the landowner to maintain flows. Within this Sector 550 there are three culverts within perennial or intermittent drains that require consideration of fish passage/fish rescue. These culverts are as follows (with lengths from final detailed design): • Culvert 34 (56.12m) • Culvert 35 (46.36m) • Culvert 35.1 (9.76m) Culvert 33 (41.5m) does not require fish passage.	Prior to stream works within any of the watercourses listed above, the Project Ecologist shall visit each culvert/diversion location and confirm presence of fish to determine the fish rescue/culvert installation / diversion methodology (including for temporary diversions/culverts). Immediately prior to any stream reclamation process / diversion / culvert installation, the section of stream to be reclaimed shall be isolated by coffer dams, bunds or steel plates, and fish present will be safely captured for translocation by accepted methods as provided in the EMP. *Note: this includes installation of temporary culvert installation/upgrades.* Prior to livening of the new drain diversions and associated culverts, fish capture and removal will be required in accordance with the EMP. At least 5 working days prior to the livening of the new channel / culvert, a plan for capture and relocation of fish will be finalised and provided to GWRC in accordance with the EMP (including for temporary culverts and diversions). All fish that are captured shall be transferred to the nearest equivalent habitat upstream to limit their exposure to any increased turbidity that is caused during the stream reclamation process / diversion / culvert installation. Culvert installation shall require the following in all culverts that require fish passage: • Culverts shall not significantly constrict the normal flow to ensure fish passage for existing fish species is retained. • Entrance and exit of culverts shall be below the stream invert, and ensure any hard substrates (head wall, steps, etc) do not affect flow and swimming passage. • During construction special attention shall be given to the protection of native fish within any section of stream being culverted.

		• Where the existing channel is to be lost or drained as part of culvert installation, fish capture and transfer will be required prior to water loss in accordance with the EMP (Appendix 3 of EMP). • All permanent culverts 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 (including temporary culverts) shall be supervised through the construction phase (and sign-off) by Project Ecologist. Briefing at the outset of construction to contractors by Project Ecologist. Briefings through final design, site layout and prior to final completion shall be undertaken with Regional Council.
L. MITIGATION PLANTING REFER TO APPENDIX 1 SHEETS 2, 3, 4, 11, 12, 13, 14, 15 AND APPENDIX 4	Conditions G.42 and DC.57 f) – Landscape and ecological mitigation requirements	Planting in Sector 550 is primarily required for landscape mitigation. The area of massed riparian planting shown along the Paetawa Drain is not an ecological mitigation requirement as required by the consent conditions; the planting will be isolated and will not 'connect' with any other remnant or existing planting along Paetawa Drain or in adjoining paddocks. Given the prevailing rural landscape character with shelterbelts and stands of amenity trees, most of the mitigation planting comprises pasture grass and small groups of exotic amenity trees and grass. Where practicable, stock fences shall be located close to the Expressway to enable grazing. Once established grass areas within the Expressway corridor shall be left rank apart from a 1.0m wide verge adjoining the CWB, which shall be mown. Swales on both sides of the Expressway shall be planted.

		Tree planting has been kept clear of transmission lines (20m clearance) to allow for any trees falling not interfering with the overhead lines. There are three planting types in Sector 550 (SHEETS 11-15): ***Trees and grass:*** small groups of amenity and shelter tree planting using a similar mix of species already growing in the area (poplar, matsudana willow, blackwood). ***Ecological riparian mix:*** typical planting of *Carex* species and occasional cabbage tree in a 5.0m strip on both sides of Paetawa Drain. ***Swales***: will be planted exclusively in oioi (*Apodasmia similis*).
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.	Planting shall be undertaken during 3 month planting window only (1 June until the 1 September). Planting may be carried out during a 2- week shoulder period either side of this but it will depend on environmental conditions. No planting shall be undertaken outside the 1 June-1 September planting window unless approved by Project Landscape Architect. Planting substrate shall be a minimum of 100mm deep for grass areas and 300mm deep where trees are planted. The existing bank of Paetawa Drain will be planted into the existing substrate and only supplemented with topsoil in those places to make up levels. No planting shall be undertaken until site is approved by Project Landscape Architect. 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 in the Plant Schedule (SHEET 15). All indigenous plant set out and groupings on either side of the Paetawa Drain to be random, but reflecting natural assemblages. There is no Enrichment planting in Sector 550.
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.	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.	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 topsoil comprising salvaged peat, sand and compost shall be placed and lightly compacted to a depth of 300mm over all areas to be planted in trees and 100mm for grass areas. Where required along the Paetawa Drain, topsoil shall be placed to make up levels in 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.	Along the Paetawa Drain organic mulch shall be placed on flat planting areas above the flood zone only. No organic mulch shall be used in the planted swales.

		100mm organic mulch shall be used around the groups of trees planted in grass areas (1.0m diameter). 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.	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.	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 1 June-1 September 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.	Riparian planting along the Paetawa Drain shall be maintained for 4 years. Terrestrial planting 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 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 vegetation identified on the certified plans 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 mitigation success has been achieved are as follows (as outlined in the LMP): DC.53 c), DC.57 f) and G.42 c) - 3 year Defects Liability and Maintenance Period for all terrestrial planting and a 4 year Defects Liability and Maintenance Period for riparian planting. Consistent with the EMP and LMP, monitoring of the success of Paetawa Drain diversion will be undertaken in coordination by the Project Ecologist, 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) - at the completion of planting, each area of mitigation planting will be reviewed by the Project Landscape Architect and a report prepared on the parameters above.	In relation to landscape mitigation planting, success measures are as follows: • 80% canopy closure at the time of Final Completion whereby a sustainable plant community has been established and where plants have grown to create a canopy that shades the ground and suppresses weed growth. • Invasive terrestrial weed species successfully controlled. • Shelterbelts and amenity rural tree planting shall require 100% plant survival, with 100% of trees in full leaf at the time of Final Completion.
X. ADAPTIVE MANAGEMENT – POST CONSTRUCTION	Condition G.40 – adaptive management and condition DC.57 c)	In the event that mitigation planting does not achieve the objectives within the consent timeframes, the Project 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-0010

Appendix 1: DRAWING SET

Site Specific Management Plan 010 - Peka Peka South - [Sector 550]
MacKays to Peka Peka Expressway

18 JUNE 2014

NZ TRANSPORT AGENCY
WAKA KOTAHI

MacKays to Peka Peka
Wellington Northern Corridor

SSMP#	SECTOR	NAME	NOTES
SSMP1	330/320	[RAUMATI SOUTH]	ISSUED IN TWO PARTS -SSMP01-320 -SSMP01-330
SSMP2	340/350	[RAUMATI NORTH]	
SSMP3	360/370/380	[WHAREMAKU BASIN]	
SSMP4	410/420	[KAPITI MAZENGARB]	
SSMP5&6	430/440/460	[OTAIHANGA NORTH&SOUTH]	
SSMP7	470	[WAIKANAE RIVER]	
SSMP8	480/510	[TE MOANA]	
SSMP9	520	[NGARARA]	
SSMP10	530/540/550/580	PEKA PEKA SOUTH	ISSUED IN TWO PARTS: -SSMP10-550 -SSMP10-530/540/580
SSMP11	560/570	[[PEKA PEKA NORTH]	

LEGEND

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

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

FOR APPROVAL
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR APPROVAL	VB			SW	18/06/14

Original Scale (A1) 1:25000	Design	SD	18/06/14	Approved For Construction*
	Drawn	VB	18/06/14	
Reduced Scale (A3) 1:50000	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 10 [550] - SHEET 1 LOCATION PLAN

Drawing No: M2PP-550-D-GPH-8001

Rev. A

Document No.

DO NOT SCALE IF IN DOUBT ASK.

KEY CPTED CONSIDERATIONS:

- THE 'TAGABILITY' OF MATERIALS AND SURFACES
- AVOID CREATING VISUALLY ISOLATED AND ENCLOSED HABITABLE SPACES THAT MAY ENCOURAGE ANTI-SOCIAL BEHAVIOUR. FOR EXAMPLE PLANTING ADJACENT TO BRIDGE ABUTMENTS SHOULD IDEALLY BE LOW/MEDIUM DENSE PLANTING.
- THE MAJORITY OF THE CWB CORRIDOR SHOULD BE WITHIN A 5.0-6.0M WIDE OPEN SPACE (COMPRISING GRASS AND LOW PLANTINGS), PARTICULARLY AT THE APPROACHES TO AND THROUGH BENDS TO PRESERVE VISIBILITY. VEGETATION TALLER THAN 1.0M CAN BE ESTABLISHED ADJACENT TO THE PATH FOR SHORT STRETCHES (SAY 40.0 M STRETCHES AT A TIME) ALONG STRAIGHTER SECTIONS.
- PROVIDE A SEPARATION OF 4.0-5.0M BETWEEN CWB 'PAUSE SPACES' (ROAD CROSSING POINTS, INTERSECTIONS) AND VEGETATION TALLER THAN 1M.

