Supporting documentation – spreadsheet printouts and summaries

Detailed direct cost estimates – Berry Bridge, northern route extract

52	EE formula - =(10000) Allowance temporary materials	MISC MAT	Item	10,000.000	1.000		10,000			10,000
53	EE formula - =st(44:48,#QTY) m2				346.419		268,128			268,128
54										
55	D. Completion of superstructure									
56	1. Insitu deck									
57	EE formula - =(#LQ13*#LQ14*0.2) m3	CONC DECK	m³	154.800	1,150.000				178,020	178,020
58	2. Edge barriers									
59	EE formula - =roundup(#LQ13*2/6) m Supplied in 6m lengths	PC PARAPETS	each	20.000	9,600.000				192,000	192,000
60	3. Railings									
61	EE formula - =(#LQ13*2) m	BRIDGE BARRIER	m	120.000	500.000		60,000			60,000
62	4. Expansion joints									
63	EE formula - =(13*2*2) m	EXPANSION JOINT	m	52.000	600.000				31,200	31,200
64	5. Approach slabs									
65	EE formula - =(2*13*0.3) m3	CONC RUN ON SLAB	m³	7.800	1,265.000				9,867	9,867
66	6. SAMI seal									
67	EE formula - =(#LQ13*13.0) m2	A BRIDGE SAMI	m²	780.000	10.000				7,800	7,800
68	7. Wearing coarse 75mm thk									
69	EE formula - =(#LQ13*13.0*0.075*2.4) tonne	A BRIDGE AC10 OG	tonne	140.400	220.000				30,888	30,888
70	8. Stone pitching to abutment embankments									
71	EE formula - =(285*2*0.5*2.4*1.2) tonne Allowed 285m2 per abutment, 500mm thk, 2.4tonne/m3. 20% waste	QAR STONE PITCHING	tonne	820.800	40.000		32,832			32,832
72	EE formula - =(285*2) m2	STONE PITCHING	m²	570.000	100.000				57,000	57,000
73	EE formula - =((285*2)/50/5) m2wk Allowed 50m2 per day	SCAFFOLD	m2wk	2.280	15.000		34			34
74	9. End walls									
75	EE formula - =(6*4*0.5) m3	CONC ABUTMENT	m³	12.000	1,500.000				18,000	18,000
76	10. Backfill at abutments									
77	EE formula - =(2*13*4*2.8*0.5) m3	EWKS BF HPLACE	m³	145.600	45.640	4,105	21	2,418	102	6,645
78	11. Safety screens									
79	EE formula - =(#LQ13*2.0*2) m Allowed 2.0m height	SAFETY MESH	m²	240.000	250.000				60,000	60,000
80	12. Deck stormwater drainage - Both sides									
81	EE formula - =(#LQ13*2) m Allowed 375mm UPVC	BRIDGE DRAIN 375	m	120.000	350.000				42,000	42,000
82	EE formula - =(2*5000) Allowance connections	MISC SCON	Item	10,000.000	1.000				10,000	10,000
83	EE formula - =st(55:82,#QTY) m2				951.274	4,105	92,887	2,418	636,877	736,286
84										
85	Estimated Duration									
86	EE formula - =(35*3) Days Allowed 35days per span, Assume single crew			105.000						
					3,110.508	**24,909**	**665,738**	**435,927**	**1,280,959**	**2,407,533**

Line No 85	**Berry Bridge Viaduct Chg 16065**									
Item No 10950			**m2**	**15,795.000**	**Contributing**					
1	10950 Berry Bridge Viaduct Chg 16065									
2	Spec: Nil									
3	Dwg: 60021933-DRG-10-02-BR-0100 to 60021933-DRG-10-02-BR-0801									
4	Site visit photo: Nil									

