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APPENDIX-4

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Appendix 4.1 CURRENT MONITORING/COMMUNICATION SYSTEM a si Arrich

Table 4.1-1 NUMBER OF CURRENT MONITORING ITEMS

Number of Current Monitoring Items (1)

		er of Stations	Number of Station Used in WMS						
Project Name	Rainfall	Regulator	Rainfall	Regulator					
Ponlathep	9	7	9	7					
Boromthat	7	4	5	4					
Sam Chook	15	6	14	4					
Donjedee	3	17	1	5*					
Thabote	10	13	9	6					
Chao Phraya	9	19	6	5*					
Chanasutr	8	6	7	2					
Yangmanee	12	6	9	3					
Phak Hai	- 3	9	. 2	3					
Chao Ched Bang Yeehon	7	14	. .	4					
Bangbal	. 1	·	,,	-					
Phrayabanlue	10	9	5						
Phrapimol	7	9	7	-					
Pasicharoen	4	3	2.	. 1					
Monorom	12	14	10	5*					
Chong Kae	11	12	10	6*					
Maharat	18	24	11	5					
Khok Katiem	12	8	11	5					
Roeng Rang	15	5	12	3					
Pasak Tai	5	16	4	5*					
Khlong Priew	· 🗕	-	 -	·					
Nakhon Luang	13	16	10	- 1					
Rangsit Nua	15	22	13	1					
Rangsit Tai	12	21	8						
Khlong Dam	8	6	4	-					
Nakhon Nayok		· –							
Phra Ong Chai Ya Nuchit	10	8	9						

Na sana ang kanagarang kanagarang kanagarang kanagarang kanagarang kanagarang kanagarang kanagarang kanagarang		er of Stations	Number of Station Used in WMS									
Project Name	Rainfall		Rainfall	Regulator								
Song Pee Nong	-	–	-	44.00 1								
Phanomthuan	~ .	-		~								
Kamphaengsaen	4	7	-	5								
Nakhon Phathom	7	12	-	6								
Nakhonchom	1	7		5*								
Thamaga	2	2		2								
Samut Song Khram	. 		-	***								
Ratchaburi (left bank)	10	3		3								
Ratchaburi (right bank)	- .	· -	-	-								
Damnoen Saduak	3	2	-	2*								
Vajiralongkorn Dam	-	2		2								
Tha Los	2	-		n en en anti-								
				ng Ang a								
(Rain fall Station)			1945) 1947 - 1947 1947 - 1947	•								
Upper Chao Phraya Basin	37	· · · -	37									
		4 . J ¹		tan tanàn 1								
(Water Level Gauging Stat	ion)			an an an Alfred An Anna An An								
Ping River		6	•••	3								
Wang River		4	-	4								
Yom River		4	· •••	4								
Nan River	· _	8	-	8								
Chao Phraya River		9	-	2								
Nae Klong River	1 	7		3								

Number of Current Monitoring Items (2)

Note: * ... Including group of regulators

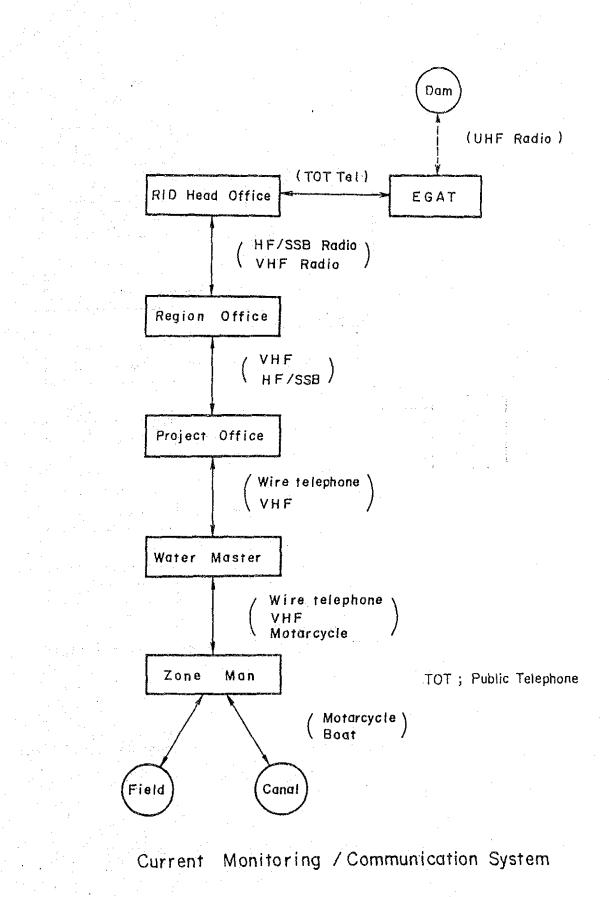
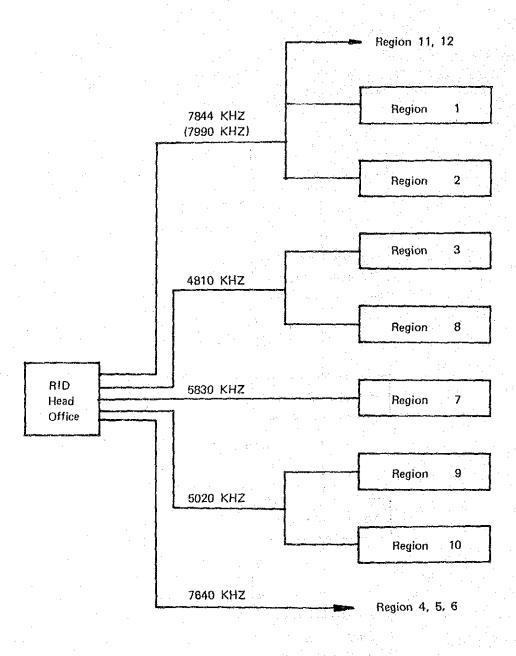
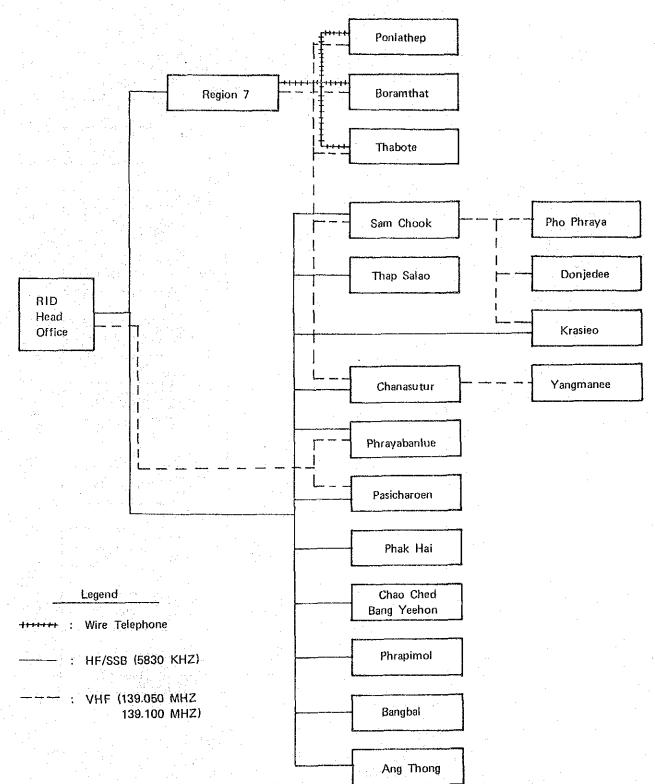


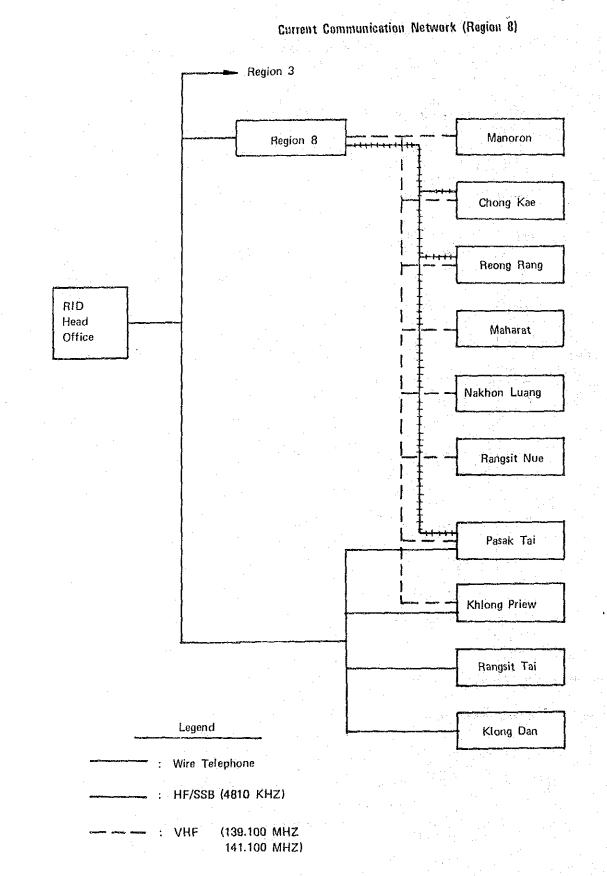
Figure 4.1-1 CURRENT COMMUNICATION NETWORK



Current Communication Network in Chao Phraya River Basin (HF/SSB)



Current Communication Network (Region 7)



Sub-Total 17 8 13 48 1	Cnom laeng
	<u>17</u> 8 <u>13</u> 48 <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>1</u> <u>100H</u> <u>2</u> <u>135</u> <u>273</u>

Communication Work Under Irrigation Office (2)

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Tele 8x60		÷																			• •					1			•
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VHF/FM Base	н	Ч	1	,		г4	ı	1		7		Н							•~~1		6				•	13	 -	ion Div	•
HF/SSB Radio Equipment	'n	r Lom 2	r-1	r~ł	r-1	;e. 1	1	1	4	•	~-4		Chrae l	• •	° r 1	•	ion &	e II	5		1 1	relopment		Barraget	ала ала Элерия Элерия	22) Communication Division	· ·
Project Name	(Region-2)	1. Mae Wang-Kuw Lom	2. Mae Lao	3. Mae Lai	4. Mae Yom		6. Nak Miang	. Cha Yac	÷	9. Mae	•	. Huai Chang	· . ·	Pravince	13. Dong Mada	14. High Way	Construction	Maintenance	15. Nam Ngae	16. Mae Tam	•	18. Security Development	ruayau ruvuuce 19. Mae Phrai	0. Wang Chan	Ban Pao	Sub-Total		Source: RID	

		· · ·																										,	age	-
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	Telephone Set	Autmatic	50	· · ·					,1			ŝ													42	00			105	
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	VHF/FN	Base	Ч	•	·			H		- -4	гĦ	r-1										 1	r-1	 1	r~4	• .				tion Di
• •	HF/SSB Radio	Equipment	4	-	Ч	Ч	г- 1	г				ter I		-1	~		1	2	г		e l	(Down)	1	~~	H		Ч	Ч	25	Communication Division
		Project Name Ec	(Region-3)	Klong Wang Bua	Sukhothai	Nam Pad	Nam Pid	Huai Pa Daeng	RID Office Tak	Mae Sod	Wang Yang	Underground Water	Development	Kamphaengphet	(Copper Pipe	Wang Si Soop	Phetehaboon	Klong Tron	Klong Wang Sai	8	Sriehan Barrage		Chrom Piram	Pho Thale	Phichit	Ban Rai	Klong chang	Sai Naam	Sub-Total	Source: RID C
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Communication Work Under Irrigation Office (3)

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Appendix 4.1 Page 9

Communication Work Under Irrigation Office (4)		
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Project Name	(Region-7)	1. Yangmanee		3. Sam Chook	4. Kra Syo	5. Chao Ched	Bang Yechon	E-	7. Bangbal	8. Ponlathep	9. Phrapimol	10. Boramthat	11. Phrayabanlue	12. Fhak Hai	13. Pasicharoen	14. Donjedee	(land forming	15. Bang Lane		17. Dredge I		19. Donjedee	20. Tab Salao	21. Small Construct	7 (Chainat)	22. Ang Thong	23. High Way Construc-	tion 8 (Supha	Sub-Total	Source: RID	
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		Appendix 4.1 Page 11
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ion Work Under Irrigation Office Automatic Magneto Telephone Exchange Switchboard	<u>3+9/12</u> 1	!
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tion I Tel		
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HF/SSB Radio	0	eam) <u>6 6 8</u> RID Communication Division
	oject Name egion-8) Rangsit Tai Klong chryo Khlong Dan Pasak Tai Roeng Rang Maharat Nakhon Luang Manoron Chong Kae Rangsit Nue Bang Sai Khok Katiem Small Constru ction 8 RID Office Ic RID Office Sa Prakan Sab Takian	(Downstream) Sub-Total Source: RID
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		Project Name	(Region-9)	1. Huai Sub	2. Khao Lan	3. Bangpakong	4. Mab Frachan	5. Klong Knwang	0. Inalad 7 Taem Stno	8 Saithono	• •	10. Ban Na	11. Nakhon Nayok	12. Nam Jon	13. Nong Khor	14. Wang Tanod	15. Kiong Frong	10. Jang Linang 17. Tha Hae	18. Phra Ong			20. wang Krajae Ficid	. പ്പ		23. Bang Phra		24. Ban Kai	

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Communication Work Under Irrigation Office (6)

Appendix 4,1

		Append Pag
Line(km) Jength 33.80	688.74	
Telephone Line(km) Magneto Length 8 33.80	320	
7) Telephone Set Autmatic		
ation Office (Magneto <u>Switchboard</u> 1	21	
Communication Work Under Irrigation Office Automatic Magneto Equipment Telephone Exchange Switchboard Portable 8x60 5x20 3+9/12 50 CH 20 CH 1 1	· .	
Communicat Equipment Portable 10	44	
Communicat VHF/FM Radio Equipment Base Mobile Portable 2 1 10 1 1 1 1 1	10	
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HF Project Name 25. Khok Krai 26. RID Office Prachin Buri 27. " Chon Buri 28. " Chaehoengsao 29. " Trad 30. " Rayong 31. " Nakhon Nayok 32. High Way Construction 10	Sub-Total Sub-Total	

Appendix 4.1 Page 13

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7777200T770															•									·. ·	:	- - -	.*
TTT TANK VION NO.	Automatic Telephone Exchange 8x60 5x20 3+9/12											•	• •	-	•											•	
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	Project Name	(Region-10)	2. Bangyang		4. Dammerusauuan 5. Petcha Buri	6. Yang Chum	7. Kui Buri 8 Pran Ruri		10. Klong Bung	11. Tha Maka	12. Nakhon Pathom	13. Kamphraeng Saen	14. Nakhon Chum	15. Ratcha Buri	16. RID Office		2	18. " Petcha Buri	Hichwav	1 d	Kanchana	21. Lum Lum	on There Design			24. Long Phi Nong	
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Communication Work Under Irrigation Office (8)

Appendix 4.1

с. ¹ 4		
 Line(km)	Length	
Telephone Line(Magneto	
Telephone Set	Autmatic	
 to oard	20 CH	nen en
Magneto Switchboard	50 CH	
 ic xchange	3+9/12	
Automatic ephone Exc	3 <u>x60 5x20 3+9/12</u>	
Tel	8x60	
Iquipmet	Portable	
VHF/FM Radio I	Mobile	
VHF/FI	Base	
 HF/SSB Radio	Equipment	
- - 	Name	ghway Const ruction 11 Petcha Buri
	Project Name	25. Highway Const- ruction 11 Petcha Buri

