<u> </u>	T-70. Unit Rat	e per	Meter	r of	Shotere	te of U	pper H	alf : G	rade Cl		
					18,872				Baht/m	84%	
	Ing-Yot No.2 Tunnel with /	Adit				-	L.C. =	3,035	Baht/m	16%	
	A.6	Ī			Foreign (urrency	Local Ci	arrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10m		
	Shotcrete Robot Shot Radius 8m	1	4	Hr	2,170	8,680	10	40	4	Hr ×	1
	Shotcrete Shooter Wei 10-15m3/h	1	4	Hr	3,105	12,420	25	100	4	Hr ×	1 .
	Truck with Crane 4t x 2.9t lift	1	25	Hr	425	10,625	25	625	25	Hr ×	1
	Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day ×	1
	Dust Collector 300m3/hr, 30kw	1	4	Hr	1,290	5,160	63	252	- 4	Hrx	1
	Truck Mixer 4.5 m3	1	9	Ю	620	5,580	70	630	9	Hr×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	9	Hr	1,780	16,020	20	- 180	9	Hr×	1
	Subtotal					60,745		1,935		Baht / 10r	<u>n </u>
2.	Material								per 10m		
	Portland Cement Type II		13	ion	1,666	21,658	714	9,282			
	Fine Sand for Aggregate		30	m3	0	0	220	6,600			
	Coarse Sand for Aggregate((Gravel)	17	m3	0	0	220	3,740			
	Accelerator for Shotcrete		750	kg	100	75,000	0	0		· .	
	Miscellaneous		1	%		967	L	196			
Γ	Subtotal					97,625	<u> </u>	19,818	· · · · · · · · · · · · · · · · · · ·	Baht / 10	m
3.	Labor		· ·			ſ			per 10m		
ĺ	Foreman Tunnel		1.0	day			720	720	2.0	dayx50%=	. I
	Operator of Heavy		9.0	day			460	4,140	1.5	day x	6
	Driver		4.5	day			350	1,575	1.5	day ×	3
1	Skilled Labor		3.0	day			260	780	1.5	day x	2
	Common Labor		6.0	day			230	1,380	1.5	day x	4
Γ	Subtotal		1			<u> </u>	L	8,595			
4	Total					158,370	<u> </u>	30,348	188,718	Baht / 10	<u>m</u>
5	. Output	Worki	ing Time	: per l	l day = 12 l	Hr × 2 shif	ì		per	10	នា
	Rate = Baht/m				5 A.	15,83	7 Baht/m	3,03	5 Baht/m	w	18,87

		Ra	tė =	20,171	Baht/m	F.C. =	17,101	Baht/m	85%	1
Ing-Yot No.2 Tunnel with A	\dit					L.C. =	3,070	Baht/m	15%	
				Foreign C	urrency	Local Ci	errency			
Items	Unit	Quan	lity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m		5	Hr	2,170	10,850	10	50	5	Hr ×	1
Shotcrete Shooter Wet 10-15=3/m	1	5	Hr	3,105	15,525	25	125	5.	Ни×	1
Truck with Crane 4t x 2.9t lift	1	28	Hr	425	11,900	25	700	28	Нr×	1
Accelerator Supplier 5.5kw	.1	2	day	1,130	2,260	. 54	108	2	day ×	1
Dust Collector 300m3/hr, 30kw	i	5	Hr	1,290	6,450	63	315	5	Hr×	1
Truck Mixer 4.5 m3	1	11	Hr	620	6,820	70	770	11	Hr ×	1
Concrete Plant 1.0"2 m3(25-30m3	1	11	Hr	1,780	19,580	20	220	11	Hr×	1
Subtotal					73,385		2,288		Baht / 101	n
2. Material								per 10m		
Portland Cement Type II		13	ton	1,666	21,658	714	9,282			
Fine Sand for Aggregate		30	m3	0	0	220	6,600			
Coarse Sand for Aggregate(Gravel	17	m3	0	. 0	220	3,740			
Accelerator for Shotcrete	· .	750	kg	100	75,000	0	0	· .		
Miscellaneous		÷ 1	%		967		196		1.1.1	· · ·
Subtotal		1			97,625		19,818		Baht / 10	m
3. Labor								per 10m		
Foreman Tunnel		1.0	day			720	720	2.0	dayx50%=	
Operator of Heavy		9.0	day			460	4,140	1.5	day x	6
Driver		4.5	day			350	1,575	1.5	day x	3
Skilled Labor		3.0	day			260	780	1.5	day ×	2
Common Labor		6.0	day		1	230	1,380	1.5	day ×	4
Subtotal	· · .	1		1		1	8,595			
4. Total					171,010		30,701	201,711	Bahi / 10)m
5. Output	Work	ing Tim	per	1 day = 12]	Hr x 2 shif	i .		per	10	m
Rate = Baht/m				,		1 Baht/m	3.07	0 Baht/m	E	20,17

T-72. Unit Rate	e per									
		R	ite =	27,189	Baht/m	F.C. =	22,493	Baht/m	83%	
Ing-Yot No.2 Tunnel with Add	£					L.C. =	4,696	Baht/m	17%	
				Foreign (Currency	Local C	игтевсу			
Items	Unit	Quar	itity	Rate	Cost	Rate	Cost	F	lemark	
Operation Cost (Equipmen	t & Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m	T	6	Hr	2,170	13,020	10	60	6	Hr ×	1
Shotcrete Shooter We 10-15m3/m	1	6	Hr	3,105	18,630	25	150	6	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	36	Hr	425	15,300	25	900	36	Hr ×	1
Accelerator Supplier 5.5kw	1	3	day	1,130	3,390	54	162	3	day x	1
Dust Collector 300m3/hr, 30kw	1	6	Hr	1,290	7,740	63	378	6	Hr x	1
Truck Mixer 4.5 m3	1	13	Hr	620	8,060	70	910	13	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	13	Hr	1,780	23,140	20	260	13	Hr ×	1
Subtotal					89,280		2,820		Baht / 10n	<u>،</u>
Material								per 10m		
Portland Cement Type II		18	ton	1,666	29,988	714	12,852			
Fine Sand for Aggregate		41	m3	0	. 0	220	9,020			
Coarse Sand for Aggregate(Gravel)	41	m3	0	0	220	9,020			
Accelerator for Shotcrete		1030	kg	100	103,000	0	0			
Miscellaneous		2	%		2,660		618			
Subtotal					135,648		31,510		Baht / 10n	1
. Labor								per 10m		
Foreman Tunnel		1.5	day			720	1,080	1	ക്യാഗ്0%-	
Operator of Heavy		13.5	day			460	6,210		day ×	•
Driver		6.0	day			· 350	2,100	1 A 1	day x	4
Skilled Labor		4.5	day			260	1,170		day ×	3
Common Labor		9.0	day	Ļ		230	2,070	1.5	day ×	. 6
Subtotal		ļ		 	ļ	<u> </u>	12,630	<u> </u>		
. Total		L		l	224,928	Ĺ	46,960	271,888	Baht / 10r	n

		R	nte =	34,590	Baht/m	F.C. =	29,320	Baht/m	85%	
Ing-Yot No.2 Tunnel with Adit				5 A. A.		L.C. =	5,270	Baht/m	15%	
				Foreign (urrency	Local C	аттеясу		· .	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipment	t & Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m	1	8	Hr	2,170	17,360	- 10	80	8	Hr ×	1
Shotcrete Shooter Wei 10-15m3/h	1	8	Hr	3,105	24,840	- 25	200	8	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	43	Hr	425	18,275	25	1,075	43	Ηr×	1
Accelerator Supplier 5.5kw	1	3	day	1,130	3,390	54	162	3	day ×	1
Dust Collector 300m3/hr, 30kw	1	8	Hr	1,290	10,320	63	504	8	Нı×	1
Truck Mixer 4.5 m3	1	20	Hr	620	12,400	70	1,400	20	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	20	Hr	1,780	35,600	20	400	20	Hr ×	1
Subtotal					122,185		3,821		Baht / 10	m
Material								per 10m		
Portland Cement Type II	· ·	23	ton	1,666	38,318	714	16,422			·
Fine Sand for Aggregate	1.1	52	m3	0	. 0	220	11,440		·	
Coarse Sand for Aggregate((Gravel)	31	m 3	0	. 0	220	6,820	1.1		
Accelerator for Shotcrete		1,310	kg	100	131,000	0	0	ļ		
Miscellaneous	• •	1	96	1.1	1,693		347			
Subtotal					171,011		35,029		Baht / 10	m j
Labor						± .		per 10m		
Foreman Tunnel		1.5	day			720	1,080	3.0	dayx50%×	. 1
Operator of Heavy		15.0	•			460	6,900	1.5	day ×	10
Driver		7.5	day	1		350	2,625	1.5	day ×	5
Skilled Labor	÷	i .	day	1.		260	1,170	1.5	day x	3
Common Labor	$(e_1)^{i_1}$	1	day			230	2,070	1	day x	6
Subtotal				1			13,845	1		
. Total		1			293,196		52,695	+	Baht / 10	han .
5. Output	Wat	e Tie-		day = 12 F	le v 7 chiff			per	10	m

			Ra	te =	35,303	Baht/m	F.C. =	29,930	Baht/m	85%	
	Ing-Yot No.2 Tunnel with Adi				•	•	L.C. =		Baht/m	15%	
					Foreign C	urrency	Local Co	urrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
	Operation Cost (Equipmen	t & Fu	el)					_	per 10m		
	Shotcrete Robot Shot Radius 8m	1	8	Hr	2,170	17,360	10	80	8	Hr ×	1
	Shotcrete Shooter Wei 10-15m3/h	1	8	Hr	3,105	24,840	25	200	8	Hr×	1
	Truck with Crane 41 x 2.9t lift	1	43	Hr	425	18,275	25	1,075	43	Hr ×	1
	Accelerator Supplier 5.5kw	1	3	day	1,130	3,390	54	162	3	day ×	1
	Dust Collector 300m3/hr, 30kw	1	8	Hr	1,290	10,320	63	504	. 8	н×	1
•	Truck Mixer 4.5 m3	1	21	Hr	620	13,020	70	1,470	21	Ηr×	1
	Concrete Plant 1.0*2 m3{25-30m3.	1	21	Hr	1,780	37,380	20	420	21	Hu×	1
-	Subtotal					124,585		3,911		Baht / 10n	n
2.	Material							1	per 10m		
	Portland Cement Type II		24	ton	1,666	39,984	714	17,136			
	Fine Sand for Aggregate		53	m3	0	0	220	11,660			
	Coarse Sand for Aggregate(Gravel)	31	m3	0	0	220	6,820			
	Accelerator for Shotcrete		1,330	kg	100	133,000	0	· 0	1.1	1.1	
	Miscellaneous		1	%	L	1,730		356			
	Subtotal		1			174,714	l	35,972	<u> </u>	Baht / 10	m
3.	Labor		1						per 10m	• •	
	Foreman Tunnel		1.5	day	l ·	:	720	1,080		dayx50%=	1
	Operator of Heavy		15.0	day			460	6,900	1	day ×	10
	Driver		7.5	day	ļ		350	2,625		day ×	5
	Skilled Labor		4.5	day	1	1	260	1,170	1	day x	3
_	Common Labor		9.0	day		ļ	230	2,070	-	day ×	6
	Subtotal		<u> </u>				1	13,845		<u></u>	
4	Total					299,299		53,728		Baht / 10	
5.	Output	Worki	ng Time	per :	i đay = 12 l	Ir × 2 shif	î e		per	10	m :
	Rate = Baht/m		1.4.			29,93	0 Baht/m	5,37.	3 Bahl/m	E	35,3

			Ra	te =	42,251	Baht/m	F.C. =	35,580	Baht/m	84%	- 1
	Ing-Yot No.2 Tunnel with Add	L			· · ·		L.C. =	6,671	Baht/m	16%	
					Foreign (Сигтевсу	Local C	итенсу			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 1.0m		
	Shotcrete Robot Shot Radius 8m	1	9	Hr	2,170	19,530	10	90	9	Hr ×	· 1
•	Shotcrete Shooter Wet 10-15m3/m	1	9	Hr	3,105	27,945	25	225	9	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	50	Hr	425	21,250	25	1,250	50	Hr ×	1
	Accelerator Supplier 5.5kw	1	4	day	1,130	4,520	54	216	4	day ×	1
	Dust Collector 300m3/hr, 30kw	1	9	Hr.	1,290	11,610	63	567	9	Hr ×	1.
	Truck Mixer 4.5 m3	1	22	HĿ	620	13,640	70	1,540	22	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	22	Hr	1,780	39,160	20	440	22	Hr×	1
	Subtotal					137,655		4,328	· ·	Baht / 10	m
2.	Material				1				per 10m	,	1
	Portland Cement Type II		30	ton	1,666	49,980	714	21,420	· .		
	Fine Sand for Aggregate		67	m 3	0	0	220	14,740			
	Coarse Sand for Aggregate(Gravel	39	m3	. 0	0	220	8,580			
	Accelerator for Shotcrete		1,660	kg	100	166,000	0	0		1	÷ [
	Miscellaneous		1	%		2,160	1	447	1		
	Subtotal				1.1.1	218,140		45,187	1 1 1	Baht / 10	m
3.	Labor				.		1.11		per 10m	i.	
	Foreman Tunnel		2.0	day			720	1,440	4.0	dayx50%=	
	Operator of Heavy		18.0	day			460	8,280	1.5	day ×	12
	Driver		9.0	day	1		350	3,150) 1.5	day x	. 6
	Skilled Labor		6.0	day			260	1,560	1.5	day ×	· 4
	Common Labor	<u> </u>	12.0	day	<u> </u> .		230	2,760) 1.5	day x	8
Ľ	Subtotal				17		<u> </u>	17,19)		
4.	Total					355,795	5	66,70	5 422,500	Baht / 1	Den
5.	Output	Work	ing Time	per :	1 day = 12	Hr x 2 shi	ft .		per	10	m
Ľ	Rate = Baht/m		-		-	1.1	0 Baht/m	6.67	1 Baht/m	= ; · ·	42,2

	T-76. Unit Ra	te per	Met	er o	f Shoter	ete of	Upper l	Half : (Grade B		
			R	ite ⇒	9,434	Baht/m	F.C. =	7,785	Baht/m	83%	
	Adit for Ing-Yot No.2 Tunz	ıe!	•				L.C. =	1,649	Baht/m	17%	
					Foreign (urrency	Local C	arrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
i	Operation Cost (Equipmen	t & Fu	el)						per 10m		
;	Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr x	1
	Shotcrete Shooter Wei 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
	Truck with Crane 41 x 2.9t lift	1	16	Hr	425	6,800	25	400	16	Hr x	1
	Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day x	1
	Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	6	Hr	620	3,720	70	420	6	Hr×	1
	Concrete Plant 1.0*2 m3(25~30m3,	1	8	Hr	1,780	14,240	20	160	8	Кu	1
	Subtotal					40,150		1,284	1	Baht / 10	-
2.	Material								per 10m		
	Portland Cement Type II		5	ton	1,666	8,330	714	3,570			
	Fine Sand for Aggregate		12	m3	0	• 0	220	2,640			
	Coarse Sand for Aggregate((Gravel)	7	m3	0	0	220	1,540			
	Accelerator for Shotcrete		290	kg	100	29,000	0	0			
	Miscellaneous		1	%		373		78			
	Subtotal					37,703		7,828		Baht / 10	11)
3.	Labor								per 10m		
	Foreman Tunnel		1.0	day			720	720	2.0	tayx:50%=	
	Operator of Heavy		7.5	day			460	3,450	1.5	day x	5
	Driver		3.0	day			350	1,050	1.5	day x	2
	Skilled Labor		3.0	day			260	780	1.5	day x	2
	Common Labor		6.0	day			230	1,380	1.5	day ×	4
	Subtotal		L					7,380	ļ		
4.	Total			•		77,853	L	16,492	94,345	Babt / 10	m
5.	Output	Workin	ng Time	per 1	day = 12 H	ír × 2 shift			per	10	m
	Rate = Baht/m					7,785	Baht/m	1,649	Baht/m =		9,43

	T-77. Unit Rat	e per	Meter	r of	Shoter	ete of U	pper H	alf : G	rade Cl	L	•
			Ra	te ≈	13,365	Baht/m	F.C. =	11,379	Baht/m	85%	
	Adit for Ing-Yot No.2 Tun	nel					LC. =	1,986	Baht/m	15%	
					Foreign (Currency	Local C	irrency			•
	Items	Unit	Quant	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10m		
	Shotcrete Robol Shot Radius 8m	1	3	Hr	2,170	6,510	10	30	3	Hr ×	1
	Shoicrete Shooler Wei 10-15m3/h	1	3	Hr	3,105	9,315	25	75	3	Hex	1
	Truck with Crane 4t x 2.9t lift	1	20	Hr	425	8,500	25	500	20	Hr×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day ×	1
	Dust Collector 300m3/hr, 30kw	1	3	Hr	1,290	3,870	63	189	3	Hr ×	1
	Truck Mixer 4.5 m3	1	7	Hr	620	4,340	70	490	7	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	7	Hr	1,780	12,460	20	140	7	Hı ×	1
	Subtotal					46,125		1,478		Baht / 10r	n
2.	Material								per 10m		
	Portland Cement Type II		9	ton	1,666	14,994	714	6,426			
	Fine Sand for Aggregate		21	m3	0	0	220	4,620	· ·		
	Coarse Sand for Aggregate(Gravel	12	m3	. 0	0	220	2,640			
	Accelerator for Shotcrete		520	kg	100	52,000	0	· 0			
	Miscellaneous	:	1	%		670		137			
	Subtotal		<u> </u>			67,664		13,823		Baht / 10	n
3.	Labor					·			per 10m		÷ .
	Foreman Tunnel		0.5	day	÷.,		720	360	1.0	dayx50%+	0.
	Operator of Heavy		4.5	day			.460	2,070	1.5	day × .	3
	Driver		3.0	day			350	1,050	1.5	day x	2
	Skilled Labor		1.5	day			260	390	1.5	day x	1
L	Common Labor		3.0	day		· · · · ·	230	690	1.5	day x	2
	Subtotal						L	4,560	·		
4.	Total					113,789	L	19,861	133,650	Baht / 10	m
5.	Output	Work	ing Time	per 1	day = 12 I	lr × 2 shif	t .		per	10	m
	Rate = Baht/m				· ·	11.379	Baht/m	1.98	Baht/m		13,36

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Adit for Ing-Yo	No 1 Tune			te =	14,000	Baht/m	<u></u>			84%	
	e taore y one	e)					L.C. =	2,424	Baht/m	16%	
					Foreign (arrency	Local C	ertecy			
Iter	ns	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost	(Equipmen	t & Fu	el)		1.1				per 10m		
Shotcrete Robot Si	ot Radius 8m	1	4	Hr	2,170	8,680	10	40	4	Hr ×	1
Shotcrete Shooter	Wci 10-15m3/h	1	4	Hr	3,105	12,420	25	100	4	Hr ×	1
Truck with Crane	41 x 2.91 lift	1	24	Hr	425	10,200	25	600	24	Hr ×	1
Accelerator Suppli	er S.Skw	1	2	day	1,130	2,260	54	108	2	day x	1
Dust Collector 300)m3/hr, 30kw	1	4	Hr	1,290	5,160	63	252	4	Hr×	1
Truck Mixer 4.5	n3	1	8	Hr	620	4,960	70	560	8	Hr×	1
Concrete Plant 1.0	2 m3(25-30m3	1	8	Hr	1,780	14,240	20	160	8	Hr.×	1
Subtotal						57,920		1,820		Baht / 10m	n
Material		• •							per 10m		
Portland Cemen	t Type II		9	ion	1,666	14,994	714	6,426			
Fine Sand for A	ggregate		21	m3	0	0	220	4,620			
Coarse Sand for	Aggregate(Gravel	12	m3	0	. 0	220	2,640			
Accelerator for	Shotcrete		520	kg	100	52,000	0	· 0		· .	
Miscellaneous			1	%		670		: 137	Ľ		
Subtotal			1			67,664		13,823		Baht / 10	n
. Labor									per 10m		
Foreman Tunne	1		1.0	day	1		720	720	2.0	deyx50%=	:
Operator of Hea	wγ		9.0	day			460	4,140	1.5	day x	6
Driver	· ·		4.5	dáy			350	1,575	1.5	day x	3.
Skilled Labor				day			260	780	1.5	daý x	2
Common Labor			6.0	day			230	1,380	1.5	day x	4
Subtota)			1		1	1		8,595			
Total			1		1	125,584		24,238	149,822	Baht / 10	m

			R	ite ≈	19,718	Baht/m	F.C. =	16,457	Baht/m	83%	
	Adit for Ing-Yot No.2 Tun	xel					L.Ç. =	3,261	Baht/m	17%	
					Foreign (urrency	Local C	urrency			
	Items	Unit	Quar	stity	Rate	Cost	Rate	Cost	F	lemark	
ι.	Operation Cost (Equipmen	t & Fu	el)						per 10m		
	Shotcrete Robot Shot Radius 8m	1	5	Hr	2,170	10,850	10	50	5	Hr x	1
	Shoicrete Shooler Wei 10-15m3/h	1	5	Hr	3,105	15,525	25	125	5	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	28	Hr	425	11,900	25	700	28	Hrx	1
	Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day ×	1
	Dust Collector 300m3/hr, 30kw	1	5	Hr	1,290	6,450	63	315	5	Hr ×	1
	Truck Mixer 4.5 m3	1	10	Hr	620	6,200	70	700	10	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	10	Hr	1,780	17,800	20	200	10	Нr×	1
	Subtotal					70,985		2,198		Baht / 10	hn
2.	Material								per 10m		
	Portland Cement Type II		13	ton	1,666	21,658	714	9,282			
	Fine Sand for Aggregate	1	28	m3	· 0	. 0	220	6,160			
	Coarse Sand for Aggregate(Gravel)	28	m3	0	0	220	6,160			
	Accelerator for Shotcrete		710	kg	100	71,000	0	· 0			
	Miscellaneous		1	%		927		216			
	Subtotal			-		93,585		21,818		Baht / 10)m
3.	Labor								per 10m		
-	Foreman Tunnel		1.0	day			720	. 720	2.0	dayx50%=	
	Operator of Heavy		9.0	day	·		460	4,140	1.5	day 🗙	6
•	Driver		4.5	day			350	1,575	1.5	day ×	3
	Skilled Labor		3.0	day			260	780	· 1.5	day ×	2
	Common Labor	· .	6.0	day			230	1,380	1.5	day x	4
	Sabtotal					·		8,595	ļ	1 - E	
4.	Total			1.11		164,570		32,611	197,181	Baht / 10)m
5.	Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shift	L A		per	10	m
	Rate = Baht/m					16,457	Baht/m	3,261	Baht/m =	-	19,71

	- ·		23,574	ete of U Baht/m			Baht/m 85%
A 314 P- 1 W-6 X1- 0 Thin		inate -	<i></i>	790114 JUL	L.C. =		Baht/m 15%
Adit for Ing-Yot No.2 Tunne	-	· .	Foreign (Local C		
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipment							per 10m
	.i 1	6 Hr	2,170	13.020	10	60	6 Hr× 1
Shotcrete Shooter Wei 10-15m3/h	1	6 Hr	3,105	18,630	25	150	6 Hrx 1
Truck with Crane 4t x 2.9t lift	1	33 Hr	425	14,025	25	825	33 Hr× 1
Accelerator Supplier 5.5kw	1	2 day	1.130	2,260	54	108	2 day × 1
Dust Collector 300m3/hr, 30kw	1	6 Hr	1,290	7,740	63	378	6 Hr× 1
Truck Mixer 4.5 m3	1	11 Hr	620	6,820	70	770	11 Hrx 1
Concrete Plant 1.0*2 m3(25-30m3	1	11 Hr	1,780	19,580	20	220	11 Hr× 1
Subtotal				82,075		2,511	Baht / 10m
. Material			1				per 10m
Portland Cement Type II	. · *	16 ton	1,666	26,656	714	11,424	
Fine Sand for Aggregate		36 m3	. 0	0	220	7,920	· · ·
Coarse Sand for Aggregate(G	ravel)	21 m3	0	i o	220	4,620	
Accelerator for Shotcrete		900 kg	100	90,000	· · 0	0	
Miscellaneous		1 %		1,167		240	
Subtotal				117,823		24,204	Baht / 10m
3. Labor					ľ		per 10m
Foreman Tunnel		1.0 day			720	720	2.0 dayx50%=
Operator of Heavy		9.0 day			. 460	4,140	1.5 day × 6
Driver		6.0 day			350	2,100	1.5 day x 4
Skilled Labor	·.	3.0 day			260	780	1.5 day × 2
Common Labor	- 1	6.0 day			230	1,380	1.5 day × 4
Subtotal						9,120	
4. Total				199,898		35,835	235,733 Bahi / 10m
5. Output	Worki	ng Time per l	day = 12 H	ir × 2 saif	i.		per 10 m
Rate = Baht/m	st.	-	•		Baht/m	3.58	Baht/m = 23,5

		Ra	te =	23,798	Baht/m	F.C. =	20,192	Babt/m	85%	
Adit for Ing-Yot No.2 Tunn	el					L.C. =	3,606	Baht/m	15%	
				Foreign (urrency	Local Cu	urency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipment	t & Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m	1	6	Hr	2,170	13,020	10	60	6	Hr ×	1
Shotcrete Shooter Wet 10-15m3/h	1	6	Hr	3,105	18,630	25	150	6	Hr ×	1
Truck with Crane 41 x 2.9t lift	1	33	Hr	425	14,025	25	825	33	Hr ×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day ×	3
Dust Collector 300m3/hr, 30kw	1	6	Нr	1,290	7,740	63	378	6	Hr ×	1
Truck Mixer 4.5 m3	1	11	Ħr	620	6,820	70	770	11	Hr ×	1
Concrete Plant 1.0*2 m3(25~30m3	1	11	Hr	1,780	19,580	20	220	11	Hr ×	1
Subtotal					82,075		2,511		Baht / 10r	n
. Material								per 10m		
Portland Cement Type II		16	ton	1,666	26,656	714	11,424			
Fine Sand for Aggregate		37	ഷ	0	0	220	8,140			
Coarse Sand for Aggregate(0	Gravel	21	m3	0	0	220	4,620			
Accelerator for Shotcrete		920	kg	100	92,000	. 0	0			
Miscellaneous		1	%		1,187		242			
Subtotal					119,843		24,426		Baht / 10	m
3. Labor								per 10m		
Foreman Tunnel		1.0	day			.720	720	2.0	dayx50%=	
Operator of Heavy		9.0	day			460	-4,140	1.5	day ×	6
Driver		6.0	day			350	2,100	1.5	day x	4
Skilled Labor		3.0	day			260	· 780	1.5	day ×	2
Common Labor		6.0	day			230	1,380	1.5	đay ×	4
Subtotal						<u></u>	9,120	· · ·	<u> </u>	
4. Total					201,918	1.1	36,057	237,975	Baht / 10	<u>m</u>)
5. Output	Work	ing Time	per 1	day = 12 F	lr × 2 shift	t 1.		per	10	m :

Adit for Ing-Yot No.2 Tun			te =		Baht/m	1.0	24,410	- 100 9 101	84%	
	nei		1		· · ·	L.C. =	4,615	Baht/m	16%	
				Foreign (Surrency	Local Ci	атевсу	· · · ·	. *	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	1 .
Operation Cost (Equipme	nt & Fu	ei)						per 10m		
Shotcrete Robot Shot Radius 8n	1 1	7	Hr	2,170	15,190	10	70	7	Hr ×	1
Shotcrete Shooler Wei 10-15m3/	1	7	Hr	3,105	21,735	25	175	7	Hr ×	1
Truck with Crane 4t x 2.9t lift	i	38	Hr	425	16,150	25	950	38	Hr×	1
Accelerator Supplier 5.5kw	1	3	day	1,130	3,390	54	162	3	day x	1
Dust Collector 300m3/hr, 30k	1	7	H	1,290	9,030	63	441	7	Hr ×	1
Truck Mixer 4.5 m3	1	12	Hr	620	7,440	70	840	. 12	Hrx	1
Concrete Plant 1.0*2 m3(25-30m	3 1	12	Hr	1,780	21,360	20	240	12	Hr×	1
Subtotal				1	94,295		2,878		Baht / 100	n
Material								per 10m		
Portland Cement Type II		20	101	1,666	33,320	714	14,280		÷	
Fine Sand for Aggregate		46	່ ຫ 3	0	0	220	10,120			
Coarse Sand for Aggregate	(Gravel)	27	m3	0	. 0	220	5,940	Ì		
Accelerator for Shotcrete		1,150	kg	100	115,000	0	0			
Miscellaneous		1	%		1,483	1.1	303	· .	·	:
Subtotal					149,803		30,643		Baht / 10r	n
Labor								per 10m		÷.,
Foreman Tunnel		1.5	day			720	1,080	3.0	dayx50%=	
Operator of Heavy		13.5	day			460	6,210	1.5	day x	9
Driver		6.0	day			350	2,100	1.5	day x	4
Skilled Labor		4.5	day			260	1,170	1.5	day x	3
Common Labor		9.0	day			230	2,070	1.5	day x	6
Subtotal		1					12.630			
Total				1	244,098		46,151	290,249	Baht / 10	m.

