

OCK S	SEAWALL - STAGE 1 OPTION 1 (WALL CREST A	T 2013 EMBANKMENT CREST)						
	Variables Wall length Average disturbed footprint width	Excavation, stockpile and plant track area		0 m 0 m				
Item	Description	Comments	Unit	Quantity	Rate	Amount	Item Subtotal	Item Tota
1	Site Establishment							\$ 55,0
1.1	Mobilisation of construction plant to site Establish and manage Contractors Work Area	Includes temporary services and person proof fence along the	LS				\$ 35,000	
2	Works EMP	crest and down side ends to MHWM  Includes preparation and implementation of Works EMP	LS				\$ 20,000	\$ 58.0
2.1	Condition inventory of private property assets	molecus preparation and implementation of works Livi	LS				\$ 10,000	\$ 58,0
2.2 2.3 2.4	Noise and vibration Air quality Surface drainage and water quality		LS LS LS				\$ 8,000 \$ 5,000 \$ 10,000	
2.5 2.6	Traffic and pedestrian control  Beach and dunal ecology	Include flora and fauna	LS LS				\$ 10,000 \$ 10,000	
2.7 <b>3</b>	Archaeology  Protection of the Works from Coastal Hazards	Protection from storm water levels and wave action	LS				\$ 5,000	\$ 50.0
4	Preconstruction Survey	Total Indiana						\$ 12,0
5	Demolition and Earthworks	All demolition includes disposal to licensed waste disposal facility						¢ 000.0
	Assumption 1	No of private property fences affected	17					\$ 809,0
	Assumption 2 Assumption 3	% disturbed footprint to be cleared % disturbed footprint with top soil	80% 50%					
5.1 5.2	Demolition of building structure at 36 Lewis Street  Demolition of existing geotextile protection at Meridian Resort	Ross Keys garage	m² LS	300	\$ 60		\$ 18,000 \$ 5,000	
5.3 5.4	Demolition of existing timber steps at Meridian Resort Demolition of existing private property fences to provide plant	Demolished 6m landward from landward edge or rock works	LS	40=	ф		\$ 1,000	
5.5	access along back of new wall  Miscellaneous demolition of private property garden structures including and seaward of maintenance corridor	Excludes fences	m LS	192	\$ 25		\$ 4,800 \$ 5,000	
5.6 5.7 5.8	Removal of existing large trees Clearing and disposal of ground cover and minor vegetation	Assume the 100mm	LS m <sup>2</sup>	21,600	\$ 1		\$ 3,000 \$ 21,600	
5.8	Strip and stockpile top soil  Excavation for rock seawall	Assume top 100mm  Assume all sand and gravel beds. Temporary stockpile on the beach to protect the excavation from tides and wave action	m <sup>3</sup>	1,350 55,000	\$ 20 \$ 7		\$ 27,000 \$ 385,000	
6	Replacement of excavated material and spreading of surplus material onto the beach	Includes compaction behind seawall	m <sup>3</sup>	56,350	\$ 6		\$ 338,100	
6	Rock Works							\$ 4,281,0
	Assumption 1 Assumption 2 Assumption 3	Rock placement rate  Dewatering costs per m <sup>2</sup> per day to reduce water level by 1m  Reduction in contingency applied to rock supply	\$ 60	0 T/day				
6.1	Supply of rock armour	3.9 - 6.6 T armour	10% T	31,000	\$ 68		\$ 2,092,500	
6.2	Supply of rock underlayer Supply or other rock Develoring	400 - 700 kg  Spearpoints and pumping for rock placement up to RL0 over 12m	T T	9,000	\$ 68 \$ 68		\$ 607,500 \$ -	
6.4	Dewatering	toe berm underside width assuming work confined to a rolling dewatered compartment each day	m	450	\$ 750		\$ 338,000	
6.5	Supply and placement of geotextile Placement of rock armour	Assume Elcomax 1200R OAE	m² T T	8,800 31,000 9,000	\$ 10 \$ 30		\$ 88,000 \$ 930,000	
6.7	Placement of rock underlayer Placement of other rock		T	0	\$ 25 \$ 20		\$ 225,000 \$ -	
7	Shareway Path			_				\$ 176,0
	Assumption 1 Assumption 2	Path width including edges Path length		5 m 0 m				
7.1	Subgrade Wearing course	Bituminous concrete 25 thick on crushed rock basecourse	m <sup>3</sup>	405 1,130	\$ 120 \$ 35		\$ 48,600 \$ 39,550	
7.3 <b>8</b>	Handrail  Retaining Wall above Seawall Crest	Monowills stainless	m	250	\$ 350		\$ 87,500	\$ 140,0
