

*cost
estimate*

STRATEGIC COST ESTIMATE
REPORT

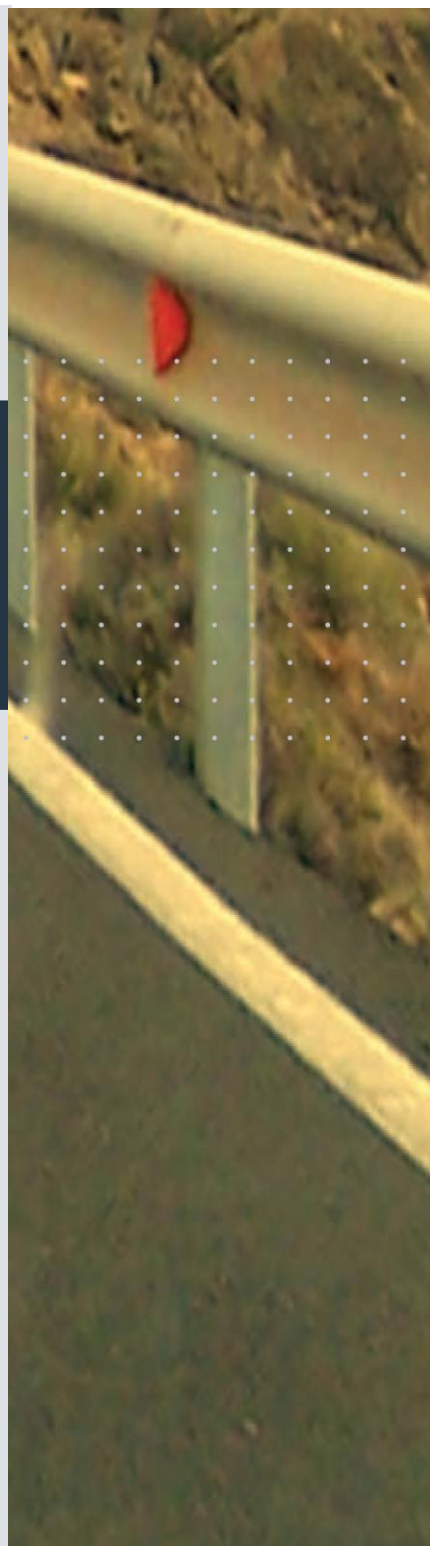
SPORTSMANS CREEK NEW
BRIDGE (OPTIONS 1 - 4)

ISSUED TO:

KBR

DATE:

13/11/2013



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1 Executive Summary

1.1 PURPOSE OF REPORT

As part of the strategic development process requirements, various road/bridge alignment options have been examined for the Sportsmans Creek new bridge project. These options address the requirements of all identified stakeholders and community groups. As the process has developed the options have been shortlisted as a result of workshops and assessment/evaluation sessions.

There are four (4) options to be considered from a cost perspective for further assessment and ultimately a preferred option to be selected. Construction costs have a major bearing on this selection process. Individual strategic cost estimates for the four options has been undertaken. The purpose of this report is to outline and detail the anticipated costs, methodology and assumptions made in relation to each of these designs/options so as to enable further consideration to determine a preferred option.

1.2 SCOPE OF REPORT

Aquenta Consulting has been engaged by KBR to prepare a Strategic Cost Estimate Report for the four (4) shortlisted Sportsmans Creek new bridge alignment options.

This report discusses the development of the construction and project costs and the project as a whole. The report provides a contingency allowance applied to the construction costs based on the following:

- The base date for the estimate is October 2013.
- A traditional construct only project delivery.
- Review on the confidence level of information provided for both construction and project cost.
- Strategic design detail.
- In accordance with RMS guidelines and recommendations.

For the purposes of the preparation of the estimate the strategic design has been provided by KBR to Aquenta Consulting. The estimate is based on this strategic design. This information should not be used in the future as a comparison without considering the following;

- Changes in scope due to revisions to RMS project requirements
- Changes in scope due to project specifications
- Changes in scope due to proposed design
- Assessment of the latest market conditions



1.3 STRATEGIC ESTIMATE SUMMARY

The cost summary in table 1 shows the total project cost for both including and excluding contingency as per RMS requirements;

TABLE 1 SPORTSMANS CREEK NEW BRIDGE STRATEGIC ESTIMATE SUMMARY

ITEM	DESCRIPTION	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	Project Development	\$327,167	\$278,970	\$284,777	\$284,989
2	Detail design and Documentation	\$509,067	\$431,952	\$441,243	\$441,583
3	Property Acquisitions	\$666,000	\$222,000	\$444,000	\$222,000
4	Utility Adjustments	\$222,000	\$277,500	\$222,000	\$277,500
5	Infrastructure	\$12,388,190	\$10,452,501	\$10,741,454	\$10,694,243
6	Finalisation	\$335,073	\$256,154	\$260,471	\$259,766
	<u>Total Strategic Estimate (Ex Contingencies)</u>	<u>\$14,447,496</u>	<u>\$11,919,077</u>	<u>\$12,393,946</u>	<u>\$12,180,081</u>
	<u>Total Strategic Estimate (Incl Contingencies)</u>	<u>\$20,226,125</u>	<u>\$16,686,338</u>	<u>\$17,351,154</u>	<u>\$17,051,743</u>

Both the summary and detailed breakdown of the construction estimate for each option is contained in Appendix 1.

1.4 METHODOLOGY

The Strategic Estimate is based on a schedule of quantities prepared by Aquenta Consulting based on a Strategic Design provided by KBR and first principle rates have been used.

A number of elements of the estimate rely on specific details that will be contained in the design specification to the contract documents. As these documents are not currently available, recent experience from similar projects has been utilised to generate costs for these elements. Some allowances have been included on the advice of RMS.

Generally, the specification utilised for the purpose of this estimate has been outlined by RMS.

1.5 MAIN ASSUMPTIONS

The key assumptions of the Strategic Cost Estimate are:

- No specific project delivery or procurement option has been considered
- The estimate is based on the KBR provided strategic design
- No existing studies, geotechnical and environment reports were provided for estimation
- All existing asphalt from the existing road surface removed and disposed off site

- Excavated material utilised on site as general fill and the surplus will be disposed off-site
- Costs for Drainage, Utilities, Signposting, Fencing, Landscaping have been based on past experience and recent projects including RMS advice
- No Street Lighting is required as per RMS advice
- Bridge structures are based on an assumed super tee configuration with 35 m spans assumed for all options. Option 1 is a 5 span structure giving a total length of 175 m. Options 2 to 4 inclusive have a 4 span configuration giving a total length of 140 m
- Approach embankments are assumed to be an average of 3m high earthwork batters with grass seeding as per RMS advice
- Headstocks are assumed to be supported by two (2) x 900 mm diameter concrete columns at 5 metres average height
- Piers / abutments are assumed to have a concrete pile cap of size 6000 x 3000 x 1500 mm deep to be supported by two (2) x thirty (30) metre long 900 mm diameter bored cast in place reinforced concrete piles
- Bridge structures are based on an assumed super tee configuration (6 Super T per span at 35m long each) for all options as per RMS advice
- Deck width assumed to be twelve and a half (12.5) metres average width which allows for two (2) x three and a half (3.5) metre lanes and allowance for one (1.0) metre on either side for a shoulder and a two and a half (2.5) metre shared pathway.
- Bridge structures are assumed to have railings and safety screens as per RMS requirement
- Road pavements are assumed to be 300mm sub-base with in-situ lime stabilisation, 200mm DGB20 base, and 2 layers of sprayed bituminous surfacing with 7/14mm aggregate as per RMS advice.
- No Asphalt is included for road pavements and bridge deck as per RMS advice.
- Section 3 contains all assumptions made during the Strategic Estimate development.

2 Scope of Project

2.1 PROJECT DESCRIPTION

The project allows for a second Sportsmans Creek crossing on a super tee concrete overbridge structure. It also allows for the existing timber bridge structure and approaches to be demolished with the subsequent reinstatement of Bridge Street and Flo Clark Park.

A summary of the high level quantum of the Project is as follows:

Option 1

- Total length of new roadway – 840 m
- Super Tee Girders – 30 No (6 No/span)
- Piling Length – 360 m (12 x 30 m deep)

- Total Bridge structure – 2,188 m² (12.50 x 175 m long)
- Total area of new pavement – 10,913 m² (including localised median / islands at intersections)
- Earthworks excavation volume – 22,053 m³

Option 2

- Total length of new roadway – 618 m
- Super Tee Girders – 24 No (6 No/span)
- Piling length – 300 m (10 x 30 m deep)
- Total Bridge structure – 1,750 m² (12.50 x 140 m long)
- Total area of new pavement – 7,727 m² (including localised median / islands at intersections)
- Earthworks excavation volume – 13,122 m³

Option 3

- Total length of new roadway – 810 m
- Super Tee Girders – 24 No (6 No/span)
- Piling Length – 300 m (10 x 30 m deep)
- Total Bridge structure – 1,750 m² (12.50 x 140 m long)
- Total area of new pavement – 10,142 m² (including localised median / islands at intersections)
- Earthworks excavation volume – 15,751 m³

Option 4

- Total length of new roadway – 745 m
- Super Tee Girders – 24 No (6 No/span)
- Piling Length – 300 m (10 x 30 m deep)
- Total Bridge structure – 1,750 m² (12.50 x 140 m long)
- Total area of new pavement – 9,313 m² (including localised median / islands at intersections)
- Earthworks excavation volume – 14,139m³

2.2 DOCUMENTS REVIEWED

This Report is based on all drawings, schedules and other information provided by KBR up to and including October 2013 (a summary of this information is contained in Section 4).