Communication Work Under Irrigation Office (9)

Sub-Total171429Source:RIDCommunicationDivision

10.00

460

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Appendix 4.1 Page 15

Appendix 4.3 IMPROVEMENT PLAN OF TRUNK LINE

Appendix 4.3 Page 1

Table 4.3-1 CONSTRUCTION COST OF TRUNK LINE BY RID

Construction Cost of Trunk Line by RID (1/3)

	Description		· . · ·	Quantity	Amount (1000 Yen)
Equipment					
1. RID Head office (Terminal))		. · ¹ ·		21,060
UHF Digital T/R 1, 1 stand	by 2MB/sec $ imes 2$			1set	5,100
PCM Multiplex Equipment	$30 \mathrm{ch} imes 2$			lset	2,800
UHF Antenna φ 3m Grid P	arabolic			1set	800
Coaxial Feeder & Connecto)r			1set	360
DC power Supply DC 48 V			· .	lset	2,000
AC Power Plant				lset	6,400
Renote Supervisory Master	•			1set	3,600
2. Rangsit Nua (Relay)					26,220
UHF Digital T/R 1, 1 Stand	by 2MB/sec $ imes 2$	· · · ·		2sets	10,200
PCM Multiplex Equipment	Brand 6ch			1set	3,000
UHF Antenna φ3m Parat	polic			2sets	1,600
Coaxial Feeder & Connecto	Dr .			2sets	720
DC Power Supply DC 48 V		А.		1set	2,500
AC Power Plant				lset	6,400
Remote Supervisory Slave			. •	1set	1,800
		·			
3. Pasak Tai (Relay)			· · · .		
(Same as Ranghit Nue)				1 set	26,220
4. Region 8 (Relay)					26,320
UHF Digital T/R 1, 1standl	by 2MB/sec $\times 2$			2sets	10,200
PCM Multiplex Equipment				1set	3,100
UIIF Antenna φ 3m Grid P				2sets	1,600
Coaxial Feeder & Connecto				2sets	720
DC Powerr Supply DC 48 V			· .	lset	2,500
AC Power Plant				1set	6,400
Remote Supervisory Slave				lset	1,800

Description	Quantity	Amount (1000 Yen)
5. Region 7 (Relay)	1set	26,300
(same as Region 8)		
6. Relay Station (1)		24.820
UHF Digital T/R 1, 1 standby 2MB/sec $\times 2$	2sets	10,200
PCM Multiplex Equipment	1set	1,600
UHF Antenna φ 3m Grid Parabolic	2sets	1,600
Coaxial Feeder & Connector	2sets	720
DC Power Supply DC 48 V	lset	2,500
AC Power Plant	lset	6,400
Remote Supervisory Slave	lset	1,800
7. Nakhon Sawan (Relay)		<u>26.220</u>
UHF Digital T/R 1, 1 standby 2MB/sec $\times 2$	2sets	10,200
PCM Multiplex Equipment Branch 9ch	1set	3,000
UHF Antenna φ 3m Grid Parabolic	2sets	1,600
Coaxial Feeder & Connector	2sets	720
DC Power Supply DC - 48V	lset	2,500
AC Power Plant	lset	6,400
Remote Supervisory Slave	lset	1,800
8. Relay station (2)		24,820
(Same as Relay station (1))		

Construction Cost of Trunk Line by RID (2/3)

9. Phichit (Relay)

(Same as Rangsit Nue)

26.220

Cons	struction	Cost of	Trunk	Line b	y RID	(3/3)
ri i i	$(1,1)^{n+1} \in \mathbb{R}$	e e de la composition		1.1		

	Descriptio	n		(Quantity	Amount (1000 Yen)
· · · · ·	1		•			
10. Region 3 (Terr	ninal)		н н. . т			<u>19,260</u>
UHF Digital I	/R 1, 1 standby 2MB/se	$c \times 2$	-		1set	5,100
PCM Multiple	x Equipment 30 ch $ imes 2$: :*	1set	2,800
UHF Antenna	φ 3m Grid Parabolic		•		lset	800
Coaxial Feeder	& Connector		. · ·		1set	360
DC Power Sup	oly DC - 48 V		. :*		1set	2,000
AC Power Plar	ıt				1set	6,400
Remote Superv	visory Slave		· · · ·		1set	1,800
- 						
Equipment Tota	1			2		<u>247.480</u>
Test Equipment		· ·				<u>8.300</u>
• • •					n ya s	2.000
Spares, Installat	ion materials, Hand Bo	ok, Manual, Mi	aintemance Too	ols.	1Lot	<u>32.360</u>
Installation Fee					1Lot	<u>58.800</u>
1997 - 1 997 - 1997 -						
Antenna Tower			· · ·	· .	1Lot	<u>171,600</u>
				· .		1
Building					10Lot	<u>40.000</u>
Miscellaneous						<u>34.460</u>
Freight, Insuranc	e			na gola Na Star		<u>37.000</u>
	Grand total	·				<u>630.000</u>
		• • •				

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Table 4.3-2 CONSTRUCTION COST OF TRUNK LINE BY RID AND TOT

Equipment		e de la companya de l
Equipment		
. RID Head office	•	<u>33,200</u>
UHF Digital T/R 2MB/sec×2, 1 standby	1Lot	10,200
PCM Multiplex Equipment	2sets	5,600
UHF Antenna φ 2m Parabolic	2sets	1,400
Coaxial Feeder & Connector	2sets	600
DC Power Supply DC - 48 V	2sets	4,000
AC Power Plant	1set	6,400
Remote Supervisory	1set	5,000
. Rangsit Nua		<u>32,600</u>
UHF Digital T/R 2MB/sec, 1 standby	1Lot	10,200
PCM Multiplex Equipment	2sets	5,000
UHF Antenna φ 2m Parabolic	2sets	1,400
Coaxial Feeder & Connector	2sets	600
DC Power Supply DC - 48 V	2sets	4,000
AC Power Plant	1set	6,400
Remote Supervisory	1set	5,000
. Pasak Tai		32,600
(Same as Rangsit Nue)		
. Region 8		33.000
UHF Digital T/R 2MB/sec, 1 standby	1Lot	10,200
PCM Multiplex Equipment	2sets	5,400
UHF Antenna φ 2m Parabolic	2sets	1,400
Coaxial Feeder & Connector	2sets	600
DC Power Supply DC - 48 V	2sets	4,000
AC Power Plant	1set	6,400
Remote Supervisory	1set	5,000

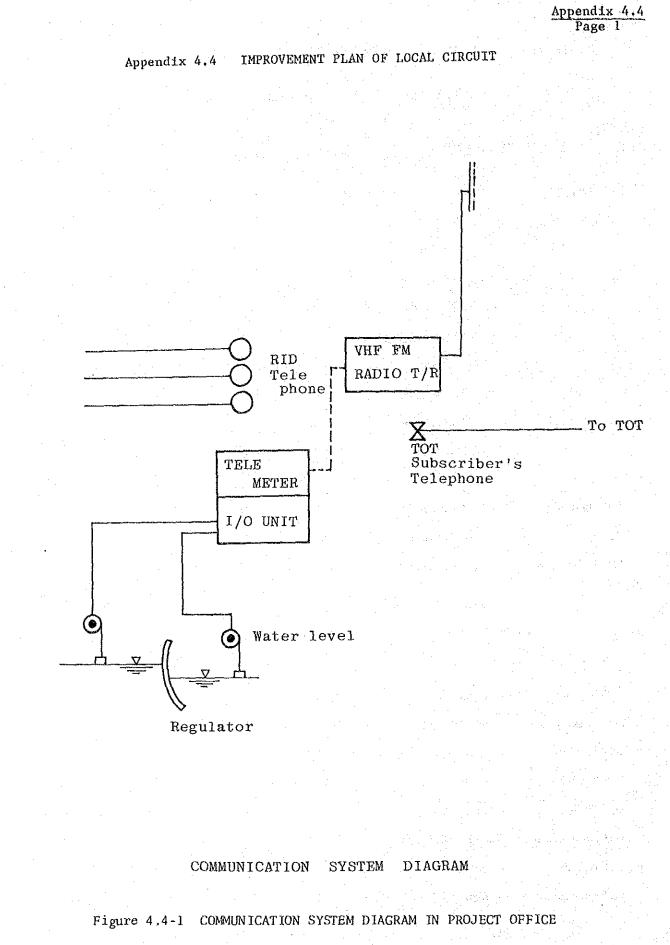
Construction Cost of Trunk Line by RID and TOT (1/2)

	an An Anna Anna Anna Anna An Anna Anna A	Description	<u></u>		Quantity	Amount (1000 Yen)
			· · · ·			
. 5.	Region 7		5			<u>33,000</u>
	(Same as Region 8)				en e	
	Nakhon Sawan			•	an An an Antara an Antar	32.600
6.					ning and the second starts of	
	(Rame as Rangsit nue)	·				32,600
7.	Plichit					<u>52,000</u>
	(Same as Rangsit Nue)			:		
8.	Region 3					<u>33.000</u>
	(Same as Region 8)				and the second sec	en e
					n de ser	
1	Equipment total			•		262,600
	nguipmentototar					
						<u>8.300</u>
II	Test Equipment				ning and a start of the start o	0.000
Ш	Spares, Installation mater	ials, Mannal, Mainten	ance Tools,			<u>25,900</u>
	· · · ·			· · ·	and a second	
IV	Installation Fee			$\sim 10^{11}$		65,540
	2			· · ·		
	Antenna Tower					26,800
	Antenna Towci			en e		
				•		48.000
VI	Building					<u>48,000</u>
					n an tha an t Tha an tha an t	
MI	Miscellaneous					<u>43,180</u>
						and
VIII	Freight, Insurance		•			<u>29.680</u>
	A	_1			en e	560,000_
	Grand Tot	ai .		· ·		700.000
		. ,				

Construction Cost of Trunk Line by RID and TOT (2/2)

Table 4.3-3 LENTAL FEE FROM COMMUNICATION SYSTEM BY TOT

		Number of	Distance	Rate *	Amount
Communicat	ion Section	Channel	(km)	(Baht/ch.km.Y)	(Baht/Year
1. Trunk Route					
TOT Bangkok	- TOT Chainat	12	163	170	332,520
	- TOT Lop Buri	12	115	170	234,600
jā.	- TOT Ayutthaya	3	96	170	48,960
	– TOT Saraburi	3	80	. 170	40,800
	- TOT Nakhon Sawan	3	220	170	112,200
	- TOT Phichit	3	300	170	153,000
	- TOT Phitsanulok	6	350	170	357,000
TOT Lop Buri	- TOT Ayutthaya	3	40	170	20,400
antan antan antan La santan La santan	- TOT Saraburi	3	100	170	51,000
	– TOT Chainat	6	48	170	48,960
TOT Chainat	- TOT Nakhon Sawan	3	55	170	28,050
	- TOT Phitsanulok	3	185	170	94,350
TOT Phisanulok	– TOT Nakhon Sawan	3	130	170	66,300
	- TOT Phichit	3	50	170	25,500
Sab-	total		· ·		1,613,640
	· · · ·			(B/ch · km)	
2. <u>Local Line</u>		_			584.000
TOT Bangkok	 Head office 	42		1,000	504,000
TOT Ayutthaya	– Rangsit Nua	6		2,000	144,000
TOT Saraburi	– Pasak Tai	6	-	1,000	72,000
TOT Lop Buri	- Regional 8	24	~	2,000	576,000
TOT Chainat	- Regional 7	24	<u></u>	1,000	288,000
TOT Nakhon Sawan	- Nakhon SawanP.	9	-	1,000	108,000
TOT Phichit	- Phichit P.	6	<u> </u>	1,000	72,0 <u>0</u> 0
TOT Phisanulok	- Regional 3	15	-	1,000	180,000
Sab-	total				1,944,000
Grand	Total	2			3,557,640
Crans	· · · ·				(3,600,000



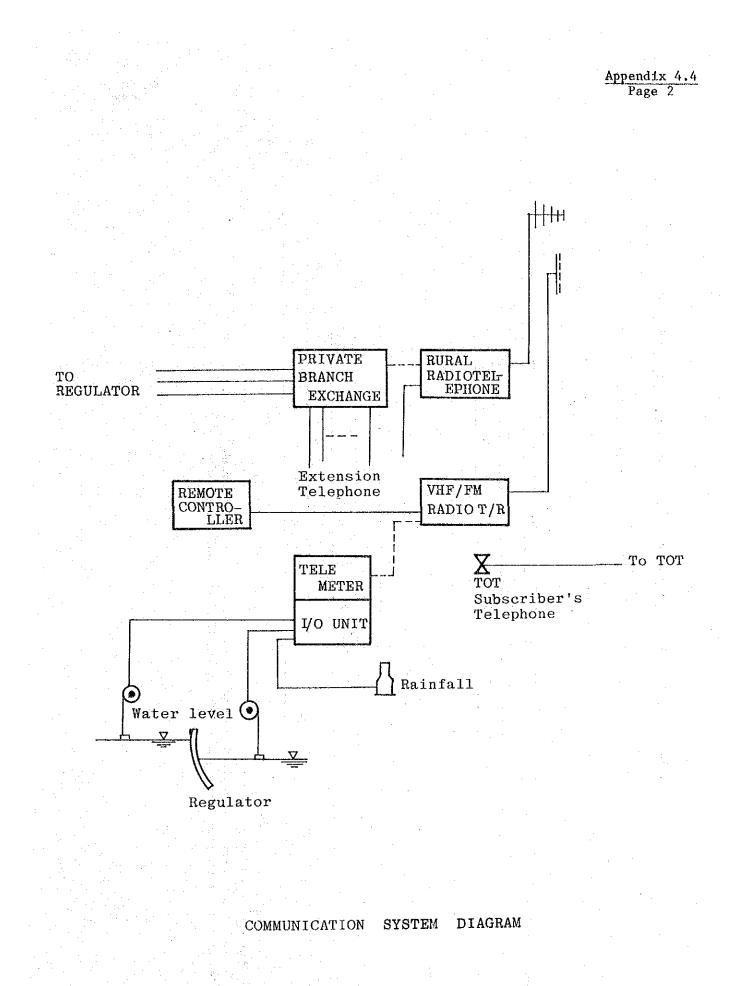


Table 4.4-1 NUMBER OF VHF/FM RADIO STATION TO BE INTRODUCED IN DELTA

Number of VHF Station to be Introduced in Delta

		Base Station	tation		-	Project Name			
Area	Project office	Water Master office	Others	Sub-total	Land mobil	Portable	Sub-total	Total	Remarks
Region 7	15	34	11	60	15	231	246	306	
	- (18) -	(40)	(11)	(69)	(18)	(258)	(276)	(345)	
Region 8	11	23	9	40	11	151	162	202	
	(11)	(23)	(9)	(40)	(11)	(121)	(162)	(202)	-
Region 9	\$-4 	ŝ		4	1	16	24	28	
	(2)	(11)		(16)	(2)	(55)	(16)	(32)	
Region 10	•			•	•			•	
	(6)	(12)		(21)	(6)	(63)	(72)	(83)	
Total	27	60	17	104	27	401	432	536	
	(43)	(88)	(11)	(146)	(43)	(527)	(586)	(732)	- - -