	Assumption 1	Average wall height	1.6					
8.1	Assumption 2  Construction of retaining wall	Wall length	250 m <sup>2</sup>	400	\$ 350		\$ 140,000	
9	Private Property Structures			400	φ 330		ψ 140,000	\$ 161,0
	Assumption 1	No of private property entries	13					
9.1	Special return treatments at retaining wall to provide entry for steps		Entry	13	\$ 2,500		\$ 32,500	
9.2 9.3 9.4	Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall	Equivalent to high quality aluminium pool fence	Entry Entry m	13 13 317	\$ 3,500 \$ 1,500 \$ 200		\$ 45,500 \$ 19,500 \$ 63,400	
10	Ancillary Works	Equitation to high quality distribution poor to not		017	Ψ 200		Ψ 30,400	\$ 3,00
10.1	Signage	Warning and interpretative	LS				\$ 3,000	
11	Services	Not applicable						\$
12	Work as Executed Survey		LS					\$ 8,00
13	Site Disestablishment, Restoration and Clean up							\$ 104,3
13.1.1	Restoration Fences	Restoration of private property fences. Assume high quality butt					\$ 79,300	
	Landscaping and garden structures	joint paling fence	m Properties	153 16	\$ 100 \$ 4,000	\$ 15,300 \$ 64,000		
13.2 13.3	Disestablishment Clean up		LS LS				\$ 20,000 \$ 5,000	
					SUB TOTAL			¢ = 0.53.0
Add	Contingency on construction cost		25%		IUIAL			\$ <b>5,857,3</b> \$ 1,464,3
-		SUB T		ONSTRUCTI	ON COST			\$ 7,321,6
Add	DA preparation including Environmental Assessment	Includes concept design	Lump Sum			\$ 200,000		
Add	Design development, detailed design and tender preparation		3.5%			\$ 256,300		
Add	Advertising, advising on tenders, tender review and award of					e 00.05		
Add	contract  Supervision and contract administration		Lump Sum			\$ 20,000 \$ 219,700		\$ 696,0
	,		J 70	TOT	AL COST	ESTIMATE		\$8,018,00
			то	TAL COST P				\$ 17,90

JUCK S	│ SEAWALL - STAGE 1 OPTION 2 (MOST LANDWARD)	1								
33110	Variables									
	Wall length	Cupristing stacked and plant track are		0 m						
	Average disturbed footprint width	Excavation, stockpile and plant track area	Ь	0 m				Itom		
Item	Description	Comments	Unit	Quantity	Ra	ate	Amount	Item Subtotal	Ite	em Tota
1	Site Establishment								\$	55,0
1.1	Mobilisation of construction plant to site		LS				:	\$ 35,000		
1.2	Establish and manage Contractors Work Area	Includes temporary services and person proof fence along the crest and down side ends to MHWM	LS					\$ 20,000		
2	Works EMP	Includes preparation and implementation of Works EMP							\$	63,00
2.1	Condition inventory of private property assets		LS					\$ 15,000		
2.3	Noise and vibration Air quality Surface drainage and water quality		LS LS LS				:	\$ 10,000 \$ 5,000 \$ 10,000		
2.5	Traffic and pedestrian control  Beach and dunal ecology	Include flora and fauna	LS				:	\$ 10,000 \$ 10,000 \$ 8,000		
	Archaeology	mode nora and radina	LS					\$ 5,000		
3	Protection of the Works from Coastal Hazards	Protection from storm water levels and wave action							\$	50,00
4	Preconstruction Survey								\$	12,00
5	Demolition and Earthworks	All demolition includes disposal to licensed waste disposal facility							\$	1,008,00
	Assumption 1	No of private property fences affected	17							1,000,00
	Assumption 2 Assumption 3	% disturbed footprint to be cleared % disturbed footprint with top soil	80% 50%							
	Demolition of building structure at 36 Lewis Street	Ross Keys garage	m <sup>2</sup>	300	\$	60		\$ 18,000		
5.2	Demolition of existing geotextile protection at Meridian Resort  Demolition of existing timber steps at Meridian Resort	,- 5 "3"	LS	500	Ψ	JU		\$ 18,000 \$ 5,000 \$ 1,000		
5.4	Demolition of existing trinder steps at mendian resort  Demolition of existing private property fences to provide plant access along back of new wall	Demolished 6m landward from landward edge or rock works	m	314	\$	25		\$ 7,850		
5.5	Miscellaneous demolition of private property garden structures including and seaward of maintenance corridor	Excludes fences	LS					\$ 5,000		