	T-83. Unit Rate	e per	Mete	r of	Shoter	ete of I	.ower H	falf : G	rade Cl	l	
				te =		Baht/m			Baht/m	84%	
	Kok-Ing Tunnel						L.C. =	820	Baht/m	16%	
					Foreiga (Currency	Local C	штевсу			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	ei)						per 10 m		
	Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
	Shotcrete Shooter Wei 10-15m3/b	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	8	Hr	425	3,400	25	200	8	Hr ×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1 1	day ×	1
	Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	3	Hr	620	1,860	70	210	. 3	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3,	1	3	Hr	1,780	5,340	20	60	3	Hr ×	1
	Subtotal					24,860		720		Baht / 10	ព
2.	Material								per 10 m		
	Portland Cement Type II		2	ton	1,666	3,332	714	1,428			
	Fine Sand for Aggregate		6	m3	- 0	0	220	1,320			
	Coarse Sand for Aggregate(Gravel)	3	m3	· 0	0	220	660			
	Accelerator for Shotcrete		150	kg	100	15,000	0	0			
	Miscellaneous		1	%	ļ	183		34	<u> </u>		
Γ	Subtotal				L	18,515	ļ	3,442	ļ	Baht / 10	hm
3.	Labor					ł			per 10m		
ļ	Foreman Tunnel		0.5	day		l I	720	360	1.0	dayx50%⇒	0.5
	Operator of Heavy		4.5	day			460	2,070	1.5	day ×	3
	Driver		1.5	day			350	525	1.5	day ×	1
	Skilled Labor		1.5	day			260	390	1.5	day x	1
	Common Labor		3.0	day			230	690	1.5	day x	2
	Subtotal		<u> </u>			ļ <u></u>	L	4,035	-	<u></u>	
4	Total		1		1	43,375	<u> </u>	8,197	51,572	Baht / 10)m
5	. Output	Worki	ng Time	: per 1	day = 12 1	ir × 2 shif	t j		per	10	រា
	Rate = Baht/m		•			4,33	8 Baht/m	820	Baht/m	ĸ	5,158

•		Ra	ite ≒	5,202	Baht/m	F.C. =	4,380	Babt/m	84%	
Kok-Ing Tannel					· · ·	L.C. =	822	Baht/m	16%	
KOK-Ing Lumici	<u> </u>			Foreign C	MITTERCY.	Local C	urrency			
Items	Unit	Ouar	itity	Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipmen								per 10m		
Shoterete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
Shotcrete Shooter We 10-15m3/h		2	Hr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	9	Hr	425	3,825	25	225	9	Hr×	1
Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	. 1	day x	1
Dust Collector 300m3/hr, 30kw	-1	· 2	Hr	1,290	2,580	63	126	2	Hr ×	1
Truck Mixer 4.5 m3	1	3	Hr	620	1,860	70	210	. 3	Hr×	1
Concrete Plant 1.0"2 m3(25-30m3	1	3	Hr	1,780	5,340	20	60	3	Hr×	1
Subtotal					25,285		745		Baht / 10o	n.
2. Material								per 10m		
Portland Cement Type II		2	ion	1,666	3,332	714	1,428			
Fine Sand for Aggregate		6	m3	0	• 0	. 220	1,320		÷.,	
Coarse Sand for Aggregate(Gravel)	3	m3	0	. 0	220	660	ľ		
Accelerator for Shotcrete		150	kg	100	15,000	0	. 0	1		
Miscellaneous		. 1	%		183		34			
Subtotal					18,515	I	3,442		Baht / 10r	n
3. Labor		I .			:			per 10m		
Foreman Tunnel		0.5	day			720	360	1.0	dayx50% =	· 0.
Operator of Heavy		4.5	dày	1.		460	2,070	1.5	day x	3.
Driver		1.5	day	1.		350	525	1.5	day x	1
Skilled Labor		1.5	day		11	260	390	1.5	day ×	1
Common Labor	· .	3.0	day			230	690	1.5	day x	2
Subtotal		T					4,035			
4. Total	.1				43,800		8,222	52,022	Baht / 10	5
5. Output	World	ng Time	e per l	day = 12 H	lr × 2 shif	i .		per	10	m
Rate = Baht/m			•		1. S. S. S. S.	Baht/m	87	2 Baht/m	-	5,20

T-85. Unit Rate	-		te =					Baht/m 81%	
		R	te =	6,753	Baht/m .				•
Kok-Ing Tunnel		<u></u>				LC,=		Baht/m 19%	
				Foreign C		Local Ci			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark	
. Operation Cost (Equipmen	t & Fu	el)						per 10m	
Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2 Hr×	1
Shotcrete Shooter Wei 10-15m3/h	1	2	H	3,105	6,210	25	50	2 Hr×	1
Truck with Crane 4t x 2.9t lift	1	11	Hr	425	4,675	25	275	11 Hr×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2 day x	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2 Hr×	1
Truck Mixer 4.5 m3	1	4	Hr	620	2,480	70	280	4 Hr×	- 1
Concrete Plant 1.0*2 m3(25-30m3	1	4	Hr	1,780	7,120	20	80	4 Hr×	<u> </u>
Subtotal					29,665		939	Baht / 1	Om
. Material								per 10m	
Portland Cement Type II		- 3	ion	1,666	4,998	714	2,142		
Fine Sand for Aggregate		8	m3	0	0	220	1,760	· ·	
Coarse Sand for Aggregate(Gravel)	4	m3	0	0	220	880		
Accelerator for Shotcrete		200	kg	100	20,000	0	0		
Miscellaneous		1	%		250		48		
Subtotal					25,248		4,830	Baht / 1	0m
3. Labor								per 10m	
Foreman Tunnel		1.0	day			720	720	2.0 dayx50%	•
Operator of Heavy		7.5	day			460	3,450	1.5 day x	5
Driver		1.5	day			350	525	1.5 day x	1
Skilled Labor		3.0	day			260	780	1.5 day x	2
Common Labor		6.0	day			230	1,380	1.5 day x	4
Subtotal			·				6,855		
4. Total		1		1	54,913		12,624	67,537 Baht /	l0m
5. Output	Worki	ng Time	per 1	day = 12 F	lr × 2 shif			per 10	m.
Rate = Baht/m		0				Baht/m	1 26	2 Baht/m =	6,75

		Rat	te =	7,882	Babt/m	F.C. =	6,447	Baht/m	82%	÷ .
Kok-Ing Tunnel				i s ji		L_C. =	1,435	Baht/m	18%	
	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -			Foreign C	wrrency	Local Ci	arrency			
Items	Unit	Quant	lity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipmen	t & Fu	iel)				- 1 - L	2.4	per 10m	r I de	
Shotcrete Robot Shot Radius 8m	1	2	Ĥr	2,170	4,340	10	20	2	Hr×	1
Shotcrete Shooter Wet 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12	Hr ×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day x	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr x	1
Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	5	Hr ×	1
Subtotal					32,490		1,054	1	Baht / 10m	<u> </u>
. Material								per 10m	F9 .	
Portland Cement Type II		4	ton	1,666	6,664	714	2,856		i.	1
Fine Sand for Aggregate		10	m3	0	0	220	2,200		•	
Coarse Sand for Aggregate(Gravel	6		0	· 0	. 220	1,320			· · .
Accelerator for Shotcrete		250	kg	100	25,000	• • • •	0			а 1
Miscellaneous	÷.,	1	٩,		317		64		41 C. A	
Subtotal					31,981		6,440		Baht / 10n	л.
. Labor			·	1				per 10m		
Foreman Tunnel		1.0	day			720	720	2.0	dayx\$0%=	
Operator of Heavy		7.5	day			460	3,450	1.5	day x	5
Driver		1.5	day			350	525	1.5	day x	1
Skilled Labor		3.0	day			260	. 780	1.5	day x	• 2
Common Labor		6.0	day			230	1,380	1.5	day ×	4
Subtotal	1 N						6,855			
i. Total				T	64,471		14,349	78,820	Baht / 10	ກ
5. Output	Work	ing Time	per 1	l day ≠ 12 h	ir x 2 shii	1		per	10	n
Rate = Baht/m				-,		7 Baht/m	1.43	5 Baht/m =		7,88

		Ra	te =	7,882	Baht/m	F.C. =	6,447	Baht/m	82%	
Kok-Ing Tunnel						L.C. =	1,435	Baht/m	18%	
				Foreign (Surreacy	Local C	urrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
Shotcrete Shooter Wei 10-15#3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12	Hr ×	1
Accelerator Supplier 5.5kw	1	· 2	day	1,130	2,260	54	108	2	day x	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	5	Hr ×	1
Subtotal					32,490		1,054		Baht / 101	n
. Material								per 10m		
Portland Cement Type II		4	ton	1,666	6,664	714	2,856			
Fine Sand for Aggregate		10	m3	· 0	.0	220	2,200			
Coarse Sand for Aggregate((Gravel)	-6	m3	0	0	220	1,320			
Accelerator for Shotcrete		250	kg	100	25,000	0	0			
Miscellaneous		1	%		317		64			
Subtotal					31,981		6,440		Baht / 10	m
. Labor								per 10m		
Foreman Tunnel		1.0	day	1 A.		720	720	2.0	dayx50%=	
Operator of Heavy		-7.5	day			460	3,450	1.5	day ×	5
Driver	÷.,	1.5	day	1		350	525	1.5	day ×	1
Skilled Labor		3.0	day	1		260	780	1.5	day ×	2
Common Labor	•	6.0	day	<u> </u>		230	1,380	1.5	day x	4
Subtotal							6,855	1		
l. Totai					64,47 1		14,349	78,820	Baht / 10	m
5. Output		~		day = 12 H				per	10	m

		Ra	te =	9,604	Baht/m	F.C. =	7,963	Baht/m 83%
Kok-Ing Tunnel		· · ·				L.C. =	1,641	Baht/m 17%
				Foreign (arrency	Local C	irrency	
Items U	Jnit	Quan	tity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipment &	k Fu	el)			· -	1	:	per 10m
Shotcrete Robot Shot Radius 8m	1	3	Hr	2,170	6,510	10	30	3 Hr× 1
Shotcrete Shooter Wei 10-15m3/m	1	3	Hr	3,105	9,315	25	75	3 Hrx 1
Truck with Crane 4t x 2.9t lift	1	14	Hr	425	5,950	25	350	14 Hr× 1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2 day× 1
Dust Collector 300m3/hr, 30kw	1	3	Hr	1,290	3,870	63	189	3 Hr× 1
Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5 Hr× 1
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	<u>5 Hrx</u> 1
Subtotal					39,905		1,202	Baht / 10m
. Material			:					per 10m
Portland Cement Type II		5	ton	1,666	8,330	714	3,570	
Fine Sand for Aggregate		12	m 3	0	. 0	220	2,640	
Coarse Sand for Aggregate(Gr	avel)	7	m 3	· . 0	0	220	1,540	
Accelerator for Shotcrete		310	kg	100	31,000	0	0	
Miscellaneous		1_	%	·	393		78	
Subtotal					39,723		7,828	Baht / 10m
3. Labor								per 10m
Foreman Tunnel		1.0	day	1 - 1 t		720	720	2.0 dayx50%=
Operator of Heavy	÷	7.5	day			460	3,450	1.5 day × 5
Driver		3.0	day			350	1,050	1.5 day x 2
Skilled Labor		3.0	day			. 260	780	1.5 day × 2
Common Labor		6.0	day	· · ·		230	1,360	1.5 day × 4
Subtotal							7,380	
Total					79,628		16,410	96,038 Baht / 10m -

	T-89. Unit Rate	e per	Mete	r of	Shoter	ete of L	ower H	Ialf : G	irade Cl	L	
			Ra	ıte ⇒	5,407	Baht/m	F.C. =	4,578	Baht/m	85%	
	Ing-Yot Tunnel without Ad	lit					L.C. =	829	Baht/m	15%	
-	· · ·		······		Foreign (Сагтевсу	Local C	urrency			
	Items	Unit	Quar	ıtity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10 m		
	Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
	Shotcrete Shooter Wei 10-15m3/2	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	8	Hr	425	3,400	25	200	8	Hr ×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day X	1
	Dust Collector 300m3/hr, 30kw	1	2	Нr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	4	Hr	620	2,480	70	280	4	Hr ×	1
	Concrete Plant 1.0*2 m3(25~30m3.	1	4	Hr	1,780	7,120	20	80	4	Hr ×	1
	Subtotal					27,260		810	1	Baht / 10r	n
2.	Material								per 10 m		
	Portland Cement Type II		2	ton	1,666	3,332	714	1,428			
	Fine Sand for Aggregate		6	സി	0	0	220	1,320			
	Coarse Sand for Aggregate(Gravel)	3	3	0	0	220	660			
	Accelerator for Shotcrete		150	kg	100	15,000	0	0	·		
	Miscellaneous		1	%	l	183		34			
	Subtotal					18,515		3,442		Baht / 10	m
3.	Labor			1.					per 10m		
	Foreman Tunnel		0.5	day			720	360	1.0	day×50% =	0.:
	Operator of Heavy		4.5	day			460	2,070	1.5	day x	3
	Driver		1.5	đay			350	525	1.5	day ×	1
	Skilled Labor		1.5	day			260	390	1.5	day ×	1
	Common Labor		3.0	day	<u>.</u>	1	230	690	1.5	day x	2
	Subtotal					-		4,035		· .	
4.	Total					45,775		8,287	54,062	Baht / 10	<u>л</u>
5.	Output	Wonki	ng Time	per 1	day = 12 I	∙lr×2 shif	ì	· .	per	10	m
	Rate = Baht/m			•	$(t,y,t) \in \mathbb{R}^{n}$	4,578	Baht/m	82	9 Baht/m =		5,407

	· · · · ·	Rate	= 5,852	Baht/m	F.C. =	4,733	Baht/m 81%
Ing-Yot Tunnel without Ad	it 🦾	· · ·	e de ste		L.C. =	1,119	Baht/m 19%
			Foreign	Carrency	Local C	arrency	10 A.
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fu	el)	1.1				per 10m
Shotcrete Robot Shot Radius 8m	1	2 H	r 2,170	4,340	10	20	2 Hr× 1
Shotcrete Shooter We 10-15m3/h	1	2 H	r 3,105	6,210	25	50	2 Hr× 1
Truck with Crane 4t x 2.9t lift	· 1	9 Н	425	3,825	25	225	9 Hr× 1.
Accelerator Supplier 5.5kw	i	2 da	y 1,130	2,260	54	108	2 dayx 1
Dust Collector 300m3/hr, 30kw	1	2 H	1,290	2,580	63	126	2 Hr× 1
Truck Mixer 4.5 m3	1	4 H	r 620	2,480	70	280	4 Hr× 1
Concrete Plant 1.0*2 m3(25~30m3	1	4 H	r 1,780	7,120	20	80	4 Hr× 1
Subtotal			1 × 1	28,815	· .	889	Baht / 10m
2. Material							per 10m
Portland Cement Type II	1.	2 10	a 1,66	6 3,332	714	1,428	
Fine Sand for Aggregate	1.1	6 m	3	0 0	220	1,320	
Coarse Sand for Aggregate(Gravel)	3 m	3	o o	220	660	
Accelerator for Shotcrete		150 k	g 10	0 15,000	0	jo	a ser a de la ser
Miscellaneous		1 9	6	183		34	
Subtotal				18,515	1 .	3,442	Baht / 10m
3. Labor						1.	per 10m
Foreman Tunnel		1.0 da	/ ·		720	720	2.0 daiyx50%**
Operator of Heavy		7.5 da	,	1	460	3,450	1.5 day x 5
Driver	<u>.</u>	1.5 da	, I		350	525	1.5 day x 1
Skilled Labor		3.0 da	,		260	780	1.5 day x 2
Common Labor		6.0 dar	y .	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	230	1,380	1.5 day x 4
Subtotal		<u> </u>		1	T	6,855	
4. Total		1	1.	47.330		11.186	58,516 Baht / 10m

	T-91. Unit Rat		Mate	rof	Shoter	te of T	ower H		rade D		
	1-91, Ohn Kar	e per		ate =		Baht/m			Baht/m	82%	
	we have a second state of the second state		10	11C -	7,002	Danique	L.C. =		Baht/m	18%	
	Ing-Yot Tunnel without Ad	80							panym	1070	
			~		Foreign (Local C	······		emark	
	Items	Unit		nuty	Rate	Cost	Rate	Cost		етагк	
1.	Operation Cost (Equipmen		ł						per 10m		
	Shotcrete Robot Shot Radius 8m		2	Hr	2,170	4,340	10	20	2	Hr ×	1
	Shotcrete Shooter Wei 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr×	1
	Truck with Crane 4t x 2.9t lift	1	.11	Hr	425	4,675	25	275	11	Hr×	1
	Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day x	1
	Dust Collector 300m3/hr, 30kw	1	. 2	Hr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5	Hr ×	1
	Concrete Plant 1.0*2 #3(25-30m3	1	5	Hr	1,780	8,900	20	100	5	Hr×	1
	Subtotal					32,065		1,029	<u>i</u>	Baht / 10	n
2.	Material								per 10m		
	Portland Cement Type II		3	ton	1,666	4,998	714	2,142			
	Fine Sand for Aggregate		8	m3	·· 0	0	220	1,760			
	Coarse Sand for Aggregate(Gravel)	4	m3	0	0	220	880			
ļ	Accelerator for Shotcrete		200	kg	100	20,000	0	0			
	Miscellaneous		. 1	%		2.50		48		•	
	Subtotal		*·····			25,248		4,830		Baht / 10	n
3.	Labor								per 10m		
	Foreman Tunnel		1.0	day			720	720	2.0	dayx50%×	1
	Operator of Heavy		7.5	day	· ·		460	3,450	1.5	day ×	5 ·
	Driver		1.5	đay			350	525	1.5	day x	1
	Skilled Labor		3.0	day	· ·		260	780	1.5	day x	2
	Common Labor		6.0	day			230	1,380	1.5	day x	4
F	Subtotal		1					6,855			
4	Total					57,313		12,714	70,027	Baht / 10	m
5	Output	Worki	ng Time	per 1	day = 12 F	lr x 2 shift			per	10	m .
	Rate = Baht/m			•			Baht/m	1.271	Baht/m =		7,002
L.,	Fute - Daiton						() and ()				.,

		Ra	te =	7,882	Beht/m	F.C. =	6,447	Baht/m 82%
Ing-Yot Tunnel without Ad	it ·	·				L.C. =	1,435	Baht/m 18%
				Foreign (mrency	Local Cu	птевсу	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark
1. Operation Cost (Equipment	& Fu	el)						per 10m
Shotcrete Robot Shot Radius 8m	I	. 2	Hr	2,170	4,340	10	20	2 Hr×
Shotcrete Shooter Wei 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2 Hr×
Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12 Hr×
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2 day×
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2 Hr×
Truck Mixer 4.5 m3	1	5	Нr	620	3,100	70	350	5 Hr×
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	5 Hrx
Subtotal					32,490		1,054	Baht / 1
2. Material							1. 1.	per 10m
Portland Cement Type II		4	ton	1,666	6,664	714	2,856	
Fine Sand for Aggregate		10	m3	0	0	220	2,200	
Coarse Sand for Aggregate(C	Gravel)	6	m3	0	. O	220	1,320	
Accelerator for Shotcrete		250	kg	100	25,000	0	0	
Miscellaneous		· 1	%		317		64	
Subtotal	·				31,981		6,440	Baht / 1
3. Labor				[· ·]				per 10m
Foreman Tunnel	2	1.0	day			720	720	2.0 dayx50%
Operator of Heavy	· · ·	7.5	day			460	3,450	1.5 day ×
Driver		1.5	day			350	525	1.5 day ×
Skilled Labor		3.0	day		· ·	260	780	1.5 day ×
Common Labor		6.0	daý			230	1,380	1.5 day x
Subtotal		1					6,855	[
4. Total		<u> </u>		1	64,471		14,349	78.820 Baht /

		Ra	te =	7,920	Baht/m	F.C. =	6,479	Baht/m	82%	
Ing-Yot Tunnel without Add	it					L.C. =	1,441	Baht/m	18%	
1.6	T	·		Foreign (urrency	Local Ci	urrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipment	& Fu	el)						per 10m		÷
Shotcrete Robot Shot Radius 8m	1	2	Нŗ	2,170	4,340	10	20	2	Hr ×	1
Shotcrete Shooter Wei 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12	Hr ×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	- 2	day ×	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr×	1
Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	-350	5	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	. 5	Hr ×	1
Subtotal					32,490		1,054		Baht / 101	n
Material								per 10m		11
Portland Cement Type II		4	ton	1,666	6,664	714	2,856			
Fine Sand for Aggregate		10	m3	0	0	220	2,200			
Coarse Sand for Aggregate(Gravel)	6	m3	0	0	220	1,320			
Accelerator for Shotcrete		250	kg	100	25,000	0	0			
Miscellaneous		2	%		633		128			·
Subtotal					32,297		6,504		Baht / 10	m
3. Labor		·					i i	per 10m		. 1
Foreman Tunnel		1.0	day		j –	720	720	2.0	dayx50%•	
Operator of Heavy		7.5	day			460	3,450	1.5	day x .	5
Driver		1.5	day	1		350	525	1		1
Skilled Labor		3.0	day			260	780	-		2
Common Labor		6.0	day			230	1,380	1.5	day ×	4
Subtotal					ļ	<u> </u>	6,855			
4. Total					64,787		14,41	3 79,200	Baht / 10	kn

		Rate =	10,858	Baht/m	F.C. =	9,114	Baht/m	84%	÷.,
Ing-Yot Tunnel without Ad	it .				L.C. =	1,744	Baht/m	16%	
		·	Foreign C	arrency	Local Cu	rrency			
Items	Unit	Quantity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipmen	t & Fu	el)	T I				per 10m	1	
Shotcrete Robot Shot Radius 8m		4 Hr	2,170	8,680	10	40	4	Hr×	1
Shotcrete Shooter Wei 10-15m3/h	1	4 Hr	3,105	12,420	25	100	4	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	20 Hr	425	8,500	- 25	500	20	Hr×	1
Accelerator Supplier 5.5kw	1	2 day	1,130	2,260	54	108	2	day x	1
Dust Collector 300m3/hr, 30kw	1	4 Hr	1,290	5,160	63	252	. 4	flr ×	1
Truck Mixer 4.5 m3	1	6 Ни	620	3,720	70	420	6	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	6 Hr	1,780	10,680	20	120	6	Hr×	1
Subtotal	_		1	51,420		1,540		Baht / 10r	3
Material				1.1.1		1.1	per 10m		
Portland Cement Type II		5 tor	1,666	8,330	714	3,570			. :
Fine Sand for Aggregate		12 m3	0	0	220	2,640			
Coarse Sand for Aggregate(Gravel) 7 m2	0	0	220	1,540		•	
Accelerator for Shotcrete		310 kg	100	31,000	0	0			·
Miscellaneous		1 %		393		78			
Subtotal				39,723		7,828	·	Baht / 10	ໝ່.
3. Labor							per 10m		
Foreman Tunnel		1.0 day			720	720	2.0	dayx50%=	
Operator of Heavy		9.0 day			460	4,140	1.5	day x	6
Driver		3.0 day			350	1,050	1.5	day x	2
Skilled Labor		3.0 day			260	780	1.5	day x	2
Common Labor		6.0 day			230	1,380	1.5	day ×	4
Subtotal					1.1	8,070			
1. Total				91,14	3 4 4	17,438	108,581	Baht / 10	Ъm