5	NOTE: North & South bound carraigeways of viaduct have different lengths 610m & 590m respectively									
6	NOTE: Assume bored pile required 1:1 embedded vs retainied, end bearing on rock below NSL 3m rock socket									
7	NOTE: Assume piling equipment of pile rig, 50t crawler crane, 20t rough terrain crane & bobcat									
8	NOTE: Allow 1No crane mobilisation to site per bridge span. Allow a further 50% mobilisation costs for move on site between piers eg. 2No setups per span									
9	NOTE: Assume Girders 1.5m depth, Supporting Deck 0.3m depth, Parapet Wall 0.8m high & Spans of 32m									
10	NOTE: RSW will be required at abutments - refer to item 10980									
11	NOTE: Assumed currently that precast beams will be precast On Site. Risk exists for Off Site precast operation by subcontractor									
12										
13	EE formula - =(20400-7600) m Total corridor length			12,800.000						
14	EE formula - =(((16360-15750)+(16360-15770))/2) m Length Viaduct			600.000						
15	EE formula - =(26.0) m Viaduct deck width			26.000						
16	EE formula - =(18+19) each No spans			37.000						
17										
18	A. Piling									
19	EE formula - =(7*2*(6+6+3)) m Length of 900mm dia bored piles @ 15m/each			210.000						
20	EE formula - =((18+19)*(6+3)*2) m Length of 1200mm dia bored piles @ 6m/each			666.000						
21	EE formula - =((600*10.0)+(19*26)) m2 Allowed for single side of bridge, width 10m	TEMPROAD	m²	6,494.000	10.616	6,988	52,016	9,933		68,937
22	EE formula - =(18+19) each Allowed 15x15m	ACCESS PAD	each	37.000	30,000.000				1,110,000	1,110,000
23	EE formula - =(#LQ19) m	PILE 900	m	210.000	900.000				189,000	189,000
24	EE formula - =(#LQ20) m	PILE 1200	m	666.000	1,200.000				799,200	799,200
25	EE formula - =((#LQ23*0.221)+(#LQ24*0.295)) tonne Allowed 221kg/m for 900mm dia and 295kg/m for 1200mm dia piles respectively	PILE CASING PERM	tonne	242.880	3,500.000		850,080			850,080
26	EE formula - =st(18:24,#QTY) m2				137.204	6,988	52,016	9,933	2,098,200	2,167,137
27										
28	B. Substructure									
29	1. Abutments									
30	EE formula - =(((23*1.5*1.5)+(23*1.5*0.3)+(1.5*1.2*0.3*2)+(15*0.3*2))*2) m3	CONC ABUTMENT	m³	144.360	1,500.000				216,540	216,540
31	2. Pile caps - Amended design N/A									
32	EE formula - =((18+19)*(5*5*1.5)) m3 Detailed excavation	EWKS DETAILED	m³	1,387.500	46.504	33,009		31,516		64,525
33	EE formula - =((18+19)*(3.5*3.5*1.5)) m3	CONC PILE CAP	m³	679.875	1,500.000				1,019,813	1,019,813
34	EE formula - =(#LQ32-#LQ33) m3	EWKS BF MACHINE10	m³	707.625	42.836	13,073	318	16,920		30,312
35	3. Piers, 3No 120mm dia									
36	EE formula - =((18+19)*(3*1.130*4.5)) m3 Allowed 3No @ 1.130m3/m, typically 4.5m height	CONC PIERS	m³	564.435	1,750.000				987,761	987,761
37	4. Headstocks									
38	EE formula - =((18+19)*(17.25*1.5)) m3	CONC HEADSTOCKS	m³	957.375	2,500.000				2,393,438	2,393,438
39	5. Diaphragms, end blocks									

