

Goulburn Broken Catchment Management Authority  
Remote Operation Control of Outlet Structures in the Lower Goulburn Levees  
COST ESTIMATE - SUMMARY

Item	Description	Loch Garry	Deep Creek	Wakiti Creek	Hagen's Lane	Hancock's Creek		
1	Preliminaries	\$ 65,000.00	\$ 24,500.00	\$ 19,000.00	\$ 8,000.00	\$ 32,500.00	\$ 149,000.00	1.8%
2	Site Works	\$ 152,212.00	\$ 92,200.00	\$ 43,200.00	\$ 2,600.00	\$ 216,900.00	\$ 507,112.00	6.1%
3	Structural Works	\$ 203,700.00	\$ 24,400.00	\$ 178,600.00	\$ 1,000.00	\$ 211,600.00	\$ 619,300.00	7.5%
4	Walkway Access	\$ 65,200.00	\$ 6,500.00	\$ 14,300.00	\$ -	\$ 15,200.00	\$ 101,200.00	1.2%
5	Waterway Control Device (Gates)	\$ 3,233,394.80	\$ 274,635.20	\$ 444,272.00	\$ 11,750.00	\$ 143,700.00	\$ 4,107,752.00	49.5%
6	Waterway & Embankment Protection Works	\$ 293,500.00	\$ 23,000.00	\$ 17,500.00	\$ 2,850.00	\$ 55,750.00	\$ 392,600.00	4.7%
7	Electricity Supply	\$ 281,000.00	\$ 30,000.00	\$ 24,000.00	\$ 11,500.00	\$ 34,500.00	\$ 381,000.00	4.6%
8	SCADA & Remote Control	\$ 168,300.00	\$ 35,600.00	\$ 35,600.00	\$ 12,400.00	\$ 33,200.00	\$ 285,100.00	3.4%
9	Landscape & Reinstatement Works	\$ 3,000.00	\$ 3,000.00	\$ 3,000.00	\$ 1,500.00	\$ 6,000.00	\$ 16,500.00	0.2%
10	Maintenance of The Works	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 1,000.00	\$ 2,000.00	\$ 9,000.00	0.1%
11	Provisional Items	\$ 100,000.00	\$ 70,000.00	\$ 70,000.00	\$ 2,000.00	\$ 70,000.00	\$ 312,000.00	3.8%
12	Practical Completion	\$ 60,000.00	\$ 38,000.00	\$ 38,000.00	\$ 4,500.00	\$ 38,000.00	\$ 178,500.00	2.2%
13	Contractors Overheads	\$ 809,778.69	\$ 109,171.16	\$ 155,657.60	\$ 10,342.50	\$ 150,386.25	\$ 1,235,336.20	
	<b>Construction Cost Subtotal</b>	<b>\$ 5,437,085.49</b>	<b>\$ 733,006.36</b>	<b>\$ 1,045,129.60</b>	<b>\$ 69,442.50</b>	<b>\$ 1,009,736.25</b>	<b>\$ 8,294,400.20</b>	
14	Technical Services & Approvals	\$ 874,562.82	\$ 168,950.95	\$ 205,769.44	\$ 59,416.38	\$ 200,460.44	\$ 1,509,160.03	18.2%
15	Contingencies	\$ 2,174,834.20	\$ 293,202.54	\$ 418,051.84	\$ 27,777.00	\$ 403,894.50	\$ 3,317,760.08	40.0%
	<b>TOTAL OVERALL COST exc' GST</b>	<b>\$ 8,486,482.51</b>	<b>\$ 1,195,159.86</b>	<b>\$ 1,668,950.88</b>	<b>\$ 156,635.88</b>	<b>\$ 1,614,091.19</b>	<b>\$ 13,121,320.31</b>	
	<b>TOTAL OVERALL COST inc' GST</b>	<b>\$ 9,335,130.76</b>	<b>\$ 1,314,675.84</b>	<b>\$ 1,835,845.97</b>	<b>\$ 172,299.46</b>	<b>\$ 1,775,500.31</b>	<b>\$ 14,433,452.34</b>	
<b>Notes</b>								
1	This estimate is compiled based upon information drawn from the "Cordell Commercial & Industrial Building Cost Guide - Victoria", recent tender outcomes and information supplied by GM Water.							
2	At the time of writing our current version of "Cordell Commercial & Industrial Building Cost Guide - Victoria" is dated July 2015.							
3	This estimate adopts a location factor of 1.02 from "Cordell Commercial & Industrial Building Cost Guide - Victoria" as nominated for Shepparton.							
4	The rates in this estimate also include allowances for remote location, low speed gravel track access and limited or unserviced site conditions.							
5	The above rates have been drawn from various line items in Cordell's as above.							
6	All areas taken from dimensions shown on our preliminary sketch dated 28/9/15.							
7	No provision for cost of capital, land purchase, holding or delay costs, contingencies, legal costs or stamp duty or profit unless shown.							
8	All costs based upon information available at the time of compilation.							
9	All costs subject to detailed design development.							
10	All costs subject to planning approval and the requirements of the relevant authorities.							
11	All costs subject to confirmation planning approval requirements and conditions.							
12	GMR Engineering Services does not purport to be Quantity Surveyors.							
13	Any cost estimates prepared by GMR should be considered as a "preliminary advice" only.							
14	We recommend that Quantity Surveyors be engaged should you need accurate or more detailed cost estimates.							
15	Construction cost outcomes can vary considerably and are very much dependant upon the prevailing market conditions at the time of construction.							
16	Construction cost outcomes are also dependant upon the availability of suitable contractors and materials at the time of construction.							
								Prepared by GMR 28/9/15
								Updated by GMR 30/9/15
								Updated by GMR 23/10/15

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<u>Site Establishment</u>					
	To establish initial presence on site, make access arrangement and provide site office, temporary facilities, secure storage compound, generator and prepare for works @ per item.	1	item	\$ 25,000.00	\$ 25,000.00	
1.2	<u>Quality Plan</u>					
1.2.1	<u>Site Safety Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 7,500.00	\$ 7,500.00	
1.2.2	<u>Site Environmental Management Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 7,500.00	\$ 7,500.00	
1.2.3	<u>Site Works Traffic Control Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 2,500.00	\$ 2,500.00	
1.2.4	<u>Quality Assurance Test Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 15,000.00	\$ 15,000.00	
1.3	<u>Re-establishment of property boundaries (nominal provision only)</u>					
	To carry out re-establishment survey of adjacent property boundaries, allow for not less than 2 pegs (provisional item only).	1	item	\$ 2,500.00	\$ 2,500.00	
1.4	<u>Setout of Works</u>					
	To undertake necessary computations, supply, place and maintain required pegs & stakes as per approved drawings for the duration of the project.	1	item	\$ 5,000.00	\$ 5,000.00	
						<b>Preliminaries \$ 65,000.00</b>
<b>2</b>	<b>Site Works</b>					
2.1	<u>Site Access</u>					
	To upgrade existing access road to ensure all weather access to site @ per lin.m.	1,700	lin.m.	\$ 30.00	\$ 51,000.00	
2.2	<u>Secure Site Perimeter</u>					
	To provide a secure temporary perimeter fence around the site to control access for the duration of the works, @ per lin.m.	276.1	lin.m.	\$ 20.00	\$ 5,522.00	
2.3	<u>Demolition Works</u>					
2.3.1	To remove the timber bridge deck, railing and beams from the existing structure and dispose of surplus materials from the site, transport and dispose of same to an approved location @ per m2.	854	m2	\$ 35.00	\$ 29,890.00	
2.3.2	To remove existing drop boards from each control device @ per no.	48	no.	\$ 100.00	\$ 4,800.00	
2.4	<u>Temporary Diversion Works</u>					
	To provide upstream diversionary works to redirect flows and protect the site from inundation @ per item	1	item	\$ 5,000.00	\$ 5,000.00	
2.5	<u>Lay-down Area</u>					
	To supply necessary materials and construct clear, level, open, hard stand lay-down area for site facilities, site office, parking, materials storage and assembly construction purposes and future maintenance @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
2.6	<u>Access Ramps</u>					
	To construct compacted earthfill ramp for construction phase access to top of levee @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
2.7	<u>Access Stairs</u>					
	To fabricate offsite, transport and install on site galvanised, steel fabricated access stairs connected to existing steel walkway @ per no.	2	no.	\$ 10,000.00	\$ 20,000.00	
2.8	<u>Waterway Protection Works</u>					
	To provide waterway protection countermeasures to contain debris, silt or sediment and prevent it from entering the waterway @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
2.9	<u>Clearing &amp; Grubbing</u>					
	To clear any designated vegetation obstructing the waterway @ per item	1	item	\$ 5,000.00	\$ 5,000.00	
<b>3</b>	<b>Earthworks (nominal)</b>					
	To win, excavate necessary insitu materials to achieve specified subgrade design levels and grade and provide suitable material for use as compacted fill @ per m3.	200	m3	\$ 15.00	\$ 3,000.00	
	To load, cart, place, spread and consolidate in place suitable fill materials necessary to achieve specified subgrade design levels and grade @ per m3.	200	m3	\$ 15.00	\$ 3,000.00	
						<b>Siteworks \$ 152,212.00</b>
<b>3</b>	<b>Structural Works</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
3.1	<u>Modification of Existing Structure</u>					
	To sawcut and rebate existing concrete surfaces to receive frames for new waterway controls @ per waterway.					
3.1.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 1,200.00	\$ 56,400.00	
3.1.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 2,500.00	\$ 2,500.00	