5.6 5.7	Removal of existing large trees Clearing and disposal of ground cover and minor vegetation		LS m <sup>2</sup>	21,600	\$	1		\$ 4,000 \$ 21,600		
	Strip and stockpile top soil Excavation for rock seawall	Assume top 100mm Assume all sand and gravel beds. Temporary stockpile on the	m <sup>3</sup>	1,350	\$	20		\$ 27,000		
		beach to protect the excavation from tides and wave action	m³	70,000	\$	7		\$ 490,000		
	Replacement of excavated material and spreading of surplus material onto the beach	Includes compaction behind seawall	m³	71,350	\$	6	:	\$ 428,100		
6	Rock Works	Includes dewatering							\$	4,281,00
	Assumption 1	Rock placement rate		0 T/day						
	Assumption 2 Assumption 3	Dewatering costs per m <sup>2</sup> per day to reduce water level by 1m Reduction in contingency applied to rock supply	10%	)						
	Supply of rock armour	3.9 - 6.6 T armour	T	31,000	\$	68		\$ 2,092,500		
6.3	Supply of rock underlayer Supply or other rock	400 - 700 kg	T	9,000	\$	68 68		\$ 607,500 \$ -		
6.4	Dewatering	Spearpoints and pumping for rock placement up to RL0 over 12m toe berm underside width assuming work confined to a rolling dewatered compartment each day	m	450	\$	750		\$ 338,000		
	Supply and placement of geotextile Placement of rock armour	Assume Elcomax 1200R OAE	m <sup>2</sup>	8,800 31,000	\$	10	:	\$ 88,000 \$ 930,000		
6.7	Placement of other rock Placement of other rock		T	9,000	\$	25 20	:	\$ 225,000 \$ -		
	Shareway Path				<u> </u>			Ψ	\$	176,00
	Assumption 1	Path width including edges	2	5 m					Ψ	170,00
	Assumption 2	Path length		0 m						
	Subgrade Wearing course	Bituminous concrete 25 thick on crushed rock basecourse	m³ m²	405 1,130	\$	120 35		\$ 48,600 \$ 39,550		
7.3	Handrail	Monowills stainless	m	250	\$	350	:	\$ 87,500		
8	Retaining Wall above Seawall Crest								\$	140,00
	Assumption 1 Assumption 2	Average wall height Wall length	1.6 250							
8.1				400	\$	350		\$ 140,000		
8.1 <b>9</b>	Assumption 2		250	400	\$	350	:	\$ 140,000	\$	161,00
	Assumption 2  Construction of retaining wall		250	400	\$	350		\$ 140,000	\$	161,00
	Assumption 2  Construction of retaining wall  Private Property Structures	Wall length	250 m <sup>2</sup>	400	\$	350		\$ 140,000 \$ 32,500	\$	161,00
9	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1	Wall length	250 m <sup>2</sup>		\$ 3				\$	161,00
9.1 9.2	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall	Wall length	m <sup>2</sup> 13  Entry Entry	13	\$ 3	2,500 3,500		\$ 32,500 \$ 45,500	\$	161,00
9.1 9.2 9.3	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate	Wall length  No of private property entries	250 m² 13 Entry Entry Entry	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500	\$	3,00
9.1 9.2 9.3 9.4	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall	Wall length  No of private property entries	250 m² 13 Entry Entry Entry	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500		
9.1 9.2 9.3 9.4 10	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence	250  m²  13  Entry Entry Entry m	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400		
9.1 9.2 9.3 9.4 10	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative	250  m²  13  Entry Entry Entry m	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400	\$	
9.1 9.2 9.3 9.4 10 10.1 11	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative	250  m²  13  Entry Entry Entry M	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative	250  m²  13  Entry Entry Entry M	13 13 13	\$ 3	2,500 3,500 1,500		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12 13	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality	250 m² 13 Entry Entry Entry M LS	13 13 13 317	\$ (\$	2,500 3,500 1,500 200		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable	250  m²  13  Entry Entry Entry M	13 13 13	\$ \$	2,500 3,500 1,500 200		\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1 13.1.1 13.1.2	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality	250  m²  13  Entry Entry Entry M  LS  LS	13 13 13 317	\$ \$	2,500 3,500 1,500 200	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1.1 13.1.2	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality	250  m²  13  Entry Entry Entry m  LS  LS  Properties	13 13 13 317	\$ \$	100 1,000	\$ 15,300	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$	3,0
