

Appendices

Appendix A: Consultation Minutes

UDLP Consultation Register		
Stakeholder	Contact details	Date document issued for comment
RMS (Roads and Maritime Services)	Grafton - Greg Nash Senior Project Manager PO Box 546 Grafton 2460 T 02 6640 1390 Gregory.NASH@rms.nsw.gov.au Sydney UD - Raeburn Chapman Jenny Burge Gareth Collins	16th June 2016 Discussion regarding heritage interpretation, area under bridge, Greaves St precinct
Clarence City Council		21st July 2016 Meeting minutes attached
Grafton Ngerrie LALC		16th July 2016 - Grafton Meeting minutes attached
Community consultation		

Table A-1 UDLP Consultation Register



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Meeting Minutes **MM**

PROJECT No:	16-14	WRITER'S NAME:	Judy van Gelderen
PROJECT NAME:	GRAFTON BRIDGE UD		
MEETING No:	01		
DATE:	21/07/2016; TIME – 2.30pm, RMS Office, Grafton. Meeting closed at 3.45		
PRESENT:	Greg Nash, RMS David Morrison, CRVC David Sutton, CRVC Judy van Gelderen, KIS/for FH		
APOLOGIES:	Brendon Johnson		

ITEM	DESCRIPTION	ACTION	COMPLETE/comments
1	Both Davids confirmed Council preference for having less open space provision than what was shown in the EIS plans/reference design.	noted	
2	Greg Nash confirmed RMS also keen to create safer streets- and to reclaim residential precinct. He said residents have voiced this as well and commented on this in the EIS.	noted	
3	Greg Nash confirmed the need to provide skink habitat and he suggested adding areas within new blocks with restricted title.	KIS provide plan	JvG
4	David Sutton confirmed the SEPTED needs to be functional, with easy to maintain grass areas and planted beds. He said he preferred no feature planting beds in the Greaves Street precinct area.	noted	JvG
5	South Grafton- Greg Nash mentioned that Tf NSW would be providing funds for the Rail turntable heritage interpretation where the rail line used to go to the ferries	RMS	Refer HIP
6	Greg also said he would like to see a viewing area each side of the river.	FH/noted	Refer HIP- this has been recommended
7	Judy van Gelderen presented the revised landscape plan, indicating the following changes, that were agreed with all present: 1. Deleting the SUP that went up and down the bank; and substituting with a path running on level ground form Greaves st to meet Pound Street, inside the RMS property boundary. (following discussion regarding the difficulty in gaining permission from the NSW State Rail for the path to be put into their property- which would likely cause time delays to the project) 2. Retain the concept of introducing additional housing blocks, to recreate the Greaves Street housing precinct, and make a safer street, rather than having such a large area of open space. As per reference design. 3. Create a dense planted edge (east of bridge between narrowed space between bridge and building blocks) to contain the bridge and also provide TTSTS habitat with the goal to provide interpretation for it.(funds permitting. 4. Delete the path shown on FH-KIS UD plan that ran east along the river bank, from the new bridge, as that is causing problems with existing residents, and it may be 20 years before that pathway/circulation is actually realised. FH to assess operational feasibility for relocating the SW generator under the bridge and blocking it off. 5. David Sutton asked of the tall river bank planting could be reduced to clumps, to allow views through from residential areas.	KIS to prepare plan following FH inputs	Works all completed and incorporated into UDLMF
7	Judy van G requested permission to forward the planting plans from the bid to David Sutton at Council to review- to provide initial feedback, especially with regard to proposed street tree species. Plans to be submitted via FH to Greg Nash in Grafton who will then forward to Council.	JvG/RMS	To be undertaken by FH
8	Judy van G presented the South Grafton landscape plan, and mentioned the constraints with services.	noted	
9	David Sutton asked if RMS could consider aerial bunding to allow more street trees.as has been done in other areas of Grafton.	RMS?	
10	The car park along Pound street was discussed, (numbers still required) along with the proposed development block to the south of Pound Street- access will be required off Clarence Street.	noted	

Table A-2 Meeting Minutes - KI Studio

Meeting:	Meeting with Grafton Ngerrie LALC to discuss induction training, Construction Heritage Management Plan (CHMP), Heritage Interpretation Plan (HIP) and Aboriginal participation
Project	Additional Crossing of the Clarence River at Grafton
Date & time:	Thursday 21 July 2016, 1:40pm – 3:30pm.
Location:	RMS Regional Office, 76 Victoria Street Grafton NSW 2460, The Bruxner Tender Room – Level 2
Minute taker:	Rebekah Byrne
Attendees:	Grafton Ngerrie LALC: Brett Tibbet (BT). Fulton Hogan (FH): Rebekah Byrne (RB), Irina Kliger (IK), Brendon Johnson (BJ), Matthew Inkster (MI). kiStudio: Judy van Gelderen (JV) RMS: Greg Nash (GN), Scott Lawrence (SL)
Distribution:	Above, Karen Williams (FH), John O'Donnell (RMS), Jason Sheehan (RMS), Roger Santos (RS), Sam Leigh (FH)