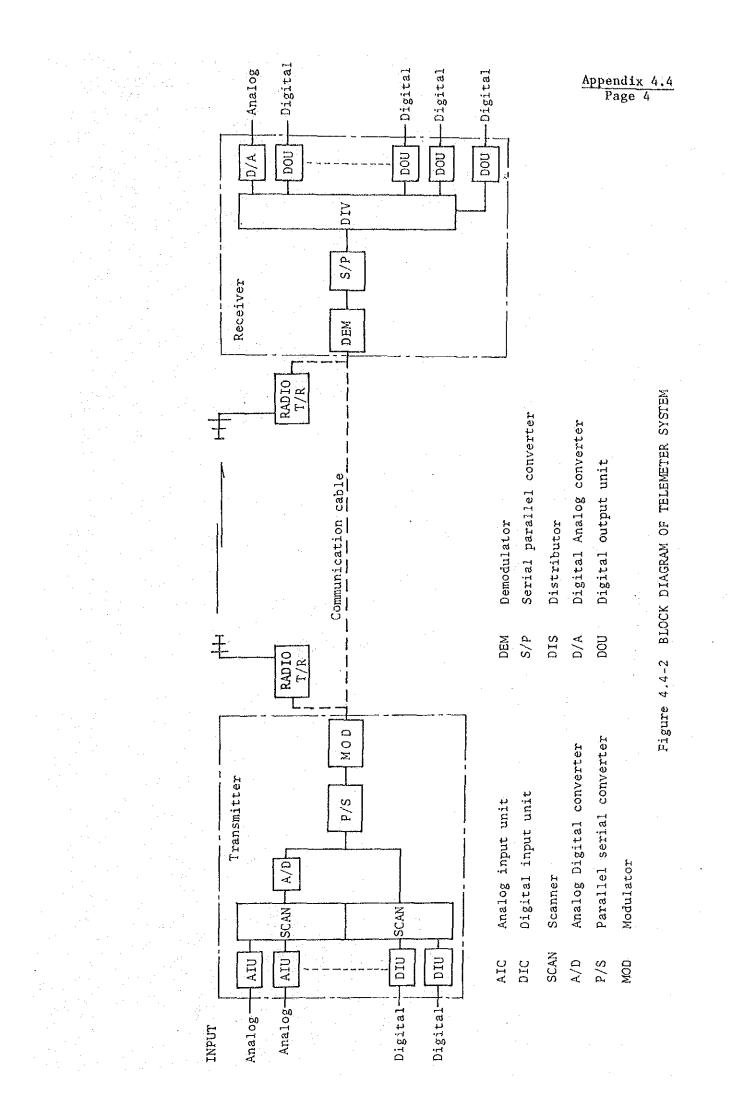
Note: *1 Number of mobil station are estimated as follows.

- One unit by one project office be introduced.

Three units of portable wireless telephone be introduced at project office and water master office, respectively.

() indicates in case of including surrounding project areas , Regional 9 and 10 in Chao Phraya Delta.

Appendix 4.4 Page 3



Appendix 4.5 IMPROVEMENT PLAN OF FIELD CIRCUIT

Table 4.5-1 COMPARISON OF COMMUNICATION CABLE

Comparison of Communication Cable

Loss in 1KHz (dB/km)

					I con Posietoneo
Items	Fine weather	Rainy weather	Resistance (Ohm/km · loop)	Loss in 30km (dB)	in 30 km (Ohm)
Open wire $\phi \ 2 \ mm$	0.063	0.07	13.0	1.9	390
Toll cable & 1.4mm	0.48	0.48	22.6	14.4	678
Toll PEF - P cable & 1.2 mm	0.49	0.49	31.0	14.7	930
CPEV cable \$ 1.2 mm	0.60	0.60	31.0	18.0	030

Appendix 4.5 Page 1

		VHFrFM mobil station	•7 New *8 Land*9 Portable *1 moval Introduction mobil Telephone	
			New *8 Introduction	
JULT			Re	ì
FIELD CIR(cuit (1)	Telephone Set	Installation*5 Installation*6 *7 New ** bv local circuit by Telemeter Removal Introduction.	1
NUMBER OF IMPROVEMENT EQUIPMENT FOR FIELD CIRCUIT	Number of Improvement Equipments for Field Circuit (1)			· · ·
FINT EQU	ment Equipme		Number *4 Total of Station	
IMPROV	mprove		Total	•
UMBER OF]	Number of]		Replacement*3 in Project off	-
Table 4.5-2 NI		Telephone Set	New *2 Installation	
Table			*1 lacement	

		*1 New *2	Replacement"3		Number *4	Installation*5	Installation *6	4	New *8	Land*9	Portable *10
Project Name	Replacement	Installation	in Project off	Total	of Station	<u>bv local circuit</u>	by Telemeter	Removal	Introduction	mobil	Telephone
Region 7						•		•		•	•
Chao Phraya Dam		•	•	•	•	•	•	ţ,	•	•	co N
Phoniathep	G 5	4	20	33	61	. 11	•		•		σ
Thabote	27	υ Ο	20	55	3	Ţ	•	٦	r-1	• •1	đ
Samchook	15	10	20	45	5	1	,	M	က	1	18
Don Chedi	25	Ť	20	49	¢1	्रम	ı	ب م	۱.		ch Ch
Pho Phraya	22	16	20	58	ъ	ы	ŧ	1	ę	-1	19
Boromathat	20	10	20	20	υ ·	м	1	•4	ę	P-1	22
Chanasutr	33	20	20	73	۲	1	•	м	ŝ	1	30
Yang Manee	29	к о	50	57	m	: F	•	1	71	ŧ٠t	14
Pakhai	18	63	20	46	n	н	FI	١	1		¢)
Bang Ban		ι	20	20	7	-		,	•	- -1	IS
Chaochet Bang Yihon	18	4	50	42	ю	1	Ţ	,	1	ы	14
Phraya Banlu	01	12	20	42	ci	7	ı	1	ы	7-4	19
Phra Pimon	e S	4	20	30	61	нı	ы	•			11
Phasi Charoen	•	•	20	20	ო	۶۰۰۹	1	Ч	7	1	15
Kra Sieo	0		20	20	61	14	•	7	•	1	15
Others	•	1	,	ı	Ċ,	ŀ	G	•	•	•	'r
Sub-total	232	108	300	640	60	15	12	11	22	15	231

Replacement outside project office. # ₽

Note:

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Additional installation outside project loffice. 11 64

Replacement or new introduction inside project office. :#S

Project office and water master office have one set, respectively. Radio to be introduced by improvement plan of local circuit. || |1 |1 # \$

Radio to be introduced by telemetering system. #9#

After introduction by local circuit, that in project office be replace to water master office. 115

Numbers to be introduced as improvement plan of field circuit. ∦ ₽

Project office have one land mobil. ။ ရှိ

Project office and water master office have three sets, respectively. But, project area without wire ≈0I*

communication system have five sets, respectively.

Appendix 4.5 Page 2

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ref ref ref r New New r New New r New	The set of the s			Telephone Set	et			VHF	VHF/FM fixed station			VHF/FM	VHF/FM mobil station
ore \$16 29 8 20 57 3 1 2 2 2 3 1	e 11 4 20 57 3 1 - 1 ast 11 4 20 57 3 1 - 1 ast 11 4 20 57 3 1 - - 1 ast 10 4 20 55 2 1 - - 1 ast 11 4 20 55 2 1 - - 1 ast 14 20 55 2 1 1 -	Project Northe	#1 Kanlarent	tallativ	Replacement*3 in Project off	Total	50	Installation #5 by local circuit	Installation*6 by Telemeter	*7 Removal	duction	Land*9 mobil	
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org Pare 10 4 20 34 2 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 <th< td=""><td>org Rang 10 4 20 34 2 1 2 Anaraj 35 14 20 65 6 1 1 1 ask Tai 11 4 20 55 2 1 1 1 argst Nua 14 8 20 45 3 1 1 1 argst Yai 5 12 20 45 1 1 1 1 argst Yai 5 12 20 45 1 1 1 1 argst Yai 5 12 20 45 1</td><td>Koke Kathiem</td><td>31</td><td>60</td><td>20</td><td>59</td><td>ო</td><td>1</td><td></td><td>•</td><td>3</td><td>1</td><td>თ</td></th<>	org Rang 10 4 20 34 2 1 2 Anaraj 35 14 20 65 6 1 1 1 ask Tai 11 4 20 55 2 1 1 1 argst Nua 14 8 20 45 3 1 1 1 argst Yai 5 12 20 45 1 1 1 1 argst Yai 5 12 20 45 1 1 1 1 argst Yai 5 12 20 45 1	Koke Kathiem	31	60	20	59	ო	1		•	3	1	თ
Intravi 55 14 20 59 6 1 1 1 1 3 1 matrix 11 1 4 20 55 2 1	nhandi 55 14 20 59 6 1 1 sairTai 11 4 20 55 2 1 1 1 agsitNua 14 8 20 55 2 1 1 1 agsitTai 1 5 12 2 2 1 1 1 agsitTai 5 12 2 2 3 1 1 1 agsitTai 5 12 20 37 5 1 2 2 ong Darm - - 20 37 5 1 2 </td <td>Reong Rang</td> <td>10</td> <td>4</td> <td>20</td> <td>34</td> <td>67</td> <td>M</td> <td>a</td> <td>н</td> <td>•</td> <td>1</td> <td>11.</td>	Reong Rang	10	4	20	34	67	M	a	н	•	1	11.
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 hers 179 56 540 505 44 12 8 10 14 13 vio-stotal 179 56 540 505 44 12 8 10 14 13 * Additional installation outside project office. * Additional installation outside project office. * Replacement or installation inside project office. * Replacement of provide the arrow as ext, respectively. * Replacement of installation outside project office. * Replacement of the introduction inside project office. * Replacement of an outside project office. * Replace office and water master office have one set, respectively. * Replace office and water master office have one set, respectively. * Replace office and water master office have one set, respectively. * Project office and water master office have one set, respectively. * Project office and water master office have one set, respectively. * Project office and water master office have one set, respectively. * 10 = Project office and water master office have three sets, respectively. * 10 = Project office and water master office have three sets, respectively. 	hers 240 5 5 5 iub-toteal 179 86 540 505 44 12 8 iub-total 11 194 1.145 104 27 20 *1= Replacement outside project office. * 1.145 104 27 20 *2= Additional installation outside project office. * 1.145 104 27 20 *3= Replacement or new introduction inside project office. * 1.145 104 27 20 *3= Replacement or new introduction inside project office. * * 27 20 *4= Project office and water master office. * * 27 20 *5= Radio to be introduction by local circuit. * * * * *6= Radio to be introduction by local circuit. *	Phra Ong Chaiyanichit	60	12	•	4 0	4	T	1	H	63	1	19
ind-storal17986540505441281014130:eal411134-1,145104273627*1 =Replacement outside project office.*2 =Additional installation outside project office.*3 =Replacement or new introduction inside project office.*4 =Project office and water master office.*5 =Radio to be introduced by improvement plan of local circuit.*6 =Numbers to be introduced by improvement plan of local circuit.*6 =Numbers to be introduced by improvement plan of local circuit.*7 =After introduced by improvement plan of local circuit.*9 =Project office have one land mobil.*10 =Project office and water master office.*10 =Project office have fire sets, respectively. But, project area without wire communication system have five sets, respectively.	ub-total1798654050544128.0tal411194-1,1451042720*1=Replacement outside project office.*2=Additional installation outside project office.*3=Replacement or new introduction inside project office.*4=Project office and water master office have one set, respectively.*5=Radio to be introduced by improvement plan of local circuit.*6=Radio to be introduced by telemetering system.*7=After introduction by local circuit, that in project office he replace to water master office.*6=Project office and water master office here explate to water master office.*7=After introduction by local circuit, that in project office here explate to water master office.*6=Project office and water master office here explate to water master office.*10=Project office and water master office have three sets, respectively. But, project area without wire communication system have five sets, respectively.	Others	•	•	240	•	ыз	ı	Q	•	•	•	•
411 194 1,145 104 27 20 21 36 27 *1= Replacement outside project office. * * 1,145 104 27 20 21 36 27 *2= Additional installation outside project office. * <td< td=""><td>Otail 411 194 1,145 104 27 *1= Replacement outside project office. *2= Additional installation outside project office. *3= Replacement or new introduction inside project office. *4= Project office and water master office have one set, respectively. *5= Radio to be introduced by improvement plan of local circuit. *6= Radio to be introduced as improvement plan of local circuit. *6= Radio to be introduced as improvement plan of field circuit. *1= Project office have one set, respectively. *1= Project office and water master office.</td><td>Sub-total</td><td>179</td><td>86</td><td>540</td><td>505</td><td>\$</td><td>12</td><td>60 </td><td>10</td><td>14</td><td>12</td><td>170</td></td<>	Otail 411 194 1,145 104 27 *1= Replacement outside project office. *2= Additional installation outside project office. *3= Replacement or new introduction inside project office. *4= Project office and water master office have one set, respectively. *5= Radio to be introduced by improvement plan of local circuit. *6= Radio to be introduced as improvement plan of local circuit. *6= Radio to be introduced as improvement plan of field circuit. *1= Project office have one set, respectively. *1= Project office and water master office.	Sub-total	179	86	540	505	\$	12	60 	10	14	12	170
11 11 11 11 11 11 11 11 11 11 11 11 11 1	11 11 11 11 11 11 11 11 11 11 11 11 11 1	Total	411	194	•	1,145	104	27	50	21	36	27	401
1 1 1 1 1 1 1 1 1 1 1 1 1 	1 											•	
영상 이렇게 많이 있는 것을 많이 많이 했다.	영상 이렇게 많이 있는 것을 많이 많이 했다.	11 11 11 1	ment outside project	office. de moiset office							1	•	
			ment or new introdu	iction înside project	toffice								
			office and water mas	ter office have one	set, respectively.		•	·		•			· .
) be introduced by im	provement plan of	local circuit.	·	•						
			be introduced by tel	lemetering system.							:		
fa a tean	de la della del		troduction by local c	ircuit, that in proje	ct office be replace t	o water m	aster office.			÷	:		
. 19			es to de marcauceu an office have one land	s unprovement pro- mobil.						: `.			
communication system have five sets, respectively.	communication system have five sets, respectively.	. te	office and water mas	iter office have thre	se sets, respectively.	But, proj	ect area without w	rire					•
		commur	nication system have	s five sets, respectiv	vely.	;			· · ·	•			