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1.1 13.1.1 13.1.2 13.2 13	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality	250  m²  13  Entry Entry Entry  M  LS  LS  LS  LS  LS  LS	13 13 13 317	\$ \$	100 1,000	\$ 15,300	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$	8,0 104,3
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1.1 13.1.1 13.1.2 13.2 13	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence	250  m²  13  Entry Entry Entry m  LS  LS  LS  LS  LS  25%	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$ \$	8,0 104,5 6,061,3 1,515,3
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1.1 13.1.2 13.2 13.3	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up  Contingency on construction cost	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence  SUB To	250  m²  13  Entry Entry Entry m  LS  LS  LS  LS  LS  25%	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$	8,0 104,5 6,061,3 1,515,3
9.1 9.2 9.3 9.4 10 10.1 11 12 13.1 13.1.1 13.1.2 13.2 13.3	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence	250  m²  13  Entry Entry Entry m  LS  LS  LS  LS  LS  25%	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$ \$	8,0 104,5 6,061,5 1,515,5
9.1 9.2 9.3 9.4 10 10.1 11 12 13.1 13.1.1 13.1.2 13.2 13.3 Add	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up  Contingency on construction cost	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence  SUB To	250  m²  13  Entry Entry Entry m  LS  LS  LS  Amproperties  LS  LS  OTAL ON C	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$ \$	8,0 104,5 6,061,5 1,515,5
9.1 9.2 9.3 9.4 10 10.1 11 12 13.1 13.1.1 13.1.2 13.2 13.3 Add	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up  Contingency on construction cost  DA preparation including Environmental Assessment	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence  SUB To	250 m²  13 Entry Entry Entry Entry m  LS  LS  LS  Am Properties LS  LS  25%  OTAL ON C	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$ \$	8,0 104,5 6,061,3 1,515,3
9.1 9.2 9.3 9.4 10 10.1 11 12 13 13.1 13.1.1 13.1.2 13.2 13.3 Add Add Add	Assumption 2  Construction of retaining wall  Private Property Structures  Assumption 1  Special return treatments at retaining wall to provide entry for steps Timber steps Lockable aluminium gate Guard rail / fence at crest of retaining wall  Ancillary Works  Signage  Services  Work as Executed Survey  Site Disestablishment, Restoration and Clean up  Restoration  Fences  Landscaping and garden structures  Disestablishment Clean up  Contingency on construction cost  DA preparation including Environmental Assessment  Design development, detailed design and tender preparation	Wall length  No of private property entries  Equivalent to high quality aluminium pool fence  Warning and interpretative  Not applicable  Restoration of private property fences. Assume high quality butt joint paling fence  SUB To	250 m²  13 Entry Entry Entry Entry m  LS  LS  LS  LS  CTAL ON C  Lump Sum	13 13 13 317	\$ \$	100 1,000	\$ 15,300 \$ 64,000 \$ 200,000 \$ 265,200	\$ 32,500 \$ 45,500 \$ 19,500 \$ 63,400 \$ 3,000 \$ 79,300	\$ \$ \$	8,0 104,3

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OCK S	SEAWALL - STAGE 2								-
	Variables								_
	Wall length Average disturbed footprint width	Excavation, stockpile and plant track area	425 50						_
