

SummaryDoc: **Concept design estimate**

Rev: 1

Job No: 3413527

Date: 6 September 2018

ESTIMATE SUMMARY

1.00 Executive Summary:

1.01 The following concept design estimate is for the proposed design options for the Raglan Stormwater Gilmour Street

2.00 Scope of Work:

2.01 Our interpretation of the scope of work included in this project typically includes for the following:

- a Option 1 - Swale drain with culverts below driveways
- b Option 2 - Swale drain with stormwater pipe work and manholes

3.00 High level summary of Cost:

Our estimate of cost is as summarised below:

3.01 Option 1 - Swale drain with culverts below driveways

Item Description	Total (\$ NZD)	Lower Tolerance		Upper Tolerance	
		%	Total (\$ NZD)	%	Total (\$ NZD)
Total Physical Works	283,000	-10%	254,700	30%	367,900
Total Base Works	283,000	-10%	254,700	30%	367,900
Total Expected Estimate	365,700	-10%	329,200	30%	475,400

3.02 Option 2 - Swale drain with stormwater pipe work and manholes

Item Description	Total (\$ NZD)	Lower Tolerance		Upper Tolerance	
		%	Total (\$ NZD)	%	Total (\$ NZD)
Total Physical Works	467,100	-10%	420,390	30%	607,230
Total Base Works	467,100	-10%	420,390	30%	607,230
Total Expected Estimate	528,200	-10%	475,400	30%	686,700

Note: We recommend that the upper tolerance range be used for budgetary purposes.
Further detail of this estimate can be found in the estimate attached to this report

4.00 Estimate Approach & Methodology:

4.01 This estimate has been prepared using a combination of high level and detailed estimating principles (i.e. cost per functional area, cost per elemental item, first principles resource estimating, etc.) for the key scope items identified. This estimate has also been priced on local construction industry rates at present date prices. Our adopted work break down structure for this project is as set out in the estimate attached to this report

4.02 An estimating contingency has been included in the estimate to cover items of unforeseen detail and design development. This contingency is expected to be converted to scope, and therefore should not be regarded as discretionary. The accuracy range indicated above reflects the accuracy after and including the estimating contingency.

5.00 Project Risks:

- 5.01 The following project risks have been identified with the current scheme:
- a Additional premiums for restricted working hours & disruptions (Cost estimate includes for normal working hours)
 - b Existing ground conditions
 - c Existing unknown services
 - d This is a concept design estimate with a variance of -10% and +30%
 - e Traffic

6.00 Estimate Assumptions:

- 6.01 Our estimate of cost is based on the following working assumptions:
- a Soft soil
 - b Unrestricted access to carry out the works
 - c The works will be undertaken under normal working hours
 - d The works will be undertaken concurrently. No allowance has been made in our estimate for staged works
 - e The works will be procured under competitive bid scenario via local building contractors
 - f The works will be carried out by a Single Main Contractor. No allowance has been made for multiple contracts
 - g The accuracy of this estimate is commensurate with the level of design information available and base assumptions made. We have allowed for an estimating tolerance to account for general unknowns in the design and for any discrepancies in the design information prepared to date. For this estimate we have assessed our accuracy range at an individual cost centre level to express confidence levels in the reported figures in relation to the identified scope. Please refer to attached estimate of this report for further detail regarding estimation accuracy.

7.00 Estimate Exclusions:

- 7.01 Our estimate of cost excludes the following:
- a Extent of existing services
 - b Client management costs
 - c Building consent fees
 - d Legal fees
 - e Land acquisition costs (not applicable)
 - f Client insurances
 - g Escalation allowances
 - h Goods and Services Tax (GST)
 - i Asbestos identification, removal and disposal
 - j Consent fees
 - k Professional services (i.e. design fees)
 - l Relocation of electric utility pole

8.00 Reference Documentation:

- 8.01 Our estimate is based on the following documentation:
- a Refer to individual estimate sheets

9.00 Disclaimers:

- 9.01 © Beca 2018 (unless Beca has expressly agreed otherwise with the Client in writing).
- 9.02 This report has been prepared by Beca on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.
- 9.03 Where another party has supplied information for use in this report, it is assumed to be reliable.
- 9.04 Beca reserves the right, but not the obligation, to review all calculations included or referred to in this report and, if considered necessary, to revise its opinion in the light of any new or existing information.

