

Location: Bonriki International Airport (TRW) - Airside Pavement

Engineer's Estimate

Item	Description	Unit	Quantity	Rate	Amount
1.0	PRELIMINARY AND GENERAL				
1.1	Insurances				
a)	Provide all specified Insurances	LS	1	\$ 20,000	\$ 20,000
	Establishment				
1.2	Fixed charges				
a)	Importing Aggregates- Shipping and Establish stockpile and facilities on site and tidy up on completion of works	LS	1	\$ 3,610,000	\$ 3,610,000
b)	Supply of Bitumen - Shipping and unloading, return shipping of empty containers	LS	1	\$ 1,826,118	\$ 1,826,118
c)	Supply of Cutter Oil - Shipping and unloading, return shipping of empty containers	LS	1	\$ 80,000	\$ 80,000
d)	Supply of Sasol Wax additive	LS	1	\$ 73,045	\$ 73,045
e)	Mobilisation of Plant and Materials to site	LS	1	\$ 2,500,000	\$ 2,500,000
f)	Demobilisation of Plant from site	LS	1	\$ 500,000	\$ 500,000
g)	Other fixed charge obligations: <i>(specify)</i>	LS			
1.3	Time Related Items (Contract Total 40 Weeks with 26 Weeks on Site)				
a)	Contractual requirement	Wk.	40	\$ 10,000	\$ 400,000
b)	Contractors site office including power and telephone	Wk.	26	\$ 5,000	\$ 130,000
c)	Contractors staff accommodation	Wk.	26	\$ 25,000	\$ 650,000
d)	Provide Engineers Office fully equipped as specified	Wk.	26	\$ 500	\$ 13,000
e)	Provide Engineers vehicle transport	Wk.	26	\$ 300	\$ 7,800
f)	Provide Engineers Communications	Wk.	26	\$ 100	\$ 2,600
g)	Provide onsite materials testing lab	Wk.	26	\$ 500	\$ 13,000
h)	Other time related items (specify)	Wk.	40		\$ -
1.4	SITE SAFETY MANAGEMENT PLAN				
1.4.1	Prepare and submit a site safety management plan. Brief all site personnel and non escorted visitors. Implement and manage plan	LS	1	\$ 10,000	\$ 10,000
1.5	CONSTRUCTION MANAGEMENT				
a)	Daily Works Record / Monthly Progress Reports / Site Meetings	LS	1	\$ 50,000	\$ 50,000
b)	Attend at Weekly Co-ordination Meetings	Wk.	40	\$ 500	\$ 20,000
c)	Prepare and submit Contract Works Quality Plan. Implement and manage plan.	LS	1	\$ 5,000	\$ 5,000
d)	Prepare and submit Environmental Management Plan. Implement and Manage Plan.	LS	1	\$ 5,000	\$ 5,000
e)	Prepare, submit and update Contractors Construction Programme	LS	1	\$ 5,000	\$ 5,000
f)	Prepare and Submit 'AS Built' Construction Records	LS	1	\$ 2,000	\$ 2,000
Total Cost for 1.0 Preliminary & General, copy total to summary page					\$ 9,922,563
Item	Description	Unit	Quantity	Rate	Amount
2.0	AIRSIDE CONSTRUCTION				
2.1	Allow for all costs associated with Specification Section 2.0 Airside Construction (contractor to provide breakdown)	LS	1	\$ 20,000	\$ 20,000
2.2	Uplift draft Method of Works Plan, update, issue and implement for duration of physical works on site	LS	1	\$ 10,000	\$ 10,000
2.3	Coordination with Airlines, Airport Manager for duration of the works	Wk.	26	\$ 500	\$ 13,000
2.4	Protection of lighting cabling and runway / taxiway lighting fixtures	Wk.	26	\$ 500	\$ 13,000
2.5	FOD protection for the duration of the airside works	Wk.	26	\$ 1,000	\$ 26,000
2.6	Unscheduled flight requiring stand down of paving operations. (Provisional Sum Item)	hrs.	24	\$ 2,000	\$ 48,000
Total Cost for 2.0 Airside Construction, copy total to summary page					\$ 130,000
Item	Description	Unit	Quantity	Rate	Amount
3.0	SITE CLEARANCE				
3.1	Clearance and removal of vegetation from Runway 09-27 & RESAs	LS	1	\$ 75,000	\$ 75,000
3.2	Removal of existing shrub and grading of Taxiway A, Taxiway B, Apron & ATC Access Road	LS	1	\$ 25,000	\$ 25,000