Appendix 4.5 Page 3

APPENDIX 4.6 IMPROVEMENT PLAN OF MONITORING SYSTEM

Table 4.6-1 NUMBER OF REGULATOR STATION BY LEVEL

Appendix 4.6 Page 1

	Canal	Length	Number	Number	Numbe	er of	station	by i	level
Project	type	(km)	of Regu.	of FTO	Type	Լ-1	L-2	L-3	. L-
Phonlathep	AA	· · · · · · · · · · · · · · · · · · ·	2	-	(1)	2	2	2	2
	A	31, 32	3	40	(2)	-	3	3	3
	B	56.87	18	53	(3)	-	-	46	46
· .	C	38.59	28	57	(4)		-	-	150
	Total	126.78	51	150	Total	2	. 5	51	201
Borommath-	AA		1		(1)	1	1	1	1
at	A .	131.30	24	335	(2)	-	24	24	24
	B	81.13	24	157	(3)	-	. –	75	75
	C :	95.31	51	203	(4)	-	-	-	695
	Total	307.74	100	695	Total	1	25	100	795
Sam Chuk	AA		1	_	(1)	1	1	1	1
· · ·	A.	60.40	11	196	(2)	· _	- 11	11	11
	B	112,90	27	273	(3)		-	42	42
	C	38.72	15	98	(4)	-	-	-	567
	Total	212.02	54	567	Total	1	12	54	621
Don Chedi	AA		~	-	(1)	-	_	-	-
	A	50.13	3	56	(2)	-	3	3	3
	B	30.02	19	63	(3)	-	-	57	57
	C.	55.58	38	83	(4)	-	-	-	202
	Total	135.73	60	202	Total	1	3	60	262
Thabote	AA	_ `	1	-	(1)	1	1	1	1
	A.	33, 28	2	38	(2)	-	2	2	2
	B	78.22	17	108	(3)	-	-	61	61
	C	68.77	44	103	(4)	-		-	249
	Total	180.27	64	249	Total	1	3	64	313
Pho Phraya	AA	 	3	_	(1)	3	3	3	5
	A	79.74	9	212	(2)	-	9	9	ę
	В	91.62	15	176	(3)	-	-	33	33
	C	36.66	18	82	(4)	-	-	-	47(
	Total	208.02	45	470	Total	3	12	45	515

		<u>, </u>			- - 	{		.* .** **			pendix Page 2
		Canal	Length	Number	Nu	umber	Number	ofs	tatio	n by	level
	Project	type	(km)	of Regu	L	f FTO	Type I	,-1	L - 2	L-3	L-4
	Chanasutr	AA	-	1		-	(1)	1	1	1 	1
		A	79, 59	9		99	(2)	·	9	9	9
		B	218, 98	72	. 4	189 -	(3)			138	138
		С	114.06	66	1	62	(4)		-	-	750
	·	Total	412.63	148	Ĩ	750	Total	1	10	148	898
	Yangmanee	AA			i		(1)	1	1	1	1
	I d ti E m d n c c	A	81.69	14	. 1	120	(2)		14	14	14
ļ		B	100, 60	33		58	(3)	_		45	45
		C	15. 74	12		21	(4)				299
		Total	198, 03	60	ž	299		1	15	60	359
					· · · · · · · · · · · · · · · · · · ·			· · · · ·			
.	Phak Hai	AA	-	3			(1)	3	3.	3	3
		A	15.05			8	(2)		- ,	-	. –
		В	23.52	- 4		35	(3)	-	-	6	6
ļ		C	4.22	. 2		8	(4)	- 7	-	· _ `	51
		Total	42.79	9	<u>.</u>	51	Total	3	3	9	60
	Bang Ban	ÅÅ	-	_	· .	- '	(1)		Ť	den de Filier	- 1997 - 1999 - 1997 - 1997 - 1997 - 1997 - 1997
		A		-			(2)		- * <u>-</u>	-	1 -
		B	52.38	12		.95	(3)	. 	-	40	40
		С	70.41	28	· ·]	113	(4)	-	-	·	208
		Total	122.79	40	4	208	Total		· *	40	248
	Chao Ched	AA		2			(1)	1	1	1	1
	Bang Yihon	A					(2)	n ja ji H	· · · ·	· · · ·	
ļ		B	989, 30	88	. *	-	(3)	- 1	- 	89	89
		C	:				(4)				-
		Total	989.30	90	· .	-	Total	1	1	90	90
	Phraya Ban	ÅÅ		1			(1)	1	1	1	1
		AA		. 1			(1)	•	т. С		•
	Lu	B	834.10	54			(3)			54	54
		С В	034,10	94				dra t Sul - t Sul - s		74	J¥
			834.10	55		-	(4) Total	1	1	55	55
Į	·		·	<u></u>						<u> </u>	

	endix 4 Page 3									
]	evel	n by 1	station	rofs	Number	Number	Number	Length	Canal	
	L-4	L-3	L-2	L-1	Туре	of FTO	of Regu.	(km)	type	Project
	3	3	3	3	(1)	· _	. 3	-	AA	Phra Pimon
					(2)		•		A	
	20	20	-	_	(3)	-	20	422, 30	В	
					(4)				C	
	23	23	3	3	Total	-	23	422.30	Total	
		-	-	-	(1)		-	~	AA	Phasi
					(2)				Å	Charoen
	32	32	-	-	(3)	. –	32	1094.00	B	
					(4)				C	
	32	32	-	-	Total	- · [32	1094.00	Total	
-	1	1	1	1	(1)	18	1	45.60	AA	Manorom
	-	-	. –		(2)	-		_	A	
	83 -	83	-	-	(3)	148	55	145, 21	В	
	284	-	-	-	(4)	118	28	31.70	C	
	368	84	1	1	Total	284	84	222.51	Total	
	1	. 1	· . 1	1	(1)	14	1	39.65	AA	Chong Kae
	3	3	3	-	(2)	33	3	18.20	A	
	69	69		_	(3)	126	36	80.47	B	
	267	-		-	(4)	94	33	74.15	C	
	340	73	4	1	Total	267	73	212.47	Total	
	1	1	1 .	1	(1)	-	1		AA	Maharaj
	11	11	11	_	(2)	252	11	154.41	A	
	85	85	_	-	(3)	360	52	160.64	В	
	730	_	·	-	(4)	118	33	49.20	C	
	827	97	12	1	Total	730	97	364. 25	Total	
	1	1	1	1	(1)	18	1	36, 65	AA	Khok
	3	3	3		(2)	52	3	38.20	A	Kathiem
	72	72	-	_	(3)	132	31	81.10	B	ναιμιζη
1	275	-	-	~	(4)	73	41	49.76	D C	
	351	76	4	1	Total	275	76	45.70 205.71	Total	
ļ			·					500,11	iviai	glass da la f

Appendix 4.6 Page 4

	Canal	Length		Number					
Project	type	(km)	of Regu.	of FTO	Туре	L-1	L-2	L-3	L-4
loeng Rang	٨Å	12, 88	1	3	(1)	l .	1	i	1
	A	44,50	2	64	(2)	-11	2	2	2
	B	41,18	13	62	(3)		· :- :	31	31
	C	41,24	18	57	(4)			· • •	186
	Total	139.80	34	186	Total	1	3	34	220
asak Tai	AA	· -	4		(1)	4	4	4	4
	A	32.00	1 -	·	(2)	, É	-		-
	B	72.39	26	239	(3)		-	71	71
	C	81.78	45	212	(4)		-	- ⁻	451
	Total	186.17	75	451	Total	4	4	75	526
lakhon	AA	· · ·			(1)			_	· · · · ·
uang .	A	55.90	3	71	(2)	-	3	. 3	3
	. 8	91.84	22	148	(3)	· · _		46	46
	C	53.68	24	85	(4)	1994) 	- ,		304
	Total	201.42	49	304	Total		3	49	353
langsit	ÅA	_	1		(1)	2	2	2	2
iua	A				(2)		•	e e e E e tra	• •
	B	536.90	50	227	(3)			49	49
	C				(4)	• •	· · · ·	•	227
	Total	536.90	51	227	Total	2	2	51	279
langsit	AA		1		(1)	1	1	1	1
lai	A	-		· .	(2)			•	
	B	597.30	52	 	(3)	<u> </u>	<u> </u>	52	52
	C			i.	(4)				
	Total	597.30	53		Total	1	1	53	53
Khlong Dan	AA		1	.	(1)	1	1	1	- 1
	A				(2)	i i			
	8	497 00	19	'	(3)		÷ _ `	19	19
	C		· · ·		(4)			· · · · · ·	•• • • •
	Total	497.00	20	·	Total	1	1	20	20

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	Canal	Length	Number	Number	Numbe	er of	statio	n by	level
Project	type	(km)	of Regu.	of FTO	Туре	L-1	L-2	L-3	L-4
Phra-Ong	AA .	· · · · · · · · · · · · · · · · · · ·			(1)			_	
Chaiya-	A				(2)				
nuchit	B	452.20	64	-	(3)	-	-	64	64 [:]
	C	÷		i i i i	(4)				
	Total	452.20	64	-	Total		_ ·	64	64
G-Total	- 1+ -		· · · · ·			32	128	1507	7872

Note AA ; Major regulator

A ; Main regulator of which capacity is more than 10.0 m³/s.

B ; Regulator of capacity from 1.0 m³/s to 10.0 m³/s.

C ; Regulator of which capacity is less than 1.0 m³/s.

(1) ; Major regulator of AA.

(2) ; Main regulator of A.

(3); Other regulator of B and C.

(4) ; FTO.

Table 4.6-2 NUMBER OF WATER LEVEL OBSERVATION STATION BY PROJECT OFFICE

	leneth	Number of	Level 2	Level 3	Levi	Level 4		Length	Number of	1 ovol	1 ouol 2	Teue I		
Canal name	E)	Barrage	Aut			Tele	Canal name	(E)	Barrage	Aut	Aut Tele	1	Tele	
11	62,722	12	1		-1	1(II)	Klong Makamthao-				1			
1R-1L	7,400	ന	ı	•	γ −1	f	Uthong	21,120	Ţ	щ	5		1(П)	
2R-1L	2,800	∾1	¢	1	ı	ı	IL	2,400	2		1 4	ı	ſ	
3R-1L	5, 850	က	ŀ	, 1	ı	1	Klong Phonlathep				•			
4R-IL	4,500	53	ŗ	1 1	. 1	ł	IR	19,800	ın	ı	•		ţ	-
21	28,400	ß	4	۔ م	****	1(I)	1L	9,300	ላ	,	1	1	.•	
1L-2L	19,000	دي		1 1	4	ı	21	21,580	ъ	,	1	 4	ŧ	
1L-1L-2L	2,410	~	r	ı ı	1	,	11-21	3,200	্য	•	4	1	ų	
1R-1L-2L	4.510	8	1	1	•	1	2L-2L	2,400	2	1		1	ŗ	
2L-2L	4,100	0	F	1 8		I	Klong Tung Rahan	10,200	က	1	' 8	⊶	1(I)	
3L-2L	5,434	ന	,	ı	,	I	lR Rahan	8,640	1	ı	3		. t	
4L-2L	6,700	5	•	, ,	1	ŧ	1r "	7,000	শ্ব	. 1	1 1	red	ſ	
IR	40,180	Ŀ	7	1 63	, 	1(Ⅱ)	1R-1L ~	4,000	လ	4	• . • 1	1	ĩ	
1R-1R	5,817	Ţ	3	r 1	1	•	21° ~	4,650	4	ı	1	F	2	
2R-1R	5, 300	4	ı	3	ł		31. "	8,494	сл	ı	н - - т -	+-4	ı	
3R-IR	23, 700	4	, 1	1	• ••••	,	1L-3L ~	4,000	4	•	1 3	1	'ı	
4R-1R	8, 720	4	ł	k 1	1	ı	Major Regulator			÷.			- - -	
1L-4R-1R	2,710	က		1	•	I,	Phonlathep	•	ı	* 4	- 1(1(II) -	1(II)	
5R-1R	3,845	4	,	I	١	t	Makamthao-		•	•) 1 - 1(1(1) -	(1)[
6R-18	15,667	ស	J	• .	7	ı	Utong						:	
7R-1R	3,800	2	r	1 1	5	ł	· · · ·						•	
8R-1R	6,640	ന		1		ı	Total		6	ŝ	<u>4</u> <u>I(</u>	I(I) 6	(1)1	
1L-1R	20,470	с С	1	1	ı						H	(II)	3(II)	
2L-1R	4,660	4		1. 1	•				•					
3L-1R	4,700	ጚ		1 1	•	1	Note : Aut :	Automativ	; Automatic water level	el gauge	•	i i		
4L-1R	7,500	~	1.	1	,	•	Ē					-		·
Major Regulator							iele ;	Automati	; Automatic gauge with telemeter	th telemete	0	type of	is type of telemeter	P
Borommathat		• • •		(M) I -	1	1(IV)	· .		- - -	· .				age
Total	307 735	UUL	V	6 - 1 (TV)	0	3(II)		·						6
101 01			*											

			•											
Sam Chuk Project								Don Chedi Project	۰. ۲.		•			
	Length	Number of	Level 2	Level	- 13	Level 4	14		Length	Number of	Level 2	Level 3	Level	14
Canal name	(B)	Barrage	Aut	Aut	Tele	Aut	Tele	Canal name	(H)	Вагтаде	Aut	Aut Tele	Aut	Tele
IL	25,000	പ	* -4	ო	•	2	1(П)	Klong Makamthao-	•					
IR-IL	7, 500	က		ł	F	r4		Uthong	50, 125	ŝ	5 7	5	ંભ	
2R-1L	31,600	7	1	, '	ł		8	В	4,200	ကို		ן - - - - ו	Ļ	
1L-2R-1L	5,600	ന	1	ı	•			10L	2,620	2	I	· •	•	L
2L-2R-1L	7, 500	~	ŧ	1	۱	ı	ł	111	4,100	က	3	1 1	ı	ļ
3R-1L	6,200	2	ł	ı	·	,	I	121	4,440	ന	ı	. I	ı	ι
4R-1L	8,500	က	1	I	ı	r~4	1	131	3, 600	ŝ	ı	•	·	•
1R	35,400	Q	1	2	F		1(1)	14L	3, 800	ę	ı	ı ı	ı	ı
IR-IR	7,000	ŝ	,	1	1	ı	I	151	4,000	m	ı. I	1 F	I	ı
IL-IR	7,400	ę	1	·	ı	ı		161	3,620	4	1	1	ı	
2L-1R	9,000	ო	I	t	•	11	1	17L	4,200	4	I	ı I	1	۱
3L-1R	7,000	ი	,	·	1	÷–4	ı	18L	6,020	4	1	• •	1	. 1
2.8	49,300	8	ł	4	I	ı	I(II)	1L-18L	3,020	6 1	1	. 1 1	ı	
1L-2R	5,020	\$	1	Ţ	1	ı	ì	1R-18L	3,400	2	t		ı	ŧ
Major Regulator		-						19L	6,300	ц С	ł	נ נ	щ	I
Sam Chuk		r-1	, 1	١	1 (IV)	I	1(IV)	50L	6,800	Ÿ	ų	ı ı	1	ı
								21L	4,920	63	ŗ	, ,	1	•
Total	212,020	54	3	9	1 (IV)	∞	3(П)	22L	4,800	57	,	• •	ı	ı
						1	1(IV)	23L	10,900	ݥ	,	•		ı
								24L	4,856	63	,	۰ ۱	t	i
												•		
								Total	135, 721	60	5	۔ 2	Q	ı