2.3 LIMITATIONS OF ESTIMATE

The Estimate is limited by the detail provided in the documents which are currently at a Strategic Stage.

A large number of assumptions have been made where details were not shown on the drawings or drawings were not finalised. This estimate should only be read in conjunction with the list of notes as outlined on Section 3.1.

Costs are estimated in October 2013 prices.

3 Project Cost

The Project Cost (including contingency) presented in this Report comprises a number of parts. These are the Principal's Costs, Construction Estimate and Project Contingency. No allowance has been made for inflation. Integral to the Construction Estimate and escalation calculation is a construction program and methodology, this information was not provided for this estimate. Aquenta has assumed that the delivery of the works will be carried out over a 12 month period.

3.1 CONSTRUCTION ESTIMATE

3.1.1 Assumptions/Data Used

During the preparation of the Construction Estimate the following assumptions (listed below) were made;

3.1.1.1 JOB SPECIFIC REQUIREMENTS

The following provisions have been made for job specific requirements:

- Construction of temporary sidetrack including earthworks, pavement and safety barriers (at tie in locations) predominantly associated with getting access to the bridge area and on the local roads to ensure continuity of operation within this area,
- Demolition and removal of existing timber bridge structure
- Earthwork batter embankment at approaches

3.1.1.2 PROVISION FOR TRAFFIC MANAGEMENT

The following provisions for traffic items have been allowed:

- Costs for a number of these items are duration based. The duration applied for traffic control has been 12 weeks as per RMS advice.
- Provision for traffic – We have allowed \$65,000 excl. Indirect Costs for traffic management as per RMS advice.

3.1.1.3 ENVIRONMENTAL PROTECTION & MANAGEMENT

The following Environmental Management items have been allowed:

- Sediment Basins (including cleaning and operating)

- Air, noise, and vibration monitoring
- Dilapidation surveys
- Allowance for peripheral adjustments to existing properties due to the impacts of the works

3.1.1.4 DRAINAGE WORKS

In the absence of a finalised design for this package of work, we have applied a provisional sum of \$100,800 incl. Indirect Costs for stormwater drainage

3.1.1.5 EARTHWORKS

Clearing and Grubbing:

Areas nominated for these works are associated with the overall, as well as embankment cut areas associated with the new alignments.

Stripping of Topsoil:

The volume is reflective of 200mm over the area nominated for clearing and grubbing.

Earthworks:

There is no allowance for non-rippable material within the schedule

- Excavation: 3463 m³, 1296 m³, 2981 m³, 703 m³ for Options 1, 2, 3 and 4 respectively (allowed for under clearing and grubbing/stripping of topsoil)
- Road Embankment with excavated materials: 3514 m³, 2141 m³, 3165 m³, 1882m³ for Options 1, 2, 3 and 4 respectively
- Road Embankment with imported materials: 13136 m³, 8959 m³, 7935 m³, 9218m³ for Options 1, 2, 3 and 4 respectively

As there is limited geotechnical information, it is assumed that 80% of the excavated materials can be re-used for the bridge embankment works, and the outstanding to be an imported non graded quarry product.

3.1.1.6 PAVEMENT

Removal of existing asphalt surfacing from existing roadway.

Existing road pavements are boxed out and excavated to 500mm thick as per RMS advice.

- Excavation: 930 m³, 1380 m³, 975 m³, 1650 m³ for Options 1, 2, 3 and 4 respectively

A new pavement profile has been allowed with 300mm sub-base with in-situ lime stabilisation, 200mm DGB20 base, and 2 layers of sprayed bituminous surfacing with 7/14mm aggregate as per RMS advice.

Pavement Profile

The following pavement profile has been assumed:

Sub Base Pavement

- 300 mm controlled sub-grade (Min 2% Quicklime by mass): 2022 m3, 1450 m3, 2016 m3, 1328 m3 for Options 1, 2, 3 and 4 respectively.
- 200mm DGB20 base: 1348 m3, 967 m3, 1344 m3, 885 m3 for Options 1, 2, 3 and 4 respectively.

Pavement Surfacing

2 layers of sprayed bituminous surfacing are applied to all areas (as advised by RMS)

7/14 mm aggregates over all areas: 10913 m2, 7727 m2, 10142 m2, 6767 m2 for Options 1, 2, 3 and 4 respectively.

3.1.1.7 MISCELLANEOUS

Signage

In the absence of a finalised design for this package of work, we have applied provisional quantities on the basis of our knowledge from similar projects.

The supply and Installation of both regulatory and Information signage has been allocated as follows:

- Regulatory signs (nominal allowance) for length of works
- Major Directional Signs

Guardrail

In the absence of a finalised design for this package of work, we have applied provisional quantities on the basis of our knowledge from similar projects.

An allowance for a 'Thrie Beam' guardrail on the approach to the bridge structure has been allowed for each of the options.

Anti-throw safety screens, and railings have been incorporated into the bridge structures.

Line Marking

In the absence of a finalised design provisional allowances have been made for the line marking component of works.

3.1.1.8 BRIDGE STRUCTURES

Piling

900mm diameter driven reinforced concrete piles and each pile is assumed at 30m deep: 12 No. for Option 1, and 10 No. for each of Options 2, 3 and 4 respectively. Twin piles layout is assumed per pile cap.

Concrete in Pile Caps & Abutments

Concrete in pile caps and abutments based on 40MPa concrete: 188m³ for Options 1, and 161m³ for each of the Options 2, 3, and 4 respectively.



Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge	Estimate Prepared by:	Aqunta Consulting Pty Ltd
	Quantities Prepared by:	Level 10, 67 Albert Avenue Chatswood NSW 2067
Project No: 213083	Date: 07/11/2013	Estimate Type: Preliminary Sketch - Option 1

Item	Base Estimate (excluding contingency)	Contingency		Estimate (including contingency)	% of Total Estimate	Comments/Assumptions
		%	Amount			
1. Project Development						
1 (a) Route/Concept/EIS	\$286,637	40%	\$114,655	\$401,291		2.5% of Construction Costs 10% of Route/Concept/EIS 10% of PM Services Costs General Allowance
1 (b) Project Management Services	\$28,664	40%	\$11,465	\$40,129		
1 (c) Sponsor	\$2,866	40%	\$1,147	\$4,013		
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		
Sub total	\$327,167	40%	\$130,867	\$458,033	2.26%	
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$458,619	40%	\$183,448	\$642,066		4% of Construction Cost 10% of Investigation and Design 10% of Project Management Services
2 (b) Project Management Services	\$45,862	40%	\$18,345	\$64,207		
2 (c) Client Representation	\$4,586	40%	\$1,834	\$6,421		
Sub total	\$509,067	40%	\$203,627	\$712,694	3.52%	
3. Property Acquisitions						
3 (a) Acquire Property	\$600,000	40%	\$240,000	\$840,000		Plugged - Allowance Only.(Minimal) 10% of Property 10% of professional services
3 (b) Professional Services for Property	\$60,000	40%	\$24,000	\$84,000		
3 (c) Project Management Services	\$6,000	40%	\$2,400	\$8,400		
Sub total	\$666,000	40%	\$266,400	\$932,400	4.61%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$200,000	40%	\$80,000	\$280,000		Allowance only. 10% of Utility Costs 10% of Project Management Services
4 (b) Project Management Services	\$20,000	40%	\$8,000	\$28,000		
4 (c) Client Representation	\$2,000	40%	\$800	\$2,800		
Sub total	\$222,000	40%	\$88,800	\$310,800	1.54%	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$11,115,469	40%	\$4,446,188	\$15,561,657		See breakdown 10% of Infrastructure 10% of Project Management Services 0.45% of Infrastructure
5(d) Project Management Services	\$1,111,547	40%	\$444,619	\$1,556,166		
5(e) Client Representation	\$111,155	40%	\$44,462	\$155,617		
5(f) PA Insurance	\$50,020	40%	\$20,008	\$69,657		
Sub total	\$12,388,190	40%	\$4,955,276	\$17,343,096	85.75%	
6. Finalisation						
6 (a) Refurbish old route	\$150,000	40%	\$60,000	\$210,000		Allowance 1.5% of Construction Cost 10% of Project Data Costs 10% of Project Management Services
6 (b) Project data and post completion review.	\$166,732	40%	\$66,693	\$233,425		
6 (c) Project Management Services	\$16,673	40%	\$6,669	\$23,342		
6 (d) Client Representation	\$1,667	40%	\$667	\$2,334		
Sub total	\$335,073	40%	\$134,029	\$469,102	2.32%	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$14,447,496	40%	\$5,778,999	\$20,226,125		

