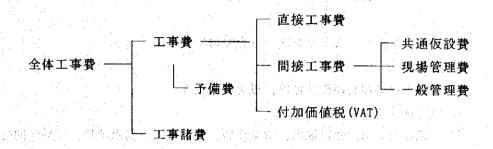
第4章 工事費の積算

\$P\$《大台》:"我们是有知识的是一个的,这个人的。"

4.1 工事費積算の条件

(1) 工事費の構成

工事費の構成は、下記の通りである。



A. 双翻作用,高品格拉门面标。

1) 直接工事費

下記(4)で述べる範囲の工事に係る直接工事費である。

2) 間接工事費

民間業者への請負工事とし、共通仮設費・現場管理費、及び一般管理費をそれぞれ直接工事費の10%ずつ計上するものとする。従って、間接工事費は直接工事費の20%となる。共通仮設費に含まれるものは、仮設費、運搬費、準備費、営繕費、間接労務費等々。現場管理費に含まれるものは、労務管理費、事務用品費、通信交通費、交際費、補償費、租税公課、保険料等であり、一般管理費には本支店経費、利益等が含まれる。

3) 付加価値税(VAT)

直接工事費に間接工事費を加えた額の7%をVATとして計上する。

(**4)。 <u>予備費</u>入集的大力。如大百人,**是物品自己,并各省十八百,可以上

予備費は、工事費の積算時と工事段階での価格差の相違による経費増や各種工事の実施段階で発生する不測の事態に対応するためのものである。予備費としては、工事の内容と実施予定時期から勘案して、直接工事費に間接工事費と付加価値税(VAT)を加えた額の5%を計上する。

5)、工事諸費而具有自然的。於為此則,所以其以其一的以及於此可

工事諸費は、JICA事務所長が工事発注するにあたって必要とする諸経費であり、工事費の5%とする。

(2) 工事費積算の範囲

この工事費の積算には、供与資機材及び請負業者が行う工事を監理・監督する費用は含まれない。

(3) 施工単価

施工単価は、現地で調査・確認した材料価格、労務賃金、建設機械の単価を基に 積み上げたもの、或いは現地業者より取り寄せた見積価格を参考に積み上げたもの である。また、前年度事業として実施された「東部タイ農地保全計画モデルインフラ整備事業」の施工単価も参考にした。

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T-시회학수 관리 티트 (축

THE RESERVE OF THE PROPERTY OF

(4) 工事の範囲

本工事に含まれる工事は、下記のとおりである。

- a) パッツンタニーA I センター (全て材工共)
- 7.1) 图 準備工 2 日本 公司 2 終初
- 工事の準備及び後片付け、現場の測量等
- 2) 給水施設工
 - 一深井戸工 (深井戸掘削、電気検層、井戸仕上、揚水試験、ポンプ据付、 配管工、受電工、試運転)

- 給水塔工(基礎工、給水塔設置)
- 一給水管工
- 3) パドックエ

- シーナエ、コンクート舗装工、排水工厂管理施設工(牧柵、門扉に植栽)

- [4] "道路整備工程" "一点" "在是"上版" "是是是自己的文化的"外域" 是是在"
 - 日中アプローチ道路工具**(土工にアスファルト舗装工)**(日本の日本語の日本)
- (5) 堆肥<u>舍工以下是一个</u>是一个人的。
 - お台土工、コンクート舗装工、排水工業等の資源等と対象には解析的を強
 - 一堆肥舎上屋工(RC壁、スレート屋根)にある方式を行う場合で
- b) チャイバダン酪農展示センター (ポンプ設備及びその配管材と付属設備、パイプライン管材、バルブ、スプリ ンクラーは支給品。その他は全で材工共)

当人工工工工工企业的工工等管理的管理企业工具建设民工工厂。

有证的证据是自由证据的证据 化压缩电路

国民共產黨的計畫與國際部門 医二氯甲酚甲基异物的

- 1) 準備工
 - ー工事の準備及び後片付け、現場の測量等
 - 2) 灌漑施設工
 - ー深井戸工(電気探査、井戸掘削、電気検層、井戸仕上、揚水試験、 ポンプ据付工、配管工、受電工、試運転)
 - 一ため池工(土工、階段工、表面遮水工)。今天、おきの原子で、おり
 - ー配水施設工(土工、ポンプ据付工、ポンプ小屋工、パイプライン布設工、 試運転)

3) 道路整備工

- 一主要建物進入路工(土工、アスファルト舗装工)
- -幹線道路工(土工、アスファルト舗装工)

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400-216

- 支線道路取付工(土工、アスファルト舗装工)

4. 2 全体工事費

· 1888年1905年186日

医缺氧性 静态 医乳质管肠炎

激光的非黑相连接多角的

文艺,也是事情的

全体工事費は、次頁に示すとおりであり、その合計は<u>6,852,000</u>バーツとなり、1995年1月時点の換算で<u>27,408,000</u>円となる。

タイ国中部酪農開発計画 モデルインフラ整備事業施設整備工事

全体工事费

工種	数量	金額	備 考
1. 直接工事費			
A. パッツンタニーAIセンター			
1) 給水施設工	1式	1, 121, 000	
2) パドックエ	1 / 所	543, 000	
3) 堆肥舎工 4) 道 路 工	1 棟 262 m	345, 000	
47 趋 断 土	202 M	210, 000	
小計		2, 219, 000	
D. そ、ノバが、新田屋ニにいた。			
B. チャイバダン酪農展示センター1) 灌漑施設工	1	0 105 000	
2) 道 路 工	1 式 489 m	2, 105, 000 529, 000	
2)是 时 土	400 M	529, 000	
小計		2, 634, 000	
直接工事費計(A+B)		4, 853, 000	
2. 間接工事費			
1) 共通仮設費・現場管理費	1 式	485, 000	直接工事費の10%
2) 一般管理費		485, 000	直接工事費の10%
間接工事費計		970, 000	
3. 付加価値税(VAT)	1 式	407, 000	直・間工事費計の7%
一工事 / 1 + 2 + 2 \			
工事費(1+2+3)		6, 230, 000	

工工種	数量	金額	備考
4. 予 備 費	1 式	311,000	工事費の5%
合計 (1~4)		6, 541, 000	
5. 工事諸費	1 式	311,000	工事費の5%
全体工事費(1~5)		6, 852, 000	

	film och stadt för bli film och film för		
※ 対円換算額:	[18] 深情神经的。	Herry L. M. L.	
	Rt	1 US\$ = 100.00 円	
現地通貨全体工事費	$^{\circ}$ 6.852.000 $ imes$ $-$	1 US\$ = 25.00 Bt	= 27,408,000 円
	i îndici porto altre el La compositorio de la compositorio		

工事實明細書

	₩.			

工工種	数量	単位	金額	内訳書	内答
1. 直接工事費		A. 25.00 pt			
(A) パッツンタニーA I センター		and the second			
Aı 給水施設工		p to contrast per even	1, 121, 000	A - 1	
1)探井戸正	1	力所	904, 000	A-1-1	井戸:φ100mm d=300m ポンプ:水中モーターポンプ φ32mm Q=421/min 1 unit
2) 給水塔工	1	力所	195, 000	A-1-2	V= 5 m³ H=18m
3)配水管工	1	式	22, 000	A-1-3	φ1. 5"=60m • φ0. 75"=56m
Az パドックエ	1	力所	543, 000	A – 2	700m ² うちコンクリート舗装=400m ²
Aa 堆肥舎工	1	カ所	345, 000	A – 3	50m²(10m x 5m)
Aa 道路工			210, 000	A – 4	
1)搾乳牛舎進入路	70	m	74, 000	A-4-1	7スファルト舗装 W=4.0m
2)精液処理棟雄牛舎進入路	44	m	18, 000	A-4-2	ラテライト道路 ₩=3.5m
3)堆肥舎進入路	148	m	118, 000	A-4-3	ラテライト道路 ₩=5.0m
小 計			2, 219, 000		
(B) チャイバダン展示センター					
B ₁ 灌溉施設工			2, 105, 000	B-1	
1) 深井戸工	1	力所	523, 000	B-1-1	井戸: φ150mm d=80m ポンプ:水中モーターポンプ(支糸 φ50mm Q=2501/min 1 uni
2) ため池工	1	カ所	1, 306, 000	B-1-2	V=4500m ³ ・表面遮水3100m ³
3) 配水施設工	1	式	276, 000	B-1-3	材料支給(材料費含まず) φ100mm=210mφ80mm=480m ポンプ:φ65mm 1 unit
B ₂ 道路工			529, 000	B – 2	
1)主要建物進入路工	180	m	181, 000	B-2-1	7277ルト舗装 〒=4.0m
2)幹線道路工	294	m	333, 000	B-2-2	7277ルト舗装 ▼=5.0m