							Item		_
Item	Description	Comments	Unit	Quantity	Rate	Amount	Subtotal	Item Tot	al
1	Site Establishment							\$ 54,0	00
1.1	Mobilisation of construction plant to site Establish and manage Contractors Work Area	Includes temporary services and person proof fence along the	LS				\$ 35,000		
2	Works EMP	crest and down side ends to MHWM  Includes preparation and implementation of Works EMP	LS				\$ 19,000	\$ 45,0	00
2.1		includes preparation and implementation of WORS LIVII	LS				6	\$ 45,0	00
2.2	Condition inventory of private property assets  Noise and vibration  Air quality		LS LS				\$ 5,000 \$ 5,000		_
	Surface drainage and water quality Traffic and pedestrian control		LS LS				\$ 10,000 \$ 10,000		_
2.6 2.7	Beach and dunal ecology Archaeology	Include flora and fauna	LS LS				\$ 10,000 \$ 5,000		
3	Protection of the Works from Coastal Hazards	Protection from storm water levels and wave action						\$ 50,0	,00
4	Preconstruction Survey							\$ 8,0	,00
5	Demolition and Earthworks	All demolition includes disposal to licensed waste disposal facility							_
								\$ 613,0	00
	Assumption 1 Assumption 2 Assumption 3	No of private property fences affected % disturbed footprint to be cleared // disturbed feotprint with top coil	0 90% 20%						_
5.1	Removal of existing large trees	% disturbed footprint with top soil	LS				\$ 8,000		
5.2	Clearing and disposal of ground cover and minor vegetation Strip and stockpile top soil	Assume top 100mm	m <sup>2</sup>	19,200 425	\$ 1 \$ 20		\$ 19,200 \$ 8,500		_
5.4	Excavation for rock seawall	Assume all sand and gravel beds. Temporary stockpile on the beach to protect the excavation from tides and wave action			. 20		· ,		_
5.5	Replacement of excavated material and spreading of surplus material	'	m <sup>3</sup>	44,200	\$ 7		\$ 309,400		
	onto the beach		m <sup>3</sup>	44,625	\$ 6		\$ 267,750		_
6	Rock Works Assumption 1	Rock placement rate	050	T/day				\$ 4,348,0	00
	Assumption 1 Assumption 2 Assumption 3	Rock placement rate  Dewatering costs per m² per day to reduce water level by 1m  Reduction in contingency applied to rock supply	\$ 60 10%	17uay					_
6.1	Supply of rock armour	3.9 - 6.6 T armour	Т	29,000	\$ 75		\$ 2,175,000		_
6.2 6.3	Supply of rock underlayer Supply or other rock	400 - 700 kg	T T	9,000	\$ 75 \$ 75		\$ 675,000 \$ -		_
6.4	Dewatering	Spearpoints and pumping for rock placement up to RL0 over 12m toe berm underside width assuming work confined to a		407	¢		<b>6 6 1 1 1</b>		_
6.5	Supply and placement of geotextile Placement of rock armour	rolling dewatered compartment each day Assume Elcomax 1200R OAE	m m² T	425 8,400 29,000	\$ 750 \$ 10 \$ 30		\$ 319,000 \$ 84,000 \$ 870,000		_
6.6 6.7 6.8	Placement of rock armour Placement of rock underlayer Placement of other rock		T T	9,000	\$ 30 \$ 25 \$ 20		\$ 870,000 \$ 225,000 \$ -		_
	Shareway Path		-	-	. 20		-	\$	_
	Assumption 1	Path width including edges	2.5	m					_
	Assumption 2	Path length	0	m			-		
7.1	Subgrade Wearing course	Bituminous concrete 25 thick on crushed rock basecourse	m <sup>3</sup> m <sup>2</sup>	0	\$ 120 \$ 35		\$ - \$ -		_
7.3	Handrail  Pataining Wall shows Seewell Creet	Minowills stainless	m	0	\$ 350		\$ -	Φ.	_
8	Retaining Wall above Seawall Crest	Avorage well beight	10					\$	_
	Assumption 1 Assumption 2	Average wall height Wall length	1.6 0						_
8.1	Construction of retaining wall		m <sup>2</sup>	0	\$ 350		\$ -		_
9	Private Property Structures							\$	_
	Assumption 1	No of private property entries	0						_
9.1	Special return treatments at retaining wall to provide entry for steps		Entry	0	\$ 2,500		\$ -		
9.2	Timber steps Lockable aluminium gate Guard rail / fence at creet of retaining well	Equivalent to high quality aluminium poet force	Entry Entry	0	\$ 3,500 \$ 1,500 \$ 200		\$ - \$ -		_