INDICATIVE COST ESTIMATE:

\$21,000,000

Rounded as per 4.5 of RMS Estimating Requirements

Reality checks:

Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont/Cost Unit incl cont
1. Cost per km	km	0.84	\$14,447,496	\$20,226,125	\$17,199,400 / \$24,078,720
2. Cost per lane-km (Road and Bridge)	lane-km	1.68	\$14,447,496	\$20,226,125	\$8,599,700 / \$12,039,360
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.33	\$4,840,296	\$6,776,414	\$3,639,320 / \$5,095,048
4. Cost per sqm of Bridge	sq.m	2,187.00	\$7,391,491	\$10,348,088	\$3,380 / \$4,732
5. Cost of earthworks /m3	cu.m	22,053.00	\$1,283,197	\$1,796,476	\$58 / \$81
6. Cost of pavement /m2	sq.m	10,913.00	\$693,314	\$970,639	\$64 / \$89

Line	Item	Description	Quantity	Unit	Rate	Total
2	G1	JOB SPECIFIC REQUIREMENTS	1.000	LSum	126,000.000	126,000
4	G1P1.1	Construction of side tracks and diversion works	1.000	LSum	126,000.000	126,000
6	G2	GENERAL REQUIREMENTS	1.000	LSum	148,680.000	148,680
7	G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
8	G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	315,000.000	315,000
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until Completion	52.000	week	3,150.000	163,800
14	G10	TRAFFIC MANAGEMENT	1.000	LSum	112,896.000	112,896
15	G10P1	Traffic Management	1.000	Lsum	81,900.000	81,900
16	G10P2	Maintenance of Traffic Control Measures	12.000	week	1,008.000	12,096
17	G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000	Lsum	18,900.000	18,900
19	G36	ENVIRONMENTAL PROTECTION	1.000	LSum	75,600.000	75,600
20	G36P2	Site Monitoring	1.000	lump	18,900.000	18,900
21	G36P2.1	Air Pollution	1.000	lump	18,900.000	18,900
22	G36P2.2	Noise	1.000	lump	18,900.000	18,900
23	G36P2.3	Ground Vibration	1.000	lump	18,900.000	18,900
25	G40	CLEARING AND GRUBBING	1.000	LSum	34,727.762	34,728
26	G40P1	Clearing and grubbing	9,698.000	m2	3.581	34,728
28	R11	STORMWATER DRAINAGE (All Provisional)	1.000	LSum	100,800.000	100,800
29	R11P1	Allow provisional sum for stormwater drainage	1.000	lump	100,800.000	100,800
30	R15	KERBS AND GUTTERS	1.000	LSum	6,360.190	6,360
32	R15P1.1	Kerb and gutter (Provisional)	40.000	m	76.020	3,041
33	R15P1.2	Kerb only (median - localised at intersections) - Provisional - Type SF	50.000	m	66.388	3,319
35	R44	EARTHWORKS	1.000	LSum	1,644,973.741	1,644,974
37	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,940.000	m3	20.394	39,565
38	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for future use (landscaping etc)	1,940.000	m3	14.994	29,088
40	R44P2.1	Excavation of all material	3,463.000	m3	17.325	59,996
41	R44P2.2	Excavation of 500mm thick of existing road pavement	930.000	m3	17.325	16,112
42	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for future use (embankment, etc)	3,514.000	m3	14.994	52,689
44		Road embankment using excavated material for fill	3,514.000	m3	5.776	20,296
45		Road embankment using imported material for fill	13,136.000	m3	74.072	973,005
47	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20% unsuitable)	879.000	m3	60.103	52,831
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and recompact (20% of new pavement area - excluding bridge)	1,310.000	m2	27.720	36,313
50	R44P7.1	Trim and Compaction	1,310.000	m2	2.520	3,301
54	R44P5.1	Supply and Place 300mm subbase, unbound new road pavement	1,464.000	m3	137.899	201,885
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road pavement	558.000	m3	140.438	78,365
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime stabilisation (Min 2% Quicklime by mass) (Cut areas only) to road pavement	2,022.000	m3	40.320	81,527
59	R71	UNBOUND AND MODIFIED PAVEMENT COURSE	1.000	LSum	210,054.368	210,054
61	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000	m3	164.412	16,441
63	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,348.000	m3	143.630	193,613
65	R83	GENERAL PAVEMENT BASE	1.000	LSum	7,595.734	7,596
67	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa reinforced concrete, including SL72 reinforcement and jointing) - Provisional	20.000	m2	172.027	3,441
68	R173P1.2	Concrete median infill slab to localised areas (intersections) (125mm thick, 25MPa reinforced concrete with stencilled finish, including SL72 reinforcement)	30.000	m2	138.507	4,155
70	R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	86,667.221	86,667
72	R106P1.1	AMC4 1.5L/m2	16,369.000	ltr	2.381	38,981
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including Adhesion Agent where required and Preparation of Surface)	16,369.000	ltr	0.466	7,631
75	R106P7.1	7mm aggregate	10,913.000	m2	1.223	13,352
76	R106P7.2	14mm aggregate	10,913.000	m2	2.447	26,703
84	R141	PAVEMENT MARKING	1.000	LSum	24,920.910	24,921
86	R141P3.2	C1 lines	840.000	m	6.300	5,292
87	R141P3.3	C4 lines	140.000	m	6.300	882
88	R141P3.4	E1 lines	1,680.000	m	6.000	10,080
89	R141P3.7	L1 lines	840.000	m	5.040	4,234
90	R141P3.8	L3 lines	40.000	m	5.040	202
91	R141P3.9	L6 lines	80.000	m	5.040	403
92	R141P3.10	L7 lines	40.000	m	5.040	202
94	R141P4.5	UA3L arrow	11.000	m2	95.445	1,050
95	R141P4.6	UA3R arrow	17.000	m2	95.445	1,623
96	R141P4.7	UA5R arrow	5.000	m2	95.445	477
97	R141P4.8	Bicycle marking	5.000	m2	95.445	477
98	R142	RAISED PAVEMENT MARKERS (Provisional)	1.000	LSum	2,299.248	2,299

99 R142P2.1	Type W	80.000 each	28.741	2,299
100 R143	SIGNPOSTING	1.000 LSum	18,792.741	18,793
102 R143P1.1	Major directional signs	1.000 each	10,710.000	10,710
104 R143P2.6	Type R1-2B 'GIVE WAY'	2.000 each	1,143.880	2,288
105 R143P2.10	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118 R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	113,278.813	113,279
120 R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	2,500.000 m2	7.284	18,210
121 R178P2.2	Areas steeper than 5 to 1 except stepped batters	4,025.000 m2	10.079	40,567
123 RS178P4.1	Rural grass mix seeding to to site boundaries	4,025.000 m2	1.511	6,081
124 R178P11	Topsoiling of open drains using site material including surface preparation and screening of topsoil stockpiles (10% of total area)	1,260.000 m2	7.284	9,178
125 R178P17	Lining open drains with organic fibre mesh (10%)	1,260.000 m2	13.149	16,568
126 R178P19	Watering	13,050.000 m2	1.738	22,675
128 R179	LANDSCAPE PLANTING	1.000 LSum	30,366.000	30,366
131 R179P6.2a	Tree planting (medium)	40.000 each	44.100	1,764
132 R179P6.2b	Tree planting (large)	60.000 each	214.200	12,852
133 R179P12	Maintenance watering	5.000 each	3,150.000	15,750
136 R201	FENCING (All Provisional)	1.000 LSum	34,965.000	34,965
138 R201P6.2	Picket and wire fencing	1,110.000 m	31.500	34,965
141 B1	OPTION 1 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	7,391,491.327	7,391,491
143 B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
144 B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
145 B1.1.3	900 mm dia. driven reinforced concrete pile	360.000 m	1,600.000	576,000
146 B1.1.7	Pile integrity testing	12.000 each	420.000	5,040
147 B1.1.8	Sheet Piling	1,120.000 m2	652.500	730,800
148 B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	126,000.000	126,000
149 B1.1.11	Dewatering	1.000 Item	319,681.908	319,682
150 B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
153 B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 6 caps in total	188.000 m ³	1,033.200	194,242
154 B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	37.600 tonne	2,953.185	111,040
156 B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 4 intermediates	26.000 m ³	657.954	17,107
157 B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 250kg / m3 For Collision	6.500 tonne	2,953.188	19,196
159 B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	130.000 m ³	1,146.600	149,058
160 B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	23.000 tonne	2,953.187	67,923
162 B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	30.000 each	48,420.351	1,452,611
163 B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	30.000 each	5,974.513	179,235
165 B1.6.1	Pot-type bearings, 2000kN,	60.000 each	4,050.438	243,026
166 B1.6.3	Girder restraints block	60.000 each	838.623	50,317
168 B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	875.000 m ³	439.671	384,712
169 B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	210.000 m ³	2,370.661	497,839
170 B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m ³	472.640	59,080
171 B1.7.4	Reinforcing steel in decks.- Allow 220kg/m3	220.000 tonne	3,702.633	814,579
173 B1.8.1	Bituminous waterproof membrane for bridges	2,187.000 m ²	18.572	40,618
179 B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
180 B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6 Joints	1.000 Lsum	3,023.894	3,024
181 B1.9.3	Joint sealants - 6 Joints	1.000 Lsum	2,915.964	2,916
182 B1.9.4	Supply and fabrication of bridge traffic rail, steel including pedestrian separation	525.000 m	910.287	477,901
183 B1.9.5	Transport and erection of bridge balustrade, steel including pedestrian separation	525.000 m	434.700	228,218
184 B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
185 B1.9.8	Safety Screen Erection	350.000 m	466.560	163,296
186 B1.9.9	Safety Screen Manufacture and delivery	350.000 m	622.080	217,728
190 B2	DEMOLITION OF EXISTING BRIDGE	1.000 LSum	630,000.000	630,000
191 B2.1	Works associated with demolition of existing bridge and reinstatement works at Bridge Street and Flo Clark Park	1.000 LSum	630,000.000	630,000

