

# Appendices





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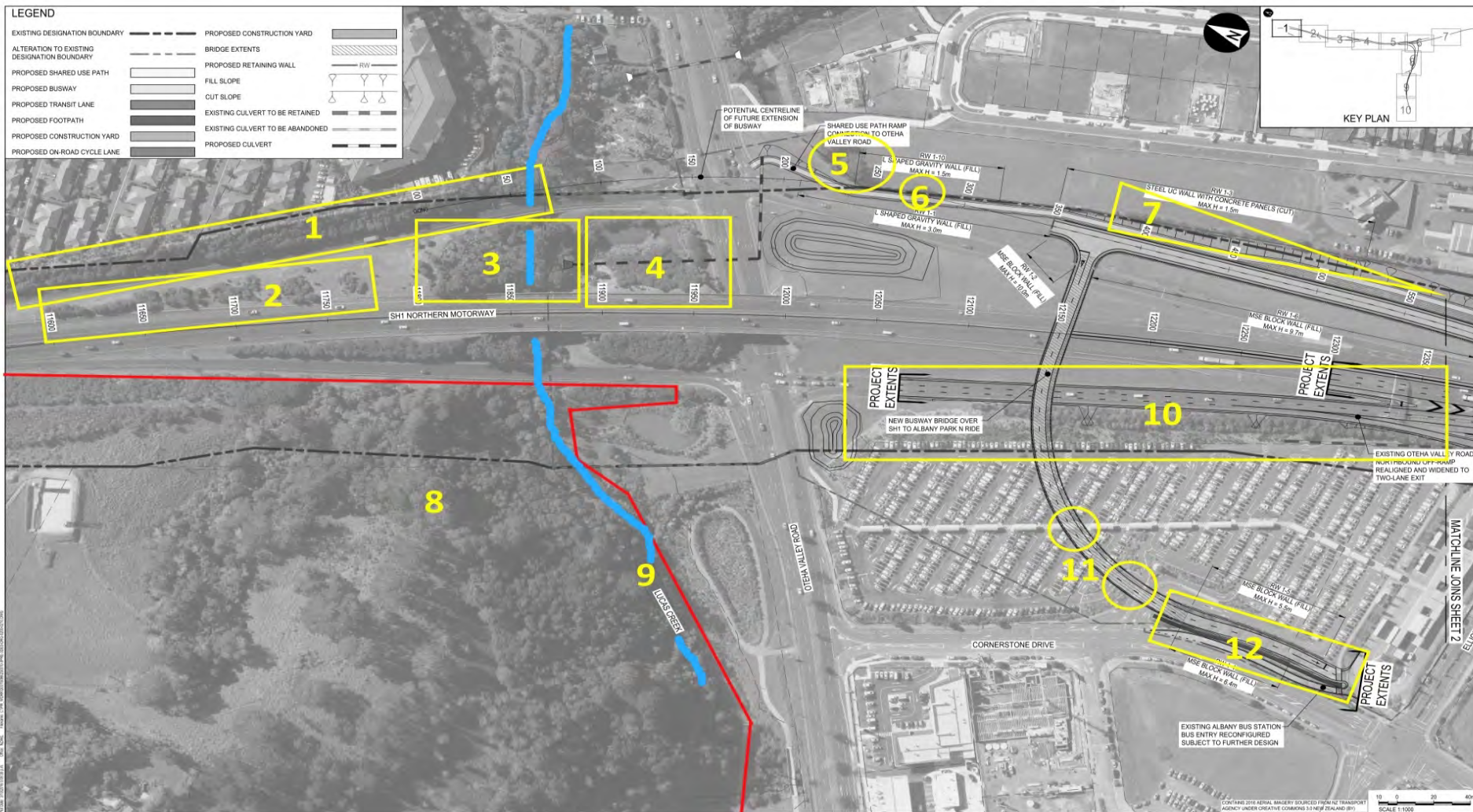


# Appendix A

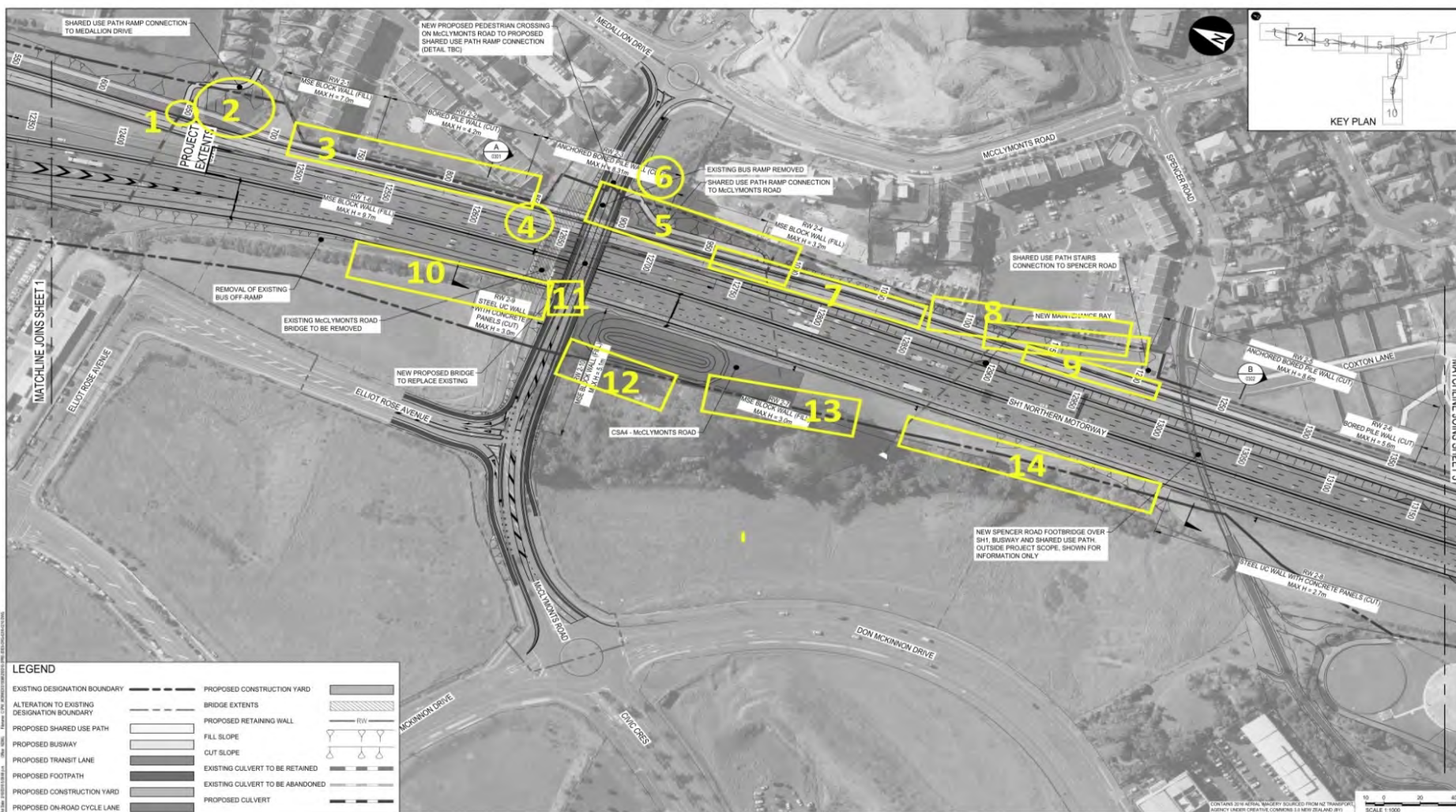
## Annotated General Arrangement (GA) Plans