40	EE formula - =(((25*1.5)-(13*1.276))*1*41) m3	CONC DIAPHRAGMS	m³	857.392	3,300.000				2,829,394	2,829,394
41	6. Bearings									
42	EE formula - =((18+19)*(6*2)) each	BRIDGE BEARING ELASTO	each	444.000	1,500.000		666,000			666,000
43	EE formula - =(#LQ42) each	BRIDGE BEARING ELASTO INS	each	444.000	3,771.249	232,546	1,425,240	16,648		1,674,435
44	EE formula - =st(28:41,#QTY) m2				406.909				6,427,132	6,427,132
45										
46	C. Deck beams									
47	1. Supply beams									
48	EE formula - =(#LQ14*12*0.581) m3 Allowed 1500mm depth Super Tee @ 0.581m3/m	BRIDGE PSC BEAMS	m³	4,183.200	1,600.000		6,693,120			6,693,120
49	EE formula - =(#LQ48) m3 Onsite precast facility	BRIDGE OS BEAMS	m³	4,183.200	1,520.000		6,358,464			6,358,464
50	2. Install beams									
51	EE formula - =(20*1.5) each	CR 400T MOB	each	30.000	21,000.000			630,000		630,000
52	EE formula - =(roundup(222/5)*10) hr Allowed to install 5No per day in 10hr	CR 400T	hr	450.000	1,100.000			495,000		495,000
53	EE formula - =(#LQ52*5) hr Allowed 5No men, 10hr per day	LAB RIGGER	hr	2,250.000	58.950	132,638				132,638
54	EE formula - =(4*10*(18+19)) hr Allow 4Men @ 10hr per span install temporary handrails	LAB CIVIL	hr	1,480.000	55.510	82,155				82,155
55	EE formula - =(#LQ54/40) week temporary handrails, 40wk per week	BOOMLIFT	week	37.000	1,278.000			47,286		47,286
56	EE formula - =(100000) Allowance temporary materials	MISC MAT	Item	100,000.000	1.000		100,000			100,000
57	EE formula - =st(46:50,#QTY) m2				402.562		6,358,464			6,358,464
58										
59	D. Completion of superstructure									
60	1. Insitu deck									
61	EE formula - =(#LQ14*26*0.2) m3	CONC DECK	m³	3,120.000	1,150.000				3,588,000	3,588,000
62	2. Central median barriers									
63	EE formula - =roundup(#LQ14*2/6) m Supplied in 6m lengths	PC MEDIAN	each	200.000	10,500.000				2,100,000	2,100,000
64	3. Edge barriers									
65	EE formula - =roundup(#LQ14*2/6) m Supplied in 6m lengths	PC PARAPETS	each	200.000	9,600.000				1,920,000	1,920,000
66	4. Railings									
67	EE formula - =(#LQ14*2) m	BRIDGE BARRIER	m	1,200.000	500.000		600,000			600,000
68	5. Expansion joints									
69	EE formula - =(13*2*2) m	EXPANSION JOINT	m	52.000	600.000				31,200	31,200
70	6. Approach slabs									
71	EE formula - =((4*13*0.3)*2) m3	CONC RUN ON SLAB	m³	31.200	1,265.000				39,468	39,468
72	7. SAMI seal									
73	EE formula - =(#LQ14*11.5*2) m2	A BRIDGE SAMI	m²	13,800.000	10.000				138,000	138,000
74	8. Wearing coarse 75mm thk									
75	EE formula - =(#LQ14*11.5*0.075*2.4) tonne	A BRIDGE AC10 OG	tonne	1,242.000	220.000				273,240	273,240
76	9. Stone pitching to abutment embankments									
77	EE formula - =(230*2*0.5*2.4*1.2) tonne Allowed 230m2 per abutment, 500mm thk, 2.4tonne/m3. 20% waste	QAR STONE PITCHING	tonne	662.400	40.000		26,496			26,496
78	EE formula - =(230*2) m2	STONE PITCHING	m²	460.000	100.000				46,000	46,000
79	EE formula - =((230*2)/50/5) m2wk Allowed 50m2 per day	SCAFFOLD	m2wk	1.840	15.000		28			28

80	10. End walls									
81	EE formula - =(6*4*0.5) m3	CONC ABUTMENT	m³	12.000	1,500.000				18,000	18,000
82	11. Backfill at abutments									
83	EE formula - =(2*23*4*3*0.5) m3	EWKS BF HPLACE	m³	276.000	45.640	7,781	39	4,583	193	12,597
84	12. Deck stormwater drainage - Both sides									
85	EE formula - =(#LQ14*2) m Allowed 375mm UPVC	BRIDGE DRAIN 375	m	1,200.000	350.000				420,000	420,000
86	EE formula - =((18+19+2)*5000) Allowance connections	MISC SCON	Item	195,000.000	1.000				195,000	195,000
87	EE formula - =st(59:86,#QTY) m2				595.633	7,781	626,563	4,583	8,769,101	9,408,028
88										
89	Estimated Duration									
90	EE formula - =(35*20/2) Days Allowed 35days per span, Assume 2No crews			350.000						
					1,838.452	**462,108**	**10,078,363**	**1,203,451**	**17,294,434**	**29,038,355**