Total Infrastructure Costs

11,115,469

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge	Estimate Prepared by:	Aqunta Consulting Pty Ltd
	Quantities Prepared by:	Level 10, 67 Albert Avenue Chatswood NSW 2067
Project No: 213083	Date: 07/11/2013	Estimate Type: Preliminary Sketch - Option 2

Item	Base Estimate (excluding contingency)	Contingency		Estimate (including contingency)	% of Total Estimate	Comments/Assumptions
		%	Amount			
1. Project Development						
1 (a) Route/Concept/EIS	\$243,216	40%	\$97,286	\$340,503		2.5% of Construction Costs 10% of Route/Concept/EIS 10% of PM Services Costs General Allowance
1 (b) Project Management Services	\$24,322	40%	\$9,729	\$34,050		
1 (c) Sponsor	\$2,432	40%	\$973	\$3,405		
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		
Sub total	\$278,970	40%	\$111,588	\$390,558	2.34%	
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$389,146	40%	\$155,658	\$544,804		4% of Construction Cost 10% of Investigation and Design 10% of Project Management Services
2 (b) Project Management Services	\$38,915	40%	\$15,566	\$54,480		
2 (c) Client Representation	\$3,891	40%	\$1,557	\$5,448		
Sub total	\$431,952	40%	\$172,781	\$604,733	3.62%	
3. Property Acquisitions						
3 (a) Acquire Property	\$200,000	40%	\$80,000	\$280,000		As advised by RMS 10% of Property 10% of professional services
3 (b) Professional Services for Property	\$20,000	40%	\$8,000	\$28,000		
3 (c) Project Management Services	\$2,000	40%	\$800	\$2,800		
Sub total	\$222,000	40%	\$88,800	\$310,800	1.86%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$250,000	40%	\$100,000	\$350,000		Allowance only. 10% of Utility Costs 10% of Project Management Services
4 (b) Project Management Services	\$25,000	40%	\$10,000	\$35,000		
4 (c) Client Representation	\$2,500	40%	\$1,000	\$3,500		
Sub total	\$277,500	40%	\$111,000	\$388,500	2.33%	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$9,378,646	40%	\$3,751,458	\$13,130,104		See breakdown 10% of Infrastructure 10% of Project Management Services 0.45% of Infrastructure
5(d) Project Management Services	\$937,865	40%	\$375,146	\$1,313,010		
5(e) Client Representation	\$93,786	40%	\$37,515	\$131,301		
5(f) PA Insurance	\$42,204	40%	\$16,882	\$58,715		
Sub total	\$10,452,501	40%	\$4,181,000	\$14,633,131	87.70%	
6. Finalisation						
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance 1.5% of Construction Cost 10% of Project Data Costs 10% of Project Management Services
6 (b) Project data and post completion review.	\$140,680	40%	\$56,272	\$196,952		
6 (c) Project Management Services	\$14,068	40%	\$5,627	\$19,695		
6 (d) Client Representation	\$1,407	40%	\$563	\$1,970		
Sub total	\$256,154	40%	\$102,462	\$358,616	2.15%	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$11,919,077	40%	\$4,767,631	\$16,686,338		

INDICATIVE COST ESTIMATE:

\$17,000,000

Rounded as per 4.5 of RMS
Estimating Requirements

Reality checks:

Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont / Cost Unit incl cont
1. Cost per km	km	0.62	\$11,919,077	\$16,686,338	\$19,224,318 / \$26,913,449
2. Cost per lane-km (Road and Bridge)	lane-km	1.24	\$11,919,077	\$16,686,338	\$9,612,159 / \$13,456,724
3. Cost per lane-km (Road only excl. Bridge)	lane-km	0.96	\$4,110,078	\$5,754,109	\$4,281,331 / \$5,993,864
4. Cost per sqm of Bridge	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	13,122.00	\$831,242	\$1,163,738	\$63 / \$89
6. Cost of pavement /m2	sq.m	7,727.00	\$509,046	\$712,665	\$66 / \$92

Line	Item	Description	Quantity	Unit	Rate	Total
2	G1	JOB SPECIFIC REQUIREMENTS	1.000	LSum	126,000.000	126,000
4	G1P1.1	Construction of side tracks and diversion works	1.000	LSum	126,000.000	126,000
6	G2	GENERAL REQUIREMENTS	1.000	LSum	148,680.000	148,680
7	G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
8	G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	302,400.000	302,400
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until Completion	48.000	week	3,150.000	151,200
14	G10	TRAFFIC MANAGEMENT	1.000	LSum	112,896.000	112,896
15	G10P1	Traffic Management	1.000	Lsum	81,900.000	81,900
16	G10P2	Maintenance of Traffic Control Measures	12.000	week	1,008.000	12,096
17	G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000	Lsum	18,900.000	18,900
19	G36	ENVIRONMENTAL PROTECTION	1.000	LSum	75,600.000	75,600
20	G36P2	Site Monitoring	1.000	lump	18,900.000	18,900
21	G36P2.1	Air Pollution	1.000	lump	18,900.000	18,900
22	G36P2.2	Noise	1.000	lump	18,900.000	18,900
23	G36P2.3	Ground Vibration	1.000	lump	18,900.000	18,900
25	G40	CLEARING AND GRUBBING	1.000	LSum	12,973.673	12,974
26	G40P1	Clearing and grubbing	3,623.000	m2	3.581	12,974
28	R11	STORMWATER DRAINAGE (All Provisional)	1.000	LSum	100,800.000	100,800
29	R11P1	Allow provisional sum for stormwater drainage	1.000	lump	100,800.000	100,800
30	R15	KERBS AND GUTTERS	1.000	LSum	6,360.190	6,360
32	R15P1.1	Kerb and gutter (Provisional)	40.000	m	76.020	3,041
33	R15P1.2	Kerb only (median - localised at intersections) - Provisional - Type SF	50.000	m	66.388	3,319
35	R44	EARTHWORKS	1.000	LSum	1,091,969.695	1,091,970
37	R44P1.1	Removal and stockpiling of non-contaminated topsoil	726.000	m3	20.394	14,806
38	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for future use (landscaping etc)	726.000	m3	14.994	10,886
40	R44P2.1	Excavation of all material	1,296.000	m3	17.325	22,453
41	R44P2.2	Excavation of 500mm thick to existing road pavement	1,380.000	m3	17.325	23,909
42	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for future use (embankment, etc)	2,141.000	m3	14.994	32,102
44		Road embankment using excavated material for fill	2,141.000	m3	5.776	12,366
45		Road embankment using imported material for fill	8,959.000	m3	74.436	666,870
47	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20% unsuitable)	535.000	m3	60.103	32,155
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and recompact (20% of new pavement area - excluding bridge)	519.000	m2	27.720	14,387
50	R44P7.1	Trim and Compaction	519.000	m2	2.520	1,308
54	R44P5.1	Supply and Place 300mm subbase, unbound new road pavement	622.000	m3	140.016	87,090
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road pavement	828.000	m3	139.099	115,174
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime stabilisation (Min 2% Quicklime by mass) (Cut areas only) to road pavement	1,450.000	m3	40.320	58,464
59	R71	UNBOUND AND MODIFIED PAVEMENT COURSE	1.000	LSum	155,978.350	155,978
61	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000	m3	164.412	16,441
63	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	967.000	m3	144.299	139,537
65	R83	GENERAL PAVEMENT BASE	1.000	LSum	7,595.734	7,596
67	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa reinforced concrete, including SL72 reinforcement and jointing) - Provisional	20.000	m2	172.027	3,441
68	R173P1.2	Concrete median infill slab to localised areas (intersections) (125mm thick, 25MPa reinforced concrete with stencilled finish, including SL72 reinforcement)	30.000	m2	138.507	4,155
70	R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	61,367.558	61,368
72	R106P1.1	AMC4 1.5L/m2	11,591.000	ltr	2.381	27,603
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including Adhesion Agent where required and Preparation of Surface)	11,591.000	ltr	0.466	5,404
75	R106P7.1	7mm aggregate	7,727.000	m2	1.223	9,454
76	R106P7.2	14mm aggregate	7,727.000	m2	2.447	18,907
84	R141	PAVEMENT MARKING	1.000	LSum	21,077.595	21,078
86	R141P3.2	C1 lines	600.000	m	6.300	3,780
87	R141P3.3	C4 lines	100.000	m	6.300	630
88	R141P3.4	E1 lines	1,200.000	m	8.400	10,080
89	R141P3.7	L1 lines	600.000	m	5.040	3,024
90	R141P3.8	L3 lines	30.000	m	5.040	151
91	R141P3.9	L6 lines	50.000	m	5.040	252
92	R141P3.10	L7 lines	40.000	m	5.040	202
94	R141P4.5	UA3L arrow	11.000	m2	95.445	1,050
95	R141P4.6	UA3R arrow	10.000	m2	95.445	954
96	R141P4.7	UA5R arrow	5.000	m2	95.445	477
97	R141P4.8	Bicycle marking	5.000	m2	95.445	477
98	R142	RAISED PAVEMENT MARKERS (Provisional)	1.000	LSum	2,299.223	2,299