		R	ite ≈	3,674	Baht/m	F.C. =	2,741	Baht/m	75%	
Ing-Yot No.2 Tunnel with A	dit					L.C. =	933	Baht/m	25%	
				Foreign C	Сыгтеясу	Local C	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	F	temark	
Operation Cost (Equipment	t & Fu	el)						per 10 m		
Shotcrete Robot Shot Radius 8m	1	1	Hr	2,170	2,170	10	10	1	Hr ×	1
Shoicrete Shooter Wei 10-15m3/h	1	1	Hr	3,105	3,105	25	25	1	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	6	Hr	425	2,550	25	150	6	Нr×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day ×	1
Dust Collector 300m3/hr, 30kw	1	1	Hr	1,290	1,290	63	63	1	Hr×	1
Truck Mixer 4.5 m3	1	3	Hr	620	1,860	70	210	3	Hr ×	1
Concrete Plant 1.0*2 m3(25-30m3	1	3	Hr	1,780	5,340	20	60	3	Hr×	1
Subtotal					18,575		626		Baht / 101	n.
Material								per 10 m		
Portland Cement Type II		1	ton	1,666	1,666	714	714	1		
Fine Sand for Aggregate		3	m3	0	0	220	660			
Coarse Sand for Aggregate((Gravel)	2	3	. 0	0	220	440			
Accelerator for Shotcrete		70	kg	100	7,000	0	0			
Miscellaneous		2	%		173		36			
Subtotal					8,839		1,850		Baht / 10	m
. Labor								per 10m		
Foreman Tunnel		1.0	day			720	720	2.0	dayx.S()%=	
Operator of Heavy		7.5	day			450	3,450	1.5	day x	S
Driver		1.5	day			350	525	1.5	day ×	3
Skilled Labor		3.0	day			260	780	1.5	day ×	2
Common Labor		6.0	day			230	1,380		day x	4
Subtotal		<u> </u>				ļ	6,855		······	
Total		11			27,414	I	9,331	36,745	Baht / 10	m

	T-96. Unit Rat	e per	Mete	r of	Shoter	ete of L	ower H	lalf : G	rade C	l	
			Ra	te =	5,428	Baht/m	F.C. =	4,596	Baht/m	85%	
	Ing-Yot No.2 Tunnel with	Adit					L.C. =	832	Baht/m	15%	
					Foreign (Currency	Local C	штевсу			
	Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)					•	per 10 m		
	Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Н×	1
	Shotcrete Shooler Wei 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
	Truck with Crane 41 x 2.9t lift	1	8	Hr	425	3,400	25	200	8	Hr ×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day ×	1
	Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	4	Hr	620	2,480	70	280	4	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	4	Hr	1,780	7,120	20	80	4	Hr ×	1
	Subtotal					27,260		810		Baht / 10	m
2.	Material								per 10 m		
	Portland Cement Type II		2	ton	1,666	3,332	714	1,428			
	Fine Sand for Aggregate		6	m3	0	0	220	1,320			÷.,
	Coarse Sand for Aggregate(Gravel)	3	m3	0	0	220	660			
1	Accelerator for Shotcrete		150	kg	100	15,000	0	0			
	Miscellaneous		2	%		367		68	· · · · · · · · · · · · · · · · · · ·		
	Subtotal		1			18,699	.	3,476		Baht / 10	m
3.	Labor								per 10m		
	Foreman Tunnel		0.5	day			720	360	1.0	dayx50%=	0.5
	Operator of Heavy		4.5	dzy			460	2,070	1.5	day ×	3
	Driver		1.5	day			350	525	1.5	day ×	1
	Skilled Labor		1.5	day			260	390	1.5	day ×	1
L	Common Labor	. <u></u>	3.0	day	<u> </u>		230	690		day x	2
	Subtotal		 		ŀ			4,035			
4.	Total				<u> </u>	45,959	<u> </u>	8,321	54,280	Baht / 10	han
5.	Output	Worki	ng Time	per 1	day = 12 H	ir × 2 shif	L		per	10	m
	Rate = Baht/m			· ·	<u></u>	4,596	Baht/m	83	Z Baht/m		5,428

			R	te =	6.101	Baht/m	F.C. =	4.973	Baht/m 82%
	Ing-Yot No.2 Tunnel with A	Adit .		-	-,		L.C. =		Baht/m 18%
	mg- tot hos funct white				Foreign C	WTERCY	Local Ci		
	Items	Unit	Ouar	tity	Rate	Cost	Rate	Cost	Remark
1.	Operation Cost (Equipmen	t & Fu	el)						per 10m
	Shotcrete Robot Shot Radius 8m		2	Нı	2,170	4,340	10	20	2 Hr× 1
	Sholcrete Shooter Wei 10-15m3/b	1	2	Hr	3,105	6,210	25	50	2 Hr× 1
	Truck with Crane 4t x 2.9t lift	1	9	Hr	425	3,825	25	225	9 Hr× 1
	Accelerator Supplier 5.5kw	1	2	daÿ	1,130	2,260	54	108	2 day× 1
	Dust Collector 300m3/hr, 30kw	1	2	Hr	1.290	2.580	63	126	2 Hrx 1
	Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5 Hr× 1
	Concrete Plant 1.0°2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	5 Hr× 1
	Subtotal					31,215		979	Baht / 10m
2.	Material								per 10m
	Portland Cement Type II		2	ton	1,666	3,332	714	1,428	1
	Fine Sand for Aggregate		6	m3	0	0	220	1,320	
	Coarse Sand for Aggregate(Gravel)	3	m 3	0	0	220	660	
	Accelerator for Shotcrete	,	150	kg	100	15,000	0	· 0	
	Miscellaneous		. 1	%		183		34	
	Subtotal				1	18,515	1	3,442	Baht / 10m
3.	Labor						1		per 10m
	Foreman Tunnel		1.0	day			720	720	2.0 dayx50%=
	Operator of Heavy		7.5	day			460	3,450	1.5 day × 5
	Driver			day			350	525	1.5 day × 1
	Skilled Labor		3.0	day			260	780	1.5 day × 2
	Common Labor			day			230	1,380	1.5 day x 4
	Subtotal		1			1	1	6,855	
4	Total		1		1	49,730		11,276	61,006 Baht / 10m
5.	Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shif	ì		per 10 m.
[Rate = Babt/m						Baht/m	1 12	8 Baht/m = 6,1

		R	ate ≈	7,251	Baht/m	F.C. =	5,971	Baht/m	82%
Ing-Yot No.2 Tunnel with A	dit					L.C. =	1,280	Baht/m	18%
				Foreign (brrency	Local Ci	arrency		
Items	Unit	Quar	itity	Rate	Cost	Rate	Cost	Ren	nark
. Operation Cost (Equipmen	& Fu	el)				.		per 10m	
Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2 H	ux 1
Shotcrete Shooter Wet 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2 H	irx 1
Truck with Crane 4t x 2.9t lift	1	11	Hr	425	4,675	25	275	11 H	lrx 1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2 da	ay× 1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2 H	t × ۱
Truck Mixer 4.5 m3	1	6	Hr	620	3,720	70	420	6 H	trx '1
Concrete Plant 1.0*2 m3(25-30m3	1 ·	6	Hr	1,780	10,680	20	120	6 H	ir× 1
Subtotal					34,465		1,119	Ba	ht/10m
2. Material								per 10m	
Portland Cement Type II		3	ton	1,666	4,998	714	2,142		
Fine Sand for Aggregate		8	m3	0	0	220	1,760		
Coarse Sand for Aggregate(0	Gravel)	4	m3	0	0	220	880		
Accelerator for Shotcrete		200	kg	100	20,000	0	0		
Miscellaneous		1	%		250		48		
Subtotal					25,248		4,830	Ba	ht / 10m
3. Labor								per 10m	
Foreman Tunnel		1.0	day			720	720	2.0 day	×:0%
Operator of Heavy		7.5	day			460	3,450	1.5 d	ay× :
Driver		1.5	day			350	525	· 1.5 d	ay x
Skilled Labor		3.0	day			260	780	1.5 d	ayx 2
Common Labor		6.0	day .	L		230	1,380	1.5 d	ayx 4
Subtotal		<u> </u>		L			6,855	· · · · ·	
4. Total				<u> </u>	59,713		12,804	72,517 Ba	ht/10m
5. Output	Worki	ag Time	per 1	day = 12 H	lr × 2 shift			per	10 m

T-99. Unit Rate pe	r Meter of	Shoter	ete of L	ower H	lalf : G	rade D2
	Rate =	8,183	Baht/m	F.C. =	6,687	Baht/m 82%
Ing-Yot No.2 Tunnel with Adit		1.1		L.C. =	1,496	Baht/m 18%
		Foreign (Servency.	Local C	Irrency.	
Items Uni	t Quantity	Rate	Cost	Rate	Cost	Remark
I. Operation Cost (Equipment & I	Fuel)					per 10m
Shotcrete Robot Shot Radius 8m 1	2 Hr	2,170	4,340	10	20	2 Hr× 1
Shotcrete Shooter Wet 10-15m3/h 1	2 Hr	3,105	6,210	25	50	2 Hrx 1
Truck with Crane 4t x 2.9t lift 1	12 Hr	425	5,100	25	300	12 Hr× 1
Accelerator Supplier 5.5kw 1	2 day	1,130	2,260	54	108	2 day × 1
Dust Collector 300m3/hr, 30kw 1	2 Hr	1,290	2,580	63	126	2 Hr× 1
Truck Mixer 4.5 m3 1	6 Hr	620	3,720	70	420	6 Hr× 1
Concrete Plant 1.0*2 m3(25-30m3 1	6 Hr	1,780	10,680	20	120	6 Hr× 1
Subtotal			34,890		1,144	Baht / 10m
2. Material						per 10m
Portland Cement Type II	4 ton	1,666	6,664	714	2,856	
Fine Sand for Aggregate	10 m3	0	0	220	2,200	
Coarse Sand for Aggregate(Grave	:l) 6 m3	0	· 0	220	1,320	
Accelerator for Shotcrete	250 kg	100	25,000	0	0	the second s
Miscellaneous	1 %	·	317		64	and the second second
Subtotal			31,981		6,440	Baht / 10m
3. Labor			1.5			per 10m
Foreman Tunnel	1.0 day			720	720	2.0 dayx50%=
Operator of Heavy	7.5 day			460	3,450	1.5 day x 5
Driver	3.0 day			350	1,050	1.5 day × 2
Skilled Labor	3.0 day			260	780	1.5 day x 2
Common Labor	6.0 day		1 . ·	230	1,380	1.5 day × 4
Subtotal			12.14	1	7,380	the set of the set
4. Total			66,871		14,964	81,835 Baht / 10m
	king Time per 1	day = 12 F	lr x 2 shif	1		per 10 m
Rate = Babt/m				Baht/m		Baht/m = 8.18

		Ra	te ⇒	8,222)	Baht/m	F.C. =	6,719	Baht/m	82%	
Ing-Yot No.2 Tunnel with A	dit			-	-	L.C. =	1,503	Baht/m	18%	
				Foreign C	urrency	Local Cu	rrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipment	t & Fu	ei)			:	_		per 10m		
Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
Shotcrete Shooter Wet 10-15m3/hd	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 41 x 2.9t lift	1	12	Hr	425	5,100	25	300	12	Нr×	ł
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day x	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
Truck Mixer 4.5 m3	1	6	Hr	620	3,720	70	420	6	Hr ×	1
Concrete Plant 1.0*2 m3(25~30m3	1	6	Hr	1,780	10,680	20	120	6	Hr ×	1
Subtotal					34,890		1,144	<u> </u>	Baht / 10	n
Material								per 10sa		
Portland Cement Type II		4	ton	1,666	6,664	714	2,856			
Fine Sand for Aggregate		10	m3	0	0	220	2,200			
Coarse Sand for Aggregate(Gravel)	6	m3	0	0	220	1,320			
Accelerator for Shotcrete		250	kg	100	25,000	0	0		· · ·	
Miscellaneous		2	%		633		128	<u>.</u>		
Subtotal					32,297	<u> </u>	6,504	ļ	Baht / 10	ជា
3, Labor								per 10m		
Foreman Tunnel		1.0	day			720	720	2,0	day×50%=	
Operator of Heavy		7.5	day			460	3,450	1.5	day x	5
Driver		3.0	day	1		350	1,050	1.5	day x	1
Skilled Labor		3.0	day			260	780		day x	2
Common Labor		6.0	day	<u> </u>	·	230	1,380	1.5	day x	4
Sobtotal						·	7,380			
4. Total				1	67,187		15,028	82,215	Baht / 10	11

		Ra	te =	10,858]	Baht/m	F.C. =	9,114	Baht/m	84%
Ing-Yot No.2 Tunnel with A	dit	1.				L.C. =	1,744	Baht/m	16%
			÷.	Foreign C	arrency	Local Ci	urrency		
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Ren	nark 📃
Operation Cost (Equipment	t & Fo	el)						per 10m	
Shoicrete Robot Shot Radius 8m	1	4	Hr	2,170	8,680	10	40	4 1	lir× l
Shotcrete Shooter Wei 10-15m3/h	1	4	Hr	3,105	12,420	25	100	4 1	trx _1
Truck with Crane 41 x 2.9t lift	1	20	Hr	425	8,500	25	500	20 1	uх 1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2 d	ayx 1
Dust Collector 300m3/ar, 30kw	1	4	Hr	1,290	5,160	63	252	4 1	Htx 1
Truck Mixer 4.5 m3	1	6	Hr	620	3,720	70	420	6 1	Hr× 1
Concrete Plant 1.0*2 m3(25-30m3	1	6	Hr	1,780	10,680	20	120	6 - 1	Hrx 1
Subtotal			_		51,420	· ·	1,540	Ba	aht / 10m
Material	1		(\cdot, \cdot)					per 10m	
Portland Cement Type II		5	ton	1,666	8,330	714	3,570		
Fine Sand for Aggregate		12	m3	0	0	220	2,640	l	1.1
Coarse Sand for Aggregate(Gravel)	7	m3	0	0	220	1,540		1.1.1
Accelerator for Shotcrete		310	kg	100	31,000	0	0		
Miscellaneous		· 1	%		- 393		78		
Subtotal					39,723		7,828	B	aht / 10m
Labor				1.				per 10m	
Foreman Tunnel		1.0	day			720	720	ىك 2.0	yx50%=
Operator of Heavy		9.0	day			460	4,140	1.5	day x
Driver	÷.	3.0	day		1 . ·	350	1,050	1.5	day x
Skilled Labor		3.0	day			260	780	1.5	day x
Common Labor		6.0	day			230	1,380	1.5	day ×
Subtotal		1.		1		1	8,07)	
. Total				-	91,143	1	17,438	108.581 E	laht / 10m

		Ra	ite =	3,893	Baht/m	F.C. =	3,144	Baht/m	81%	
Adit for Ing-Yot No.2 Tunn	el					L.C. =	749	Baht/m	19%	
······································	1			Foreign (urrency	Local C	атевсу			
Items	Unit	Quar	stity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipment	t & Fu	el)						per 10 m		
Shotcrete Robot Shot Radius 8m	1	1	Hr	2,170	2,170	10	10	1	Hr ×	1
Shotcrete Shooter Wei 10-15m3/h	1	1	Hr	3,105	3,105	25	25	1	Hr x	1
Truck with Crane 4t x 2.9t lift	1	6	Hr	425	2,550	25	150	6	Hr×	1
Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day x	ì
Dust Collector 300m3/hr, 30kw	1	1	Hr	1,290	1,290	63	63	1	Hr ×	1
Truck Mixer 4.5 m3	1	3	Hr	620	1,860	70	210	3	Ηr×	1
Concrete Plant 1.0*2 m3(25-30m3)	1	3	Hr	1,780	5,340	20	60	3	Hu ×	1
Subtotal					17,445		572		Baht / 10r	n
. Material								per 10 m		
Portland Cement Type II		2	ton	1,666	3,332	714	1,428			
Fine Sand for Aggregate		4	m3	· 0	0	220	880	ļ		
Coarse Sand for Aggregate(Gravel)	2	m3	0	0	220	440			
Accelerator for Shotcrete		100	kg	100	10,000	0	0		•	
Miscellaneous		. 5	%		667		137			
Subtotal					13,999		2,885		Baht / 10	n
3. Labor								per 10m		
Foreman Tunnel		0.5	day			720	360	1.0	dayxS0%=	C
Operator of Heavy		4.5	day			460	2,070	1.5	day 🗙	3
Driver		1.5	day			350	525	1.5	day x	1
Skilled Labor		1.5	day			260	390	1.5	day ×	1
Common Labor		3.0	day		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	230	690	1	day ×	2
Subtotal						ļ	4,035			
4. Total		<u> </u>		L	31,444	<u> </u>	7,492	38,936	Baht / 10	m i
5. Output	Worki	ae Tim	oer 1	day = 12 H	lr x 2 shift			per	10	ni.

	T-103. Unit Rat	e per	Met	er of	Shoter	ete of I	ower l	Half : (Grade C	1	
			R	ite =	5,079	Baht/m	F.C. =	4,152	Baht/m	82%	
	Adit for Ing-Yot No.2 Tunn	ie!					L.C. =	927	Baht/m	18%	
					Foreign (Jurrency	Local C	urrency			
	Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10 m		
	Shotcrete Robot Shot Radius 8m	1	1	Hr	2,170	2,170	10	10	1	Hr ×	1
	Shotcrete Shooter Wet 10-15m3/m	1	1	Hr	3,105	3,105	25	25	1	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	8	Hr	425	3,400	25	200	8	Hr ×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day ×	1
	Dust Collector 300m3/hr, 30kw	1	1	Ħr	1,290	1,290	63	63	1	Hr×	1
	Truck Mixer 4.5 m3	1	3	Hr	620	1,860	. 70	210	3	Ни×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	3	Hr	1,780	5,340	20	60	3	Hr×	1
[Subtotal					18,295		622	1	Baht / 10n	n
2.	Material							•	per 10 m		
	Portland Cement Type II		3	ton	1,666	4,998	714	2,142]		
	Fine Sand for Aggregate		7	m3	· 0	0	220	i,540			
	Coarse Sand for Aggregate(Gravel	4	m3	0	0	220	880	Í		
	Accelerator for Shotcrete		180	kg	- 100	18,000	0	0			
L	Miscellaneous		1	%		230		46	<u> </u>		
	Subtotal		<u> </u>			23,228		4,608		Baht / 10r	n .
3.	Labor		ļ						per 10m		
	Foreman Tunnel		0.5	day			720	360	1.0	dayx50%=	0.5
	Operator of Heavy		4.5	day			460	2,070	1.5	day ×	3
	Driver		1.5	day			350	525		day x	1
	Skilled Labor		1.5	day			260	390		day ×	1
L	Common Labor		3.0	day	<u> </u>		230	690		day ×	2
L	Subtotal		<u> </u>			ļ		4,035		·	
4	Total		1			41,523	<u> </u>	9,265	50,788	Baht/10	<u>n</u>
5	Output	Work	ing Tim	e per 1	day = 12 i	Ir × 2 shif	t	· · ·	per	10 ji	ព -
L	Rate = Baht/m				·	4,15	Baht/m	92	7 Baht/m	-	5,079

T-104. Unit Ra	-		te =		Baht/m			Baht/m	82%	1
Adit for Ing-Yot No.2 Tun	net			· .		L.C. =		Baht/m	18%	
Auto Ing. Log Tot House I and				Foreign C	Marreney.	Local C				
Items	Unit	Ouan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipment	t & Fu					÷	·	per 10m	-	
Shotcrete Robot Shot Radius 8m	1 1	1	Hr	2,170	2,170	10	10	1	Hr×	1
Shotcrete Shooter Wei 10-15m3/h	4 1	1	Hr	3,105	3,105	25	25	· · 1	Hr×	1
Truck with Crane 41 x 2.9t lift	1	10	Hr	425	4,250	. 25	250	10	Hr ×	1
Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	. 54	1	day x	1
Dust Collector 300m3/hr, 30kv	1	1	H	1,290	1,290	63	63	1	Hr ×	1
Truck Mixer, 4.5 m3	1	3	Hr	620	1,860	70	210	3	Hr×	1
Concrete Plant 1.0*2 m3(25-30m2	1	3	Hr	1,780	5,340	20	60	3	Нr×	1
Subtotal					19,145		672]	Baht / 10	
2. Material								per 10m		
Portland Cement Type II		3	ion	1,666	4,998	714	2,142			
Fine Sand for Aggregate		7	m3	0	· 0	220	1,540			
Coarse Sand for Aggregate	(Gravel)	. 4	m3	0	0	220	880			
Accelerator for Shotcrete		180	kg	100	18,000	0	0	1.1		· · .
Miscellaneous		1	%		230		46			
Subtotal					23,228		4,608	· ·	Baht / 10	m
3. Labor								per 10m		
Foreman Tunnel		0.5	day			720	360	1.0	dayx50%=	0.:
Operator of Heavy		4,5	day			460	2,070	1.5	day ×	3
Driver		1.5	day			350	525	1.5	daý x	1
Skilled Labor		1.5	day		1 . •	260	390	1.5	day x	į 1
Common Labor		3.0	day			230	690	1.5	day x	2
Subtotal					1	1.0	4,035			
4. Total					42.373		9,315	51,688	Baht / 10)तः
5. Output	Work	ng Tim	e per J	day = 12 l	tr x 2 shif	ti -		per	. 10	no -
Rate = Baht/m					4.23	7 Baht/m	93:	2 Baht/m =		5,169

	T-105. Unit Rat	e per	Met	er of	Shoter	ete of I	lower I	Talf : C	Grade D	1	
		-		ıte ≃		Baht/m			Baht/m	84%	
	Adit for Ing-Yot No.2 Tunt	e)					L.C. =	1,116	Baht/m	16%	
				÷	Foreign (urrescy	Local C	штевсу			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	ei)						per 10m		
	Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Hr ×	1
	Shotcrete Shooter Wet 10-15m3/h	1	2	Hr	3,105	6,210	25	50	2	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12	Hr ×	1
	Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day x	1
-	Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Hr ×	1
	Truck Mixer 4.5 m3	1	4	Hr	620	2,480	70	280	4	Hr ×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	4	Н	1,780	7,120	20	80	4	Hr ×	1
	Subtotal					28,960		910		Baht / 101	n
2.	Material								per 10m		
	Portland Cement Type II		- 4	ion	1,666	6,664	714	2,856			
	Fine Sand for Aggregate		10	m3	0	0	220	2,200	· ·		
	Coarse Sand for Aggregate(Gravel)	5	m3	0	. 0	220	1,100			
	Accelerator for Shotcrete		240	kg	100	24,000	- 0	0			
	Miscellaneous		1	%		307		62	· · · ·		
	Subtotal					30,971		6,218		Baht / 10	n
3.	Labor								per 10m		
	Foreman Tunnel		0.5	day			720	360	1.0	dayx50%=	0.5
	Operator of Heavy		4.5	day			460	2,070	1.5	day ×	3
	Driver		1.5	day			350	525	1.5	day ×	1
	Skilled Labor	. 1	1.5	day			260	390	1.5	day ×	1
L	Common Labor		3.0	day	<u> </u>		230	690		day x	2
Ĺ	Subtotal				L	·		4,035			
4.	Total		<u> </u>		<u> </u>	59,931	L	11,163	71,094	Baht / 10	m
5.	Output	Worki	ng Time	per 1	daý = 12 ľ	tr × 2 shif	t I		per	10	m
	Rate = Baht/m		÷.			5,993	Baht/m	1,116	5 Baht/m	±	7,109

 $(1,1,\ldots,n_{n-1}$

		Ra	te =	10,623	Baht/m	F.C. =	8,872	Baht/m	84%	
Adit for Ing-Yot No.2 Tunne	eÌ	·				L.C. =	1,751	Bant/m	16%	
				Foreign (arrency	Local Cu	urency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipment	& Fu	el) -		1. A.				per 10m		
Shotcrete Robot Shot Radius 8m	1	2	Hr	2,170	4,340	10	20	2	Ηr×	1
Shotcrete Shooter Wei 10-15m3/b	1	2	Ĥr	3,105	6,210	25	50	2	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	14	Hr	425	5,950	25	350	- 14	Hr ×	1
Accelerator Supplier 5.5kw	1	1	day	1,130	1,130	54	54	1	day ×	1
Dust Collector 300m3/hr, 30kw	1	2	Hr	1,290	2,580	63	126	2	Нiх	1
Truck Mixer 4.5 m3	1	4	Hr	620	2,480	70	280	4	Hr ×	1
Concrete Plant 1.0"2 =3(25-30=3,	1	4	Hr	1,780	7,120	20	80	4	Ηr×	1
Subtota!					29,810		960		Baht / 10m	I
. Material								per 10m		
Portland Cement Type II		8	tòn	1,666	13,328	714	5,712			
Fine Sand for Aggregate		18	m3	0	0	220	3,960			
Coarse Sand for Aggregate(C	Fravel)	10	m3	0	0	220	2,200			
Accelerator for Shotcrete	•	450	kg	100	45,000	- 0	0	1 A A	·	
Miscellaneous		1	%	· .	583		119			:
Subtotal					58,911		11,991		Baht / 10m	1
3. Labor								per 10m		
Foreman Tunnel		0.5	day	1		720	360	1.0	dayx50%×	, I
Operator of Heavy	· *	4.5	day -	•	4 - A	460	2,070	1.5	day x	3
Driver	1.1	3.0	day		 :	350	1,050	1.5	day ×	2
Skilled Labor	•	1.5	day	1 .		260	390	1.5	day ×	1
Common Labor	11.1	3.0	day			230	690	1.5	day x	2
Subtotal							4,560			
i. Total		1			88,721	T	17,511	106,232	Baht / 10r	n