Item	Description	Qty	Units	Rate	Cost	Subtotal
3.2	<b>Installation of RC Invert Sills</b>					
3.2.1	To fabricate EPS infills @ per no.	16	no.	\$ 600.00	\$ 9,600.00	
3.2.2	To prepare reinforcement, formwork, supply and place RC sill over EPS infills @ per no.	16	no.	\$ 2,200.00	\$ 35,200.00	
3.3	<b>Outfall Energy Dissipation</b>					
	To repair and replace existing cast insitu, reinforced concrete energy dissipation structures @ per item.	1	item	\$ 50,000.00	\$ 50,000.00	
3.4	<b>Reinstatement &amp; Repairs</b>					
	To reinstate and repair existing cast insitu, reinforced concrete structure, ie. cracks and open joints etc. @ per item.	1	item	\$ 50,000.00	\$ 50,000.00	
						<b>Structural Works \$ 203,700.00</b>
4	<b>Walkway Access</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
4.1	<b>Modification of Existing Galvanised Walkway</b>					
4.1.1	To close off the gap in the floor over the existing drop boards @ per no.	47	no.	\$ 600.00	\$ 28,200.00	
4.1.2	To provide opening and modifications to handrails to accommodate the new control devices on the downstream side @ per item.	47	no.	\$ 600.00	\$ 28,200.00	
4.2	<b>Provision of Access Stairs to Walkway</b>					
	To fabricate and install a series of galvanised access stairs linking the walkway with ground level @ per no.	4	no.	\$ 2,200.00	\$ 8,800.00	
						<b>Walkway Access \$ 65,200.00</b>
5	<b>Waterway Control Device (Gates)</b>					
5.1	<b>Fabrication Drawings</b>					
	To confirm dimensions for all devices, prepare fabrications drawings @ per no. of waterway devices.					
5.1.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 120.00	\$ 5,640.00	
5.1.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 1,720.00	\$ 1,720.00	
5.2	<b>Supply &amp; Install Control Devices</b>					
	To supply necessary materials, fabricate, bench test, transport to site, then install each control device complete with frames, doors, hydraulic rams, pumps, controls, sensors and fixings etc. @ per no. of waterway devices.					
5.2.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 66,317.00	\$ 3,116,899.00	
5.2.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 99,235.80	\$ 99,235.80	
5.3	<b>Testing &amp; Commissioning of Control Devices</b>					
	To test and commission each control device insitu @ per no. of waterway devices.					
5.3.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 200.00	\$ 9,400.00	
5.3.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 500.00	\$ 500.00	
						<b>Waterway Control Device (Gates) \$ 3,233,394.80</b>
6	<b>Waterway &amp; Embankment Protection Works</b>					
6.1	<b>Downstream Waterway Works</b>					
6.1.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.1.2	To clear away debris, silt and sediment from the waterway and within 20m downstream of the structure @ per m2.	2440	m2	\$ 20.00	\$ 48,800.00	
6.1.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	2440	m3	\$ 30.00	\$ 73,200.00	
6.1.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	1220	m2	\$ 75.00	\$ 91,500.00	
6.2	<b>Upstream Waterway Works</b>					
6.2.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.2.2	To clear away debris, silt and sediment from the waterway and within 10m upstream of the structure @ per m2.	1220	m2	\$ 20.00	\$ 24,400.00	
6.2.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	1220	m3	\$ 30.00	\$ 36,600.00	
6.2.4	To supply, assemble and install waterway armour along low inlet drain only, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	200	m2	\$ 75.00	\$ 15,000.00	
						<b>Waterway &amp; Embankment Protection Works \$ 293,500.00</b>
7	<b>Electricity Supply</b>					
7.1	<b>Solar Panels</b>					
	To supply and install pole mounted solar panels, inverter, control pedestal and cables, assuming 1 x panel will supply 2 x gate devices @ per no.					
7.1.1	- common waterway openings about 1.66m high x 2.35m wide.	23	no.	\$ 5,000.00	\$ 115,000.00	
7.1.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 7,500.00	\$ 7,500.00	
7.2	<b>Battery Backup</b>					
	To supply and install secure battery back up systems within a cabinet, assuming 1 x cabinet will supply 2 x gate devices @ per no.					
7.2.1	- common waterway openings about 1.66m high x 2.35m wide.	23	no.	\$ 1,500.00	\$ 34,500.00	
7.2.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 3,000.00	\$ 3,000.00	
7.3	<b>Standby Systems</b>					

Item	Description	Qty	Units	Rate	Cost	Subtotal
	To provide a standby mechanical gearbox operated system to allow manual operation of gates using battery operated drill or similar @ each control device.					
7.3.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 2,500.00	\$ 117,500.00	
7.3.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 3,500.00	\$ 3,500.00	
					<b>Electricity Supply</b>	<b>\$ 281,000.00</b>
<b>8</b>	<b>SCADA &amp; Remote Control</b>					
8.1	<u>Water Level Sensors</u>					
	To supply and install an ultrasonic water level sensor upstream and downstream of each control device @ per no.					
8.1.1	- common waterway openings about 1.66m high x 2.35m wide.	94	no.	\$ 500.00	\$ 47,000.00	
8.1.2	- low flow waterway opening about 2.82m high x 2.07m wide.	2	no.	\$ 750.00	\$ 1,500.00	
8.2	<u>Control Status</u>					
	To supply and install sensors to monitor the status of each control device, ie. open/closed/part open @ per no.					
8.2.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 500.00	\$ 23,500.00	
8.2.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 750.00	\$ 750.00	
8.3	<u>Waterway Discharge</u>					
	To supply and install sensors to monitor the discharge and velocity of each control device @ per no.					
8.3.1	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 500.00	\$ 23,500.00	
8.3.2	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 750.00	\$ 750.00	
8.4	<u>Control Panel, Aerial &amp; Mast</u>					
8.4.1	To supply and install a central control panel, in a secure, all weather cabinet, complete with independent solar panel and battery backup, provide wireless link to each device for control and data, with data storage and PLC's to receive, store, backup, transmit and receive data from devices, then transmit same to SCADA system and receive then relay instructions from SCADA to device controllers @ per item.	1	item	\$ 20,000.00	\$ 20,000.00	
8.4.2	To supply and install a mast and aerials at height suitable for SCADA communications via Mobilenet, with necessary linkages @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
8.4.3	To facilitate necessary communications for internet hosting of real time data transmission and receiving @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.5	<u>CCTV Systems</u>					
8.5.1	To supply onsite hard drive for storage of CCTV vision, selectable at 15 to 30 FPS, with sufficient capacity for up to 3 x months of time & date stamped data and automatic rewrite @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
8.5.2	To provide real time CCTV link via SCADA systems for offsite monitoring of control devices @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
	To supply, install and commission high resolution, colour, CCTV surveillance cameras, with movement activation, low light infrared capability and with wireless link to main control cabinet allowing real time observation of each control device @ per no.					
8.5.3	- common waterway openings about 1.66m high x 2.35m wide.	47	no.	\$ 400.00	\$ 18,800.00	
8.5.4	- low flow waterway opening about 2.82m high x 2.07m wide.	1	no.	\$ 500.00	\$ 500.00	
8.5.5	Additional CCTV cameras at selected locations for monitoring of overall site, walkway etc. @ per no.	6	no.	\$ 500.00	\$ 3,000.00	
8.6	<u>SCADA Link</u>					
	To provide secure data link to site for SCADA communications via the internet, complete with inbuilt fail safe systems, compatible with GBCMA PC and smart phone network @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
8.7	<u>SCADA System</u>					
	To develop the necessary software, install, test and commission same, with capabilities for augmentations and expansion to include other control devices, also provide appropriate web hosting, ongoing support, data backup services @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
					<b>SCADA &amp; Remote Control</b>	<b>\$ 168,300.00</b>
<b>9</b>	<b>Landscape &amp; Reinstatement Works</b>					
9.1	<u>Grade &amp; Level Disturbed Areas</u>					
	To trim by hand, supply and place as required any additional materials @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
9.2	<u>Topsoil &amp; Grass</u>					
	To supply, place and spread clean and approved topsoil only, to a minimum (lightly compacted) depth of 50mm, sow to grass with drought tolerant native species indigenous to the area @ per m2.	1	item	\$ 1,000.00	\$ 1,000.00	
9.3	<u>General Reinstatement</u>					
	Provision for reinstatement of any damaged road pavements, fencing, gates etc on completion @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
					<b>Landscape &amp; Reinstatement Works</b>	<b>\$ 3,000.00</b>
<b>10</b>	<b>Maintenance of The Works</b>					
10.1	<u>Duration of Works</u>					
	To clean up site on a daily basis, collect all litter and debris and dispose of to an approved location, pay any necessary fees etc. at per item.	1	item	\$ 1,000.00	\$ 1,000.00	

Item	Description	Qty	Units	Rate	Cost	Subtotal
10.2	<u>Defects Liability Period</u>					
	To maintain the site during the defects liability period, make good any damage, accidental or otherwise as may be provided for under the insurance cover provided @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Maintenance of The Works \$ 2,000.00</b>
<b>11</b>	<b>Provisional Items</b>					
11.1	<u>Difficult Ground</u>					
	Provision to accommodate difficult ground conditions that may exceed that amount provided for in the above scheduled items @ per m3.					
11.1.1	Type A - being ground which is water bearing ground, or excessively wet, not self-supporting, prone to collapse and unstable as a result of that condition, requiring ground support.	200	m3	\$ 100.00	\$ 20,000.00	
11.1.2	Type B - being ground which is hard and not rippable or readily excavated without using a rock breaker or blasting.	200	m3	\$ 100.00	\$ 20,000.00	
11.1.3	Type C - being ground which is otherwise deemed unstable or otherwise unsuitable for incorporation into the works.	200	m3	\$ 100.00	\$ 20,000.00	
11.2	<u>Latent Effects</u>					
	The Superintendent will require evidence of real and actual costs before considering any compensation for delays due stand down, re-establishment costs etc. due to Latent Effects @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.1	<u>Delays Due To Weather</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.2	<u>Suspension of Works</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
	Additional Tests	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Provisional Items \$ 100,000.00</b>
<b>12</b>	<b>Practical Completion</b>					
12.1	<u>As Constructed Drawings</u>					
	Recording of the Works	1	item	\$ 5,000.00	\$ 5,000.00	
	Preparation of Necessary Drawings	1	item	\$ 5,000.00	\$ 5,000.00	
12.2	<u>Testing &amp; Commissioning</u>					
	To attend and participate in final acceptance testing and commissioning for practical completion.	1	item	\$ 10,000.00	\$ 10,000.00	
12.3	<u>Operating Manuals</u>					
	To prepare and provide operations and maintenance manuals in hard copy and digital format.	1	item	\$ 5,000.00	\$ 5,000.00	
12.4	<u>Defects &amp; Omissions</u>					
	To respond to defects and omissions schedule ion a timely fashion to the satisfaction of the superintendent.	1	item	\$ 5,000.00	\$ 5,000.00	
12.5	<u>Maintenance Period</u>					
	To attend to matters arising during the 12 x months defects liability period in a timely fashion.	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Practical Completion \$ 60,000.00</b>
						<b>Construction Cost Subtotal \$ 4,627,306.80</b>
<b>13</b>	<b>Contractors Overheads</b>					
13.1	Allowance for profit and attendance @ % of construction costs.	10.0%		\$ 4,627,306.80	\$ 462,730.68	
13.2	Allowance for project management costs @ % of construction costs.	5.0%		\$ 4,627,306.80	\$ 231,365.34	
13.3	Allowance for head office costs @ % of construction costs.	2.5%		\$ 4,627,306.80	\$ 115,682.67	
						<b>Contractors Overheads \$ 809,778.69</b>
						<b>Construction Cost Subtotal \$ 5,437,085.49</b>
<b>14</b>	<b>Technical Services &amp; Approvals</b>					
14.1	<u>Detailed Design &amp; Documentation</u>					
	To prepare a detailed and documentation solution suitable for tender and construction purposes.					
	Estimated as a % of the construction cost.	5.50	%		\$ 299,039.70	
14.2	<u>Planning Approval</u>					
14.2.1	To prepare a comprehensive planning submission to secure a planning permit.					
	Estimated as a % of the construction cost.	2.00	%		\$ 108,741.71	
14.2.2	Preparation of the necessary Impact Assessments for each @ per no. including;					
	Geotechnical	1	no.	\$ 3,000.00	\$ 3,000.00	
	Flora & Fauna	1	no.	\$ 3,000.00	\$ 3,000.00	
	Cultural Heritage	1	no.	\$ 3,000.00	\$ 3,000.00	
14.2.3	Prepare Management Plans and implement compensatory works @ per no. including;					
	Flora & Fauna	1	no.	\$ 25,000.00	\$ 25,000.00	
	Cultural Heritage	1	no.	\$ 25,000.00	\$ 25,000.00	
14.3	<u>Project Management</u>					