Discussion item	Action by
1. Induction training	
1.1 IK explained the content of the four proposed heritage induction slides (Attachment 1), including no-go areas, the incident and emergency flowchart, signage and stop work processes. IK noted that the cultural heritage induction will form part of the overall environmental induction that runs for approximately 3 hours. Inductions are typically carried out 3 times per week commencing at 6am. Fulton Hogan provided BT with a hardcopy of the four induction slides.	Note
1.2 BT advised that there is quite a bit of heritage on the south side. When the EIS process first began, Brett said that 3 stipulations came out from the initial members meeting: <ol style="list-style-type: none"> 1) Erection of a human-proof fence to prevent access to the Golden Eel site 2) Interpretative signage to promote the importance of the Golden Eel site 3) Involvement of Aboriginal Site Officers. BT acknowledged that the fence has been installed. RB advised that interpretative signage would be covered in the HIP. BT advised that John O'Donnell advised him that there would be no Aboriginal Site Officers on the Project. BT said he would have to go back to the members meeting to advise them of the same.	Note
1.3 BT advised that the workers need to know what scarred trees are. Don't include photos of the actual grinding stones at the site in the induction training.	Note
1.4 IK explained that Fulton Hogan has "Green rules" and one of these is – no work outside the project boundary. The project boundary will be clearly delineated.	Note
1.5 BT advised that the main concern is about <i>machinery</i> in the vicinity of the grinding stones.	Note
1.6 BT asked about the possibility of Grafton Ngerrie LALC having some kind of involvement in induction training. IK advised that induction training is carried out 3 times per week at 6am. It was agreed that a one off 'Train the Trainer' session would be undertaken between the relevant FH personnel (e.g. Environmental Manager, Environmental Officer) and a member of Grafton Ngerrie LALC to ensure that the person delivering the induction is aware of all the issues and culturally sensitive information is managed appropriately. FH will organise this with Grafton Ngerrie LALC once the Project Environmental Manager starts working on the project.	FH
2. CHMP (Revision 2)	
2.1 The CHMP was sent to BT for review and comment on 15/07/2016. The CHMP focuses on the sites within 200m of the project, including Carr's Creek campsite, the Golden Eel, a scarred tree and grinding stones. Key mitigation measures are exclusion fencing, induction training, unexpected finds procedure, the Heritage Interpretation Plan and pedestrian-proof fencing. BT advised that he would take the CHMP to the members during the members meeting next week. BT to advise RB of any feedback on the CHMP after the members meeting on 27/07/16.	BT
3. Heritage Interpretation Plan (HIP)	
3.1 JV advised that the HIP will be integrated with the Urban Design and Landscape Management Plan (UDLMP). The HIP will involve summarising the EIS material and preparing a sketch of the main areas where interpretation will be provided and how. In South Grafton - the Golden Eel, the old wharf. In North Grafton-two heritage houses and the Old Grafton Bridge.	Note
3.2 BT explained the significance of the Golden Eel.	Note
3.3 JV to liaise with BT about what stories can be interpreted and then he can take it to the Elders for feedback.	JV

Discussion item	Action by
4. Aboriginal participation	
4.1 MI advised that FH looks forward to meeting its obligations under the <i>NSW Government's Aboriginal Participation in Construction Guidelines</i> (1 May 2015). FH would like to meet the guidelines and also Grafton Ngerrie LALC's expectations with regard to engaging with the community. FH would be looking to get some guidance from BT as to how FH can get involved. The Project is a Category 2 project. This means a targeted project spend of 1.5% of the total estimated contract value to support Aboriginal participation. This equates to approximately \$2.15 million.	Note
4.2 BT to provide MI with a list of Aboriginal businesses in the area. BJ advised that there are not many services that FH would not need in one form or another. For example, fencing contractors; machinery – diggers, trucks; cleaning; tree planting.	BT
4.3 BT confirmed receipt of the Gerringong Upgrade heritage training video. BT advised that he would be showing it at the next members meeting. BT said he thought it was a good way to deliver the message.	Note

Attachments:

No.	Description
1	Proposed heritage induction slides

Table A-3 Meeting Minutes - Fulton Hogan



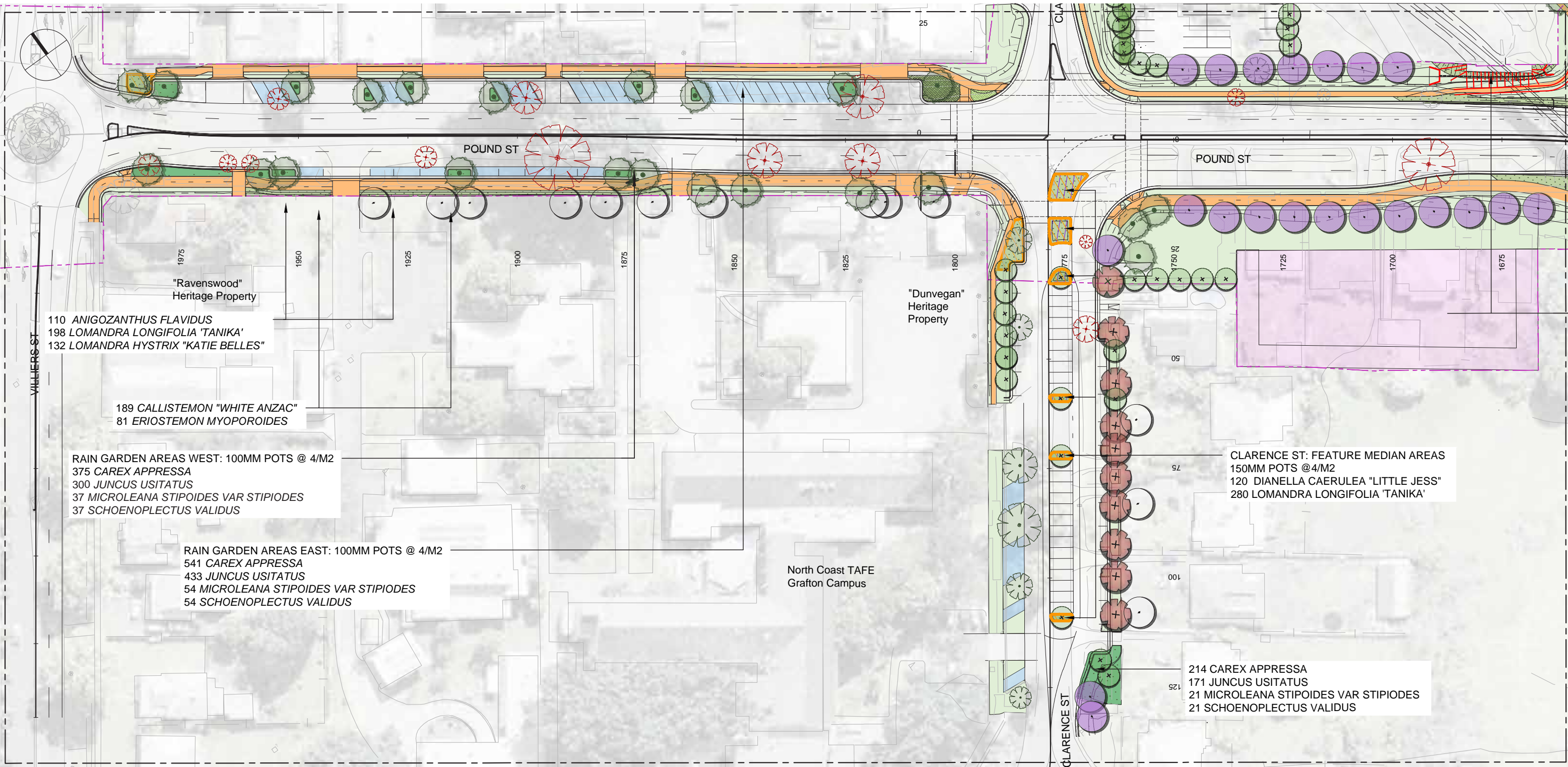
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Meeting Minutes **MM**