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Tele Canal name (n) Barrage Aut Tele Hut Tele 1 (II') 11-18 5,100 3 1 2 1 1(II') - 18-18 5,100 3 - - - 1 1(II') - 18-18 5,100 3 - - - 1 1(II') - 18-18 10,460 2 - - 1 - - - 1 - - 1 - - 1 1(II') 1 1 2 - 1 - - 1	Nunber of
IR I3,075 3 1 2 1 1(II) IL-IR 5,100 3 - <th>Aut Aut Tele Aut Tel</th>	Aut Aut Tele Aut Tel
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	
2L-IR $30,500$ 4 - - - 1 $IR-IR$ $I0,460$ 2 - - - - - 1 $IR-IR$ $I8,215$ 3 1 2 - - - - - 1 $IR-IR$ $I8,215$ 3 1 2 - - - - - - - - - 1 $IR-IR$ $I8,215$ 3 1 2 - - - - - - - - - 1 $IR-IR$ $I8,700$ 2 - - - - - 1 $IL-IR-IR 9,320 3 1 2 - 1 1 IL-IL 12,200 3 1 2 - - - 1 1 IL-IL 13,200 4 - - - - - 1 1 IL-IL 1,300 3 1 - - - $	1 2 - 1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$, , ,
IR-IR-2L-IR 6,023 2 - 1 - - 1 -	, ,
IR-IR IS.215 3 1 2 1 IL-IR-IR(1) 6,460 2 - - - 1 IL-IR-IR(1) 6,460 2 - - - - - 1 IL-IR-IR(1) 6,460 2 - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - 1 - - -<	, i
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1 1 1
1L-IR-IR(1) 6,450 2 - - - - - - 1 3L-IR 2,350 3 1 2 - 1 1 3L-IR 2,350 3 1 2 - 1 3L-IR 3,320 2 - - - - 1 1L-3L-IR 7,280 2 - - - - 1 1L 19,100 3 1 2 - 1 1L 19,100 3 1 2 - 1 1L-1L 19,800 3 - - - 1 2L-1L 4,500 4 - - - 1 Major Regulator 1R-1L-1L 9,842 2 - - 1 Phokoi 1 1 - - - - - 1 Bang Vibon 1 1 1 - - - 1 1 1 1 1 1 1 1	1
3:-1R 29,350 3 1 2 - 1 1L-3L-1R 9,320 2 - - - - 1 1R-3L-1R 9,320 2 - - - - - 1 1R-3L-1R 9,320 2 2 -	r-4 1
11-31-1R 9,320 2 - - 1 1R-3L-1R 7,280 2 - - - 1 1L 19,100 3 1 2 - - 1 1L 19,100 3 1 2 - - 1 1L-1L 12,800 3 1 2 - - 1 2L-1L 4,500 4 - - - 1 - - 1 2L-1L 1,300 4 -	4
IR-3L-IR 7,280 2 - - - - - - 1 IL 19,100 3 1 2 - - - 1 IL-IL 12,800 3 1 2 - 1 2L-IL 4,500 4 - - - 1 2L-IL 4,500 4 - - - 1 1R-IL 7,300 4 - - - - 1 Major Regulator 1R-ILL 9,842 2 - - - 1 Phokoi 1R-ILL 1,300 4 - - - - - 1 Phokoi 1 1 - 1 - </td <td>1 1 1</td>	1 1 1
1L 19,100 3 1 2 1 1L-1L 12,800 3 1 2 - 1 2L-1L 4,500 4 - - - - 1 2L-1L 12,800 3 - - - - 1 2L-1L 12,800 4 - - - - - 1 1R-1L-1L 9,842 2 - - - - - - 1 Major Regulator 1 7,300 4 - - - - - 1 Pho Phraya 1 7,300 4 - - - - 1 Phokoi 1 1 - 1 - - - - - - - - - - - - - - - 1 1 1 1 1 1 1 1 - - - - - - - - 1 1	
IL-IL 12,800 3 - - I - - - I - - I - - I - - I - - I - - I - - I - - I - - I - - I - 1 1 1 1 1 - - - - - - - - - - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 <th< td=""><td>1 1 5</td></th<>	1 1 5
2L-1L 4,500 4 - 1 - 1 - 1 - 1	1 1 1
IR-1L 7,300 4 - - - - - 1 IR-1L-1L 9,842 2 - - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 1 - 1 <td>1. 2 - I</td>	1. 2 - I
1R-1L-1L 9,842 2 - - 1 Major Regulator Pho Phraya 1 - - 1(Y) - 1(Y) Phokoi 1 - - - - 1(Y) - 1(Y) Phokoi 1 1 - - 1(Y) - 1(H) Bang Yihon 1 - 1(I) - 1(H) - 1(H) Total 45 6 8 2(I) 10 6(II)	1 1 1
Major Regulator Pho Phraya 1 - 1(IV) - Phokoi 1 - 1(II) - Bang Yihon 1 - 1(II) - Total 45 6 8 2(II) 10 <u>1(IV)</u>	3 1 1
Pho Phraya 1 - 1(W) - Phokoi Bang Yihon 1 - 1(II) - Bang Yihon 1 - 1(II) - 1(II) - Total 45 6 8 2(II) 10	1
Phokoi 1 - 1(П) Bang Yihon 1 - 1(П) Total 45 6 8 I(П) - - 1(П)	1
Bang Yihon 1 - 1(II) - Total 45 6 8 2(II) 10	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Total 45 6 8 2(II) 10 1(W)	
Total 45 6 8 2(II) 10 1(IV)	1
	1 1
(AD)	1
(X)	I I I I
(II)	· .
2(11)	I - I(II) -
	3 4 1 (IV) 5

Len	Length	Number of	Level 2	Level 3	က	Level	14
Canal name) (E	Barrage		Aut	Tele	Aut	Tele
11	7,820	5		F	1		•
IL-IL	6,098	က	ı	1 ·	F	1	1
IR-IL	17,310	ഗ		ı		 4	ı
1L-1R-1L	5,804	ကာ	ŀ	•	.'	ı	1.
21	14,973	ю.	,	н.	ŀ	1	1
1R	79, 592	б	1	Ť	I	¢1	2(П)
1L-1R	29, 720	L	۱	r	•	-	۰,
1R-1L-1R	5,000	0	•	۱	F	•	ı
2R-1L-1R	16,910	ស	,	ļ	•	ł	۱
IR-2R-IL-IR	1,800	5	•		ŀ	۱	ı
2L-1R	12,600	ഹ	ı	•	I	-4	1
1R-2L-1R	4,100	က	ı	•	ī	ı	۱
3L-IR	24,462	9	r	ì	ı	 -1	1
1L-3L-1R	4,000	2	ı	ı	ı		ŀ
2L-3L-1R	3,220	2		ı	ı	۲	ī
1R-3L-1R	5,600	4	1	ı	ı	۱	ı
IR-IR	13,600	ŝ	r.	•	ı	-4	,
1R-1R-1R	5,170	က	1	r	ı	ı	I
2R-1R	8, 738	ŝ	ŀ	۱	ı	1	ı
4L-1R	12,200	ന	۱	ı	t	1	٠
5L-1R	16,480	ţ	I	ı	ŀ	 4	ł
1L-5L-IR	1,480	က	ı		r	•	ı
2L-5L-1R	4,133	ന	I	ł	1	۱	ī
3L-5L-1R	4,800	က	,		3		1
1L-3L-5L-1R	3, 680	ຕາ	ì	ł	ı	ı	ı
1R-5L-1R	3, 700	ന	;	1	1	•	ı
2R-5L-1R	5,060	ຕ	ı	ı	I	۱	ı
38-51-18	5,680	63	ı	·	ı	,	۱
6L-1R	7,840	2	ı	ı	ı		1
7L-1R	4,348	5	:	,	,	4	ı
12-7118	6.356	ç	•				,

	Length	Number of	Level 2	Lev.	Level 3	Level 4	I 4
Canal name	(m)	Barrage	Aut	Aut	Tele	Aut	Tele
8L-1R	4,440	2	•	1	1. 1.		
9L-1R	4,200	ന	1	: •	1	•	I
3R-IR	14,810	4	1		't	. ===	1
1R-3R-1R	3, 432	~1	•	ı	ı	1-1	
4R-1R	14,940	ന	۱	•	I	щ	ŀ
5R-1R	3,670	\$2	ı	•		ı	i
6R-1R	8, 650	ഹ		ł	,		ı
1R(Left bank)	3, 366		ſ	.'	7	ı	ı
<pre>IR-1(Right bank)</pre>	5,450	c.1	ı	I	4	1	
1R-1R-1	1,500	2	ł	·	,	. t	ı
IR-2(Left)	5,800	2	ı	,	1	1	t
Major Regulator	_						
Chanasutr		4	 4	ï	1 (IV)	· T	1(IV)
Total	412,628	148	2	4	F(IV)	\$0 \$	2(II)

	Length	Number of	Level 2	Leve	Level 3	Level 4	14		Length	Length Number of	Level 2	Leve	Level 3	Level 4	14
Canal name	(E)	Barrage	Aut	Aut	Tele	Aut	Tele	Canal name	(m)	Barrage	Aut	Aut	Tele	Aut	Tele
IL	11,074	က		'n		f	ł	Phak Hai Project					-		. *
11-11	8,039	4	ı	,	,		ı	11	14,400	ŝ	۴.	ı	· I	⊷4	ŀ
22	4,160	ო	1	١	۰.	ï	,	21.	4,200	6 2	,	!	ι	•	ı
31	38, 990	9	4	က	۰.	• ~••	1(1)	ઝા	9,120	က	•	1	1	 4	ŧ
11-3L	20,218	က ျ	,	۱	ı	 i	r	Area btween			ı	•	ı	ı	ı
2L-3L	2,200	\$	ŀ	,	1	ı	I	k.Latchado and							
31-31	12,670	m	ł	,	4	щ	ı	K. Chaochet					·		
1R-3L-3L	5,200	ന	i	۱	ł	,	ı	Klong Pakhai-	·						
1R-3L	12,400	ى ما	1	،	t	+ 1		Chaochet	15,050		⊷		t	∵: ⊷~∢	ŀ
2R-3L	21,000	с С	ı	١	ł	1	•	Major Regulator	•••						
3R-3L	1,567	2	.1	١	1	,	1	Phakai		 4	,		1 (IV)	ι	1(IV)
18	42,700	8	1	ო	ı	61	1(11)	Chaochet			1	•	1(W)	•	(N)1
1R-1R	2,610	2	1		r	ı	•	Phakai-Chaochet	2		F-1	•	1(II)	ι	1(日
2R-2R	15,200	თ	•	`.	•	 4	•						: '	•	
Major Regulator							-	Total	42,790	6	ŝ	1	1(E)	ຕາ	<u>[</u>]
Yangmanee		-1	• ••••		1 (IV)	`E.,	1(W)		- 				2(IV)		2(IV)
Total	198,028	60	က	0	1 (IV)	(IV) 10	2(II)			· ·			- 		
												-			

$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	Length (m) 8,420	Number of Barrage 2	Level 2 Aut	Level Aut	Level 3- ut Tele	Level Aut	Tele	Canal name Chaochet-Bang Yi	Length e (m) Yihon Project	Number of Barrage	Level 2 Aut	Level 3 Aut Tele	Level 4 Aut Te	Tele
2 Naive Regulator 1 1 (T) 1 (T) 2 - - - - - - 1 (T) - 1 (T) 2 - - - - - - - 1 (T) - 1 (T) 2 - - - - - - - 1 (T) - 1 (T) 2 - - - - - - - 1 (T) - 1 (T) 2 - - - - - - - - 1 (T) 2 - - - - - - - 1 (T) 2 - - - - - - 1 (T) 2 - - - - - - 1 (T) 2 - - - - - - 1 (T) 2 - - - - - - - 1 (T) 2 - - - - - - - 1 (T) 2 - - - - - - - - </td <td>11,137</td> <td>ৎগ</td> <td>1</td> <td>1</td> <td></td> <td></td> <td></td> <td>Canal</td> <td></td> <td>6</td> <td>• 1</td> <td>•</td> <td>a</td> <td>ı</td>	11,137	ৎগ	1	1				Canal		6	• 1	•	a	ı
2 -	420	~	ن ۱. ا	1 I		į I	1 1	Major Regulator Sinchanat	•			τ (π		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	22	101	1	r 1	I J			Phraya Ban Lu			-4 1-1	M)1 -	• •	(m)1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	420	5	1	ł	į	, i	1					t		1
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	320	ິຕ	ı	ı	J		I	Total	989, 300	06	2			(I)I
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	400	2	ŀ	•	, ,	1	i.		-			1 (IV)		1(IV)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	100	~1			,		,			• •				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	420	~	•	ı	J	۲.	. · •	Phraya Ban Lu Pro	oject		-			·
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	300		ţ	۳đ	J	. –1	t	Canal	834,100	55	ı	י י	,	ı
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$, 900	2	,	,	ł	ı	ł	Major Regulator						
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	3, 520	2	,		ı	ı		Bang Buathong			⊷ -4			1(E)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$,420	7	ı	•	1	1	•		1					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$,100	2	ł	1	ı	·	ı	Total	834,100	55	1			1(I)
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	4,650	2	r	·	,	•	ı							
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4,700	2	ŀ	ı	••	·	ı	Phra Pimon Projec	뉨					
1 - - - Major Regulator 2 - - - - - 1 - 1(V) - 1 - - - - - - - 1(V) - - 1(V) - - 1(V) <	, 200	\$,	.	J	1	ŧ	Canal	422, 300	23	. I	1 1	'	ì
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	420	•••	٩	۰	J	I	ı	Major Regulator	·					
$\begin{array}{cccccccccccccccccccccccccccccccccccc$, 500.	5	3	•	ı	ı	t	Phra Pimon			F-1	- 1(IV)	ı	1(IV)
1 1 - Chimphli 1 - $1(\Pi)$ - $1(\Pi)$ - $1(\Pi)$ - $1(\Pi)$ 40 - 3 - 7 - T - Total 422,300 23 3 - $1(\Pi)$ - $1(\Pi)$ 2(IV) 2(IV) 2(IV) Canal 1,034,000 32	, 920	. 	1	١	J			Maha Sawat			•~4	- I (IV)	1	1 (IV)
40 - 3 - 7 - Total 422,300 23 3 - 1(H) - 2(W) Phasi Charoen Project Canal 1.094.000 32 - 1	006	۰-i	, ,	•	•	₽.	ı	Chimphli			⊷	- 1(I)	ı	1(E)
2(IV) 200 32	. 787	40		8				Total	422,300	53	က ၊	- 1(I)		1(II)
												2(IV)		S(W)
I,034.000 32								Phasi Charoen Pro	ject		-	-		
1,094,000 32									,094.000	32	I	ı ı	ŧ	
						•			,094,000	32	Ĩ	,	ı	