TRANSMISSION LINES

TRANSMISSION LINE TOWERS

CWB 3.0M WIDE

SECTOR 540

SECTOR 550

OVERLAND FLOW PATH

DESIGNATION LINE

M2PP PROPOSED ALIGNMENT

15100

15200

15300

15400

15500

NORTH BOUND

SOUTH BOUND

CULVERT 33 (41.50m)

TRANSMISSION LINE TOWER

OVERLAND FLOW PATH

DESIGNATION LINE

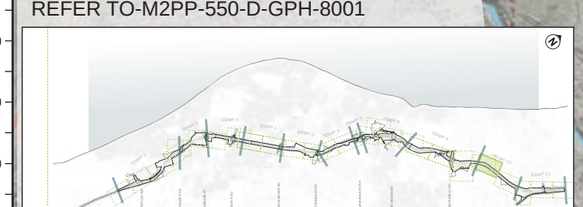
A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

REFER TO-M2PP-550-D-GPH-8001



General

- Designation Boundary
- Wire Barrier
- W-Barrier
- Barrier Transition
- Concrete Traffic Barrier
- Culvert
- Swale
- Planted Swale

Urban Design

- Concrete Bridge Barrier
- Concrete Noise Wall
- Culvert Headwall
- Retaining Wall
- Bridge Deck
- Bridge Abutment
- Bridge Piers

Landscape

- Individual Retained Trees
- Retained Vegetation
- Grass
- Massed Planting
- with Tree Enrichment
- Wetland / Riparian Planting
- NativeTree Planting
- Exotic Tree Planting

Ecology

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

CWB

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

FOR APPROVAL
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR APPROVAL	VB			SW	18/06/14

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design	SD	18/06/14	Approved For Construction* Date
	Drawn	VB	18/06/14	
	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 10 [550] - SHEET 2 MASTERPLAN

DRAFT

Drawing No: M2PP-550-D-GPH-8102

Rev. A

Document No.

DETAIL DESIGN

KEY CPTED CONSIDERATIONS:

- THE 'TAGABILITY' OF MATERIALS AND SURFACES
- AVOID CREATING VISUALLY ISOLATED AND ENCLOSED HABITABLE SPACES THAT MAY ENCOURAGE ANTI-SOCIAL BEHAVIOUR. FOR EXAMPLE PLANTING ADJACENT TO BRIDGE ABUTMENTS SHOULD IDEALLY BE LOW/MEDIUM DENSE PLANTING.
- THE MAJORITY OF THE CWB CORRIDOR SHOULD BE WITHIN A 5.0-6.0M WIDE OPEN SPACE (COMPRISING GRASS AND LOW PLANTINGS), PARTICULARLY AT THE APPROACHES TO AND THROUGH BENDS TO PRESERVE VISIBILITY. VEGETATION TALLER THAN 1.0M CAN BE ESTABLISHED ADJACENT TO THE PATH FOR SHORT STRETCHES (SAY 40.0 M STRETCHES AT A TIME) ALONG STRAIGHTER SECTIONS.
- PROVIDE A SEPARATION OF 4.0-5.0M BETWEEN CWB 'PAUSE SPACES' (ROAD CROSSING POINTS, INTERSECTIONS) AND VEGETATION TALLER THAN 1M.

REFER TO-M2PP-550-D-GPH-8001

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

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

General		Urban Design		Landscape		Ecology		CWB	
	Designation Boundary		Concrete Bridge Barrier		Individual Retained Trees		Retained Valued Terrestrial Vegetation		Loose Chip CWB
	Wire Barrier		Concrete Noise Wall		Retained Vegetation		Retained Valued Wetland Vegetation		Chip Seal CWB
	W-Barrier		Culvert Headwall		Grass		Planted Indigenous Terrestrial Habitat		Concrete CWB
	Barrier Transition		Retaining Wall		Massed Planting		Planted Indigenous Wetland Habitat		Existing Access Track or CWB
	Concrete Traffic Barrier		Bridge Deck		with Tree Enrichment		Stream Mitigation / Riparian Habitat		
	Culvert		Bridge Abutment		Wetland / Riparian Planting		Existing Water Body		
	Swale		Bridge Piers		NativeTree Planting				
	Planted Swale				Exotic Tree Planting				

FOR APPROVAL
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR APPROVAL	VB			SW	18/06/14

Original Scale (A1) 1:1000 Reduced Scale (A3) 1:2000	Design	SD	18/06/14
	Drawn	VB	18/06/14
	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 10 [550] - SHEET 3 MASTERPLAN

DRAFT

Drawing No: M2PP-550-D-GPH-8103

Rev. A

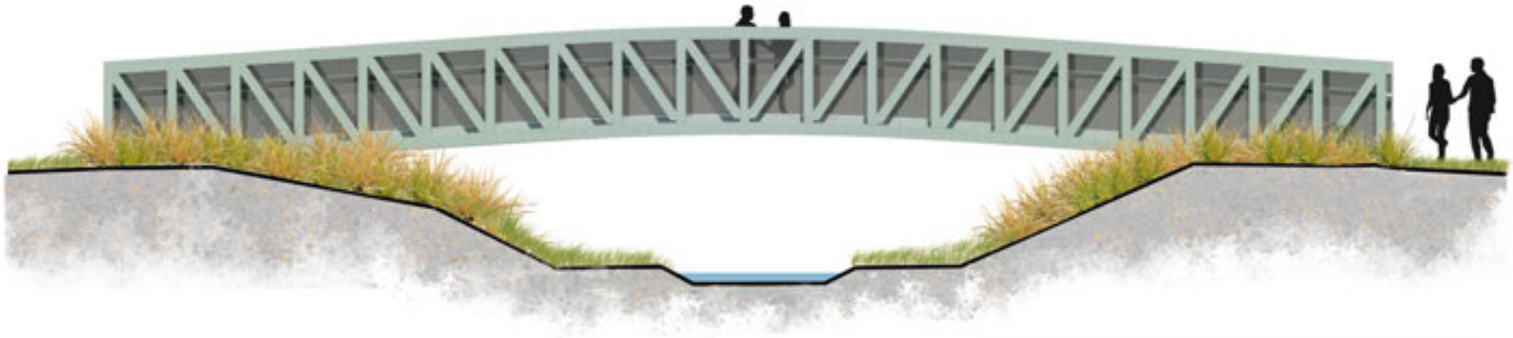
Document No.

DO NOT SCALE

IF IN DOUBT ASK.

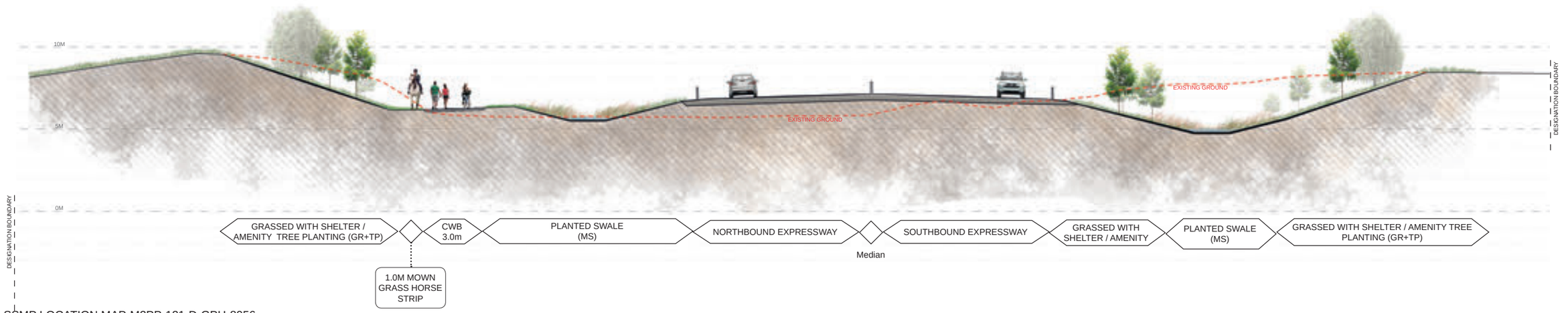
CS1 -CROSS SECTIONAL ELEVATION- CWB BRIDGE OVER PAETAWA DRAIN

1:100@A3

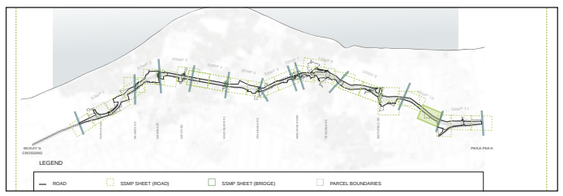


CS2 -CROSS SECTION-THROUGH EXPRESSWAY

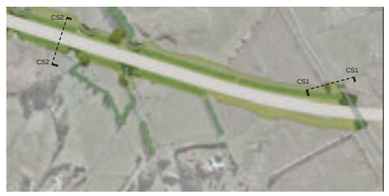
1:250@A3 FACING NORTH



SSMP LOCATION MAP-M2PP-121-D-GPH-8056



REFER TO-M2PP-121-D-GPH-8103



NOTE: FOR PLANTING CODES AND REFERENCES REFER TO PLANTING SCHEDULE DWG NO. 8204

A3 REPRODUCTION SCALE
50
40
30
20
10
0mm

FOR APPROVAL
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR APPROVAL	VB			SW	18/06/14

Original Scale (A1) VARIES Reduced Scale (A3) VARIES	Design	SD	18/06/14	Approved For Construction* Date
	Drawn	VB	18/06/14	
	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 10 [550] - SHEET 4 SITE SPECIFIC SECTIONS

DRAFT

Drawing No: M2PP-550-D-GPH-8401

Rev. A

Document No.