Items highlighted in yellow indicate a potential for cost reduction during detailed design.

Items highlighted in red indicate risk items needing to be discussed.

Option 1 - Swale drain with culverts below driveways

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Option 1 - Swale drain with culverts below driveways

Estimate Detail						
Ref	Item Description	Quantity	Unit	Rate	Sub-Total	Total
	Key Metric Data					
	Total length	185.00	m			
	Swale length	132.00	m			
	Swale width	5.50	m			
	Driveway Crossings	8.00	No			
	Estimate Reference Documentation					
	This cost estimate is based on the following reference documentation:					
	Input from Anna McKay and Greg Cumming					
	Drawings:					
	3413527-CA-103 Rev.0 - Plan / long section Option 1 (sheet 2 of 2)					
	3413527-CA-104 Rev.0 - Plan / long section Option 1 (sheet 2 of 2)					
1.00	Preliminary and General					25,000.00
1.01	Site establishment	1.00	LS	5,000.00	5,000.00	
1.02	Site demobilisation/Clean up	1.00	LS	3,000.00	3,000.00	
1.03	Contract Insurances	1.00	LS	1,000.00	1,000.00	
1.04	Contractor's Bond/s	1.00	LS	1,000.00	1,000.00	
1.05	Project Signboard	1.00	LS	500.00	500.00	
1.06	Quality Management Plan	1.00	LS	500.00	500.00	
1.07	Programme	1.00	LS	500.00	500.00	
1.08	Health and Safety	1.00	LS	500.00	500.00	
1.09	As-built drawings and Operation and Maintenance manuals	1.00	LS	1,000.00	1,000.00	
1.10	Supervision - 2 months at 50% attendance	0.50	LS	17,000.00	8,500.00	
1.11	Other	1.00	LS	3,500.00	3,500.00	
2.00	Demolition and Site Clearance					67,030.00
2.01	Allow to general site clearance (hedges, shrubs, general vegetation, rubbish etc.) to waste off site.	1,020.00	m2	5.00	5,100.00	
2.02	Remove existing catchpit	2.00	No	400.00	800.00	
2.03	Remove general stormwater pipe	45.00	m	60.00	2,700.00	
2.04	Demolish existing driveway to waste	8.00	No	500.00	4,000.00	
3.00	Earthworks					
3.01	Strip 150mm thick topsoil to stockpile	726.00	m2	10.00	7,260.00	
3.02	Cut to waste off site	231.00	m3	50.00	11,550.00	
3.03	Shaping swale drain	558.00	m2	55.00	30,690.00	
3.04	Respread topsoil from stockpile	59.00	m3	20.00	1,180.00	
3.05	Spread imported topsoil	50.00	m3	75.00	3,750.00	
4.00	Drainage					84,890.00
4.01	375mm diameter RCRRJ Class 4, 0-1.5m deep	20.00	m	350.00	7,000.00	
4.02	450mm diameter RCRRJ Class 4, 0-1.5m deep	9.00	m	550.00	4,950.00	
4.03	525mm diameter RCRRJ Class 4, 0-1.5m deep	19.00	m	700.00	13,300.00	
4.04	600mm diameter RCRRJ Class 4, 0-1.5m deep	4.00	m	850.00	3,400.00	
4.05	Extra over for 20Mpa concrete surrounds to driveway pipe	18.00	m3	550.00	9,900.00	
4.06	Imported rock armour (rip-rap) to inlet and outlet structures and rock apron	30.00	m3	170.00	5,100.00	
4.07	Bidim A44 - Class E to inlet and outlet structures	70.00	m2	7.00	490.00	
4.08	1200mm diameter manhole, 2-3m deep	1.00	No	7,500.00	7,500.00	
4.09	Mea drain (200mm, 280 depth Z/S 2000 series) with lock down grate	32.00	m	700.00	22,400.00	
4.10	Mea inline sump	7.00	No	1,000.00	7,000.00	
4.11	150mm diameter uPVC pipe from Mea drain through Headwalls	35.00	m	110.00	3,850.00	
5.00	Pavements					36,390.00
5.01	Saw cut existing pavement	185.00	m	10.00	1,850.00	
5.02	150mm thick 20Mpa Reinforced concrete slab driveways with 665 Mesh reinforcement	245.00	m2	120.00	29,400.00	
5.03	Construction saw cut joints in slab	32.00	m	20.00	640.00	
5.04	Driveway timber wheel stop	60.00	m	75.00	4,500.00	
6.00	Landscaping					10,600.00
6.01	Planting plants to swale area	530.00	m2	20.00	10,600.00	
7.00	Reinstatement Works					925.00
7.01	Two coat chipseal	92.50	m2	10.00	925.00	
8.00	Services					16,000.00
8.01	Private watermain relocation and reinstate toby boxes at each driveway	8.00	No	1,500.00	12,000.00	
8.02	Stomwater connection	1.00	LS	1,000.00	1,000.00	