<i>Item</i>	<i>Description</i>	<i>Qty</i>	<i>Units</i>	<i>Rate</i>	<i>Cost</i>	<i>Subtotal</i>
	To provide sufficient resources to manage the following elements of the project;					
	Estimated as a % of the construction cost.					
	Design Phase	1.00	%		\$ 54,370.85	
	Planning Phase	1.00	%		\$ 54,370.85	
	Tender Phase	1.00	%		\$ 54,370.85	
	Construction Phase	4.50	%		\$ 244,668.85	
		7.50				
				<b>Technical Services &amp; Approvals</b>		<b>\$ 874,562.82</b>
<b>15</b>	<b>Contingencies</b>					
	Estimated as a % of the construction cost.	40.00	%		\$ 2,174,834.20	
					<b>Contingencies</b>	<b>\$ 2,174,834.20</b>
<b>TOTAL OVERALL COST exc' GST</b>						<b>\$ 8,486,482.51</b>
<b>TOTAL OVERALL COST inc' GST</b>						<b>\$ 9,335,130.76</b>

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<u>Site Establishment</u>					
	To establish initial presence on site, make access arrangement and provide site office, temporary facilities, secure storage compound, generator and prepare for works @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
1.2	<u>Quality Plan</u>					
1.2.1	<u>Site Safety Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 2,500.00	\$ 2,500.00	
1.2.2	<u>Site Environmental Management Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.3	<u>Site Works Traffic Control Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.4	<u>Quality Assurance Test Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 5,000.00	\$ 5,000.00	
1.3	<u>Re-establishment of property boundaries (nominal provision only)</u>					
	To carry out re-establishment survey of adjacent property boundaries, allow for not less than 2 pegs (provisional item only).	1	item	\$ 2,000.00	\$ 2,000.00	
1.4	<u>Setout of Works</u>					
	To undertake necessary computations, supply, place and maintain required pegs & stakes as per approved drawings for the duration of the project.	1	item	\$ 3,000.00	\$ 3,000.00	
						<b>Preliminaries \$ 24,500.00</b>
<b>2</b>	<b>Site Works</b>					
2.1	<u>Site Access</u>					
	To upgrade existing access road to ensure all weather access to site @ per lin.m.	1,800	lin.m.	\$ 30.00	\$ 54,000.00	
2.2	<u>Secure Site Perimeter</u>					
	To provide a secure temporary perimeter fence around the site to control access for the duration of the works, @ per lin.m.	60	lin.m.	\$ 20.00	\$ 1,200.00	
2.3	<u>Demolition Works</u>					
	To remove 1 x plank from bridge deck and existing control gates from the existing structure and dispose of surplus materials from the site, transport and dispose of same to an approved location @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
2.4	<u>Temporary Diversion Works</u>					
	To provide upstream diversionary works to redirect flows and protect the site from inundation @ per item	1	item	\$ 5,000.00	\$ 5,000.00	
2.5	<u>Waterway Protection Works</u>					
	To provide waterway protection countermeasures to contain debris, silt or sediment and prevent it from entering the waterway @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
2.6	<u>Clearing &amp; Grubbing</u>					
	To clear any designated vegetation obstructing the waterway @ per item	1	item	\$ 2,000.00	\$ 2,000.00	
2.7	<u>Earthworks (nominal)</u>					
	To win, excavate necessary insitu materials to achieve specified subgrade design levels and grade and provide suitable material for use as compacted fill @ per m3.	100	m3	\$ 15.00	\$ 1,500.00	
	To load, cart, place, spread and consolidate in place suitable fill materials necessary to achieve specified subgrade design levels and grade @ per m3.	100	m3	\$ 15.00	\$ 1,500.00	
2.8	<u>Lay-down Area</u>					
	To supply necessary materials and construct clear, level, open, hard stand lay-down area for site facilities, site office, parking, materials storage and assembly construction purposes and future maintenance @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
2.9	<u>Access Ramps</u>					
	To construct compacted earthfill ramp for construction phase access to top of levee @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Siteworks \$ 92,200.00</b>
<b>3</b>	<b>Structural Works</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
3.1	<u>Modification of Existing Structure</u>					
	To sawcut and remove the floor existing concrete invert floor slab to allow installation of piers to support waterway controls @ per no..					
	- common waterway openings about 1.66m high x 2.35m wide.	3	no.	\$ 1,500.00	\$ 4,500.00	
3.2	<u>Excavation of Pier Foundations</u>					

Item	Description	Qty	Units	Rate	Cost	Subtotal
3.2.1	To excavate foundation pads for piers @ per no.	3	no.	\$ 1,200.00	\$ 3,600.00	
3.2.2	To prepare reinforcement, insert dowels, supply and place RC foundation pads for piers @ per no.	3	no.	\$ 1,500.00	\$ 4,500.00	
3.3	<u>Outfall Energy Dissipation</u>					
3.3.1	To sawcut additional penetrations through kerb on outlet side of structure @ per no.	3	no.	\$ 600.00	\$ 1,800.00	
3.3.2	To repair and replace existing cast insitu, reinforced concrete energy dissipation structures @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
3.4	<u>Reinstatement &amp; Repairs</u>					
	To reinstate and repair existing cast insitu, reinforced concrete structure, ie. cracks and open joints etc. @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
						<b>Structural Works \$ 24,400.00</b>
<b>4</b>	<b>Walkway Access</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
4.1	<u>Galvanised Handrails</u>					
	To fabricate and install a series of galvanised steel handrails along the bridge deck, ensuring unobstructed access to control structures for maintenance @ per lin.m.	15	lin.m.	\$ 300.00	\$ 4,500.00	
4.2	<u>Provision of Access to Waterway</u>					
	To construct a series of steps to provide access stairs linking the walkway with the invert of the structure @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
						<b>Walkway Access \$ 6,500.00</b>
<b>5</b>	<b>Waterway Control Device (Gates)</b>					
5.1	<u>Fabrication Drawings</u>					
	To confirm dimensions for all devices, prepare fabrications drawings @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 1.57m wide.	4	no.	\$ 1,200.00	\$ 4,800.00	
5.2	<u>Supply &amp; Install Control Devices</u>					
	To supply necessary materials, fabricate, bench test, transport to site, then install each control device complete with frames, doors, hydraulic rams, pumps, controls, sensors and fixings etc. @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 1.57m wide.	4	no.	\$ 67,258.80	\$ 269,035.20	
5.3	<u>Testing &amp; Commissioning of Control Devices</u>					
	To test and commission each control device insitu @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 1.57m wide.	4	no.	\$ 200.00	\$ 800.00	
						<b>Waterway Control Device (Gates) \$ 274,635.20</b>
<b>6</b>	<b>Waterway &amp; Embankment Protection Works</b>					
6.1	<u>Downstream Waterway Works</u>					
6.1.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.1.2	To clear away debris, silt and sediment from the waterway and within 20m downstream of the structure @ per m2.	100	m2	\$ 20.00	\$ 2,000.00	
6.1.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	50	m3	\$ 30.00	\$ 1,500.00	
6.1.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	100	m2	\$ 75.00	\$ 7,500.00	
6.2	<u>Upstream Waterway Works</u>					
6.2.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.2.2	To clear away debris, silt and sediment from the waterway and within 10m upstream of the structure @ per m2.	100	m2	\$ 20.00	\$ 2,000.00	
6.2.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	200	m3	\$ 30.00	\$ 6,000.00	
						<b>Waterway &amp; Embankment Protection Works \$ 23,000.00</b>
<b>7</b>	<b>Electricity Supply</b>					
7.1	<u>Solar Panels</u>					
	To supply and install pole mounted solar panels, inverter, control pedestal and cables, assuming 1 x panel will supply 2 x gate devices @ per no.					
	- common waterway openings about 2.52m high x 1.57m wide.	2	no.	\$ 5,000.00	\$ 10,000.00	
7.2	<u>Battery Backup</u>					
	To supply and install secure battery back up systems within a cabinet, assuming 1 x cabinet will supply 2 x gate devices @ per no.					
	- common waterway openings about 2.52m high x 1.57m wide.	2	no.	\$ 3,000.00	\$ 6,000.00	
7.3	<u>Standby Systems</u>					
	To provide a standby mechanical gearbox operated system to allow manual operation of gates using battery operated drill or similar @ each control device.					
	- common waterway openings about 2.52m high x 1.57m wide.	4	no.	\$ 3,500.00	\$ 14,000.00	
						<b>Electricity Supply \$ 30,000.00</b>