99	R142P2.1	Type W	60.000 each	38.320	2,299
100	R143	SIGNPOSTING	1.000 LSum	18,792.741	18,793
102	R143P1.1	Major directional signs	1.000 each	10,710.000	10,710
104	R143P2.6	Type R1-2B 'GIVE WAY'	2.000 each	1,143.880	2,288
105	R143P2.10	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118	R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	72,426.677	72,427
120	R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,500.000 m2	7.284	10,926
121	R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000 m2	10.079	27,011
123	RS178P4.1	Rural grass mix seeding to to site boundaries	2,680.000 m2	1.511	4,049
124	R178P11	Topsoiling of open drains using site material including surface preparation and screening of topsoil stockpiles (10% of total area)	750.000 m2	7.284	5,463
125	R178P17	Lining open drains with organic fibre mesh (10%)	750.000 m2	13.149	9,862
126	R178P19	Watering	8,360.000 m2	1.808	15,116
128	R179	LANDSCAPE PLANTING	1.000 LSum	23,499.000	23,499
131	R179P6.2a	Tree planting (medium)	30.000 each	44.100	1,323
132	R179P6.2b	Tree planting (large)	30.000 each	214.200	6,426
133	R179P12	Maintenance watering	5.000 each	3,150.000	15,750
135	R201	FENCING (All Provisional)	1.000 LSum	11,340.000	11,340
137	R201P6.2	Picket and wire fencing	360.000 m	31.500	11,340
140	R204	PROPERTY ADJUSTMENTS (Provisional)	1.000 LSum	252,000.000	252,000
141	R204P1	Adjustments to Properties	1.000 Item	252,000.000	252,000
144	B1	OPTION 2 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	6,144,589.560	6,144,590
146	B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
147	B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
148	B1.1.3	900 mm dia. driven reinforced concrete pile	300.000 m	1,600.000	480,000
149	B1.1.7	Pile integrity testing	10.000 each	504.000	5,040
150	B1.1.8	Sheet Piling	912.000 m2	657.632	599,760
151	B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	100,800.000	100,800
152	B1.1.11	Dewatering	1.000 Item	284,137.308	284,137
153	B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
156	B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000 m³	1,033.200	166,345
157	B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	29.000 tonne	2,953.184	85,642
159	B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 3 intermediates	20.000 m³	729.506	14,590
160	B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 250kg / m3 For Collision	5.000 tonne	2,953.192	14,766
162	B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000 m³	1,146.600	112,367
163	B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	18.000 tonne	2,953.184	53,157
165	B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	24.000 each	48,420.351	1,162,088
166	B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000 each	6,151.995	147,648
168	B1.6.1	Pot-type bearings, 2000kN,	48.000 each	4,050.668	194,432
169	B1.6.3	Girder restraints block	48.000 each	838.623	40,254
171	B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000 m³	439.003	307,302
172	B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000 m³	2,372.833	398,636
173	B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m³	472.640	59,080
174	B1.7.4	Reinforcing steel in decks.- Allow 220kg/m3	182.000 tonne	3,702.633	673,879
176	B1.8.1	Bituminous waterproof membrane for bridges	1,750.000 m²	18.572	32,502
182	B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
183	B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6 Joints	1.000 Lsum	3,023.894	3,024
184	B1.9.3	Joint sealants - 6 Joints	1.000 Lsum	2,915.964	2,916
185	B1.9.4	Supply and fabrication of bridge traffic rail, steel including pedestrian separation	420.000 m	910.287	382,321
186	B1.9.5	Transport and erection of bridge balustrade, steel including pedestrian separation	420.000 m	434.700	182,574
187	B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
188	B1.9.8	Safety Screen Erection	280.000 m	583.200	163,296
189	B1.9.9	Safety Screen Manufacture and delivery	280.000 m	777.600	217,728
193	B2	DEMOLITION OF EXISTING BRIDGE	1.000 LSum	630,000.000	630,000
194	B2.1	Works associated with demolition of existing bridge and reinstatement works at Bridge Street and Flo Clark Park	1.000 LSum	630,000.000	630,000

Total Infrastructure Costs

9,378,646

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge	Estimate Prepared by:	Aqunta Consulting Pty Ltd
	Quantities Prepared by:	Level 10, 67 Albert Avenue Chatswood NSW 2067
Project No: 213083	Date: 07/11/2013	Estimate Type: Preliminary Sketch - Option 3

Item	Base Estimate (excluding contingency)	Contingency		Estimate (including contingency)	% of Total Estimate	Comments/Assumptions
		%	Amount			
1. Project Development						
1 (a) Route/Concept/EIS	\$248,448	40%	\$99,379	\$347,827		2.5% of Construction Costs 10% of Route/Concept/EIS 10% of PM Services Costs General Allowance
1 (b) Project Management Services	\$24,845	40%	\$9,938	\$34,783		
1 (c) Sponsor	\$2,484	40%	\$994	\$3,478		
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		
Sub total	\$284,777	40%	\$113,911	\$398,688	2.30%	
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$397,517	40%	\$159,007	\$556,523		4% of Construction Cost 10% of Investigation and Design 10% of Project Management Services
2 (b) Project Management Services	\$39,752	40%	\$15,901	\$55,652		
2 (c) Client Representation	\$3,975	40%	\$1,590	\$5,565		
Sub total	\$441,243	40%	\$176,497	\$617,741	3.56%	
3. Property Acquisitions						
3 (a) Acquire Property	\$400,000	40%	\$160,000	\$560,000		As advised by RMS 10% of Property 10% of professional services
3 (b) Professional Services for Property	\$40,000	40%	\$16,000	\$56,000		
3 (c) Project Management Services	\$4,000	40%	\$1,600	\$5,600		
Sub total	\$444,000	40%	\$177,600	\$621,600	3.58%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$200,000	40%	\$80,000	\$280,000		Allowance only. 10% of Utility Costs 10% of Project Management Services
4 (b) Project Management Services	\$20,000	40%	\$8,000	\$28,000		
4 (c) Client Representation	\$2,000	40%	\$800	\$2,800		
Sub total	\$222,000	40%	\$88,800	\$310,800	1.79%	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$9,637,913	40%	\$3,855,165	\$13,493,078		10% of Infrastructure 10% of Project Management Services 0.45% of Infrastructure
5(d) Project Management Services	\$963,791	40%	\$385,517	\$1,349,308		
5(e) Client Representation	\$96,379	40%	\$38,552	\$134,931		
5(f) PA Insurance	\$43,371	40%	\$17,348	\$60,349		
Sub total	\$10,741,454	40%	\$4,296,582	\$15,037,666	86.67%	
6. Finalisation						
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance 1.5% of Construction Cost 10% of Project Data Costs 10% of Project Management Services
6 (b) Project data and post completion review.	\$144,569	40%	\$57,827	\$202,396		
6 (c) Project Management Services	\$14,457	40%	\$5,783	\$20,240		
6 (d) Client Representation	\$1,446	40%	\$578	\$2,024		
Sub total	\$260,471	40%	\$104,189	\$364,660	2.10%	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$12,393,946	40%	\$4,957,578	\$17,351,154		

INDICATIVE COST ESTIMATE:

\$18,000,000

Rounded as per 4.5 of RMS
Estimating Requirements

Reality checks:

Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont / Cost Unit incl cont
1. Cost per km	km	0.81	\$12,393,946	\$17,351,154	\$15,301,167 / \$21,421,178
2. Cost per lane-km (Road and Bridge)	lane-km	1.62	\$12,393,946	\$17,351,154	\$7,650,584 / \$10,710,589
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.34	\$4,492,265	\$6,289,171	\$3,352,437 / \$4,693,411
4. Cost per sqm of Bridge	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	15,751.00	\$868,808	\$1,216,332	\$55 / \$77
6. Cost of pavement /m2	sq.m	10,142.00	\$684,921	\$958,890	\$68 / \$95