工事費明細書

シーナー・エンド・セナ 単位:バーツ

工 種	数量	単位	金 額	内訳書	内 容
3) 支線道路取付工	15	m	15, 000	B-2-3	7277小舖装 W=4.0m
小計			2, 634, 000		
直接工事費計		and the state of	4, 853, 000		
2. 間接工事費		Mady leaders	970, 000		
共通仮設費・現場管理費	1	式	485, 000		直接工事費の10%
一般管理費	1	式	485, 000		直接工事費の10%
直・間工事費計(1+2)			5, 823, 000	e persona	
3. 付加価値税 (VAT)	1	式	407, 000		直接・間接費の7%
工事費 (1+2+3)		1	6, 230, 000		
4. 予備費	1	式	311, 000		工事費の5%
合計 (1~4)		Company on the	6, 541, 000		
5. 工事諸費	i	式	311, 000		工事費の5%
全体工事費(1~5)			6, 852, 000		
			A contraction		
		and the same and		· ·	
		2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1) }	
		No contract of			

※ 対円換算額:

現地通貨全体工事費 6.852,000^{Bt} × 1 US\$ = 100.00 円 1 US\$ = 25.00 Bt = 27,408,000 円

給水施設工

	单					- 4	
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						単位:バーツ
名。称	数量	単位	単価	金額	内訳書	備考
合水 施 設 工						
1)深井戸工	1	式		904, 000	A=1-1	
2) 給水塔工	1.0	式		195, 000	A-1-2.	
3)給水管工	1	式		22, 000	A-1-3	
合 . 計		wa bani Armera		1, 121, 000		
	4.4 805					
		The second second			1717	
	1,520,642					
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		The second secon				
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		and the second	4 () () () () () () () () () (
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1) 深井戸工

工事費內訳書

一金、 904, 000/バーツ

			and the state of t	<u> </u>	•	
名。称	数量	単位	単価	金額	単価表	備考
準備工	1	式		20, 000		
井戸掘削 φ8°	3 0 0	m	1, 700	510, 000		
電気検層	1	式		17, 000	·	
ケーシング設置 φ4"	288	m	500	144, 000		G.S. pipe
スクリーン設置 φ 4 "	1 2	m	3, 300	39, 600		ステンレススチール
井戸任上	1	式		35, 000		19 may 5 40 pg - 12
揚水試験	. 1	式		40, 000	-	
水中モーターポンプ ø32mm		セット	32, 000	32, 000		401/min,100m
水中ケーブル	100	m	20	2, 000	Strya i	
ライザーパイプ	7 1	m	130	9, 230	in the state of	
吐出エルボ等付属品	1.	セット	8, 000	8, 000		<i>y</i>
コントロールボックス	. 1	セット	21, 000	21, 000		
据付	1	式		8, 500		
i				886, 330		
雑 工	1	式		17, 670		
合計				904, 000		
						:
	Transport of the Control of the Cont	e established				· :
		and the second				\$ t.
The street teach to the street of the street			——————————————————————————————————————			

2)給水塔工

名称	数量	単位	単価	金額	単価表	備考
給水塔 シャンペン型 Q=5m³, H=18m	1	基	105, 000	105, 000		
PCパイル 1-22 x 22 x 14.0m	1 6	本	3, 000	48, 000		
同上打設工 0.700 11	16	本	800	12, 800		
据》的工	37. 6	п ³	40	1, 504		
埋戻し工	31.0	n ³	60	1, 860	X 50 02	
基礎栗石工	1.1	3 B	450	495		
均しコンクリートエ	0.5	ДЗ	1, 200	600		1/10 K.C.
コンクリートエ	4. 6	М3	1. 600	7, 360		\(\frac{1}{2} \cdot \frac{1}{2} \cdot \frac{1}{2
鉄 筋 工 Ø6mm	60	kg	16	960		
φ9mm	120	kg	16	1, 920		
φ 1 2 m m	120	kg	15			
アンカーボルト-φ25 x1200mm	55. 5	kg	40	2, 220	Notes 21	12本
型枠工	20	m²	350	7, 000		
a	•			191, 519		
维 工	1	式		3, 481		
<u>合計</u>				195, 000		
H P				100,000		
		- 5	8 -			

3)給水管工

工事費内訳醬

_一金、 22,000/パーツ

					<u> </u>		単位:ハーツ
名	**	数量	単位	単価	金額	単価表	備考
GSPパイフ	¢ 1. 5"	6 0	m	85	5, 100		Now that
同上エルボ	ø 1. 5 ′	1 0	個	35	350		and
同上チーズ	φ1. 5″ x 0. 75″	1	個	· 5 (80	80 (1981)		
バルブ	φ1.5"	1	個	700	700	, 1844 i	
バルブ	φ0.75"	2	個	450	900	1,500	
給水栓	φ0.75**	1	個	50	50	·	
PVCパイプ	r φ0.75"	5 6	m	20	1, 120	3 1	
配管工 GS	S P – φ 1. 5"	6 0	m	160	9, 600		
配管工PV	$7 \text{ C} - \phi 0.75\%$	5 6	m	70	3, 920		
	a				21, 820		
雑工		1	式		180		1 1 1 1 1
		J. Val			e grafte fragilista	.e 1 []	
į	計		14		22, 000		
			a de la companya de l				
		10 m				· · · · · · · · · · · · · · · · · · ·	
		1000	***************************************				1 1/2
		and the second					
				; ;			

543, 000/パーツ

			内訳			
一金、 543,000/バーツ						単位: バーツ
名称	数量	単位	単二価	金 額	単価表	帯山・ハーノ
パドックエ						
·± ±				56, 500		
基盤整正工・不陸整正・締固め	760. 0	m ²	15	11.400		
切盛土工 普通土・場内流用	47. 5	m ³	40	1, 900		
盛 土 工 購入土: ラテライト	180. 0	m ³	240	43, 200		
・舗装工	1 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1			174, 220		
表層工 コングリート舗装 t=100mm	457. 6	m²	200	91, 520		
鉄網工 φ6 mm-200mm x 150mm	460. 0	m²	100	46. 000		
路盤工 クラッシャーラン路盤 t=150mm	460. 0	m²	70	32, 200		1
緑止工 コンクリート 100mm x 250mm	30. 0	m	150	4, 500		
・排水工				74, 300		
側溝工 コンクリートU形-400x300mm	100.0	m	720	72, 000		
溝ぶた L形鋼25x25/450x1.0m	4	枚	200	800	1 (a	
沈砂桝工 RC管-φ1000mm	1	箇所	1, 500	1, 500		
・管理施設工				230, 900		
飼情・水槽工 コンクリート L=12.0m	1	箇所	18, 000	18, 000		
牧柵工 鋼管牧柵A型(標準)	134. 0	m	1, 370	183, 500		
牧柵工 鋼管牧柵B型(飼槽)	12. 0	m	800	9, 600		
植樹工 トリネコ・φ10~20cm	11	本	1, 800	19, 800		Pterocarpens
計				535, 920		
雑工	1	式		7, 080		
		Andrew Company				
合 計				543, 000		