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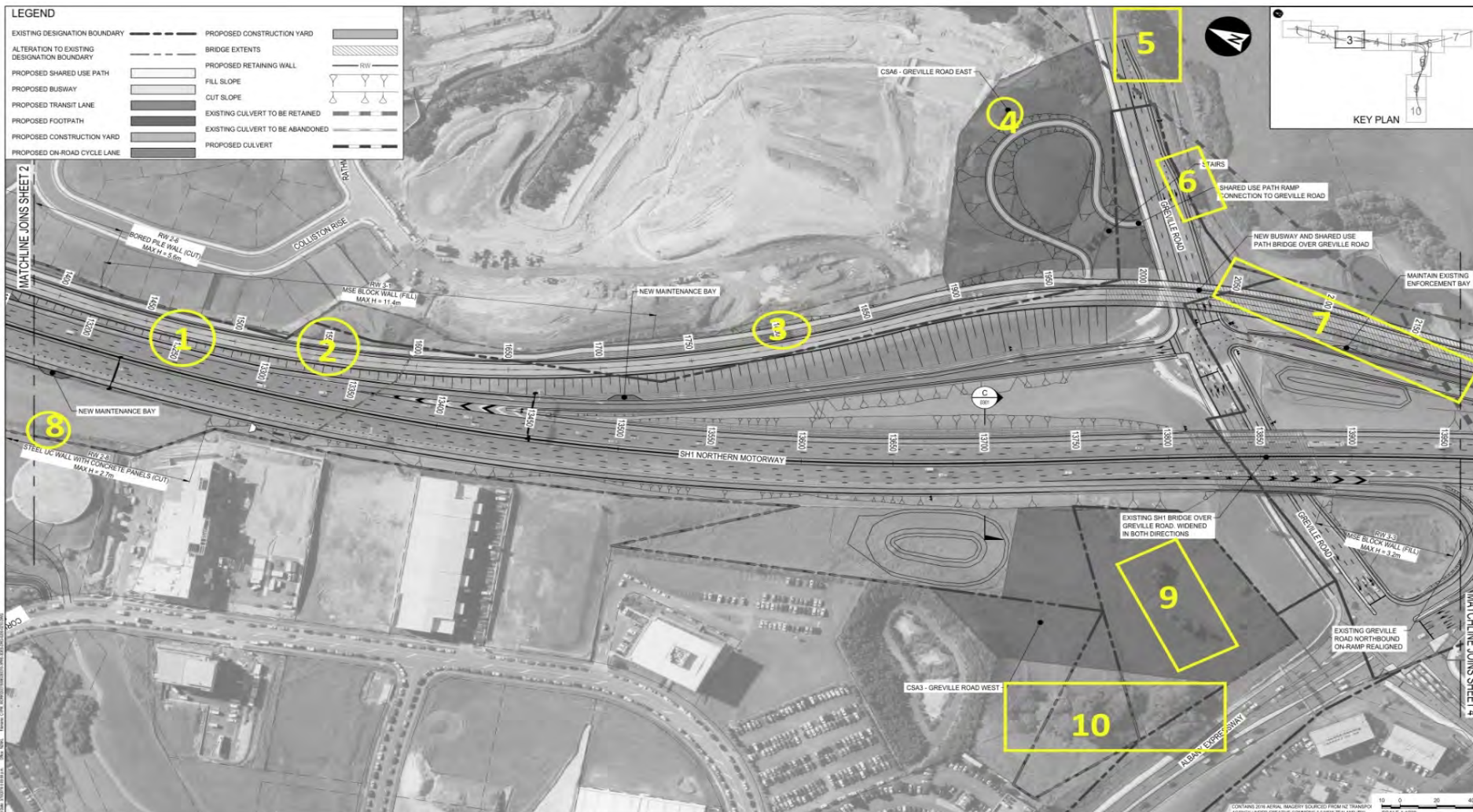
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ALTERATION TO EXISTING DESIGNATION BOUNDARY	PROPOSED RETAINING WALL	R/W
PROPOSED SHARED USE PATH	FILL SLOPE	CUT SLOPE
PROPOSED BUSWAY	EXISTING CULVERT TO BE RETAINED	EXISTING CULVERT TO BE ABANDONED
PROPOSED TRANSIT LANE	PROPOSED CULVERT	
PROPOSED FOOTPATH		
PROPOSED CONSTRUCTION YARD		
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ALTERATION TO EXISTING DESIGNATION BOUNDARY	BRIDGE EXTENTS	
PROPOSED SHARED USE PATH	PROPOSED RETAINING WALL	
PROPOSED BUSWAY	FILL SLOPE	
PROPOSED TRANSIT LANE	CUT SLOPE	
PROPOSED FOOTPATH	EXISTING CULVERT TO BE RETAINED	
PROPOSED CONSTRUCTION YARD	EXISTING CULVERT TO BE ABANDONED	
PROPOSED ON-ROAD CYCLE LANE	PROPOSED CULVERT	