		Ra	te ≈	10,065	Baht/m	F.C. ≃	8,295	Baht/m	82%	
Adit for Ing-Yot No.2 Tunne	el i				-	L.C. =	1,770	Baht/m	18%	
				Foreign (urrency	Local Ca	urrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipment	& Fu	el)						per 10m		
Shotcrete Robot Shot Radius 8m	1	3	Hr	2,170	6,510	10	30	3	Hr ×	1
Shotcrete Shooter Wet 10-15m3/h	1	3	Hr	3,105	9,315	25	75	3	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	14	Нı	425	5,950	25	350	14	Hr ×	1
Accelerator Supplier 5.5kw	1	2	day	1,130	2,260	54	108	2	day ×	1
Dust Collector 300m3/hr, 30kw	1	3	Hr	1,290	3,870	63	189	3	Hr×	1
Truck Mixer 4.5 m3	1	5	Hr	620	3,100	70	350	5	Ни×	1
Concrete Plant 1.0*2 m3(25-30m3	1	5	Hr	1,780	8,900	20	100	5	Hr ×	ļ
Subtotal					39,905		1,202	1	Baht / 10m	1
. Material								per 10m	-	
Portland Cement Type II	:	6	ton	1,666	9,996	714	4,284			
Fine Sand for Aggregate		13	т3	0	0	220	2,860			
Coarse Sand for Aggregate(G	iravel)	7	m3	· 0	0	220	1,540			
Accelerator for Shotcrete		310	kg	100	31,000	· 0	0			
Miscellaneous		5	%		2,050		434			
Subtotal					43,046		9,118]	Bahi / 10o	<u>۱</u>
3. Labor								per 10m		
Foreman Tunnel		1.0	day			720	720	2.0	dayx50%= _	
Operator of Heavy		. 7.5	day			460	3,450	1.5	day ×	
Driver		3.0	day	1		350	1,050	1.5	day ×	
Skilled Labor		3.0	day			260	780	1.5	day ×	1
Common Labor		6.0	day	_		230	1,380	1.5	day x	4
Subtotal		ļ		ļ	L		7,380		<u></u>	
ł. Total					82,951	<u>l. </u>	17,700	100,651	Baht / 10n	n

	'T-108. Unit Ra	te per	Meter o	f Shoter	ete of]	Lower I	lalf : (Grade E2	
			Rate =	11,232	Babt/m	F.C. =	9,290	Baht/m 83%	· ·
	Adit for Ing-Yot No.2 Tuni	iel 🔅				L.C. =	1,942	Baht/m 17%	
				Foreign (arrency	Local Ci	IFTERCY		
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark	
1.	Operation Cost (Equipmen	t & Fu	el)					per 10m	
	Shoicrete Robot Shot Radius 8m	1	3 Hr	2,170	6,510	10	30	3 Hr×	1
	Shotcrete Shooter Wet 10~15m3/h	1	3 Hz	3,105	9,315	25	75	3 Hr×	1
	Truck with Crane 4t x 2.9t lift	1	16 Hr	425	6,800	25	400	16 Hr×	1 .
	Accelerator Supplier 5.5kw	1	2 day	1,130	2,260	54	108	2 day×	1
	Dust Collector 300m3/hr, 30kw	1	3 Hr	1,290	3,870	63	189	3 Hrx	1
	Truck Mixer 4.5 m3	1	5 Hr	620	3,100	70	350	5 Hr×	1
	Concrete Plant 1.0*2 m3(25-30m3	1	5 Hr	1,780	8,900	20	100	5 Hr×	1
Γ	Subtotal				40,755		1,252	Baht / 10m	
2.	Material							per 10m	2
	Portland Cement Type II		7 ton	1,666	11,662	714	4,998		
	Fine Sand for Aggregate		15 m3	0	0	220	3,300		
	Coarse Sand for Aggregate(Gravel)	9 m3	0	. 0	220	1,980	11 A.	
	Accelerator for Shotcrete		380 kg	100	38,000	0	0		
	Miscellaneous	· .	5 %		2,483		514		
	Subtotal				52,145		10,792	Baht / 10m	
3.	Labor			1 A A				per 10m	
	Foreman Tunnel		1.0 day			720	720	2.0 dayx50%=	J
	Operator of Heavy		7.5 day			460	3,450	1.5 day x	°.5
	Driver		3.0 đay			350	1,050	1.5 day x	2
	Skilled Labor		3.0 day	· ·		260	780	1.5 day ×	2
	Common Labor		6.0 day			.230	1,380	1.5 day x	4
Γ	Subtotal						7,380		-
4.	Total				92,900		19,424	112,324 Baht / 10n	1 :
5.	Output	Worki	ng Time per	1 day = 12 l	lr × 2 shii	1		per 10 m	<u>ا</u> ا
	Rate = Baht/m				9,29	Bahl/m	1,94	2 Baht/m =	11,232

	77 1 X Mi		. 11	11C ~	15,823		L.C. =	12,363	Baht/m	78% 22%	
┝	Kok-Ing Tunnel				Foreign (*	Local Cu		DALIVIU	2.2.70	
	Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
F	. Operation Cost (Equipmen				Mate		Avance .	0031	per 11 set		
^	Jumbo Drill, Crawler 2Booms, 150k		0.9	Hr	7,235	6,512	35	32	0.9	Hr×	1
	Grout Pump Single15~30liter/n		0.4	day	295	118	15	6	0.4	day x	- 1
	Grout Mixer 100liter Type	1		day	125	50	15	6	ł	day x	1
┝	Subtotal	1	0.4	uay	120	6,680		44	<u> </u>	<u>uuy ~</u>	^
-	Material			· •··		0,000			per 11 set		
ľ	Rock Bolt 18t L=3m		· 11	set	540	5,940	60	660	p		
			460	kg	8	3,680	6	2,760			
	Dry Mortar Square Washer 150 x 150 x 9	.	11	Pcs	104	1,144	12	132			
	Nut M24			Pcs	0	1,144 99	12	132			
	Miscellaneous		10	703 76	,	1,086	1	356	·	Baht / 11	lset
⊦	Subtotal			70		11,949		3,919		1991117 11	
Ŀ	3. Labor					11,747		5,517	per 11 set		
·	Foreman Tunnel		06	day			720	432	1.5	day ×	0.4
	Operator of Heavy		i •	day			460	92		day x	0.1
	Skilled Labor		1	day			260	312	1.5	day x	0.8
	Common Labor		1 ·	day			230	414	1.5	day x	
F	Subtotal		1.0	367				1,250			
Ŀ	4. Total				1	18,629		5,213		Baht / 12	lset
- F	5. Output	Worki	ng Time	per 1	day = 12 H	· · ·	· · ·		рег	7.3	set / n
ľ	Rate = Baht/m						Baht/m	3 460	Baht/m =		15,82
L	Kate = Danyin			<u> </u>		12,000	Latiqui				

and president and the state of the

		Rate =	19,702	Baht/m	<u>F.C. =</u>	15,546	Baht/m 79%
Kok-Ing Tunnei	•	ter a ser a			L.C. =	4,156	Baht/m 21%
			Foreign (Currency	Local C	urrency	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1. Operation Cost (Equipmen	t & Fu	el)					per 11 set
Jumbo Drill, Crawler 2Booms, 150k	1	0.9 Hr	7,235	6,512	35	32	0.9 Hr× 1
Grout Pump Single15-30liter/n	1	0.3 day	295	89	15	. 5	0.3 day × 1
Grout Mixer 100liter Type	1	0.3 day	125	38	15	. 5	0.3 day × 1
Subtotal				6,639		42	
2. Material							per 11 set
Rock Bolt 18t L=3m	. · .	11 set	540	5,940	60	660	
Dry Mortar		460 kg	8	3,680	6	2,760	and the second sec
Square Washer 150 x 150 x 9)	11 Pcs	104	1,144	12	132	· · · ·
Nut M24		11 Pcs	9	- 99	1	11	
Miscellaneous		10 %		1,086		356	Baht / 11set
Subtotal				11,949		3,919	
3. Labor							per 11 set
Foreman Tunnel		0.5 day	1.1.1		720	360	1.5 day × 0.3
Operator of Heavy		0.2 day			460	92	1.5 day × 0.1
Skilled Labor		0.9 day		1. A. A.	260	234	1.5 day × 0.6
Common Labor		1.4 day	·		230	322	1.5 day × 0.9
Subtotal		1				1,008	
4. Total	÷.		1	18,588		4,969	23,557 Baht / 11set
5. Output	NV1-5	ng Time per 1	day - 12 1		······································	· .	per 9.2 set/

	T-111. Unit Rate pe	.1 1,110			41,338					77%	
	Kok-Ing Tunnel					•	L.C. =		Baht/m	23%	
					Foreign C	urrency	Local Cu	irrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
	Operation Cost (Equipment	t & Fu	el)						per 14 set		
	Jumbo Drill, Crawier 2Booms, 150k		1.4	Hr	7,235	10,129	35	49	1.4	Hr×	1
	Grout Pump Single15~30liter/n		0.3	day	295	89	15	5	0.3	day x	1
	Grout Mixer 100liter Type	[.] 1	0.3	day	125	38	15	5	0.3	day ×	1
-	Subtotal					10,256		59			
2	Material								per 14 set		
	Rock Bolt 18t L=4m		14	set	711	9,954	79	1,106			
	Dry Mortar		1030	kg	8	8,240	6	6,180			
	Square Washer 150 x 150 x 1	9	14	Pcs	104	1,456	12	168			
	Nut M24		14	Pcs	9	126	1	14			
	Miscellaneous		10	%	·	1,978		747		Baht / 14	set
	Subtotal					21,754		8,215	<u> </u>		
<u>3</u> .	Labor								per 14 set		
	Foreman Tunnel		0.5	day			720	360	1.5	day ×	0.3
	Operator of Heavy		0.3	day			460	138	1.5	day ×	0.2
	Skilled Labor		0.9	day			260	234	1.5	day x	0.6
	Common Labor		1.4	day			230	322	1.5	day x	0.9
_	Subtotal						ļ	1,054			
4	Total				· ·	32,010		9,328	41,338	Baht / 14	4 set

	• per			12,595 I				Grade E2 Babt/m 72%
Kok-Ing Tunnel						L.C. =		Baht/m 28%
Alve ug vonte			Т	Foreign C	urrency	Local Cu	ITTENCY	and the second
Items	Unit	Quantit	y	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fu	el)	Ť					per 4 set
Jumbo Drill, Crawler 2Booms, 150k		0.4 H	ir	7,235	2,894	35	14	0.4 Hr× 1
Grout Pump Single15-30liter/n	1	0.4 d	ay	295	118	. 15	6	0.4 day × 1
Grout Mixer 100liter Type	1	0.4 da	ay	125	50	15	6	0.4 day × 1
Subtotal					3,062	н н н	26	
2. Material			•					per 4 set
Rock Bolt 18t L=4m		4 s	et	711	2,844	.79	316	
Dry Mortar		300 k	kg	8	2,400	6	1,800	
Square Washer 150 x 150 x	9	4 P	203	104	416	12	48	
Nut M24		4 P	ès :	9	36	1	. 4	
Miscellaneous		5	%		285		108	Baht / 4set
Subtotal		l			5,981		2,276	
3. Labor					•			per 4 set
Foreman Tunnel		0.6 da	ay 🗌			720	432	1.5 day × 0.4
Operator of Heavy		0.2 da	ay			460	92	1.5 day × 0.1
Skilled Labor		1.2 da	ay			260	312	1.5 day × 0.8
Common Labor		1.8 dz	ay			230	414	1.5 day × 1.2
Subtotal					1997 - 1997 -	· ·	1,250) <u></u>
4. Total					9,043		3,552	12,595 Baht / 4 set

T-113. Unit Rate per	Mete	r of R	lock	Bolts of	f Uppe:	r Half :	Grade	E2, For	repili	ng
-			ıte ≃		Baht/m			Baht/m	80%	
Kok-Ing Tunnel						L.C. =	8,448	Baht/m	20%	
				Foreign (urrency	Local C	иттепсу			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipment	t & Fu	el)	••					per 20 set		
Jumbo Drill, Crawler 2Booms, 150k	1	1.6	Ħr	7,235	11,576	35	56	1.6	Hr×	1
Grout Pump Single15~30liter/n	1	0.4	day	295	118	15	6	0.4	day ×	1
Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4	day x	<u>1</u>
Subtotal					11,744		68			
2. Material								per 20 set		
Rock Bolt 18t L=3m		20	set	540	10,800	60	1,200	1		
Dry Mortar		830	kg	8	6,640	6	4,980			
Square Washer 150 x 150 x 9)	20	Pcs	104	2,080	12	240			
Nut M24		20	Pcs	9	180	1	20			
Miscellaneous		10	%		1,970		644		Baht / 2	0 set
Subtotal					21,670		7,084			
3. Labor		ļ						per 20 set		
Foreman Tunnel		0.6	day			720	432	1.5	day ×	0.4
Operator of Heavy		0.3	day			460	138	1.5	day x	0.2
Skilled Labor		1.2	day			260	312	1.5	day ×	0.8
Common Labor		1.8	day			230	414	1.5	day x	1.2
Subtotal							1,296	· ·		
4. Total		<u> </u>	5		33,414		8,448	41,862	Baht / 2	0 set
5. Output	Workin	ng Time	per 1	day = 12 H	r × 2 shift			per	20.0	set / n
Rate = Baht/m					33,414	Baht/m	8,448	Baht/m =		41,862

		Ra	te =	17,322]	Baht/m	F.C. =	13,615	Baht/m	79%	
Ing-Yot Tunnel				· . •		L.C. =	3,707	Baht/m	21%	
				Foreign (urrency	Local C	nrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	iel)						per 12 set		
Jumbo Drill, Crawler 2Booms, 150k		1.0	Hr	7,235	7,235	35	35	1	Hr×	1
Grout Pump Single15~30liter/n		0.4	day	295	118	15	6	0.4	day ×	1
Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0,4	day ×	1
Subtotal					7,403		47	ļ		
2. Material								per 12 set		
Rock Bolt 18t L=3m		12	set	540	6,480	60	720			
Dry Mortar		500	kg	8	4,000	6	3,000	ļ	· · .	÷ .
Square Washer 150 x 150 x	9	12	Pcs	104	1,248	12	144	1		
Nut M24		12	Pcs	9	108	1	12	Į		
Miscellaneous		10	%		1,184		388	_	Baht / 12	set
Subtotal					13,020	L	4,264			
3. Labor						<u> </u>		per 12 set		
Foreman Tunnel	• •	0.6	day			720	432	1.5	day ×	0.4
Operator of Heavy		0.2	day			460	92	1.5	day x	0.1
Skilled Labor		1.2	day			260	312	1.5	day ×	0.8
Common Labor		1.8	day		<u> </u>	230	414	1.5	day ×	1.2
Subtotal							1,250			<u> </u>
4. Total					20,423	J	5,561	25,984	Baht / 1:	2set
5. Output	Work	ing Tim	e per 1	l day = 12 ł	$1r \times 2$ shift	t .	at a second	per	8.0	set / r
Rate = Baht/m		-	•	-	1997 - Carlos I.	5 Baht/m	3,70	7 Baht/m =	- 1.	17,32

		Rat	e =	21,416	Baht/m	F.C. =	16,985	Baht/m	79%
Ing-Yot Tunnel			÷			L.C. =	4,431	Baht/m	21%
]			Foreign C	urrency	Local Cu	ITTENCY		
Items	Unit	Quant	ity	Rate	Cost	Rate	Cost		mark
. Operation Cost (Equipmen	t & Fu	iel)				. 1		per 12 set	·
Jumbo Drill, Crawler 2Booms, 150k		1.0	Hr	7,235	7,235	35	35	. 1	Hr× 1
Grout Pump Single15~30liter/n		0.3	day	295	89	· 15	5	0.3	day x 1
Grout Mixer 100liter Type	1	0.3	day	125	38	15	5	0.3	day x 1
Subtotal		I			7,362		45	·	
2. Material								per 12 set	
Rock Bolt 18t L=3m		12	set	540	6,480	60	720		
Dry Monar		500	kg	8	4,000	6	3,000		
Square Washer 150 x 150 x	9	12	Pcs	104	1,248	12	144		:
Nut M24		12	Pcs	9	108	1	12		
Miscellaneous		10	%		1,184		388	I	Baht / 12set
Subtotal					13,020	<u> </u>	4,264		<u> </u>
3. Labor								per 12 set	
Foreman Tunnel		0.5	day	1	1 ·	720	360	1.5	day x 0.3
Operator of Heavy		0.2	day			460	.92	1.5	day × 0.
Skilled Labor		0.9	day			260	234	1.5	day × 0.0
Common Labor		1.4	day			230	322	2 1.5	day × 0.
Subtotal		1		T			1,008	3	1
4. Total					20,382		5,317	25,699	Baht / 12set
5. Output	Work	ing Time	per	1 day = 12 H	lr × 2 shi	tt		рег	10.0 set ,
Rate = Baht/m						5 Baht/m	4.43	1 Baht/m =	21,

		R	ate =	44,590 (Baht/m	F.C. =	34,385	Baht/m	77%	
Ing-Yot Tunnel						L.C. =	10,205	Baht/m	23%	
<u> </u>				Foreign (urrency	Local C	ITTENCY			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
i. Operation Cost (Equip	ment & Fu	el)						per 15 set		
Jumbo Drill, Crawler 2Booms,	150k 1	1.5	Hr	7,235	10,853	35	53	1.5	Hr ×	1
Grout Pump Single15~30li	ter/n 1	0.4	day	295	118	15	6	0.4	day ×	1
Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4	day x	1
Subtotal					11,021		65			
2. Material							. >	per 15 set		
Rock Bolt 18t L=4m		15	set	711	10,665	79	1,185			
Dry Mortar		1110	kg	8	8,880	6	6,660			
Square Washer 150 x 15	0 x 9	15	Pcs	104	1,560	12	180			
Nut M24		15	Pcs	9	135	1	15			
Miscellaneous		10	%		2,124		804		Baht / 15	Sset
Subtotal		L			23,364		8,844	· · ·		
3. Labor								per 15 set		
Foreman Tunnel		0.6	day			720	432	1.5	day ×	0.4
Operator of Heavy		0.3	day			460	138	1.5	day ×	0.2
Skilled Labor		1.2	day			260	312	1.5	day x	0.8
Common Labor		1.8	day	1		230	414	1.5	day ×	1.2
Subtotal		<u> </u>				· · · ·	1,296	ļ	· · · · · · · · · · · · · · · · · · ·	
4. Total		<u> .</u>			34,385		10,205	44,590	Baht / 1	5 set
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift			per	15.0	set / n
Rate = Baht/m					34,385	Baht/m	10,205	Baht/m =	;	44,59

	T-117. Unit Rat	e per		r or atë =		OIIS OI Baht/m			Graue i Baht/m	72%	
	Ing-Yot Tunnel	•				•	L.C. =	3,552	Baht/m	28%	
					Foreign (urrency	Local C	urrency			
	Items	Unit	Quar	itity	Rate	Cost	Rate	Cost	R	lemark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 4 set		
	Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4	Hr ×	1
	Grout Pump Single15~30liter/n	1	0.4	day	295	118	15	6	0.4	day ×	1
	Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4	day ×	1
	Subtotal			•		3,062		26	·		
2.	Material		· · · ·				a dhanna		per 4 set		
	Rock Bolt 18t L=4m		4	set	711	2,844	79	316			
	Dry Mortar		300	kg	. 8	2,400	6	1,800			
	Square Washer 150 x 150 x	9 👘	. 4	Pcs	104	416	12	. 48			
	Nut M24	· .	4	Pcs	- 9	36	1	4			
	Miscellaneous		5	%		285		108	· · · · · · · · · · · · · · · · · · ·	Baht / 4s	et
	Sabtotal					5,981		2,276			
3.	Labor						1. 1.	· .	per 4 set	÷ .	
	Foreman Tunnel		0.6	day			720	432	1.5	day ×	0.4
	Operator of Heavy		0.2	day			460	- 92	1.5	day x	0.1
	Skilled Labor	1	1.2	day			260	312	1.5	day ×	0.8
	Common Labor		1.8	day			230	414	1.5	day x	1.2
	Subtotal						<u> </u>	1,250			
4.	Total					9,043	an the	3,552	12,595	Baht / 4	set

			R	ate =	44,730	Baht/m	F.C. =	35,931	Baht/m	80%	
	Ing-Yot Tunnel						L.C. =	8,799	Baht/m	20%	
_					Foreign (urrency	Local C	arrency			
	Items	Unit	Quar	itity	Rate	Cost	Rate	Cost	R	emark	
ι.	Operation Cost (Equipmen	t & Fu	iel)						per 21 set		• •
	Jumbo Drill, Crawler 2Booms, 150k	1	1.8	Hr	7,235	13,023	35	63	1.8	Hr ×	1
	Grout Pump Single15~30liter/n	1	0.4	day	295	118	15	6	0.4	day x	1
	Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4	day x	1
	Subtotal					13,191		75	· ·		
2.	Material								per 21 set		
	Rock Bolt 18t L=3m		21	set	540	11,340	60	1,260	1		
	Dry Mortar		870	kg	8	6,960	6	5,220			
	Square Washer 150 x 150 x	9	21	Pcs	104	2,184	12	252			
	Nut M24		21	Pcs	9	189	1	21			
	Miscellaneous		10	%		2,067		675		Baht / 21	set
	Subtotal					22,740		7,428		:	
3.	Labor					•			per 21 set		
	Foreman Tunnel		0.6	day	. ·		720	432	1.5	day x	0.4
	Operator of Heavy		0.3	day		* •	460	138	1.5	day x	0.2
	Skilled Labor		1.2	day			260	312	1.5	day x	0.8
	Common Labor		1.8	day			230	414	1.5	day X	1.2
	Subtotal		<u> </u>	•	<u> </u>			1,296			
4.	Total				l	35,931	<u>.</u>	8,799	44,730	Baht / 2	l set
5.	Output	Worki	ng Time	per 1	day = 12 H	$r \times 2$ shift	1 · ·		per	21.0	set /
	Rate = Baht/m			11		35,931	Baht/m	8,799	Baht/m =	1	44,7

<u> </u>	T-119. Unit Rat	e pei	Meter of	Rock	Bolts of	Upper	Half :	Grade B
		F		17,322		~ ~		and the second
	Ing-Yot No.2 Tunnel with A	\dit				L.C. =	3,707	Baht/m 21%
				Foreign (urrency	Local C	urrency	
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1.	Operation Cost (Equipmen	t & Fi	nel)					per 12 set
	Jumbo Drill, Crawler 2Booms, 150k	1	1.0 Hr	7,235	7,235	35	35	1 Hr× 1
	Grout Pump Single15~30liter/n	-1	0.4 day	295	118	15	6	0.4 day× 1
	Grout Mixer 100liter Type	1	0.4 day	125	50	15	- 6	0.4 day x 1
	Subtotal				7,403		47	
2.	Material							per 12 set
	Rock Bolt 18t L=3m		12 set	540	6,480	60	720	
	Dry Mortar	-	500 kg	8	4,000	6	3,000	
	Square Washer 150 x 150 x	9	12 Pcs	104	1,248	12	144	
	Nut M24	1	12 Pcs	9	108	· 1	12	
	Miscellaneous		10 %		1,184		388	Baht / 12 set
	Subtotal				13,020		4,264	
3.	Labor	· :						per 12 set
	Foreman Tunnel		0.6 day			720	432	1.5 day × 0.4
	Operator of Heavy		0.2 day			460	92	1.5 day × 0.1
İ	Skilled Labor	1.1	1.2 day			260	312	1.5 day x 0.8
	Common Labor		1.8 day			230	414	1.5 day x 1.2
	Subtotal						1,250	
4.	Total				20,423		5,561	25,984 Baht / 12set
5.	Öutput	Worki	ng Time per 1	day = 12 H	lr × 2 shif	t		per 8.0 set/m
İ.	Rate = Baht/m			· · ·	13,615	5 Baht/m	3,70	7 Baht/m = 17,322

		Ra	ate ≈	11,729	Baht/m	F.C. =	9,170	Baht/m	78%	
Adit for Ing-Yot No.2 Tuni	ıel					L.C. =	2,559	Baht/m	22%	
				Foreign (Currency	Local Cu	irrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipmen	t & Fu	el)						per 8 set		
Jumbo Drill, Crawler 2Booms, 150k	1	0.7	Hr	7,235	5,065	35	25	0.7	Hr ×	1
Grout Pump Single15~30liter/n	1	0.3	day	295	89	15	5	0.3	day ×	1
Grout Mixer 100liter Type	1	0.3	day	125	38	15	5	0.3	day ×	1
Subtotal					5,192		35	·		
2. Material								per 8 set		
Rock Bolt 18t L=3m		8	set	540	4,320	60	480			
Dry Mortar		330	kg	8	2,640	. 6	1,980			
Square Washer 150 x 150 x	9	8	Pcs	104	832	12	96			
Nut M24		8	Pcs	9	72	1	8			
Miscellaneous		10	%		786	1	256	ļ	Bahi / 8 :	set
Subtotal					8,650		2,820			
3. Labor							· · .	per 8 set		
Foreman Tunnel		0.5	day			720	360	1.5	day ×	0.3
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Skilled Labor		0.9	day			260	234	1.5	day ×	0.6
Common Labor		1.4	day			230	322	1.5	day x	0.9
Subtotal							1,008			
4. Total				<u> </u>	13,842		3,863	17,705	Baht / 8s	set
5. Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shift			per	5.3	set / n
Rate = Baht/m					9,170	Baht/m	2,559	Baht/m =	-	11,72