3.3	Clearance and removal of bitumen drums and environmental contamination, abandoned plant and old concrete foundations at the eastern runway end	LS	1	\$ 50,000	\$ 50,000
3.4	Clearance and removal of abandoned construction equipment (1No Excavator, 3No Rollers, 1No AC drum plant, 1No miscellaneous plant) for scrap	LS	1	\$ 50,000	\$ 50,000
3.5	Clearance of existing vegetation for main Contractor compound	LS	1	\$ 5,000	\$ 5,000
3.6	Clearance and removal of vegetation from Contractor vehicle compounds	Item	2	\$ 2,000	\$ 4,000
Total Cost for 3.0 Site Clearance, copy total to summary page					\$ 209,000
Item	Description	Unit	Quantity	Rate	Amount
4.0	MILLING AND TEXTURIZING				
4.1	Mill and texturize to predetermined levels on Runway 09-27 & RESAs	m2	100000	\$ 3	\$ 300,000
4.2	Mill to predetermined levels on Taxiway A & Taxiway B	m2	4400	\$ 3	\$ 13,200
4.3	Mill to predetermined levels on Apron	m2	17900	\$ 3	\$ 53,700
4.4	Trim, compact and prepare ATC Access Road and aprking area ready for AC surfacing	m2	2250	\$ 3	\$ 5,625
Total Cost for 4.0 Milling & texturizing Works, copy total to summary page					\$ 372,525

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Item	Description	Unit	Quantity	Rate	Amount
5.0	ASPHALTIC CONCRETE OVERLAY				
5.1	Prior to full scale production				
5.1.1	Provide aggregate samples as specified	LS	1	\$ 5,000	\$ 5,000
5.1.2	Provide aggregate feeder calibration and asphalt plant calibration certification in accordance with the specification and written statement of compliance as specified.	LS	1	\$ 5,000	\$ 5,000
5.1.3	Bitumen supply provisional sum for mix variability (assume plus 0.2% on target content)	PS	1	\$ 63,914	\$ 63,914
5.1.4	Prepare and submit a complying Asphaltic Mix Design (Target bitumen content 5.6%)	LS	1	\$ 15,000	\$ 15,000
5.1.5	Prepare and lay an Asphaltic Concrete trial strip - ATC Access Road	m2	300	\$ 50	\$ 15,000
5.1.6	Prepare revised AC mix design and prepare & lay additional trial strip (Provisional item)	m2	300	\$ 50	\$ 15,000
5.1.7	Uplift design/existing survey data and provide set out of paving works	LS	1	\$ 100,000	\$ 100,000
5.1.8	Provide digital GPS paving control with experienced technician	LS	1	\$ 100,000	\$ 100,000
5.2	Full Scale Production - Runway 09-27, Runway 27 Turnbay, RESAs				
5.2.1	Full Scale Production - Runway 09-27, Runway 27 Turnbay, RESAs	m3	6700	\$ 500	\$ 3,350,000
5.2.2	Mill and Fill in patch repairs with 100mm deep AC to all required areas	m2	6000	\$ 100	\$ 600,000
5.2.3	Supply and apply Tack coat to all required areas	m2	100011	\$ 2	\$ 150,017
5.2.4	Apply SEST to all areas identified on site by the Engineer (Provisional item)	m2	11000	\$ 4	\$ 44,000
5.2.5	Contractor to include additional allowances for ties in, cutting back and wastage to facilitate construction	Item	1	\$ 101,515	\$ 101,515
5.2.6	As-Built Runway Surface Profile Survey	Item	1	\$ 10,000	\$ 10,000
5.3	Full Scale Production - Runway 09-27Shoulders				
5.3.1	Supply and apply as per specification SEST to all required areas	m2	28000	\$ 4	\$ 112,000
5.4	Full Scale Production - Taxiway A & Taxiway B				
5.4.1	Full Scale Production - Taxiway A & Taxiway B	m3	500	\$ 500	\$ 250,000
5.4.2	Supply and apply Tack coat to all areas receiving asphalt construction	m2	4400	\$ 4	\$ 17,600
5.4.3	Contractor to include additional allowances for ties in, cutting back and wastage to facilitate construction	Item	1	\$ 7,576	\$ 7,576
5.4.4	As-Built Taxiway Surface Profile Survey	Item	1	\$ 5,000	\$ 5,000
5.5	Full Scale Production - Apron				
5.5.1	Full Scale Production - Apron	m3	1350	\$ 500	\$ 675,000