Manorom Project								Chong Kae Project	ŀ					
Canal name	Length (m)	Number of Barrage	Level 2 Aut	Level 3 Aut Tel	י ש	Aut Te	4 Tele	Canal name	Length (m)	Number of Barrage	Level 2 Aut	Level 3 Aut Tele	Level Aut 1	4 Tele
Klong Ban Lek	10,600	4						Klong Chainat-						
IR	6,400	ന	ı	,	1	r		Pasak	39,650	÷	I		ı	4
님	4,900	4	ł	ı	Ι.			9R	18,200	n	•4	1 3	•••	1(I)
Klong Chainat-								1R-9R	8,000	4	I	1	*~1	,
Pasak	45,600	, -1	ţ	•	ı		•	2R-9R	5,000	ന	•	ţ	гч	, t
18	4,800	ດ	,	ı	ı	•		3R-9R	6,670	ŝ	ı	ı ı	-1	ŕ
1L-1R	2,600	4	1	1	r	,	I	1L-9R	5,550	3	٢	ł	١	,
2L-1R	3,600	ŝ	,	ı	1	•		2L-9R	13,600	な	ŀ	1	1 -1	۱.
28	7,200	ŝ	,	,			1	IOR	3,700	ŝ	1	•		•
1L-2R	3, 700	4	,	ı	,			118	3,000	ŝ	1	1	ı	1
38-1	2,400	ന			,		ī	12R	4,400	က	•	1 1	ı	,
38-2	2,500	с ?		ı	,		r	138	4,700	က	r	1	F~1	ŧ
	9, 360	ഹ		ı	,	~	,	I4R	9,400	ю	ı	т. Т	₽~1	. 1
48	7,100	4	1	,	,			15R	3, 700	4	t	. F	'n	, I
28	9,600	ы С	ŗ	•	ŀ	1		16R	15,900	~	ti	5	r-4	1(11)
6R	13, 700	2	1	ŗ	٩.	+4		1R-16R	9,100	4	ı		ł	۹.
78	6,500	4	ب	ı		,1	,	2R-16R	8,000	ດມ	۲.	• •	 -4	1
SR SR	10,200	ന	1	. '	1	· ••••1	· ·	3R-16R	5,100	4	r	1 1	Т.,	e de
Klong Thamamun	15,350	വ.		T		, -1		1L-16R	13,200	63		F.	1	i
Klong Ban Kram	5,600	4	r	r	,	•		17R	9,200	3	•	1	: }~~1	•
-					•		÷	1L L	3,400	2	•		. 1	1
Klong Kao Kaew	24,200	ى م	1	1	ı	+-1		21	7,000	63	1	1 	¥.	۱.
1R	8,800	ന		. 1	ı		• 1	ਲਿ	5,000	2	,	•	1	i. I
28	7,800	~		1	ı	1	r	31-98	11,000	2	1		1	
Ш	10,000	5	F .	F	1		•							
Major Regulator	••					. *		Major Regulator		÷.			: · .	
Manorom		: : ·		ı	1 (N)	-	(N)	Chong Kae			 	- 1 (W)	-	1 (IV)
Total	222,510	109		3	1 (IV)	년 14 14	(N)	Total	212, 470	73	ന	4 1 (IV)) 10	2(II)
														1/11/1

	Length	Number of	revel 2	Level	اد ا	Level 4			Length	Number of	Level 2	_ Level 3	Level	4
Canal name	(m)	Barrage	Aut	Aut I	Tele	Aut Tele	<u></u>	Canal name	re (m)	Barrage	Aut	Aut Tele	e Aut	Tele
Klong Chainat-								Klong Chainat-	-					
Ayutthaya	120,390	S	 1	ல	I,	1 2(п		Pasak	36, 650	7		1 	•	
	3,200	5	. I	•	1	1		18R	7,400	ស	ı	•	:	
	6,100	, 4 4	ĩ	1	t	1 		198	6,400	9		1 1 1 1	 4	
	24,300	9	T	. 1	ı	ا جمع		1L-19R	6,000	4	ı	•	r ⊶1	, I
	8, 700	4	L	2 - 4 - 1 - 4	1.	, ,		1L-1L-19R	2,400	\$				
	2,600	53	,	I,		t . 1		20R	1,200	5	· . I	1		· 1
	3,800	5	.1	1	ı	· 1		21R	38, 200	~ 3	 1	сл С	2	1(1)
	19,520	က	ł	۲.	ı	, ,		IR-2IR	20,600	4	1	1	1	, ,
	11,100	ന	ł			+ 1		IR-1R-2IR	5,840	ر ب	,ª	1	1.	ŀ
	34,020	Q	} 4	2	ſ	1)T 1(I		2R-1R-21R	14,200	9	J	1 ¹	r-t '	ı
1L-8L	10,680	ŝ	•	F		۱ بط		IL-21R	3,400	ŝ	1	•	ı	ł
11-11-81	2,200	2		r	f	1 1		2L-2IR	6, 600	4	,	•	i	I
78~72	27,800	12	1			• •		3L-21R	14,000	12	,	•	÷4	1
18-8L	9,820	4	•	r	ŧ	-		1R-3L-21R	5,000	دى	ş	ı t	1	
	4,740	ŝ	•	ı	ı	r I		2R-3L-21R		ന	,	I I	1	I
	4,793	ന	ŀ	1.	,	1		4L-21R	5, 800	\$,	1	•	ŀ
	2,040	0	r	1		1	•	22R	12,500	4	,	۱ ۲۰۰۰	₽ -4	1(E)
	5,820	ŋ	ı	н	1	۱ ہـــ		IR-22R	3, 300	က	,	1 1	ı	ł
11-12L	1,420	63	1	ŀ	,	1 1		1L-1R-22R		ന	ł	۲ 1	ı	1
	11,760	Q	1	ı		r F		2R-22R	3, 700	ന	,	1	ı	ŀ
	25,000	N	•	,	ı	، بـــ		3R-22R	2,920	ന	,	1	I	I
lL-IR	5, 340	က	ı		,	1 1		4R-22R	3, 600	വ	,	1 1	ı	1
	7,300	ഴ.	3	ı	,	1		Major Regulator	or					
	8, 800	ល	1 [.]	1	J	۱ ۱		Koke Kathiem			,	- 1(IV)	ł	1(IV)
Major Regulator								Total	205,710	16		4 1(IV)	5	
Maharaj			9	ı	1(I)	-	C						- 	age (요)]
	364, 247	97	2	o	1(1)	13 1(·					13
					-									

Canal name	3	To Longan	12/27	0007	Level J	* 10/32	r		102121		7 12/21	רבאבר		4 10.27	
Idit Hama	(m)	Rarrare	Ant	Aut	Tele	Aut	Tele	Canal name	(#)	Barrage	Aut	Aut Tel	1 - 1	Aut Te	Tele
Klong Chainat-		201				1		Klong Raphiph-						{	
	12,879	H	ı	ı	ŗ	,	,	atana	32,000	~	1	21	1	- -	
	17,800	ო	,	-1	ı	 	(11)	1,8	4, 600	2	1	,	ż	' +-	
38	5,000	ო	ı	,	ı			2R	10,500	ന		ı		⊶	
2R-23R	6,800	4	•	· .	·	4	ı	3R	10, 892	4	ı	١	a .		
3R-23R	5,000	0	·		,	ı		4R	1,712	2	ı	١			
4R-23R	3, 700	ଦ୍ୟ			;		ı	58	12,800	ഹ	1	٠		1	
	44,500	2	1	\$	2	7	(I)	. 6R	3,600	: ന	,	,	•	•	
48	9, 180	ია	•	,		1	r	7R	11,950	4	·	·		1	
2R-24R	7,400	3	,	° 1	ŀ	ľ	,	88	17,450	Ð	•	٢	•	r-1	
3R-24R	2,000	.0	1	·	ı		,	86	4,200	~1	ı	٠	,		
4R-24R	5,200	ന	r	ı	,			IOR	1,600	ŝ		' 1	ı	•	
5R-24R	2,600	\$7	•	ı	ı	t		IIR	4, 200	\$	ı	ι		r-4	
1L-24R	5,600	ന	,		ı	ŀ		Area in Kiong 6-10	' 0	,	•	ι		•	
25R	12,144	1	ŧ	1	4	·	ŀ	Area in upper side	Ð						
								Klong Hokwa	1	,	·	L			•
Major Regulator								1L-3R	4,800	4		•		ı	
Roeng Rang			F		1(IV)	•	. (M) I	2L-3R	4,000	က	3	.		1	
, , ,								3L-3R	7, 200	4	٠	•		1	
Total 1	139,803	34	1	m	1 (IV)	5 2	2(II)	1L-5R	3, 300	2	. •	•		•	
							1 (IV)	5r-53	2,850	21	ł	1	ı	ı	
-								18-78	2,450	ന	1	I	F		
								2R-7R	4, 500	n	•	1	ı	ł	
		·						1L-7R	3,020	-1	ı	ı	r	ı	
								2L-7R	4,500	4	ı	F	,		
								IR-8R	6, 100	ę	,	•	ı	I	
							,	2R-8R	5,800	ന		ł	1	ı	
								11-58	3, 650	ъ	I,	ı	1	·	
	•	.'				:		K.Raphiphatana	•••						
				÷				West Branch	12,000	•		١		 1	·
								South Branch	5,400	r		i. L	•	ı	ı
			•					Major Regulator							ţ.
						÷		Rama VI	-		ŀ	•	1(N)	•1	1 (IV)
								Phra Narai		•	•	4	1(1)	ר- י	1(1)
							•	Phra Sri Sawa		:	ŧ	•	1(11)	<u>н</u>	1(1)
								Phra Sri Sril			•	•	1(1)	بر ۱	1(1)
								Total	186,174	74	r-4	~	4	8	

Nakhon Luang Project Length Canal name (m) Klong Nakhon- Luang 55,900 1R 18,214	Number of									
Q	Number of					1				
Q		Level 2	Level 3	Level 4		Ę.	Number of	Level 2	2	2 S
	Barrage	Aut	Aut Tele	Aut Tele	Canal name	(H)	Barrage	Aut	Aut Tele	Aut Tele
និព					Rangsit Nua Project		r .			
	ന	1	' ന	2	Total	536,900	21	5	к., 1	• • •
	4	ı	t T	•	Major Regulator					
IL-IR 6,000	5	•	F	1	2E canal			ŧ	- I (IV)	(IV)
2R 6,100	ന	ı	1	. 1 	Klong Rangsit			.	1.1(1)	2 1(1)
1L-2R 5,900	5		ı P	3						
3R 17,900	4		1	۱ ۲-۹	Total	536,900	ង	 ۱	1 1(1)	2 1(I)
1L-3R 4,000	5	•	I			-			1 (IV)	1(IV)
2L-3R 7,000	2	4	ł	1						
3r-38 7,000	4	ı	l F	•	Rangsit Tai Project		. *			
4R 15,571	67	i .	1	۱ ۲۰۰۹	Total	597,300	ទ	•	ı 1	۱ ۱
5R 17,000	¢1	ŕ	1	، بــــ	Major Regulator					
IR-5R 6,000	€3	,	. 1 F	1	Klong 13			ы	1 1(IV)	2 1(IV)
6R 4,800	2	,)							
IL 11,054	ۍ ۱		¥ 1	; 7-4	Total	597, 300	53	1	1 1(IV)	2 1(IV)
IR-1L 3,480	4	ı	i i	F 1						
2R-1L 3,200	61	ı	۱ ۱	I I	Klong Dan Project					
3R-1L 1,200	\$,	۲ ۱	1	Total	497,000	20	I	4 . 1	۲ ۱
7R 7.000	\$1	١	، ۱	ł	Major Regulator					
Klong Nakhon					Klong Dan			-4		3 1(IV)
Luang (new) 4,100	1	1	3 1		Total	497,000	50	ب 4	1 1(IV)	3 1(IV)
Total 201,419	49	1	8	- 6						
	•		2		Fhra-Ung Unalyanuchit Froject Total 452,200	111 Project 452,200	64	,	, 	ι m
			- ‡							

Appendix 4.6 Page 15

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Appendix 4.7

IMPROVEMENT PLAN IN THE UPPER AND MIDDLE BASINS

Table 4.7-1 REQUIRED COMMUNICATION FACILITIES BY REGION

REQUIRED COMMUNICATION FACILITIES IN UPPER AND MIDDLE BASINS

Table 4.7-2 REQUIRED MONITORING FACILITIES BY REGION

REQUIRED MONITORING FACILITIES IN UPPER AND MIDDLE BASINS

		<u> </u>	Leve	1-1	[Leve	1-2		Leve	1-3		Leve	1-4
			Regi	on	_	Regi	on		Regi	<u>on</u>	_!	Regi	on
Facilities	Unit	1	2	3	1	2	3	1	2	3	1	2	3
Observation Facilitie	<u>s</u>												
in project area									÷				
Staff gauge	set	47	25	77	-	-	-		-	-	-	·	
Automatic water		•											
level gauge	"	-		-	16	8	25	22	11	35	52	27	85
Reserving rainfall										• •			
gauge	"	3	2	5		-	-	-	-	-	-	: _	-
Automatic rainfall	•												
gauge	"//		-	-	4	2	6	4	2	6	4	2	6
Waterlevel/Rainfall		•											
with telemeter	"		-	-	-	-	-	-	-	-	5	3	8
Water quality meter	"	~	-	-	-	-	-	-		-	-		
Soil moisture meter	"	~	-	-	-	-	-	4	2	6	8	4	12
Ground water gauge	"	-	-	-	-	-	-	-	-	-	4	2	6
Water flow meter	· //	-			-	-	-	4	2	6	8	4	12
Monitoring Facilities													
in office													
Display panel(offlin	e) ″	·	-	-	-		-	-	-	1	-	-	-
Telemeter equipment	site		-	. –			-	-	-	-	1	1	1
Operating room			-	-	-	-	-	-	-	1	9	9	11
Monitoring Vehicle in													
project	_							•					
Motorcycle	unit	·	_	-	12	6	20	15	8	26	25	13	41
Patrol car	11	-	·	-	8	8	9	. 8	- 8	9	18	18	20
Maintenance car			_	·	-		_		-	-	1	1	1

Y LEVEL
FACILITIES BY
O COMMUNICATION
REQUIRED
4.8-1
Table

Required Communication Facilities by Level (Regional 8 office)

Level-4 Required Communication Facilities by Level (Regional 7 office) Level-2 Level-3 Level-1 Unit set Ę. set set - Portable wireless telephone Private wire telephone cable Low capacity multiplex radio - New installation at major Communication Facilities of Private automatic branch Required Facilities equipment and antenna Communication Facilites of - Replacement of radio Replacement of radio Antenna Tower Guyed 30m Guyed 20m Private wire telephone - Communication cable Rural radiotelephone VHF/FM radio system - New installation VHF/FM radio system - New installation - Main station (2) - Main station (1) regulator site - Telephone set - Sub station - Land mobil equipment Field Circuit Local Circuit Removal Exchange 1 Level-1 Level-2 Level-3 Level-4 Unit Ка Т set set Ę set - Portable wireless telephone Private wire telephone cable Low capacity multiplex radio New installation at major Communication Facilities of Required Facilities equipment and antenna Private automatic branch Communication Facilites of Replacement of radio Antenna Tower Guyed 30m Replacement of radio Guyed 20m Private wire telephone - Communication cable Rural radiotelephone - New installation WHF/FM radio system VHF/FM radio system - New installation - Main station (1) - Main station (2) regulator site - Telephone set - Sub station - Land mobil equipment Local Circuit Field Circuit - Removal Exchange *