DETAIL DESIGN (DET)

Drawing Plotted:

VS1 - OBLIQUE OF PAETAWA DRAIN AND CWB BRIDGE

VS2- PERSPECTIVE OF CWB OVER PAETAWA DRAIN

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

DETAIL DESIGN (DET)

FOR APPROVAL
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk-V	Appd	Date
A	FOR APPROVAL	MP			SW	18/06/14

Original Scale (A1) 1:500	Design	SD	18/06/14	Approved For Construction*
Reduced Scale (A3) 1:1000	Drawn	MP	18/06/14	
	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 10 [550] - SHEET 5
CWB BRIDGE

Drawing No: M2PP-550-D-GPH-8601

Rev. A

Document No.

DO NOT SCALE IF IN DOUBT ASK.

Drawing Plotted 19 Jun 2014 08:56 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.

RETAIN LANDFORM

LANDFORM AFFECTED BY FLOODWAY
ENSURE DUNE ROUNDING IS PERFORMED.
REFER DWG. 23R-8604

RETAIN

CYCLEWAY (CMS)

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

15300

15200

15100

15000

KANUKA / MANUKA SALVAGE FOR ECOLOGICAL MITIGATION AND SLASH STOCKPILE

RETAIN LANDFORM

SECTOR 550
SECTOR 540

MATCHLINE REFER: M2PP- 55R -D-DWG-8703

A1 REPRODUCTION SCALE
A3 REPRODUCTION SCALE

Rev	Revision	By	Chk	Chk'd	Appd	Date
2	FOR CONSTRUCTION - REVISED AS NOTED	MP	GPB	DH	SW	19.06.14
1	FOR CONSTRUCTION	MP	WGH	DH	SW	30.01.14

Original Scale (A1)	1:500	Design	S DUNN 06.12.13
Reduced Scale (A3)	1:1000	Drawn	M POWELL 06.12.13
		Dsg Verifier	B EVANS 20.12.13
		Dwg Check	W HOLCROFT 19.12.13

Approved for Construction* P BRADSHAW Date 30.01.14

* 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

SSMP 10 [550] - SHEET 6
VEGETATION TO BE RETAINED

Drawing No: M2PP-55R-D-DWG-8702

Rev: 2

550

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

Document No: M2PP-55R-D-DWG-8702.DWG

Drawing Plotted: 19 Jun 2014 08:58 a.m.

CYCLEWAY (CWB)

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

15400

15500

15600

MATCHLINE REFER: M2PP- 55R -D-DWG-8702

MATCHLINE REFER: M2PP- 55R -D-DWG-8704

A1 REPRODUCTION SCALE

A3 REPRODUCTION SCALE

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.

550

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No	Revision	By	Chk	Chk'd	Appd	Date
1	FOR CONSTRUCTION	MP	WGH	DH	SW	30.01.14

Original Scale (A1)	1:500	Design	S.DUNN 06.12.13
Reduced Scale (A3)	1:1000	Drawn	M.POWELL 06.12.13
		Dsg Verifier	B.EVANS 20.12.13
		Dwg Check	W.HOLCROFT 19.12.13
		Approved for Construction*	P.SRADHAN Date 30.01.14

* 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

SSMP 10 [550] - SHEET 7
VEGETATION TO BE RETAINED

Drawing No: M2PP-55R-D-DWG-8703

Rev: 1

Document No: M2PP-55R-D-DWG-8703.DWG

Drawing Plotted: 19 Jun 2014 09:00 a.m.

RETAIN

CYCLEWAY (CWB)

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

15700

15800

15900

16000

RETAIN

RETAIN

RETAIN

MATCHLINE REFER: M2PP- 55R -D-DWG-8703

MATCHLINE REFER: M2PP- 55R -D-DWG-8705

A1 REPRODUCTION SCALE

100 80 60 40 20 0mm

A3 REPRODUCTION SCALE

50 40 30 20 10 0mm

VEGETATION TO BE RETAINED

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

NOTES:

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

No	Revision	By	Chk	Chk'd	Appd	Date
1	FOR CONSTRUCTION	MP	WGH	DH	SW	30.01.14

Original Scale (A1)	1:500	Design	S.DUNN 06.12.13
Reduced Scale (A3)	1:1000	Drawn	M. POWELL 06.12.13
		Dsg Verifier	B.EVANS 20.12.13
		Dwg Check	W.HOLCROFT 19.12.13

Approved For Construction* P.BRADSHAW Date 30.01.14

* 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

SSMP 10 [550] - SHEET 8
VEGETATION TO BE RETAINED

Drawing No: M2PP-55R-D-DWG-8704

Rev: 1

550

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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DO NOT SCALE

Document No: M2PP-55R-D-DWG-8704.DWG

Drawing Plotted: 19 Jun 2014 09:01 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.

SECTOR 560
SECTOR 550
PAETAWA DRAIN
RETAIN
CYCLEWAY (CWB)
EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND
16100
16200
16300
16400
MATCHLINE REFER: M2PP-55R -D-DWG-8704
A1 REPRODUCTION SCALE
A3 REPRODUCTION SCALE

550

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

No	Revision	By	Chk	Chk'd	Appd	Date
1	FOR CONSTRUCTION	MP	WGH	DH	SW	30.01.14

Original Scale (A1)	1:500	Reduced Scale (A3)	1:1000
Design	S DUNN	06.12.13	
Drawn	M POWELL	06.12.13	
Dsg Verifier	B EVANS	20.12.13	
Dwg Check	W HOLCROFT	19.12.13	
Approved for Construction*	P BRADSHAW	Date 30.01.14	

* 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

SSMP 10 [550] - SHEET 9
VEGETATION TO BE RETAINED

Drawing No: M2PP-55R-D-DWG-8705

Rev: 1

Document Ref: M2PP-55R-D-DWG-8705.DWG

DO NOT SCALE

IF IN DOUBT ASK

Drawing Plotted: 19 Jun 2014 09:06 a.m.

KEY

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

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

- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE

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

- WP WETLAND PLANTING
- RP RIPARIAN PLANTING

EXISTING VEGETATION TO BE RETAINED

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.

FENCE
ENSURE DUNE ROUNDING PRINCIPLES ARE FOLLOWED - REFER M2PP-23R-D-DWG-8904
LANDFORM TO BE RETAINED
EXISTING FENCE
GL A 1 55R-8201
GR A 1 55R-8201
GR A 2 55R-8201
TF A 1 55R-8201
CYCLEWAY (CWB)
FLOODWAY
EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND
15300
15200
15100
K6
MS A 1 55R-8201
TF A 2 55R-8201
FENCE
15000
GR A 3 55R-8201
LANDFORM TO BE RETAINED
K6
TRANSMISSION LINES
SECTOR 550
SECTOR 540
MATCHLINE REFER: M2PP- 55R -D-DWG-8202

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

550

ORIGINAL DRAWING IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR DETAILED DESIGN	MP	GFB	DH	SW	19.06.14

Original Scale (A1) 1:500	Design	S. DUNN	18.03.14	Approved For Construction*
	Drawn	M. POWELL	18.03.14	
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.06.14	
	Dwg Check	G F-B	18.06.14	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

SSMP 10 [550] - SHEET 10
PLANTING PLAN

Drawing No: M2PP-55R-D-DWG-8201

Rev. AA

Document No. M2PP-55R-D-DWG-8201.DWG

Drawing Plotted: 19 Jun 2014 09:06 a.m.