5.5.2	Supply and apply Tack Coat to all areas receiving asphalt construction	m2	17900	\$ 4	\$ 71,600
5.5.3	Contractor to include additional allowances for ties in, cutting back and wastage to facilitate construction	Item	1	\$ 20,455	\$ 20,455
5.5.4	As-Built Apron Surface Profile Survey	Item	1	\$ 5,000	\$ 5,000
5.6	Full Scale Production - ATC Access Road				
5.6.1	Full Scale Production - ATC Access Road (75mm depth)	m3	190	\$ 500	\$ 95,000
5.6.2	Apply Tack Coat to all areas receiving asphalt construction	m2	2250	\$ 4	\$ 9,000
5.6.3	As-Built ATC Access Road Survey	Item	1	\$ 1,000	\$ 1,000
5.7	Temporary Works				
5.7.1	Supply and Construct AC temporary ramps on instruction from the Engineer only	m3	400	\$ 400	\$ 160,000
5.7.2	RB banding of construction joints	lin. m	6200	\$ 15	\$ 93,000
5.8	Production Testing				
5.8.1	Provide daily AC production tests as specified for plant produced material & field placed material. Issue daily QA pass/fail compliance reports	No.	180	\$ 500	\$ 90,000
Total Cost for 5.0 Asphaltic Concrete Overlay, copy total to summary page					\$ 6,186,676
Item	Description	Unit	Quantity	Rate	Amount
6.0	FUEL HYDRANT REMOVAL				
6.1	Excavate and dispose of existing fuel hydrants (3 by 2 pairs of hydrants)	No.	3	\$ 5,000	\$ 15,000
6.2	Supply and apply grout filling to redundant fuel pipeline	m3	10	\$ 1,000	\$ 10,000
6.3	Backfill excavation with CTB to underside of proposed pavement layer	m3	100	\$ 200	\$ 20,000
Total Cost for 6.0 Fuel Hydrant Removal Work, copy total to summary page					\$ 45,000
Item	Description	Unit	Quantity	Rate	Amount
7.0	DRAINAGE				
7.1	Excavate and Remove existing pavement for required trenches	m3	100	\$ 60	\$ 6,000
7.2	Supply and apply concrete foundation	m2	105	\$ 30	\$ 3,150
7.3	Supply and install ACO Powerdrain	Lin m	105	\$ 600	\$ 63,000
7.5	Supply and install oil separator including connections	No.	2	\$ 25,000	\$ 50,000
7.6	Supply and install new drainage soakaways including connections	No.	2	\$ 1,500	\$ 3,000
7.7	Supply and install new storm water bypass chambers including connections	No.	2	\$ 10,000	\$ 20,000
7.8	Supply and install new 900mm dia storm water manholes including connections	No.	2	\$ 10,000	\$ 20,000
7.9	100mm dia pipe	Lin m	6	\$ 200	\$ 1,200
7.10	300mm dia RCP pipe	Lin m	75	\$ 500	\$ 37,500
7.11	Undertake survey of existing apron drainage outfall	Item	1	\$ 5,000	\$ 5,000
Total Cost for 7.0 Drainage, copy total to summary page					\$ 208,850
Item	Description	Unit	Quantity	Rate	Amount
8.0	FENCING				
8.1	Not in this Contract	-	-	-	\$ -
Total Cost for 8.0 Fencing Work, copy total to summary page					\$ -

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Item	Description	Unit	Quantity	Rate	Amount
9.0	PAINT MARKING				
9.1	Install Temporary Paint markings				
9.1.1	Transverse Stripe indicating displaced threshold	m2	165	\$ 10	\$ 1,650
9.1.2	Threshold markers	m2	1296	\$ 10	\$ 12,960
9.1.3	Runway ID Numerals - '09' AND '27'	Item		\$ 300	\$ -
9.1.4	Aiming Point markers	m2	810	\$ 10	\$ 8,100
9.1.5	Runway Centreline Marking	Lin m	930	\$ 3	\$ 3,097
	Install Permanent Paint markings				
9.2	Runway Markings: White				
9.2.1	Transverse Stripe indicating displaced threshold	m2	165	\$ 10	\$ 1,650
9.2.2	Threshold markings	m2	1296	\$ 10	\$ 12,960
9.2.3	Displaced threshold arrows	No	1	\$ 300	\$ 300
9.2.4	Aiming Point markers	m2	1080	\$ 10	\$ 10,800
9.2.5	Touchdown zone markers	m2	828	\$ 10	\$ 8,280
9.2.6	Runway Centreline Marking	Lin m	930	\$ 3	\$ 3,097
9.2.7	09 Numeral Marking	No	1	\$ 300	\$ 300
9.2.8	27 Numeral Marking	No	1	\$ 300	\$ 300