Item	Description	Qty	Units	Rate	Cost	Subtotal
	Provision to accommodate difficult ground conditions that may exceed that amount provided for in the above scheduled items @ per m3.					
11.1.1	Type A - being ground which is water bearing ground, or excessively wet, not self-supporting, prone to collapse and unstable as a result of that condition, requiring ground support.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.2	Type B - being ground which is hard and not rippable or readily excavated without using a rock breaker or blasting.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.3	Type C - being ground which is otherwise deemed unstable or otherwise unsuitable for incorporation into the works.	100	m3	\$ 100.00	\$ 10,000.00	
11.2	<b>Latent Effects</b>					
	The Superintendent will require evidence of real and actual costs before considering any compensation for delays due stand down, re-establishment costs etc. due to Latent Effects @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.1	<b>Delays Due To Weather</b>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.2	<b>Suspension of Works</b>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
	Additional Tests	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>Provisional Items \$ 70,000.00</b>
<b>12</b>	<b>Practical Completion</b>					
12.1	<b>As Constructed Drawings</b>					
	Recording of the Works	1	item	\$ 2,000.00	\$ 2,000.00	
	Preparation of Necessary Drawings	1	item	\$ 2,000.00	\$ 2,000.00	
12.2	<b>Testing &amp; Commissioning</b>					
	To attend and participate in final acceptance testing and commissioning for practical completion.	1	item	\$ 5,000.00	\$ 5,000.00	
12.3	<b>Operating Manuals</b>					
	To prepare and provide operations and maintenance manuals in hard copy and digital format.	1	item	\$ 2,000.00	\$ 2,000.00	
12.4	<b>Defects &amp; Omissions</b>					
	To respond to defects and omissions schedule ion a timely fashion to the satisfaction of the superintendent.	1	item	\$ 2,000.00	\$ 2,000.00	
12.5	<b>Maintenance Period</b>					
	To attend to matters arising during the 12 x months defects liability period in a timely fashion.	1	item	\$ 5,000.00	\$ 5,000.00	
						<b>Practical Completion \$ 38,000.00</b>
						<b>Construction Cost Subtotal \$ 623,835.20</b>
<b>13</b>	<b>Contractors Overheads</b>					
13.1	Allowance for profit and attendance @ % of construction costs.	10.0%		\$ 623,835.20	\$ 62,383.52	
13.2	Allowance for project management costs @ % of construction costs.	5.0%		\$ 623,835.20	\$ 31,191.76	
13.3	Allowance for head office costs @ % of construction costs.	2.5%		\$ 623,835.20	\$ 15,595.88	
						<b>Contractors Overheads \$ 109,171.16</b>
						<b>Construction Cost Subtotal \$ 733,006.36</b>
<b>14</b>	<b>Technical Services &amp; Approvals</b>					
14.1	<b>Detailed Design &amp; Documentation</b>					
	To prepare a detailed and documentation solution suitable for tender and construction purposes.					
	Estimated as a % of the construction cost.	5.50	%		\$ 40,315.35	
14.2	<b>Planning Approval</b>					
14.2.1	To prepare a comprehensive planning submission to secure a planning permit.					
	Estimated as a % of the construction cost.	2.00	%		\$ 14,660.13	
14.2.2	Preparation of the necessary Impact Assessments for each @ per no. including;					
	Geotechnical	1	no.	\$ 3,000.00	\$ 3,000.00	
	Flora & Fauna	1	no.	\$ 3,000.00	\$ 3,000.00	
	Cultural Heritage	1	no.	\$ 3,000.00	\$ 3,000.00	
14.2.3	Prepare Management Plans and implement compensatory works @ per no. including;					
	Flora & Fauna	1	no.	\$ 25,000.00	\$ 25,000.00	
	Cultural Heritage	1	no.	\$ 25,000.00	\$ 25,000.00	
14.3	<b>Project Management</b>					
	To provide sufficient resources to manage the following elements of the project;					
	Estimated as a % of the construction cost.					
	Design Phase	1.00	%		\$ 7,330.06	
	Planning Phase	1.00	%		\$ 7,330.06	
	Tender Phase	1.00	%		\$ 7,330.06	

<i>Item</i>	<i>Description</i>	<i>Qty</i>	<i>Units</i>	<i>Rate</i>	<i>Cost</i>	<i>Subtotal</i>
	Construction Phase	4.50	%		\$ 32,985.29	
		7.50				
					<b>Technical Services &amp; Approvals</b>	<b>\$ 168,950.95</b>
<b>15</b>	<b>Contingencies</b>					
	Estimated as a % of the construction cost.	40.00	%		\$ 293,202.54	
					<b>Contingencies</b>	<b>\$ 293,202.54</b>
<b>TOTAL OVERALL COST exc' GST</b>						<b>\$ 1,195,159.86</b>
<b>TOTAL OVERALL COST inc' GST</b>						<b>\$ 1,314,675.84</b>

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<u>Site Establishment</u>					
	To establish initial presence on site, make access arrangement and provide site office, temporary facilities, secure storage compound, generator and prepare for works @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
1.2	<u>Quality Plan</u>					
1.2.1	<u>Site Safety Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 2,000.00	\$ 2,000.00	
1.2.2	<u>Site Environmental Management Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.3	<u>Site Works Traffic Control Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.4	<u>Quality Assurance Test Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 5,000.00	\$ 5,000.00	
1.3	<u>Re-establishment of property boundaries (nominal provision only)</u>					
	To carry out re-establishment survey of adjacent property boundaries, allow for not less than 2 pegs (provisional item only).	1	item	\$ 2,000.00	\$ 2,000.00	
1.4	<u>Setout of Works</u>					
	To undertake necessary computations, supply, place and maintain required pegs & stakes as per approved drawings for the duration of the project.	1	item	\$ 3,000.00	\$ 3,000.00	
					<b>Preliminaries</b>	<b>\$ 19,000.00</b>
<b>2</b>	<b>Site Works</b>					
2.1	<u>Site Access</u>					
	To upgrade existing access road to ensure all weather access to site @ per lin.m.	100	lin.m.	\$ 50.00	\$ 5,000.00	
2.2	<u>Secure Site Perimeter</u>					
	To provide a secure temporary perimeter fence around the site to control access for the duration of the works, @ per lin.m.	60	lin.m.	\$ 20.00	\$ 1,200.00	
2.3	<u>Demolition Works</u>					
	To clear the area around the upstream endwall of the existing structure, taking care to expose the pile cap cast over the sheet piling depicted on the GMW drawings @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
2.4	<u>Temporary Diversion Works</u>					
	To provide upstream diversionary works to redirect flows and protect the site from inundation @ per item	1	item	\$ 5,000.00	\$ 5,000.00	
2.5	<u>Waterway Protection Works</u>					
	To provide waterway protection countermeasures to contain debris, silt or sediment and prevent it from entering the waterway @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
2.6	<u>Clearing &amp; Grubbing</u>					
	To clear any designated vegetation obstructing the waterway @ per item	1	item	\$ 2,000.00	\$ 2,000.00	
2.7	<u>Earthworks (nominal)</u>					
2.7.1	To win, excavate necessary insitu materials to achieve specified subgrade design levels and grade and provide suitable material for use as compacted fill @ per m3.	100	m3	\$ 15.00	\$ 1,500.00	
2.7.2	To load, cart, place, spread and consolidate in place suitable fill materials necessary to achieve specified subgrade design levels and grade @ per m3.	100	m3	\$ 15.00	\$ 1,500.00	
2.8	<u>Lay-down Area</u>					
	To supply necessary materials and construct clear, level, open, hard stand lay-down area for site facilities, site office, parking, materials storage and assembly construction purposes and future maintenance @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
2.9	<u>Access Ramps</u>					
	To construct compacted earthfill ramp for construction phase access to top of levee @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
					<b>Siteworks</b>	<b>\$ 43,200.00</b>
<b>3</b>	<b>Structural Works</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
3.1	<u>Modification of Existing Structure</u>					
	To sawcut and remove the obstructing parts of existing concrete invert floor slab to allow installation of dowels into pile cap and formation of the foundations for the piers to support waterway controls @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 1,500.00	\$ 6,000.00	

Item	Description	Qty	Units	Rate	Cost	Subtotal
3.2	<b>Excavate &amp; Construct Pier Foundations</b>					
3.2.1	To excavate foundation pads for piers, abutment extensions and wingwalls @ per no.	4	no.	\$ 1,200.00	\$ 4,800.00	
3.2.2	To prepare reinforcement, insert dowels, supply and place RC foundation pads to link with existing structure @ per no.	4	no.	\$ 1,500.00	\$ 6,000.00	
3.3	<b>Floor/Invert Slab</b>					
3.3.1	To sawcut additional penetrations through kerb on outlet side of structure @ per no.	3	no.	\$ 600.00	\$ 1,800.00	
3.3.2	To repair and replace existing cast insitu, reinforced concrete energy dissipation structures @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
3.3	<b>Floor/Invert Slab</b>					
3.3.1	To excavate, prepare reinforcement, boxing, connect to pile cap with dowels, supply and place RC floor slab around piers @ per item.	1	item	\$ 25,000.00	\$ 25,000.00	
3.3.2	To excavate, prepare reinforcement, erect formwork, supply and place RC wingwalls and foundations @ per item.	1	item	\$ 25,000.00	\$ 25,000.00	
3.4	<b>Engineered Fill</b>					
	To supply, place and consolidate engineered fill behind new upstream wingwalls @ per item.	1	item	\$ 100,000.00	\$ 100,000.00	
3.5	<b>Reinstatement &amp; Repairs</b>					
	To reinstate and repair existing solid brick structure, ie. backfill subsidence's, repair cracks and collapsed sill etc. @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
						<b>Structural Works \$ 178,600.00</b>
4	<b>Walkway Access</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
4.1	<b>Galvanised Handrails</b>					
	To fabricate and install a series of galvanised steel handrails along the bridge deck, ensuring unobstructed access to control structures for maintenance @ per lin.m.	21	lin.m.	\$ 300.00	\$ 6,300.00	
4.2	<b>Provision of Access to Waterway</b>					
	To construct a series of steps to provide access stairs linking the walkway with the invert of the structure @ per item.	1	item	\$ 8,000.00	\$ 8,000.00	
						<b>Walkway Access \$ 14,300.00</b>
5	<b>Waterway Control Device (Gates)</b>					
5.1	<b>Fabrication Drawings</b>					
	To confirm dimensions for all devices, prepare fabrications drawings @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 1,500.00	\$ 6,000.00	
5.2	<b>Supply &amp; Install Control Devices</b>					
	To supply necessary materials, fabricate, bench test, transport to site, then install each control device complete with frames, doors, hydraulic rams, pumps, controls, sensors and fixings etc. @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 109,368.00	\$ 437,472.00	
5.3	<b>Testing &amp; Commissioning of Control Devices</b>					
	To test and commission each control device insitu @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 200.00	\$ 800.00	
						<b>Waterway Control Device (Gates) \$ 444,272.00</b>
6	<b>Waterway &amp; Embankment Protection Works</b>					
6.1	<b>Downstream Waterway Works</b>					
6.1.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.1.2	To clear away debris, silt and sediment from the waterway and within 20m downstream of the structure @ per m2.	100	m2	\$ 20.00	\$ 2,000.00	
6.1.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	50	m3	\$ 30.00	\$ 1,500.00	
6.1.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	100	m2	\$ 75.00	\$ 7,500.00	
6.2	<b>Upstream Waterway Works</b>					
6.2.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.2.2	To clear away debris, silt and sediment from the waterway and within 10m upstream of the structure @ per m2.	50	m2	\$ 20.00	\$ 1,000.00	
6.2.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	50	m3	\$ 30.00	\$ 1,500.00	
						<b>Waterway &amp; Embankment Protection Works \$ 17,500.00</b>
7	<b>Electricity Supply</b>					
7.1	<b>Point of Supply</b>					
	To establish a point of supply and service from the nearby aerial supply at pump station @ per no.	1	no.	\$ 10,000.00	\$ 10,000.00	