堆 肥 舎 工

工事費内訳書

一金、345,000/パーツ

名称	数量	単位	単 価	金 額	単価表	単位:ハーツ 備 考
堆 肥 舎 工						
·± I				50, 503		
基盤整正工 不陸整正・締固め	172. 2	m²	15	2, 583		
切盛土工 普通土・場内流用	220. 0	ш³	40	8, 800		
盛 土 工 購入土: 7777仆	163. 0	щЗ	240	39, 120		
・舗装工				45, 140		
表層工 セメントコンクリート版 t=100mm	122. 0	m ²	200	24, 400		エプロン・舎内床
鉄網工 φ6 mm-200mm x 150mm	122. 0	m²	100	12, 200	:	"
路盤工 クラッシャーラン路盤 t=150mm	122. 0	m²	70	8, 540		"
・排水工				20, 532		
側溝工 コンクリートU形-150x150mm	9.6	m	630	6, 048		グレーチングふた付
側溝工 コンクリートU形-200x200mm	10.0	m	260	2, 600	•	
側溝工 コンクリートU形-400x300mm	11. 2	m	720	8, 064		
側溝工 砕石雨受け-600x200mm	12.0	m	55	660	, '	:
管きょエ RCP- Ø 200 mm	9. 0	m	240	2, 160		
接続桝工 500x500x1000・箱形	1	箇所	1, 000	1, 000		
・堆肥舎工		1			;	
上屋工 RC構造・スレート葺き	1	式		221, 701	A-3-1	10.0m x 5.0m
				337, 876		
,推工	1	式		7, 124		: :-::::::::::::::::::::::::::::::::::
合 計				345, 000		

上屋工 RC構造・スレート葺き

工事費內訳書

_一金、 221, 701/バーツ

単位:パーツ

名。称	数量	単位	単価	金 額	単価表	単位:バーツ 備考
上屋工					algunga At	A CONTRACTOR OF THE STATE OF TH
·± ·I					eser (in the contract of the c	and the second of the second o
根切り	52. 3	пЗ	70	3, 661		
埋戻し (根切り土使用)	37. 0	E ³	50	1, 850	lores de los	
残土処分(場内処分)	15. 3	13	50	765		
割栗地業	4.4	дЗ	350	1, 540		
小 計				7, 816		
・躯体工事					All - Reserv	
捨てコンクリート	1.5	m ³	1, 200	1, 800		
コンクリート	23. 0	дЗ	1, 600	36, 800		
型枠	176. 6	2	350	61, 810		
鉄 筋	3. 5	t	15, 000	52, 500		
鉄 骨	1. 78	Ţ.	13, 000	23, 140		
鉄骨加工組立	1. 78	t	8, 000	14, 240		
小 計				190, 290		NAME OF STREET
・仕上工事						
屋根、波型スレート	87. 0	m²	165	14, 355	i sina. Manada	
斬、曲げスレート	12. 0	m²	95	1, 140		
鉄骨OP	80. 0	m²	70	5, 600		
コンクリート金こて押工	50.0	m²	50	2, 500		
小 計				23, 595		
a				221, 701		
	y y					

道路工

工事費內訳書

_一金、 210, 000/バーツ

					<u> </u>		千世・ハーブ
名称		数量	単位	単価	金額	内訳書	備考
道路工							
1)搾乳牛舎進入路工		1	式	A .	74, 000	A-4-1	1 1
2)精液処理棟雄牛舎進	入路工		式		18, 000	A-4-2	13 12 14 L
3) 堆肥舎進入路工)v+d	1	式		118, 000	A-4-3	14. E.
· A Mark (1) A Mark (210, 000		
	76) I						
							A TEA
	11 /2 /						
	##. }						
	- 12 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2						
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							· · · · · · · · · · · · · · · · · · ·
				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
			*			-	
			1				

1) 搾乳牛舎進入路工

1)搾乳牛舎進入路工(7277州舗装:工事延		舗装料 生	編 ▼=4.0m) 内 常尺:			No. A-4-1
_一金、 74,000/バーツ						単位:バーツ
名称	数量	単位	単価	金 額	内訳書	備考
搾乳牛舍進入路工		10 mm				
•± ± (4) (9)				7, 360		
据削捨土/場内 L=50m以内	40. 0	1 3	40	1, 600	. Tomas	PARTIE (S
盛土/購入土:ラテライト	24. 0	13	240	5, 760		
・舗装工			Section was a large	64, 610		
7スファルトコンクリート表層 t= 40mm	281. 0	<u>n</u> 2	150	42, 150		人力施工
粒調採石上層路盤 t=100mm	281. 0	m ²	60	16, 860		
クラッシャーラン下層路盤 t=150mm	80. 0	1)2	70	5, 600		
・舗装雑工		A service of the contract of t				
切盛土/普通土・場内流用	12. 7	m ³	60	762		
計		100		72, 732		
・雑 エ	1	式		1, 268		
		enige to an				
合 計				74, 000		
		2 de 19 de 1	To a fig. 1 depends			
			American Company			
		The state of the s				

2)精液処理棟雄牛舎進入路工

一金、 18,000/バーツ				e La Sur Maria de Carlos La Carlos de Carlos		単位:バーツ
名	数 量	単位	単価	金 額	内訳書	備考
精液処理棟雄牛舎進入路工						
·± I						
掘削捨土/場内 L=50m以内	55. 4	mЗ	40	2, 216		
盛土/購入土:ラテライト	65. 3	mЗ	240	15, 672		
· · · · · · · · · · · · · · · · · · ·				17, 888		
· 维 工	1	式		112	111	
合 計				18, 000		
					1.	
				·		
) . 1		
		;				
			A STATE OF THE STA	11		
						·
	Acceptance of the second					
		- 1				A. A

3) 堆肥舎進入路路工

(ラテライト道路: 工事延長 L=148.0m 道路全幅 W=5.0m)

一金、 118,000/バーツ

						単位:バーツ
名。林	数量	単位	単価	金額	内訳書	備考
堆肥舎進入路路工					maki siyan (ili sa kili) maki siyan (ili sa kili) maki siyan (ili sa kili)	
• ± ±				110, 260		
基盤整正/表土鋤取	740. 0	m ²	5	3, 700		
盛土/購入土:ラテライト	444. 0	m ³	240	106, 560		
・排水工		em story in		6, 090		
側溝/V形土側溝 d=30cm	65. 0	m	20	1, 300		
管きょ∕RCP-φ400mm	7. 0	m	470	3, 290		
沈砂桝∕RCP−φ1000mm	1	箇所	1, 500	1, 500		
計				116, 350		
· 雑 工	1	式	The state of the s	1, 650		
			A to the second of the second			
合 計				118, 000		
		10 m				
		amed/AV	7.0 			
			The state of the s			
		100 miles				

灌溉施設工

工事實內訳書

_一金、 2, 105, 000/バーツ

TO THE RESERVE TO THE PARTY OF			<u>,</u>			単位:ハーツ
名。称	数量	単位	単価	金 額	内訳書	備考
灌溉施設工 0000	Section 14					
1) 深井戸工	1	式		523, 000	B-1-1	
2)ため池工	1	式		1, 306, 000	B-1-2	
3)配水施設工	1	式		276, 000	B-1-3	
合 計				2, 105, 000		
					Í	
					v .	
	300				is a second	i e
	A formation of the contract of					il Wigh
						ar Sulphan
any let						
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	1 to					
	the time strive	100				
	E constitution and					
	and the same		/ .*			