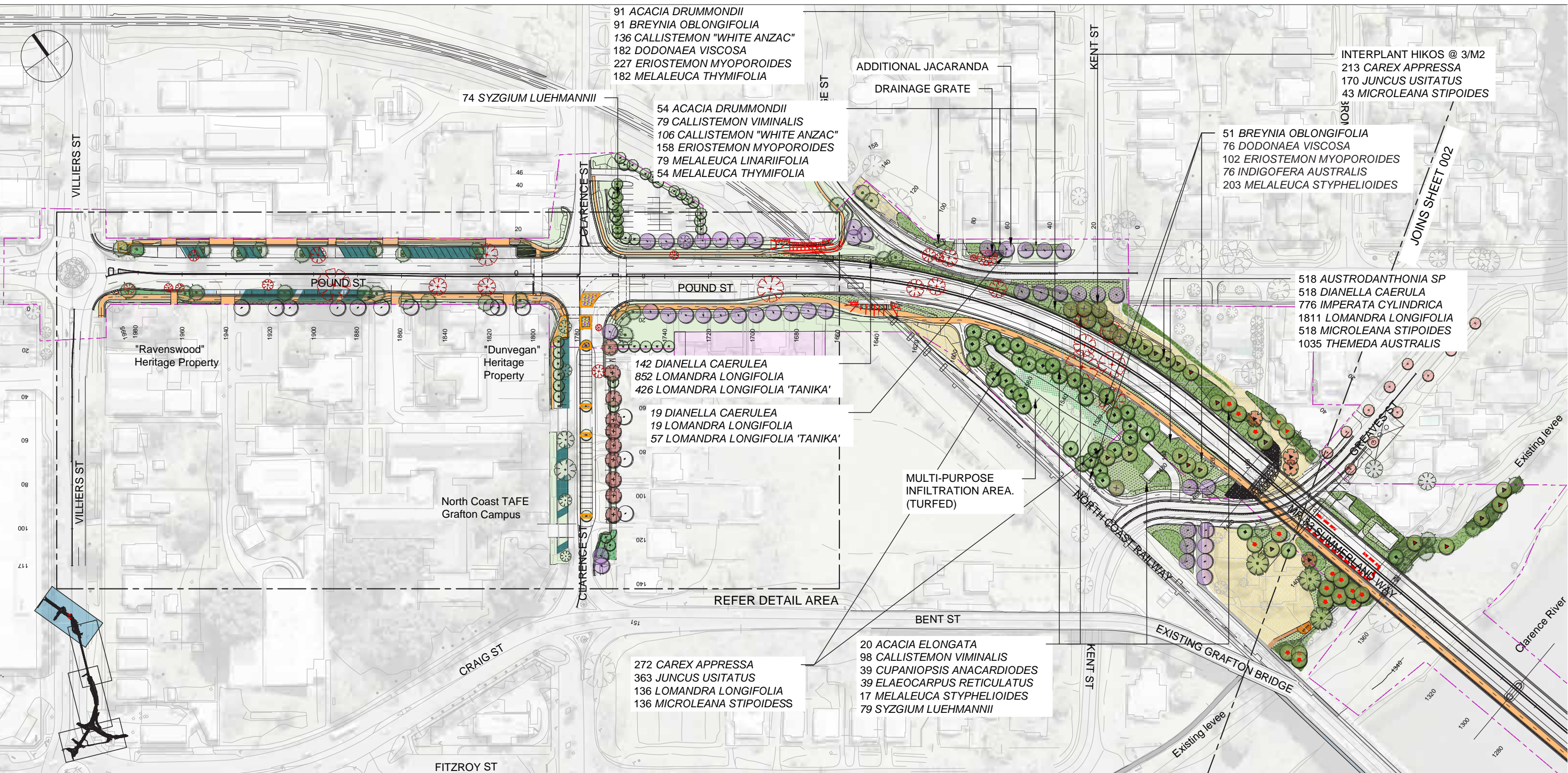
PROJECT	16-14- GRAFTON BRIDGE Urban design	WRITER'S NAME:	Judy van Gelderen
MEETING REGARDING	Page turn of the revised UDLMP and HIP (Heritage Interpretation Plan)		
MEETING No:	02		
DATE:	17 th November, 2016; TIME – 10am, Grafton Ngerrie LALC . Meeting closed at 12.00		
PRESENT:	Brett Tibett, Grafton Ngerrie LALC Judy van Gelderen, KIS/for FH Nazanine Azimpanah		
APOLOGIES:			

ITEM	DESCRIPTION	ACTION	COMPLETE/ comments
1	Judy took Brett through the latest version of the UDLMP, including the HIP, and explained that various emails had been sent requesting information regarding material to be interpreted, stories etc. Judy noted that the UDLMP will be going on public display within a week or so and FH /KIS require GLALC feedback – preferably before this is released. Confirmation of the written and graphic material noted in the HIP and acceptance or otherwise of the themes and story lines presented as concepts to be further developed in detail design.	noted	
2	Brett mentioned he had been to recent meetings regarding the Grafton Bridge to discuss the Participation Plan with Tara Freeman.	noted	
3	It was noted that Council had undertaken a previous study of Aboriginal Heritage with limited inputs from NALC. The short notice for providing inputs was not acceptable and the process needed to be improved. This study was overseen by Jason Kingsley, Deputy Mayor and CRC Aboriginal Consultative committee, of which Brett is Deputy Chair. Rosemary Laurie is Chair.	noted	
4	Judy confirmed that FH/KIS were trying to improve the process- hence the string of emails and previous attempts for meetings. The following material was confirmed as acceptable, and also any material previously published in the Biosis or EIS reports:	noted	
5	<ul style="list-style-type: none"> The Clarence river itself is the main interpretation element; The Golden Eel story, and the story of <i>Dirahnggan</i> (the wicked, mischievous witch and the water story) in relation to the Creation Story (Brett's version of this was recorded by KIS) . Brett will get approval or otherwise for releasing this information. 	Noted. JvG to include (pending Elders approval) the info in the HIP	BT
6	Brett mentioned that Wilsons Hill should be included as an Aboriginal site- it is where the battle occurred between the Golden Eel and <i>Dirahnggan</i> and it was here that the <i>Dirahnggan</i> tried to turn the water back (according to the story). It was also the place for refuge from floods. Wilsons Hill was also a place where in the massacres of 1800s the reference to "Rivers of Blood"- was the cursed point of Grafton, where bodies floated past after massacres. Some tribes say that Elizabeth Island is <i>Dirahnggan's</i> resting place. The Clarence River itself is said to connect three nations- <i>Bundalung, Gumlaynagir and Yaegl</i> .	Noted. JvG to include (pending Elders approval) the info in the HIP	BT
7		noted	BT
8	Brett confirmed that Kempsey and Coffs Harbour use the QR code for interpretation /cultural trail that has been effective and popular. Brett recalled the story of the Marriage trees- also called divorce trees. If women wanted a divorce, the elders chose a branch for the woman to cut a big trunk off. If she survived (that was rare) she could be granted a divorce. The idea was so that women stopped and thought about their decision before making it, as marriages were arranged and sanctimonious family structure. This practice continued till the 1970s.	noted	BT
9	The idea of an artist competition was discussed; Brett thought it would be a good idea	Text added into current HIP	BT
10		noted	BT/FH
11	Brett took Nazanine and Judy on site to see the Marriage Trees	noted	
12	Brett said he would take the HIP to the Elders and attempt to get comments back by Thursday, 24 th November, 2016.	BT	