FENCE

OVERCUT SLOPE BACKFILLED WITH PEAT

OVERCUT SLOPE BACKFILLED WITH PEAT

GL A 1 55R-8202

GR A 1 55R-8202

GR A 4 55R-8202

CYCLEWAY (CWB)

MP K 1 55R-8202

GR A 5 55R-8202

MS A 3 55R-8202

MS A 1 55R-8202

MP K 2 55R-8202

TF A 2 55R-8202

GR A 2 55R-8202

K6

K6

GR A 6 55R-8202

EXPRESSWAY NORTHBOUND

15400

15500

EXPRESSWAY SOUTHBOUND

15600

K6

K6

MP K 3 55R-8202

CV

CV

CV

MS A 2 55R-8202

MS A 4 55R-8202

GR A 3 55R-8202

FLOODWAY

GR A 7 55R-8202

MAINTENANCE TRACK

TF A 1 55R-8202

TF A 3 55R-8202

INUNDATED GROUND.
SOW GRASS WHERE PRACTICAL

FENCE

100
80
60
40
20
0mm

A1 REPRODUCTION SCALE

50
40
30
20
10
0mm

A3 REPRODUCTION SCALE

MATCHLINE REFER: M2PP- 55R -D-DWG-8201

MATCHLINE REFER: M2PP- 55R -D-DWG-8203

KEY

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

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

- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE

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

- WP WETLAND PLANTING
- RP RIPARIAN PLANTING

EXISTING VEGETATION TO BE RETAINED

DESIGNATION

NOTES:

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

550

ORIGINAL DRAWING IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR DETAILED DESIGN	MP	GFB	DH	SW	19.06.14

Original Scale (A1) 1:500	Design	S. DUNN	18.03.14
	Drawn	M. POWELL	18.03.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.06.14
	Dwg Check	G F-B	18.06.14

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

SSMP 10 [550] - SHEET 11
PLANTING PLAN

Drawing No: M2PP-55R-D-DWG-8202

Rev. A

Document No. M2PP-55R-D-DWG-8202.DWG

Drawing Plotted: 19 Jun 2014 09:07 a.m.

OVERCUT SLOPE BACKFILLED WITH PEAT

FENCE

GR A 1 55R-8203

MP K 1 55R-8203

GL A 1 55R-8203

GR A 2 55R-8203

TF A 2 55R-8203

MP K 4 55R-8203

GR A 6 55R-8203

CYCLEWAY (CWB)

MS A 1 55R-8203

MP K 2 55R-8203

MS A 3 55R-8203

GR A 3 55R-8203

MP K 5 55R-8203

MS A 5 55R-8203

GR A 7 55R-8203

CV

K6

EXPRESSWAY NORTHBOUND

EXPRESSWAY SOUTHBOUND

15700

15800

15900

16000

GR A 4 55R-8203

GR A 8 55R-8203

MS A 2 55R-8203

MP K 3 55R-8203

MS A 4 55R-8203

MP K 6 55R-8203

MS A 6 55R-8203

GR A 5 55R-8203

MAINTENANCE TRACK

FORD

TF A 1 55R-8203

1
8401

GRASS SOWN ON FORD BATTERS AS PART OF CONSTRUCTION.

TP C 1 55R-8203

FENCE

MATCHLINE REFER: M2PP- 55R -D-DWG-8202

MATCHLINE REFER: M2PP- 55R -D-DWG-8204

EXISTING FENCE

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
- MM MASSED PLANTING - MEDIAN
- MS MASSED PLANTING - SWALE

- TF TREES - FORESTRY GRADE
- TS TREES - SPECIMEN GRADE
- TP TREES - POLE GRADE

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

- WP WETLAND PLANTING
- RP RIPARIAN PLANTING

EXISTING VEGETATION TO BE RETAINED

DESIGNATION

NOTES:

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

550

ORIGINAL DRAWING IN COLOUR

DETAILED DESIGN NOT FOR CONSTRUCTION

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR DETAILED DESIGN	MP	GFB	DH	SW	19.06.14

Original Scale (A1) 1:500	Design	S. DUNN	18.03.14
	Drawn	M. POWELL	18.03.14
Reduced Scale (A3) 1:1000	Dsg Verifier	B EVANS	18.06.14
	Dwg Check	G F-B	18.06.14

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

SSMP 10 [550] - SHEET 12 PLANTING PLAN

Drawing No: M2PP-55R-D-DWG-8203

Rev. A

DO NOT SCALE IF IN DOUBT ASK.

Document No. M2PP-55R-D-DWG-8203.DWG

Drawing Plotted: 19 Jun 2014 09:07 a.m.

KEY

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

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

NOTES:

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

N

SECTOR 560
SECTOR 550

PAETAWA DRAIN

AREAS TO BE ADDRESSED IN 560 PLANTING PLANS

RP H 1 55R-8204
RP H 4 55R-8204
TP C 1 55R-8204
RIP RAP
RP H 5 55R-8204
RP H 2 55R-8204
RIP RAP
RP H 6 55R-8204
RP H 3 55R-8204

FENCE
CYCLEWAY (CWB)
GL A 1 55R-8204
GR A 1 55R-8204
MS A 2 55R-8204
MS A 1 55R-8204
GR A 2 55R-8204
GR A 3 55R-8204

K5

EXPRESSWAY NORTHBOUND
EXPRESSWAY SOUTHBOUND
MAINTENANCE TRACK
FLOODWAY

16400
16300
16200
16100

FENCE
EXISTING FENCE

MATCHLINE REFER: M2PP- 55R -D-DWG-8202

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR DETAILED DESIGN	MP	GFB	DH	SW	19.06.14

Design	S. DUNN	18.03.14	Approved For Construction*
Drawn	M. POWELL	18.03.14	
Dsg Verifier	B EVANS	18.06.14	
Dwg Check	G F-B	18.06.14	Date

Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000
* Refer to Revision 1 for Original Signature

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

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

SSMP 10 [550] - SHEET 13
PLANTING PLAN

Drawing No: M2PP-55R-D-DWG-8204

Rev. A

550

ORIGINAL DRAWING IN COLOUR

DETAILED DESIGN
NOT FOR CONSTRUCTION

Document No. M2PP-55R-D-DWG-8204.DWG

DO NOT SCALE IF IN DOUBT ASK.

PLANT TYPE	BOTANICAL NAME	COMMON NAME	GRADE	% MIX	NOTES
MASSED PLANTING					
MP					
MP					
MP					
MP					
TREE/SHRUB/GRASS					
TP					
TREE POLE CRATE					
TP					
RIPARIAN PLANTING					
RP					
RP					
RP					
MASSED SWALE PLANTING					
MS					
GRASS					
GL					
GH					
TOTAL					

PLANTING SCHEDULE

100
80
60
40
20
0mm
A1 REPRODUCTION SCALE

50
40
30
20
10
0mm
A3 REPRODUCTION SCALE

No.	Revision	By	Chk	Chk.V	Appd	Date
A	FOR DETAILED DESIGN	MP	GFB	DH	SW	19.06.14

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

Design	S DUNN	18.03.14	Approved For Construction*
Drawn	M POWELL	18.03.14	
Dsg Verifier	B EVANS	18.06.14	
Dwg Check	G F-B	18.06.14	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

SSMP 10 [550] - SHEET 14
PLANTING SCHEDULE

Drawing No: M2PP-55R-D-DWG-8211

Rev. A

550 DETAILED DESIGN
NOT FOR CONSTRUCTION

Document No. M2PP-55R-D-DWG-8211.DWG

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:
xii) 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

-Natural appearance. Avoid uniform, engineered profiles.

ORIGINAL DRAWING IN COLOUR

FOR CONSTRUCTION

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

No.	Revision	By	Chk	Chk.V	Appd	Date
1	FOR CONSTRUCTION	MP	GFB	DH	DC	07.05.14

Original Scale (A1) NTS	Design	B FAULKNER	24.04.14
	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		

Approved For Construction* P BRADSHAW Date 09.05.14

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

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

SSMP 10 [550] - SHEET 15 DUNE ROUNDING

Drawing No: M2PP-23R-D-DWG-8904 | Rev. 1

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

DO NOT SCALE IF IN DOUBT ASK.