Project: Raglan Stormwater Gilmour Street



Option 1 - Swale drain with culverts below driveways

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Estimate Detail						
Ref	Item Description	Quantity	Unit	Rate	Sub-Total	Total
8.03	Protection of existing power pole bases	3.00	No	1,000.00	3,000.00	
9.00	Enabling Works					10,100.00
9.01	Traffic Management	1.00	LS	7,500.00	7,500.00	
9.02	Pot holing of services	1.00	LS	750.00	750.00	
9.03	Silt control - environmental control	1.00	LS	1,850.00	1,850.00	
10.00	Test & Commission					1,500.00
10.01	Test & Commissioning	1.00	LS	1,500.00	1,500.00	
12.00	Main Contractors Off-Site Overheads & Profit					30,565.00
12.01	Main Off-Site Overheads & Profit	252,435.00	LS	12.00%	30,292.20	
	Rounding Adjustment	1.00	Sum	272.00	272.00	
Total Physical Works					283,000.00	
13.00	Consultant Fees (Design/Engineering) / Consents (Cost to Complete)					
13.01	Geotechnical Investigation	1.00	LS	Excluded	Excluded	
13.02	Survey work	1.00	LS	Excluded	Excluded	
13.03	Further Assessment Work	1.00	LS	Excluded	Excluded	
13.04	Structural Engineer Investigation Work	1.00	LS	Excluded	Excluded	
13.05	Detailed Design	1.00	LS	Excluded	Excluded	
13.06	Construction Monitoring & Contract Administration	1.00	LS	Excluded	Excluded	
13.07	Practical Completion/Producer Statements, etc	1.00	LS	Excluded	Excluded	
Total Base Estimate					283,000.00	
14.00	Provisional Costs (Risk Items)					54,400.00
14.01	Allowance for diversion of 150mm AC watermain (Works assumed to be under separate WDC renewal budget/programme)	1.00	LS	25,000.00	Excluded	
14.02	Relocation of electric utility pole	2.00	No	20,000.00	40,000.00	
15.03	150x250 Reinforced concrete edge beam	7.00	m3	1,200.00	8,400.00	
14.04	Rip Rap erosion protection in bottom of swale (25m3 D50 Rip Rap + 60m2 Bidim A49 + 25 m3 cut to waste)	1.00	LS	6,000.00	6,000.00	
14.05	Pre-Cast Concrete Headwalls	14.00	No	2,500.00	Excluded	
14.06	Extend kerb and channel (optional)	22.50	m	60.00	Excluded	
15.00	Contingency					28,300.00
15.01	Construction Contingency	283,000.00	LS	10.00%	28,300.00	
Total Expected Estimate					365,700.00	

Option 2 - Swale drain with stormwater pipe work and manholes

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Option 2 - Swale drain with stormwater pipe work and manholes