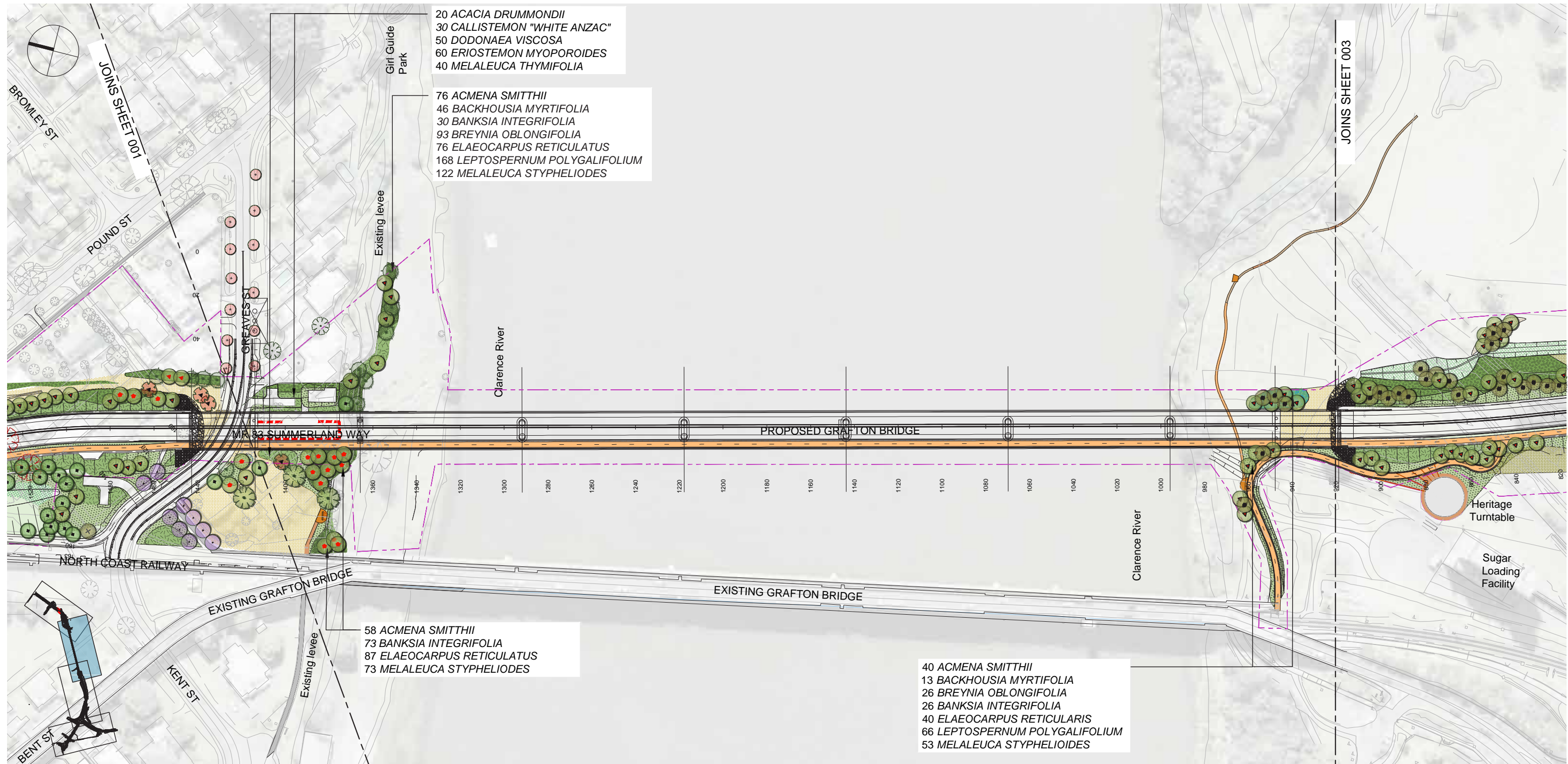
LEGEND	
	EXISTING TREES PROTECTED & RETAINED
	EXISTING TREES REMOVED
	PROPERTY BOUNDARY
	EXISTING FENCE
	FOOTPATH
	TURF 75MM DEPTH TOPSOIL
	MASS PLANTING BED - NATIVE GRASSES - 100MM TUBES PLANTED @ 4/M ² - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH
	MASS PLANTING BED - LOW SHRUBS - TUBESTOCK PLANTED @ 1X1M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH
	MASS PLANTING BED - HIGH SHRUBS - TUBESTOCK PLANTED @ 1X2M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH
	FEATURE PLANTING AREAS - PLANTING AS SHOWN - MIN, 300MM CULTIVATION - 200MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH - 150MM POT SIZES
	HYDROSEEDING - DRYLAND GRASS - 50MM DEPTH TOPSOIL
	HYDROSEEDING - PASTURE GRASS - 75MM DEPTH TOPSOIL
	MULCH ONLY - 75MM DEPTH
	RAIN GARDEN - REFER DETAIL
	INFILTRATION - REFER DETAIL
	PLANTING OVER PREVIOUS PAVEMENT
	VEGETATED SWALE INTERPLANTED - REFER DETAIL - HIKOS @ 3/m ²
	SPILL CONTAINMENT BASIN - REFER DETAIL
	SPOT PLANTING ANGOPHORA FLORIBUNDA (5L/35L)
	BRACHYCHITON ACERIFOLIUS (35L)
	CALLISTEMON VIMINALIS (25L)
	CASUARINA CUNNINGHAMIANA (5L)
	CASUARINA GLAUCA (5L/25L)
	EUCALYPTUS GRANDIS (5L)
	EUCALYPTUS MOLUCCANA (35L)
	EUCALYPTUS TERICORNIS (5L/35L)
	FICUS MACROCARPA VAR HILLII (35L)
	FLINDERSIA AUSTRALIS (5L/35L)
	JACARANDA MIMOSIFOLIA (35L)
	MELALEUCA QUINQUENERVIA (5L/35L)
	STENOCARPUS SINATUS (35L)
	SYZGIUM LEUHMANNI (25L)