1)深井戸工

		實	内訳			
一金、 523, 000/バーツ						
						単位:バーツ
名。称	数量	単位	単価	金額	単価表	備考
準備工	1	式		25, 000		
電気探査	1	式		25, 000		
井戸掘削 ø 1 2 "						
土砂層	3 0	m	800	24, 000		
軟 岩 層	2 5	m	2, 500	62, 500		
硬岩層	2 5	m	5, 000	125, 000		
電気検層	1	式	an appropriate the second seco	12, 000		
ケーシング設置 φ67	70	m	1, 200	84, 000		G.S. pipe
スクリーン設置 φ6"	10	m	5. 000	50, 000		ステンレススチール
井戸仕上	1	式	and the second	25, 000		
揚水試験	1	式	***************************************	40, 000		
水中モーターポンプ据付	1	式		12, 000		
据付雑材	1	式		5, 000		And the second s
電力引込	170	m	200	34, 000	in the second of	
計				513, 000		I profit manual
雑工	1	式	The state of the s	10, 000		to all the weapons of
		en e			<u> </u>	₹ 6 8
合 計				523, 000		

2) ため池工

工事費內訳書

一金、1,306,000/バーツ

<u>and the state of the same and the state of </u>						単位:ハーツ		
名		数量	単位	単価	金額	単価表	備考	
ため池工			e vezi dan					
·± I					714, 065			
掘削工/普通土	What is	1, 975	ш3	40	79, 000			
掘削工/転石・硬岩		1, 019	D ₃	240	244, 560			
盛土工/流用土:普通	£	1, 580	mЗ	60	94, 800			
盛土工/購入土:ラテラ	ライト	705	пЗ	180	126, 900			
残土処理工/場内捨土処	心分	1, 019	п З	20	20, 380			
法面整形工	1 54	1, 142	ш ²	20	22, 840			
底面整形工	0.7	1, 600	1 2	15	24, 000			
張芝工	N. A.	1, 847	m ²	55	101, 585			
・表面遮水工							ja V∮kaji	
シート張り工 t=1.2mm	r i se	3, 118	m²	180	561, 240			
階段工					5, 375	* * * * * * * * * * * * * * * * * * *		
基礎栗石		in [0. 9	m³	450	405			
コンクリートエ		0. 3	п 3	1, 600	480			
鉄筋工	(40% arg)	10	kg	15	150		3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
型枠工		12. 4	m ²	350	4, 340			
小 計			1 4		1, 280, 680			
雑工	951 AV	1	式		25, 320	1		
			in the second					
合 計					1, 306, 000			
					a magazina a			
	164		etim che com					
	A state of the state of the		;					

		費	内訳			
一金、 276,000/バーツ						単位:バーツ
有	数量	単位	単価	金額	単価表	備考
•± I		in the second		10, 400		
盛土工/	100	В	60	6, 000		
張芝工 /	80	2	55	4, 400		
・関連構造物工				15, 919		
基礎果石	0. 9	3	450	405		
均しコンクリートエ	0. 3	1 3	1, 200	360		
コンクリートエ	0.8	Д3	1, 600	1, 280		DENIN
鉄筋工	26. 3	kg	15	394		
型枠工	1.4	n ²	350	490	7-11-1	- 心影響劇
ブロック積工/空洞コンクリートプロック	13. 8	1 2	350	4, 830		
屋根工/ 造・スレート葺き	6.8	1112	1, 200	8, 160		
・設 備 工		1 - 1 - 1 - 1 - 1		239, 940		
遠心力ポンプ据付 /材料支給	1	式		7, 500		バルブ取付金
配管工 GSP 80A/材料支給	7 → 6	m	250	1, 500		
管布設工 GSP 100A /材料支給	210	m	280	58, 800		John States
管布設工 GSP 80A /材料支給	480	m	250	120, 000		
掘削工	350	3	40	14, 000		
埋戻しエ	350	Ш3	60	21, 000		
配管用雑材料	1	式		11, 140		
バルブボックス	6	個	1, 000	6, 000		
・送水テスト	1	式		5, 000		
計				271, 259		
雑 工	1	式		4, 741		
合 計	e Television (Physical Section)	100		276, 000		

<u>道 路 工</u>

工事費內訳書

一金、 1、829、000/バーツ

	<u></u>	100				単位:ハーン
名	数量	単位	単価	金 額	内訳書	備考
道路工						
1) 主要建物進入路工	1	式		181, 000	B-2-1	
2)幹線道路工	1	式		333, 000	B-2-2	
3) 支線道路取付工	1	式		15, 000	B-2-3	
合 計				529, 000		
				1		
		1 /-				
						· .
	1			5 3 4		. :

		4 1			<u> </u>	

1)主要建物進入路工

181,000/パーツ

単位:パーツ

		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				単位 : バーツ
名。林	数量	単位	単価	金額	単価表	備考
主要建物進入路					i de Nordania Georgia de Alexandro Grandro	e de la companya de l
· # T				16, 500		
基盤整正/表土鋤取	720. 0	2	5	3, 600		
切盛土/普通土・場内流用	216. 0	m ³	60	12, 900		
・舗装工				151, 008		
浸透式72乳剂表層 t= 40mm	726. 0	m²	100	72, 600		人力施工
粒調採石上層路盤 t= 80mm	726. 0	m²	48	34, 848		
クラッシャーラン下層路盤 t=120mm	726. 0	m²	60	43, 560		
・舗装雑工						
切盛土/普通土・場内流用	172. 8	m ³	60	10, 368		
a		100		177, 876		
维·工	1	式		3, 124		in Tolling to the second
		3				
合 計				181, 000		
		The second secon				
			1			
	* * * * * * * * * * * * * * * * * * *				in the second	and the second
		2 1 1				
			<u> </u>	<u> </u>		<u> </u>

No. B-2-2 2)幹線道路工 幹線・BP~R2-Rd.間(7スファルト舗装:工事延長 L=293.9m 舗装幅 N=5.0m) エー事 をした」まで表す。

							単位:バ-
名称		数量	単位	単 価	金 額	内訳書	備考
幹線・BP~R2~Rd. 間							
・舗装工					305, 656		
浸透式72乳剂表層	t= 40mm	1, 469. 5	п ²	100	146, 950		
粒調採石上層路盤	t= 80mm	1, 469. 5	m ²	48	70, 536		
クラッシャーラン下層路盤	t=120mm	1, 469. 5	m²	60	88, 170	- 10 A A	13.425
・舗装雑工				*			1 2128
切盛土/普通土・均	 身内流用	352. 7	mЗ	60	21, 162		
計	Seal Na		3		326, 818		
•雑 工		1	式		6, 182		
		-			0, 102		
合 計					333, 000		
H				. <u>\$</u>	333, 000		
					1		
		\$ \$ \$					
		1					
		†					· - · · · · · · · · · · · · · · · · · ·
					3		
	The second secon	The second secon					
			7 0				

3) 支線道路取付工 (727-14) 舗装: 工事延長 L=15.0m/3力所分/舗装幅 T=5.0m)

15, 000/バーツ

一金、 15,000)/バーツ						
							単位:バーツ
名称		数量	単位	単価	金額	内訳書	備考
支線道路取付工							No. 1 th Addition
・舗装工					13, 104		
浸透式72乳剂表層	t= 40mm	63. 0	m²	100	6, 300	HA A	
粒調採石上層路盤	t= 80mm	63. 0	E ²	48	3, 024	The fig.	
クラッシャーラン下層路盤	t=120mm	63. 0	<u>1</u> 2	60	3, 780		
・舗装雑工							
切盛土/普通土・場	号内流用	18. 0	m ³	60	1, 080		
計	546.41				14, 184		
•雑 工		1	式		816		
合 計	\$15 7 TO				15, 000		
					The state of the s		
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				3			
			*		11		
					The state of the s		
¥		**************************************		100			
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第5章 契約図書(案)

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5,1 工事契約書(案)

- 75 -

BID DOCUMENTS

的复数的数字字

(DRAFT)

FOR

THE MODEL INFRASTRUCTURE WORKS

FOR

THE DAIRY FARMING DEVELOPMENT PROJECT
IN
THE CENTRAL REGION OF THE KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY

THAILAND OFFICE

CONTENTS

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	٠.	*		Invitatio	n for	Bids
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* Instruction to Bidders