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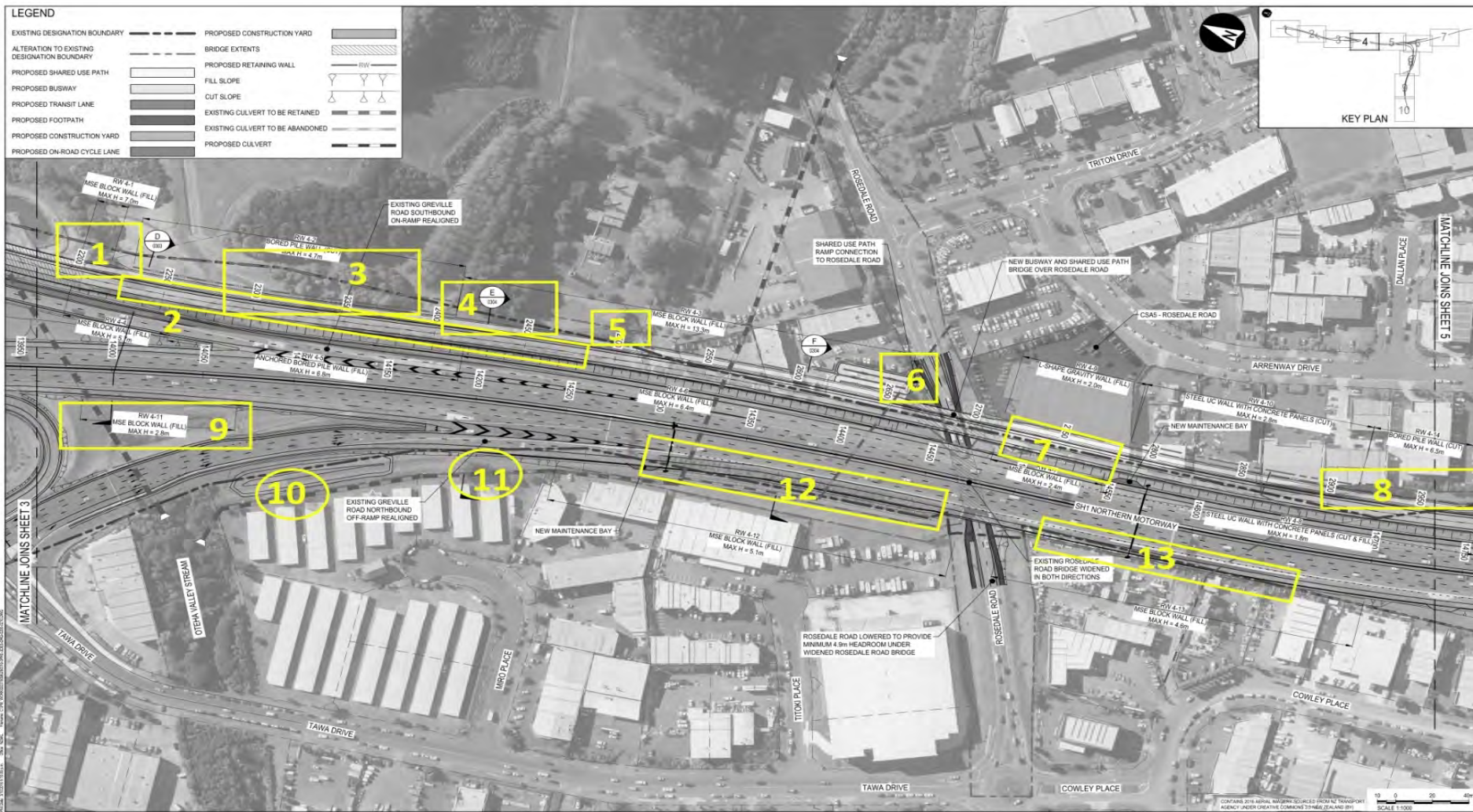
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APPROVED	DATE	TITLE
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DRAWING No.	PROJECT No.	STAGE	APP	TYPE	NUMBER	REV
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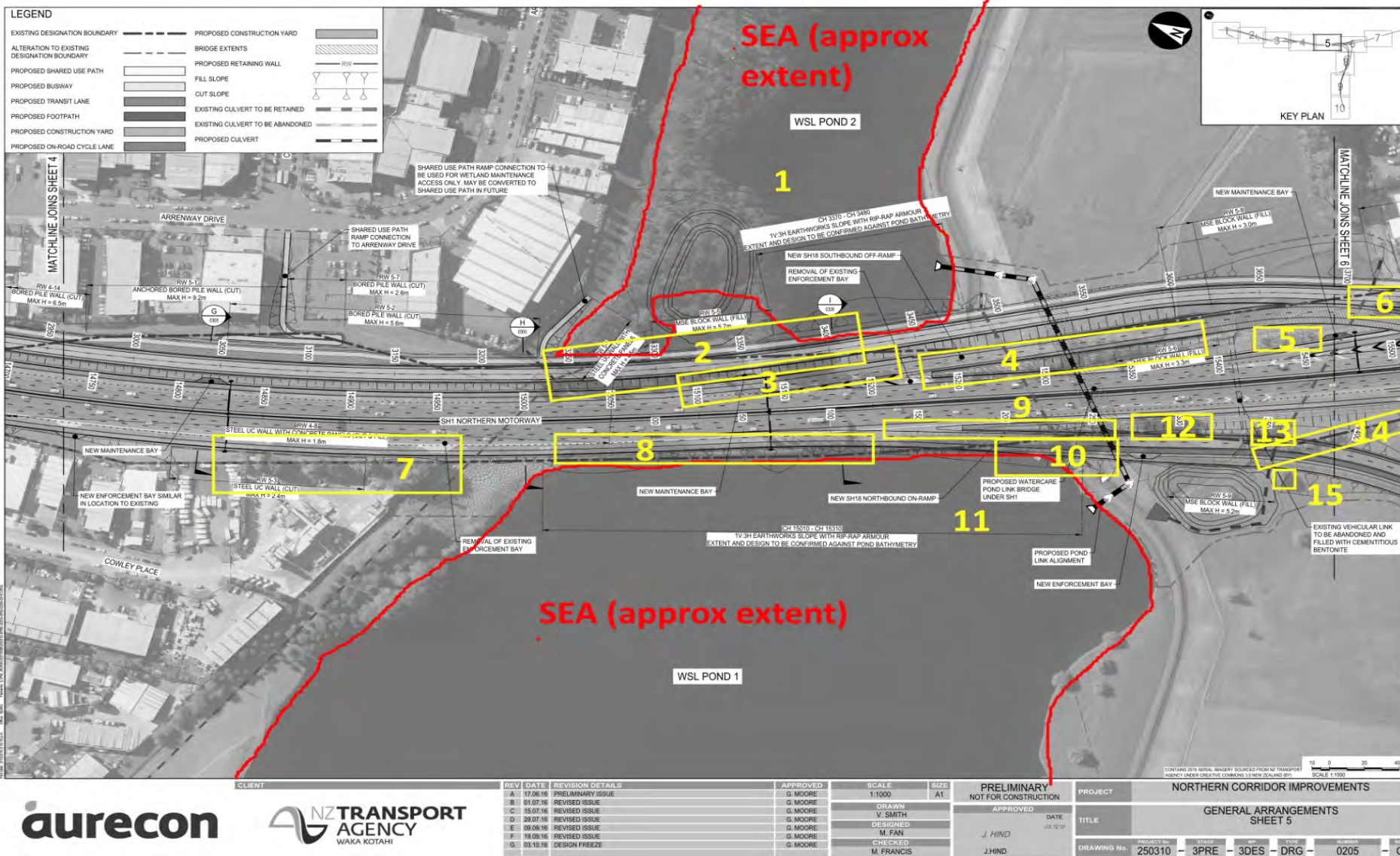
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ALTERATION TO EXISTING DESIGNATION BOUNDARY	BRIDGE EXTENTS
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PROPOSED BUSWAY	FILL SLOPE
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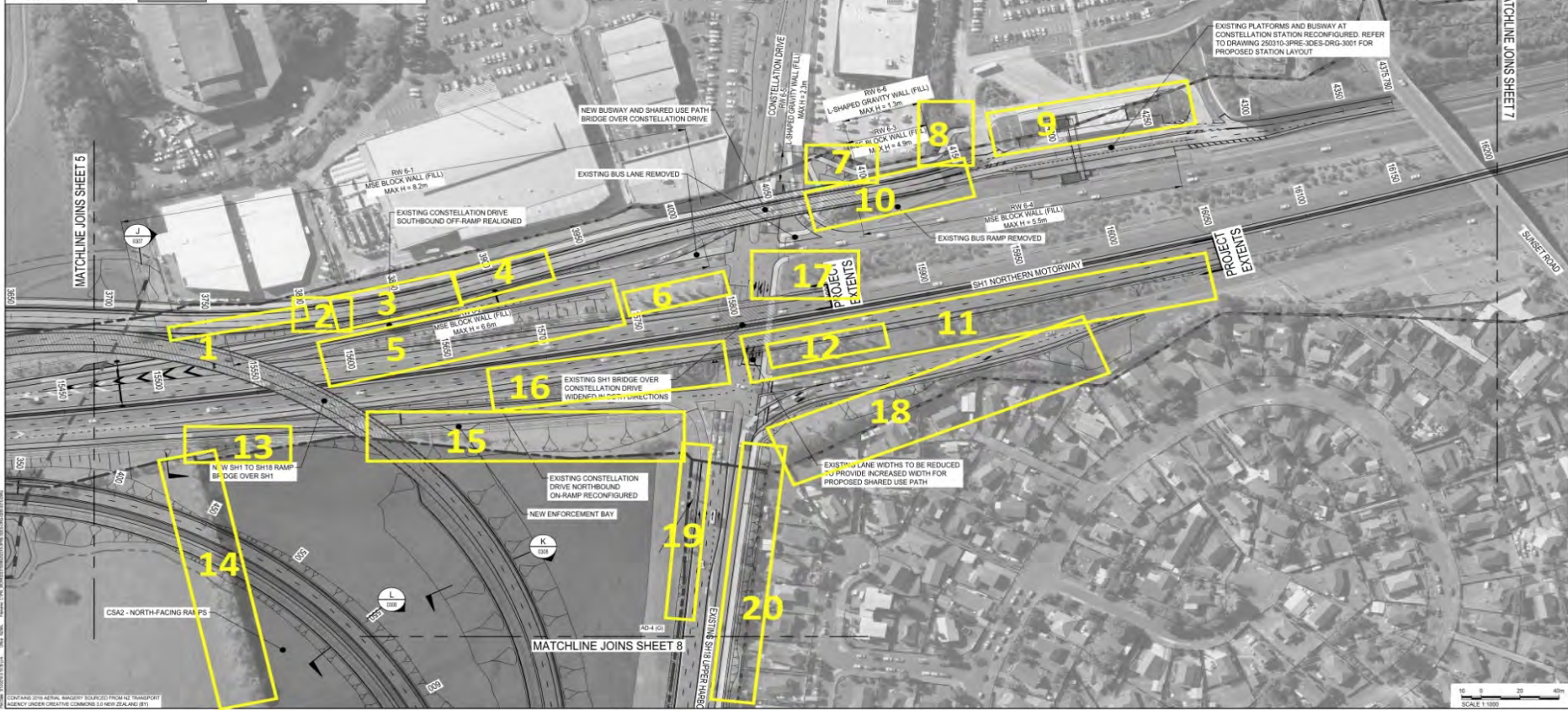