9.2.9	Runway edge stripe marking	lin m	3690	\$ 9	\$ 33,210
9.2.10	Runway end marking (yellow)	m2	70	\$ 10	\$ 700
9.2.11	Runway stopway chevrons (yellow)	m2	290	\$ 10	\$ 2,900
9.3	Taxiway Markings: Yellow				\$ -
9.3.1	150 mm wide lead in lines	lin m	865	\$ 3	\$ 2,595
9.3.2	Runway hold markings	no	2	\$ 300	\$ 600
9.3.3	Taxiway edge marking	m	685	\$ 9	\$ 6,165
9.4	Apron Markings: Yellow				
9.4.1	Stop marking	No	2	\$ 100	\$ 200
9.4.2	Runway strip warning marking	No	2	\$ 1,000	\$ 2,000
9.4.3	Apron edge double line marking	m	140	\$ 10	\$ 1,400
9.4.4	Stand lead ins and indicator marking	No	2	\$ 500	\$ 1,000
9.5	Apron Jet Seal				
9.5.1	Fuel proof coating - Single application	m2	780	\$ 35	\$ 27,300
Total Cost for 9.0 Paint Marking, copy total to summary page					\$ 141,564
Item	Description	Unit	Quantity	Rate	Amount
10	DUCTING				
10.1	Install 63mm dia PVC conduits including draw wire	lin m	2450	\$ 50	\$ 122,500
10.2	Install precast concrete Sit Pit	No	18	\$ 3,000	\$ 54,000
10.3	Install precast concrete 900 x 900 clear opening electrical pits (Class D cover and frame)	No	6	\$ 5,000	\$ 30,000
Total Cost for 10.0 Ducting, copy total to summary page					\$ 206,500
Item	Description	Unit	Quantity	Rate	Amount
11	MISCELLANEOUS CIVIL WORKS				
11.1	Remove and disposal of existing redundant AGL inset lights and fittings at 09 End. Backfill with CTB	no	22	\$ 500	\$ 11,000
11.2	Remove and disposal of existing redundant AGL inset lights and fittings at 27 End. Backfill with CTB	no	20	\$ 500	\$ 10,000
Total Cost for 11.0 Miscellaneous Civil Works, copy total to summary page					\$ 21,000
Item	Description	Unit	Quantity	Rate	Amount
12	LANDSIDE CAR PARK				
12.1	Site Clearance	m2	5200	\$ 5	\$ 26,000
12.2	Site regrading	m3	390	\$ 25	\$ 9,750
12.3	Kerb and gutter	lin m	640	\$ 75	\$ 48,000
12.4	40mm AC 14 surface course	m2	3500	\$ 20	\$ 70,000
12.5	200mm coral base course	m2	3500	\$ 20	\$ 70,000
12.6	200mm concrete walkway	m2	290	\$ 250	\$ 72,500
12.7	Landscaping	m2	1675	\$ 20	\$ 33,500
12.8	Line marking - Direction arrows	no	9	\$ 300	\$ 2,700
12.9	Car park space marking	m	390	\$ 3	\$ 1,170
12.10	Drainage sumps	no	6	\$ 1,500	\$ 9,000
Total Cost for 12.0 Lanside Car Park, copy total to summary page					\$ 342,620
Item	Description	Unit	Quantity	Rate	Amount
13.0	TESTING				
13.1	Provide a fully accredited satellite laboratory suitable to conduct all testing requirements	LS	1	\$ 150,000	\$ 150,000
13.2	Additional sampling and testing During Construction as instructed by the Engineer (Provisional sum)	PS	1	\$ 20,000	\$ 20,000
Total Cost for 13.0 Testing, copy total to summary page					\$ 170,000

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Item	Description	Unit	Quantity	Rate	Amount
14.0	DAYWORK ITEMS (PROVISIONAL SUMS)				
14.1	Labour				
14.1.1	Labourer	hrs.	40	\$ 40	\$ 1,600
14.1.2	Tradesman	hrs.	40	\$ 40	\$ 1,600
14.1.3	Foreman	hrs.	40	\$ 50	\$ 2,000
14.1.4	Asphalt Paving Crew	hrs.	40	\$ 160	\$ 6,400
14.1.5	Site Safety Supervisor	hrs.	40	\$ 40	\$ 1,600
14.1.6	Registered Surveyor & Chainperson	hrs.	40	\$ 40	\$ 1,600
14.1.7	Pavement Saw Cutting Crew	hrs.	40	\$ 40	\$ 1,600
	Other :- Contractor to List				
14.2	Plant				
14.2.1	AC Paving Plant & Rollers	hrs.	40	\$ 800	\$ 32,000
14.2.2	AC Batching Plant	hrs.	40	\$ 250	\$ 10,000
14.2.3	AC Delivery Trucks	hrs.	40	\$ 200	\$ 8,000
14.2.4	Milling Machine	hrs.	40	\$ 120	\$ 4,800
	Other :- Contractor to List				
Total Cost for 14.0 Day work Items, copy total to summary page					\$ 71,200
TOTAL PROJECT COST (Excluding GST)					\$18,027,498