9.4	Guard rail / fence at crest of retaining wall  Ancillary Works	Equivalent to high quality aluminium pool fence	m	0	\$ 200		\$ -	\$ 3,0	00
10.1		Warning and interpretative	LS				\$ 3,000	φ 3,0	UU
10.1	Signage Services	Warning and interpretative  Not applicable	LO				ψ 3,000	\$	_
12	Work as Executed Survey		LS					\$ 8,0	,00
13	Site Disestablishment, Restoration and Clean up							\$ 25,0	
13.1	Restoration						\$ -	20,	_
13.1.1	Fences	Restoration of private property fences. Assume high quality butt					_		
13.1.2	Landscaping and garden structures	joint paling fence	m Properties	0	\$ 100 \$ 4,000	\$ - \$ -			_
13.2 13.3	Disestablishment Clean up		LS LS				\$ 20,000 \$ 5,000		_
. υ. υ	Second Up				SUB		<b>J</b> J,000		_
					TOTAL			\$ 5,154,0	
Add	Contingency on construction cost		25%				-	\$ 1,288,	50
		SUB TO	OTAL ON CO	NSTRUCTI	ON COST			\$ 6,442,	50
Add	DA preparation including Environmental Assessment	Includes concept design	Lump Sum			\$ 100,000			_
Add	Design development, detailed design and tender preparation		3.5%			\$ 225,500			_
Add	Advertising, advising on tenders, tender review and award of contract		Lump Sum			\$ 20,000			_
Add	Supervision and contract administration					\$ 193,300		\$ 538,8	20
Add	E-p. 1.00.1 and outrain administration		3%		AL COST	\$ 193,300			
			тот	TOT AL COST PI				\$6,982,00 \$ 16,50	00

						1		1
	Variables Wall length		525	m				
	Average disturbed footprint width	Excavation, stockpile and plant track area	60					
Item	Description	Comments	Unit	Quantity	Rate	Amount	Item Subtotal	Item Total
	Site Establishment							\$ 52,50
1.1	Mobilisation of construction plant to site		LS				\$ 35,000	7 33,53
1.2	Establish and manage Contractors Work Area	Includes temporary services and person proof fence along the crest and down side ends to MHWM	LS				\$ 17,500	
2	Works EMP	Includes preparation and implementation of Works EMP						\$ 50,50
2.1	Condition inventory of private property assets Noise and vibration		LS LS				\$ - \$ 3,000	
2.3	Air quality Surface drainage and water quality		LS LS				\$ 5,000 \$ 10,000	
	Traffic and pedestrian control Beach and dunal ecology	Include flora and fauna	LS LS				\$ 7,500 \$ 15,000	
2.7 3	Archaeology  Protection of the Works from Coastal Hazards	Protection from storm water levels and wave action	LS				\$ 10,000	\$ 50,00
4	Preconstruction Survey	Fiotection from Storm water levels and wave action						\$ 12,00
5	Demolition and Earthworks	All demolition includes disposal to licensed waste disposal						Φ 12,00
		facility						\$ 884,00
	Assumption 1 Assumption 2	No of private property fences affected % disturbed footprint to be cleared	0 100%					
	Assumption 3	% disturbed footprint with top soil	95%					
5.2	Removal of existing large trees Clearing and disposal of ground cover and minor vegetation		LS m <sup>2</sup>	31,500	\$ 1		\$ 20,000 \$ 31,500	
	Strip and stockpile top soil Excavation for rock seawall	Assume top 100mm  Assume all sand and gravel beds. Temporary stockpile on	m <sup>3</sup>	2,993	\$ 20		\$ 59,850	
5.5	Replacement of excavated material and spreading of surplus material	the beach to protect the excavation from tides and wave action  Includes compaction behind seawall	m <sup>3</sup>	58,000	\$ 7		\$ 406,000	
	neplacement or excavated material and spreading or surplus material onto the beach		m <sup>3</sup>	60,993	\$ 6		\$ 365,955	
6	Rock Works							\$ 5,377,00
	Assumption 1 Assumption 2	Rock placement rate  Dewatering costs per m <sup>2</sup> per day to reduce water level by 1m		T/day				
	Assumption 3	Reduction in contingency applied to rock supply	\$ 60 10%					
	Supply of rock armour Supply of rock underlayer	3.9 - 6.6 T armour 400 - 700 kg	T T	36,000 11,000	\$ 75 \$ 75		\$ 2,700,000 \$ 825,000	
6.3	Supply or other rock Dewatering	Spearpoints and pumping for rock placement up to RL0 over	Ť	0	\$ 75		\$ -	