Appendix 2: CONSULTATION, FEEDBACK AND RESPONSES

Site Specific Management Plan 010 - Peka Peka South - [Sector 550]
MacKays to Peka Peka Expressway
M2PP-121-D-MPL-0010

18 JUNE 2014

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 issue of Sector 550 (part of SSMP 10). 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;
- KCDC;
- Kāpiti Cycling Incorporated; and
- Implementation Group of the Kāpiti Coast District Council Advisory on Cycleways, Walkways and Bridleways (CWB)

COMMENTS ON PRELIMINARY ISSUE SSMP10 [Sector 550]
KCDC REVIEWERS COMMENTS *[JW=Julia Williams- Landscape Architect; K=Stu Kilmister-CWB Planner]*

Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*KCDC Reviewer's comment*	*Rreference in SSMP*	*Management Plan Author's response*
DC.59 a) iii)	Structures (bridges, noise mitigation structures, abutments and other built elements) are designed in reference to their landscape setting and in relation to adjoining land uses.	JW	Assume that unnamed rock layer shown in the Paetawa Drain Bridge sections DWG 3110 is rip rap.	Page 5 Appendix 3	Rock layer is rip rap; annotation has been added to DWG 3110 to

General		JW	Would be useful to indicate where Sectors 540 and 580 are located on the overall key plan.	SheetT 1	Key plan has been amended to show location of other two sectors in SSMP 10.
General		JW	Paetawa Drain wrongly located on plan.	Sheet 4	Blue line delineating position of Paetawa Drain has been shifted so on top of actual drain alignment.
DC.57 f) iii)	Proposed planting mixes.	JW	Where are the two types of are grass that on Planting Schedule (mown and rank) shown on the plans? Will they be indicated on the long term maintenance plan?	Sheet 15	Grass on slopes that are greater than 1 in 4 are too steep to mow; once grass has been established on these slopes they will be subject to occasional mowing (i.e grass will become rank). The different types of grass treatment will be shown on the final planting plans and the maintenance regimes will be included in the maintenance schedule.
DC.59 a) iii)	CWB	JW	CWB bridge plans required so can be reviewed. Assume that same CWB bridge design will be used at most stream crossings.	Sheet 6	CWB bridge drawings included in preliminary issue are placeholders only; CWB bridge design is being progressed by the Design Team and once design has been confirmed and approved by KCDC the bridge drawings will be included. CWB bridge designs will be similar for each waterway crossing.

COMMENTS ON PRELIMINARY ISSUE SSMP 10 [Sector 550] **CYCLING ADVOCATES NETWORK** *[LS=Lynn Sleath]*					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*Reference in SSMP*	*Management Plan Author's response*
DC59A.f ii and iii and DC59A.g, DC59Ai(xi) and DC.57 c)	CWB	LS	Lack of tall planting between the CWB and Expressway; some form of screening up to 2.0m high along the western swale similar to that proposed for the eastern swale is required. Instead what is shown along the western side is a planted swale and grass. The NZTA application to the Board of Inquiry implied that there would be screening to reduce the visual and sound impact of the expressway for those walking and cycling on the CWB.	Sheets 5, 24, 13, 14 & 15	All the planting along the route is based on what was approved by the Board of Inquiry and as per the consent conditions. Planting along the Expressway is based on the landscape character of the area. This northern part of the route, including Sector 550, is open farmland comprising fenced paddocks traversed by a network of drains, shelterbelts and amenity planting. The proposed planting reflects and reinforces this character. The aim for Sector 550 and adjoining sectors is to install farm fencing as close as possible to the Expressway and the area returned to grazing. The planting proposed for these areas comprises primarily of trees and grass – reinstating or extending shelterbelts and groups of amenity trees; the native sedge oioi will be planted in the drainage swales. Also, there is dense riparian planting along the Paetawa Drain where it falls within the designation (refer Sheets 2-4 and 12-14).

					Dense native planting on the Expressway embankments and along the CWB is not proposed.

COMMENTS ON PRELIMINARY ISSUE SSMP 10 [Sector 550} **IMPLEMENTATION GROUP of KCDC ADVISORY on CYCLEWAYS, WALKWAYS and BRIDLEWAYS:** [JN= Jan Nisbet]					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*Reference in SSMP*	*Management Plan Authors' response*
DC.59A f) ii) and iii) and DC.59A g), DC.59A i) xi) and DC.57 c)	CWB	JN	What is the surfacing of the CWB and how many places and for what distance is there to be a 1.0m wide grass area for horses. Given the potential for horses to be 'spooked' by traffic the 1.0m grass strip to be used by horses should be located on the 'non-road' side of the CWB to provide maximum separation from the Expressway. Avoid 'crowning' the surface of the CWB, which restricts its width and also makes it difficult for some users (eg people in electric wheelchairs). The CWB appears in many places to be a straight line; from a users' point of view, the CWB needs to be aligned so that it 'flows'.	Page 10, Sheets 2-5 and 12-14	The CWB surfacing in the rural areas will be 'Kapiti Blue', which is a locally sourced gravel top course type material, which when compacted forms a firm and even surface. It is the same material currently used on the other rural CWB. There is provision for 1.0m wide grass area for horses along the CWB throughout the rural area. The CWB is being designed to provide a flat stable surface in both urban and rural areas with single crossfall to shed water. The CWB along has been aligned and designed to ensure that it will provide an interesting and pleasant route for users as it traverses through the varying landscapes encountered along the 16km route.

DC59A.f ii and iii and DC59A.g, DC59Ai(xi) and DC.57 c) and DC.57 d)	CWB	JN	CWB will be much nicer to use if there is extensive planting of native species as these will screen the route and filter road fumes. The road corridor needs to have native plantings rather than exotics; exotic shelterbelts have only become common in the last few years. Planting native species will create a seed source and will complement the areas of native plantings that many groups are undertaking. Exotic species are not usually evergreen, which means that every autumn the CWB will be covered with slippery fallen leaves.	Page 18, Sheets 2-5 and 12-15.	All the planting is based on what was approved by the Board of Inquiry and as per the consent conditions. Planting along the Expressway route is based on the landscape character of the area. This northern part of the route, including Sector 550, is open farmland comprising fenced paddocks traversed by a network of drains, shelterbelts and amenity planting. The proposed planting reflect and reinforce this character. The aim for this and adjoining sectors is to install farm fencing as close as possible to the Expressway and the area returned to grazing. The planting proposed for this and adjoining sectors comprises primarily of trees and grass – reinstating or extending shelterbelts and groups of amenity trees, and planting of the native sedge oioi in the drainage swales. Also, there is dense riparian planting along the Paetawa Drain where it falls within the designation (refer Sheets 2-4 and 12-14). Dense native planting on the Expressway embankments and along the CWB is not proposed in Sector 550.

COMMENTS ON PRELIMINARY ISSUE SSMP 10 [Sector 550} **TE ATIAWA KI WHAKARONGATAI** [HS=Hemi Sundgren]					
Condition Reference	*Condition Detail*	*Reviewer/ commenter*	*Comment*	*Reference in SSMP*	*Management Plan Authors' response*
DC.57 e) i)	SSMP to be prepared in consultation with Te Atiawa ki Whakarongatai	HS	Paetawa Stream is an important area for Te Atiawa ki Whakarongatai.	Pages 12, 15, Sheets 4, 5 & 14.	Text amended to include reference to Paetawa as being an important area to iwi with information included in section C. SSMP Existing Area Description on page 5. Hemi Sundgren provided the following information on Paetawa: "*Paetawa was said to have taken its name from the tawa berries that attracted many pigeons to the area. Various small settlements and cultivations were also established in the area by northern Taranaki tribes up until the 1890s. Paetawa was well known as a 'mahinga kai' (food gathering site) with fish species found in the small Paetawa stream and fertile cultivation areas on the edge of the extensive Ngāpara wetland towards the coast. The Ngāpara wetland and associated Kawakahia Lake also provided an abundance of eels that were harvested regularly from the Paetawa stream. Apple orchards were also known to have been grown in the area. Paetawa now is known by a trig station which takes its name from the kainga (small village area) and surrounding area."*

Appendix 3: BRIDGE SUMMARY-PAETAWA DRAIN BRIDGE

Site Specific Management Plan 010 - Peka Peka South - [Sector 550]
MacKays to Peka Peka Expressway
M2PP-121-D-MPL-0010