Figure A-2: Planting Plans Conforming Detail - Pound and Clarence Streets (Scale 1:1000) - Sheet 2



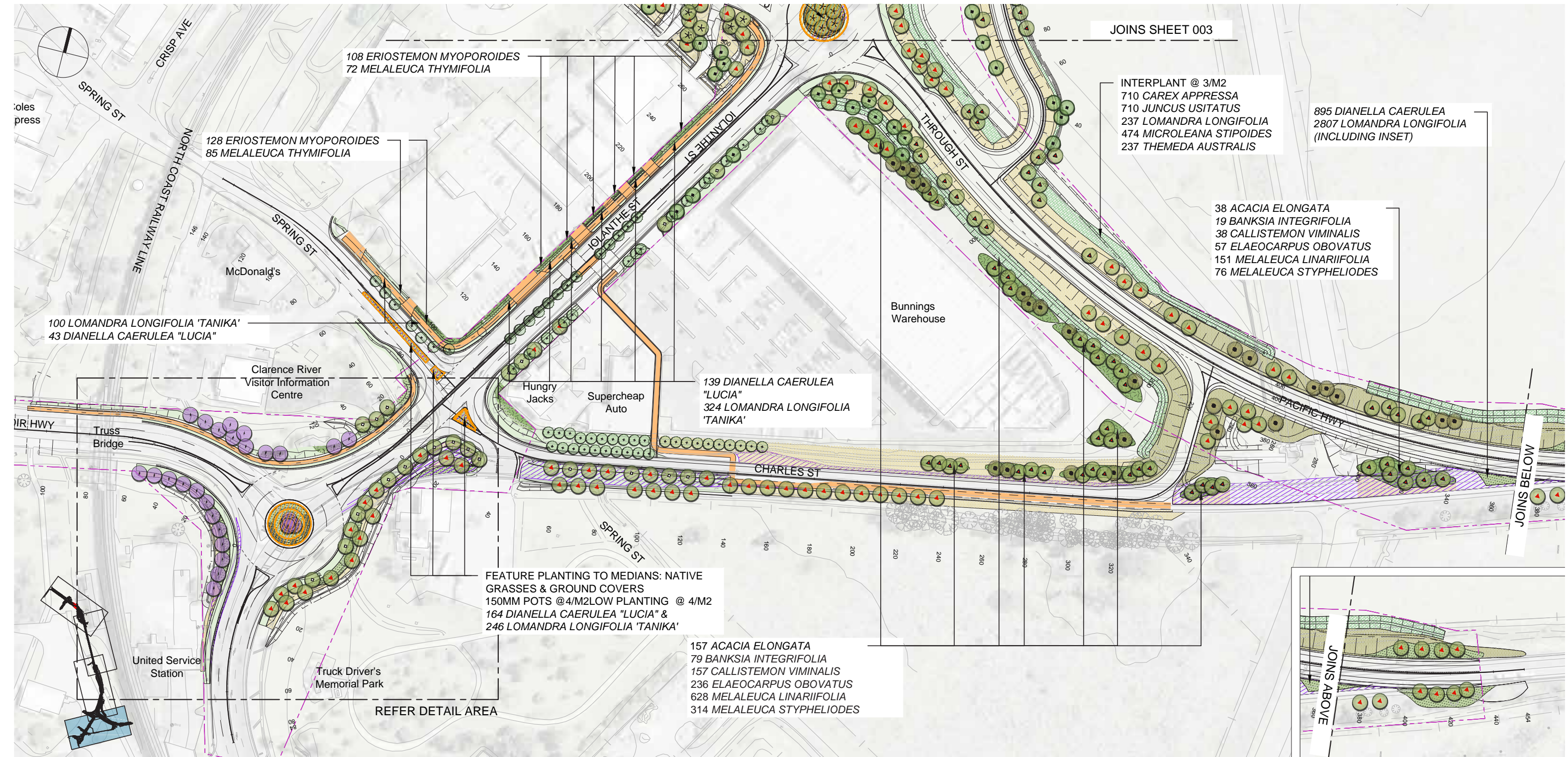
LEGEND

EXISTING ELEMENTS	PLANTING & SURFACES	MASS PLANTING BED - HIGH SHRUBS	MULCH ONLY	VEGETATED SWALE INTERPLANTED	SPOT PLANTING
EXISTING TREES PROTECTED & RETAINED	TURF - 75MM DEPTH TOPSOIL	MASS PLANTING BED - HIGH SHRUBS - TUBESTOCK PLANTED @ 1X2M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH	MULCH ONLY - 75MM DEPTH	VEGETATED SWALE INTERPLANTED - REFER DETAIL - HIKOS @ 3/m ²	ANGOPHORA FLORIBUNDA (5L/35L)
EXISTING TREES REMOVED	MASS PLANTING BED - NATIVE GRASSES - 100MM TUBES PLANTED @ 4/M ² - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH	FEATURE PLANTING AREAS - PLANTING AS SHOWN - MIN, 300MM CULTIVATION - 200MM DEPTH TOPSOILMAT - 75MM DEPTH WOODCHIP MULCH - 150MM POT SIZES	RAIN GARDEN - REFER DETAIL	SPILL CONTAINMENT BASIN - REFER DETAIL	BRACHYCHITON ACERIFOLIUS (35L)
PROPERTY BOUNDARY	MASS PLANTING BED - LOW SHRUBS - TUBESTOCK PLANTED @ 1X1M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH	HYDROSEEDING - DRYLAND GRASS - 50MM DEPTH TOPSOIL	INFILTRATION - REFER DETAIL	PLANTING OVER PREVIOUS PAVEMENT	CALLISTEMON VIMINALIS (25L)
EXISTING FENCE		HYDROSEEDING - PASTURE GRASS - 75MM DEPTH TOPSOIL			CASUARINA CUNNINGHAMIANA (5L)
FOOTPATH					CASUARINA GLAUCA (5L/25L)
					EUCALYPTUS GRANDIS (5L)
					EUCALYPTUS MOLUCCANA (35L)
					EUCALYPTUS TERICORNIS (5L/35L)
					FICUS MACROCARPA VAR HILLII (35L)
					FLINDERSIA AUSTRALIS (5L/35L)
					JACARANDA MIMOSIFOLIA (35L)
					MELALEUCA QUINQUENERVIA (5L/35L)
					STENOCARPUS SINATUS (35L)
					SYZGIUM LEUHMANNI (25L)