	-	12m toe berm underside width assuming work confined to a rolling dewatered compartment each day	m	525	\$ 750		\$ 394,000	
6.6	Supply and placement of geotextile Placement of rock armour	Assume Elcomax 1200R OAE	m² T	10,300 36,000	\$ 10 \$ 30 \$ 25		\$ 103,000 \$ 1,080,000 \$ 275,000	
6.7 6.8	Placement of rock underlayer Placement of other rock		T	11,000 0	\$ 25 \$ 20		\$ 275,000 \$ -	
7	Shareway Path							\$ 103,00
	Assumption 1 Assumption 2	Path width including edges Path length	2.5 525					
	Subgrade		m <sup>3</sup>	473	\$ 120		\$ 56,700	
7.2	Wearing course	Bituminous concrete 25 thick on crushed rock basecourse  Minowills stainless	m <sup>2</sup>	1,320 0	\$ 35 \$ 350		\$ 46,200 \$ -	
	Handrail  Retaining Wall above Seawall Crest	Minowills stainless	111	U	Ψ 330		Ψ -	\$
	Assumption 1	Average wall height	1.6					¥
	Assumption 2	Wall length	0					
8.1	Construction of retaining wall		m <sup>2</sup>	0	\$ 350		\$ -	
9	Private Property Structures							\$
0.1	Assumption 1	No of private property entries	0					
9.1	Special return treatments at retaining wall to provide entry for steps  Timber steps		Entry Entry	0	\$ 2,500 \$ 3,500		\$ - \$ -	
9.3	Cockable aluminium gate Guard rail / fence at crest of retaining wall	Equivalent to high quality aluminium pool fence	Entry	0	\$ 1,500 \$ 200		\$ - \$ -	
10	Ancillary Works							\$ 3,00
10.1	Signage	Warning and interpretative	LS				\$ 3,000	
11	Services	Not applicable						\$
12	Work as Executed Survey		LS					\$ 8,00
13	Site Disestablishment, Restoration and Clean up							\$ 25,00
13.1	Restoration						\$ -	
	Fences	Restoration of private property fences. Assume high quality butt joint paling fence	m	0	\$ 100	\$ -		
	Landscaping and garden structures		Properties	0	\$ 4,000	\$ -	¢ 00.000	
	Disestablishment Clean up		LS LS				\$ 20,000 \$ 5,000	
					SUB TOTAL			\$ 6,565,00
Add	Contingency on construction cost		25%					\$ 1,641,25
		SUB TO	OTAL ON CO	NSTRUCTI	ON COST			\$ 8,206,25
Add	DA preparation including Environmental Assessment	Includes concept design. Costs shared with Stage 3S	Lump Sum	,		\$ 75,000		,
Add	Design development, detailed design and tender preparation	Octoo shared man claye oo	3.5%			\$ 287,300		
Add	Advertising, advising on tenders, tender review and award of contract		J.U%			Ψ 201,300		
Auu	and award or condens, tender review and award or contract		Lump Sum			\$ 20,000		
Add	Supervision and contract administration		3%			\$ 246,200		\$ 628,50
				TOI	AL COST	ESTIMATE		\$ 8,835,00

		l .						
ROCK	SEAWALL - STAGE 3S							
	Variables							
	Wall length Average disturbed footprint width	Excavation, stockpile and plant track area	1600 50					
						_	Item	_
Item	Description	Comments	Unit	Quantity	Rate	Amount	Subtotal	Item Total
1	Site Establishment							\$ 75,0
1.1	Mobilisation of construction plant to site Establish and manage Contractors Work Area	Includes temporary services and person proof fence along	LS				\$ 35,000	
2	Works EMP	the crest and down side ends to MHWM  Includes preparation and implementation of Works EMP	LS				\$ 40,000	r 40.0
2.1		molecus proparation and implementation of violes also	LS				¢.	\$ 49,0
2.2	Condition inventory of private property assets  Noise and vibration  Air quality		LS LS				\$ - \$ 2,000	
2.4	Surface drainage and water quality Traffic and pedestrian control		LS LS				\$ 10,000 \$ 2,000	
2.6 2.7	Beach and dunal ecology Archaeology	Include flora and fauna	LS LS				\$ 20,000 \$ 15,000	
3	Protection of the Works from Coastal Hazards	Protection from storm water levels and wave action						\$ 75,0
4	Preconstruction Survey							\$ 20,0
5	Demolition and Earthworks	All demolition includes disposal to licensed waste disposal						
		facility						\$ 2,479,0
	Assumption 1 Assumption 2	No of private property fences affected % disturbed footprint to be cleared	0 100%					