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ALTERATION TO EXISTING DESIGNATION BOUNDARY	BRIDGE EXTENTS	
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PROPOSED BUSWAY	FILL SLOPE	
PROPOSED TRANSIT LANE	CUT SLOPE	
PROPOSED FOOTPATH	EXISTING CULVERT TO BE RETAINED	
PROPOSED CONSTRUCTION YARD	EXISTING CULVERT TO BE ABANDONED	
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EXISTING DESIGNATION BOUNDARY	--- ---	PROPOSED CONSTRUCTION YARD	[Hatched Box]
ALTERATION TO EXISTING DESIGNATION BOUNDARY	- - - -	BRIDGE EXTENTS	[Hatched Box]
PROPOSED SHARED USE PATH	[White Box]	PROPOSED RETAINING WALL	[Hatched Box]
PROPOSED BUSWAY	[White Box]	FILL SLOPE	[Hatched Box]
PROPOSED TRANSIT LANE	[White Box]	CUT SLOPE	[Hatched Box]
PROPOSED FOOTPATH	[White Box]	EXISTING CULVERT TO BE RETAINED	[Symbol]
PROPOSED CONSTRUCTION YARD	[Hatched Box]	EXISTING CULVERT TO BE ABANDONED	[Symbol]
PROPOSED ON-ROAD CYCLE LANE	[White Box]	PROPOSED CULVERT	[Symbol]

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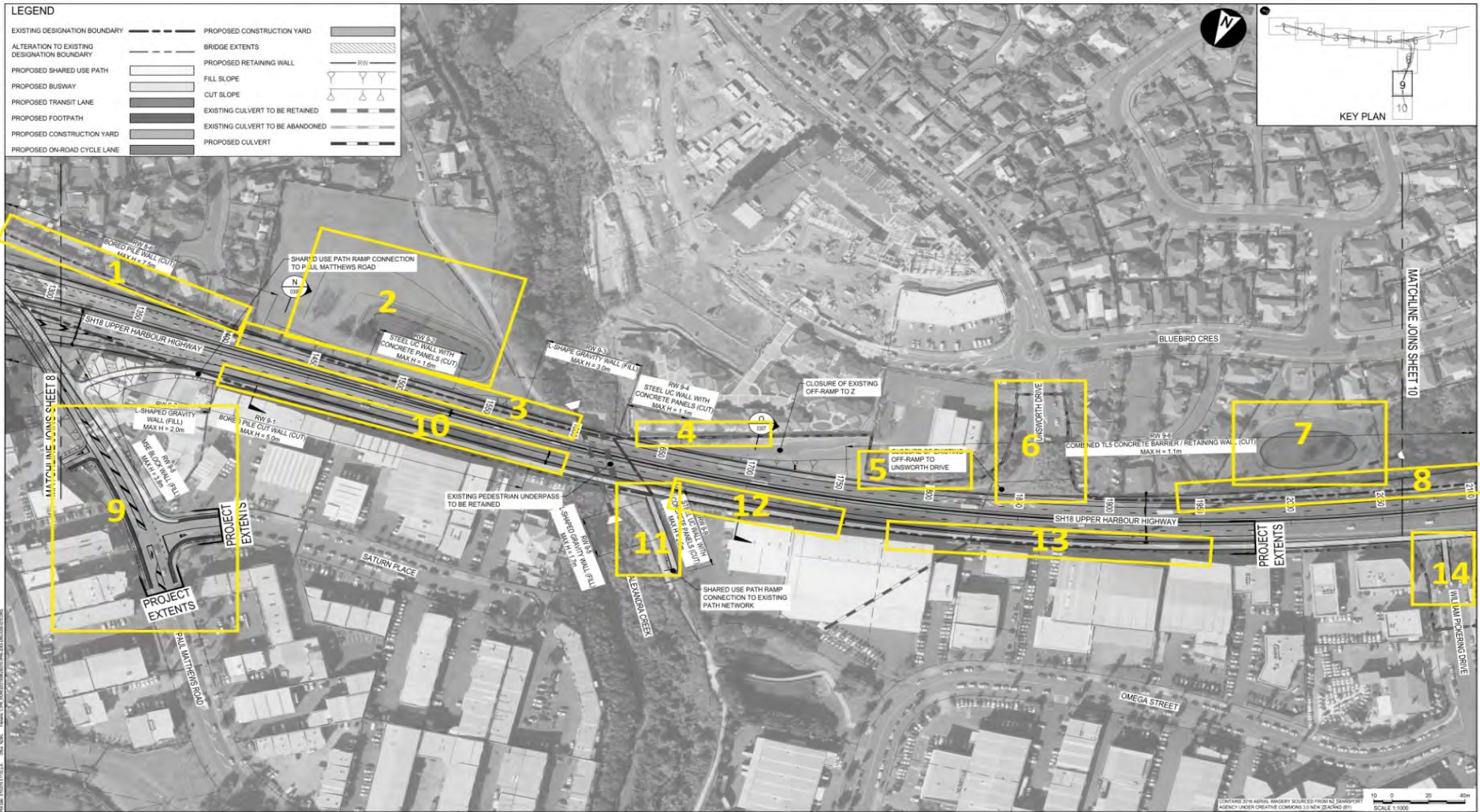
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A	17.06.16	PRELIMINARY ISSUE	G. MOORE
B	01.07.16	REVISED ISSUE	G. MOORE
C	15.07.16	REVISED ISSUE	G. MOORE
D	29.07.16	REVISED ISSUE	G. MOORE
E	09.09.16	REVISED ISSUE	G. MOORE
F	19.09.16	REVISED ISSUE	G. MOORE
G	03.10.16	DESIGN FREEZE	G. MOORE

SCALE	1:1000
SIZE	A1
DRAWN	V. SMITH
DESIGNED	M. FAN
CHECKED	M. FRANCIS

PRELIMINARY  
NOT FOR CONSTRUCTION

APPROVED DATE: 03.10.16  
J. HIND

PROJECT	NORTHERN CORRIDOR IMPROVEMENTS			
TITLE	GENERAL ARRANGEMENTS SHEET 8			
DRAWING No.	PROJECT No.	STAGE	NO.	TYPE
250310	250310	3PRE	3DES	DRG
				NUMBER
				0208
				REV
				G

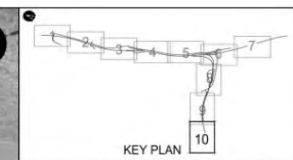


<b>aurecon</b>	<b>NZ TRANSPORT AGENCY</b> WAKA KOTAHĪ	<b>REV</b>	<b>DATE</b>	<b>REVISION DETAILS</b>	<b>APPROVED</b>	<b>SCALE</b>	<b>SIZE</b>	<b>PRELIMINARY</b>	<b>PROJECT</b>
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		B	01.07.16	REVISED ISSUE	G. MOORE				
		C	16.07.16	REVISED ISSUE	G. MOORE				
		D	28.07.16	REVISED ISSUE	G. MOORE				
		E	08.09.16	REVISED ISSUE	G. MOORE				
		F	16.09.16	REVISED ISSUE	G. MOORE				
		G	03.10.16	DESIGN FREEZE	G. MOORE				
				<b>APPROVED</b>		<b>SCALE</b>		<b>PRELIMINARY</b>	
								NOT FOR CONSTRUCTION	
				<b>DATE</b>		<b>DATE</b>			
				<b>CHECKED</b>		<b>DATE</b>		<b>TITLE</b>	
								GENERAL ARRANGEMENTS	
								SHEET 9	
				<b>DRAWING No.</b>		<b>DRAWING No.</b>			
				250310		250310			



**LEGEND**

EXISTING DESIGNATION BOUNDARY	--- (dashed line)	PROPOSED CONSTRUCTION YARD	▨ (hatched box)
ALTERATION TO EXISTING DESIGNATION BOUNDARY	- - - (long dashed line)	BRIDGE EXTENTS	▨ (hatched box)
PROPOSED SHARED USE PATH	▨ (hatched box)	PROPOSED RETAINING WALL	▨ (hatched box)
PROPOSED BUSWAY	▨ (hatched box)	FILL SLOPE	▽ (inverted triangle)
PROPOSED TRANSIT LANE	▨ (hatched box)	CUT SLOPE	▽ (inverted triangle)
PROPOSED FOOTPATH	▨ (hatched box)	EXISTING CULVERT TO BE RETAINED	▨ (hatched box)
PROPOSED CONSTRUCTION YARD	▨ (hatched box)	EXISTING CULVERT TO BE ABANDONED	▨ (hatched box)
PROPOSED ON-ROAD CYCLE LANE	▨ (hatched box)	PROPOSED CULVERT	▨ (hatched box)



**aurecon**

**NZ TRANSPORT AGENCY**  
WAKA KOTAHĪ

REV	DATE	REVISION DETAILS	APPROVED
A	17.06.16	PRELIMINARY ISSUE	G. MOORE
B	01.07.16	REVISED ISSUE	G. MOORE
C	15.07.16	REVISED ISSUE	G. MOORE
D	28.07.16	REVISED ISSUE	G. MOORE
E	09.09.16	REVISED ISSUE	G. MOORE
F	19.09.16	REVISED ISSUE	G. MOORE
G	03.10.16	DESIGN FREEZE	G. MOORE

SCALE	SIZE
1:1000	A1

**PRELIMINARY NOT FOR CONSTRUCTION**

APPROVED DATE  
J. HIND 05.02.16

PROJECT	NORTHERN CORRIDOR IMPROVEMENTS
TITLE	GENERAL ARRANGEMENTS SHEET 10
DRAWING No.	250310 - 3PRE - 3DES - DRG - 0210 - G



## Appendix B

### Tree Database

This database in the form of a spreadsheet contains the survey data for the tree survey.