Estimate Detail						
Ref	Item Description	Quantity	Unit	Rate	Sub-Total	Total
	Key Metric Data					
	Total length	185.00	m			
	Swale length	126.00	m			
	Swale width	3.00	m			
	Driveway Crossings	8.00	No			
	Reinstatement of road	135.00	m			
	Estimate Reference Documentation					
	This cost estimate is based on the following reference documentation:					
	Input from Anna McKay and Greg Cumming					
	Drawings:					
	3413527-CA-101 Rev.0 - Plan / long section Option 1 (sheet 2 of 2)					
	3413527-CA-102 Rev.0 - Plan / long section Option 1 (sheet 2 of 2)					
1.00	Preliminary and General					30,000.00
1.01	Site establishment	1.00	LS	5,000.00	5,000.00	
1.02	Site demobilisation/Clean up	1.00	LS	3,000.00	3,000.00	
1.03	Contract Insurances	1.00	LS	1,000.00	1,000.00	
1.04	Contractor's Bond/s	1.00	LS	1,000.00	1,000.00	
1.05	Project Signboard	1.00	LS	500.00	500.00	
1.06	Quality Management Plan	1.00	LS	500.00	500.00	
1.07	Programme	1.00	LS	500.00	500.00	
1.08	Health and Safety	1.00	LS	500.00	500.00	
1.09	As-built drawings and Operation and Maintenance manuals	1.00	LS	1,000.00	1,000.00	
1.10	Supervision - 3 months at 50% attendance	0.50	LS	25,000.00	12,500.00	
1.11	Other	1.00	LS	4,500.00	4,500.00	
2.00	Demolition and Site Clearance					52,050.00
2.01	Allow to general site clearance (hedges, shrubs, general vegetation, rubbish etc.) to waste off site.	650.00	m2	5.00	3,250.00	
2.02	Remove existing catchpit	2.00	No	400.00	800.00	
2.03	Remove general stormwater pipe	45.00	m	60.00	2,700.00	
2.04	Demolish existing driveway to waste	8.00	No	500.00	4,000.00	
3.00	Earthworks					
3.01	Strip 150mm thick topsoil to stockpile	693.00	m2	10.00	6,930.00	
3.02	Cut to waste swale off site	124.00	m3	50.00	6,200.00	
3.03	Cut to waste pavement seal and layer works off site	84.00	m3	50.00	4,200.00	
3.04	Shaping swale drain	348.00	m2	55.00	19,140.00	
3.05	Respread topsoil from stockpile	54.00	m3	20.00	1,080.00	
3.06	Spread imported topsoil	50.00	m3	75.00	3,750.00	
4.00	Drainage					244,650.00
4.01	300mm diameter RCRRJ Class 4, 1.51-3m deep	25.00	m	400.00	10,000.00	
4.02	375mm diameter RCRRJ Class 4, 1.51-3m deep	48.00	m	500.00	24,000.00	
4.03	450mm diameter RCRRJ Class 4, 1.51-3m deep	23.00	m	700.00	16,100.00	
4.04	525mm diameter RCRRJ Class 4, 1.51-3m deep	78.00	m	800.00	62,400.00	
4.05	Extra over for 20Mpa concrete surrounds to driveway pipe	18.00	m3	550.00	9,900.00	
4.06	1050mm diameter manhole, 1.51-2m deep	7.00	No	5,000.00	35,000.00	
4.07	1050mm diameter manhole, 2-3m deep	1.00	No	6,500.00	6,500.00	
4.08	1200mm diameter manhole, 2-3m deep	1.00	No	7,500.00	7,500.00	
4.09	Scruffy dome manhole	8.00	No	5,000.00	40,000.00	
4.10	Mea drain (200mm, 280 depth Z/S 2000 series) with lock down grate	32.00	m	700.00	22,400.00	
4.11	Mea inline sump	7.00	No	1,000.00	7,000.00	
4.12	150mm diameter uPVC pipe from Mea drain to scruffy dome	35.00	m	110.00	3,850.00	
5.00	Pavements					37,740.00
5.01	Saw cut existing pavement	320.00	m	10.00	3,200.00	
5.02	150mm thick 20Mpa Reinforced concrete slab driveways with 665 Mesh reinforcement	245.00	m2	120.00	29,400.00	
5.03	Construction saw cut joints in slab	32.00	m	20.00	640.00	
5.04	Driveway timber wheel stop	60.00	m	75.00	4,500.00	
6.00	Landscaping					7,000.00
6.01	Planting of swale area	350.00	m2	20.00	7,000.00	
7.00	Reinstatement Works					18,015.00
7.01	Subgrade preparation and testing	337.50	m2	6.00	2,025.00	
7.02	125mm GAP/WHAP 65 subbase	42.00	m3	100.00	4,200.00	