		R	ite =	14.507	Baht/m	F.C. =	11.557	Baht/m	80%
Adit for Ing-Yot No.2 Tunn	el					L.C. =			20%
Aut for hig-for ito funt		· ·		Foreign (urrency	Local Ci			
Items	Unit	Quan	itity	Rate	Cost	Rate	Cost	Ren	ark
. Operation Cost (Equipmen	t & Fu	el)						per 8 set	
Jumbo Drill, Crawler 2Booms, 150k	1	0.7	Hr	7,235	5,065	35	25	0.7 F	ir× 1
Grout Pump Single15~30liter/n	1	0.2	day	295	59	15.	3	0.2 di	ay x 1
Grout Mixer 100liter Type	· 1	0.2	day	125	25	15	3	0.2 d	ay× 1
Subtotal					5,149		31		
Material							÷.,	per 8 set	
Rock Bolt 18t L=3m		8	set	540	4,320	60	480	•	
Dry Mortar		330	kg	8	2,640	6	1,980		
Square Washer 150 x 150 x 9)	8	Pcs	104	832	12	96		
Nut M24	•	8	Pcs	9	72	. 1	8	. •	
Miscellaneous		10	%		786		256	Ba	ht / 8 set
Subtotal					8,650		2,820		
3. Labor								per 8 set	· ·
Foreman Tunnel		0.3	day			720	216	1.5 d	ay × 0.2
Operator of Heavy		0.2	day			460	92	1.5 đ	lay × 0.1
Skilled Labor	e.	0.6	day	1 .		260	156	1.5 đ	lay x 0.4
Common Labor		0.9	day			230	207	1.5 d	lay × 0.6
Subtotal							671		1
4. Total	1.4				13,799		3,522	17,321 Ba	uht / 8 set

			R	ite =	32,985)	Baht/m				5%
	Adit for Ing-Yot No.2 Tun	nel			,		L.C. =	7,760	Baht/m 24	1%
					Foreign C	Urrency	Local Ci	ITENCY		
	Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	Rema	rk
ι.	Operation Cost (Equipmen	t & Fu	el)						per 11 set	
	Jumbo Drill, Crawler 2Booms, 150k	1	1.1	Hr	7,235	7,959	35	39	1.1 Hr	× 1
	Grout Pump Single15~30liter/n	1	0.4	day	295	118	15	6	0.4 day	× 1
	Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4 day	'× 1
	Subtotal					8,127		51	· · · · · · · · · · · · · · · · · · ·	
2.	Material								per 11 set	
	Rock Bolt 18t L=4m		11	set	711	7,821	79	869		
	Dry Mortar		810	kg	8	6,480	6	4,860		
	Square Washer 150 x 150 x	9	11	Pcs	104	1,144	12	132		
	Nut M24		. 11	Pcs	9	99	1	11		4 - 1 - C
	Miscellaneous		10	%		1,554		587	Baht	1/11set
	Subtotal					17,098		6,459		<u> </u>
3.	Labor		· ·						per 11 set	
	Foreman Tunnel		0.6	day			720	432	1.5 day	yx 0.4
	Operator of Heavy		0.2	day			460	92	1.5 da	yx 0.1
	Skilled Labor		1.2	day			260	312	1.5 da	yx 0.8
ľ	Common Labor		1.8	day			230	414	1.5 da	yx 1.2
	Subtotal		Ì					1,250	· · · ·	
4	Total					25,225		7,760	32,985 Bah	t/11 set

		Ra	ite =	12,389	Baht/m	F.C. =	9,059	Baht/m 7	3%
Adit for Ing-Yot No.2 Tunn	el				1. <u>1</u> .	L.C. =	3,330	Baht/m 2	7%
				Foreign (urrency	Local Ci	irrency		a da a
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Rem	ark
Operation Cost (Equipmen	t & Fu	el)			$\mathbb{E}^{(1)\times (1)}$		1994 - 19	per 4 set	$\{ f_{1}, \dots, f_{n} \}$
Jumbo Drill, Crawler 2Booms, 150k	1	0,4	Hr	7,235	2,894	35	14	0.4 H	rx 1
Grout Pump Single15~30liter/n	1	0.3	day	295	89	15	5	0.3 da	y× 1
Grout Mixer 100liter Type	1	0.3	day	125	38	15	5	0.3 da	yx 1
Subtotal	1.1				3,021		24		
. Material								per 4 set	1. 1. ¹ .
Rock Bolt 18t L=4m		4	set	711	2,844	79	316		e ie su
Dry Mortar		300	kg	8	2,400	6	1,800		
Square Washer 150 x 150 x 1	9	4	Pcs	104	416	12	48	a service e	
Nut M24		4	Pcs	9	36	1	4		e se ji se
Miscellaneous		6	%		342		130	Bal	nt / 4set
Subtotal					6,038		2,298		<u></u>
. Labor						$\theta = \{ j \in I \}$		per 4 set	
Foreman Tunnel	۰.	0.5	day			720	360	1.5 da	ay x 0.3
Operator of Heavy		0.2	day			460	92	1.5 đi	ayx O.
Skilled Labor		0.9	day			260	234	1.5 d	ay× 0.
Common Labor		1.4	day			230	322	1.5 d	ayx 0.
Subtotal			1.	·			1,008	3	
Total			· .		9,059		3,330	12,389 Ba	ht / 4 set

	T-124. Unit Rate per	Metei	r of R	lock	Bolts of	f Upper	r Half :	Grade	E2, Fo	repilii	ng
	Rock Bolts : Forepiling		R	ate =	32,171	Baht/m	F.C. =	25,764	Baht/m	80%	
	Adit for Ing-Yot No.2 Tun	nel					L.C. =	6,407	Baht/m	20%	
					Foreign (Currency	Local C	urrency			
	Items	Unit	Qua	atity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	iel)						per 15 set		
	Jumbo Drill, Crawler 2Booms, 150k	1	1.3	Hr	7,235	9,406	35	46	1.3	Hr×	1
	Grout Pump Single1530liter/n	1	0.3	day	295	89	15	5	0.3	day x	1
	Grout Mixer 100liter Type	1	0.3	day	125	38	15	5	0.3	day x	1
	Subtotal					9,533		56			
2.	Material								per 15 set		
	Rock Bolt 18t L=3m		15	set	540	8,100	60	900			
	Dry Mortar		620	kg	8	4,960	6	3,720			
	Square Washer 150 x 150 x	9	15	Pcs	104	1,560	12	180			
	Nut M24		15	Pcs	. 9	135	1	15		1	
	Miscellaneous	1	10	%		1,476		482		Baht / 15	set
	Subtotal					16,231		5,297			
3.	Labor						:		per 15 set		
	Foreman Tunnel		0.5	day			720	360	1.5	day ×	0.3
	Operator of Heavy		0.3	day			460	138	1.5	day ×	0.2
	Skilled Labor		0.9	day	·		260	234	1.5	day ×	0.6
	Common Labor		1.4	day			230	322	1.5	day x	0.9
	Subtotal							1,054			
4.	Total					25,764		6,407	32,171	Baht / 15	set
5.	Output	Workin	ng Time	per 1	day = 12 H	r × 2 shift			рег	15.0	set / m
	Rate = Baht/m					25,764	Baht/m	6,407	Baht/m =		32,171

T-125. Unit Ra	te pei	Meter	of Rock	Bolts o	f Upper	Half :	Grade B
		Rate	= 11,729	Baht/m	F.C. =	9,170	Baht/m 78%
Adit for Ing-Yot No.2 Tun	ael				L.C. =	2,559	Baht/m 22%
			Foreign	Carrency	Local C	urrency	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1. Operation Cost (Equipmen	t & Fu	iel)					per 8 set
Jumbo Drill, Crawler 2Booms, 150k	1	0.7 H	7,235	5,065	35	25	0.7 Hr× 1
Grout Pump Single15~30liter/n	1	0.3 day	295	89	15	5	0.3 day × 1
Grout Mixer 100liter Type	1	0.3 day	125	38	15	5	0.3 day × 1
Subtotal				5,192		35	
2. Material	;						per 8 set
Rock Bolt 18t L=3m		- 8 se	540	4,320	60	480	
Dry Mortar		330 kg	8	2,640	6	1,980	
Square Washer 150 x 150 x	9	8 Pc	3 104	832	12	96	
Nut M24		8 Pc	s 9	72	1 1	· 8	
Miscellaneous	·	10 %		786		256	Baht / 8 set
Subtotal				8,650		2,820	
3. Labor							per 8 set
Foreman Tunnel		0.5 day			720	360	1.5 day × 0.3
Operator of Heavy		0.2 day		l ·	460	92	1.5 day \times 0.1
Skilled Labor		0.9 day			260	234	1.5 day x 0.6
Common Labor		1.4 day			230	322	1.5 day × 0.9
Subtotal			3.51			1,008	
4. Total				13,842		3,863	17,705 Baht / 8set
5. Output	Worki	ng Time per	1 day = 12 F	Ir × 2 shif	t		per 5.3 set/n
Rate = Baht/m		-		9.170) Baht/m	2.559	Baht/m = 11,72

		Rat	e ≈	4,665	Baht/m	F.C. =	3,526	Baht/m	76%	
Kok-Ing, Ing-Yot & Adit	· ·					L.C. =	1,139	Baht/m	24%	
······································				Foreign C	urrency	Local Cu	нтевсу			
Items	Unit	Quant	ity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 4 set		
Jumbo Drill, Crawler 2Booms, 150k	1		Hr	7,235	2,171	35	11	0.3	Hr×	1
Grout Pump Single15~30liter/n	1	0.4	day	295	118	15	6	0.4	day ×	1
Grout Mixer 100liter Type	1	0.4	day	125	50	15	6	0.4	day ×	1
Subtotal					2,339		23			
2. Material	_							per 4 set		
Rock Bolt 18t L=3m		4	set	540	2,160	60	240			
Dry Mortar		17	kg	8	136	6	102			
Square Washer 150 x 150 x	9	4	Pcs	104	416	12	48		. *	
Nut M24		4	Pcs	9	36	1	4	1		
Miscellaneous		5	%		137		20	· ·	Baht / 4se	*
Subtotal					2,885		414	ļ		
3. Labor		.				1		per 4 set		
Foreman Tunnel		0.6	day			720	432	1.5	day ×	0.4
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Skilled Labor	· •	1.2	day			260	312	1.5	day ×	0.8
Common Labor		1.8	day			230	414	1.5	day x	1.2
Subtotal				<u> </u>	<u> </u>	<u> </u>	1,250	+		
4. Total					5,224	<u></u>	1,687	6,911	Baht / 4s	et
5. Output	Work	ing Time	per I	i day = 12 F	lr × 2 shif	t		per	2.7	set/
Rate = Baht/m					3,52	6 Baht/m	1,13	9 Baht/m	=	4,66

· · · · · · · · · · · · · · · · · · ·		Rat	e =	5,483	Baht/m	F.C. =	4,321	Baht/m	79%	
Kok-Ing, Ing-Yot & Adit		1. T	х.		· · ·	L.C. =	1,162	Baht/m	21%	
				Foreign C	urrency	Local Ci	arrency	· .		
Items	Unit	Quant	ity	Rate	Cost	Rate	Cost_	<u>I</u>	lemark	
. Operation Cost (Equipmen	t & Fu	el)			1.1.1.1		· · · · ·	per 4 set	· · · ·	
Jumbo Drill, Crawler 2Booms, 150k			Hr	7,235	2,171	35	11	0.3	Hr×	1
Grout Pump Single15-30liter/m	1	0.3	day	295	89	15	5	0.3	day ×	° 1
Grout Mixer 100liter Type	1.	0.3	day	125	38	. 15	5	0.3	day ×	~ 1
Subtotal					2,298		21	. ·		
2. Material			-					per 4 set		
Rock Bolt 18t L=3m		4	set	540	2,160	60	240			
Dry Mortar		5	kg	8	40	6	- 30			
Square Washer 150 x 150 x	9 [:]	4	Pcs	104	416	12	48			
Nut M24		4	Pcs	. 9	36	· 1	4			
Miscellaneous		5	%		133		16		Baht / 4s	at 👘
Subtotal					2,785		338		-	
3. Labor								per 4 set	ана 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 -	
Foreman Tunnel	÷	0.5	day			720	360	1.5	day ×	0.3
Operator of Heavy		0.2	day	1		460	92	1.5	day x	0.1
Skilled Labor		0.9	day			260	234	1.5	day ×	0.6
Common Labor		1.4	day	1	1.1	230	322	1.5	day x	0.9
Subtotal		1					1,008			
4. Total					5,083		1,367	6,450	Baht / 4s	et
5. Output	Work	ing Time	DCI	l day = 12 k	$Ir \times 2$ shift	t	· ·	pe	3.4	set/
Rate = Baht/m			F		1.11	1 Baht/m	1 16	2 Baht/m	=	5,4

		R	ate =	8,341	Baht/m	F.C. =	6,734	Baht/m	81%	
Kok-Ing, Ing-Yot & Adit						L.C. =	1,607	Baht/m	19%	
				Foreign (urrency	Local C	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 4 set		
Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4	Hr x	1
Grout Pump Single15~30liter/n	1	0.3	day	295	89	15	5	0.3	day x	1
Grout Mixer 100liter Type	1	0.3	day	125	38	15	5	0.3	day x	1
Subtotal					3,021		24			
2. Material								per 4 set		
Rock Bolt 18t L=4m		4	set	711	2,844	79	316			
Dry Mortar		30	kg	8	240	6	180	,		
Square Washer 150 x 150 x 9)	4	Pcs	104	416	12	48			
Nut M24		4	Pcs	9	36	1	4	1		
Miscellaneous		5	%		177		27		Baht / 4s	et ·
Subtotal					3,713		575			
3. Labor		· ·						per 4 set		
Foreman Tunnel		0.5	day			720	360	1.5	day ×	0.3
Operator of Heavy		0.2	day			460	92	. 1.5	day ×	0.1
Skilled Labor		0.9	day			260	234	1.5	day x	0.6
Common Labor		1.4	day		<u>.</u>	230	322	- 1.5	day x	0.9
Subtotal		ļ .					1,008	ļ		<u>.</u>
4. Total		<u> </u>			6,734		1,607	8,341	Baht / 4	set
5. Output	Worki	og Time	per 1	day = 12 H	r × 2 shift			per	4.0	set / I
Rate = Baht/m					6,734	Baht/m	1,607	Baht/m =		8,34

		Rate =	= 8,626	Baht/m	F.C. =	6,775	Baht/m	79%	
Kok-Ing, Ing-Yot & Adit	· · ·		t inter		L.C. =	1,851	Baht/m	21%	
			Foreign (Currency	Local C	urrency		1.1.1	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	F	temark	
1. Operation Cost (Equipment	t & Fu	el)		· .			per 4 set		
Jumbo Drill, Crawler 2Booms, 150k	1	0.4 Hr	7,235	2,894	35	14	0.4	Hr ×	1
Grout Pump Single15-30liter/n	1	0.4 day	295	118	15	6	0.4	day x	1
Grout Mixer 100liter Type	1	0.4 day	125	50	15	6	0.4	day x	1
Subtotal	1.4			3,062		26			
2. Material					(x - x)		per 4 set		
Rock Bolt 18t L=4m		4 set	711	2,844	79	316			
Dry Mortar		30 kg	8	240	6	180			
Square Washer 150 x 150 x 9)	4 Pc	s 104	416	12	48			1 A A
Nut M24		4 Pc	s 9	36	1	. 4			
Miscellaneous		5 %		177		27		Baht / 4s	et
Subtotal			· ·	3,713	<u> </u>	575			· .
3. Labor					· · .		per 4 set		
Foreman Tunnel		0.6 day			720	432	1.5	day ×	0.4
Operator of Heavy		0.2 day	· ·		460	92	1.5	day x	0.1
Skilled Labor		1.2 day		· · ·	260	312	1.5	day x	0.8
Common Labor		1.8 day			230	414	1.5	day x	1.2
Subtotal						1,250		•	
4. Total				6,775		1,851	8,626	Baht / 4	set
5. Output	Worki	ng Time per	1 day = 12 F	Ir × 2 shift	t		per	4,0	set / n
Rate = Baht/m	· · ·				5 Baht/m	1 85	Baht/m	-	8,620

		R	ate =	22,246	Baht/m	F.C. 	20,048	Baht/m	90%	
Kok-Ing Tunnel						L.C. = 2,198		Baht/m 10%		
					Foreign Currency		Local Currency			
Items	Quantity		Rate Cost		Rate Cost		Remark			
. Operation Cost (Equipment		el)						per 1.2 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Нr×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1
Subtotal					3,746		26		Baht / 1.	2 m
Material								per 1.2 m		
H-Steel Tunnel Support		0.4	ton	40,500	16,200	4,500	1,800			
H-Steel Bending Extra H125~H	200	0.4	ton	1,449	580	161	64			
H-Steel Rounding Extra		0.4	ton	1,935	774	215	86			
Joint Plate		0.02	ton	5,427	109	603	12			
Miscellaneous		15	%		2,649		294			÷.,
Subtotal					20,312		2,256		Baht / 1.	2 m
. Labor								per 1.2 m	• •	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day		• .	460	92	1.5	day ×	0.1
Driver		0.2	day			350	70	1.5	day x	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day x	0.2
Subtotal							355	2	· · ·	·
. Tetal					24,058		2,637	26,695	Baht / 1.	2 m
Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift			per	1.2	ma.

T-131. Unit Rate	per N	leter	of S	teel Su	pport o	f Uppe	r Half :	Grade	D1
		R	ate =	32,236	Baht/m	F.C. =	29,043	Baht/m	90%
Kok-Ing Tunnel						L.C. =	3,193	Baht/m	10%
				Foreign Currency		Local Currency		· ·	· .
Items	Unit	Quai	ntity	Rate	Cost	Rate	Cost	F	temark
1. Operation Cost (Equipmen	t & Fu	ei)						per 1.0 m	
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr× 1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr× 1
Subtotal					3,746		26		Baht / 1.0 m
2. Material							a art	per 1.0 m	
H-Steel Tunnel Support	· ·	0.5	ton	40,500	20,250	4,500	2,250		e de la composición de la composición de la composición de la composición de la composición de la composición d
H-Steel Bending Extra H125-H	200	0.5	ton	1,449	725	161	81		
H-Steel Rounding Extra		0.5	ton	1,935	· 968	215	108		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
Joint Plate		0.01	ton	5,427	54	603	6	ĺ	
Miscellaneous		15	%		3,300		367		k the second sec
Subtotal					25,297		2,812		Baht / 1.0 m
3. Labor			· ·					per 1.0 m	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7= 0.1
Operator of Heavy		0.2	day			460	.92	1.5	day × 0.1
Driver		0.2	day			350	70	1.5	day × 0.1
Skilled Labor		0.2	day		1 A.	260	52	1.5	day × 0.1
Common Labor	· · · · ·	0.3	day	1	-	230	69	1.5	day x 0.2
Subtotal						·	355		· · · · .
4. Total					29,043		3,193	32,236	Baht / 1.0 m
5. Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shift		·	per	1.0 m
Rate = Baht/m				·	29,043	Baht/m	3,193	Baht/m	= 32,236

		R	ate =	37,841	Baht/m	F.C. =	34,088	Baht/m	90%	
Kok-Ing Tunnel						L.C. =	3,753	Baht/m	10%	
				Foreign (urrency	Local C	urrency			
Items	Unit	Quantity		Rate	Cost	Rate	Cost	Remark		
I. Operation Cost (Equipmen	t & Fu	el)			:			per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hı ×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr×	1 .
Subtotal					3,746		26		Baht / 1.() m
2. Material								per 1.0 m		
H-Steel Tunnel Support		0.6	ton	40,500	24,300	4,500	2,700			
H-Steel Bending Extra H125~H	1200	0.6	ton	1,449	869	161	97			
H-Steel Rounding Extra		0.6	ton	1,935	1,161	215	129			
Joint Plate		0.01	ton	5,427	54	603	6			
Miscellaneous		15	%		3,958		440			
Subtotal					30,342		3,372		Baht / 1.0) m
3. Labor								per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day x	0.1
Driver		0.2	day			. 350	70	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day	L		230	69	1.5	day ×	0.2
Subtotal		ļ		L			355		· · · ·	
4. Total					34,088		3,753	37,841	Baht / 1.	0 m
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift			рег	1.0	m
Rate = Baht/m					34,088	Baht/m	3,753	Baht/m =		37,841

T-133. Unit Rate	per N	leter	of S	teel Suj	pport o	f Uppe	Half:	: Grade	El	
		Ra	ite =	54,803 1	Baht/m	F.C. =	49,354	Babt/m	90%	
Kok-Ing Tunnel				· .		L.C. =	5,449	Baht/m	10%	
		Quantity		Foreign Currency		Local Currency		·		
Items	Unit			Rate	Cost	Rate	Cost	Remark		
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1
Subtotal					3,746	1. A.	26		Baht / 1.0) m
2. Material								per 1.0 m		
H-Steel Tunnel Support		0.9	ton	40,500	36,450	4,500	4,050			
H-Steel Bending Extra H125-H	1200	0.9	ton	1,449	1,304	161	145			
H-Steel Rounding Extra	H-Steel Rounding Extra		ton	1,935	1,742	215	194			
Joint Plate		0.03	ton	5,427	163	603	18			
Miscellaneous		15	%		5,949		661			
Subtotal				·	45,608		5,068		Baht / 1.	0 m
3. Labor		1.1						per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Driver		0.2	day	:		350	70	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day x	0.1
Common Labor		0.3	day			230	69	1.5	day x	0.2
Subtotal							355			
4. Total					49,354		5,449	54,803	Baht / 1.	.0 m

		Ra	te =	54,803	Baht/m	F.C. ≃	49,354	Baht/m	90%	
Kok-Ing Tunnel						L.C. =	5,449	Baht/m	10%	
]			Foreign Currency		Local Currency				
Items	Unit	Quantity		Rate Cost		Rate Cost		Remark		
Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k		0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr×	1
Subtotal					3,746		26	1	Baht / 1.0) m
laterial								per 1.0 m		
H-Steel Tunnel Support		0.9	ton	40,500	36,450	4,500	4,050	1		
H-Steel Bending Extra H125~H	1200	0.9	ton	1,449	1,304	161	145			
H-Steel Rounding Extra		0.9	ton	1,935	1,742	215	194			
Joint Plate		0.03	ton	5,427	163	603	18			
Miscellaneous		15	%		5,949		661	<u> </u>		
Subtotal		T			45,608		5,068		Baht / 1.	0 m
Labor								per 1.0 m		
Foreman Tunnel		0.1	day			720	72		Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Driver		0.2	day			350	70	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day ×	0.2
Subtotal							355			
Total		1			49,354		5,449	54,803	Baht / 1	0 m

			Ra	ite =	26,922	Baht/m	F.C. =	24,255	Babt/m	90%		
	Ing-Yot Tunnel				•		L.C. =	2,667	Baht/m	10%		
]			Foreign (urrency	Local Currency					
	Items	Unit	Quar	tity	Rate	Cost	Rate Cost		Remark			
1.	Operation Cost (Equipment	: & Fu	el)						per 1.2 m			
-	Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr×	1	
	Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1	
	Subtotal					3,746		26		Baht / 1.	2 m	
2.	Material								per 1.2 m			
	H-Steel Tunnel Support		0.5	ton	40,500	20,250	4,500	2,250				
	H-Steel Bending Extra H125~H	200	0.5	ton	1,449	725	161	81				
	H-Steel Rounding Extra		0.5	ton	1,935	968	215	108				
	Joint Plate		0.02	ton	5,427	109	603	12				
	Miscellaneous		15	%		3,308		368		<u>.</u>		
	Subtotal				ļ	25,360		2,819	ļ	Baht / 1	2 m	
3.	Labor		l .	• •					per 1.2 m			
	Foreman Tunnel		0.1	day .			720	72	0.5	Hi/7=	0.1	
	Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1	
	Driver		0.2	day			350	. 70	1.5	day ×	0.1	
	Skilled Labor		0.2	day			260	52	1.5	day ×	0.1	
	Common Labor		0.3	day			230	69	1.5	day x	0.2	
	Subtotal		<u> </u>			1	ļ	355	ļ			
4.	Total		1			29,106		3,200	32,306	Baht / 1	.2 m	
5.	Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shift	-		per	1.2	m	
	Rate = Baht/m					24,255	Baht/m	2,667	Baht/m =	5	26,92	

		Rat	te =	32,236	Baht/m	F.C. =	29,043	Baht/m	90%		
Ing-Yot Tunnel		eter de	÷.,	1		L.C. = 3,193		Baht/m 10%			
				Foreign C	arrency	Local Currency					
Items	Unit	Quant	ity	Rate	Cost	Rate	Cost	Remark			
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m			
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Нr×	1	
Truck with Crane 4t x 2.9t lift	1	0,3	Hr	425	128	25	. 8	0.3	Hr×	1	
Subtotal					3,746		26	1	Baht / 1.) m (
. Material					4 N.			per 1.0 m			
H-Steel Tunnel Support		0.5	ton	40,500	20,250	4,500	2,250				
H-Steel Bending Extra H125~H	200	0.5	ton	1,449	725	161	81			· ·	
H-Steel Rounding Extra		0.5	ton	1,935	968	215	108				
Joint Plate		0.01	ton	5,427	54	603	6				
Miscellaneous	1.11	15	%		3,300		367				
Subtotal					25,297		2,812		Baht / 1.	0 m	
3. Labor	•	E						per 1.0 m		1.	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1	
Operator of Heavy		0.2	day		·	460	92	1.5	day x	0.1	
Driver		0.2	day			350	70	1.5	day ×	0.1	
Skilled Labor		0.2	day		· ·	260	52	1.5	day ×	0.1	
Common Labor		0.3	day			230	69	. 1.5	day ×	0.2	
Subtotal							355	<u> </u>			
4. Total	- 				29,043	<u> </u>	3,193	32,236	Baht / 1	0 m	
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift	t		per	1.0	m	
Rate = Baht/m			-		29.041	Baht/m	3.19	Baht/m =	2	32,2	