Line No 86	**Kangaroo Valley Road Overbridge Chg 17680**									
Item No 10960			**m2**	**1,045.000**		**Contributing**				
1	10960 - Kangaroo Valley Road Overbridge Chg 17680									
2	Spec: Nil									
3	Dwg: 60021933-DRG-10-02-BR-0100 to 60021933-DRG-10-02-BR-0801									
4	Site visit photo: Nil									
5	NOTE: Three span simply supported two lane overbridge									
6	NOTE: Assume bored pile required 1:1 embedded vs retainied, end bearing on rock below NSL 3m rock socket									
7	NOTE: Assume piling equipment of pile rig, 50t crawler crane, 20t rough terrain crane & bobcat									
8	NOTE: Allow 1No crane mobilisation to site per bridge span. Allow a further 50% mobilisation costs for move on site between piers eg. 2No setups per span									
9	NOTE: Assume Girders 1.2m depth, Supporting Deck 0.3m depth, Parapet Wall 0.8m high & Spans of 18m									
10	NOTE: Assumed currently that precast beams will be precast On Site. Risk exists for Off Site precast operation by subcontractor									
11										
12	EE formula - =(20400-7600) m Total corridor length			12,800.000						
13	EE formula - =(55) m Length bridge			55.000						
14	EE formula - =(19.0) m Deck width			19.000						
15										
16	A. Piling									
17	EE formula - =(6*2*(6+6+3)) m Length of 900mm dia bored piles @ 15m/each			180.000						
18	EE formula - =(3*(6+3)*2) m Length of 1200mm dia bored piles @ 6m/each			54.000						
19	EE formula - =(2*100*10) m2 Allowed for 100m road either side of bridge, width 10m	TEMPROAD	m²	2,000.000	10.616	2,152	16,020	3,059		21,231
20	EE formula - =(2) each Allowed 15x15m	ACCESS PAD	each	2.000	30,000.000				60,000	60,000
21	EE formula - =(#LQ17) m	PILE 900	m	180.000	900.000				162,000	162,000
22	EE formula - =(#LQ18) m	PILE 1200	m	54.000	1,200.000				64,800	64,800

Supporting documentation – spreadsheet printouts and summaries

Detailed direct cost estimates – Berry Bridge, southern route extract

58	2. Edge barriers									
59	EE formula - =roundup(#LQ13*2/6) m Supplied in 6m lengths	PC PARAPETS	each	20.000	9,600.000				192,000	192,000
60	3. Railings									
61	EE formula - =(#LQ13*2) m	BRIDGE BARRIER	m	120.000	500.000		60,000			60,000
62	4. Expansion joints									
63	EE formula - =(13*2*2) m	EXPANSION JOINT	m	52.000	600.000				31,200	31,200
64	5. Approach slabs									
65	EE formula - =(2*13*0.3) m3	CONC RUN ON SLAB	m^3	7.800	1,265.000				9,867	9,867
66	6. SAMI seal									
67	EE formula - =(#LQ13*13.0) m2	A BRIDGE SAMI	m^2	780.000	10.000				7,800	7,800
68	7. Wearing coarse 75mm thk									
69	EE formula - =(#LQ13*13.0*0.075*2.4) tonne	A BRIDGE AC10 OG	tonne	140.400	220.000				30,888	30,888
70	8. Stone pitching to abutment embankments									
71	EE formula - =(285*2*0.5*2.4*1.2) tonne Allowed 285m2 per abutment, 500mm thk, 2.4tonne/m3. 20% waste	QAR STONE PITCHING	tonne	820.800	40.000		32,832			32,832
72	EE formula - =(285*2) m2	STONE PITCHING	m^2	570.000	100.000				57,000	57,000
73	EE formula - =((285*2)/50/5) m2wk Allowed 50m2 per day	SCAFFOLD	m2wk	2.280	15.000		34			34
74	9. End walls									
75	EE formula - =(6*4*0.5) m3	CONC ABUTMENT	m^3	12.000	1,500.000				18,000	18,000
76	10. Backfill at abutments									
77	EE formula - =(2*13*4*2.8*0.5) m3	EWKS BF HPLACE	m^3	145.600	45.640	4,105	21	2,418	102	6,645
78	11. Safety screens									
79	EE formula - =(#LQ13*2.0*2) m Allowed 2.0m height	SAFETY MESH	m^2	240.000	250.000				60,000	60,000
80	12. Deck stormwater drainage - Both sides									
81	EE formula - =(#LQ13*2) m Allowed 375mm UPVC	BRIDGE DRAIN 375	m	120.000	350.000				42,000	42,000
82	EE formula - =(2*5000) Allowance connections	MISC SCON	Item	10,000.000	1.000				10,000	10,000
83	EE formula - =st(55:82,#QTY) m2				985.774	4,105	92,887	2,418	663,580	762,989
84										
85	Estimated Duration									
86	EE formula - =(35*3) Days Allowed 35days per span, Assume single crew			105.000						
					3,145.008	**24,909**	**665,738**	**435,927**	**1,307,662**	**2,434,236**