The data is organized by General Arrangement plan sheet.



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GA Map Sheet	Tree #	Common name genus / species	Ownership / designation	Largest tree dimensions	Arboricultural value	Photograph in App 4	Comment	Effect of works	Recommendation
1	1	Kanuka	NZTA		M		Kanuka-dominated mass planting	Apparently unaffected by works	
1	2	Mixed native trees	NZTA	2 x 2	M		Kanuka, Karamu, Flax	Apparently unaffected by works	
1	3	Mixed native trees	NZTA	12 x 10	M		See notes	Apparently unaffected by works	
1	4	Kanuka	NZTA	2 x 1	L		Small Kanuka and Ti Kouka	Apparently unaffected by works	
1	5	Black wattle	Private	7 x 5	L		Group of black wattle	May be affected by SUP	Remove as necessary
1	6	Black wattle	Private	7 x 5	L		Group of black wattle	In alignment of SUP	Remove
1	7	Cypress	Private	7 x 5	L		Cypress hedge up to 40 stems	Affected by wall construction	Remove
1	8	SEA	Private		H		SEA designation west of motorway	Apparently unaffected by works	
1	9	Lucas Creek			H		See note for 1.3	Apparently unaffected by works	
1	10	Mixed amenity planting	AT/NZTA	4 x 4	M		Mixed amenity planting see notes	Mostly unaffected	Remove as necessary
1	11	Mixed amenity planting	AT	1 x 1	L		Small areas of bedding plants	Affected by busway bridge and approach	Remove
1	12	Mixed amenity planting	AT	3 x 3	M		See notes	Affected by alterations to busway	Remove as necessary
2	1	Black Wattle	NZTA	3 x 3	L		Weed	Stands in busway	Remove
2	2	Mixed native planting	NZTA	3 x 3	L		Ti Kouka and Kanuka around pond	Stands in SUP and busway	Remove as necessary
2	3	Kohuhu hedge	NZTA	4 x 4	L		Hedge along fence	Stands between SUP and busway	Remove
2	4	Flax and Ti Kouka	NZTA	1 x 1	L		Ornamental shrubs	Close to civils works	Remove
2	5	Mixed native planting	NZTA	4 x 4	M		See notes	In Busway, affected by batter	Remove



2	6	Black wattle and macrocarpa	Private	10 x 8	M		See notes	Affected by SUP ramp, excavations	Remove as necessary
2	7	Kohuhu hedge	NZTA	3 x 2	M		Screening hedge	Between Busway and SUP	Remove
2	8	Kohuhu hedge	NZTA	3 x 2	M		Screening hedge	Affected by batter / SUP	Remove as necessary
2	9	Kohuhu hedge	NZTA	3 x 2	M		Screening hedge	Between Busway and SUP	Remove
2	10	Mixed native planting	NZTA	5 x 4	M		Mixed amenity planting	Appears unaffected by works	Remove as necessary
2	11	Flax and Ti Kouka	NZTA	1 x 1	L		Ornamental planting	May be affected by wetland construction	Remove as necessary
2	12	Radiata pine	Private	10 x 8	M		Three radiata pines	May be affected by wetland construction Some may be affected by wetland construction	Remove as necessary
2	13	Radiata pine	Private	12 x 8	M		Group of up to 16 radiata pines	construction	Remove as necessary
2	14	Black wattle and weeds	Private	5 x 5	L		Exotic weeds	May be affected by excavation	Remove as necessary
3	1	Dead							
3	2	Flax and small shrubs	NZTA	1 x 1	L		Flax planted around SW pond Wattle standing on boundary of Spencer Road development	Affected by SUP and busway	Remove
3	3	Black wattle	Private	7 x 7	L			Affected by SUP and busway	Remove
3	4	Gone							
3	5	Mixed Pine and Gum windrow	AT	12 x 8	M		Windrow planting	Apparently unaffected by works	
3	6	Yunnan poplar and Pine	NZTA / Private	5 x 4	L		Amenity planting adjacent to roading works	Apparently unaffected by works	Remove as necessary
3	7	Ngaio / Ti Kouka / Flax	Park	4 x 4	L		Amenity planting along fence. Low value	Between Busway and enforcement bay	Remove as necessary
3	8	Pohutukawa	NZTA	4 x 4	L		Isolated tree	Apparently unaffected by works	
3	9	Native group	Private	6 x 4	M		See notes	Construction yard	Remove as necessary Isolate and retain if possible
3	10	Slash Pine group	Private / NZTA	10 x 8	M		See notes	Construction yard	
4	1	Mixed amenity planting	Park	4 x 4	L		See notes	Affected by SUP and Busway	Remove as necessary
4	2	Rough hedge	Park	4 x 4	L		See 4.1 of main report	Affected by SUP and Busway	Remove
4	3	Mixed planting	Park	10 x 8	L		See 4.1 of main report	Affected by bored pile wall	Remove as necessary
4	4	Mixed planting	Park	8 x 6	M		See 4.1 of main report	Affected by wall	Remove as necessary
4	5	Mixed planting	Park	4 x 4	L		See 4.1 of main report	Affected by excavation	Remove as necessary
4	6	Conifer hedge	Private	3 x 1	M		Conifer hedge in very poor health	Affected by SUP ramp	Remove



4	7	Pandanus	Private/NZTA	1 x 1	L		Six Pandanus or similar on private property but within NZTA designation	Affected by SUP and Busway	Remove as necessary
4	8	Kohuhu trees	Private / NZTA	4 x 3	L		Eight Kohuhu on private property but within NZTA designation	Apparently unaffected by works	Remove as necessary
4	9	Pond planting	NZTA	1 x 1	L		One Kanuka and reeds planted around stilling pond	Apparently unaffected by works	
4	10	3 x Poplar trees	Park	12 x 8	M		On public open space, inside fence	May be affected by SW pond works	Isolate and retain if possible
4	11	1 x Poplar	Park	12 x 8	M		On public open space, inside fence	Apparently unaffected by works	
4	12	Flax amenity planting	NZTA	1 x 1	M		Amenity planting within NZTA designation	Within roading footprint	Remove
4	13	Rimu	Private/NZTA	2 x 2	L		On private land, inside fence line	May be affected by road widening	Remove as necessary
5	1	SEA	WWTP / NZTA	16 x 12	H		See 4.2 of main report	Affected by SUP and busway	Remove as necessary
5	2	Mixed planting	WWTP / NZTA	16 x 12	H		See 4.2 of main report	Affected by SUP and busway	Remove as necessary
5	3	Ti Kouka & Kanuka	NZTA	5 x 3	M		See notes	Within roading footprint	Remove
5	4	Queen Palm & Kanuka	NZTA	10 x 6	M		See notes	Within roading footprint	Remove
5	5	Ti Kouka	NZTA	5 x 2	M		About 20 Ti Kouka trees in mass planting	Within roading footprint	Remove
5	6	Pohutukawa x 5	NZTA	5 x 5	L		About 5 Pohutukawa in group	Within roading footprint	Remove
5	7	Mixed planting	Private	12 x 8	M		See notes	On private land overhanging NZTA	Works within dripline
5	8	Ti Kouka	NZTA	5 x 2	M		See notes	Within roading footprint	Remove
5	9	Queen Palm	NZTA	6 x 4	M		See notes	Within roading footprint	Remove
5	10	Mixed native and exotic	NZTA	5 x 5	L		See notes	Within roading footprint	Remove
5	11	SEA	WWTP		M		See 4.2 of main report	Affected by roading works	Remove
5	12	Kanuka group	NZTA	4 x 4	M		Group of about 10 Kanuka	Within excavation	Remove
5	13	Pohutukawa and Kanuka	NZTA	3 x 3	L		Group of small bushes	Within excavation	Remove
5	14	Mixed native planting	WWTP	1 x 1	L		See notes	Within excavation and busway	Remove
5	15	Weeping willow	WWTP	3 x 3	L		Single small tree	Affected by excavation	Remove
6	1	16 x Queen Palm	NZTA	6 x 4	M		Row of palms	Affected by busway	Remove
6	2	12 x Ngaio	NZTA	4 x 4	M		Group of about 12 Ngaio bushes	Within busway footprint	Remove
6	3	30 x Kanuka	NZTA	4 x 4	M		Row of about 30 Kanuka bushes	Within busway footprint	Remove