Appendix 4.8 COST ESTIMATE

Phraya Dam Office)	1-2 Level-3 Level-4	1		· · · ·			1		•			5 1.5 1.5	ł		ı	,	1			•	•				1	1		<u>A</u>]	Ppe F	and ag	0 0
y Level (Chao	Level-1 Level-2				•		ı		1		1	. 1. 5	1		1 1	1	1	ı	1	•	1				1 1	1		1	•	1	er t
littes b	Unit			·	set		٤		*		*	km	set		"	v	r		. 11		n				km	set		"		ų	r
wequired communication facilities by Level (Chao Phraya Dam Office)	Required Facilities	Communication Facilities of	Local Circuit	VHF/FM radio system	- New installation	- Replacement of radio	equipment and antenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	Exchange	Antenna Tower Guyed 30m	✓ Guyed 20m	Communication Facilites of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set	VHF/FM radio system	- New installation	- Removal	- Land mobil	- Portable wireless telenhone
	Level-4				÷ I	•	, ,				ł	14.0	·		,	ł	r		1	1	1				38	33		١	-	1	c)
a meh)	Level-3		-		'. I		г		ı		۰.	14.0	I		ı	r	ſ		7	1	,				88	83 83		,	}4		σ
THORN Ta	Level-2				ŀ		ч		ι		ı	14.0	ł		•	•	,		*4	ı	ı				88	CC		L	Н		5
es of rev	Level-1				į		- 4		ı		•	ı	I		ı	ı	ı		·	ı	3				ı	ı		1		1	
raciti	Unit				set		ž		ĩ		z	kп	set		ž	ž	*		*	٤					km	set		ž	ž	z	ž
Required Communication facinities of Level VIIONIA MED	Required Facilities	Communication Facilities of	Local Circuit	VHF/FM radio system	- New installation	- Replacement of radio	equipment and antenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	Exchange	Antenna Tower Guyed 30m	~ Guyed 20m	Communication Facilites of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set		- New installation	- Removal	- Land mobil	Tratchic with the school

Communication Facilities of Local Circuit WHF/FM radio system - New installation - Replacement of radio equipment and antenna - Replacement of radio equipment - Replacement of radio equipment - Replacement of radio equipment - Replacement of radio equipment - New installation at major regulator site Private wire telephone cable Private wire telephone Low capacity multiplex radio Rural radiotelephone - Main station (1) - Main station (2)			Level-4		Unit	T-Tanar	Level-2	Level-3	Level-4
<pre>system system allation at and antenna ent of radio ent of radio t allation at major r site e telephone cable y multiplex radio s tion (1) tion (2)</pre>				Communication Facilities of		:			
o system allation ent of radio t and antenna ent of radio t callation at major r site e telephone cable y multiplex radio stelephone ition (2)				Local Circuit					
adio tenna adio adio adio none cable olex radio s				VHF/FM radio system					
9	•	ł	e	- New installation	set	ł	I	ı	ı
<i>6</i> 7				- Replacement of radio					
Ŵ	,	1	ı	equipment and antenna	*	r	ì	۲.	ı
40				- Replacement of radio					
60		н	*-4	equipment	×	-1	1	-1	⊷ 4
60	i i			- New installation at major					
<i>w</i>	1	•	ı	regulator site	*	ŧ)	1	ı
<i>w</i>	, ;	,	3	Private wire telephone cable	щ	ı	\$	1	ł
	, , ,	-	₽ −4	Low capacity multiplex radio	set	, 1	۱	ı	,
Rural radiotelephone - Main station (1) - Main station (2)	•	l		Dural radiotalanhona					
	т Т.	ł	r		2	I	•	,	,
	г ,		r-4	- Main station (2)	"	I		•	·
- Sub station	,	ı	•	- Sub station	z	ı	y4	1	
Drivete automatic branch				Praivate automatic branch					
	. 1 1	Ļ	-1	exchange	*	, г	* 4	أسع	r-1
LACHAIRSC	ہے اب	-1	T	Antenna tower guyed 30m	*		ł	ı	·
TOMO T	, ,	•	,	" guyed 20m	ž	· ,	,	. 1	1
				Communication Facilities of			•		
Communication Facilities UL				Field Circuit			×		
Field Ulrcult	·			Private wire telephone			•	.'	-
•	UL.	70	Cr.	- Commentcation cable	, E	1	92	88	88
- Communication cable Km	5 -t	2 4	2 4				10	72	22
- Telephone set	- 4D	C 1	C 1	1as another -	100	I	<u>.</u>	3	2
VHF/FM radio system		•		VHF/FM radio system			I		:
- New installation	۳ ۱	ຕ່	er)	- New installation	*		Ω.	C.	ഹ
- Removal	ہ۔۔۔ ۱	<u>, -</u> 1	1	- Removal	2			¥1	- 71
. Kabilimohil 100 - 100				- Land mobil	٤.	I	¥-4	4	Pa
Distriction:	- 18	18	18	- Portable wireless telephone	<i>H</i> .	ł	ଛ	ଞ	ଝ

Required Communication Facilities by Level (Don Chedi)

Level-4

Required Communication Facilities by Level (Borommathat)

•																															
	Level-3			:	r~4		•		4			4.2	ı		ŀ	,	ł		1-4	۱.	ı				19	50		က	H	*-4	22
•.	Level-2		•		1-1		ı		ι		ı	4.2	ļ		ı	ı	ι		4	۲.	1				79	50		ო		ᆏ	22
	Level-1				,		١		4		I	I	ı		·	١	ı		ı	ı	t				1	1		ŧ	•	1	•
	Unit				set		×		٤		¥	km	set		ŕ	٤	*		ž	Ľ	ĸ				ƙm	set		Ľ	u	*	1 1 1
· · · · · · · · · · · · · · · · · · ·	Required Facilities	Communication Facilities of	Local Circuit	VHF/FM radio system	- New installation	- Replacement of radio	equipment and antenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	Exchange	Antenna Tower Guyed 30m	K Guyed 20m	Communication Facilites of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set	VHF/FM radio system	- New installation	- Removal	- Land mobil	- Portable wireless telephone
	Level-4				•		•		y4		I	ı	I		I	t	-1		, - 1	I	ı				50	49		ı	1	1	თ
	Level-3						1		1		•	,	ı		•	ł	-1		 1	·	,				50	49		,	1	1	б
	Level-2				ı		ı		1		1	ı	·			F	* 1			I	·				50	49			r-4	⊷	თ
	Level-1				ı		1		₽−₹		ı	ŀ	ŧ		ı	1	ı		ı	1	•				1	ł		•	I	ŀ	t
	Unit				set						ų	kт	set		*	*	٤		ž	Ľ	*				km	set		*	u	*	u
	Required Facilities	Communication Facilities of	Local Circuit	VHF/FM radio system	- New installation	- Replacement of radio	equipment and antenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	Exchange	Antenna Tower Guyed 30m	~ Guyed 20m	Communication Facilites of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set	VHF/FM radio system	- New installation	- Removal	- Land mobil	- Portable wireless telephone

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Appendix 4.8 Page 4

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Required Communication Facilities by Level (Thabote)

Required Communication Facilities by Level (Pho Phraya)

Level-4 Level-1 Level-2 Level-3 82 83 3 ----ព្ 83 ജ \sim 51 2 Unit set Ē set E Y set - Portable wireless telephone Private wire telephone cable - New installation at major Low capacity multiplex radio Communication Facilities of Required Facilities equipment and antenna Private automatic branch Communication Facilites of - Replacement of radio Replacement of radio Antenna Tower Guyed 30m Guyed 20m Private wire telephone - Communication cable Rural radiotelephone VHF/FM radio system - New installation VHF/FM radio system - Main station (1) - Main station (2) - New installation regulator site. - Telephone set - Sub station - Land mobil equipment Local Circuit Field Circuit - Removal Exchange Level-4 p ស្រ Level-2 Level-3 σ 2 8 2 ട്ട Level-I Unit set set Ę Ē set - Portable wireless telephone Private wire telephone cable - New installation at major Low capacity multiplex radio Communication Facilities of Required Facilities equipment and antenna Private automatic branch Communication Facilites of Antenna Tower Guyed 30m - Replacement of radio . Replacement of radio Guyed 20m Private wire telephone - Communication cable Rural radiotelephone - New installation VHF/FM radio system VHF/FM radio system - New installation - Main station (1) Main station (2) regulator site - Telephone set Sub station. - Land mobil equipment Field Circuit Local Circuit - Removal Exchange *

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-					. '							
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4		Required Facilities	Unit	Level-1	Level-2	Eevel-3	Level-4
Communication Facilities of						*.	Communication Facilities of					
Local Circuit		.'			. '		Local Circuit			•		
VHF/FM radio system							VHF/FM radio system		- - 	•		
- New installation	set	-1	£-4	t	F~4		- New installation	set				•
- Replacement of radio							- Replacement of radio			:	•	
equipment and antenna	ž	ı. 1	•	ı	÷ F		equipment and antenna	¥	-i	° 1		•
- Replacement of radio							- Replacement of radio					
equipment	Ľ	ı	1	ı	ŀ		equîpment			ы	+4	
- New installation at major			·				- New installation at major					
regulator site		5	2	\$	3		regulator site	Ľ	,. I	, t	ı	ι
Private wire telephone cable	Кш	•	•	, F	J		Private wire telephone cable	km	I	I	ı	Ţ
Low capacity multiplex radio	set	ſ	•	ŧ	ı		Low capacity multiplex radio	set	ı	ı	I,	١
Rural radiotelephone							Rural radiotelephone					
- Main station (1)	*	ł		ł	ł		- Main station (1)	*	ı	ı	•	ι
- Main station (2)	ų	· f	1	ı	ı		- Main station (2)		ı	1	ł	•
- Sub station	"	ſ	1	 4	, 1		- Sub station	n.	•	Ţ	r-i	1-4
Praivate automatic branch							Praivate automatic branch					
exchange	ž	ı	1	- -4			exchange	Ľ	۱	, - 1	Н	۲Ħ
Antenna tower guyed 30m		1		í	,		Antenna tower guyed 30m		ŀ	I,	ι	ı
" guyed 20m	*	ſ	ı	,	ļ		″ guyed 20m	*	.'	1	1	ı
Communication Facilities of							Communication Facilities of					
Field Circuit							Field Circuit					
Private wire telephone							Private wire telephone					
Communication cable	km	f	53	53	53		- Communication cable	km	· 1	76	76	76
- Telephone set	set	ſ	46	46	46		- Telephone set	set	ı	57	57	57
VHF/FM radio system							VHF/FM radio system					
- New installation	r	ı	-4	7-~4	Ч		- New installation		1	- 1	1	┯┥
- Removal	¥	ſ	1	ı	ł		- Removal	"	ł	r -t	⊷ 1	*~4
- Land mobil	1	۲	1 1		, 4		- Land mobil		3	,	, - 1	Pag
- Dortable wireless telenhone	*	ı	0	c	Q		- Portable wireless telephone	"	ı	¥ 1	14	ge 2

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Required Communication Facilities by Level (Chao Chet Bang Yihon)

Required Communication Facilities by Level (Bang Ban)

Appendix 4.8 Page 7 Level-3 Level-4 8 5 8 R Level-2 8 B Level-1 Unit Ş set 5 set set - Portable wireless telephone Private wire telephone cable Low capacity multiplex radio - New installation at major Required Facilities Praivate automatic branch Communication Facilities of Communication Facilities of equipment and antenna Replacement of radio - Replacement of radio Antenna tower guyed 30m guyed 20m Private wire telephone - Communication cable Rural radiotelephone - New installation WHF/FM radio system - Main station (2) VHF/FM radio system - Main station (1) - New installation regulator site - Telephone set - Sub station - Land mobilequipment Field Circuit Local Circuit - Removal exchange Level-4 52 F3 4 Level-3 52 71 Level-2 £2 42 14 Level-1 Unit Ę set set ž set - Portable wireless telephone Private wire telephone cable Low capacity multiplex radio - New installation at major Required Facilities Communication Facilities of Communication Facilities of Praivate automatic branch equipment and antenna - Replacement of radio - Replacement of radio Antenna tower guyed 30m guyed 20m Private wire telephone - Communication cable Rural radiotelephone - New installation WHF/FM radio system VHF/FM radio system - New installation - Main station (1) Main station (2) regulator site - Telephone set - Sub station - Land mobil equipment Field Circuit Local Circuit - Removal exchange 2

Appendix 4.8 Page 8 Level-4 **42** ទា -(Level-3 Required Communication Facilities by Level (Phraya Bar Lu) В \$ စ္ဆ Level-2 昭 42 ∞ 5 Level-1 Unit set Ē set 뎚 set - Portable wireless telephone - New installation at major Private wire telephone cable Low capacity multiplex radio Required Facilities Communication Facilities of Praivate automatic branch equipment and antenna Communication Facilities of Replacement of radio Replacement of radio Antenna tower guyed 30m guyed 20m - Communication cable Private wire telephone Rural radiotelephone - New installation VHF/FM radio system VHF/FM radio system - Main station (1) - Main station (2) - New installation regulator site - Telephone set - Sub station equipment - Land mobil Local Circuit Field Circuit - Removal exchange 2 Level-4 ର୍ଷ୍ଣ କ୍ଷ 1 Level-3 Required Communication Facilities by Level (Phra Pimon) ង ន Π Level-2 ାର କ \$ Ë Level-1 КШ. set Unit set set - Portable wireless telephone Private wire telephone cable New installation at major Low capacity multiplex radio Required Facilities Communication Facilities of Praivate automatic branch Communication Facilities of equipment and antenna guyed 20m Antenna tower guyed 30m Replacement of radio Replacement of radio Private wire telephone - Communication cable Rural radiotelephone - New installation VHF/FM radio system - New installation VHF/FM radio system - Main station (1) - Main station (2) regulator site - Telephone set - Sub station - Land mobil equipment Field Circuit ocal Circuit - Removal exchange

Required Communication Facilities by Level (Phasi Chaoren)

Level-2 Level-3 ິຊ ព្រ ର୍ଷ ក្ម Level-1 Unit set set set set set 5 - Portable wireless telephone Private wire telephone cable Low capacity multiplex radio - New installation at major Communication Facilities of Communication Facilities of equipment and antenna Required Facilities Private automatic branch - Replacement of radio Replacement of radio Antenna tower guyed 30m guyed 20m Private wire telephone - Communication cable Rural radiotelephone - New installation VHF/FM radio system - New installation VHF/FM radio system - Main station (2) - Main station (1) regulator site - Telephone set - Sub station - Land mobil equipment Field Circuit Local Circuit - Removal exchange Level-4 ណ្ណ R Level-3 ц 22 Level-2 ର୍ଷ 比 Level-1 ŝ set Unit se. set - Portable wireless telephone Low capacity multiplex radio Private wire telephone cable - New installation at major Required Facilities Praivate automatic branch Communication Facilities of Communication Facilities of equipment and antenna Antenna tower guyed 30m guyed 20m - Replacement of radio Replacement of radio Private wire telephone - Communication cable Rural radiotelephone VHF/FM radio system - New installation - New installation - Main station (2) - Main station (1) VHF/FM radio system regulator site Telephone set Sub station - Land mobil equipment Field Circuit Local Circuit - Removal exchange

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Required Communication Facilities by Level (Kra-sieo)

Level-4

(Manorom)	
Level	
þ	
Facilities	
Communication	
Required	

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Communication Facilities of					
Local Circuit		5			
VHF/FM radio system					
- New installation	set	1	1	۱ ب	•
- Replacement of radio	. *				
equipment and antenna	*	. •	•	,	•
- Replacement of radio					
equipment	٤	Ч	1	P-4	, L
- New installation at major					
regulator site		•	ł	I	1
Private wire telephone cable	Кm	ı	1	I	r
Low capacity multiplex radio	set	1	ı	ï	ı
Rural radiotelephone		·			
- Main station (1)	ž	ı	,	ł	ı
- Main station (2)	r	1	1	1	ł
- Sub station	r	ı	-1	1 -1	1
Praivate automatic branch					
exchange	*	1	1	-	-1
Antenna tower guyed 30m	٤	i	•	ı	1
" guyed 20m	ĩ	ł	•	•	1
Communication Facilities of					
Field Circuit					
Private wire telephone					
- Communication cable	km	1	83	SS	83
- Telephone set	set	1	57	57	57
VHF/FM radio system					
- New installation	٤	ı		1	≁ 4
- Removal	£	1		r -1	1
- Land mobil	ž	•	gurd.	-1	Ę
				•	