Line No 87	**Berry Bridge Viaduct Chg 16695**				
Item No 10950		**m2**	**30,888.000**	**Contributing**	

1 10950 Berry Bridge Viaduct Chg 16695
2 Spec: Nil
3 Dwg: 60021933-DRG-10-02-BR-0100 to 60021933-DRG-10-02-BR-0801
4 Site visit photo: Nil
5 NOTE: Assume North & South bound carraigeways of viaduct have same lengths 1188m
NOTE: Assume bored pile required 1:1 embedded vs retainied, end bearing on rock below NSL 3m rock socket.
6 Allow length 14m + 3m
NOTE: Assume piling equipment of pile rig, 50t crawler
7 crane, 20t rough terrain crane & bobcat

	NOTE: Allow 1No crane mobilisation to site per bridge span. Allow a further 50% mobilisation costs for move on site									
8	between piers eg. 2No setups per span									
	NOTE: Assume Girders 1.5m depth, Supporting Deck 0.3m									
9	depth, Parapet Wall 0.8m high & Spans of 33m									
	NOTE: RSW will be required at abutments - refer to item									
10	10990a									
	NOTE: Assumed currently that precast beams will be precast On Site. Risk exists for Off Site precast operation by									
11	subcontractor									
12										
13	EE formula - =(20400-7600) m Total corridor length			12,800.000						
14	EE formula - =(17288-16100) m Length Viaduct			1,188.000						
15	EE formula - =(26.0) m Viaduct deck width			26.000						
16	EE formula - =(33) each No spans			33.000						
17										
18	A. Piling									
19	EE formula - =(7*2*(14+6+3)) m Length of 900mm dia bored piles @ 15m/each			322.000						
20	EE formula - =(32*(14+3)*3) m Length of 1200mm dia bored piles @ 6m/each			1,632.000						
21	EE formula - =((1200*10.0)+(34*26)) m2 Allowed for single side of bridge, width 10m	TEMPROAD	m²	12,884.000	10.616	13,864	103,199	19,707		136,770
22	EE formula - =(33) each Allowed 15x15m	ACCESS PAD	each	33.000	30,000.000				990,000	990,000
23	EE formula - =(#LQ19) m	PILE 900	m	322.000	900.000				289,800	289,800
24	EE formula - =(#LQ20) m	PILE 1200	m	1,632.000	1,200.000				1,958,400	1,958,400
25	EE formula - =((#LQ23*0.221)+(#LQ24*0.295)) tonne Allowed 221kg/m for 900mm dia and 295kg/m for 1200mm dia piles respectively	PILE CASING PERM	tonne	552.602	3,500.000		1,934,107			1,934,107
26	EE formula - =st(18:24,#QTY) m2				109.265	13,864	103,199	19,707	3,238,200	3,374,970
27										
28	B. Substructure									
29	1. Abutments									
30	EE formula - =(((23*1.5*1.5)+(23*1.5*0.3)+(1.5*1.2*0.3*2)+(15*0.3*2))*2) m3	CONC ABUTMENT	m³	144.360	1,500.000				216,540	216,540
31	2. Pile caps - Amended design N/A									
32	EE formula - =(40*(5*5*1.5)) m3 Detailed excavation	EWKS DETAILED	m³	1,500.000	46.504	35,685		34,071		69,756
33	EE formula - =(40*(3.5*3.5*1.5)) m3	CONC PILE CAP	m³	735.000	1,500.000				1,102,500	1,102,500
34	EE formula - =(#LQ32-#LQ33) m3	EWKS BF MACHINE10	m³	765.000	42.836	14,133	344	18,292		32,770
35	3. Piers, 3No 120mm dia									
36	EE formula - =(33*(3*1.130*4.5)) m3 Allowed 3No @ 1.130m3/m, typically 4.5m height	CONC PIERS	m³	503.415	1,750.000				880,976	880,976
37	4. Headstocks									
38	EE formula - =(33*(17.25*1.5)) m3	CONC HEADSTOCKS	m³	853.875	2,500.000				2,134,688	2,134,688
39	5. Diaphragms, end blocks									
40	EE formula - =(((25*1.5)-(12*1.276))*1*34) m3	CONC DIAPHRAGMS	m³	754.392	3,300.000				2,489,494	2,489,494
41	6. Bearings									
42	EE formula - =(33*12*2) each	BRIDGE BEARING ELASTO	each	792.000	1,500.000		1,188,000			1,188,000
43	EE formula - =(#LQ42) each	BRIDGE BEARING ELASTO INS	each	792.000	3,771.249	414,812	2,542,320	29,697		2,986,830
44	EE formula - =st(28:41,#QTY) m2				185.240				5,721,697	5,721,697
45										