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- Proposal Action of Proposal
 - * Terms and Conditions of the Contract

and the first of the first the first of the contract of the co

- coldinate * Pledge Agreement
 - * Contract
 - * Technical Specifications
 - * Drawings
 - * Bill of Quantities

(LETTER HEAD OF JICA THAILAND OFFICE)

INVITATION FOR BIDS

		<u>DATED</u> ,1995.
'o:		물일 얼마를 하는 것은 사람이
DEAR Sir		grani katang kantila di Pangang Kilali
	ave the pleasure to inform you t	
	on Agency, Thailand Office (hereinaf	
nvites yo	ou to participate in the bids for The	Model Infrastructure Works for
1.11	Farming Development Project in the Co	
hailand ((hereinafter referred to as "the Pr	oject"). The Project has two
ork sites	s in Pathum Thailand Province and in	Lopburi Province.
You	are kindly requested to join the pre	-bidding meeting which will be
ield on	, 1995 at	o'clock p.m. / a.m., at
he JICA T	hailand office.	
Fol1	owing documents will be provided to	the bidders in the pre-bidding
meeting:		
		The spokers of the second
1.	Instruction to Bidders	
2.	Form of Proposal	STATE OF THE STATE
3.	Terms and Conditions of the Contra	ict in the second of the secon
4.	Form of Pledge Agreement	
5.	Contract (draft)	
6.	Technical Specifications	
7.	Drawings	
8.	Bill of Quantities	
	Thanking you,	
		esident Representative of JICA
		hailand Office
	.	MATIANU OTTICE

INSTRUCTION TO BIDDERS

tak dirikti, kelilir jet titoret troes yriy, kreikok orto vaaraksi kuit ortok ky eesti ja k

IB-01 of SCOPE OF WORK to the real real parameter and the second of the contract of the contra

The Contractor shall carry out the Model Infrastructure Works for the Dairy Farming Development Project in the central Region of the Kingdom of Thailand (hereinafter referred to as "the Works" consisting of construction of water supply facilities, paddock, manure deposit shed and approach roads in Pathum Thani Province, and irrigation facilities and roads in the Chai Badan Dairy Demonstration Centre located in Lopburi Province.

IB-02 PREPARATION OF BIDS

Representative, Japan International Cooperation Agency Thailand Office (hereinafter referred to as "the JICA", 1674/1, New Petchburi Road, Bangkok 10310, Thailand, and marked Sealed proposal, DFD PROJECT.

val un decignolisticado l'italia (1966), en en consecto en ciente del como como llegado en el como como como co

All bids shall be directly submitted to the JICA in an original and three (3) copies on or before the hour and date set for the opening of bids, and shall conform to the following requirements;

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- a) One copy of proposal shall be marked "original". The original and copies of bids shall be submitted in its entirety with all banks in the proposal properly filled in.
- b) Bids prices shall be written in words as well as in figures. In case of discrepancy between the words and figures, the price in words shall prevail.
- c) The proposal must be signed by the Bidder with his usual signature and shall show his full business address.

and the Called Angle and granted by Angle and Angle and David Called and David Called Angle and Angle and Angl

IB-03 BASIS ON WHICH BIDS ARE REQUESTED

The form of the Contract to be awarded is on fixed unit price basis of payment to the Contractor, as specifically set forth in these Contract Documents. Bids are requested on the above basis and a proposal which is on any other basis will not be considered.

Bids prices shall be made in Thai Baht and the Contractor shall be paid in Thai Baht.

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IB-04 BID SECURITY

The original, but not the copies of each bid, shall be accompanied by a proposal bond in an amount equivalent to ten (10)% of the total bid price in the form of cash or certified check, as a guarantee that the successful bidder will, within ten (10) days from receipt of the notice of award, enter into Contract with the JICA, and complete faithful performance of the work specified in these Contract documents. In case the successful bidder fails for any reason to execute such contract within the stipulated time, the bid security shall be forfeited to the JICA as liquidated damages.

The bid securities will be returned without interest after the successful bidder has signed the Contract.

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IB-05 WITHDRAWAL OF BIDS

A bidder will be allowed to withdraw his bid prior to the time set for the opening of bids if he communicates his purpose in writing to the JICA, Thailand Office, and his bid shall be returned to him unopened. No bid can be withdrawn for any reason whatsoever after the opening of bids has been made.

IB-06 BIDDER'S RESPONSIBILITY

The bidders shall be responsible for having taken steps to carefully examine all of the Contract Documents and also to have fully informed themselves as to all conditions, locality and otherwise, affecting the carrying our of the Contract Works. Failure to do so will be at the Bidder's risk.

nga Bantalah palam pang Melekeratan persadah dengah belah panah pelangangan dibit kelalah sebagai kelalah seba

IB-07 DATA TO BE SUBMITTED WITH PROPOSAL

All proposal shall contain the following documents:

- a) A construction schedule showing the detailed proposal plan of operation and construction of each main item in the Bill of Quantities from start to completion of the Contract work. The schedule shall be in a bar chart form with weeks shown as the least unit of time and each main item on a separate horizontal line. The schedule shall also show expected monthly accomplishment and financial requirements based on the Bill of Quantities.
 - b) A list of equipment proposed to be used for the performance of the Contract Work. This list shall specifically enumerate the number, type and capacity.

IB-08 INTERPRETATION OF CONTRACT DOCUMENTS

If the prospective Bidder is in doubt as to the true meaning of any part of the Contract Document, the Bidder may submit to the JICA Thailand office, a written request for interpretation allowing sufficient time for a reply to reach him before submission of his bid. Any interpretation of the proposed documents will be made only by a supplemental notice duly issued.

IB-09 OPENING OF BIDS

The	opening	of Bids	will	be sche	dule at	3 1 4 1 L	o'	clock	p.m.	/ a.m.
,Thailand	standard	l Time o	n	tores of a	,1995	at the	JICA	Thail	and o	ffice.
Attendance	for Bid	lders is	desira	able.		e galanda Salah Prada			180 4	

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IB-10 COMPARISON OF BIDS

In making its selection, the JICA will not be bound to award a Contract to the bidder submitting the Bid with lowest indicated cost, but will that into consideration the bid prices, unbalanced bid, guaranteed completion time and other relevant consideration.

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IB-11 AWARD OF CONTRACT SERVICE FOR CONTRACT SERVICE FOR SERVICE F

Promptly after the opening of the bids the JICA will undertake a detailed study and appraisal of the proposal submitted. The Contract will be awarded to the Bidder whose proposal is considered to be the most advantageous to the JICA. The JICA reserves the right to reject any and all bids received.

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IB-12 BID DOCUMENTS

Bid documents shall include the following:

- a) Invitation for Bids with 1200 at 120 at 1
- b) Instruction to Bidders
- c) Proposal and a first on the relation with a gastle, who required the
- d) Teams and conditions of the contract
- e) Pledge Agreement Artificial residence to the personal residence and the residence
- f) Contract
- g) Technical Specifications
- h) Drawings
- i) Bill of Quantities

PROPOSAL

<u>Zadi, akad</u>da, jaa likas seesaa - Askasa - kale, - eyay - 194 s

To:

The Resident Representative

Japan International Cooperation Agency, Thailand Office

1674/1, New Petchburi Road, Bangkok 10310

P-01 BILL OF QUANTITIES AND BID PRICES

The undersigned Bidder having carefully examined in their entirety the Contract Documents for The Model Infrastructure Works for the Dairy Farming Development Project in the Central Region of The Kingdom of Thailand, hereby offers and proposes to perform all of the construction and services, to furnish all equipments, materials supplies, labor and other items described in the Contract Documents, all for the unit and lump sum prices stated in words and figures in the following quantities:

Bid Price:	Baht
	(in words)
<u> </u>	Baht)
(in	figures)

- Bill of Quantities to be attached herein.