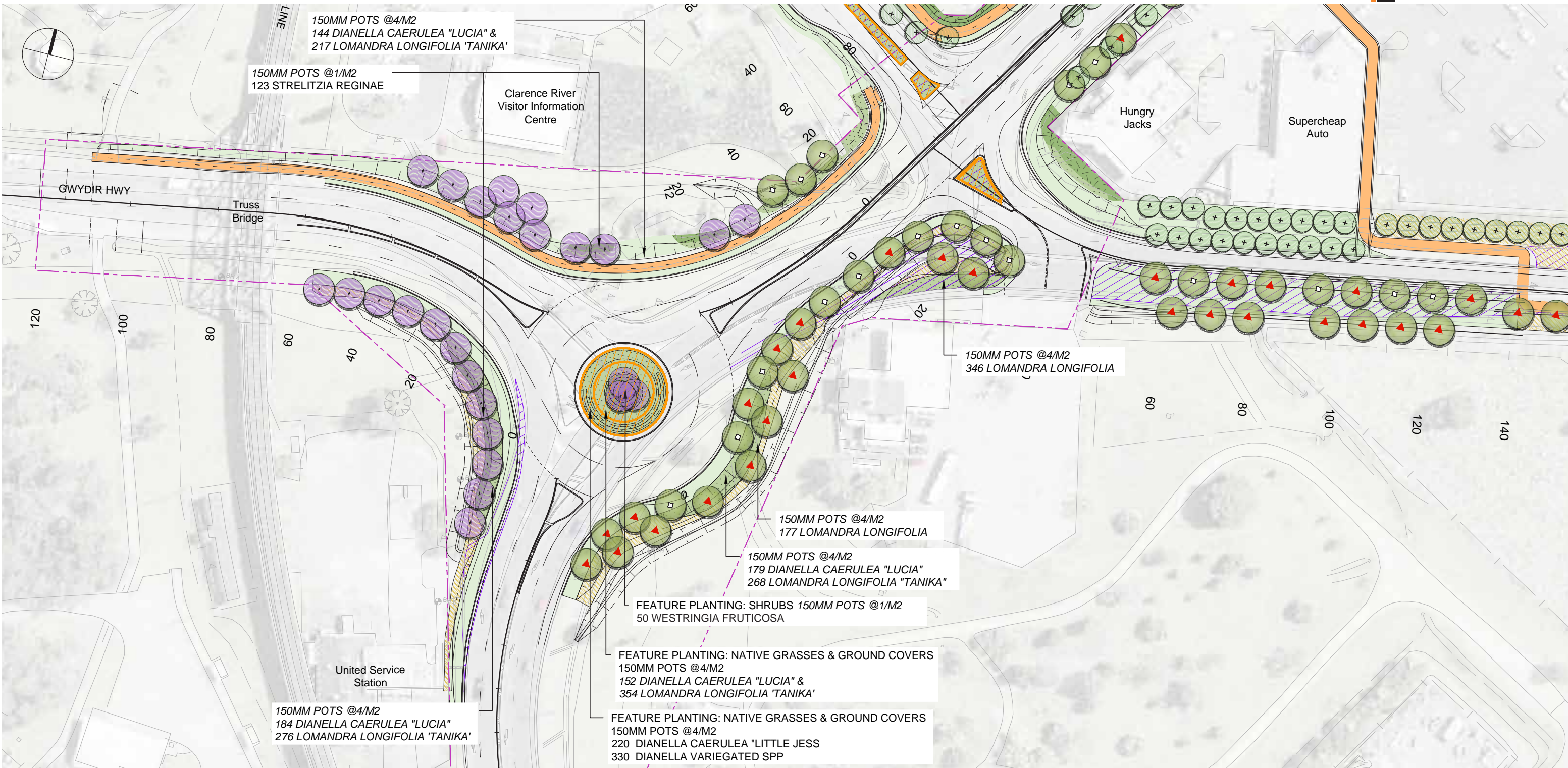


LEGEND

<p>EXISTING ELEMENTS</p> <ul style="list-style-type: none"> EXISTING TREES PROTECTED & RETAINED EXISTING TREES REMOVED PROPERTY BOUNDARY EXISTING FENCE FOOTPATH 	<p>PLANTING & SURFACES</p> <ul style="list-style-type: none"> TURF 75MM DEPTH TOPSOIL MASS PLANTING BED - NATIVE GRASSES - 100MM TUBES PLANTED @ 4/M² - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH MASS PLANTING BED - LOW SHRUBS - TUBESTOCK PLANTED @ 1X1M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH 	<ul style="list-style-type: none"> MASS PLANTING BED - HIGH SHRUBS - TUBESTOCK PLANTED @ 1X2M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH FEATURE PLANTING AREAS - PLANTING AS SHOWN - MIN, 300MM CULTIVATION - 200MM DEPTH TOPSOILMAT - 75MM DEPTH WOODCHIP MULCH - 150MM POT SIZES HYDROSEEDING - DRYLAND GRASS - 50MM DEPTH TOPSOIL HYDROSEEDING - PASTURE GRASS - 75MM DEPTH TOPSOIL 	<ul style="list-style-type: none"> MULCH ONLY - 75MM DEPTH RAIN GARDEN - REFER DETAIL INFILTRATION - REFER DETAIL PLANTING OVER PREVIOUS PAVEMENT 	<ul style="list-style-type: none"> VEGETATED SWALE INTERPLANTED - REFER DETAIL - HIKOS @ 3/m² SPILL CONTAINMENT BASIN - REFER DETAIL 	<p>SPOT PLANTING</p> <ul style="list-style-type: none"> <i>ANGOPHORA FLORIBUNDA</i> (5L/35L) <i>BRACHYCHITON ACERIFOLIUS</i> (35L) <i>CALLISTEMON VIMINALIS</i> (25L) <i>CASUARINA CUNNINGHAMIANA</i> (5L) <i>CASUARINA GLAUCA</i> (5L/25L) <i>EUCALYPTUS GRANDIS</i> (5L) <i>EUCALYPTUS MOLUCCANA</i> (35L) <i>EUCALYPTUS TERETICORNIS</i> (5L/35L) <i>FICUS MACROCARPA VAR HILLII</i> (35L) <i>FLINDERSIA AUSTRALIS</i> (5L/35L) <i>JACARANDA MIMOSIFOLIA</i> (35L) <i>MELALEUCA QUINQUENERVIA</i> (5L/35L) <i>STENOCARPUS SINATUS</i> (35L) <i>SYZGIUM LEUHMANNI</i> (25L)
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LEGEND		EXISTING ELEMENTS		PLANTING & SURFACES		SPOT PLANTING	
	EXISTING TREES PROTECTED & RETAINED		TURF 75MM DEPTH TOPSOIL		EXISTING TREES REMOVED		ANGOPHORA FLORIBUNDA (5L/35L)
	PROPERTY BOUNDARY		MASS PLANTING BED - NATIVE GRASSES - 100MM TUBES PLANTED @ 4/M ² - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH		MULCH ONLY - 75MM DEPTH		BRACHYCHITON ACERIFOLIUS (35L)
	EXISTING FENCE		FEATURE PLANTING AREAS - PLANTING AS SHOWN - MIN, 300MM CULTIVATION - 200MM DEPTH TOPSOIL/MAT - 75MM DEPTH WOODCHIP MULCH - 150MM POT SIZES		RAIN GARDEN - REFER DETAIL		CALLISTEMON VIMINALIS (25L)
	FOOTPATH		HYDROSEEDING - DRYLAND GRASS - 50MM DEPTH TOPSOIL		INFILTRATION - REFER DETAIL		CASUARINA CUNNINGHAMIANA (5L)
			HYDROSEEDING - PASTURE GRASS - 75MM DEPTH TOPSOIL		PLANTING OVER PREVIOUS PAVEMENT		CASUARINA GLAUCA (5L/25L)
					VEGETATED SWALE INTERPLANTED - REFER DETAIL - HIKOS @ 3/m ²		EUCALYPTUS GRANDIS (5L)
					SPILL CONTAINMENT BASIN - REFER DETAIL		EUCALYPTUS MOLUCCANA (35L)
							EUCALYPTUS TERETICORNIS (5L/35L)
							FICUS MACROCARPA VAR HILLII (35L)
							FLINDERSIA AUSTRALIS (5L/35L)
							JACARANDA MIMOSIFOLIA (35L)
							MELALEUCA QUINQUENERVIA (5L/35L)
							STENOCARPUS SINATUS (35L)
							SYZGIUM LEUHMANNI (25L)



LEGEND