18 JUNE 2014

NZ TRANSPORT AGENCY
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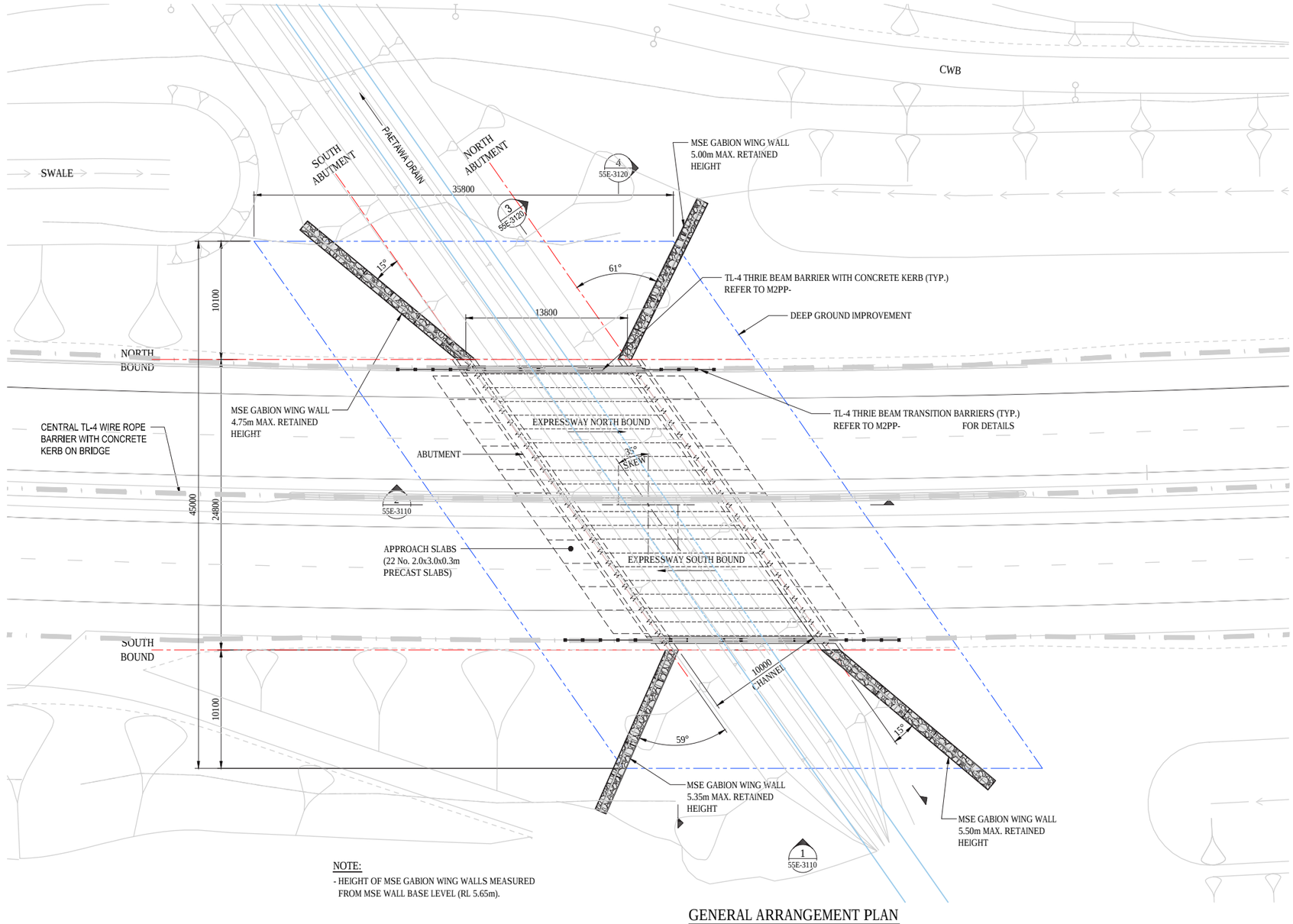
MacKays to Peka Peka
Wellington Northern Corridor



NOTE:
- HEIGHT OF MSE GABION WING WALLS MEASURED FROM MSE WALL BASE LEVEL (RL 5.65m).

GENERAL ARRANGEMENT PLAN
1:200

A1 REPRODUCTION SCALE
100 80 60 40 20 0mm

A3 REPRODUCTION SCALE
50 40 30 20 10 0mm

NOTES:

1. DESIGN STANDARDS
   - 1.1 NZTA BRIDGE MANUAL, 2nd EDITION (2003) WITH PROVISIONAL AMENDMENTS (2004) AND PROJECT SPECIFIC AMENDMENTS.
   - 1.2 NZS 3101:2006 CONCRETE STRUCTURES STANDARDS.
   - 1.3 REFER TO DESIGN REPORT FOR FURTHER DETAILS.

2. DESIGN LOADING
   - 2.1 SUPERIMPOSED DEAD LOAD ALLOWANCE:
     - SURFACING = (INCLUDE 2.0kPa FOR LEVELLING COURSE)
     - SERVICES = 0.25 kPa (FUTURE)
   - 2.2 TRAFFIC LOAD HN-H0-72
   - 2.3 SEISMIC LOAD BASED ON NZS1170.5 AND SSSHA STUDY WITH SUBSOIL CLASS D
     - ZONE FACTOR Z=0.4
     - ULS AEP (1/2500) Ru=1.65 (SSSHA)
   - 2.4 TEMPERATURE AND DIFFERENTIAL TEMPERATURE AS PER NZTA BRIDGE MANUAL
   - 2.5 CREEP AND SHRINKAGE BASED ON AS3600 AND NZTA BRIDGE MANUAL 3RD EDITION FOR RELATIVE HUMIDITY 80%

3. DRAWING LIST
   - 3.1 FOR THE LIST OF ALL DRAWINGS APPLICABLE TO THIS BRIDGE REFER TO DRAWING M2PP-55E-D-DWG-3000

4. ALL SPECIFICATIONS APPLICABLE TO THIS BRIDGE
   - C0203 - EXCAVATION AND FILLING
   - C0221 - ROAD SAFETY BARRIERS
   - C0405 - MECHANICALLY STABILISED EARTH WALLS
   - C0420 - VIBRO COMPACTION OF GRANULAR SOILS
   - C0503 - DRIVEN STEEL H-PILES
   - C0600 - REINFORCED CONCRETE SUPPLY
   - C0601 - REINFORCED CONCRETE CONSTRUCTION
   - C0607 - REINFORCED CONCRETE ELEMENTS
   - C0614 - CONCRETE STAIN AND ANTI-GRAFFITI COATING
   - C0700 - STRUCTURAL STEEL WORK

5. CONSTRUCTION LOADS
   - 5.1 BRIDGE BEAMS ARE DESIGNED FOR CONSTRUCTION LIVE LOAD OF 1.5kPa, IN ADDITION TO WET CONCRETE WEIGHT. TEMPORARY WORK TO BE ADEQUATE FOR 1/ 500 APE (R=1.0) SEISMIC AND WIND LOADING.

6. MASS HAUL LOADING
   - 6.1 A SINGLE 65T DUMPER TRUCK CAN BE ALLOWED TO CROSS THE BRIDGE DURING CONSTRUCTION GIVEN THE FOLLOWING CONDITIONS:
     - TOTAL WEIGHT (SELF WEIGHT + PAYLOAD) LIMIT TO MAXIMUM 65000kg.
     - MAXIMUM FRONT LOAD = 19090kg
     - MAXIMUM LOAD = 45910kg
     - REAR CARRIED BY 2 AXLES WITH MINIMUM SPACING OF 1.94m.
   - 6.2 ONLY ONE 65T DUMPER WILL BE ALLOWED TO PASS OVER THE BRIDGE AT A TIME.
   - 6.3 65T DUMPER TRUCK WILL TRAVEL CENTRALLY ON THE BRIDGE .
   - 6.4 NO OTHER CONSTRUCTION TRAFFIC WILL BE ALLOWED TO USE THE BRIDGE WHILE 65T DUMPER TRUCK IS CROSSING THE BRIDGE.
   - 6.5 THE SPEED OF THE 65T DUMPER TRUCK MUST BE LIMITED TO 10km/hr.
   - 6.6 THE APPROACH SURFACE OF THE BRIDGE IS TO BE KEPT IN A REASONABLE CONDITION TO LIMIT "BOUNCING" OF THE VEHICLES AS THEY CROSS THE BRIDGE.

7. COATINGS FOR EXPOSED CONCRETE SURFACES
   FOLLOWING TYPES OF COATING TO BE APPLIED TO EXPOSED CONCRETE SURFACES
   - KEIM CONCRETAL LASUR COATING EQUIVALENT APPROVED BY THE DESIGNERS
   - GRAFFITI SOLUTION COATING OR EQUIVALENT APPROVED BY THE DESIGNERS

   FOR THE APPLICATION OF SURFACE COATING, PLEASE REFER TO THE SPECIFICATION C0614 FOLLOWING TABLE SUMMARISES THE EXTENT OF COATING TO THE CONCRETE SURFACES.

8. STRUCTURAL ELEMENTS INCLUDED IN SECTOR 550:
   - 8.1 BRIDGE PILES, ABUTMENTS, APPROACH SLABS, PRESTRESSED BEAMS, AND CONCRETE DECK SLAB.
   - 8.2 SOFT / ORGANIC SOILS EXCAVATE AND REPLACE GROUND IMPROVEMENT, VIBRO DENSIFICATION GROUND IMPROVEMENT BLOCK, MSE ABUTMENT / SIDE BLOCKS, MSE GABION WING WALL, PRECAST PANELS AND TOE WALLS.
   - 8.3 BRIDGE TL-4 WIRE ROPE BARRIERS UP TO END OF BRIDGE, STANDARDS ROAD BARRIERS BEYOND NOT PART OF SCOPE.
   - 8.4 BRIDGE MEDIAN WIRE ROPE BARRIER AND KERB NOT PART OF SCOPE.
   - 8.5 ASPHALT LEVELLING COURSE PART OF SCOPE. OGPA SURFACING NOT PART OF SCOPE.
   - 8.6 BRIDGE BARRIERS DETAILED IN THE STRUCTURAL DRAWINGS TERMINATE AT THE END OF BRIDGE. REFER TO CIVIL DRAWINGS FOR BARRIERS BEYOND THE BRIDGE END WHERE DIFFERENT.