Line	Item	Description	Quantity	Unit	Rate	Total
2	G1	JOB SPECIFIC REQUIREMENTS	1.000	LSum	126,000.000	126,000
4	G1P1.1	Construction of side tracks and diversion works	1.000	LSum	126,000.000	126,000
6	G2	GENERAL REQUIREMENTS	1.000	LSum	148,680.000	148,680
7	G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
8	G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	302,400.000	302,400
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until Completion	48.000	week	3,150.000	151,200
14	G10	TRAFFIC MANAGEMENT	1.000	LSum	112,896.000	112,896
15	G10P1	Traffic Management	1.000	Lsum	81,900.000	81,900
16	G10P2	Maintenance of Traffic Control Measures	12.000	week	1,008.000	12,096
17	G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000	Lsum	18,900.000	18,900
19	G36	ENVIRONMENTAL PROTECTION	1.000	LSum	75,600.000	75,600
20	G36P2	Site Monitoring	1.000	lump	18,900.000	18,900
21	G36P2.1	Air Pollution	1.000	lump	18,900.000	18,900
22	G36P2.2	Noise	1.000	lump	18,900.000	18,900
23	G36P2.3	Ground Vibration	1.000	lump	18,900.000	18,900
25	G40	CLEARING AND GRUBBING	1.000	LSum	29,850.549	29,851
26	G40P1	Clearing and grubbing	8,336.000	m2	3.581	29,851
28	R11	STORMWATER DRAINAGE (All Provisional)	1.000	LSum	100,800.000	100,800
29	R11P1	Allow provisional sum for stormwater drainage	1.000	lump	100,800.000	100,800
30	R15	KERBS AND GUTTERS	1.000	LSum	6,360.190	6,360
32	R15P1.1	Kerb and gutter (Provisional)	40.000	m	76.020	3,041
33	R15P1.2	Kerb only (median - localised at intersections) - Provisional - Type SF	50.000	m	66.388	3,319
35	R44	EARTHWORKS	1.000	LSum	1,229,523.168	1,229,523
37	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,670.000	m3	20.394	34,059
38	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for future use (landscaping etc)	1,670.000	m3	14.994	25,040
40	R44P2.1	Excavation of all material	2,981.000	m3	17.325	51,646
41	R44P2.2	Excavation of 500mm thick to existing road pavement	975.000	m3	17.325	16,892
42	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for future use (embankment, etc)	3,165.000	m3	14.994	47,456
44		Road embankment using excavated material for fill	3,165.000	m3	5.776	18,281
45		Road embankment using imported material for fill	7,935.000	m3	74.583	591,818
47	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20% unsuitable)	791.000	m3	60.103	47,542
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and recompact (20% of new pavement area - excluding bridge)	1,193.000	m2	27.720	33,070
50	R44P7.1	Trim and Compaction	1,193.000	m2	2.520	3,006
54	R44P5.1	Supply and Place 300mm subbase, unbound new road pavement	1,431.000	m3	137.935	197,385
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road pavement	585.000	m3	140.248	82,045
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime stabilisation (Min 2% Quicklime by mass) (Cut areas only) to main carriageway and temporary Richmond Rd	2,016.000	m3	40.320	81,285
59	R71	UNBOUND AND MODIFIED PAVEMENT COURSE	1.000	LSum	209,488.316	209,488
61	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000	m3	164.412	16,441
63	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,344.000	m3	143.636	193,047
65	R83	GENERAL PAVEMENT BASE	1.000	LSum	7,595.734	7,596
67	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa reinforced concrete, including SL72 reinforcement and jointing) - Provisional	20.000	m2	172.027	3,441
68	R173P1.2	Concrete median infill slab to localised areas (intersections) (125mm thick, 25MPa reinforced concrete with stencilled finish, including SL72 reinforcement)	30.000	m2	138.507	4,155
70	R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	81,201.743	81,202
72	R106P1.1	AMC4 1.5L/m2	15,213.000	ltr	2.381	36,228
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including Adhesion Agent where required and Preparation of Surface)	15,213.000	ltr	0.466	7,092
75	R106P7.1	7mm aggregate	10,142.000	m2	1.223	12,408
76	R106P7.2	14mm aggregate	10,142.000	m2	2.446	25,473
84	R141	PAVEMENT MARKING	1.000	LSum	23,621.535	23,622
86	R141P3.2	C1 lines	811.000	m	6.300	5,109
87	R141P3.3	C4 lines	100.000	m	6.300	630
88	R141P3.4	E1 lines	1,622.000	m	6.215	10,080
89	R141P3.7	L1 lines	811.000	m	5.040	4,087
90	R141P3.8	L3 lines	40.000	m	5.040	202
91	R141P3.9	L6 lines	70.000	m	5.040	353
92	R141P3.10	L7 lines	40.000	m	5.040	202
94	R141P4.5	UA3L arrow	11.000	m2	95.445	1,050
95	R141P4.6	UA3R arrow	10.000	m2	95.445	954
96	R141P4.7	UA5R arrow	5.000	m2	95.445	477
97	R141P4.8	Bicycle marking	5.000	m2	95.445	477
98	R142	RAISED PAVEMENT MARKERS (Provisional)	1.000	LSum	2,299.223	2,299
99	R142P2.1	Type W	60.000	each	38.320	2,299
100	R143	SIGNPOSTING	1.000	LSum	18,792.741	18,793

102	R143P1.1	Major directional signs	1.000	each	10,710.000	10,710
104	R143P2.6	Type R1-2B 'GIVE WAY'	2.000	each	1,143.880	2,288
105	R143P2.10	Type R4-1 Speed Limit	6.000	each	965.830	5,795
118	R178	VEGETATION (ALL PROVISIONAL)	1.000	LSum	72,426.677	72,427
120	R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,500.000	m2	7.284	10,926
121	R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000	m2	10.079	27,011
123	RS178P4.1	Rural grass mix seeding to to site boundaries	2,680.000	m2	1.511	4,049
124	R178P11	Topsoiling of open drains using site material including surface preparation and screening of topsoil stockpiles (10% of total area)	750.000	m2	7.284	5,463
125	R178P17	Lining open drains with organic fibre mesh (10%)	750.000	m2	13.149	9,862
126	R178P19	Watering	8,360.000	m2	1.808	15,116
128	R179	LANDSCAPE PLANTING	1.000	LSum	25,420.500	25,421
131	R179P6.2a	Tree planting (medium)	25.000	each	44.100	1,103
132	R179P6.2b	Tree planting (large)	40.000	each	214.200	8,568
133	R179P12	Maintenance watering	5.000	each	3,150.000	15,750
136	R201	FENCING (All Provisional)	1.000	LSum	38,367.000	38,367
138	R201P6.2	Picket and wire fencing	1,218.000	m	31.500	38,367
141	R204	PROPERTY ADJUSTMENTS (Provisional)	1.000	LSum	252,000.000	252,000
142	R204P1	Adjustments to Properties	1.000	Lsum	252,000.000	252,000
145	B1	OPTION 3 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000	LSum	6,144,589.560	6,144,590
147	B1.1.1	Bridge Site Preparation	450.000	m2	77.922	35,065
148	B1.1.2	Restoration of bridge site	450.000	m2	126.000	56,700
149	B1.1.3	900 mm dia. driven reinforced concrete pile	300.000	m	1,600.000	480,000
150	B1.1.7	Pile integrity testing	10.000	each	504.000	5,040
151	B1.1.8	Sheet Piling	912.000	m2	657.632	599,760
152	B1.1.9	Temporary Works and Scaffolding Allowance	1.000	Item	100,800.000	100,800
153	B1.1.11	Dewatering	1.000	Item	284,137.308	284,137
154	B1.1.12	Water Quality Allowance	1.000	Item	124,570.152	124,570
157	B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000	m ³	1,033.200	166,345
158	B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	29.000	tonne	2,953.184	85,642
160	B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 clumns x 3 intermediates	20.000	m ³	729.506	14,590
161	B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 250kg / m3 For Collision	5.000	tonne	2,953.192	14,766
163	B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000	m ³	1,146.600	112,367
164	B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	18.000	tonne	2,953.184	53,157
166	B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	24.000	each	48,420.351	1,162,088
167	B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000	each	6,151.995	147,648
169	B1.6.1	Pot-type bearings, 2000kN,	48.000	each	4,050.668	194,432
170	B1.6.3	Girder restraints block	48.000	each	838.623	40,254
172	B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000	m ³	439.003	307,302
173	B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000	m ³	2,372.833	398,636
174	B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000	m ³	472.640	59,080
175	B1.7.4	Reinforcing steel in decks.- Allow 220kg/m3	182.000	tonne	3,702.633	673,879
177	B1.8.1	Bituminous waterproof membrane for bridges	1,750.000	m ²	18.572	32,502
183	B1.9.1	Anchors for guardrail terminals	1.000	Lsum	7,765.128	7,765
184	B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6 Joints	1.000	Lsum	3,023.894	3,024
185	B1.9.3	Joint sealants - 6 Joints	1.000	Lsum	2,915.964	2,916
186	B1.9.4	Supply and fabrication of bridge traffic rail, steel including pedestrian separation	420.000	m	910.287	382,321
187	B1.9.5	Transport and erection of bridge balustrade, steel including pedestrian separation	420.000	m	434.700	182,574
188	B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000	Lsum	36,204.563	36,205
189	B1.9.8	Safety Screen Erection	280.000	m	583.200	163,296
190	B1.9.9	Safety Screen Manufacture and delivery	280.000	m	777.600	217,728
194	B2	DEMOLITION OF EXISTING BRIDGE	1.000	LSum	630,000.000	630,000
195	B2.1	Works associated with demolition of existing bridge and reinstatement works at Bridge Street and Flo Clark Park	1.000	Lsum	630,000.000	630,000