Item	Description	Qty	Units	Rate	Cost	Subtotal
7.2	<u>Solar Panels</u>					
	To supply and install pole mounted solar panels, inverter, control pedestal and cables, assuming 1 x panel will supply 2 x gate devices @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	0	no.	\$ -	\$ -	
7.3	<u>Battery Backup</u>					
	To supply and install secure battery back up systems within a cabinet, assuming 1 x cabinet will supply 2 x gate devices @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	0	no.	\$ -	\$ -	
7.4	<u>Standby Systems</u>					
	To provide a standby mechanical gearbox operated system to allow manual operation of gates using battery operated drill or similar @ each control device.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 3,500.00	\$ 14,000.00	
						<b>Electricity Supply \$ 24,000.00</b>
<b>8</b>	<b>SCADA &amp; Remote Control</b>					
8.1	<u>Water Level Sensors</u>					
	To supply and install an ultrasonic water level sensor upstream and downstream of each control device @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	8	no.	\$ 500.00	\$ 4,000.00	
8.2	<u>Control Status</u>					
	To supply and install sensors to monitor the status of each control device, ie. open/closed/part open @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 500.00	\$ 2,000.00	
8.3	<u>Waterway Discharge</u>					
	To supply and install sensors to monitor the discharge and velocity of each control device @ per no.					
	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 500.00	\$ 2,000.00	
8.4	<u>Control Panel, Aerial &amp; Mast</u>					
8.4.1	To supply and install a central control panel, in a secure, all weather cabinet, complete with independent solar panel and battery backup, provide wireless link to each device for control and data, with data storage and PLC's to receive, store, backup, transmit and receive data from devices, then transmit same to SCADA system and receive then relay instructions from SCADA to device controllers @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
8.4.2	To supply and install a mast and aerials at height suitable for SCADA communications via Mobilenet, with necessary linkages @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
8.4.3	To facilitate necessary communications for internet hosting of real time data transmission and receiving @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.5	<u>CCTV Systems</u>					
8.5.1	To supply onsite hard drive for storage of CCTV vision, selectable at 15 to 30 FPS, with sufficient capacity for up to 3 x months of time & date stamped data and automatic rewrite @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.5.2	To provide real time CCTV link via SCADA systems for offsite monitoring of control devices @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
	To supply, install and commission high resolution, colour, CCTV surveillance cameras, with movement activation, low light infrared capability and with wireless link to main control cabinet allowing real time observation of each control device @ per no.					
8.5.3	- common waterway openings about 2.52m high x 3.1m wide.	4	no.	\$ 400.00	\$ 1,600.00	
8.5.4	Additional CCTV cameras at selected locations for monitoring of overall site, walkway etc. @ per no.	2	no.	\$ 500.00	\$ 1,000.00	
8.6	<u>SCADA Link</u>					
	To provide secure data link to site for SCADA communications via the internet, complete with inbuilt fail safe systems, compatible with GBCMA PC and smart phone network @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.7	<u>SCADA System</u>					
	To develop the necessary software, install, test and commission same, with capabilities for augmentations and expansion to include other control devices, also provide appropriate web hosting, ongoing support, data backup services @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
						<b>SCADA &amp; Remote Control \$ 35,600.00</b>
<b>9</b>	<b>Landscape &amp; Reinstatement Works</b>					
9.1	<u>Grade &amp; Level Disturbed Areas</u>					
	To trim by hand, supply and place as required any additional materials @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
9.2	<u>Topsoil &amp; Grass</u>					

Item	Description	Qty	Units	Rate	Cost	Subtotal
	To supply, place and spread clean and approved topsoil only, to a minimum (lightly compacted) depth of 50mm, sow to grass with drought tolerant native species indigenous to the area @ per m2.	1	item	\$ 1,000.00	\$ 1,000.00	
9.3	<u>General Reinstatement</u>					
	Provision for reinstatement of any damaged road pavements, fencing, gates etc on completion @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
				<b>Landscape &amp; Reinstatement Works</b>		<b>\$ 3,000.00</b>
<b>10</b>	<b>Maintenance of The Works</b>					
10.1	<u>Duration of Works</u>					
	To clean up site on a daily basis, collect all litter and debris and dispose of to an approved location, pay any necessary fees etc. at per item.	1	item	\$ 1,000.00	\$ 1,000.00	
10.2	<u>Defects Liability Period</u>					
	To maintain the site during the defects liability period, make good any damage, accidental or otherwise as may be provided for under the insurance cover provided @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
				<b>Maintenance of The Works</b>		<b>\$ 2,000.00</b>
<b>11</b>	<b>Provisional Items</b>					
11.1	<u>Difficult Ground</u>					
	Provision to accommodate difficult ground conditions that may exceed that amount provided for in the above scheduled items @ per m3.					
11.1.1	Type A - being ground which is water bearing ground, or excessively wet, not self-supporting, prone to collapse and unstable as a result of that condition, requiring ground support.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.2	Type B - being ground which is hard and not rippable or readily excavated without using a rock breaker or blasting.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.3	Type C - being ground which is otherwise deemed unstable or otherwise unsuitable for incorporation into the works.	100	m3	\$ 100.00	\$ 10,000.00	
11.2	<u>Latent Effects</u>					
	The Superintendent will require evidence of real and actual costs before considering any compensation for delays due stand down, re-establishment costs etc. due to Latent Effects @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.1	<u>Delays Due To Weather</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.2	<u>Suspension of Works</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
	Additional Tests	1	item	\$ 10,000.00	\$ 10,000.00	
				<b>Provisional Items</b>		<b>\$ 70,000.00</b>
<b>12</b>	<b>Practical Completion</b>					
12.1	<u>As Constructed Drawings</u>					
	Recording of the Works	1	item	\$ 2,000.00	\$ 2,000.00	
	Preparation of Necessary Drawings	1	item	\$ 2,000.00	\$ 2,000.00	
12.2	<u>Testing &amp; Commissioning</u>					
	To attend and participate in final acceptance testing and commissioning for practical completion.	1	item	\$ 5,000.00	\$ 5,000.00	
12.3	<u>Operating Manuals</u>					
	To prepare and provide operations and maintenance manuals in hard copy and digital format.	1	item	\$ 2,000.00	\$ 2,000.00	
12.4	<u>Defects &amp; Omissions</u>					
	To respond to defects and omissions schedule in a timely fashion to the satisfaction of the superintendent.	1	item	\$ 2,000.00	\$ 2,000.00	
12.5	<u>Maintenance Period</u>					
	To attend to matters arising during the 12 x months defects liability period in a timely fashion.	1	item	\$ 5,000.00	\$ 5,000.00	
				<b>Practical Completion</b>		<b>\$ 38,000.00</b>
				<b>Construction Cost Subtotal</b>		<b>\$ 889,472.00</b>
<b>13</b>	<b>Contractors Overheads</b>					
13.1	Allowance for profit and attendance @ % of construction costs.	10.0%		\$ 889,472.00	\$ 88,947.20	
13.2	Allowance for project management costs @ % of construction costs.	5.0%		\$ 889,472.00	\$ 44,473.60	
13.3	Allowance for head office costs @ % of construction costs.	2.5%		\$ 889,472.00	\$ 22,236.80	
				<b>Contractors Overheads</b>		<b>\$ 155,657.60</b>
				<b>Construction Cost Subtotal</b>		<b>\$ 1,045,129.60</b>
<b>14</b>	<b>Technical Services &amp; Approvals</b>					
14.1	<u>Detailed Design &amp; Documentation</u>					
	To prepare a detailed and documentation solution suitable for tender and construction purposes.					
	Estimated as a % of the construction cost.	5.50	%		\$ 57,482.13	
14.2	<u>Planning Approval</u>					