Project: **Raglan Stormwater Gilmour Street**



Option 2 - Swale drain with stormwater pipe work and manholes

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Option 2 - Swale drain with stormwater pipe work and manholes

Estimate Detail						
Ref	Item Description	Quantity	Unit	Rate	Sub-Total	Total
7.03	125mm M/4 AP40 Basecourse	42.00	m3	120.00	5,040.00	
7.04	Two coat chipseal	337.50	m2	20.00	6,750.00	
8.00	Services					16,000.00
8.01	Private watermain relocation and reinstate toby boxes at each drive way	8.00	No	1,500.00	12,000.00	
8.02	Stomwater connection	1.00	LS	1,000.00	1,000.00	
8.03	Protection of existing power pole bases	3.00	No	1,000.00	3,000.00	
9.00	Enabling Works					10,100.00
9.01	Traffic Management	1.00	LS	7,500.00	7,500.00	
9.02	Pot holing of services	1.00	LS	750.00	750.00	
9.03	Silt control - environmental control	1.00	LS	1,850.00	1,850.00	
10.00	Test & Commission					1,500.00
10.01	Test & Commissioning	1.00	LS	1,500.00	1,500.00	
11.00	Main Contractors Off-Site Overheads & Profit					50,045.00
11.01	Main Off-Site Overheads & Profit (excluding provisional costs)	417,055.00	LS	12.00%	50,046.60	
	Rounding Adjustment	1.00	Sum	(1.60)	(1.60)	
	Total Physical Works				467,100.00	
12.00	Consultant Fees (Design/Engineering) / Consents (Cost to Complete)					
12.01	Geotechnical Investigation	1.00	LS	Excluded	Excluded	
12.02	Survey work	1.00	LS	Excluded	Excluded	
12.03	Further Assessment Work	1.00	LS	Excluded	Excluded	
12.04	Structural Engineer Investigation Work	1.00	LS	Excluded	Excluded	
12.05	Detailed Design	1.00	LS	Excluded	Excluded	
12.06	Construction Monitoring & Contract Administration	1.00	LS	Excluded	Excluded	
12.07	Practical Completion/Producer Statements, etc	1.00	LS	Excluded	Excluded	
	Rounding Adjustment	1.00	Sum	Excluded	Excluded	
	Total Base Estimate				467,100.00	
13.00	Provisional Cost					14,400.00
13.01	Allowance for diversion of 150mm AC watermain (Works assumed to be under separate WDC renewal budget/programme)	1.00	LS	10,000.00	Excluded	
13.02	Grass planting in swale (in lieu of plants)	530.00	m2	4.00	Excluded	
13.03	Rip Rap erosion protection in swale (25m3 D50 Rip Rap + 60m2 Bidim A49 + 25 m3 cut to waste)	1.00	LS	6,000.00	6,000.00	
13.04	150x250 Reinforced concrete edge beam	7.00	m3	1,200.00	8,400.00	
13.05	Extend kerb and channel	22.50	m	60.00	Excluded	
14.00	Contingency					46,710.00
14.01	Construction Contingency	467,100.00	LS	10.00%	46,710.00	
	Rounding Adjustment	1.00	Sum	(10.00)	(10.00)	
	Total Expected Estimate				528,200.00	