BRIDGE ELEMENT	EXPOSED SURFACE	CONCRETE STAIN	ANTI-GRAFFITI COATING
ABUTMENTS	FRONT FACES, FACING LOCAL ROAD	YES	YES
	SIDES OF ABUTMENTS	YES	YES
DOWNHANG WALL	FRONT FACE, FACING DRAIN	YES	YES
EDGE OF DECK UNITS	EXPOSED SIDE OF OUTER UNITS	YES	YES

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ORIGINAL DRAWING IN COLOUR

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No.	Revision	By	Chk	Chk.V	Appd	Date
B	FOR INFORMATION - 95% DESIGN REVIEW	BVC	-		-	09.05.14
A	FOR INFORMATION (COORDINATION SET)	BVC	-		-	24.03.14

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

Design	J. SALANDANAN	27.01.14	Approved For Construction*
Drawn	B. CRUZ	27.01.14	
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: PAETAWA DRAIN BRIDGE GENERAL ARRANGEMENT PLAN

Drawing No: M2PP-55E-D-DWG-3100

Rev. B

UNDER REVISION

Document No. M2PP-55E-D-DWG-3100.DWG

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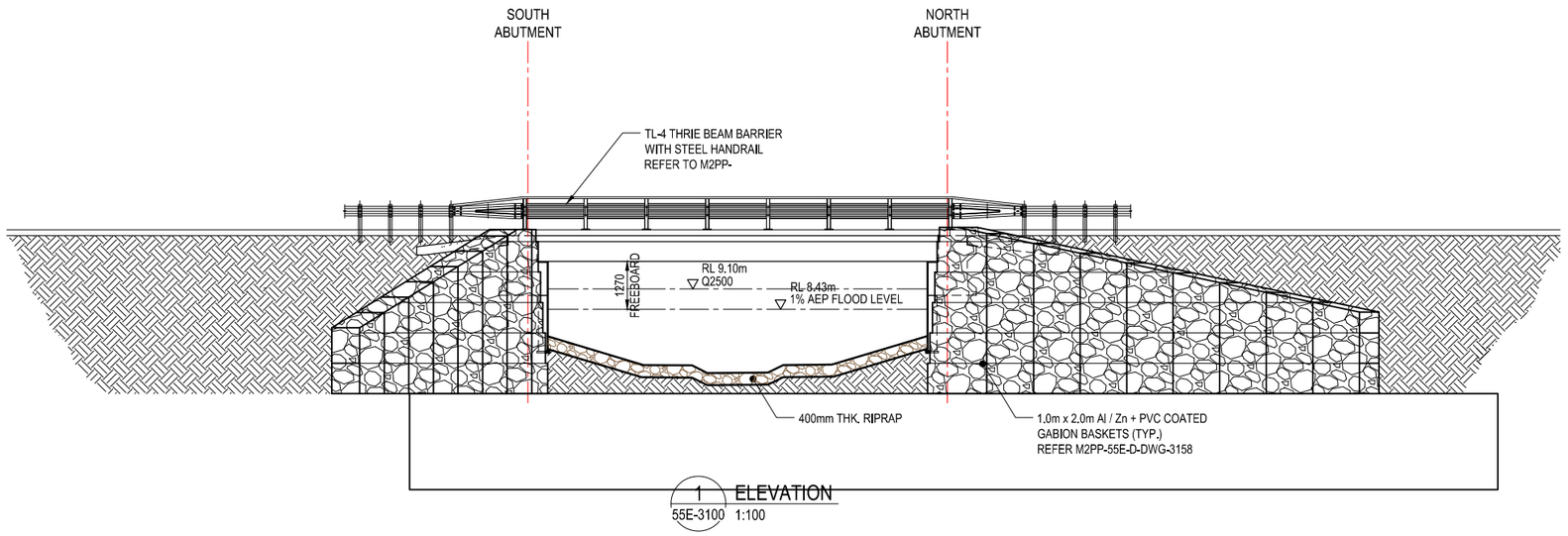


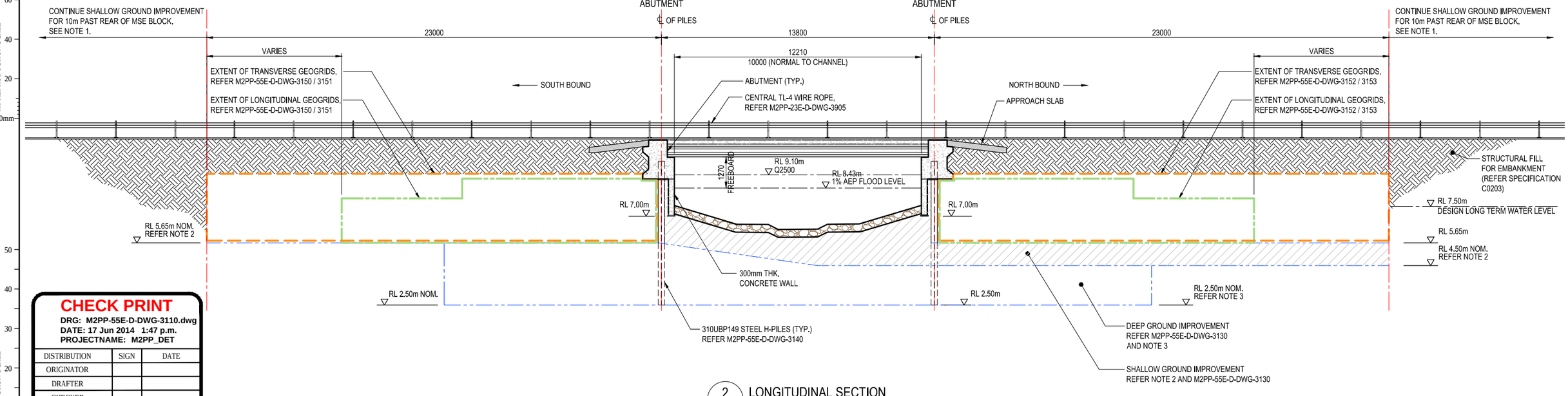
1 ELEVATION
55E-3100 1:100

NOTES:

1. EXCAVATION AND REPLACEMENT OF SOFT / ORGANIC SOILS BENEATH ENTIRE FOOTPRINT OF ABUTMENT FILL (EMBANKMENT) SHALL BE UNDERTAKEN AS PER STANDARD EARTHWORKS DRAWINGS. REFER TO SED102 ON CIVIL DRAWING M2PP-23D-D-DWG-2900.
2. SHALLOW GROUND IMPROVEMENT TOE RL VALUES PROVIDED ARE INDICATIVE. TOE LEVELS ARE BASED ON THE ANTICIPATED DEPTH OF UNDERCUT REQUIRED TO REMOVE SOFT / ORGANIC SOILS. ACTUAL UNDERCUT LEVEL TO BE CONFIRMED ON SITE AND RECORDED FOR AS BUILT RECORDS. REFER TO EARTHWORKS SPECIFICATION C0203.
3. DEEP GROUND IMPROVEMENT TOE RL VALUES PROVIDED ARE INDICATIVE AND ASSUME A 500mm EMBEDMENT INTO UNDERLYING DENSE SOILS. ACTUAL TOE LEVEL SHALL BE CONFIRMED ON SITE AND RECORDED FOR AS BUILT RECORDS.