P-02 GUARANTEE OF COMPLETION

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P-03 BID SECURITY	물일을 가는데 한 번째 되었다.
The undersigned Bidder hereby certifies the	
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Witness	

The undersigned Bidder guarantees to effect the commencement,

TERMS AND CONDITIONS OF THE CONTRACT

1-448 1 June 1- 1 HO

Section 1 General Information

1.1 Objective

According to the Record of Discussion signed, technical cooperation concerning the Dairy Farming Development Project in the Central Region of the Kingdom of Thailand (hereinafter referred to as "the Project") is being carried out.

The objectives of the Model Infrastructure Works are to provide the demonstration farm facilities which are the essentials for the implementation of the Project.

1.2 Location of the side

The project has two work sites as follows;

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Pathum Thani AI Centre: 80 Tiwanon Road, Bang Ka Dee Subdistrict, Muang District, Pathum Thani 12000

Dairy Demonstration Centre: at Chai Badan Land Settlement
Cooperative Unit, Tha-Luang
District, Lopburi Province
15230

1.3 Major Work to be done in the Model Infrastructure Works

<u> Item</u>	Quantity	<u>Specification</u>
<pre>< Pathumu Thani A</pre>	I Centre >	ms legio appellar en sel sel c
 Water Supply F Deep Well 	acilities 1 No.	Drilling dia: 200 mm
ing have estimated the sit	z fluoj kie ojsek, avdužili je kofataštili.	Well dia: 100 mm
		Depth: 300 m
	Programme and the contract of	Design Field. Of I/min
Pump for well	on Carte Cal unit of	Submergible pump
		32 mm x 2.2 kw
2) Elevated Wate	r Tank 1 set	V 5 cu.m x H 18 m
3) Water Supply	Pipe 56 m	PVC 20 mm
	60 m	GSP 40 mm

3. Manure Deposit Shed	1 No.	5 m x 10 m
. Road		
1) Approach to Milking Cow Shed	70 m	Asphalt pavement of 4.0 m wide
2) Approach to Semen Collecting Building	44 m	Laterite, 3.5 m wide
3) Approach to Manure Deposit Shed	. . 148, m . _{131, 20} 	Laterite; 5.0 m wide from the control of the contro
Chai Badan Dairy Demonstr	ation Cent	re >
I. Irrigation Facilities	1 11-	
1) Deep Well	1 No.	Drilling dia: 300 mm Well dia: 150 mm Depth: 80 m
कृष्णके प्रकार को है। अने के कि कि अने के	ana lihitetii sali	Design Yield: 250 1/min
Pump for well	1 unit	(Supplied by JICA) Submergible pump, 50 mm x 2.2 k
2) Farm Pond	1 No.	V=4,500 cu.m (area of full water level = 50
	werterst. pysic	m sq. = 2,500 sq.m), lined by flexible PVC membrane liner (t=1.2
		mm)
3) Water Distribution Fac	ilities	randi in reall aminist, in the
Pump for Trrigation		(Supplied by JICA) Volute pump, 80/65 mm x 22 kw
Pipe line (sprinkler irrigation system)	210 m 480 m	(Supplied by JICA) GSP 100 mm (Supplied by JICA) GSP 80 mm
2. Road	n a si in videntik	र कर्ने मेर्ने इंडीक्स्पेस एक रहे
1) Approaches to major buildings(6 nos.)	. 180 m	Asphalt pavement of 4.0 m wide
2) Main road 3) Junctions of lateral	294 ш	Asphalt pavement of 5.0 m wide Asphalt pavement of

1.4 Collaboration

The JICA assists the DLD's and the CPD's activities through the project type technical cooperation scheme according to the Record of Discussion. Prior to or during the course of the Works, the Contractor shall make the good relation within the related Organizations*) for the satisfactory implementation of the Works as to secure full collaboration.

*) DLD : Department of Livestock Development, Ministry of Agriculture and Cooperatives

ou katayakin b

CPD: Cooperatives promotion Department, Ministry of Agriculture and Cooperatives

Section 2 Submission of Notices

2.1 Work schedule

The Contractor shall submit the Work Schedule in following items before the commencement of the Works at the work site. If the Contractor intends to change the Work schedule, the approval from the Engineer to be appointed by the JICA (hereinafter called "the Engineer") shall be obtained prior to the modification of the schedule.

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Pathum Thani AI Center

- 1. Mobilization & demobilization
- 2. Water supply facilities
 - 1) Deep well with a super the state of the s
 - 2) Elevated water tank & water supply pipe

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1. Mobilization & demobilization

light for which takes the accordance of the expedient behave the consequence of the experience of

- 2. Irrigation facilities
 - 1) Deep Well
 - 2) Farm pond
 - 3) Water distribution facilities
- The Districtive of the 1983 of the Roads of the State of

Also the Contractor shall submit the machineries scheme including the numbers, kind of machineries and using period of them.

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2.2 Notices

The JICA and the Contractor shall submit the notices to each other as necessary, in accordance with Article 19 of the Contract within reasonable time except that special articles are provided in Terms and Conditions of the Contract.

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Section 3 Field Test and Inspection State State

The field tests in accordance with the Technical Specification and the demands from the Engineer shall be the responsibility for the Contractor. The charges for such field test shall be included in the total amount of the construction cost, and the Contractor is not entitled to claim any amount of the field test charges.

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Section 4 Modification of Plan

In case the JICA estimate the cost for the modification in accordance with Article 14 of the Contract, and if there are two portions, on for the increase and the other for the decrease of the construction cost resulting from such modification, the JICA shall have the right to offset them in the payment and pay of claim the difference between the increase and decrease of the construction cost as the case may be.

Section 5 Release from the Works

After the final acceptance of the Works by the JICA, the Contractor shall remove its own temporary facilities, warehouses, construction roads, electric wiring, surplus material debris and so forth which were provided by the Contractor within ten (10) days. Upon approval of the Engineer for the removal of the abovementioned facilities etc. the Contractor will be released from its responsibility of the Works but remains responsible under one (1) year guarantee of the Works as specified in Article 11 of the Contract.

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Section 6 General Obligations of the Contractor

6.1 remporary office and residence was a superior and residence

From Paris Bernar Edozoff and Leafing And

In case the Contractor intends to build the temporary office, residence and so forth, the Contractor shall submit the plan to the Engineer for approval at least seven(7) days in advance of the commencement of the Works.

The Contractor is required to always keep the buildings and facilities in good condition and to make proper drainage and sanitary system. Should the Contractor build them outside of the site, the Contractor shall arrange with the owner of the such land and at its own expense.

6.2 Fuel storage of the start o

In area of temporary office and residence, the fuel tank capacity shall not exceed 1,000 liters and shall be far away from the housing area.

tikka da tarak badi katipa sebabih dan arah katan jakarik, kepulaja di kapulaja penganjaran sebagai

Fuel storage and transportation shall be done with care and shall have a good system of fire prevention, if storage license is required, the Contractor shall arrange for obtaining it.

6.3 Other facilities

All necessary facilities for the Works and the Contractor's convenience shall be provided and maintained in good condition by the Contractor.

Section 7 General Text

The Contractor shall implement the Works in accordance with the Contract Documents in broad sense such as the Contract in narrow sense, Terms and Conditions of the Contract, Technical Specifications. Should the evens occur that the both parties can not reach agreement on the interpretation of the above-mentioned Contract Documents in broad sense, both parties shall negotiate with sincerity and good faith for settlement of any disagreement, failing with decision of the JICA shall prevail.