Item	Description	Qty	Units	Rate	Cost	Subtotal
14.2.1	To prepare a comprehensive planning submission to secure a planning permit. Estimated as a % of the construction cost.	2.00	%		\$ 20,902.59	
14.2.2	Preparation of the necessary Impact Assessments for each @ per no. including;					
	Geotechnical	1	no.	\$ 3,000.00	\$ 3,000.00	
	Flora & Fauna	1	no.	\$ 3,000.00	\$ 3,000.00	
	Cultural Heritage	1	no.	\$ 3,000.00	\$ 3,000.00	
14.2.3	Prepare Management Plans and implement compensatory works @ per no. including;					
	Flora & Fauna	1	no.	\$ 20,000.00	\$ 20,000.00	
	Cultural Heritage	1	no.	\$ 20,000.00	\$ 20,000.00	
14.3	<u>Project Management</u>					
	To provide sufficient resources to manage the following elements of the project; Estimated as a % of the construction cost.					
	Design Phase	1.00	%		\$ 10,451.30	
	Planning Phase	1.00	%		\$ 10,451.30	
	Tender Phase	1.00	%		\$ 10,451.30	
	Construction Phase	4.50	%		\$ 47,030.83	
		7.50				
				<b>Technical Services &amp; Approvals</b>		<b>\$ 205,769.44</b>
15	<b>Contingencies</b>					
	Estimated as a % of the construction cost.	40.00	%		\$ 418,051.84	
					<b>Contingencies</b>	<b>\$ 418,051.84</b>
	<b>TOTAL OVERALL COST exc' GST</b>					<b>\$ 1,668,950.88</b>
	<b>TOTAL OVERALL COST inc' GST</b>					<b>\$ 1,835,845.97</b>



Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<u>Site Establishment</u>					
	To establish initial presence on site, make access arrangement and provide site office, temporary facilities, secure storage compound, generator and prepare for works @ per item.	1	item	\$ 1,500.00	\$ 1,500.00	
1.2	<u>Quality Plan</u>					
1.2.1	<u>Site Safety Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 500.00	\$ 500.00	
1.2.2	<u>Site Environmental Management Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.3	<u>Site Works Traffic Control Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,000.00	\$ 1,000.00	
1.2.4	<u>Quality Assurance Test Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,500.00	\$ 1,500.00	
1.3	<u>Re-establishment of property boundaries (nominal provision only)</u>					
	To carry out re-establishment survey of adjacent property boundaries, allow for not less than 2 pegs (provisional item only).	1	item	\$ 1,500.00	\$ 1,500.00	
1.4	<u>Setout of Works</u>					
	To undertake necessary computations, supply, place and maintain required pegs & stakes as per approved drawings for the duration of the project.	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>Preliminaries</b>
						<b>\$ 8,000.00</b>
<b>2</b>	<b>Site Works</b>					
2.1	<u>Site Access</u>					
	To upgrade existing access road to ensure all weather access to site @ per lin.m.	30	lin.m.	\$ 50.00	\$ 1,500.00	
2.2	<u>Secure Site Perimeter</u>					
	To provide a secure temporary perimeter fence around the site to control access for the duration of the works, @ per lin.m.	0	lin.m.	\$ 20.00	\$ -	
2.3	<u>Demolition Works</u>					
	To clear the area around the upstream endwall of the existing structure @ per item.	0	item	\$ 5,000.00	\$ -	
2.4	<u>Temporary Diversion Works</u>					
	To provide upstream diversionary works to redirect flows and protect the site from inundation @ per item	0	item	\$ 5,000.00	\$ -	
2.5	<u>Waterway Protection Works</u>					
	To provide waterway protection countermeasures to contain debris, silt or sediment and prevent it from entering the waterway @ per item.	0	item	\$ 2,000.00	\$ -	
2.6	<u>Clearing &amp; Grubbing</u>					
	To clear any designated vegetation obstructing the waterway @ per item	1	item	\$ 500.00	\$ 500.00	
2.7	<u>Earthworks (nominal)</u>					
2.7.1	To win, excavate necessary insitu materials to achieve specified subgrade design levels and grade and provide suitable material for use as compacted fill @ per m3.	20	m3	\$ 15.00	\$ 300.00	
2.7.2	To load, cart, place, spread and consolidate in place suitable fill materials necessary to achieve specified subgrade design levels and grade @ per m3.	20	m3	\$ 15.00	\$ 300.00	
						<b>Siteworks</b>
						<b>\$ 2,600.00</b>
<b>3</b>	<b>Structural Works</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
3.1	<u>Modification of Existing Structure</u>					
	To prepare existing brick outlet endwall to attach penstock @ per item.					
	- common 375mm RCP.	1	item	\$ 500.00	\$ 500.00	
3.2	<u>Reinstatement &amp; Repairs</u>					
	To reinstate and repair existing solid brick structure, ie. backfill subsidence's, repair cracks etc. @ per item.	1	item	\$ 500.00	\$ 500.00	
						<b>Structural Works</b>
						<b>\$ 1,000.00</b>
<b>4</b>	<b>Walkway Access</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
4.1	<u>Galvanised Handrails</u>					
	To fabricate and install a series of galvanised steel handrails along the bridge deck, ensuring unobstructed access to control structures for maintenance @ per lin.m.	0	lin.m.	\$ 300.00	\$ -	

Item	Description	Qty	Units	Rate	Cost	Subtotal
4.2	<u>Provision of Access to Waterway</u>					
	To construct a series of steps to provide access stairs linking the walkway with the invert of the structure @ per item.	0	item	\$ 8,000.00	\$ -	
						<b>Walkway Access</b>
						<b>\$ -</b>
<b>5</b>	<b>Waterway Control Device (Gates)</b>					
5.1	<u>Fabrication Drawings</u>					
	To confirm dimensions for all devices, prepare fabrications drawings @ per no. of waterway devices.					
	- common waterway openings about 2.52m high x 1.57m wide.	1	no.	\$ 750.00	\$ 750.00	
5.2	<u>Supply &amp; Install Control Devices</u>					
	To supply necessary materials, fabricate, bench test, transport to site, then install control device complete with frame, door, hydraulic rams, pumps, controls, sensors and fixings etc. @ per no. of waterway devices.					
	- common 375mm RCP.	1	no.	\$ 10,000.00	\$ 10,000.00	
5.3	<u>Testing &amp; Commissioning of Control Devices</u>					
	To test and commission each control device insitu @ per no. of waterway devices.					
	- common 375mm RCP.	1	no.	\$ 1,000.00	\$ 1,000.00	
						<b>Waterway Control Device (Gates)</b>
						<b>\$ 11,750.00</b>
<b>6</b>	<b>Waterway &amp; Embankment Protection Works</b>					
6.1	<u>Downstream Waterway Works</u>					
6.1.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 500.00	\$ 500.00	
6.1.2	To clear away debris, silt and sediment from the waterway and within 20m downstream of the structure @ per m2.	50	m2	\$ 20.00	\$ 1,000.00	
6.1.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	20	m3	\$ 30.00	\$ 600.00	
6.1.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	10	m2	\$ 75.00	\$ 750.00	
6.2	<u>Upstream Waterway Works</u>					
6.2.1	To dewater the site prior to commencing works @ per item.	0	item	\$ 2,000.00	\$ -	
6.2.2	To clear away debris, silt and sediment from the waterway and within 10m upstream of the structure @ per m2.	0	m2	\$ 20.00	\$ -	
6.2.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	0	m3	\$ 30.00	\$ -	
						<b>Waterway &amp; Embankment Protection Works</b>
						<b>\$ 2,850.00</b>
<b>7</b>	<b>Electricity Supply</b>					
7.1	<u>Solar Panels</u>					
	To supply and install pole mounted solar panels, inverter, control pedestal and cables, assuming 1 x panel will supply 2 x gate devices @ per no.					
	- common 375mm RCP.	1	no.	\$ 5,000.00	\$ 5,000.00	
7.2	<u>Battery Backup</u>					
	To supply and install secure battery back up systems within a cabinet, assuming 1 x cabinet will supply 2 x gate devices @ per no.					
	- common 375mm RCP.	1	no.	\$ 3,000.00	\$ 3,000.00	
7.3	<u>Standby Systems</u>					
	To provide a standby mechanical gearbox operated system to allow manual operation of gates using battery operated drill or similar @ each control device.					
	- common 375mm RCP.	1	no.	\$ 3,500.00	\$ 3,500.00	
						<b>Electricity Supply</b>
						<b>\$ 11,500.00</b>
<b>8</b>	<b>SCADA &amp; Remote Control</b>					
8.1	<u>Water Level Sensors</u>					
	To supply and install an ultrasonic water level sensor upstream and downstream of each control device @ per no.					
	- common 375mm RCP.	2	no.	\$ 500.00	\$ 1,000.00	
8.2	<u>Control Status</u>					
	To supply and install sensors to monitor the status of each control device, ie. open/closed/part open @ per no.					
	- common 375mm RCP.	1	no.	\$ 500.00	\$ 500.00	
8.3	<u>Waterway Discharge</u>					
	To supply and install sensors to monitor the discharge and velocity of each control device @ per no.					
	- common waterway openings about 2.52m high x 1.57m wide.	1	no.	\$ 500.00	\$ 500.00	
8.4	<u>Control Panel, Aerial &amp; Mast</u>					