<p>EXISTING ELEMENTS</p> <ul style="list-style-type: none"> EXISTING TREES PROTECTED & RETAINED EXISTING TREES REMOVED PROPERTY BOUNDARY EXISTING FENCE FOOTPATH 	<p>PLANTING & SURFACES</p> <ul style="list-style-type: none"> TURF 75MM DEPTH TOPSOIL MASS PLANTING BED - NATIVE GRASSES - 100MM TUBES PLANTED @ 4/M² - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH MASS PLANTING BED - LOW SHRUBS - TUBESTOCK PLANTED @ 1X1M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH 	<ul style="list-style-type: none"> MASS PLANTING BED - HIGH SHRUBS - TUBESTOCK PLANTED @ 1X2M - 150MM DEPTH TOPSOIL - 75MM DEPTH WOODCHIP MULCH FEATURE PLANTING AREAS - PLANTING AS SHOWN - MIN, 300MM CULTIVATION - 200MM DEPTH TOPSOILMAT - 75MM DEPTH WOODCHIP MULCH - 150MM POT SIZES HYDROSEEDING - DRYLAND GRASS - 50MM DEPTH TOPSOIL HYDROSEEDING - PASTURE GRASS - 75MM DEPTH TOPSOIL 	<ul style="list-style-type: none"> MULCH ONLY - 75MM DEPTH RAIN GARDEN - REFER DETAIL INFILTRATION - REFER DETAIL PLANTING OVER PREVIOUS PAVEMENT 	<ul style="list-style-type: none"> VEGETATED SWALE INTERPLANTED - REFER DETAIL - HIKOS @ 3/m² SPILL CONTAINMENT BASIN - REFER DETAIL 	<p>SPOT PLANTING</p> <ul style="list-style-type: none"> ANGOPHORA FLORIBUNDA (5L/35L) BRACHYCHITON ACERIFOLIUS (35L) CALLISTEMON VIMINALIS (25L) CASUARINA CUNNINGHAMIANA (5L) CASUARINA GLAUCA (5L/25L) EUCALYPTUS GRANDIS (5L) EUCALYPTUS MOLUCCANA (35L) EUCALYPTUS TERETICORNIS (5L/35L) FICUS MACROCARPA VAR HILLII (35L) FLINDERSIA AUSTRALIS (5L/35L) JACARANDA MIMOSIFOLIA (35L) MELALEUCA QUINQUENERVIA (5L/35L) STENOCARPUS SINATUS (35L) SYZGIUM LEUHMANNI (25L)
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Appendix C: Structural Maintenance Diary

Clarence River Bridge

Asset Element	Asset sub-item	Specific Durability Requirements	Inspection Regime	Maintenance Activities
Bored Piles	Structures	Concrete mix for Exposure Classification, B2	Detailed Inspection of representative sample number after each moderate seismic that may have resulted in high loading of the piles	Not accessible for maintenance.
Abutments	Structures	Concrete mix for exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress and damage and movement. Also look for signs of subsidence in approach slab and damage to the expansion joint.
Piers	Structures	Concrete mix for Exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Pile cap/ ground beam	Structures	Concrete mix for Exposure Classification B2	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Pile cap skirts	Structures	Concrete mix for Exposure Classification C	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Wingwalls	Structures	Concrete mix for Exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Bearings	Non-reinforced elastomeric bearing strips	-	Visual inspection each 5 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Check for excessive movement compared to the design drawings. Assume replacement interval of 40 years.
	Stainless steel attachment plates	Stainless steel Grade 316	Visual inspection each 2 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Clean surface dirt from metal surface, assume 10 years max (frequency dependant on dirt).
	Pot bearings	Stainless steel Grade 316 components for all pot bearings	Visual inspection every 2 years. Detailed Inspection every 10 years, or after each moderate seismic event.	Inspect for evidence of squeezing out of the gaskets or other sliding surfaces within the bearing. Clean surface dirt from metal surface, assume 10 years max (frequency dependant on dirt).
	Mortar pad	-	Visual inspection each 2 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Inspect for evidence of cracks or deterioration at the mortar pads.
Precast girders	Structures	Concrete mix for Exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress and damage. Clean surface i.e. dirt build-up of debris (from flooding), frequency dependant on dirt build up (if any). Assume replacement interval of 100 years.
Deck slab	General	Concrete mix for exposure	Visual inspection each 1 year.	Check Concrete and Asphalt wearing surface for