PLENGE AGREEMENT

To the Ja	pan International	Cooperation	Agency, Tha	iland Office	
Date					
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1971 1993	haris bay artisesta		Alada James	Thinks Not a	rjer ser stest
	S. die vigter verroerie	मिनेश हो। इस्टेस्ट्रेस	AN STEEN SYNER T	र्वे अस्तिकार स्थापन स्थापन है। इ.स.च्या १९४५ व्याचन स्थापन	an Jayongin
We		<u> </u>	the Contrac	tor hereby ag	ee that all
equipment	, materials and su	ipplies brough	ht to the jo	b sites under	the Contract
made with	h the security fo	r our execut	ion of the	Works, and s	hall not be
removed	at any time with	nout prior a	pproval of	the Japan I	nternational
Cooperati	on Agency, Thaila	nd Office (ca	illed the J	ICA") in writi	ng Parkenda
We	further agree tha	at should the	re be any l	oss or damage	to pledged
	, materials and s				
no respon	sibility whatsoev	er for such 1	oss or dama	ge.	
	प्रमुद्धम ्हिन्दी सम्बद्धी अस्ति हा	en all modern de la company		Rignald (Addy)	Charles and Sale
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THE MODEL INFRASTRUCTURE WORKS

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THE CENTRAL REGION OF THE KINGDOM OF THAILAND

JAPAN INTERNATIONAL COOPERATION AGENCY
THAILAND OFFICE

CONTRACT

THE MODEL INFRASTRUCTURE WORKS

<u>FOR</u>

THE DAIRY FARMING DEVELOPMENT PROJECT

IN

THE CENTRAL REGION OF THE KINGDOM THAILAND

This Con	tract is exec	uted on th	ne <u>(</u>	day_of	at	the Japan
International	Cooperation	Agency,	Thailand	Office	between th	ne Japan
International	Cooperation A	gency, Tha	iland Off	ice, by		Resident
Representative	as its author	rized repr	resentativ	re of the J	ICA Thailan	d office,
hereinafter re	ferred to as	the JICA	of the	one part,	and	<u> </u>
		_ whose o	ffice is	situated a	t	
	on the second	T	el > <u>/ / / /</u>	MING MEE	Repres	ented by
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Contractor*, o	f the other p		under th	e terms c	of this Con	tract as
follows:-						
Article 1 Pu	rpose of Agre	ement and	Contract	Price		
The JICA	agrees to em	ploy the	Contracto	r and the	Contractor	agrees to
perform the Wo	orks for the l	odel Inf	rastructu	re Works f	or the Dair	y Farming
Development Pr	oject in the	Central R	egion of 1	The Kingdon	n of Thailan	d for the
total amount o	f <u>Marting More</u>	ANDER BOX 113	- Parada			Baht
(Baht), he	reinafter	referred	to as "th	e Contract	Price".

The following documents shall form integral part of this Contract:-

Terms and Conditions of the Contract

tion and the fitte this legal to applicately a secret policies and a grain in a secret to a new other. Attract the proper language in the property of the contract of the contract of the contract of the contract of

- 2. Pledge agreement
- 3. Technical specifications
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Article 2 Performance Bond

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As a security for the faithful performance of the Works under this Contract, the Contractor has on the execution of this Contract deposited a preformation bond with the JICA in cash or in lieu thereof a Bank Guarantee issued by The Bank of bearing the number and dated on in the amount of Bath) which represents five (5) percent of the Contract Price, the name of the issuing bank and the form of the bank guarantee are to be approved by the JICA.

The JICA will return the Performance Bond in cash or the Bank Guarantee to the Contractor after final acceptance of the Works by the JICA as stipulated in Article 15 of this Contract, provided that the completed Works shall not show any defect or damage caused through the fault of the Contractor, or through the fault of any new Contractor in the case of termination of Contract by the JICA under Article 4.

Should the Contractor be in default, the JICA shall have the right to demand payment from all or any or any part of the Performance Bond. In addition, the Contractor shall remain liable for the full loss sustained by the JICA.

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Article 123 () Payment - 12 ag mangin in a moder literal singerstate goldwart of sept.

The JICA agrees to effect payments for the Works to the Contractor in the following manner:-

. 1,,210,12	encities i Legal Legal Control
a.	Advance Payment, to be effected upon the bringing of part of
	equipment and materials required for the Works and having stored
	at the job site by the contractor, and upon the verification of
	those facts by the Engineer to be appointed by the JICA
The state of the s	(hereinafter referred to as "the Engineer"). The amount of
	Baht(Baht)
k dolay	which corresponds to Thirty (30) percent of the Contract Price,
	shall be paid upon signing of this Contract at the request of the
er water ye	Contractor. / Fall of the late at what he was a property for the purpose of
	The figure of the second of
b.	Interim Payment, to be effected according to the progress of the
	Works satisfactorily executed by the Contractor and accepted by
Part of San S	the Engineer. The amount of Baht
	(Baht) which corresponds to
	Forty (40) percent of the Contract Price, shall be requested for
nice part (4	the payment once during the course of construction at the request
	of the Contractor, and apply a limit to the property of the
Mary John	y and a first out this to read a government in the graphs of the first
7° c. 1	Final payment, to be effected upon the satisfactory completion of
The state of the s	the Works by the Contractor and accepted by the Engineer. The
	remainder of the state white Alexander at the section of the Baht
	(Baht) which corresponds to
ed to s	Thirty (30) percent of the Contract Price, shall be paid after
	the Final Certificate to be issued by the JICA for payment to the
a e e di sabab	Contractor.ed (a) a said all allege (Cape a marines and inches Care
* .	
	Payment under (b) and (c) shall be effected within ten (10) days
	after the respective acceptance of the Works by the Engineer.

source by the JICA on each payment.

Taxes payable by the Contractor, if any, shall be deducted at

It is expressly understood that payments by the JICA do not mean acceptance responsibilities under this Contract.

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Article 4 Completion Time

The Contractor agrees to commence the Works at the site within ten (1	0)
days from the date of signing of this Contract (commencement date) and t	he
Contractor agrees to satisfactorily complete the Works within	
days (completion time) from the date hereof which will become due on	<u></u>
, 1996 (completion date).	

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If the Contractor fails to commence the Works by the above commencement date, or should in the course of the construction may event occur which may reasonably cause the JICA to believe that the Contractor will not be able to complete the Works on the completion date, or should the Contractor fail to complete the Works by the completion date, or should the Contractor fail to meet any of the Contract requirement, the JICA shall have the right to terminate this Contract by giving written notice to the Contractor.

However, in case that the Contractor fails to complete the Works by the completion date, or to meet any of the Contract requirement, if the Engineer thinks that the Contractor has the ability for completion of the Works within reasonably extended period, the Contractor may be permitted by the JICA to continue the Works beyond the completion date but within the extended time.

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Articles 5 Penalty War and year such appreciately Algorithm at 19

In case that the Contractor is in default as mentioned in Article 4 the Contractor agrees to be responsible to the JICA as follow:-

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5.1 In case of the termination by the default of commencement for the Works,
the Contractor shall pay a penalty of
(Baht) per day counting from the commencement
date until the new Contract is completely executed with a new Contractor for
this Works, the period of which is included the time spent for finding the new
Contractor and executing the new Contract etc.
5.2 In case the JICA thinks that the Contractor will not be able to complete
the Works within the completion time and thereby terminates this Contract, the
Contractor shall pay a penalty of
(Baht) per day counting the number of
days in the same manner as prescribed in 5.1 above. However, the JICA may
reduce such number of days according to the ratio between the completed Works
and the total Works as may be decided by the Engineer.
5.3 In case the Contractor fails to complete the Works by the completion
date or to meet any Contract requirement, the Contractor shall pay a penalty
of Baht(Baht(Baht) per day counting from
the date following the completion date until the Works satisfactorily

Article 6 Compensation

If the JICA sustains any losses as direct or indirect damages caused by the Contractor's failure, the Contractor shall compensate the JICA for such losses. The parties agree that time is essential for the completion of the Works.

Article 7 The JICA's right for default

The JICA has the sole and absolute right to decide whether to terminate the Contract, to impose only the penalty on the Contractor or to claim the compensation for the damage as stated in Article 5 or Article 6. The money due to the JICA exercising its right under this article shall be retained and deducted from any money due to the Contractor but yet unpaid including from the performance bond. If the total amount of the loss is larger than the money above-mentioned, the Contractor agrees that the JICA has the right to retain the construction equipment, materials and supplies etc. and demand payment of the balance from such equipment etc. or proceeds of sale thereof.