NOTES ON CONSTRUCTION SEQUENCE:

1. DRIVE THE STEEL H-PILES.
2. INSTALL MSE WALL TO THE BACK AND AROUND THE H-PILES TO THE SOFFIT OF DOWNHANG WALL.
3. LAY BLINDING CONCRETE AND INSTALL FORMWORK FOR THE DOWNHANG WALL AND CAST THE DOWNHANG WALL WITH VERTICAL REBARS EXTENDING INTO ABUTMENT BEAM.
4. COMPLETE THE MSE WALL TO THE SOFFIT OF THE ABUTMENT BEAMS.
5. LAY BLINDING CONCRETE FOR ABUTMENT BEAM, ERECT THE FORMWORK FOR ABUTMENT BEAM, INSTALL REINFORCEMENT AND CAST THE ABUTMENT BEAM TO THE SEATING OF BEAMS.
6. LAY THE LEVELLING GROUT FOR BEAM SEATING.
7. INSTALL THE SHC BEAM FROM ONE END TO T HE OTHER END. ANCHOR THE BEAM STRANDS INTO THE UNCAST PORTION OF ABUTMENT BEAM.
8. INSTALL THE DECK REINFORCEMENT AND ANCHOR THE LONGITUDINAL DECK (END) REINFORCEMENT INTO THE UNCAST PORTION OF THE ABUTMENT BEAMS.
9. INSTALL THE GALVANISED ANCHOR REINFORCEMENT FOR APPROACH SLAB.
10. CAST THE REMAINING PORTION OF THE ABUTMENT BEAM AND TOP SLAB IN ONE OPERATION.
11. COMPLETE THE EARTH WORK BEHIND THE ABUTMENT BEAM TO THE UNDERSIDE OF THE APPROACH SLAB AND INSTALL APPROACH SLAB.
12. COMPLETE THE REMAINING EARTHWORK.
13. INSTALL THE BARRIERS.
14. SINCE THE BRIDGE WILL BE USED FOR TRANSPORTING THE EARTH, THE APPOACHED TO BE KEPT IN REASONABLE CLEAN CONDITION TO AVOID ANY BOUNCING EFFECTS.
15. LAY THE AC ELEVELLING COURSE AND SMA SURFACING ONCE THE BRIDGE IS NO NORE REQUIRED FOR TRANSPORTING THE EARH.



2 LONGITUDINAL SECTION
55E-3100 1:100

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A3 REPRODUCTION SCALE: 50 40 30 20 10 0mm

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B	FOR INFORMATION - 95% DESIGN REVIEW	BVC	-		-	09.05.14
A	FOR INFORMATION (COORDINATION SET)	BVC	-		-	24.03.14

Original Scale (A1) 1:100
Reduced Scale (A3) HALF A1

			Approved For Construction* Date
Design	J. SALANDANAN	27.01.14	
Drawn	B. CRUZ	27.01.14	
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: PAETAWA DRAIN BRIDGE ELEVATION AND LONGITUDINAL SECTION

Drawing No.: M2PP-55E-D-DWG-3110

Rev.: B

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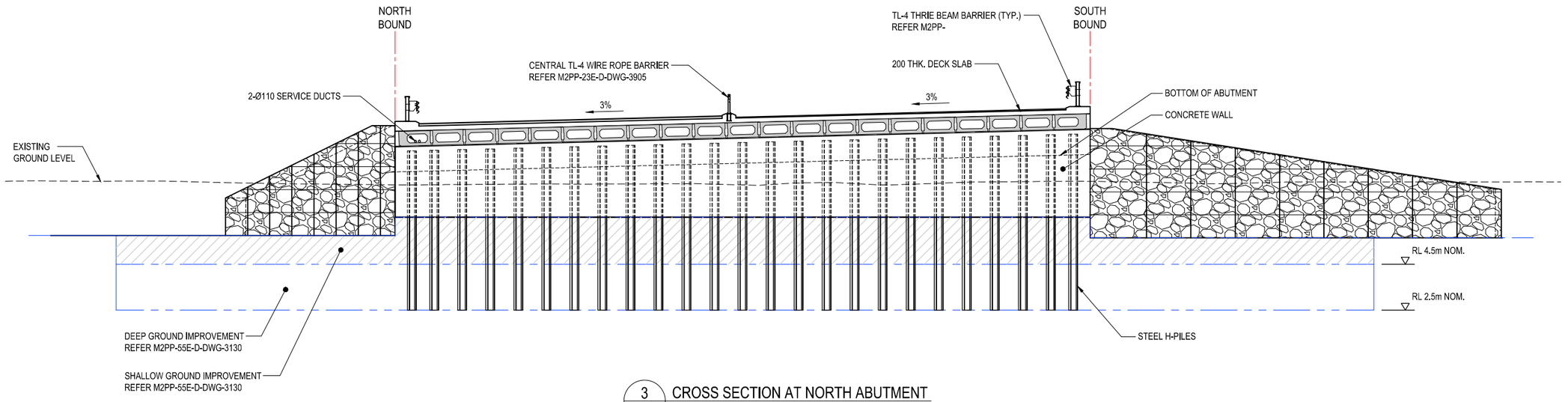
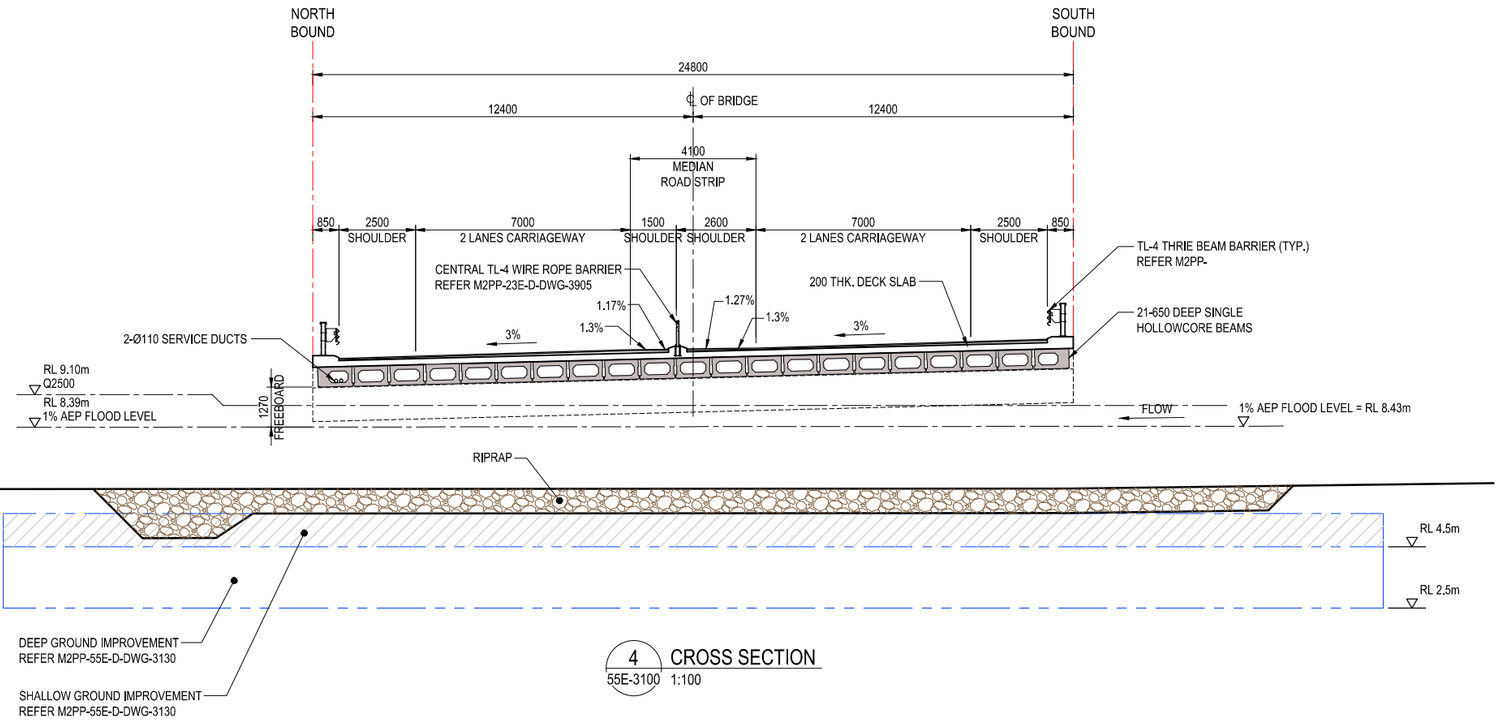


3 CROSS SECTION AT NORTH ABUTMENT
55E-3100 1:100



4 CROSS SECTION
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A3 REPRODUCTION SCALE
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No.	Revision	By	Chk	Chk.V	Appd	Date
B	FOR INFORMATION - 95% DESIGN REVIEW	BVC	-		-	09.05.14
A	FOR INFORMATION (COORDINATION SET)	BVC	-		-	24.03.14

Original Scale (A1) 1:100	Design	J. SALANDANAN	27.01.14
Reduced Scale (A3) HALF A1	Drawn	B. CRUZ	27.01.14
	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: PAETAWA DRAIN BRIDGE CROSS SECTIONS ABUTMENT AND MID-SPAN

Drawing No: M2PP-55E-D-DWG-3120

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Appendix 4: LANDSCAPE SPECIFICATION

Site Specific Management Plan 010 - Peka Peka South - [Sector 550]
MacKays to Peka Peka Expressway
M2PP-121-D-MPL-0010

18 JUNE 2014

SEE SEPARATE A4 BOUND DOCUMENT.

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MacKays to Peka Peka
Wellington Northern Corridor