Total Infrastructure Costs

9,637,913

Estimate Summary Sheet - Total

Project: Sportsman Creek New Bridge	Estimate Prepared by:	Aqunta Consulting Pty Ltd
	Quantities Prepared by:	Level 10, 67 Albert Avenue Chatswood NSW 2067
Project No: 213083	Date: 07/11/2013	Estimate Type: Preliminary Sketch - Option 4

Item	Base Estimate (excluding contingency)	Contingency		Estimate (including contingency)	% of Total Estimate	Comments/Assumptions
		%	Amount			
1. Project Development						
1 (a) Route/Concept/EIS	\$248,639	40%	\$99,456	\$348,094		2.5% of Construction Costs 10% of Route/Concept/EIS 10% of PM Services Costs General Allowance
1 (b) Project Management Services	\$24,864	40%	\$9,946	\$34,809		
1 (c) Sponsor	\$2,486	40%	\$995	\$3,481		
1 (d) Community Liaison	\$9,000	40%	\$3,600	\$12,600		
Sub total	\$284,989	40%	\$113,996	\$398,985	2.34%	
2. Detail Design & Documentation						
2 (a) Investigation and Design	\$397,822	40%	\$159,129	\$556,951		4% of Construction Cost 10% of Investigation and Design 10% of Project Management Services
2 (b) Project Management Services	\$39,782	40%	\$15,913	\$55,695		
2 (c) Client Representation	\$3,978	40%	\$1,591	\$5,570		
Sub total	\$441,583	40%	\$176,633	\$618,216	3.63%	
3. Property Acquisitions						
3 (a) Acquire Property	\$200,000	40%	\$80,000	\$280,000		As advised by RMS 10% of Property 10% of professional services
3 (b) Professional Services for Property	\$20,000	40%	\$8,000	\$28,000		
3 (c) Project Management Services	\$2,000	40%	\$800	\$2,800		
Sub total	\$222,000	40%	\$88,800	\$310,800	1.82%	
4. Utility Adjustments						
4 (a) Adjust Utilities	\$250,000	40%	\$100,000	\$350,000		Allowance only. 10% of Utility Costs 10% of Project Management Services
4 (b) Project Management Services	\$25,000	40%	\$10,000	\$35,000		
4 (c) Client Representation	\$2,500	40%	\$1,000	\$3,500		
Sub total	\$277,500	40%	\$111,000	\$388,500	2.28%	
5. Infrastructure Construction						
5(a) - 5(c) Infrastructure	\$9,595,552	40%	\$3,838,221	\$13,433,773		10% of Infrastructure 10% of Project Management Services 0.45% of Infrastructure
5(d) Project Management Services	\$959,555	40%	\$383,822	\$1,343,377		
5(e) Client Representation	\$95,956	40%	\$38,382	\$134,338		
5(f) PA Insurance	\$43,180	40%	\$17,272	\$60,452		
Sub total	\$10,694,243	40%	\$4,277,697	\$14,971,940	87.80%	
6. Finalisation						
6 (a) Refurbish old route	\$100,000	40%	\$40,000	\$140,000		Allowance 1.5% of Construction Cost 10% of Project Data Costs 10% of Project Management Services
6 (b) Project data and post completion review.	\$143,933	40%	\$57,573	\$201,507		
6 (c) Project Management Services	\$14,393	40%	\$5,757	\$20,151		
6 (d) Client Representation	\$1,439	40%	\$576	\$2,015		
Sub total	\$259,766	40%	\$103,906	\$363,672	2.13%	
TOTAL - PRELIMINARY SKETCH ESTIMATE	\$12,180,081	40%	\$4,872,032	\$17,051,743		

INDICATIVE COST ESTIMATE:

\$18,000,000

Rounded as per 4.5 of RMS
Estimating Requirements

Reality checks:

Component	Unit	Quantity	Cost excl cont	Cost incl cont	Cost Unit excl cont/Cost Unit incl cont
1. Cost per km	km	0.75	\$12,180,081	\$17,051,743	\$16,349,101 / \$22,888,245
2. Cost per lane-km (Road and Bridge)	lane-km	1.49	\$12,180,081	\$17,051,743	\$8,174,551 / \$11,444,123
3. Cost per lane-km (Road only excl. Bridge)	lane-km	1.21	\$4,380,467	\$6,132,654	\$3,620,221 / \$5,068,309
4. Cost per sqm of Bridge (Only)	sq.m	1,750.00	\$6,144,590	\$8,602,425	\$3,511 / \$4,916
5. Cost of earthworks /m3	cu.m	14,139.00	\$861,463	\$1,206,049	\$61 / \$85
6. Cost of pavement /m2	sq.m	9,313.00	\$674,047	\$943,666	\$72 / \$101