46	C. Deck beams									
47	1. Supply beams									
48	EE formula - =(#LQ14*12*0.581) m3 Allowed 1500mm depth Super Tee @ 0.581m3/m	BRIDGE PSC BEAMS	m³	8,282.736	1,600.000		13,252,378			13,252,378
49	EE formula - =(#LQ48) m3 Onsite precast facility	BRIDGE OS BEAMS	m³	8,282.736	1,520.000		12,589,759			12,589,759
50	2. Install beams									
51	EE formula - =(33*1.5) each	CR 400T MOB	each	49.500	21,000.000			1,039,500		1,039,500
52	EE formula - =(roundup(396/5)*10) hr Allowed to install 5No per day in 10hr	CR 400T	hr	800.000	1,100.000			880,000		880,000
53	EE formula - =(#LQ52*5) hr Allowed 5No men, 10hr per day	LAB RIGGER	hr	4,000.000	58.950	235,800				235,800
54	EE formula - =(4*10*40) hr Allow 4Men @ 10hr per span install temporary handrails	LAB CIVIL	hr	1,600.000	55.510	88,816				88,816
55	EE formula - =(#LQ54/40) week temporary handrails, 40wk per week	BOOMLIFT	week	40.000	1,278.000			51,120		51,120
56	EE formula - =(200000) Allowance temporary materials	MISC MAT	Item	200,000.000	1.000		200,000			200,000
57	EE formula - =st(46:50,#QTY) m2				407.594		12,589,759			12,589,759
58										
59	D. Completion of superstructure									
60	1. Insitu deck									
61	EE formula - =(#LQ14*26*0.2) m3	CONC DECK	m³	6,177.600	1,150.000				7,104,240	7,104,240
62	2. Central median barriers									
63	EE formula - =roundup(#LQ14*2/6) m Supplied in 6m lengths	PC MEDIAN	each	396.000	10,500.000				4,158,000	4,158,000
64	3. Edge barriers									
65	EE formula - =roundup(#LQ14*2/6) m Supplied in 6m lengths	PC PARAPETS	each	396.000	9,600.000				3,801,600	3,801,600
66	4. Railings									
67	EE formula - =(#LQ14*2) m	BRIDGE BARRIER	m	2,376.000	500.000		1,188,000			1,188,000
68	5. Expansion joints									
69	EE formula - =(13*2*2) m	EXPANSION JOINT	m	52.000	600.000				31,200	31,200
70	6. Approach slabs									
71	EE formula - =((4*13*0.3)*2) m3	CONC RUN ON SLAB	m³	31.200	1,265.000				39,468	39,468
72	7. SAMI seal									
73	EE formula - =(#LQ14*11.5*2) m2	A BRIDGE SAMI	m²	27,324.000	10.000				273,240	273,240
74	8. Wearing coarse 75mm thk									
75	EE formula - =(#LQ14*11.5*0.075*2.4) tonne	A BRIDGE AC10 OG	tonne	2,459.160	220.000				541,015	541,015
76	9. Stone pitching to abutment embankments									
77	EE formula - =(230*2*0.5*2.4*1.2) tonne Allowed 230m2 per abutment, 500mm thk, 2.4tonne/m3. 20% waste	QAR STONE PITCHING	tonne	662.400	40.000		26,496			26,496
78	EE formula - =(230*2) m2	STONE PITCHING	m²	460.000	100.000				46,000	46,000
79	EE formula - =((230*2)/50/5) m2wk Allowed 50m2 per day	SCAFFOLD	m2wk	1.840	15.000		28			28
80	10. End walls									
81	EE formula - =(6*4*0.5) m3	CONC ABUTMENT	m³	12.000	1,500.000				18,000	18,000
82	11. Backfill at abutments									
83	EE formula - =(2*23*4*3*0.5) m3	EWKS BF HPLACE	m³	276.000	45.640	7,781	39	4,583	193	12,597
84	12. Deck stormwater drainage - Both sides									
85	EE formula - =(#LQ14*2) m Allowed 375mm UPVC	BRIDGE DRAIN 375	m	2,376.000	350.000				831,600	831,600