Article 8 Contractor's responsibility on termination of this Contract

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After the contract has been terminated in accordance with the foregoing Article 4, the JICA shall have the right to employ another Contractor (hereinafter referred to as "the New Contractor") to carry on the remaining parts of the Works, and the payment for the Contractor that fail to complete the work shall be made out of the necessary Contract price for the remaining Works. Should the remaining amount after payment of the advance and interim payment from the Contract price, be insufficient to effect payment to the New Contractor, the difference between such remaining amount and actual cost estimated by the JICA for the satisfactory completion Works carried out by the New Contractor, shall be deemed as direct loss sustained by the JICA, and the Contractor shall pay such difference to the JICA within ten (10) days from the date of request by the JICA, failing which interest at the rate of eighteen (18) percent per annum shall be charged thereon.

Article 9 The Engineer

The Engineer, authorized to act on behalf of the JICA will be appointed by the JICA and the Engineer is entitled to do all things that the JICA may do so. The Engineer shall control and supervise the Works all the times whether it is in the preparation of implementation of the Works and the Contractor shall promptly furnish all necessary facilities for proper inspections of the Works in accordance with the Engineer's direction. At any moment the Engineer can direct the Contractor to stop the Works, if necessary and the Contractor shall have no claim on the JICA for extension of the completion time due to such suspension of the Works under this Article.

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The inspection will not be deemed as the acceptance of the Works, and the Contractor shall not be relieved from his responsibility to meet the Contract requirements by the fact that the Engineer exercises their duties. Should it be found that the Works have not been satisfactorily performed in the faithful manner, the Contractor shall correct any part of the Works indicated by the Engineer within the period specified by the Engineer.

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Article 10 Prohibition for the equipment removal and a second a second and a second

Should the Contractor fail to complete the Works during the completion time or the Engineer thinks that the Contractor will not be able to satisfactorily complete the Works, any equipment and materials brought to the site for use on the Works shall not be removed without the prior approval of the Engineer in writing.

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Article 11 Rectification of the defective construction

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For a further period of One (1) year after satisfactory completion and final acceptance of the Works by the JICA, whether completed by the Contractor or by the New Contractor in case of termination of Contract under Article 4, any damage to the Works which is caused by the Contractor's fault, either because of defective workmanship or the use of inferior materials or any other cause, shall be made good as necessary by the Contractor to the satisfaction of the JICA at no extra cost.

place and plant of the first transfer and the contract of the contract of the contract of the contract of

In case of the termination of the Contract, the JICA may decide which part of the Works should come under the Contractor's responsibility, and requests the Contractor to make good of the damaged Works. Should the Contractor fail to do so within period specified after receipt of written request to do so from the JICA, the JICA shall have the right to employ another Contractor to carry out such work and the Contractor agrees to bear all expenses incurred.

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Article 12 Discrepancies among the Contract Documents

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If, prior to or during the course of the Works, any discrepancies are found in the drawings and/or the Technical Specifications etc. attached to this Contract, the Contractor shall follow the ruling given by the Engineer at no additional cost to the JICA.

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Article 13 Construction Method and Temporary Works

The construction method including implementation schedule and plan of the temporary works such as installation of temporary facilities, offices, ware houses, construction road, electric wiring, etc. shall be submitted by the Contractor and approved by the Engineer at least seven (7) days in advance of the commencement of the Works.

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Should the cost of the above temporary works be estimated in the Bill of Quantities in this Contract, the Contractor is not entitled to claim any amount of charges for the temporary works.

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Article 14 Modification of Plant Desperation to the Modification of Plant

If the Engineer finds it necessary to make modification of construction design and/or materials and so forth during the course of construction, the JICA has the right to order the modification of the Works to the Contractor, and such order shall be made in writing from the Engineer to the Contractor.

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The JICA agrees to adjust upwards or downwards the necessary expense for such modification to the Contractor, which will be estimated by unit price in the Bill of Quantities of this Contract in case of modification of quantities of construction works. In the case of additional works which are not quoted by unit price in the Bill of Quantities of this Contract, the Engineer will make estimation thereof and the JICA will pay to the Contractor for such additional works accordingly. But if the Contractor does not agree to such estimation, the Contractor is then entitled to negotiate with the JICA. Also the extension of the completion time due to the modification shall be given by the JICA who shall have the sole right to decide the number of days of such extension.

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Article 15 Acceptance of the Works

When the entire Works have been completed, the Contractor shall submit the invoice in written form indicating the Works actually completed to the Engineer. if there are compliance with drawings or Technical Specifications, the JICA shall accept the Works as the final acceptance of satisfactory completion Works within ten (10) days after the receipt of the written form and it shall be deemed that the final acceptance has been made on such date of the receipt of the written form.

On the other hand, should non-compliance with drawings or Technical Specifications or defects be found in the Works executed by the Contractor, the Engineer will have the right not to accept the Works and to order the rectification of the Works. If the required period for the rectification of the Works is beyond the completion date, the Contractor shall not be relieved from its responsibility to pay the penalty as stipulated under Clause 5.3, and after the completion of rectification of the Works, then the final acceptance will be made in the same manner as described in the first paragraph of this Article.

During the course of construction, whether in the completion time or of extended time specified in the last paragraph of Article 4, the JICA has the right to accept a part of the Works already completed in the written form which each other for the maintenance and usage of the accepted part of the Works, and the Contractor is not entitled to request the extension of the completion time due to any interruption caused by the use of such accepted Works by the JICA, or any delay in repairing such accepted Works.

Article 16 Construction Engineer

The Contractor shall appoint a construction engineer at his own expense for the supervision of the Works performance, who shall be authorized to act on behalf of the Contractor, and the instructions given to him shall be deemed as given to the Contractor. The construction engineer shall stay at the job site all the time and shall not leave without obtaining the prior approval of the Engineer. If the Contractor replaces the construction engineer, the Contractor shall obtain the prior approval from the Engineer in writing.

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Article 17 Replacement of Labor, Engineer and Foreman

The Engineer may request the Contractor to remove any of the Contractor's labors, foremen or engineers if it appears to the Engineer that such labor, foremen or engineer is incompetent for his job or is not suitable or is not capable of handing his workmen or staff, and the Contractor shall promptly replace any such labor, foremen or engineer. No extra cost or claim for extension of time will be allowed because of such replacement.

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Article: 18 a Sub-Contractor: A sub-Contractor Associated and the sub-Cont

The Contractor shall not sub-contract of assign any portion of the Works under this Contract without obtaining the prior approval of the JICA who has the sole right to decide which portion of the Works may be sub-contracted or assigned to the sub-contractor. However, the Contractor shall be fully responsible for the Works done by the sub-contractor.

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Article 19 Notice

All notices required by this Contract shall be effective only at the time of receipt thereof, and only when received by the parties concerned at following address:

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All Notices required by the terms of this Contract shall be made in writing in English Language, and delivered by registered mail or hand delivery.

Article 20 Dispute

In the event of any dispute arising from the interpretation and performance of the terms of this Contract, both parties agree to make the best attempt with sincerity and in good faith to negotiate and amicably settle such dispute, failing which the parties agree to refer such dispute to arbitration under Thai Commercial Arbitration Rules and Regulation, Bangkok, by 2 arbitrators, each of which is to be appointed by each party. If either party fails to appoint its arbitrator within seven (7) days or should the arbitrators fail, within fifteen (15) days after their appointment, to agree upon the decision of the dispute or not decision is reached on the appointment of an umpire, then the dispute shall be brought before the Court of Thailand for decision under the laws and procedures of the Kingdom of Thailand.

This Contract is executed in duplicate of the same tenor, one of the original copy to be kept by the JICA and the other original copy to be kept by the Contractor. Both the JICA and the Contractor have set their signatures and affixed the seals thereto in the presence of the witnesses.

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