6	4	12 x Ngaio	NZTA	4 x 4	M		Row of about 12 Ngaio bushes	Within busway footprint Partly within excavation / construction footprint	Remove
6	5	Flax x 50-60	NZTA	1 x 1	M		Mass planting of Harakeke		Remove as necessary
6	6	Washingtonia Palm x 6	NZTA	7 x 2	M		Row of Washingtonia Palms	Apparently unaffected by works	
6	7	Pohutukawa x 8	NZTA	5 x 5	M		Group of Pohutukawa and other natives	Partly affected by SUP works	Remove
6	8	Mixed native planting	NZTA/AT	4 x 4	M		Trees of small overall stature	Partly affected by SUP and busway works	Remove as necessary
6	9	Queen Palm x 8	NZTA	8 x 4	M		Palms and shrubs	Apparently unaffected by works	
6	10	Mixed native planting	NZTA	4 x 4	M		Trees of small overall stature	Partly affected by busway and construction	Remove as necessary
6	11	Mass planting of flax	NZTA	1 x 1	M		Mass planting of Harakeke	Apparently unaffected by works	
6	12	Washingtonia Palm x 6	NZTA	7 x 2	M		Row of Washingtonia Palms	Apparently unaffected by works	
6	13	Kanuka x 8	NZTA	4 x 3	M		Group of Kanuka	Affected by excavation	Remove
6	14	Mixed native windrow	Parks / WWTP	9 x 9	M		See 4.3 of main report	May be affected by excavation	Remove as necessary
6	15	Mixed native planting	NZTA	9 x 5	M		See notes	Affected by earthworks	Remove as necessary
6	16	Flax and Washingtonia Palm	NZTA	5 x 2	M		Flax groundcover and 6 Washingtonia Palms	Affected by bridge widening	Remove as necessary
6	17	Flax and Washingtonia Palm	NZTA	8 x 3	M		Flax groundcover and 6 Washingtonia Palms	Affected by bridge widening	Remove as necessary
6	18	Ngaio, Pohutukawa	NZTA	4 x 4	M		See notes	Affected by roadworks and excavation	Remove as necessary
6	20	20 x Kanuka	NZTA	7 x 7	M		See notes	May be affected by SUP works	Remove as necessary
6	21	Pohutukawa	NZTA	3 x 2	L		Small road berm trees	May be affected by excavation	Remove as necessary
8	1	Kanuka x 20	AT	5 x 5	M		See notes	May be affected by SUP works	Remove as necessary
8	2	Pohutukawa x 12	AT	5 x 5	M		Small road berm trees	May be affected by SUP works	Remove as necessary
8	3	Road reserve trees	AT	5 x 5	M		See 4.5 of main report	More comment in main report	Remove as necessary
8	4	Kanuka x 15	AT	3 x 2	L		Row of small, bushy Kanuka	May be affected by excavation	Remove as necessary
8	5	Washingtonia Palm x 22	AT	5 x 2	M		Row of small Washingtonia Palms	Will be affected by new intersection works	Remove
8	6	Pohutukawa x 9	AT	4 x 2	L		Row of small Pohutukawa	Within roading footprint	Remove
8	7	Pohutukawa and Ngaio	AT	5 x 5	M		See notes	May be affected by SUP works	Remove as necessary
8	8	Mixed native planting	Parks / WWTP	9 x 9	H		See 4.3 of main report	See notes for 6/15 above	
8	9	Mixed native planting	WWTP	7 x 7	M		See 4.4 of main report	will be affected by roundabout works	Remove as necessary



8	11	Mixed native planting	WWTP	2 x 2	L		See notes	Will be affected by pond works	Remove as necessary
8	10	Mixed planting	WWTP	12 x 10	M		See notes and 4.4 of main report	Within roading footprint	Remove
8	12	Hybrid Poplar x 30	Parks	8 x 1	M		Row of hybrid poplars	Within roading footprint	Remove
8	13	Hybrid Poplar x 19 and others	Parks	12 x 6	M		See notes	Within roading footprint	Remove
8	14	Mixed native windrow	Parks	6 x 5	M		See notes	Part of windrow is within roading footprint	Remove as necessary
8	15	Phoenix palm x3	AT	10 x 8	M		Road berm trees	Within roading footprint	Remove
9	1	Ngaio and Pohutukawa	NZTA	6 x 6	M		See notes	May be affected by road widening	Remove as necessary
9	2	Mixed planting	NZTA	14x6	M		See 4.6 of main report	See main report Rook Reserve	Remove as necessary
9	3	Kanuka and Pohutukawa	NZTA	2 x 2	L		17 small Kanuka and 6 small Pohutukawa	Apparently affected by road widening	Remove
9	4	Ti Kouka x 23	NZTA	5 x 2	M		Row of Ti Kouka - variable quality	Apparently unaffected by works	
9	5	Mixed planting	NZTA/Private	4 x 4	M		See notes	Apparently unaffected by works	
9	6	Mixed native planting	NZTA/Private	3 x 3	M		See notes	May be affected by road works	Remove as necessary
9	7	Scattered exotic palms	Parks	10 x 3	M		See 4.9 of main report	Affected by SW pond works	Remove as necessary
9	8	Mixed native planting	NZTA	5 x 5	M		See 4.9 of main report	May be affected by concrete wall	Remove as necessary
9	9	Road berm trees	AT	6 x 5	M		See 4.7 of main report	May be affected by road works	Remove as necessary
9	10	Scattered bushes and trees	AT	2 x 2	L		Small stature	May be affected by road widening	Remove as necessary
9	11	Mixed native planting	Parks	5 x 5	H		See 4.8 of main report	May be affected by SUP and drains	Remove as necessary
9	12	Ti Kouka x 26 Pohutukawa x 2 and	AT / Private	5 x 2	M		Ti Kouka on both sides of fence	May be affected by SUP works	Remove as necessary
9	13	Washingtonia x 2	AT	3 x 3	L		Very isolated road berm trees	Will be affected by SUP works	Remove
9	14	Kanuka planting	AT	5 x 4	M		See notes	Will be affected by SUP works	Remove as necessary
10	1	Mixed planting	Parks	6 x 6	M		See 4.9 of main report	Apparently affected by road widening	Remove as necessary
10	2	Mass planting of Kanuka	AT	3 x 3	M		Small massed planting, mainly Kanuka	Affected by SUP construction	Remove as necessary



# Appendix C

## Notes to Annotated GA plans



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This data consists of additional explanatory or descriptive notes about trees in **Appendix B**. Many of the groups described here in **Appendix C** are also described in more detail in Section 4 of the main report. The notes below are organized by General Arrangement plan sheet (i.e. 1.3 refers to Tree 3 on GA sheet 1).