	86 EE formula - =((33+2)*5000) Allowance connections	MISC SCON	Item	175,000.000	1.000				175,000	175,000
	87 EE formula - =st(59:86,#QTY) m2				590.730	7,781	1,214,563	4,583	17,019,556	18,246,483
	88									
	89 Estimated Duration									
	90 EE formula - =(35*33/2) Days Allowed 35days per span, Assume 2No crews			577.500						
					1,571.390	**761,074**	**19,771,947**	**2,024,607**	**25,979,454**	**48,537,082**
Line No 88	**Wharf Road underbridge Chg 17500**									
Item No 10960			**m2**	**572.000**		**Contributing**				
	1 10960 - Wharf Road Underbridge Chg 17500									
	2 Spec: Nil									
	3 Dwg: 60021933-DRG-10-02-BR-0100 to 60021933-DRG-10-02-BR-0801									
	4 Site visit photo: Nil									
	5 NOTE: Assume 15m span precast arch units atop cast insitu foundations, height 2m and bored 900mm dia piles at 1.5m cts Length of arch 30m									
	6 NOTE: Minimum clearance from road surface to arch structure 4.6m									
	7 NOTE: Assume bored pile required 1:1 embedded vs retainied, end bearing on rock below NSL 3m rock socket									
	8 NOTE: Assume piling equipment of pile rig, 50t crawler crane, 20t rough terrain crane & bobcat									
	9 NOTE: Allow 1No crane mobilisation to site per bridge span. Allow a further 50% mobilisation costs for move on sitespan									
	10 NOTE: Assume thk precast arch units 300mm. Also minimum depth 1.5m of imported select material backfill above the arch									
	11 NOTE: Assumed currently that precast beams will be precast On Site. Risk exists for Off Site precast operation by subcontractor									
	12									
	13 EE formula - =(20400-7600) m Total corridor length			12,800.000						
	14 EE formula - =(22) m Length bridge			22.000						
	15 EE formula - =(26.0) m Deck width			26.000						
	16 EE formula - =(30*2/1.5) each Precast arch units			40.000						
	17 EE formula - =((9*(15+5+5))-((15*2)-40)) m2 Area of Precast headwalls			235.000						
	18									
	19 A. Piling									
	20 EE formula - =((30*2/1.5)*(10+3)) m Length of 900mm dia bored piles @ 10m/each			520.000						
	21 EE formula - =((22*10.0)+(1*30)) m2 Allowed for single side of arch, width 10m	TEMPROAD	m²	250.000	10.616	269	2,002	382		2,654
	22 EE formula - =(2) each Allowed 15x15m	ACCESS PAD	each	2.000	30,000.000				60,000	60,000
	23 EE formula - =(#LQ20) m	PILE 900	m	520.000	900.000				468,000	468,000
	24 EE formula - =(#LQ23*0.221) tonne Allowed 221kg/m for 900mm dia piles	PILE CASING PERM	tonne	114.920	3,500.000		402,220			402,220
	25 EE formula - =st(19:24,#QTY) m2				1,630.898	269	404,222	382	528,000	932,874
	26									