T-137. Unit Rate	per N				port o Baht/m			Baht/m	90%	
× ×7.4/0	·	Ka	ite =	37,841	owni/m	L.C. =		Baht/m	10%	
Ing-Yot Tunnel				Foreign C		Local Ci				
Ya	Unit	Quan	4164	Rate	Cost	Rate	Cost	R	emark	
Items			my	MALE		Mate		per 1.0 m		
. Operation Cost (Equipment		0.5	Hr	7,235	3.618	35	18	0.5	Hrx	1
Jumbo Drill, Crawler 2Booms, 150k			nr Hr	425	128	25	8	0.3	Hrx	1
Truck with Crane 4t x 2.9t lift	1	0.3	nr	42	3,746	~	26		Baht / 1.0	
Subtotal					3,740			per 1.0 m		
. Material				40,500	24,300	4,500	2,700			
H-Steel Tunnel Support		0.6	ton		24,500 869	4,500	2,700			
H-Steel Bending Extra H125~H	200	0.6	ton	1,449		215	129	Ì		
H-Steel Rounding Extra		0.6	ton	1,935	1,161					
Joint Plate		0.01	ton	5,427	54	603	6	· ·		
Miscellaneous		15	%	ļ	3,958		440	·		
Subtotal		ļ		<u> </u>	30,342		3,372	+	Baht / 1.	Um
3. Labor								per 1.0 m	·	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7≈	0.1
Operator of Heavy		0.2	day			460	92	1	day x	0.1
Driver		0.2	day			350	70		day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day x	0.2
Subtotal							355	ļ		
4. Total					34,088		3,753	37,841	Baht / 1.	0 m

		Rate =	60,409	Baht/m	F.C. =	54,400	Baht/m 90%
Ing-Yot Tunnei				<u> </u>	L.C. =	6,009	Baht/m 10%
			Foreign (urrency	Local Cu	rrency	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
Operation Cost (Equipm	ent & Fu	el)					per 1.0 m
Jumbo Drill, Crawler 2Booms, 15	1	0.5 Hr	7,235	3,618	35	18	0.5 Hr× 1
Truck with Crane 4t x 2.9t lif	t 1	0.3 Hr	425	128	25	8	0.3 Hr × 1
Subtotal				3,746		26	Baht / 1.0 m
Material				¹			per 1.0 m
H-Steel Tunnel Support		1.0 ton	40,500	40,500	4,500	4,500	
H-Steel Bending Extra H125	~H200	1.0 ton	1,449	1,449	161	161	
H-Steel Rounding Extra		1.0 ton	1,935	1, 93 5	215	215	
Joint Plate		0,03 ton	5,427	163	603	18	
Miscellaneous		15 %		6,607	· · ·	734	
Subtotal				50,654		5,628	Baht / 1.0 m
. Labor							рег 1.0 m
Foreman Tunnel		0.1 day	·		720	72	0.5 Hr/7= 0.1
Operator of Heavy		0.2 day			460	92	1.5 day × 0.1
Driver		0.2 day			350	70	1.5 day × 0.1
Skilled Labor		0.2 day			260	52	1.5 day × 0.1
Common Labor	н <u>,</u> н	0.3 day		·	230	69	1.5 day × 0.2
Subtotal			,			355	
. Total				54,400		6,009	60,409 Baht / 1.0 m

		R	ate =	60,409	Baht/m	F.C. =	54,400	Baht/m	90%	
Ing-Yot Tunnel	•					L.C. =	6,009	Baht/m	10%	
				Foreign (Currency	Local C	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0,5	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1
Subtotal					3,746		26	F	Baht / 1.0	0 m
. Material								per 1.0 m		
H-Steel Tunnel Support		1.0	ton	40,500	40,500	4,500	4,500			
H-Steel Bending Extra H125-H200 1.0 to H-Steel Rounding Extra 1.0 to				1,449	1,449	161	161			
H-Steel Rounding Extra			ton	1,935	1,935	215	215			
Joint Plate		0.03	ton	5,427	163	603	18			
Miscellaneous		15	%		6,607		734			
Subtotal				Ì	50,654		5,628	I	Baht / 1.0	0 m
3. Labor							•	per 1.0 m		
Foreman Tunnel			day			- 720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Driver		0.2	day			350	70	1.5	day x	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day ×	0.2
Subtotal							355			
I. Total					54,400		6,009	60,409 1	Baht / 1.	0 m
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift	· .		per	1.0	m
Rate = Bahi/m					54,400	Baht/m	6,009	Baht/m =		60,40

		Rat	e =	17,574]	Baht/m	F.C. =	15,843	Baht/m	90%	
Adit for Ing-Yot No.2 Tunn	el				,	L.C. =	1,731	Baht/m	10%	
				Foreign C	urrency	Local Cu	rrency			
Items	Unit	Quant	ity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 1.2 m		
Jumbo Drill, Crawler 2Booms, 150k			Hr	7,235	3,618	35	18	0.5	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25		0.3	Hr ×	1
Subtotal					3,746		26]]	Baht / 1.2 m	
2. Material								per 1.2 m		
H-Steel Tunnel Support		0.3	ton	40,500	12,150	4,500	1,350	ł	•	
H-Steel Bending Extra H125~H	1200	0.3	ton	1,449	435	161	48			
H-Steel Rounding Extra	Steel Rounding Extra		ton	1,935	581	215	65			
Joint Plate		0.02	ton	5,427	109	603	12			
Miscellaneous		15	%		1,991		221			
Subtotal					15,266		1,696	ļ	Baht / 1.2 m	
3. Labor								per 1.2 m		
Foreman Tunnel		0.1	day			720	. : . 72	0.5	Hr/7= ().1
Operator of Heavy		0.2	day			460	92	1.5	day x ().1
Driver		0.2	day			350	_70	1.5	day × (0,1
Skilled Labor		0.2	day			260	. 52	1.5	day x C).1
Common Labor		0.3	day_			230	69	1.5	day × ().2
Subtotal							355			
4. Total					19,012		2,077	21,089	Baht / 1.2 m	
5. Output	Work	ing Time	per J	l day = 12 H	lr × 2 shif	t i sa i		, per	1.2 m	1.1
Rate = Baht/m					15,84	3 Baht/m	1,73	1 Baht/m =	17	1,5

		Ra	te =	26,625]	Baht/m	F.C. =	23,995	Baht/m	90%	
Adit for Ing-Yot No.2 Tunn	el					L.C. =	2,630	Baht/m	10%	
				Foreign C	urrency	Local C	irrency		:	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost_	R	emark	
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Нr×	1
Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr×	1
Subtotal				·	3,746		26		Baht / 1.0) m
2. Material				-				per 1.0 m		
H-Steel Tunnel Support		0.4	ton	40,500	16,200	4,500	1,800			
H-Steel Bending Extra H125-H	1200	0.4	ton	1,449	580	161	64			
H-Steel Rounding Extra		0.4	ton	1,935	774	215	86			
Joint Plate		0.01	ton	5,427	54	603	. 6			
Miscellaneous		15	%		2,641	·	293			
Subtotal					20,249		2,249		Baht / 1.	0 m
3. Labor						1 . ·		per 1.0 m		
Foreman Tunnel		0.1	day	-		720	72	0.5	: Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Driver		0.2	day	-	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	350	70	1.5	day ×	0.1
Skilled Labor		0.2	day	1.	ļ	260	52	1.5	day ×	0.1
Common Labor		0.3	day		Ì	230	69	1.5	day ×	0.2
Subtotal							355	5		·
4. Total		T		-	23,995		2,630	26,625	Baht / 1	0 m
5. Output	Work	ing Tim	per :	1 day = 12 F	$Ir \times 2$ shift	ì		per	1.0	m
Rate = Baht/m		•	•			5 Baht/m	2.63	0 Baht/m	z .	26,62

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<u> </u>	T-142. Unit Rate	per N	Meter	of S	steel Su	pport c	of Uppe	r Half	: Grade	D2	
				ate =		Baht/m			Baht/m	 90%	
	Adit for Ing-Yot No.2 Tunne	el					L.C. =	3,193	Baht/m	10%	•
					Foreign (Currency	Local C	urrency			
	Items	Unit	Qua	atity	Rate	Cost	Rate	Cost	T	temark	
1.	Operation Cost (Equipment	& Fu	el)						per 1.0 m		
	Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr×	1
	Truck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1
	Subtotal					3,746		26		Baht / 1.	0 m
2.	Material								per 1.0 m		
	H-Steel Tunnel Support		0.5	ton	40,500	20,250	4,500	2,250			
	H-Steel Bending Extra H125~H2	:00	0.5	ton	1,449	725	161	81			
	H-Steel Rounding Extra		0.5	ton	1,935	968	215	108			
	Joint Plate		0.01	ton	-5,427	54	603	- 6			
	Miscellaneous		15	%		3,300		367			
	Subtotal					25,297		2,812		Baht / 1.	0 m
3.	Labor								per 1.0 m		
	Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
	Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
	Driver		0.2	day			350	70	1.5	$day \times$	0.1
	Skilled Labor						260	52	1.5	day x	0.1
L	Common Labor						230	69	1.5	day \times	0.2
Ŀ	Subtotal							355			
4.	Totai			· .		29,043		3,193	32,236	Baht / 1.	0 m
5.	Output V	Vorkin	g Time	per 1 d	day = 12 Hi	$r \times 2$ shift			per	1.0	m
	Rate = Baht/m		÷.,	1		29,043	Baht/m	3,193	Baht/m =		32,236

	T-143. Unit Rate	ner I	Motor	ofs	tool Su	anort o	flinne	- Walf	Crada	D 1	
	1-145. Unit Rate	per r		ate ≓			F.C. =				
· •	lia fan Tele Mad Na O Tele-		· K	ate =	40,000				Baht/m	90%	-
AC	lit for Ing-Yot No.2 Tuni	iei	_				<u>L.C. =</u>		Baht/m	10%	
	-	.			Foreign (Local C		· _		
-	Items	Unit	Qua	unty	Rate	Cost	Rate	Cost	+	lemark	
_	peration Cost (Equipmen		1						per 1.0 m		
	nbo Drill,Crawler 2Booms,150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Τn	uck with Crane 4t x 2.9t lift	1	0.3	Hr	425	128	25	8	0.3	Hr ×	1
	Subtotal					3,746		26		Baht / 1.	.0 m
2. M	aterial								per 1.0 m		
H	Steel Tunnel Support	· .	0.7	ton	40,500	28,350	4,500	3,150			
Н-	Steel Bending Extra H125~H	200	0.7	ton	1,449	1,014	161	113			
H-	Steel Rounding Extra		0.7	ton	1,935	1,355	215	151			
Joi	int Plate		0.03	ton	5,427	163	603	18			
Mi	iscellaneous		15	%		4,632		515	•	ъ. ÷.,	
	Subtotal					35,514		3,947		Baht / 1.	0 m
3. La	ibor						· · ·		per 1.0 m		
Fo	reman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Or	perator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Dr	iver		0.2	day	.		350	70	1.5	day x	0.1
Sk	tilled Labor		0.2	day			260	52	1.5	day ×	0.1
Co	ommon Labor		0.3	day			230	69	1.5	day ×	0.2
	Subtotal				-			355			
4.	Total					39,260		4,328	43,588	Baht / 1	.0 m
5. Ot	utput	Workir	g Time	per 1	day = 12 H	r × 2 shift	·		per	1.0	in .
R	ate = Baht/m			· · ·		39,260	Baht/m	4,328	Baht/m =		43,588

		Ra	nte ≃	43,588	Baht/m	F.C. =	39,260	Baht/m	90%
Adit for Ing-Yot No.2 Tun	nel			-		L.C. =	4,328	Baht/m	10%
· · · · · · · · · · · · · · · · · · ·				Foreign C	urrency	Local C	urrency		
Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	R	emark
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m	
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr× 1
Truck with Crane 4t x 2.9t lift	1.	0.3	Hr	425	128	25	8	0.3	Hr× 1
Subtotal					3,746		26		Baht / 1.0 m
2. Material								per 1.0 m	
H-Steel Tunnel Support		0.7	ton	40,500	28,350	4,500	3,150		
H-Steel Bending Extra H125~H	1200	0.7	ton	1,449	1,014	161	113		
H-Steel Rounding Extra		0.7	ton	1,935	1,355	215	151		· ·
Joint Plate		0.03	ton	5,427	163	603	18		
Miscellaneous		15	%		4,632		515		
Subtotal					35,514		3,947		Baht / 1.0 m
3. Labor								per 1.0 m	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7= 0.1
Operator of Heavy		0.2	day			460	92	1.5	day × 0.1
Driver		0.2	day			. 350	70	1.5	day x 0.1
Skilled Labor		0.2	day			260	52	1.5	day × 0.1
Common Labor		0.3	day			230	69	1.5	day × 0.2
Subtotal							355		
4. Total					39,260		4,328	43,588	Baht / 1.0 m
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift			per	1.0 m
Rate = Baht/m					39.260	Baht/m	4.328	Baht/m =	43,5

		R	ate =	9,829	Baht/m	F.C. =	8,876	Baht/m	90%	>
Kok-Ing Tunnel						L.C. =	953	Baht/m	10%	>
				Foreign (Currency	Local Ci	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R I	lemark	<u>.</u>
1. Operation Cost (Equipment	& Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Ħr	7,235	3,618	35	18	0.5	Hr ×	
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	- 25	5	0.2	Hr ×	
Subtotal					3,703		23		Baht / 1	.0
2. Material								per 1.0 m		
H-Steel Tunnel Support		0.1	ton	40,500	4,050	4,500	450			
H-Steel Bending Extra H125~H2	200	0.1	ton	1,449	145	161	16			
H-Steel Rounding Extra	÷.,	0.1	ton	1,935	194	215	22			
Joint Plate		0.02	ton	5,427	109	603	12			
Miscellaneous		15	%		675		75			
Subtotal		·			5,173	·	575		Baht / 1	.0
3. Labor		· .						per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7≂	
Operator of Heavy		0.2	day			460	92	1.5	day ×	
Driver		0.2	day			350	70	1.5	day ×	
Skilled Labor		0.2	day			260	52	1.5	day ×	
Common Labor		0.3	day			230	69	1.5	day ×	
Subtotal							355	ļ		
4. Total					8,876		953	9,829	Baht / 1	. .0
5. Output	Worki	ng Time	per 1	day = 12 H	$r \times 2$ shift			per	1.0	I
Rate = Baht/m					8,876	Baht/m	953	iBaht/m ≠	;	

 $\frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right) + \frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right) + \frac{1}{2} \left(\frac{1}{2} \right) + \frac{1}{2} \left(\frac{1}{2} \right) + \frac{1}{2} \left(\frac{1}{2} \left(\frac{1}{2} \right) + \frac{1}{2} \left(\frac{1}{2}$

	per n			-	-			: Grade	
·		R	ate =	15,504	Baht/m	F.C. =		Baht/m	90
Kok-Ing Tunnel	1	[Foreign (L.C. =		Baht/m	10
Items	Unit	Qua	atity	Rate	Cost	Rate	Cost	R	ema
1. Operation Cost (Equipmen				Annie		- And C	0030	per 1.0 m	
Jumbo Drill, Crawler 2Boons, 150	1	1	Hr	7,235	3,618	35	18	0.5	Hr
Truck with Crane 4t x 2.9t lift	1	0.2	Нг	425	85	25	5	0.2	Hr
Subtotal	 	····			3,703		23	, , , , , , , , , , , , , , , , , , ,	Baht .
2. Material	<u> </u>				· · · ·			per 1.0 m	
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	900		
H-Steel Bending Extra H125-H	1200	0.2	ton	1,449	290	161	32		
H-Steel Rounding Extra		0.2	ton	1,935	387	215	43		
Joint Plate		0.03	ton	5,427	163	603	18		·
Miscellaneous		15	%		1,341		149		
Subtotal					10,281		1,142	1	Baht
3. Labor								per 1.0 m	
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7
Operator of Heavy		0.2	day			460	92	1.5	day
Driver		0.2	day			350	70	1.5	day
Skilled Labor		0.2	day			260	52	1.5	day
Common Labor		0.3	day		· · · ·	230	69	1.5	day
Subtotal		· .					355	·	
4. Total	· · · · ·				13,984		1,520	15,504	Baht

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		Ra	te =	15,573 🛛	Baht/m	F.C. ≈	14,046	Baht/m 90%
Kok-Ing Tunnel						L.C. =	1,527	Baht/m 10%
				Foreign C	urrency	Local Ci	irrency	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fu	el)			1 A A			per 1.0 m
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5 Hr× 1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2 Hr × 1
Subtotal					3,703		23	Baht / 1.0 m
. Material								per 1.0 m
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	900	
H-Steel Bending Extra H125-H	ł200	0.2	ton	1,449	290	161	32	
H-Steel Rounding Extra	I-Steel Rounding Extra			1,935	387	215	43	
Joint Plate				5,427	217	603	24	and the second
Miscellaneous		15	%		1,349		150	
Subtotal					10,343		1,149	Baht / 1.0 m
3. Labor								per 1.0 m
Foreman Tunnel		0.1	day			720	72	0.5 Hr/7= 0.1
Operator of Heavy		0.2	day			460	92	1.5 day × 0.1
Driver		0.2	day			350	70	1.5 day × 0.1
Skilled Labor	12.00	0.2	day			260	52	1.5 day × 0.1
Common Labor		0.3	day	· · · · · · · · · · · · · · · · · · ·		230	69	1.5 day × 0.2
Subtotal		· ·					355	
4. Total		<u> </u>			14,046	<u> </u>	1,527	15,573 Baht / 1.0 m
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift	:		per 1.0 m
Rate = Baht/m					14,046	Baht/m	1,52	7 Baht/m = 15,57

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			R	ate =	10,079	Baht/m	F.C. =	9,101	Baht/m	90%	
	Ing-Yot Tunnel					. ·	L.C. =	978	Baht/m	10%	
					Foreign (arrency	Local C	urrency			
	Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
	Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
	Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2	Hr x	1
	Subtotal	1				3,703		23		Baht / 1.() m
2.	Material								per 1.0 m		
	H-Steel Tunnel Support		0.1	ton	40,500	4,050	4,500	450			
	H-Steel Bending Extra H125~H	1200	0.1	ton	1,449	145	161	16	-		
	H-Steel Rounding Extra		0.1	ton	1,935	1 9 4	215	22			
	Joint Plate		0.02	ton	5,427	109	603	12			
	Miscellaneous		20	%		900		100			
	Subtotal					5,398		600		Baht / 1.	ົກ
3.	Labor								per 1.0 m		
	Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
	Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
	Driver		0.2	day			350	70	1.5	day ×	0.1
	Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
	Common Labor		0.3	day	· · · ·		230	69	1.5	day ×	0.2
	Subtotal				l			355	ļ		
4.	Total					9,101		978	10,079	Baht / 1.	0 m _
5.	Output	Worki	ng Time	per l	day = 12 H	r × 2 shift	· · ·	,	per	1.0	m
	Rate = Baht/m					9,101	Baht/m	978	Baht/m =	•	10,079

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T-149. Unit Rate	her 1			16,001	-			Baht/m	90%	
Ing-Yot Tunnel		14	aic -	10,001		L.C. =		Baht/m	10%	
Ang-1 of 1 units				Foreign C	arrency	Local Ci				
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	F	temark	
1. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k		0,5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	- 85	25	5	0.2	Hr×	1
Subtotal					3,703		23		Baht / 1.0) m
2. Material								per 1.0 m		
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	-900			
H-Steel Bending Extra H125-H	200	0.2	ton	1,449	290	161	32			
H-Steel Rounding Extra		0.2	ton	1,935	387	215	43			
Joint Plate		0.03	ton	5,427	: 163	603	18			
Miscellaneous		20	%		1,788		. 199			
Subtotal					10,728		1,192	ļ	Baht / 1.	0 m
3. Labor								per 1.0 m		
Foreman Tunnel		0.1	day		•	720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day	1 1		460	92	1.5	day ×	0.1
Driver		0.2	day			350	70	1.5	$day \times$	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day_			230	69	1.5	day ×	0.2
Subtotai							355			
4. Total			1		14,431		1,570	16,001	Baht / 1.	0 m
5. Output	Worki	ng Time	per 1	day = 12 H	$r \times 2$ shift	:		per	1.0	м
Rate = Baht/m					14,431	Baht/m	1,570	Baht/m =	e '	16,001

		.	ite =	10,073	Baht/m	r. C. =	14,470	Baht/m	90%	
Ing-Yot Tunnel						L.C. =	1,577	Baht/m	10%	
				Foreign (urrency	Local Cu	irrency			
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	- 35	18	0.5	Hr×	1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2	Hr ×	1
Subtotal					3,703		23	!	Baht / 1.0) m
Material						.*		per 1.0 m		
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	900			
H-Steel Bending Extra H125-H	200	0.2	ton	1,449	290	161	32			
H-Steel Rounding Extra		0.2	ton	1,935	387	215	43			
Joint Plate		0.04	ton	5,427	217	603	24			
Miscellaneous		20	%		1,799		200			
Subtotai					10,793		1,199		Baht / 1.0	0 m
Labor		.			1			per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Operator of Heavy	·	0.2	day			460	92	1.5	day ×	0.1
Driver		0.2	day			350	70	1.5	day ×	0.1
Skilled Labor		0.2	day	· ·		260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day ×	0.2
Subtotal					and the second		355			
Total					14,496		1,577	16,073	Baht / 1.	0 m

		R	ate =	9,351	Baht/m	F.C. =	8,377	Baht/m	90%	
Adit for Ing-Yot No.2 Tunn	el					L.C. =	974	Baht/m	10%	
· .				Foreign (Currency	Local Ci	urrency			
Items	Unit	Quantity		Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipmen	t & Fu	ei)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2	Hr ×	1
Subtotal					2,979		19		Baht / 1.	0 m
2. Material								per 1.0 m		
H-Steel Tunnel Support	- 	0.1	ton	40,500	4,050	4,500	450			
H-Steel Bending Extra H125~H	200	0.1	ton	1,449	145	161	16			
H-Steel Rounding Extra		0.1	ton	1,935	194	215	22			
Joint Plate		0.02			109	603	12			
Miscellaneous		20	%		900		100			
Subtotal					5,398		600		Baht / 1.	0 m
3. Labor								per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.4	Hr/7=	0.1
Operator of Heavy		0.2	day	1997 - A.		460	92	1.5	$day \times$	0.1
Driver		0.2	day			350	70	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day	l	<u> </u>	230	69	1.5	day ×	0.2
Subtotal							355			
4. Total					8,377		974	9,351	Baht / 1.	0 m _
5. Output	Worki	ng Time	per 1	day = 12 H	$r \times 2$ shift	1 - A		per	1.0	m
Rate = Baht/m	5. ¹				8,377	Baht/m	974	Baht/m =	4	9,35

nanda (interaction contraction) in the contraction of the system of the

		R	ite =	15,200	Baht/m	F.C. =	13,642	Baht/m	90%	
Adit for Ing-Yot No.2 Tuni	nel					L.C. =	1,558	Baht/m	10%	
				Foreign C	arrency	Local Ci	аггеясу			
Items	Unit	Quar	itity	Rate	Cost	Rate	Cost	R	temark	
. Operation Cost (Equipmen	t & Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2	Hr ×	1
Subtotal					2,979		19		Baht / 1.(0 m
. Material								per 1.0 m		
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	900			
H-Steel Bending Extra H125-H	1200	0.2	ton	1,449	290	161	32			
H-Steel Rounding Extra		0.2	ton	1,935	387	215	43			
Joint Plate		0.02	ton	5,427	109	603	12			
Miscellaneous		20	%		1,777		197			
Subtotal					10,663		1,184	<u> </u>	Baht / 1.	0 m
3. Labor								per 1.0 m		
Foreman Tunnel		0.1	day			720	72	0.4	Hr/7=	0,1
Operator of Heavy		0.2	day			460	92	1.5	day x	0,1
Driver		0.2	day			350	70	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day x	0.2
Subtotal							355			
4. Total					13,642		1,558	15,200	Baht / 1.	.0 m
5. Output	Worki	ng Time	per 1	day = 12 H	r × 2 shift		· ·	per	1.0	m
Rate = Baht/m			· ·		13,642	Baht/m	1,558	Baht/m =	. .	15,2

		Ra	te =	15,345]	Baht/m	F.C. =	13,772	Baht/m	90%	
Adit for Ing-Yot No.2 Tunne	el					L.C. =	1,573	Baht/m	10%	
				Foreign C	urrency	Local Cu	rrency	· .		
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
. Operation Cost (Equipment	& Fu	el)						per 1.0 m		
Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4	Hr ×	1
Truck with Crane 4t x 2.9t lift	1	0.2	Hr	425	85	25	5	0.2	Hr ×	1
Subtotal					2,979		19		Baht / 1.0	m
2. Material								per 1.0 m		
H-Steel Tunnel Support		0.2	ton	40,500	8,100	4,500	900			
H-Steel Bending Extra H125~H	200	0.2	ton	1,449	290	161	32			
H-Steel Rounding Extra		0.2	ton	1,935	387	215	43			
Joint Plate		0.04	tòn	5,427	217	603	24		:	
Miscellaneous		20	%		1,799		200		<u></u>	
Subtotal	·				10,793		1,199		Baht / 1.0	m
3. Labor		Γ				•		per 1.0 m		. •
Foreman Tunnel		0.1	day			720	72	0.4	Hr/7=	0.1
Operator of Heavy	•	0.2	day			460	92	1.5	day ×	. 0.1
Driver		0.2	day			350	70	1.5	day x	0.:
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day x	0.
Subtetal							355	· · ·		
4. Total					13,772		1,573	15,345	Baht / 1.0	<u>m</u>