Item	Description	Qty	Units	Rate	Cost	Subtotal
	The Superintendent will require evidence of real and actual costs before considering any compensation for delays due stand down, re-establishment costs etc. due to Latent Effects @ per item.	1	item	\$ 500.00	\$ 500.00	
11.2.1	<u>Delays Due To Weather</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 500.00	\$ 500.00	
11.2.2	<u>Suspension of Works</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 500.00	\$ 500.00	
	Additional Tests	1	item	\$ 500.00	\$ 500.00	
					<b>Provisional Items</b>	<b>\$ 2,000.00</b>
<b>12</b>	<b>Practical Completion</b>					
12.1	<u>As Constructed Drawings</u>					
	Recording of the Works	1	item	\$ 500.00	\$ 500.00	
	Preparation of Necessary Drawings	1	item	\$ 500.00	\$ 500.00	
12.2	<u>Testing &amp; Commissioning</u>					
	To attend and participate in final acceptance testing and commissioning for practical completion.	1	item	\$ 500.00	\$ 500.00	
12.3	<u>Operating Manuals</u>					
	To prepare and provide operations and maintenance manuals in hard copy and digital format.	1	item	\$ 500.00	\$ 500.00	
12.4	<u>Defects &amp; Omissions</u>					
	To respond to defects and omissions schedule ion a timely fashion to the satisfaction of the superintendent.	1	item	\$ 500.00	\$ 500.00	
12.5	<u>Maintenance Period</u>					
	To attend to matters arising during the 12 x months defects liability period in a timely fashion.	1	item	\$ 1,000.00	\$ 1,000.00	
					<b>Practical Completion</b>	<b>\$ 4,500.00</b>
					<b>Construction Cost Subtotal</b>	<b>\$ 59,100.00</b>
<b>13</b>	<b>Contractors Overheads</b>					
13.1	Allowance for profit and attendance @ % of construction costs.	10.0%		\$ 59,100.00	\$ 5,910.00	
13.2	Allowance for project management costs @ % of construction costs.	5.0%		\$ 59,100.00	\$ 2,955.00	
13.3	Allowance for head office costs @ % of construction costs.	2.5%		\$ 59,100.00	\$ 1,477.50	
					<b>Contractors Overheads</b>	<b>\$ 10,342.50</b>
					<b>Construction Cost Subtotal</b>	<b>\$ 69,442.50</b>
<b>14</b>	<b>Technical Services &amp; Approvals</b>					
14.1	<u>Detailed Design &amp; Documentation</u>					
	To prepare a detailed and documentation solution suitable for tender and construction purposes.					
	Estimated as a % of the construction cost.	5.50	%		\$ 3,819.34	
14.2	<u>Planning Approval</u>					
14.2.1	To prepare a comprehensive planning submission to secure a planning permit.					
	Estimated as a % of the construction cost.	2.00	%		\$ 1,388.85	
14.2.2	Preparation of the necessary Impact Assessments for each @ per no. including;					
	Geotechnical	1	no.	\$ 3,000.00	\$ 3,000.00	
	Flora & Fauna	1	no.	\$ 3,000.00	\$ 3,000.00	
	Cultural Heritage	1	no.	\$ 3,000.00	\$ 3,000.00	
14.2.3	Prepare Management Plans and implement compensatory works @ per no. including;					
	Flora & Fauna	1	no.	\$ 20,000.00	\$ 20,000.00	
	Cultural Heritage	1	no.	\$ 20,000.00	\$ 20,000.00	
14.3	<u>Project Management</u>					
	To provide sufficient resources to manage the following elements of the project;					
	Estimated as a % of the construction cost.					
	Design Phase	1.00	%		\$ 694.43	
	Planning Phase	1.00	%		\$ 694.43	
	Tender Phase	1.00	%		\$ 694.43	
	Construction Phase	4.50	%		\$ 3,124.91	
		7.50				
					<b>Technical Services &amp; Approvals</b>	<b>\$ 59,416.38</b>
<b>15</b>	<b>Contingencies</b>					
	Estimated as a % of the construction cost.	40.00	%		\$ 27,777.00	
					<b>Contingencies</b>	<b>\$ 27,777.00</b>
	<b>TOTAL OVERALL COST exc' GST</b>					<b>\$ 156,635.88</b>
	<b>TOTAL OVERALL COST inc' GST</b>					<b>\$ 172,299.46</b>

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>1</b>	<b>Preliminaries</b>					
1.1	<u>Site Establishment</u>					
	To establish initial presence on site, make access arrangement and provide site office, temporary facilities, secure storage compound, generator and prepare for works @ per item.	1	item	\$ 15,000.00	\$ 15,000.00	
1.2	<u>Quality Plan</u>					
1.2.1	<u>Site Safety Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 2,500.00	\$ 2,500.00	
1.2.2	<u>Site Environmental Management Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,500.00	\$ 1,500.00	
1.2.3	<u>Site Works Traffic Control Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 1,500.00	\$ 1,500.00	
1.2.4	<u>Quality Assurance Test Plan</u>					
	To prepare and submit necessary documents in response to specification.	1	item	\$ 5,000.00	\$ 5,000.00	
1.3	<u>Re-establishment of property boundaries (nominal provision only)</u>					
	To carry out re-establishment survey of adjacent property boundaries, allow for not less than 2 pegs (provisional item only).	1	item	\$ 2,500.00	\$ 2,500.00	
1.4	<u>Setout of Works</u>					
	To undertake necessary computations, supply, place and maintain required pegs & stakes as per approved drawings for the duration of the project.	1	item	\$ 4,500.00	\$ 4,500.00	
					<b>Preliminaries</b>	<b>\$ 32,500.00</b>
<b>2</b>	<b>Site Works</b>					
2.1	<u>Site Access</u>					
	To upgrade existing access road to ensure all weather access to site @ per lin.m.	1,000	lin.m.	\$ 30.00	\$ 30,000.00	
2.2	<u>Secure Site Perimeter</u>					
	To provide a secure temporary perimeter fence around the site to control access for the duration of the works, @ per lin.m.	120	lin.m.	\$ 20.00	\$ 2,400.00	
2.3	<u>Excavation Works</u>					
	To excavate overburden and expose existing structure and stockpile excavated materials for reuse onsite at an approved location @ per m3.	4000	m3	\$ 5.00	\$ 20,000.00	
2.4	<u>Demolition Works</u>					
	To dismantle existing structure and dispose of surplus materials from the site, transport and dispose of same to an approved location @ per item.	1	item	\$ 20,000.00	\$ 20,000.00	
2.5	<u>Temporary Diversion Works</u>					
	To provide upstream diversionary works to redirect flows and protect the site from inundation @ per item	1	item	\$ 5,000.00	\$ 5,000.00	
2.6	<u>Waterway Protection Works</u>					
	To provide waterway protection countermeasures to contain debris, silt or sediment and prevent it from entering the waterway @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
2.7	<u>Clearing &amp; Grubbing</u>					
	To recover any topsoil and stockpile for reuse. To clear any designated vegetation obstructing the waterway @ per item	1	item	\$ 1,500.00	\$ 1,500.00	
2.8	<u>Engineered Fill Earthworks (nominal)</u>					
	To win, clean, select fill material, suitable for reuse as engineered fill, spread, compact and reincorporate same to specified subgrade design levels and grade for use as engineered fill below new structure @ per m3.	1200	m3	\$ 20.00	\$ 24,000.00	
	To load, cart, place, spread and consolidate in place suitable back fill materials necessary to achieve specified levee reinstatement over culvert to design levels and grade @ per m3.	2800	m3	\$ 15.00	\$ 42,000.00	
2.9	<u>Sheet Piling</u>					
	To supply and place, vertically driven, interlocking, steel, sheet piling to 5m depth and provide a cut-off wall beneath the inlet and outlet structures @ per m2.	50	m2	\$ 1,000.00	\$ 50,000.00	
2.10	<u>Lay-down Area</u>					
	To supply necessary materials and construct clear, level, open, hard stand lay-down area for site facilities, site office, parking, materials storage and assembly construction purposes and future maintenance @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
2.11	<u>Access Ramps</u>					
	To construct compacted earthfill ramp for construction phase access to top of levee @ per item	1	item	\$ 10,000.00	\$ 10,000.00	
					<b>Siteworks</b>	<b>\$ 216,900.00</b>

Item	Description	Qty	Units	Rate	Cost	Subtotal
<b>3</b>	<b>Structural Works</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
3.1	<u>Foundation Slab for Crown Units</u>					
	To prepare the foundations, over the sheet piling, complete with formwork and reinforcement then supply, place and finish RC slab @ per m3.					
	- RC crown units 1.5m high x 1.5m wide.	32	m3	\$ 1,100.00	\$ 35,200.00	
3.2	<u>Crown Units</u>					
	To supply and place crown units and header slabs, complete with fixings and grout trench @ per lin.m.	54	lin.m.	\$ 1,400.00	\$ 75,600.00	
3.3	<u>Inlet Headwall &amp; Wingwalls</u>					
	To prepare the foundations, formwork, reinforcement then supply, place and finish RC slab @ per m3.	32	m3	\$ 1,200.00	\$ 38,400.00	
3.4	<u>Outlet Headwall &amp; Wingwalls</u>					
	To prepare the foundations, formwork, reinforcement then supply, place and finish RC slab @ per m3.	42	m3	\$ 1,200.00	\$ 50,400.00	
3.5	<u>Energy Dissipation Blocks &amp; Kerb</u>					
	To prepare for, then install cast insitu, reinforced concrete energy dissipation blocks and kerb in the outlet structure @ per item.	1	item	\$ 12,000.00	\$ 12,000.00	
						<b>Structural Works</b>
						<b>\$ 211,600.00</b>
<b>4</b>	<b>Walkway Access</b>					
	To supply necessary materials, plant and equipment to complete the following tasks.					
4.1	<u>Suspended Walkway</u>					
	To prefabricate, then transport and install, suspended, galvanised, steel walkway complete with handrails to accommodate the control cabinet, the solar panels etc. and provide access to the control structures for maintenance @ per m2.	28	m2	\$ 500.00	\$ 14,000.00	
4.2	<u>Bollards</u>					
	To erect bollards to protect the walkway form vehicle impact @ per item.	1	item	\$ 1,200.00	\$ 1,200.00	
						<b>Walkway Access</b>
						<b>\$ 15,200.00</b>
<b>5</b>	<b>Waterway Control Device (Gates)</b>					
5.1	<u>Fabrication Drawings</u>					
	To confirm dimensions for all devices, prepare fabrications drawings @ per no. of waterway devices.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 1,500.00	\$ 4,500.00	
5.2	<u>Supply &amp; Install Control Devices</u>					
	To supply necessary materials, fabricate, bench test, transport to site, then install each control device complete with frames, doors, hydraulic rams, pumps, controls, sensors and fixings etc. @ per no. of waterway devices.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 45,900.00	\$ 137,700.00	
5.3	<u>Testing &amp; Commissioning of Control Devices</u>					
	To test and commission each control device insitu @ per no. of waterway devices.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 500.00	\$ 1,500.00	
						<b>Waterway Control Device (Gates)</b>
						<b>\$ 143,700.00</b>
<b>6</b>	<b>Waterway &amp; Embankment Protection Works</b>					
6.1	<u>Downstream Waterway Works</u>					
6.1.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.1.2	To clear away debris, silt and sediment from the waterway and within 20m downstream of the structure @ per m2.	100	m2	\$ 20.00	\$ 2,000.00	
6.1.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	400	m3	\$ 30.00	\$ 12,000.00	
6.1.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	300	m2	\$ 75.00	\$ 22,500.00	
6.2	<u>Upstream Waterway Works</u>					
6.2.1	To dewater the site prior to commencing works @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
6.2.2	To clear away debris, silt and sediment from the waterway and within 10m upstream of the structure @ per m2.	50	m2	\$ 20.00	\$ 1,000.00	
6.2.3	To supply, cart, place and consolidate select fill materials to shape waterway invert @ per m3.	100	m3	\$ 30.00	\$ 3,000.00	
6.2.4	To supply, assemble and install waterway armour, ie. hand packed stone filled Reno mattresses over geotextile filter cloth @ per m2.	150	m2	\$ 75.00	\$ 11,250.00	
						<b>Waterway &amp; Embankment Protection Works</b>
						<b>\$ 55,750.00</b>
<b>7</b>	<b>Electricity Supply</b>					
7.1	<u>Solar Panels</u>					