### **Sheet 1**

- 1.3 Area of dense, healthy native trees with heights up to 12m. Species include Rimu, Kahikatea and many Kanuka trees with understorey species such as Ponga, Karamu and Hangehange. A new SW connection is proposed to Lucas Creek, within the NZTA designation, so no vegetation is protected. Works will need to be carefully executed to avoid unnecessary damage to riparian vegetation.
- 1.10 Mixed amenity planting between busway carpark and SH1. Most planting is within the NZTA designation and consists of trees up to 4m in height and spread. Species include Magnolia, Karamu, Ti Kouka, Manuka, Houhere, Kohuhu, Mapou, Karo, Puriri, and Tanekaha. The plantings are affected where the busway bridge crosses over the motorway where it is assumed approach works will be required.
- 1.12 Area of general amenity planting within bus station designation that may be affected by busway alterations and wall construction. Bushes and small trees up to 3m in height, includes Karamu, Kanuka, Ti Kouka, Harakeke and various grasses. Not protected due to small size. To be removed as necessary – mitigation by replacement planting.

### **Sheet 2**

- 2.5 An area of mixed native planting up to 4 x 4m. Consists of commonly-planted native species such as Kanuka / Manuka, Ti Kouka, Harakeke, Kohuhu, Karamu. This area will be within the footprint of SUP and busway and is affected by the excavation of battered slopes. Areas of planting will need to be removed to facilitate civil works.
- 2.6 Four Black Wattle trees and a Macrocarpa standing in open ground. The Macrocarpa and up to three of the Wattle trees will be affected by adjacent civils work, requiring removal. Although these trees are larger than the mixed planting adjacent, they are not of great arboricultural significance. The trees appear to stand on private property but are not protected by the AUP.

### **Sheet 3**

- 3.9 Two small islands of native trees up to 6m in height – Ti Kouka x 6 and Karamu, Mapou and Karo. The trees are isolated and have little amenity impact. Removal may be necessary if the area is to be used as a construction yard.
- 3.10 A planting of Slash Pine (*Pinus elliotti*) – 30+ trees with some landscape value. The undergrowth is gorse, Ponga, Mahoe and Manuka. The area is designated as construction yard, but is unlikely to be used for this purpose. The trees collectively have some landscape value.

### **Sheet 4**

- 4.1 An area of bush within the landfill site within the NZTA designation. The vegetation consists of mixed amenity planting and natural recruitment consisting of small natives and a scattering of exotics of dimensions up to 4 x 4m. Natives include Ngaio, Harakeke, Karamu, and Western Red Cedar, Karo as well as wattle and gorse. This area has no specific theme and the plantings are not of high individual value. Part of this area must be cleared to accommodate the busway and SUP.





## **Sheet 5**

- 5.3 A row of 12 x Ti Kouka close to the existing road edge, and a row of about 10 small Kanuka along the fence line. Will need to be cleared to accommodate roading works.
- 5.4 This group has a double or single row of 25 x Queen Palm (*Syagrus romanzoffiana*) up to about 10m tall at the northern end. The palm trees have some amenity value and may be suitable for relocation. The palms give way to a Kanuka hedge along the fence line to the south. There is also a small group of Ti Kouka. All of these trees will have to be removed as they stand within the footprint of construction works.
- 5.7 A group of mixed native and exotic trees. The most prominent are 4 x Silky Oak (*Grevillea robusta*) with the rest an eclectic mix of native (e.g. Puriri, Puka and Rewarewa) and exotic (Tobacco Weed (*Solanum mauritanum*), Magnolia, and *Syzigium*), amongst others. The trees provide some screening and have moderate amenity value. This group is located on private land just outside the NZTA designation except for an island of Harakeke at the northern end, which is closer to the existing roadway. It appears that the bank on which the trees stand may be undercut by road widening works. The trees are not protected.
- 5.8 A group of about 10 Ti Kouka up to 5m in height standing on NZTA land inside the fence with the WWTP. There are also three smaller Ti Kouka and a number of Brush Wattle (*Paraserianthes lapantha*) in the boundary fence.
- 5.9 A double row of Queen Palm (*Syagrus romanzoffiana*) up to 10m in height standing on NZTA land. The trees are within the roading footprint and need to be removed. These trees may be suitable for relocation.
- 5.10 Two clusters of mixed native planting up to 6m in height including Puka, Pohutukawa, Kanuka, Totara as well as privet. All trees between the motorway and the WWTP ponds are proposed to be removed due to road widening works here.
- 5.14 An overgrown area of small native planting including small Manuka / Kanuka bushes and Pohutukawa, together with flax and shrubs. Amenity value is low. Will be removed as part of busway excavations.

## **Sheet 6**

- 6.15 This planting consists of small native trees such as Ngaio and Pohutukawa within the NZTA designation and inside the motorway reserve fence. The largest trees are at the southern end of the group close to the intersection between SH18 and SH1 and are up to 6m in height. The trees are scattered and variable, giving them little visual bulk and only moderate amenity value at best. The bank on which the trees stand will be affected by earthworks, requiring the removal of the trees.
- 6.18 Roadside planting of Ngaio, Pohutukawa and other small trees up to 6 x 6m in size, growing west of the motorway. This area will be affected by SUP works as well as excavation for road works, and some of the trees may have to be removed. The trees are individually of low to moderate arboricultural value.
- 6.20 A row of about 20 Kanuka trees up to 7 x 7m in size, and one self-sown Phoenix Palm (*Phoenix canariensis*) standing partially within the NZTA designation. The trees are mostly healthy, except for one or two that are either senescent or dead. The trees as a group have considerable visual bulk. The trees stand at the top of a retained bank, but may be affected by SUP construction along SH18. Removal of these trees will result in some noticeable amenity losses. The bank on which the trees stand should be retained if possible. The same



largely applies to all mass plantings along the southern side of SH18 where the SUP is proposed. Refer also to 5.2.4 of the main report.

- 6.21 4 x small Pohutukawa up to 3 x 2m standing north of SH18. The trees are small and widely-spaced and have little amenity value. They will be removed to allow road widening and excavation to the north of SH18.

### **Sheet 7**

No commentary on Sheet 7 as no works are proposed adjacent to any of the plantings surveyed.

### **Sheet 8**

- 8.1 Row of about 20 Kanuka trees up to 5 x 5m in size. Variable in health, with about six senescent or dead. These trees provide valuable screening south of the road. The works layout suggests that some trees may be affected by SUP works adjacent. Parks may take an interest in these trees.
- 8.7 Group of about 130 trees, similar to 8.1, of which approximately half are Pohutukawa and half are Ngaio, with a few scattered individuals of other species such as Bottlebrush (*Callistemon sp.*), Karo and Puka. The largest individuals are about 6m in height and spread. The density of this planting is highly variable. In places it provides considerable screening between SH18 and the adjacent houses. These trees appear to be affected by the excavations for the adjacent SUP and road widening works
- 8.10 Mixed native and exotic trees scattered along the route of the pipeline running north of SH18 and parallel to it. There are over 100 trees. Most trees are small and bush-like, up to 5 x 5 in size, whilst the largest are up to 8 x 8 in size. Native species include Totara, Kahikatea, Rimu, small Kauri, Kanuka and Ti Kouka. Natives make up the majority of the trees. There are also Black Wattle trees, an English Oak and five large Corsican Pines (*Pinus pinaster*). The pines are all mature to post-mature and are up to 20m in height. The trees have moderate individual value. Most trees are scattered in the landscape and hidden from general view by intervening trees. There is no scope to retain any of these trees as the scope of roadwork construction in the area does not allow this.
- 8.11 Mixed native planting scattered in a grazed paddock. Species include Totara, Kanuka, and Pohutukawa. The trees are hidden from general view and have little amenity value. If the new proposed wetland is established as shown all of the trees will have to be removed to allow earthworks. See also 5.2.7 of the main report.
- 8.13 A group of 19 Hybrid Poplar of up to 12m in height as well as two small Liquidambar trees and two small Ginkgo trees about 4m tall. There is no scope to retain any of these trees as they stand within the roading footprint. The trees are scattered and have little arboricultural value as specimens or as groups.
- 8.14 A windrow of natives consisting of trees up to 6m tall. Only part of the row of trees is affected, at the southern end where it encroaches on the roading corridor. Species include Hohere, Ti Kouka, Mahoe and Pohutukawa. There is also some Privet which is a weed. The trees are of moderate arboricultural value but stand within the proposed roading envelope.