T-154. Unit Rate	per l	Meter	of	Upper V	Vireme	sh : Gr	ade D1	,D2,E1,	E2	
		R	ate =	4,576	Baht/m	F.C. =	4,208	Baht/m	92%	
Kok-Ing Tunnel						L.C. =	368	Baht/m	8%	
				Foreign (Currency	Local Ci	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipmen	t & Fu	iel)								
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Subtotal					3,618		18		Baht / m	
2. Material										
Wire Mesh 150 x 150 x D6		20.8	m2	27	562	3	62			
Miscellaneous		5	%		28		3			· .
Subtotal		ļ		ļ	590		65		Baht / m	
3. Labor					•					
Foreman Tunnel		0.1	day		•	720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			. 230	69	1.5	day x	0.2
Subtotal				· · · ·			285		Baht / m	
4. Total					4,208		368	4,576	Baht / m	
5. Output					·			per	1.0	m
Rate = Baht/m		. *	5. j. j.		4,208	Baht/m	368	Baht/m =	:	4,576

•		R	ate =	2,730	Baht/m	F.C. =	2,429	Baht/m 89%
Kok-Ing Tunnel		÷.				L.C. =	301	Baht/m 11%
	1. 1. 1.	1	÷	Foreign (Currency	Local C	irrency	
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fr	iel)						
Jumbo Drill, Crawler 2Booms, 150k	1	0.3	Hr	7,235	2,171	. 35	. 11	0.3 Hr × 1
Subtotal			• " •		2,171		11	Baht / m
2. Material			· .					·
Wire Mesh 150 x 150 x D6		9.1	m2	27	246	3	27	
Miscellaneous		5	%		12		1	
Subtotal	÷				258		28	Baht / m
3. Labor								
Foreman Tunnel	· .	0.1	day			. 720	72	0.3 Hr/7= 0.1
Operator of Heavy	. *	0.2	day			460	92	1.5 day × 0.1
Skilled Labor		0.2	day			260	52	1.5 day × 0.1
Common Labor	е. н. н. Стала	0.2	day			230	46	1.5 day × 0.1
Subtotal						l	262	Baht / m
4. Total				· ·	2,429		301	2,730 Baht / m
5. Output								per 1.0 m
Rate = Baht/m					2.429	Baht/m	301	Baht/m = 2,7

			R	ate =	5,023	Baht/m	F.C. =	4,610	Baht/m 92%	
	Ing-Yot Tunnel						L.C. =	413	Baht/m 8%	
				• .	Foreign (Currency	Local C	urrency		
	Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	Remark	
ι.	Operation Cost (Equipmen	t & Fu	el)							
	Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5 Hr ×	1
	Subtotal					3,618		18	Baht / m	
2.	Material									
	Wire Mesh $150 \times 150 \times D6$		35.0	m2	27	945	3	105		
	Miscellaneous		5	%		47		5		
	Subtotal					992		110	Baht / m	
3.	Labor								· .	
	Foreman Tunnel	•	0.1	day			720	72	0.5 Hr/7=	0.1
	Operator of Heavy		0.2	day			460	92	1.5 day ×	0.1
	Skilled Labor		0.2	day			260	52	1.5 day ×	0.1
•	Common Labor		0.3	day			. 230	69	1.5 day x	0.2
	Subtotal							285	Baht / m	
1.	Total		· ·			4,610		413	5,023 Baht / m	
5.	Output								per 1.0 m	i'.
	Rate = Baht/m		• . •			4,610	Baht/m	413	Baht/m =	5,02

	T-157. Unit Ra	te per	r Met	er o	f Lower	Wiren	nesh : (Frade I	D2,E1,E2
			Ra	ate =	3,495	Baht/m	F.C. =	3,166	Baht/m 91%
	Ing-Yot Tunnel						L.C. =	329	Baht/m 9%
				• .	Foreign	Currency	Local C	urrency	
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark
1.	Operation Cost (Equipmen	t & Fu	el)					1. A	
	Jumbo Drill, Crawler 2Booms, 150k	1	0.4	Hr	7,235	2,894	35	14	0.4 Hr × 1
	Subtotal					2,894		14	Baht / m
2.	Material		· .			÷			
	Wire Mesh 150 x 150 x D6		9.6	m2	27	259	3	29	
	Miscellaneous		5	%		. 13		• 1	the second states and
	Subtotal					272	· · · ·	30	Baht / m
3.	Labor						· ·		
	Foreman Tunnel		0.1	day	- A		720	72	0.4 Hr/7≖ 0.1
	Operator of Heavy		0.2	day			460	92	1.5 day × 0.1
	Skilled Labor		0.2	day		- 4 	260	52	1.5 day × 0.1
	Common Labor	1	0.3	day			230	· · · 69	1.5 day × 0.2
	Subtotal				1		I	285	Baht / m
4.	Total					3,166		329	3,495 Baht / m
5.	Output								per 1.0 m
	Rate = Baht/m					3,166	Baht/m	329	Baht/m = 3,495

		R	ate =	4,390	Baht/m	F.C. =	4,040	Baht/m	92%	
Adit for Ing-Yot No.2 Tuni	nel					L.C. =	350	Baht/m	8%	
				Foreign (Currency	Local C	urrency			
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1. Operation Cost (Equipmen	t & Fu	el)								
Jumbo Drill, Crawler 2Booms, 150k	1	0.5	Hr	7,235	3,618	35	18	0.5	Hr ×	1
Subtotal					3,618		18]	Baht / m	
2. Material										
Wire Mesh 150 x 150 x D6		14.9	m2	27	402	3	45			
Miscellaneous		5	%		20		2			
Subtotal					422		47		Baht / m	
3. Labor										
Foreman Tunnel		0.1	day			720	72	0.5	Hr/7=	0.1
Operator of Heavy		0.2	day			460	92	1.5	day ×	0.1
Skilled Labor		0.2	day			260	52	1.5	day ×	0.1
Common Labor		0.3	day			230	69	1.5	day ×	0.2
Subtotal							285		Baht / m	
4. Total		i			4,040		350	4,390	Baht / m	
5. Output								per	1.0	m .
Rate = Baht/m			. '	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	4,040	Baht/m	350	Baht/m =		4,390

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	T-159. Unit Rat	te per	Rate =		Baht/m			Baht/m 89%
	Adit for Ing-Yot No.2 Tunn	el	Nate -	2,027	Danom	L.C. =		Baht/m 11%
-	Aut for the Totalou Aut			Foreign (Currency	Local C		
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1.	Operation Cost (Equipmen	t & Fu	iel)				· · ·	· · · ·
	Jumbo Drill, Crawler 2Booms, 150k	1	0.3 Hr	7,235	2,171	35	11	0.3 Hr × 1
	Subtotal			· .	2,171		11	Baht / m
2.	Material							
	Wire Mesh 150 x 150 x D6		5.8 m2	27	157	3	17	
	Miscellaneous		5 %		8		1	
	Subtotal				165		18	Baht / m
3.	Labor							
	Foreman Tunnel		0.1 day			720	- 72	0.3 Hr/7= 0.1
	Operator of Heavy		0.2 day	4. A.	-	460	92	1.5 day × 0.1
	Skilled Labor		0.2 day	1		260	52	1.5 day × 0.1
	Common Labor		0.2 day			230	46	1.5 day × 0.1
	Subtotal						262	Baht / m
4	. Total	11			2,336		291	2,627 Baht / m
5.	. Output							per 1.0 m
ĺ	Rate = Baht/m		a ser e		2,336	Baht/m	291	Baht/m = 2,627

			Ra	ite =	15,466	Baht/m	F.C. =	8,409	Baht/m	54%	
	Kok-Ing Tunnel						L.C. =	7,057	Baht/m	46%	
					Foreign C	urrency	Local Cu	rrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10.5 m		
	Concrete Pump Pipe 90~100m3/hr	i I	5	Hr	1,805	9,025	45	225	5	Hr×	1
	Vibrator Converter 60mm	1	5	day	108	540	18	90	5	day ×	1
	Subtotal					9,565		315	F	Baht / 10).5m
2.	Material								per 10.5 m	a.	
	Ready Mixed Concrete 180k	(g/cm2	84	m3	781	65,604	639	53,676	· ·		
	Miscellaneous		20	%		13,121		10,735	} 		
	Subtotal					78,725		64,411		Baht / 10).5 m
3.	Labor								per 10.5 m	i i	
	Foreman Tunnel		5.0	day			720	3,600	5.0	day ×	5.0
	Operator of Heavy		0.8	day			460	368	1.5	day ×	0.5
	Skilled Labor		7.5	day		-	260	1,950	1,5	day ×	5.0
	Common Labor		15.0	day			230	3,450	1.5	day ×	10.0
	Subtotal							9,368		1.11	
4.	Total					88,290		74,094	162,384	Baht / 10	0.5 m
5.	Output	Worki	ng Time	per 1	day = 12 H	lr × 2 shif	t		per	10.5	m
	Rate = Baht/m		-	-		8,409	Baht/m	7,05	7 Baht/m =		15,46

		Ra	ite =	18,887]	Baht/m	F.C. =	10,366	Baht/m 55%
Kok-Ing Tunnel						L.C. =	8,521	Baht/m 45%
				Foreign C	urrency	Local Cu	irrency	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fu	el)						per 10.5 m
Concrete Pump Pipe 90-100m3/hr	1	6	Hr	1,805	10,830	45	270	6 Hr x 1
Vibrator Converter 60mm	1	5	day	108	540	18	90	5 day × 1
Subtotal					11,370		360	Baht / 10.5m
2. Material								per 10.5 m
Ready Mixed Concrete 180k	g/cm2	104	m3	781	81,224	639	66,456	
Miscellaneous		20	%		16,245		13,291	
Subtotal					97,469		79,747	Baht / 10.5 m
3. Labor					1 			per 10.5 m
Foreman Tunnel	· · ·	5.0	day			720	3,600	5.0 day \times 5.
Operator of Heavy	:	0.8	day			460	368	1.5 day × 0
Skilled Labor		7.5	day			260	1,950	1.5 day × 5.
Common Labor		15.0	day			230	3,450	1.5 day × 10
Subtotal							9,368	
4. Total					108,839		89,475	198,314 Baht / 10.5 m

			R	ate =	20,195	Baht/m	F.C. =	11,091	Baht/m	55%	
	Kok-Ing Tunnel						L.C. =	9,104	Baht/m	45%	
					Foreign (urrency	Local Ci	іггепсу			
	Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1.	Operation Cost (Equipmen	t & Fu	el)						per 10.5 m	l I	
	Concrete Pump Pipe 90~100m3/hr	1	6	Hr	1,805	10,830	45	270	6	Hr ×	1
	Vibrator Converter 60mm	1	5	đay	108	540	18	90	5	day x	1
	Subtotal					11,370		360]	Baht / 10).5m
2.	Material	•							per 10.5 n	1	
	Ready Mixed Concrete 210k	g/cm2	104	m3	842	87,568	688	71,552			
	Miscellaneous		20	%		17,514		14,310			
	Subtotal					105,082		85,862		Baht / 1().5 m
3.	Labor		÷						per 10.5 п	1	
	Foreman Tunnel		5.0	đay			. 720	3,600	5.0	$day \times$	5.0
	Operator of Heavy		0.8	day	1.1		460	368	1.5	day x	0.5
	Skilled Labor		7.5	day			260	1,950	1.5	day x	5.0
	Common Labor		15.0	day			230	3,450	1.5	day x	10.0
	Subtotal			•				9,368	+		
4.	Total	· .	<u> </u>			116,452		95,590	212,042	Baht / 10	0.5 m
5.	Output	Worki	ng Time	per 1	day = 12 H	Ir × 2 shift			per	10.5	m j
	Rate = Baht/m					11,091	Baht/m	9,104	Baht/m =		20,19

Items Unit Quantity Rate Cost Rate Cost Remark 1. Operation Cost (Equipment & Fuel) 0 1 8 Hr 1,805 14,440 45 360 8 Hr × Concrete Pump Pipe 90-100m3/hr 1 8 Hr 1,805 14,440 45 360 8 Hr × Vibrator Converter 60mm 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108 540 18 90 5 day × 2. Material 1 1 5 day 106,092 688 86,688 17,338 Miscellaneous 20 % 127,310 104,026 Baht / 10 3. Labor 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 2				F.C. =	Baht/m	24,406	ate =	R	ara Ara ara Ara ara		
Items Unit Quantity Rate Cost Rate Cost Remark 0. Operation Cost (Equipment & Fuel) 1 8 Hr 1,805 14,440 45 360 8 Hr × Concrete Pump Pipe 90–100m3/hr 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108,052 886 Per 10.5 m Ready Mixed Concrete 210kg/cm2 126 m3 842 106,092 688 86,688 Per 10.5 m Miscellaneous 20 % 21,218 17,338 Per 10.5 m Per 10.5 m Subtotal 5.0 day 127,310 104,026 Baht / 10 Jumpel 5.0 day 260 3,600<	6	Baht/m 44%	10,855	L.C. =				18 <u>1</u> 2		Kok-Ing Tunnel	
Items Office Office </th <th></th> <th>· · · ·</th> <th>итепсу</th> <th>Local Cu</th> <th>urrency</th> <th>Foreign (</th> <th>· ,</th> <th></th> <th></th> <th></th>		· · · ·	итепсу	Local Cu	urrency	Foreign (· ,				
Concrete Pump Pipe 90-100m3/hr 1 8 Hr 1,805 14,440 45 360 8 Hr × Vibrator Converter 60mm 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108 540 18 90 5 day × Subtotal 1 5 day 108 540 18 90 5 day × Subtotal 14,980 450 Baht / 10 per 10.5 m Per 10.5 m Ready Mixed Concrete 210kg/cm2 126 m3 842 106,092 688 86,688 Miscellaneous 20 % 21,218 17,338 Per 10.5 m Subtotal 127,310 104,026 Baht / 10 Jack or foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 230 3,450 1.5 day × Subtotal	ĸ	Remark	Cost	Rate	Cost	Rate	ntity	Quan	Unit	Items	
Vibrator Converter 60mm 1 5 day 108 540 18 90 5 day × Subtotal 14,980 450 Baht / 10 per 10.5 m Ready Mixed Concrete 210kg/cm2 126 m3 842 106,092 688 86,688 Miscellaneous 20 % 21,218 17,338 per 10.5 m Subtotal 127,310 104,026 Baht / 10 Joperator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 230 3,450 1.5 day × Subtotal 9,506 9,506 9,506		per 10.5 m						el)	t & Fu	Operation Cost (Equipmen	
Subtotal 14,980 450 Baht / 10 2. Material Ready Mixed Concrete 210kg/cm2 126 m3 842 106,092 688 86,688 Miscellaneous 20 % 21,218 17,338 17,338 Subtotal 127,310 104,026 Baht / 10 Babor 127,310 104,026 Baht / 10 Foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 230 3,450 1.5 day × Subtotal 15.0 day 230 3,450 1.5 day ×	1	8 Hr×	360	45	14,440	1,805	Hr	8	1	Concrete Pump Pipe 90-100m3/hr	
Outroin Image: constraint of the avy Image: constraint of	1	5 day×	90	18	540	108	day	5	1	Vibrator Converter 60mm	
Ready Mixed Concrete 210kg/cm2 126 m3 842 106,092 688 86,688 Miscellaneous 20 % 21,218 17,338 Subtotal 127,310 104,026 Baht / 10 B. Labor 5.0 day 720 3,600 5.0 day × Foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 230 3,450 1.5 day × Common Labor 15.0 day 9,506 9,506 1.5 day ×	10.5m	Baht / 10	450		14,980					Subtotal	
Miscellaneous 20 % 21,218 17,338 Subtotal 127,310 104,026 Baht / 10 Baht / 10 Per 10.5 m Per 10.5 m Foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 260 1,950 1.5 day × Common Labor 15.0 day 230 3,450 1.5 day ×		per 10.5 m						. *			
Subtotal 127,310 104,026 Baht / 10 3. Labor per 10.5 m per 10.5 m Foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 260 1,950 1.5 day × Common Labor 15.0 day 230 3,450 1.5 day ×		· .	86,688	688	106,092	842	m3	126	g/cm2	Ready Mixed Concrete 210	
Subtrial Janyard <			17,338		21,218		%	20			
Foreman Tunnel 5.0 day 720 3,600 5.0 day × Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 260 1,950 1.5 day × Common Labor 15.0 day 230 3,450 1.5 day × Subtotal 9,506 9,506 9,506 1.5 day ×	10.5 m	Baht / 10	104,026		127,310					Subtotal	
Operator of Heavy 1.1 day 460 506 1.5 day × Skilled Labor 7.5 day 260 1,950 1.5 day × Common Labor 15.0 day 230 3,450 1.5 day × Subtotal 9,506 9,506 1.5 day ×	1.1.1	per 10.5 m								Labor	
Skilled Labor 7.5 day 260 1.950 1.5 day × Common Labor 15.0 day 230 3,450 1.5 day × Subtotal 9,506 9 9 9	: 5.0	5.0 day ×	3,600	720			day	5.0	1.11	Foreman Tunnel	
Common Labor 15.0 day 230 3,450 1.5 day × Subtotal 9,506	c 0.7	1.5 day ×	506	460		1	day	1.1		Operator of Heavy	
Subtotal 9,506	c 5.0	1.5 day ×	1,950	260			day	7.5		Skilled Labor	
	(10.0	1.5 day×	3,450	230			day	15.0		Common Labor	
4. Total 142,290 113,982 256,272 Baht / 1			9,506							Subtotal	
	10.5 m	256,272 Baht / 1	113,982	an an an an an an an an an an an an an a	142,290					Total	
5. Output Working Time per 1 day = $12 \text{ Hr} \times 2 \text{ shift}$ per 10.5	m	per 10.5			lr × 2 shift	day = 12 H	per 1	ng Time	Worki	Output	

		Ra	te =	17,102	Baht/m	F.C. =	9,384	Baht/m 55%
Ing-Yot Tunnel						L.C. =	7,718	Baht/m 45%
				Foreign (Jurrency	Local Cu	irrency	
Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Remark
. Operation Cost (Equipmen	t & Fu	el)						per 10.5 m
Concrete Pump Pipe 90~100m3/hr	1 1	6	Hr	1,805	10,830	45	270	6 Hr× 1
Vibrator Converter 60mm	1	5	day	108	540	18	90	5 day × 1
Subtotal					11,370		360	Baht / 10.5m
2. Material			•				1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	per 10.5 m
Ready Mixed Concrete 1801	cg/cm2	93	m3	781	72,633	639	59,427	
Miscellaneous		20	%		14,527		11,885	
Subtetal		-			87,160		71,312	Baht / 10.5 m
3. Labor								per 10.5 m
Foreman Tunnel		5.0	day	Į		720	3,600	5.0 day × 5.0
Operator of Heavy	. •	0.8	day		·	460	368	1.5 day × 0.5
Skilled Labor		7.5	day			260	1,950	- 1.5 day × 5.0
Common Labor	, et e e	15.0	day			230	3,450	1.5 day × 10.
Subtotal		:					9,368	
4. Total					98,530		81,040	179,570 Baht / 10.5 m
5. Output	Worki	ng Time	per 1	day = 12 I	Hr × 2 shif	t		per 10.5 m
Rate = Baht/m			·		9.384	Baht/m	7,718	Baht/m = 17,1

			Rate =	20,852	Baht/m	F.C. =	11,519	Baht/m 55%
	Ing-Yot Tunnel		·			L.C. =	9,333	Baht/m 45%
				Foreign (Currency	Local Cu	rrency	
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
ί.	Operation Cost (Equipmen	t & Fu	el)					per 10.5 m
	Concrete Pump Pipe 90~100m3/hr	1	7 Hr	1,805	12,635	45	315	7 Hr× 1
	Vibrator Converter 60mm	1	5 day	108	540	18	90	5 day × 1
	Subtotal				13,175		405	Baht / 10.5m
2.	Material							per 10.5 m
•	Ready Mixed Concrete 180k	g/cm2	115 m3	781	89,815	639	73,485	
	Miscellaneous		20 %		17,963		14,697	
	Subtotal				107,778		88,182	Baht / 10.5 m
3.	Labor						÷.,	per 10.5 m
	Foreman Tunnel		5.0 day	- -		720	3,600	5.0 day × 5.0
	Operator of Heavy		0.9 day		1 - L	460	414	1.5 day × 0.6
	Skilled Labor		7.5 day	1.11		260	1,950	1.5 day × 5.0
	Common Labor		15.0 day			230	3,450	$1.5 \mathrm{day} \times 10.0$
	Subtotal						9,414	
4	. Total		1		120,953		98,001	218,954 Baht / 10.5 m
5	. Output	Worki	ng Time per 1	day = 12 l	Hr × 2 shi	h		per 10.5 m
ĺ	Rate = Baht/m		w		- 10 - A - A - A - A - A - A - A - A - A -	Baht/m	9.33	3 Baht/m = 20,8

		R	ate =	22,298	Baht/m	F.C. =	12,321	Baht/m	55%	
Ing-Yot Tunnel				· · · · · ·		L.C. =	9,977	Baht/m	45%	
				Foreign (Currency	Local C	urrency			
Items	Unit	Quar	ıtity	Rate	Cost	Rate	Cost	<u> </u>	lemark	
. Operation Cost (Equipmen	t & Fu	el)						per 10.5 n	1	
Concrete Pump Pipe 90~100m3/hr	1	7	Hr	1,805	12,635	45	315	7	Hr ×	1
Vibrator Converter 60mm	1	5	day	108	540	18	90	5	day ×	1
Subtotal					13,175		405	l	Baht / 10).5m
2. Material								per 10.5 n	n	
Ready Mixed Concrete 210k	g/cm2	115	m3	842	96,830	688	79,120			
Miscellaneous		20	%		19,366		15,824			
Subtotal					116,196		94,944		Baht / 1().5 m
3. Labor								per 10.5 r	n .	
Foreman Tunnel		5.0	day			720	3,600	5.0	day x	5.0
Operator of Heavy		0.9	day			460	414	1.5	day ×	0.6
Skilled Labor		7.5	day			260	1,950	· 1.5	$day \times$	5.0
Common Labor		15.0	day			230	3,450	1.5	day ×	10.0
Subtotal	·						9,414		. •	
4. Total					129,371		104,763	234,134	Baht / 1	0.5 m
5. Output	Worki	ng Time	per 1	day = 12 H	Ir × 2 shift	t		per	10.5	m
Rate = Baht/m					12.321	Baht/m	9,977	Baht/m =	=	22,298

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T-167. Unit Rate pe	er Me	ter of	[Ar	ch & Ri	ib Conc	erete Li	ning : (Grade E	1,E2	
	1.	Ra	nte =	26,680	Baht/m	F.C. =	14,802	Baht/m	55%	
Ing-Yot Tunnel			1	1 1 2 11		L.C. =	11,878	Baht/m	45%	
				Foreign (Currency	Local C	игтерсу	· ·		
Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	R	emark	
Operation Cost (Equipmen	t & Fu	el)					1.5	per 10.5 m		
Concrete Pump Pipe 90~100m3/hr	1	8	Hr	1,805	14,440	45	360	8	Hr×	1
Vibrator Converter 60mm	1	5	day	108	540	18	90	5	day ×	1
Subtotal		,	•		14,980		450	<u> </u>	Baht / 10	.5m
2. Material							1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	per 10.5 m	1	
Ready Mixed Concrete 210k	g/cm2	139	m3	842	117,038	688	95,632			
Miscellaneous		20	%		23,408		19,126			
Subtotal					140,446		114,758	1	Baht / 10	.5 m
3. Labor								per 10.5 m	ł	
Foreman Tunnel		5.0	day			720	3,600	5.0	day ×	5.0
Operator of Heavy		1.1	day			460	506	1.5	day ×	0.7
Skilled Labor		7.5	day			260	1,950	1.5	day ×	5.0
Common Labor		15.0	day			230	3,450	1.5	day ×	10.0
Subtotal					1		9,506		· .	·
4. Total					155,426	1 .	124,714	280,140	Baht / 10).5 m

			R	ite =	14,166	Baht/m	F.C. =	7,694	Baht/m 5	54%
	Adit for Ing-Yot No.2 Tunn	ıel					L.C. =	6,472	Baht/m 4	46%
	······································				Foreign (Currency	Local C	arrency		
	Items	Unit	Quar	tity	Rate	Cost	Rate	Cost	Rem	ark
ι.	Operation Cost (Equipmen	t & Fu	el)						per 10.5 m	-
	Concrete Pump Pipe 90~100m3/hr	1	5	Hr	1,805	9,025	45	225	5 H	írx 1
	Vibrator Converter 60mm	1	5	day	108	540	18	90	5 da	iyx 1
	Subtotal					9,565		315	Bat	nt / 10.5m
2.	Material					· .			per 10.5 m	
	Ready Mixed Concrete 180k	g/cm2	76	m3	781	59,356	639	48,564		
	Miscellaneous		20	%		11,871		9,713		·
	Subtotal					71,227		58,277	Bal	ht / 10.5 m
3.	Labor								per 10.5 m	
	Foreman Tunnel		5.0	day			720	3,600	5.0 da	ayx 5.0
	Operator of Heavy		0.8	day		-	460	368	1.5 da	ay x 0.5
	Skilled Labor		7.5	day			260	1,950	1.5 da	ay x 5.0
	Common Labor	-	15.0	day		<u> </u>	230	3,450	1.5 da	ay × 10.0
	Subtotal		1.1					9,368		
4.	Total	•				80,792		67,960	148,752 Ba	ht / 10.5 m
5.	Output	Worki	ng Time	per 1	day = 12 H	Ir × 2 shift			per 1	0.5 m
	Rate = Baht/m					7,694	Baht/m	6,472	Baht/m =	14,160