Line	Item	Description	Quantity	Unit	Rate	Total
2	G1	JOB SPECIFIC REQUIREMENTS	1.000	LSum	126,000.000	126,000
4	G1P1.1	Construction of side tracks and diversion works	1.000	LSum	126,000.000	126,000
6	G2	GENERAL REQUIREMENTS	1.000	LSum	148,680.000	148,680
7	G2P1	Provisional sum for Primary Testing Subcontract	1.000	item	126,000.000	126,000
8	G2P2	Provisional sum for WAE Drawings	1.000	item	22,680.000	22,680
10	G4	PRINCIPAL'S PROJECT ACCOMMODATION	1.000	LSum	302,400.000	302,400
11	G4P1	Establishment of Principal's Project Accommodation	1.000	LSum	151,200.000	151,200
12	G4P2	Maintenance of Principal's Project Accommodation until Completion	48.000	week	3,150.000	151,200
14	G10	TRAFFIC MANAGEMENT	1.000	LSum	112,896.000	112,896
15	G10P1	Traffic Management	1.000	Lsum	81,900.000	81,900
16	G10P2	Maintenance of Traffic Control Measures	12.000	week	1,008.000	12,096
17	G10P4	Routine Maintenance of New Roadways Opened to Traffic	1.000	Lsum	18,900.000	18,900
19	G36	ENVIRONMENTAL PROTECTION	1.000	LSum	75,600.000	75,600
20	G36P2	Site Monitoring	1.000	lump	18,900.000	18,900
21	G36P2.1	Air Pollution	1.000	lump	18,900.000	18,900
22	G36P2.2	Noise	1.000	lump	18,900.000	18,900
23	G36P2.3	Ground Vibration	1.000	lump	18,900.000	18,900
25	G40	CLEARING AND GRUBBING	1.000	LSum	19,530.338	19,530
26	G40P1	Clearing and grubbing	5,454.000	m2	3.581	19,530
28	R11	STORMWATER DRAINAGE (All Provisional)	1.000	LSum	100,800.000	100,800
29	R11P1	Allow provisional sum for table drains	1.000	lump	100,800.000	100,800
30	R15	KERBS AND GUTTERS	1.000	LSum	6,360.190	6,360
32	R15P1.1	Kerb and gutter (Provisional)	40.000	m	76.020	3,041
33	R15P1.2	Kerb only (median - localised at intersections) - Provisional - Type SF	50.000	m	66.388	3,319
35	R44	EARTHWORKS	1.000	LSum	1,220,885.148	1,220,885
37	R44P1.1	Removal and stockpiling of non-contaminated topsoil	1,091.000	m3	20.394	22,250
38	R44P1.2	Dispose excavated topsoil to temporary stockpile on site for future use (landscaping etc)	1,091.000	m3	14.994	16,358
40	R44P2.1	Excavation of all material	1,948.000	m3	17.325	33,749
41	R44P2.2	Excavation of 500mm thick to existing road pavement	1,750.000	m3	17.325	30,319
42	R44P2.3	Removal and disposal of surplus topsoil to spoil heap for future use (embankment, etc)	2,958.000	m3	14.994	44,352
44		Road embankment using excavated material for fill	2,958.000	m3	5.776	17,085
45		Road embankment using imported material for fill	8,142.000	m3	74.403	605,789
47	R44P4.1	Disposal of unsuitable and surplus material (Assumed 20% unsuitable)	739.000	m3	60.103	44,416
49	R44P7.1	Treatment Type E1 and Cutting Type C1 - loosen and recompact (40% of new pavement area - excluding bridge)	1,559.000	m2	27.720	43,215
50	R44P7.1	Trim and Compaction	1,559.000	m2	2.520	3,929
54	R44P5.1	Supply and Place 300mm subbase, unbound new road pavement	935.000	m3	143.108	133,806
55	R44P5.2	Supply and Place 300mm subbase, unbound existing road pavement	1,050.000	m3	138.648	145,580
57	R44P6.1	300mm Controlled subbase, comprising of in-situ lime stabilisation (Min 2% Quicklime by mass) (Cut areas only) to main carriageway and temporary Richmond Rd	1,985.000	m3	40.320	80,035
59	R71	UNBOUND AND MODIFIED PAVEMENT COURSE	1.000	LSum	207,785.028	207,785
61	R71P1.7	Supply and Place 250mm DGB20 sub base (Provisional)	100.000	m3	164.412	16,441
63	R71P2.1	Supply and Place 200mm DGB20 Base to road pavement	1,324.000	m3	144.519	191,344
65	R83	GENERAL PAVEMENT BASE	1.000	LSum	7,595.734	7,596
67	R173P1.1	Concrete footpath / bus stop area (250mm thick, 40MPa reinforced concrete, including SL72 reinforcement and jointing) - Provisional	20.000	m2	172.027	3,441
68	R173P1.2	Concrete median infill slab to localised areas (intersections) (125mm thick, 25MPa reinforced concrete with stencilled finish, including SL72 reinforcement)	30.000	m2	138.507	4,155
70	R106	SPRAYED BITUMINOUS SURFACING	1.000	LSum	73,951.544	73,952
72	R106P1.1	AMC4 1.5L/m2	13,968.000	ltr	2.381	33,263
73	R106P1.2	Supply and Spray Binder - Class 170 Bitumen (including Adhesion Agent where required and Preparation of Surface)	13,968.000	ltr	0.466	6,512
75	R106P7.1	7mm aggregate	9,313.000	m2	1.223	11,392
76	R106P7.2	14mm aggregate	9,313.000	m2	2.446	22,784
84	R141	PAVEMENT MARKING	1.000	LSum	22,784.895	22,785
86	R141P3.2	C1 lines	745.000	m	6.300	4,694
87	R141P3.3	C4 lines	90.000	m	6.300	567
88	R141P3.4	E1 lines	1,490.000	m	9.333	10,080
89	R141P3.7	L1 lines	745.000	m	5.040	3,755
90	R141P3.8	L3 lines	40.000	m	5.040	202
91	R141P3.9	L6 lines	65.000	m	5.040	328
92	R141P3.10	L7 lines	40.000	m	5.040	202
94	R141P4.5	UA3L arrow	11.000	m2	95.445	1,050
95	R141P4.6	UA3R arrow	10.000	m2	95.445	954
96	R141P4.7	UA5R arrow	5.000	m2	95.445	477
97	R141P4.8	Bicycle marking	5.000	m2	95.445	477
98	R142	RAISED PAVEMENT MARKERS (Provisional)	1.000	LSum	2,508.257	2,508
99	R142P2.1	Type W	60.000	each	41.804	2,508
100	R143	SIGNPOSTING	1.000	LSum	18,792.741	18,793
102	R143P1.1	Major directional signs	1.000	each	10,710.000	10,710
104	R143P2.6	Type R1-2B 'GIVE WAY'	2.000	each	1,143.880	2,288

105	R143P2.10	Type R4-1 Speed Limit	6.000 each	965.830	5,795
118	R178	VEGETATION (ALL PROVISIONAL)	1.000 LSum	63,676.544	63,677
120	R178P2.1	Areas with a slope of 5 to 1 or flatter (Provisional)	1,000.000 m2	7.284	7,284
121	R178P2.2	Areas steeper than 5 to 1 except stepped batters	2,680.000 m2	10.079	27,011
123	RS178P4.1	Rural grass mix seeding to to site boundaries	2,680.000 m2	1.511	4,049
124	R178P11	Topsailing of open drains using site material including surface preparation and screening of topsoil stockpiles (10% of total area)	500.000 m2	7.284	3,642
125	R178P17	Lining open drains with organic fibre mesh (10%)	500.000 m2	13.149	6,575
126	R178P19	Watering	7,360.000 m2	2.054	15,116
128	R179	LANDSCAPE PLANTING	1.000 LSum	23,499.000	23,499
131	R179P6.2a	Tree planting (medium)	30.000 each	44.100	1,323
132	R179P6.2b	Tree planting (large)	30.000 each	214.200	6,426
133	R179P12	Maintenance watering	5.000 each	3,150.000	15,750
136	R201	FENCING (All Provisional)	1.000 LSum	35,217.000	35,217
138	R201P6.2	Picket and wire fencing	1,118.000 m	31.500	35,217
141	R204	PROPERTY ADJUSTMENTS (Provisional)	1.000 LSum	252,000.000	252,000
142	R204P1	Adjustments to Properties	1.000 Item	252,000.000	252,000
145	B1	OPTION 4 SPORTSMAN CREEK BRIDGE STRUCTURES	1.000 LSUM	6,144,589.560	6,144,590
147	B1.1.1	Bridge Site Preparation	450.000 m2	77.922	35,065
148	B1.1.2	Restoration of bridge site	450.000 m2	126.000	56,700
149	B1.1.3	900 mm dia. driven reinforced concrete pile	300.000 m	1,600.000	480,000
150	B1.1.7	Pile integrity testing	10.000 each	504.000	5,040
151	B1.1.8	Sheet Piling	912.000 m2	657.632	599,760
152	B1.1.9	Temporary Works and Scaffolding Allowance	1.000 Item	100,800.000	100,800
153	B1.1.11	Dewatering	1.000 Item	284,137.308	284,137
154	B1.1.12	Water Quality Allowance	1.000 Item	124,570.152	124,570
157	B1.2.1	Concrete Class 40 Mpa/20 (6 x 3 x 1.5 m deep) 5 caps in total	161.000 m ³	1,033.200	166,345
158	B1.2.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	29.000 tonne	2,953.184	85,642
160	B1.3.1	Concrete Class 40 Mpa/20 (900 dia x 5m H) - 2 columns x 3 intermediates	20.000 m ³	729.506	14,590
161	B1.3.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 250kg / m3 For Collision	5.000 tonne	2,953.192	14,766
163	B1.4.1	Concrete Class 40] Mpa/20 (12 m L x 1.8W x 1.5D)	98.000 m ³	1,146.600	112,367
164	B1.4.2	Steel reinforcing bar (Provisional Quantity), N32 Bar - Allow 180kg / m3	18.000 tonne	2,953.184	53,157
166	B1.5.1	Prestressed concrete T girders, supply on Site, 35 metres long	24.000 each	48,420.351	1,162,088
167	B1.5.3	Erection of Prestressed concrete T girders, 35 meters long	24.000 each	6,151.995	147,648
169	B1.6.1	Pot-type bearings, 2000kN,	48.000 each	4,050.668	194,432
170	B1.6.3	Girder restraints block	48.000 each	838.623	40,254
172	B1.7.1	Concrete Class 40 Mpa/20 in deck Av. 250mm thickness	700.000 m ³	439.003	307,302
173	B1.7.2	Concrete Class 40 Mpa/20 in parapet and parapet terminal	168.000 m ³	2,372.833	398,636
174	B1.7.3	Concrete Class 40 Mpa/20 in transition slabs	125.000 m ³	472.640	59,080
175	B1.7.4	Reinforcing steel in decks.- Allow 220kg/m3	182.000 tonne	3,702.633	673,879
177	B1.8.1	Bituminous waterproof membrane for bridges	1,750.000 m ²	18.572	32,502
183	B1.9.1	Anchors for guardrail terminals	1.000 Lsum	7,765.128	7,765
184	B1.9.2	Bridging strips, compressible fillers and isolation inserts - 6 Joints	1.000 Lsum	3,023.894	3,024
185	B1.9.3	Joint sealants - 6 Joints	1.000 Lsum	2,915.964	2,916
186	B1.9.4	Supply and fabrication of bridge traffic rail, steel including pedestrian separation	420.000 m	910.287	382,321
187	B1.9.5	Transport and erection of bridge balustrade, steel including pedestrian separation	420.000 m	434.700	182,574
188	B1.9.6	Bolted-in aluminium bridge deck expansion joints - 1 span	1.000 Lsum	36,204.563	36,205
189	B1.9.8	Safety Screen Erection	280.000 m	583.200	163,296
190	B1.9.9	Safety Screen Manufacture and delivery	280.000 m	777.600	217,728
194	B2	DEMOLITION OF EXISTING BRIDGE	1.000 LSum	630,000.000	630,000
195	B2.1	Works associated with demolition of existing bridge and reinstatement works at Bridge Street and Flo Clark Park	1.000 LSum	630,000.000	630,000

Total for all items

9,595,552