### **Sheet 9**

- 9.1 Ngaio and Pohutukawa planting along SH18. About 20 trees in this section. Most in this section are Ngaio, and the largest trees are about 6 x 6m. It appears that some of these trees may be directly or indirectly affected by road widening and associated engineering. Although



these are not high-quality trees they do provide some screening. Refer also to 5.2.4 of the main report.

- 9.2 This planting consists of six hybrid Poplar, a Pin Oak, a Wild Date Palm (*Phoenix reclinata*), a Pin Oak and a Pohutukawa standing in Rook Reserve. The largest trees are the Poplars at 14 x 6m. This planting has moderate amenity, but it appears that if will all have to be removed if the new wetland is constructed here, due to the amount of earthworks required. See also 5.2.8 of the main report.
- 9.5 An area of mixed planting on the bank above SH18. Consists of Karamu, Puka, Harakeke and Brazilian Pepper (*Schinus terebinthifolius*) – the latter is a weed. This area falls outside the NZTA designation but does not appear to be affected by works.
- 9.6 Road berm planting at the approach to Unsworth Drive, consisting of small native trees of up to 4 x 4m in size, comprising Ti Kouka, Pohutukawa, Ngaio and similar small roadside trees. It does not appear that significant alterations are proposed at this stage.
- 9.14 A small area of Kanuka planted at the end of William Pickering Drive. A SUP connection is proposed here, which will probably require the removal of Kanuka trees standing within the path alignment.

#### **Sheet 10**

- 10.1 This mass planting of Kanuka is on the southern bank of the westbound Albany Highway off-ramp from SH18. The trees are healthy and about 3 x 3m and in places form a continuous canopy. Some of the trees south of the road may be affected by road widening. Some of this vegetation is located in Bluebird Reserve which is described in 4.9 of the main report.
- 10.2 The road islands in the vicinity of Albany Highway are mass planted with a mix of natives with Kanuka dominant. The individual bushes / trees are up to 3 x 3m in size. Species encountered include Kanuka, Akeake, Puriri, Koromiko, Ti Kouka, and Taupata. Some trees in this group will be removed to allow construction of the SUP along the northern edge of the motorway.



# Appendix D

## Site Photographs



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Site photographs are provided, as numbered in the site photograph column of **Appendix B**. Not every site was photographed, and some photographs cover a number of trees or groups of trees. Please refer to **Appendix A** for the locations of trees, and **Appendix B** for numbering and other details.

**Fig 1.1 Motorway planting north of Oteha**



**Fig 1.2 Motorway planting – north of Oteha, northbound**





**Fig 1.3 Motorway planting at Lucas Creek bridge**



**Fig 1.4 Flax / Ti Kouka at Oteha Valley Road SW pond**





**Fig 1.5 Black Wattle – Oteha, southbound**



**Fig 1.7 Conifer windrow**



**Fig 1.10 Planting at Albany bus station**







**Fig 1.12 Planting, Albany bus station**



**Fig 2.2 Pond planting McClymonts Road**



**Fig 2.5 Kohuhu hedge McClymonts**





**Fig 2.6 Macrocarpa and Black Wattle - McClymonts**



**Fig 2.7 Kohuhu / mixed native planting – McClymonts busway on-ramp**



**Fig 2.12 Pines W of motorway, McClymonts**





**Fig 3.5 Roadside planting S of Greville Road**



**Fig 3.6 Roadside planting S of Greville**





**Fig 3.7 Roadside planting S of Greville**



**Fig 3.9 Isolated natives, NW of Albany Highway**



**Fig 3.10 Slash Pine, NW of Albany Highway**





Fig 4.2 (foreground) and 4.3 Planting at Rosedale landfill



Fig 4.5 Planting at Rosedale landfill





**Fig 4.6 SUP ramp location, Rosedale Road**



**Fig 4.10-4.11 Poplar trees along drainage easement**



**Fig 4.12 Harakeke mass planting, Rosedale Road**





**Fig 5.3 Roadside Ti Kouka, Rosedale WWTP southbound**



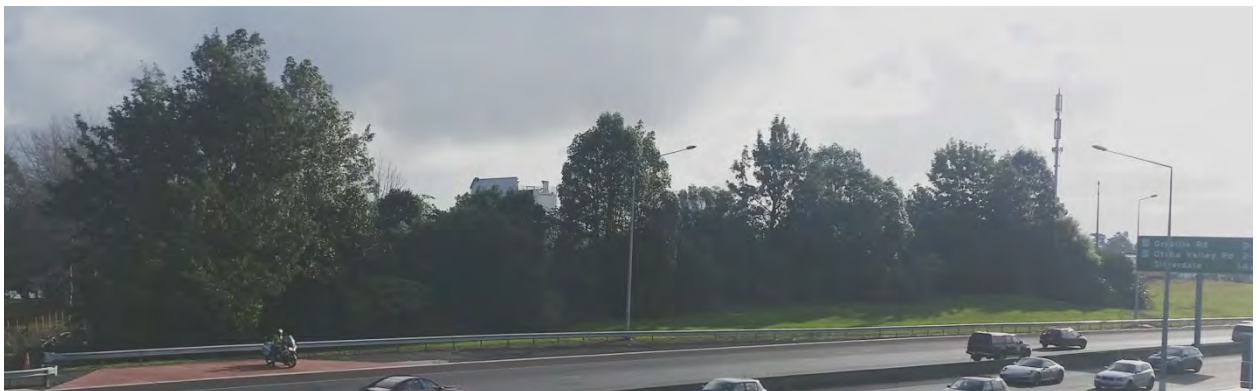
**Fig 5.4 Queen Palms, Rosedale WWTP southbound**



**Fig 5.5 Ti Kouka Rosedale WWTP southbound**



**Fig 5.7 Private planting Cowley Place adjacent motorway northbound**





**Fig 5.8 Ti Kouka roadside planting, Rosedale WWTP northbound**



**Fig 5.9 Queen Palm roadside planting, Rosedale WWTP northbound**



**Fig 5.10 Mixed natives and Queen Palms, Rosedale WWTP northbound**



**Fig 5.12 Kanuka – Rosedale South Park northbound on SH1**







**Fig 6.1 – 6.4 Ngaio / Pohutukawa / Kanuka – Constellation approach southbound**



**Fig 6.9 Natives / Queen Palm – Constellation bus station southbound**



**Fig 6.11 Flax planting, centre median**



**Fig 6.12 Washingtonia Palms, Constellation on-ramp southbound**





**Fig 6.14 Windrow between Rosedale South / Constellation Park and Rosedale WWTP**



**Fig 6.16 Flax, Washingtonia, Ngaio – Constellation on-ramp northbound**



**Fig 6.20 Kanuka S of SH18 westbound**





**Fig 8.1 SH18, south side Kanuka planting, westbound**



**Fig 8.4, 8.5, 8.6 SH18, Kanuka, Washingtonia, also Constellation Park / Rosedale South Park**



**Fig 8.7 Roadside planting W of Caribbean, SH18 westbound**



**Fig 8.9 Mixed native planting, Rosedale WWTP**





**Fig 8.10 Mixed planting, Rosedale WWTP looking north**



**Fig 8.12, 8.10 in background - Hybrid Poplar, Constellation Park at hockey pitches**





**Fig 8.13 Hybrid Poplar by SH18 eastbound**



**Fig 8.14 Native windrow, W boundary of Constellation Park**





**Fig 8.15 Washingtonia, SW of Constellation Park**



**Fig 8.15 Washingtonia Palms, Paul Matthews Road**



**Fig 9.1 Mixed native planting, SH18 westbound**





**Fig 9.2 Rook Reserve, SH18 westbound**



**Fig 9.3 Roadside Kanuka / Pohutukawa – Rook Reserve, SH18 westbound**





**Fig 9.4 Ti Kouka at Unsworth Drive Z service station**



**Fig 9.5 Mixed natives and exotics Unsworth Z Service Station**







**Fig 9.6 Mixed natives – Unsworth offramp, SH18 westbound**



**Fig 9.11 SW corner of Alexandra Creek reserve showing ramp location**



**Fig 9.12 Ti Kouka W of Alexandra Creek Reserve, SH18 eastbound**