	14 g	Rate =	: 17,264	Baht/m	F.C. =	9,473	Baht/m 55%
Adit for Ing-Yot No.2 Tunn	el 👘				L.C. =	7,791	Baht/m 45%
			Foreign (urrency	Local Cu	irrency	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1. Operation Cost (Equipmen	t & Fu	el)					per 10.5 m
Concrete Pump Pipe 90~100m3/hr	1	6 Hr	1,805	10,830	45	270	6 Hr× 1
Vibrator Converter 60mm	1	5 đay	108	540	18	90	5 day× 1
Subtotai				11,370		360	Baht / 10.5m
2. Material							per 10.5 m
Ready Mixed Concrete 180k	g/cm2	94 m3	781	73,414	639	60,066	
Miscellaneous		20 %		14,683		12,013	
Subtotal				88,097		72,079	Baht / 10.5 m
3. Labor						· · ·	per 10.5 m
Foreman Tunnel		5.0 day			720	3,600	5.0 day × 5.0
Operator of Heavy		0.8 day		- -	460	368	1.5 day × 0.5
Skilled Labor	•	7.5 day		· / .	260	1,950	1.5 day × 5.0
Common Labor		15.0 day			230	3,450	1.5 day × 10.0
Subtotal						9,368	
4. Total				99,467		81,807	181,274 Baht / 10.5 m
5. Output	Worki	ng Time per	1 day = 12 H	Ir × 2 shif	t jes		per 10.5 m
Rate = Baht/m		-		1999 - J. B. B.	Baht/m	7 701	Baht/m = 17

	•		R	ate ≃	18,446	Baht/m	F.C. =	10,128	Baht/m 55%	
	Adit for Ing-Yot No.2 Tuni	iel					L.C. =	8,318	Baht/m 45%	
					Foreign (Currency	Local C	агтепсу		
	Items	Unit	Qua	atity	Rate	Cost	Rate	Cost	Remark	:
1.	Operation Cost (Equipmen	t & Fu	el)						per 10.5 m	
	Concrete Pump Pipe 90-100m3/hr	1	6	Hr	1,805	10,830	45	270	6 Hr×	1
	Vibrator Converter 60mm	1	5	day	108	540	18	90	5 day×	1
	Subtotal					11,370		360	Baht / 1	0.5m
2.	Material								per 10.5 m	
	Ready Mixed Concrete 210k	g/cm2	- 94	m3	842	79,148	688	64,672		
	Miscellaneous		20	%		15,830		12,934	·	
	Subtotal					94,978		77,606	Baht / 1	0.5 m
3.	Labor								per 10.5 m	
	Foreman Tunnel		5.0	day			720	3,600	5.0 day ×	5.0
	Operator of Heavy	۰.	0.8	day			460	368	1.5 day×	0.5
	Skilled Labor		7.5	day			260	1,950	1.5 day ×	5.0
	Common Labor		15.0	day	· · · · · · · · · · · · · · · · · · ·		230	3,450	1.5 day ×	10.0
	Subtotal	5 A.						9,368		
4.	Total					106,348		87,334	193,682 Baht / 1	0.5 m
5.	Output	Workin	ng Time	per 1	day = 12 H	lr × 2 shift			per 10.5	m
1	Rate = Baht/m					10.128	Baht/m	8.318	Baht/m =	18,446

			Rate =	22,309	Baht/m	F.C. =	12,397	Baht/m 56%
	Adit for Ing-Yot No.2 Tuni	nel				L.C. =	9,912	Baht/m 44%
				Foreign (Currency	Local C	urrency	
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
ί.	Operation Cost (Equipmen	t & Fu	el)					per 10.5 m
	Concrete Pump Pipe 90-100m3/hr	1	8 Hr	1,805	14,440	45	360	8 Hr× 1
	Vibrator Converter 60mm	1	5 day	108	540	18	90	5 day × 1
	Subtotal	· .			14,980		450	Baht / 10.5m
2.	Material							per 10.5 m
	Ready Mixed Concrete 210k	g/cm2	.114 m3	842	95,988	688	78,432	
	Miscellaneous		20 %		19,198	ang sa sa sa sa sa sa sa sa sa sa sa sa sa	15,686	
_	Subtotal				115,186		94,118	Baht / 10.5 m
3.	Labor							per 10.5 m
	Foreman Tunnel		5.0 day		· .	720	3,600	5.0 day × 5.0
	Operator of Heavy	•	1.1 day			460	506	1.5 day × 0.7
÷	Skilled Labor		7.5 day			260	1,950	1.5 day \times 5.0
	Common Labor		15.0 day		· · · ·	230	3,450	1.5 day × 10.0
	Subtotal						9,506	
4.	Total				130,166		104,074	234,240 Baht / 10.5 m
5.	Output	Workin	ng Time per 1	day = 12 H	lr × 2 shift	1		per 10.5 m
	Rate = Baht/m	· · .			12.397	Baht/m	9.912	Baht/m = 22,30

T-172.	Unit Rate	per	Mete	r of	Waterp	roofin	g : Gra	de C1,	C2,D1,D	2	
			R	ate =	15,655	Baht/m	F.C. =	15,246	Baht/m	97%	
Kok-Ing Tunnel						. •	L.C. =	409	Baht/m	3%	
					Foreign (Currency	Local C	urrency			
Iten	ıs	Unit	Quar	ntity	Rate	Cost	Rate	Cost	R	emark	
1. Material									per 1 m		
Waterproof Sheet f	for NATM 0.8	mm	21	m3	660	13,860	0	0			
Miscellaneous			10	%		1,386		0			
Subtotal					-	15,246		• 0	F	Baht/m	
2. Labor								· .	per 1 m		
Foreman Tunnel			0.1	day	•		720	72		day ×	0.1
Skilled Labor			0.5	day			260	130	1.5	day ×	0.3
Common Labor			0.9	day			230	207	1.5	day x	0.6
Subtotal								409		le pre	
4. Total						15,246		409	15,655 H	3aht / m	: -
5. Output	· .								per	1.0	na.
Rate = Baht/m						15,246	Baht/m	409	Baht/m =		15,65

	T-173. Unit	Rate	per Mete	r of Wa	terpro	ofing : (Grade I	E1,E2
		* ÷	Rate =	17,734	Baht/m	F.C. =	17,325	Baht/m 98%
	Kok-Ing Tunnel					L.C. =	409	Baht/m 2%
				Foreign (Currency	Local C	urrency	
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1.	Material						· · · ·	per 1 m
	Waterproof Sheet for NATM 1	.0mm	21 m3	750	15,750	0	0	
	Miscellaneous		10 %		1,575		0	
	Subtotal				17,325		0	Baht / m
2.	Labor						-	per 1 m
Ì	Foreman Tunnel	•	0.1 day			720	72	day × 0.1
	Skilled Labor		0.5 day			260	130	1.5 day × 0.3
ŀ	Common Labor		0.9 day			230	207	1.5 day × 0.6
	Subtotal						409	
4.	Total				17,325		409	17,734 Baht / m
5.	Output	· .				•	· · · · ·	per 1.0 m
1	Rate = Baht/m				17,325	Baht/m	409	Baht/m = 17,734

		R	ate ≃	16,159	Baht/m	F.C. =	15,750	Baht/m 97%
Ing-Yot No.2 To	unnel with Adit					L.C. =	409	Baht/m 3%
		T		Foreign Currency		Local Currency		
Iter	ns Uni	t Qua	ntity	Rate	Cost	Rate	Cost	Remark
. Material	Material							per 1 m
Waterproof Sheet	for NATM 1.0mm	20	m3	750	15,000	0	0	
Miscellaneous		5	%		750		0	
Subtotal					15,750		0	Baht / m
2. Labor								per 1 m
Foreman Tunnel		0.1	day			720	72	day × 0.1
Skilled Labor		0.5	day			260	130	1.5 day× 0.3
Common Labor		0.9	day			230	207	1.5 day × 0.6
Subtotal		_					409	
4. Total					15,750		409	16,159 Baht / m
5. Output								per 1.0 m
Rate = Baht/m					15.750	Baht/m	409	Baht/m = 16,15

		Rate =	16,476	Baht/m	F.C. =	15,972	Baht/m 97%	
	Ing-Yot Tunnel				L.C. =	504	Baht/m 3%	
			Foreign (lurrency	Local C	urrency		
	Items Un	it Quantity	Rate	Cost	Rate	Cost	Remark	÷.,
1.	Material						per 1 m	
	Waterproof Sheet for NATM 0.8mm	22 m3	660	14,520	0	0		
	Miscellaneous	10 %		1,452		0		
	Subtotal			15,972		0	Baht/π	1 ·
2.	Labor						per 1 m	
	Foreman Tunnel	0.1 day			720	72	day x	0.1
	Skilled Labor	0.6 day	· ·	•	260	156	1.5 day ×	0.4
	Common Labor	1.2 day			230	276	1.5 day ×	0.8
	Subtotal					504		
4.	Total	1. A. A.		15,972		504	16,476 Baht/m	L
5.	Output						per 1.0	m
	Rate = Baht/m		1	15.972	Baht/m	504	Baht/m =	16,47

							,
			· · · ·	1 A.			
e per Mete	r of Wa	terpro	ofing : (Grade	E1,E2		
Rate =	19,479	Baht/m	F.C. =	18,975	Baht/m	97%	
			L.C. =	. 504	Baht/m	3%	
1. A. 1.	Foreign (Currency	Local C	игтепсу			
t Quantity	Rate	Cost	Rate	Cost	I	emark	
					per 1 m		
23 m3	750	17,250	0	0			. · ·
10 %		1,725		0			
		18,975		0		Baht / m	l ·
					per 1 m		
0.1 day			720	72		day 🗙	0.1
0.6 day		· · ·	260	156	1.5	day x	0.4
1.2 day			230	276	1.5	day x	0.8
		· · ·		504			
		18,975		504	19,479	Baht / m	
'					per	1.0	m
		18,975	Baht/m	504	Baht/m =	=	19,479
	Rate = t Quantity 23 m3 10 % 0.1 day 0.6 day	Rate = 19,479 t Quantity Foreign (Rate 23 m3 750 10 % - 0.1 day - 0.6 day -	Rate = 19,479 Baht/m Foreign Currency Quantity Rate Cost 23 m3 750 17,250 10 % 1,725 18,975 0.1 day 12 day 18,975 1.2 day 18,975	Rate = 19,479 Baht/m F.C. = L.C. = Quantity Foreign Currency Local C 23 m3 750 17,250 0 10 % 1,725 0 1 0.1 day 720 260 230	Rate = 19,479 Baht/m F.C. = 18,975 L.C. = 504 Quantity Rate Cost Rate Cost 23 m3 750 17,250 0 0 10 % 1,725 0 0 0 0.1 day 720 72 0 156 1.2 day 230 276 504	L.C. = 504 Baht/m Quantity Rate Cost Rate Cost Rate 23 m3 750 17,250 0 0 0 10 % 1,725 0 0 0 0.1 day 720 72 72 0.6 day 230 276 1.5 1.2 day 18,975 504 19,479	Rate = 19,479 Baht/m F.C. = 18,975 Baht/m 97% L.C. = 504 Baht/m 3% Coal Currency Local Currency Local Currency Quantity Rate Cost Rate Cost Remark 23 m3 750 17,250 0 0 0 10 % 1,725 0 Baht/m 97% 0.1 day 720 72 day × 0.6 day × 230 276 1.5 day × 1.2 day 230 276 1.5 day × 504 19,479 Baht/m per 18,975 504 19,479 Baht/m per 1.0

	T-177. Unit	INA	_						074	
			Rate =	14,584	Baht/m	F.C. =	14,175	Baht/m	97%	
	Adit for Ing-Yot No.2 Tunnel	l				L.C. =	409	Baht/m	3%	
				Foreign (Currency	Local C	urrency			
	Items	Jnit	Quantity	Rate	Cost	Rate	Cost	F	lemark	
1.	Material							per 1 m		
_ `	Waterproof Sheet for NATM 1.0n	ım	18 m3	750	13,500	0	0			
	Miscellaneous		5 %		675		. 0			
	Subtotal				14,175		0		Baht / m	
2.	Labor							per 1 m		
	Foreman Tunnel		0.1 day			720	72		day x	0.1
	Skilled Labor		0.5 day			260	130	1.5	day ×	0.3
	Common Labor		0.9 day			230	207	1.5	day x	0.6
	Subtotal						409			
4.					14,175		409	14,584	Baht / m	
5	Output							per	1.0	m
1	Rate = Baht/m				14,175	Baht/m	405	Baht/m	.	14,58

			Rate =	14,929	Baht/m	F.C. =	14,520	Baht/m 97%
	Adit for Ing-Yot No.2 Ti	ınn ci	-	· .		L.C. =	409	Baht/m 3%
				Foreign (Jurrency	Local C	arrency	
	Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1. 1	Material				:			per 1 m
,	Waterproof Sheet for NATM	0.8mm	20 m.3	660	13,200	0	. 0	
	Miscellaneous		10 %		1,320		0	1. St.
	Subtotal				14,520		0	Baht / m
2.	Labor		· .	· ·		· .		per 1 m
	Foreman Tunnel		0.1 day			720	72	day × 0.1
	Skilled Labor		0.5 day			260	130	1.5 day × 0.3
	Common Labor		0.9 day			230	207	1.5 day × 0.6
	Subtotal					·	409	
4.	Total		· · · ·		14,520		409	14,929 Baht / m
5.	Output							per 1.0 m
	Rate = Baht/m		•	·	14,520	Baht/m	409	9 Baht/m = 14,92

T-179. Un	it Rate	-					
		Rate =	16,909	Baht/m	F.C. =	16,500	Baht/m 98%
Adit for Ing-Yot No.2 Tu	unnel		1. A. A.		L.C. =	409	Baht/m 2%
			Foreign (arrency	Local C	urrency	
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark
1. Material							per 1 m
Waterproof Sheet for NATM	[1.0mm	20 m3	750	15,000	0	• • • 0	
Miscellaneous	•	10 %		1,500		0	
Subtotal				16,500		0	Baht / m
2. Labor	······		:				per 1 m
Foreman Tunnel		0.1 day			720	72	day × 0.1
Skilled Labor		0.5 day			260	.130	1.5 day x 0.3
Common Labor		0.9 day		1	230	207	1.5 day × 0.6
Subtotal						409	
4. Total				16,500		409	16,909 Baht / m
5. Output						- ¹	per 1.0 m
Rate = Babt/m				16,500	Baht/m	40	Baht/m = 16,90

	Т-	180. I	Jnit I	cate	of Form	nwork	ior inv	ert			
			R	ate =	333	Baht/m2	F.C. =	51	Baht/m2	15%	
	Kok-Ing & Ing-Yot, Insi	de Tur	nel				L.C. =	282	Baht/m2	85%	
					Foreign (Currency	Local C	urrency			
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost		Remark	
1.	Operation Cost (Equipment &	k Fuel)									
	Truck with Crane 4t x 2.9t lift	1	12	Hr	425	5,100	25	300	12	<u>Hr</u> ×	1
	Subtotal					5,100		300			
2.	Material										
	Wood for Form		100	m2	0	0	160	16,000			
	Miscellaneous		5	%				800	16,000	Baht/day	
	Subtotal					0		16,800			
3.	Labor										
	Foreman Tunnel		· 1	day			720	720			
	Operator of Heavy		1.5	day			460	690	1.5	day ×	1
	Form-work Labor (Carpenter)		12.0	day			390	4,680	1.5	day ×	8
	Skilled Labor		6.0	day			260	1,560	1.5	day ×	4
•	Common Labor		15.0	day			230	3,450	1.5	day ×	10
	Subtotal							11,100		· .	
4.	Total					5,100		28,200	33,300	Baht/day	
5.	Output = 100 m2/day									100	m2/day
	Rate = Baht/m2					51	Baht/m2	282	Baht/m2	=	333

 $(1,1) \in \mathcal{N}_{0}$

Kok-Ing & Ing-Yot, Insi Items	Quantity per m	Foreign (Currency	Local Ci	irrency	Total
(Grade of Ground)	(Area of Formwork)	Rate	Cost	Rate	Cost	(Baht/m)
Kok-Ing Tunnel			- -			
. B	0 m2/m	51	• 0	282	0	0
C1	0.44 m2/m	51	22	282	124	146
C2	0.44 m2/m	51	22	282	124	146
D1	0.54 m2/m	51	28	282	152	180
D2	0.54 m2/m	51	28	282	152	180
E1	0.66 m2/m	51	34	282	186	220
E2	0.66 m2/m	51	34	282	186	220
Ing-Yot Tunnel without A	dit					
B	0 m2/m	51	0	282	0	0
C1	0.48 m2/m	51	- 24	282	135	159
C2	0.48 m2/m	51	- 24	282	135	159
D1	0.60 m2/п	51	- 31	282	169	200
D2	0.60 m2/m	51	31	282	169	200
E1	0.71 m2/m	51	36	282	200	236
E2	0.71 m2/m	51	36	282	200	236
. Ing-Yot No.2 Tunnel with	Adit					
В	0.48 m2/n	n 51	24	282	135	159
C1	0.48 m2/n	51	. 24	282	135	159
C2	0.48 m2/n	n 51	24	282	135	159
D1	0.60 m2/m	n 51	31	282	169	200
D2	0.60 m2/n	n 51	31	282	169	200
E1	0.71 m2/n	n 51	36	282	200	236
E2	0.71 m2/m	n 51	36	282	200	236
Adit for Ing-Yot No.2 Tu	onel	· · ·				
В	0 m2/r	n 51	0	282	0	0.0
C1	0 m2/r	n 51	0	282	0	0
C2	0 m2/r	n 51	0	282	0	0
D1	0.36 m2/r	n - 51	- 18	282	102	120
D2	0.36 m2/r	n · 51	18	282	102	120
El	0.40 m2/r		20	282	113	133
E2	0.40 m2/r	m 51	20	282	113	133

		R	ate =	- 1,803]	Baht/m3			Baht/m3 59%
Kok-Ing & Ing-Yot				.		L.C. =	. 747	Baht/m3 41%
				Foreign C	urrency	Local Ci	urrency	
Items	Unit	Quar	ntity	Rate	Cost	Rate	Cost	Remark
1. Operation Cost (Equipment	& Fu	el)						· .
Concrete Pump Boom 90~110m3/hr	1	1	Hr	1,965	1,965	65	65	1 Hr×
Subtotal					1,965		65	Baht / 1
2. Material					-			
Ready Mixed Concrete 180kg	g/cm2	10	m3	781	7,810	639	6,390	
Miscellaneous		10	%		781		639	
Subtotal					8,591		7,029	Baht / 1
3. Labor								
Foreman Tunnel		0.1	day	· ·		720	72	day ×
Operator of Heavy		0.2	day			460	. 92	1.5 day ×
Skilled Labor		0.3	day			260	78	1.5 day ×
Common Labor		0.6	day			230	138	1.5 day×
Subtotal							380	
4. Total					10,556		7,474	18,030 Baht / 1
5. Output	Worki	ng Time	e per 1	day = 12 H	lr × 2 shif	t :		per 10.0
Rate = Baht/m3					1,056	Baht/m3	747	Baht/m3 =

		Rate =	1,924	Baht/m3	F.C. =	1,123	Baht/m3 58%	
Kok-Ing & Ing-Yot		· · · · ·	· · · · · · · · · · · · · · · · · · ·		L.C. =	801	Baht/m3 42%	
			Foreign (Currency	Local Ci	irrency		
Items	Unit	Quantity	Rate	Cost	Rate	Cost	Remark	
1. Operation Cost (Equipmen	t & Fu	iel)		· .				
Concrete Pump Boom 90~110m3/hr	1	- 1 Hr	1,965	1,965	65	65	1 Hr× 1	
Subtotal				1,965		65	Baht / 10m3	
2. Material								
Ready Mixed Concrete 210k	g/cm2	. 10 m3	842	8,420	688	6,880		
Miscellaneous		10 %		842		688		
Subtotal				9,262		7,568	Baht / 10m3	
3. Labor	· .					an Alamanan		
Foreman Tunnel		0.1 day	1.1.1		720	72	day × 0,1	
Operator of Heavy		0.2 day			460	92	1.5 day × 0.1	
Skilled Labor		0.3 day		· ·	260	78	1.5 day × 0.2	
Common Labor	- 1	0.6 day		1	230	138	1.5 day × 0.4	
Subtotal						380		
4. Total	. :			11,227		8,013	19,240 Baht / 10m3	
5. Output	Worki	ng Time per 1	day = 12 H	ir × 2 shif	t		per 10.0 m3	
Rate = Baht/m3					Baht/m3	801	Baht/m3 = 1,92	

T-184. U	nit Rate per M	leter of]	(nvert (Concre	te Linir	Ig
Kok-Ing & Ing-Yot						Baht/m
Ko Items	Quantity per m	Foreign C	urrency	Local Ci	irrency	Total
(Grade of Ground)	(Concrete Volume)	Rate	Cost	Rate	Cost	(Baht/m)
. Kok-Ing Tunnel						
В	0 m3/m	1,056	0	747	0	0
C1	4.6 m3/m	1,056	4,858	747	3,436	8,294
C2	4.6 m3/m	1,056	4,858	747	3,436	8,294
D1	5.7 m3/m	1,056	6,019	747	4,258	10,277
D2	5.7 m3/m	1,123	6,401	801	4,566	10,967
E1	6.9 m3/m	1,123	7,749	801	5,527	13,276
E2	6.9 m3/m	1,123	7,749	801	5,527	13,276
2. Ing-Yot Tunnel without A	dit					
В	0 m3/m	1,056	0 1	747	0	0
C1	5.0 m3/m	1,056	5,280	747	3,735	9,015
C2	5.0 m3/n	1,056	5,280	747	3,735	9,015
D1	6.3 m3/m	1,056	6,653	747	4,706	11,359
D2	6.3 m3/m		7,075	801	5,046	12,121
E1	7.5 m3/m	1,123	8,423	801	6,008	14,431
<u>E2</u>	7.5 m3/m	1,123	8,423	801	6,008	14,431
3. Ing-Yot No.2 Tunnel with	Adit					
В	5.0 m3/n		5,280	747	3,735	9,015
C1	5.0 m3/m	· ·	5,280	747	3,735	9,015
C2	5.0 m3/n	· ·	5,280	747	3,735	9,015
D1	6.3 m3/n		6,653	747	4,706	
D2	6.3 m3/n		7,075	801	5,046	12,121
E1	7.5 m3/n		8,423	801	6,008	14,431
E2	7.5 m3/n	a <u>1,123</u>	8,423	801	6,008	14,431
4. Adit for Ing-Yot No.2 Tur	1 .					0
B	0 m3/n	1				
C1	0 m3/n					. 0
C2	0. m3/n				1	
D1	3.8 m3/r			L .	1	6,852
D2	3.8 m3/r					7,311
E1	4.2 m3/r		1 .	1.	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
E2	4.2 m3/r	n 1,123	4,717	801	3,364	8,081

	T-185. Uni	t Kat	e oi k	eini	orcea	sar/ton	; Grau	C D2,D.	Lyllia		
			R	ate =	20,952	Baht/ton	F.C. =	17,765	Baht/ton	85%	
	Kok-Ing & Ing-Yot						L.C. =	3,187	Baht/ton	15%	
					Foreign Currency		Local Currency		-		
	Items	Unit	Quan	tity	Rate	Cost	Rate	Cost	Re	mark	
1.	Operation Cost (Equipment &	k Fuel)									
	Truck with Crane 4t x 2.9t lift	2	48	Hr	425	20,400	25	1,200	24	Hr ×	2
	Subtotal					20,400		1,200		<u> </u>	
2,	Material										
	Reinforced Bar D16-D25		10	ton	13,104	131,040	1,456	14,560			
	Miscellaneous		20	%		26,208		2,912	Ba	ahi/day	
	Subtotal					157,248		17,472			
3.	Labor									÷	
	Foreman Tunnel		1	day			720	720		· · ·	
	Operator of Heavy		3.0	day			460	1,380	1.5	day ×	2
	Steel Worker (Bender/Fixer)		12.0	day			350	4,200	1.5	day ×	8
	Common Labor		30.0	day			230	6,900	1.5	day ×	20
	Subtotal			1				13,200			
4.	Total					177,648		31,872	209,520 B	aht/day	

Kok-Ing & Ing-Yot		esti di	- <u>-</u>			Baht/1
Items	Quantity per m	Foreign C	urrency	Local Currency		Total
(Grade of Ground)	(ton/m)	Rate	Cost	Rate	Cost	(Baht/m)
. Kok-Ing Tunnel						
D2	0.70 ton/m	17,765	12,436	3,187	2,231	14,667
E1	0.65 ton/m	17,765	11,547	3,187	2,072	13,619
E2	1.12 ton/m	17,765	19,897	3,187	3,569	23,466
. Ing-Yot Tunnel without A	dit		1. A. A.			
D2	0.76 ton/m	17,765	13,501	3,187	2,422	15,923
E1	0.72 ton/m	17,765	12,791	3,187	2,295	15,086
E2	1.23 ton/m	17,765	21,851	3,187	3,920	25,771
3. Ing-Yot No.2 Tunnel with	Adit					
D2	0.76 ton/m	17,765	13,501	3,187	2,422	15,923
E1	0.72 ton/m	17,765	12,791	3,187	2,295	15,086
E2	1.23 ton/m	17,765	21,851	3,187	3,920	25,771
Adit for Ing-Yot No.2 Tur	inel					
D2	0.50 ton/m	17,765	8,883	3,187	1,594	10,477
E1	0.44 ton/m	17,765	7,817	3,187	1,402	9,219
E2	0.75 ton/n	17,765	13,324	3,187	2,390	15,714