Table A-5 Structural Maintenance Diary - Clarence Bridge - 1

Asset Element	Asset sub-item	Specific Durability Requirements	Inspection Regime	Maintenance Activities
		Classification B1		evidence of distress and damage. Detailed inspection if cracking is evident.
Approach slab	General	Concrete mix for exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress and damage and movement. Check for signs of subsidence in approach slab and damage to the expansion joint.
Deck expansion joints	Fingerplate joint	Bridge joints	Visual inspection, initially on a quarterly basis. Assess required frequency after 1st year.	Clean joints to ensure no dirt build up, moss, or vegetation impedes function (likely to be only for part length). Assume replacement of joint membrane every 10 years
	Sealant		Visual inspection each 1 year.	Check for failure of deck and adjoining surface. Assume replacement of sealant every 15 years or as necessary (will depend on traffic load and numbers of vehicles).
Bridge barrier – concrete parapet	General	Concrete mix for exposure Classification B1	Visual inspection each 1 year.	Check for minor collision damage, if any. Repair damage as required to maintain integrity of reinforcement and structure. Assume replacement of joint sealant every 20 years.
Bridge Barrier – steel traffic railing	General	Bridge traffic barriers	Visual inspection each 1 year.	Check for minor collision damage, if any. Repair damage as required to maintain integrity of reinforcement and structure.
Bridge deck waterproof membrane and wearing surface	Surface coating systems	Water proof membrane wearing course	Visual inspection each 1 year. Detailed Assessment for correction maintenance every 5 years.	Check for wear each year. Assume replacement interval of 10 years.
Road barrier – concrete parapet	General	Concrete mix for exposure Classification B1	Visual inspection each 1 year.	Check for minor collision damage, if any. Repair damage as required to maintain integrity of reinforcement and structure. Assume replacement interval of 20 years.
Maintenance access stairs	General		Visual inspection each 1 year.	Check for minor corrosion and/or damage, if any. Repair damage as required to maintain integrity of structure.
Scour protection	General	Abutment stability	Visual inspection each 1 year. Detailed Assessment for correction maintenance every 5 years.	Check for loose and missing rocks each year.
FRC Drainage pipe	General		Visual inspection each 1 year.	Check for minor corrosion and/or damage, if any. Repair damage as required to maintain integrity of structure.
Anti-graffiti coating			Visual inspection each 1 year.	Check for wear and assume replacement every 12 years.

Table A-6 Structural Maintenance Diary - Clarence Bridge - 2

Pound Street Bridge

Asset Element	Asset sub-item	Specific Durability Requirements	Inspection Regime	Maintenance Activities
Bored Piles	Structures	Concrete mix for Exposure Classification, B2	Detailed Inspection of representative sample number after each moderate seismic that may have resulted in high loading of the piles	Not accessible for maintenance.
Existing Abutment and Pier	Structures	N/A	Visual inspection each 1 year.	Check for signs of concrete distress and damage and movement. Also look for signs of subsidence in approach slab.
Piers / Columns	Structures	Concrete mix for Exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Ground Beam/Pilecap	Structures	Concrete mix for Exposure Classification B2	Visual inspection each 1 year.	Check for signs of concrete distress or damage.
Elastomeric Bearings	Non-reinforced elastomeric bearing strips	-	Visual inspection each 5 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Check for excessive movement compared to the design drawings. Assume replacement interval of 40 years.
	Stainless steel attachment plates	Stainless steel Grade 316	Visual inspection each 2 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Clean surface dirt from metal surface, assume 10 years max (frequency dependant on dirt).
	Pot bearings	Stainless steel Grade 316 components for all pot bearings	Visual inspection every 2 years. Detailed Inspection every 10 years, or after each moderate seismic event.	Inspect for evidence of squeezing out of the gaskets or other sliding surfaces within the bearing. Clean surface dirt from metal surface, assume 10 years max (frequency dependant on dirt).
	Mortar pad	-	Visual inspection each 2 year. Detailed Inspection every 10 years, or after each moderate seismic event.	Inspect for evidence of cracks or deterioration at the mortar pads.
Ballast Trough Slab	General	Concrete mix for exposure Classification B1	Visual inspection of soffit and edge kerbs each 2 year.	Check Concrete surface under ballast for evidence of distress and damage every 10 years during a scheduled track possession in 3 locations. Detailed inspection if cracking is evident.
Ballast	General		Visual inspection each 1 year.	As per ARTC requirements.

Table A-7 Structural Maintenance Diary - Pound Street Bridge - 1

Asset Element	Asset sub-item	Specific Durability Requirements	Inspection Regime	Maintenance Activities
Structural Steel Truss main members	Painted steelwork	Painted steel to B220	Visual Inspection each 1 year Detailed Inspection every 5 years, or after each moderate seismic event.	Clean surface dirt and debris from metal surfaces. Patch paint where protective coating is broken down. Repaint every 25 years. Check steelwork for evidence of distress and damage. Detailed inspection if cracking is evident.
Structural Steel Truss stiffeners, bracing and connections	Painted steelwork	Painted steel to B220	Visual Inspection each 1 year Detailed Inspection every 5 years, or after each moderate seismic event.	Clean surface dirt and debris from metal surfaces. Patch paint where protective coating is broken down. Repaint every 25 years. Check steelwork for evidence of distress and damage. Detailed inspection if cracking is evident.
Approach slab	General	Concrete mix for exposure Classification B1	Visual inspection each 1 year.	Check for signs of concrete distress and damage and movement. Check for signs of subsidence in approach slab and damage to the joint.
Anti-graffiti coating			Visual inspection each 1 year.	Check for wear and assume replacement every 12 years.

Table A-8 Structural Maintenance Diary - Pound Street Bridge - 2

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