	Assumption 3	% disturbed footprint with top soil	95%					
5.1 5.2	Removal of existing large trees		LS m²	00.000	<b>.</b>		\$ 30,000	
5.3	Clearing and disposal of ground cover and minor vegetation Strip and stockpile top soil	Assume top 100mm Assume all sand and gravel bads. Temporary stocknile on	m <sup>2</sup> m <sup>3</sup>	80,000 7,600	\$ 1 \$ 20		\$ 80,000 \$ 152,000	
5.4	Excavation for rock seawall	Assume all sand and gravel beds. Temporary stockpile on the beach to protect the excavation from tides and wave action	m <sup>3</sup>	167,000	\$ 7		\$ 1,169,000	
5.5	Replacement of excavated material and spreading of surplus material onto the beach	Includes compaction behind seawall	m <sup>3</sup>	174,600	\$ 6		\$ 1,047,600	
6	Rock Works						, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$ 15,003,0
	Assumption 1	Rock placement rate	250	T/day				
	Assumption 2	Dewatering costs per m <sup>2</sup> per day to reduce water level by 1m	\$ 60					
	Assumption 3	Reduction in contingency applied to rock supply	10%					
6.1 6.2	Supply of rock armour Supply of rock underlayer Supply or other rock	3.9 - 6.6 T armour. 400 - 700 kg	T	108,000 32,000	\$ 68 \$ 68		\$ 7,290,000 \$ 2,160,000	
6.3	Supply or other rock  Dewatering	Spearpoints and pumping for rock placement up to RL0 over 12m toe berm underside width assuming work confined to a	T	0	\$ 68		\$ -	
6.5	Supply and placement of geotextile	rolling dewatered compartment each day  Assume Elcomax 1200R OAE	m m²	1,600 31,300	\$ 750 \$ 10		\$ 1,200,000 \$ 313,000	
6.6	Placement of rock armour  Placement of rock underlayer	TOTAL TECHNICAL TECHNICAL CONTE	T T	108,000 32,000	\$ 10 \$ 30 \$ 25		\$ 3,240,000 \$ 800,000	
6.8	Placement of other rock		Ť	0	\$ 20		\$ -	
7	Shareway Path							\$ 313,0
	Assumption 1 Assumption 2	Path width including edges Path length	2.5 1600					
7.1	Subgrade		m <sup>3</sup>	1,440	\$ 120		\$ 172,800	
7.2	Wearing course	Bituminous concrete 25 thick on crushed rock basecourse	m²	4,000	\$ 35		\$ 140,000	
7.3	Handrail  Retaining Wall above Seawall Crest	Minowills stainless	m	0	\$ 350		\$ -	\$
-	Assumption 1	Average wall height	1.6					Ψ
	Assumption 1 Assumption 2	Average wall height Wall length	0					
8.1	Construction of retaining wall		m <sup>2</sup>	0	\$ 350		\$ -	
9	Private Property Structures							\$
	Assumption 1	No of private property entries	0					
9.1	Special return treatments at retaining wall to provide entry for steps		Entry	0	\$ 2,500		\$ -	
9.2	Timber steps Lockable aluminium gate		Entry Entry	0	\$ 3,500 \$ 1,500		\$ - \$ -	
9.4	Guard rail / fence at crest of retaining wall	Equivalent to high quality aluminium pool fence	m	0	\$ 200		\$ -	
10	Ancillary Works							\$ 3,00
10.1	Signage	Warning and interpretative	LS				\$ 3,000	
11	Services Week on Executed Survey	Not applicable						\$
12	Work as Executed Survey		LS					\$ 17,5
13	Site Disestablishment, Restoration and Clean up							\$ 30,0
13.1	Restoration						\$ -	
13.1.1	Fences	Restoration of private property fences. Assume high quality		0	e 400	¢		
13.1.2	Landscaping and garden structures	butt joint paling fence	m Properties	0	\$ 100 \$ 4,000	\$ - \$ -		
13.2 13.3	Disestablishment Clean up		LS LS				\$ 20,000 \$ 10,000	
-					SUB		2,300	
					TOTAL			\$ 18,064,5
Add	Contingency on construction cost		25%					\$ 4,516,1
		SUB T	OTAL ON CO	NSTRUCTION	ON COST			\$ 22,580,6
Add	DA preparation including Environmental Assessment	Includes concept design. Costs shared with Stage 3N	Lump Sum			\$ 200,000		
Add	Design development, detailed design and tender preparation		0.50			Ф 700		
	Advantation		3.5%			\$ 790,400		
Add	Advertising, advising on tenders, tender review and award of contract		Lump Sum			\$ 20,000		
Add	Supervision and contract administration		3%			\$ 677,500		\$ 1,687,9
								\$24,269,00
				TOT	AL COST	ESTIMATE		\$24,205.