Item	Description	Qty	Units	Rate	Cost	Subtotal
	To supply and install pole mounted solar panels, inverter, control pedestal and cables, assuming 1 x panel will supply 2 x gate devices @ per no.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 5,000.00	\$ 15,000.00	
7.2	<u>Battery Backup</u>					
	To supply and install secure battery back up systems within a cabinet , assuming 1 x cabinet will supply 2 x gate devices @ per no.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 3,000.00	\$ 9,000.00	
7.3	<u>Standby Systems</u>					
	To provide a standby mechanical gearbox operated system to allow manual operation of gates using battery operated drill or similar @ each control device.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 3,500.00	\$ 10,500.00	
				<b>Electricity Supply</b>		<b>\$ 34,500.00</b>
<b>8</b>	<b>SCADA &amp; Remote Control</b>					
8.1	<u>Water Level Sensors</u>					
	To supply and install an ultrasonic water level sensor upstream and downstream of each control device @ per no.					
	- RC crown units 1.5m high x 1.5m wide.	6	no.	\$ 500.00	\$ 3,000.00	
8.2	<u>Control Status</u>					
	To supply and install sensors to monitor the status of each control device, ie. open/closed/part open @ per no.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 500.00	\$ 1,500.00	
8.3	<u>Waterway Discharge</u>					
	To supply and install sensors to monitor the discharge and velocity of each control device @ per no.					
	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 500.00	\$ 1,500.00	
8.4	<u>Control Panel, Aerial &amp; Mast</u>					
8.4.1	To supply and install a central control panel, in a secure, all weather cabinet, complete with independent solar panel and battery backup, provide wireless link to each device for control and data, with data storage and PLC's to receive, store, backup, transmit and receive data from devices, then transmit same to SCADA system and receive then relay instructions from SCADA to device controllers @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
8.4.2	To supply and install a mast and aerials at height suitable for SCADA communications via Mobilenet, with necessary linkages @ per item.	1	item	\$ 5,000.00	\$ 5,000.00	
8.4.3	To facilitate necessary communications for internet hosting of real time data transmission and receiving @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.5	<u>CCTV Systems</u>					
8.5.1	To supply onsite hard drive for storage of CCTV vision, selectable at 15 to 30 FPS, with sufficient capacity for up to 3 x months of time & date stamped data and automatic rewrite @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.5.2	To provide real time CCTV link via SCADA systems for offsite monitoring of control devices @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
	To supply, install and commission high resolution, colour, CCTV surveillance cameras, with movement activation, low light infrared capability and with wireless link to main control cabinet allowing real time observation of each control device @ per no.					
8.5.3	- RC crown units 1.5m high x 1.5m wide.	3	no.	\$ 400.00	\$ 1,200.00	
8.5.4	Additional CCTV cameras at selected locations for monitoring of overall site, walkway etc. @ per no.	2	no.	\$ 500.00	\$ 1,000.00	
8.6	<u>SCADA Link</u>					
	To provide secure data link to site for SCADA communications via the internet, complete with inbuilt fail safe systems, compatible with GBCMA PC and smart phone network @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
8.7	<u>SCADA System</u>					
	To develop the necessary software, install, test and commission same, with capabilities for augmentations and expansion to include other control devices, also provide appropriate web hosting, ongoing support, data backup services @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
				<b>SCADA &amp; Remote Control</b>		<b>\$ 33,200.00</b>
<b>9</b>	<b>Landscape &amp; Reinstatement Works</b>					
9.1	<u>Grade &amp; Level Disturbed Areas</u>					
	To trim by hand, supply and place as required any additional materials @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
9.2	<u>Topsoil &amp; Grass</u>					
	To supply, place and spread clean and approved topsoil only, to a minimum (lightly compacted) depth of 50mm, sow to grass with drought tolerant native species indigenous to the area @ per m2.	1	item	\$ 2,000.00	\$ 2,000.00	

Item	Description	Qty	Units	Rate	Cost	Subtotal
9.3	<u>General Reinstatement</u>					
	Provision for reinstatement of any damaged road pavements, fencing, gates etc on completion @ per item.	1	item	\$ 2,000.00	\$ 2,000.00	
						<b>\$ 6,000.00</b>
<b>10</b>	<b>Maintenance of The Works</b>					
10.1	<u>Duration of Works</u>					
	To clean up site on a daily basis, collect all litter and debris and dispose of to an approved location, pay any necessary fees etc. at per item.	1	item	\$ 1,000.00	\$ 1,000.00	
10.2	<u>Defects Liability Period</u>					
	To maintain the site during the defects liability period, make good any damage, accidental or otherwise as may be provided for under the insurance cover provided @ per item.	1	item	\$ 1,000.00	\$ 1,000.00	
						<b>\$ 2,000.00</b>
<b>11</b>	<b>Provisional Items</b>					
11.1	<u>Difficult Ground</u>					
	Provision to accommodate difficult ground conditions that may exceed that amount provided for in the above scheduled items @ per m3.					
11.1.1	Type A - being ground which is water bearing ground, or excessively wet, not self-supporting, prone to collapse and unstable as a result of that condition, requiring ground support.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.2	Type B - being ground which is hard and not rippable or readily excavated without using a rock breaker or blasting.	100	m3	\$ 100.00	\$ 10,000.00	
11.1.3	Type C - being ground which is otherwise deemed unstable or otherwise unsuitable for incorporation into the works.	100	m3	\$ 100.00	\$ 10,000.00	
11.2	<u>Latent Effects</u>					
	The Superintendent will require evidence of real and actual costs before considering any compensation for delays due stand down, re-establishment costs etc. due to Latent Effects @ per item.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.1	<u>Delays Due To Weather</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
11.2.2	<u>Suspension of Works</u>					
	To shut down the works for an extended period (more than 5 days) then restart @ per event.	1	item	\$ 10,000.00	\$ 10,000.00	
	Additional Tests	1	item	\$ 10,000.00	\$ 10,000.00	
						<b>\$ 70,000.00</b>
<b>12</b>	<b>Practical Completion</b>					
12.1	<u>As Constructed Drawings</u>					
	Recording of the Works	1	item	\$ 2,000.00	\$ 2,000.00	
	Preparation of Necessary Drawings	1	item	\$ 2,000.00	\$ 2,000.00	
12.2	<u>Testing &amp; Commissioning</u>					
	To attend and participate in final acceptance testing and commissioning for practical completion.	1	item	\$ 5,000.00	\$ 5,000.00	
12.3	<u>Operating Manuals</u>					
	To prepare and provide operations and maintenance manuals in hard copy and digital format.	1	item	\$ 2,000.00	\$ 2,000.00	
12.4	<u>Defects &amp; Omissions</u>					
	To respond to defects and omissions schedule ion a timely fashion to the satisfaction of the superintendent.	1	item	\$ 2,000.00	\$ 2,000.00	
12.5	<u>Maintenance Period</u>					
	To attend to matters arising during the 12 x months defects liability period in a timely fashion.	1	item	\$ 5,000.00	\$ 5,000.00	
						<b>\$ 38,000.00</b>
						<b>\$ 859,350.00</b>
<b>13</b>	<b>Contractors Overheads</b>					
13.1	Allowance for profit and attendance @ % of construction costs.	10.0%		\$ 859,350.00	\$ 85,935.00	
13.2	Allowance for project management costs @ % of construction costs.	5.0%		\$ 859,350.00	\$ 42,967.50	
13.3	Allowance for head office costs @ % of construction costs.	2.5%		\$ 859,350.00	\$ 21,483.75	
						<b>\$ 150,386.25</b>
	<b>Construction Cost Subtotal</b>					<b>\$ 1,009,736.25</b>
<b>14</b>	<b>Technical Services &amp; Approvals</b>					
14.1	<u>Detailed Design &amp; Documentation</u>					
	To prepare a detailed and documentation solution suitable for tender and construction purposes.					
	Estimated as a % of the construction cost.	5.50	%		\$ 55,535.49	
14.2	<u>Planning Approval</u>					
14.2.1	To prepare a comprehensive planning submission to secure a planning permit.					
	Estimated as a % of the construction cost.	2.00	%		\$ 20,194.73	



<i>Item</i>	<i>Description</i>	<i>Qty</i>	<i>Units</i>	<i>Rate</i>	<i>Cost</i>	<i>Subtotal</i>
14.2.2	Preparation of the necessary Impact Assessments for each @ per no. including;					
	Geotechnical	1	no.	\$ 3,000.00	\$ 3,000.00	
	Flora & Fauna	1	no.	\$ 3,000.00	\$ 3,000.00	
	Cultural Heritage	1	no.	\$ 3,000.00	\$ 3,000.00	
14.2.3	Prepare Management Plans and implement compensatory works @ per no. including;					
	Flora & Fauna	1	no.	\$ 20,000.00	\$ 20,000.00	
	Cultural Heritage	1	no.	\$ 20,000.00	\$ 20,000.00	
14.3	<u>Project Management</u>					
	To provide sufficient resources to manage the following elements of the project;					
	Estimated as a % of the construction cost.					
	Design Phase	1.00	%		\$ 10,097.36	
	Planning Phase	1.00	%		\$ 10,097.36	
	Tender Phase	1.00	%		\$ 10,097.36	
	Construction Phase	4.50	%		\$ 45,438.13	
		7.50				
						<b>Technical Services &amp; Approvals \$ 200,460.44</b>
<b>15</b>	<b>Contingencies</b>					
	Estimated as a % of the construction cost.	40.00	%		\$ 403,894.50	
						<b>Contingencies \$ 403,894.50</b>
<b>TOTAL OVERALL COST exc' GST</b>						<b>\$ 1,614,091.19</b>
<b>TOTAL OVERALL COST inc' GST</b>						<b>\$ 1,775,500.31</b>