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1.1		-4-				•																						A	ippo I	end Pag		
		Level	: : :*:		•	1		•		r-4		ı	I	ı		ı	I	fund			•	•				83	35		•	•1		<
	ong kae)	-2 Level-3	· * .			1	· : ·	ι		y-4		ł	ł	I		•	I	щ		.)1	F.	ı				28	35		ı	⊷ 4	F -4	•
	revel (un	Level			• .	• 1 • • • *	÷	• •		⊷		۲	,	·		1	. I	ы		⊶	• •	ı				88	35		•	,1	****	<
- - - -	Itles by	Level-1	-	•		1		•		т. Н	÷		·	•		ţ	ı	ı		•	۰,	1				•	•		ı	,	ı	
ç	ion racii	Unit			-	set	•••	ž		*			kт	set	·		*	×		*	set					km	set		£	*	¥	:
τ	kequired communication facilities of Level (ubong hae)	Required Facilities	Communication Facilities of	Local Circuit	VHF/FM radio system	- New installation	- Replacement of radio	equipment and an tenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	exchange	Antenna tower guyed 30m		Communication Facilities of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set	VHF/FM radio system	- New installation	- Removal	- Land mobil	

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- Portable wireless telephone

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4	Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Communication Facilities of						Communication Facilities of					
Local Circuit						Local Circuit					÷
VHF/FM radio system						VHF/FM radio system					
- New installation	set	ı	١	ı	ı	- New installation	set	1904	. रन्व	*1	
- Replacement of radio						- Replacement of radio				•	·
equipment and antenna	*	r	٢	ı	ı	equipment and antenna	n	,	ı	ł	I
- Replacement of radio						- Replacement of radio					
equipment	£	 1	,	. 1	~ ¶	equipment	*	4	I	ł	ł
- New installation at major				÷		- New installation at major					
regulator site	ų	1	ı	ı	ı	regulator site	Ł	ł	ļ	۲	ł
Private wire telephone cable	km	,	ι	r		Private wire telephone cable	km		0.6	0.6	0.6
Low capacity multiplex radio	set	1	ŧ		1	Low capacity multiplex radio	set	ı	•	,	•
Rural radiotelephone		÷				Rural radiotelephone					
- Main station (1)	#	•	ų	ı	,	- Main station (1)	2	ŀ	` ı	1	i T
- Main station (2)	¥.	•		١.	8	- Main station (2)	"	¥.,	1	• 1	۱,
- Sub station	*	1	1	·•	r-1	- Sub station	*	.,	I.	۲	i
Private automatic branch						Private automatic branch				·	. *
exchange	2	·	: H	 t	1	exchange		jı	ſ	. 1	ı
Antenna tower guyed 30m	set	1	ı	,	1	Antenna tower guyed 30m	set	, ,	1	· •	
// guyed 20m	2	ŀ	;	ı		" guyed 20m	2	1	1	3	1
Communication Facilities of	,					Communication Facilities of					
Field Circuit			-	÷		Field Circuit	•.				
Private wire telephone						Private wire telephone					
- Communication cable	ж Ш	- 1	118	118	118	- Communication cable	km	ı	18	78	78
- Telephone set	set		69	60 60	69	- Telephone set	set	i	ß	23	59
VHF/FM radio system						VHF/FM radio system				•	
- New installation	11	ı	ന ന	З	۰. ۳	- New installation	. *	1	N	¢4	ର ଅ
- Removal		1	1	р-~¶	۲۰۰۹	- Removal	r.		i	х 1. 2	•
- Land mobil	*				4	- Land mobil		,	11		1 -1
					-					,	

	· · ·		•								
Required Facilities	Unit	Level-1	Level-1 Level-2	Level-3	Level-4	Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Communication Facilities of				:		Communication Facilities of					
Local Circuit		•				Local Circuit	•				
VHF/FM radio system						VHF/FM radio system	•				
- New installation	set	्रम्न	1	, 1-1		- New installation	set	н н		1	-
- Replacement of radio					:	- Replacement of radio			1	5. N	
equipment and antenna	2	ı	•	1	: т	equipment and antenna	ž	ı	•	1	1
- Replacement of radio						- Replacement of radio		*	•		
equipment		٠	•	ı	'n	equipment	"	ť		เ	
- New installation at major	ŗ					- New installation at major				·	
regulator site	*	ı	I	,	1	regulator site	"	2	\$	\$7	2
Private wire telephone cable	ka .	ı	ı	•	•	Private wire telephone cable	km	I	ı	1	I
Low capacity multiplex radio	set	1	ı		ı	Low capacity multiplex radio	set	١			1
Rural radiotelephone						Rural radiotelephone					
- Main station (1)	"	3	•	1	1	- Main station (1)	*	ı,	ı	1	I
- Main station (2)		•	1	ı	F	- Main station (2)	×	٠	1	ı	ı
- Sub station	u	ı	Ц	Ч	,1	- Sub station	×	ı	1	اسم	
Private automatic branch						Private automatic branch			·		
exchange	*	ı	. .	-1	r~1	exchange	ž	1	⊷ 4	v-4	1
Antenna tower guyed 30m	set	ı	I.	t	,	Antenna tower guyed 30m	set	•	I	ı	,
	ž	. I	•	ı	١	″ guyed 20m		[.] т	÷	+-4	
Communication Facilities of						Communication Facilities of					
Field Circuit						Field Circuit					
Private wire telephone						Private wire telephone					
- Communication cable	kт	ı	36	36	36	- Communication cable	km	1	42	42	42
- Telephone set	set	ı	34	34	34	- Telephone set	set	·	35	35	35
VHF/FM radio system						VHF/FM radio system					
- New installation	*	1	ı	,	ı	- New installation	Ľ	۱	I	1	
- Removal	ŧ	1	-	-1	1	- Removal	£	•	I	ł	<u>بولو،</u> ر
- Land mobil	n	ı	H)	4	+-4	- Land mobil	ž	 F	1-1		end Pag
- Portable wireless telenhone				11		- Portable wireless telephone		,	O	a	ge a

Required Communication Facilities by Level (Rangsit Nua)

Required Communication Facilities by Level (Nakhon Luang)

Required Facilities	Unit	Level-I	Level-2	Level-3	Level-4	Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Communication Facilities of						Communication Facilities of					
Local Circuit						Local Circuit					
VHF/FM radio system						VHF/FM radio system					
- New installation	set	ł	۱	ı	•	- New installation	set	ı	1	ı	ı
- Replacement of radio				. •	f	- Replacement of radio					
equipment and antenna	z	ł	•	ŗ	ı	equipment and antenna	"	ı	1	ı	۱
- Replacement of radio						- Replacement of radio					
equipment	ï	F =~4	7-4	4	*-1	equipment	2	4	÷	 4	~1
- New installation at major						- New installation at major					
regulator site	2	•	I	ı	ŀ	regulator site	Ł	2	<u>م</u>	2	2
Private wire telephone cable	km	ı	1	ı	ı	Private wire telephone cable	kт	ı	ι	ı	ı
Low capacity multiplex radio	set	·	·	t	,	Low capacity multiplex radio	set	ł	ı	ı	ı
Rural radiotelephone						Rural radiotelephone					
- Main station (I)	¥	•	ı	,		- Main station (1)	*	1	t	ı	. 1
- Main station (2)	"	ŗ	J.	r	1.	- Main station (2)	*	ł	•	•	
- Sub station	"	1	÷	1		- Sub station	*	ı	tund.	r-1	
Private automatic branch						Private automatic branch					
exchange		ì	H		F-1	exchange		•	+t	Ч	н
Antenna tower guyed 30m	set	ı	I	,		Antenna tower guyed 30m	set	۲ _	• 	I	ł
″ guyed 20m		ı	•	1	ı	" guyed 20m		1	ŗ	ŧ	•
Communication Facilities of	·					Communication Facilities of					
Field Circuit		·				Field Circuit					
Private wire telephone						Private wire telephone				•	
- Communication cable	кя Х	ŧ	60	8	Og	- Communication cable	ка	i	40	40	40
- Telephone set	set	1	43	43	43	- Telephone set	set	1	42	42	42
VRF/FM radio system	., i .,		•			VHF/FM radio system					·
- New installation	"	j	1	7-4	-	- New installation		н н	i d	9-49.	,~1
- Removal	"	I		H	=+	- Removal		•	⊷ 1	+ 1	1-1
- Land mobil			r~4	7		- Land mobil		•		-	age
- Portahle wireless telenhone	"	•	12	12	12	- Portable wireless telephone	*		13	12	ដ

Appendix 4.8 Page 13

Required Communication Facilities by Level (Rangsit Tai)

	1 1 1 1 1 1 1			·	÷	
Domined Racilities	linit	Level-1	Level-2	Level-3	Level-4	
the state of						
COMMUNICATION FACTILLUTES OF		•				
Local Circuit				·		
VHF/FM radio system				. •		
- New installation	set	-	Ч	- 1		
- Replacement of radio						
equipment and antenna		ı	1	I	١	
- Replacement of radio						
equipment	2	•	ı	I	1	
- New installation at major						
regulator site	*	1	 4	,		
Private wire telephone cable	Ka B	J	ı	•	ı .	
Low capacity multiplex radio	set	•	ŧ	ı	ı	
Rural radiotelephone						
- Main station (1)	z	ı	I	•	•	
- Main station (2)	*	•	ŀ	ı	ı	
- Sub station	*	1	ı	ı	t	
Private automatic branch						
exchange	u	J	1	-	¥-4	
Antenna tower guyed 30m	set	ł	ı	•	•	
" guyed 20m	r	\$	г	ı		
Communication Facilities of						
Field Circuit						
Private wire telephone			,	1	i	
- Communication cable	kш	ı	89	28	28	
- Telephone set	set	I	37	37	37	
VHF/FM radio system				•	¢	
- New installation	n	ı	0	24	2	
- Removal	ĸ	3	М		F=-4	
- Land mobil		٩.	1		-1	
- Portable wireless telephone		,	ຊ	50	50	

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Required Communication Facilities by Level (Khlong Dan)

	Level-4				t		. 1		⊷ 1		ŀ	ı	1		ı	ŀ	ı		*4	,	ı					20		5	Ap	per Pa	nd 1 ige R
- 	Level-3 Le	ал 1911 19		•	•		•		1		3	1	•		ı	t	1		¥4	•	•				ı	20		2	7-4	* ~~4	20
	1 Level-2		•••		1		•		- - - - - - - - - -		. •	•	ı		ı	ı	•		- 	ı	ı				ı	20		્ય	1	۶۰۰۹	20
	Level-1			-)		1		•1		I	ŧ	1		ı,	• •	ŀ		ι	1	, i				L	•		a	·	L	• •
	Unit				set	•	*				r	<u>в</u>	set		2	u,	*		*	set					km	set		z	"	и	le ″
	Required Facilities	Communication Facilities of	Local Circuit	VHP/FM radio system	- New installation	- Replacement of radio	equipment and antenna	- Replacement of radio	equipment	- New installation at major	regulator site	Private wire telephone cable	Low capacity multiplex radio	Rural radiotelephone	- Main station (1)	- Main station (2)	- Sub station	Private automatic branch	exchange	Antenna tower guyed 30m	" guyed 20m	Communication Facilities of	Field Circuit	Private wire telephone	- Communication cable	- Telephone set	VHF/FM radio system	- New installation	- Removal	- Land mobil	- Portable wireless telephone

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Required Communication Facilities by Level (Khlong Priew)

Required Communication Facilities by Level (Phra ong Chaiyanuchit)

<u>sit</u> adio system sstallation cement of radio ment and antenna	Local Gircuit VHF/FM radio system - New installation - Replacement of radio	Local Circuit VHF/FM radio system - New installation - Replacement of radio	Local Circuit VHF/FM radio system - New installation - Replacement of radio	Local Circuit VHF/FM radio system - New installation	VHF/FM radio system	Local Gircuit VHF/FM radio system	Local Circuit VHF/FM radio system	Local Gircuit UHF/FM radio evetem	Local Gircuit	Local Gircuit VHF/FM radio system
adio tenna adio	adio	adio tenna	adio) ** 1		VHF/FM radio system	VHF/FM radio system	UHR/THY TUDIO SUSTOR		VHF/FM radio system
adio tenna adio	adio	adio terna	adio	(44 71						
sement of radio ment and antenna cement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	7 - 1		set installation set			New installation	
nent and antenna cement of radio		equipment and antenna "		- Keplacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio
cement of radio	equipment and antenna		equipment and antenna "	- equipment and antenna	- equipment and antenna "	equipment and antenna "	equipment and antenna "	certenna	// equipment and antenna //	· · · · · · · · · · · · · · · · · · ·
	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio	- Replacement of radio
ment ~	equipment "									I I I I equipment
nstallation at major	- New installation at major	- New installation at major	- New installation at major	- New installation at major	- New installation at major	- New installation at major	- New installation at major	- New Installation at major	- New installation at major	•
ator site "	regulator site	regulator site	regulator site "	regulator site "	regulator site "	regulator site "	regulator site "	regulator site "	" regulator site "	" " regulator site "
wire telephone cable km	Private wire telephone cable km									km Private wire telephone cable
city multiplex radio set	Low capacity multiplex radio set									set Low capacity multiplex radio
1:otelenhone	Rural radiotalenhone	Dural radiotalenhone	Dural radiotalonhora	Rural radiatalenhone	Dural radiotalanhora	Dural radiotalanhána	Dural radiotalanhona	Purel redictalentine	Rural radiotalonhome	
station (1) "										
station (2) "	- Main station (2) "	- Main station (2) "	- Main station (2) "	- Main station (2) "	Main station (2) //	Main station (2) "		^ Main station (2) "	" " "	" " - " "
tation " -	- Sub station "	- Sub station "	Sub station "	- Sub station "	Sub station "		Sub station "		" "	" "
automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch	Private automatic branch
	exchange	exchange	1 exchange	1 exchange	1 1 exchange "	1 1 1 exchange ~ -	1 1 1 exchange ~ ~	- 1 1 1 exchange "	// - 1 1 1 exchange // - //	// - 1 1 1 exchange
tower guyed 30m set -	•	guyed 30m	guyed 30m	guyed 30m	guyed 30m	guyed 30m	guyed 30m	guyed 30m	guyed 30m	Antenna tower guyed 30m
// guyed 20m										
ion Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of	Communication Facilities of
1011 FAVILLEN 01	Communication Factings of	Communication Factures of	Communication Factifiers of		COMMUNICATION FACTILITIES OF		Communication Factures of		Communication Factures of	Communication Facilities Of
uit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit
uit wire telenhone	Private wire felenhame	Field Vircuit Private wire felenhame	Field Vircuit Deivete wire telenhame	ricial vircuit Drivete wire felenhame						
wire telephone	Private wire telephone	Private wire telephone	Drivete wire telenhone	Dufinate wire talenhane	Darburgen in the second s					
wire telephone	Private wire telephone	Private wire telephone	Drivate wire talenhane	Deitete wire telenhone						
uit wire telephone	Field Circuit Private wire telephone	Field Circuit Private wire telephone	Field Circuit Private wire telenhone	Field Circuit Deiuste aires felenkone	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit	Field Circuit
wer guyed Jom " guyed 20m ion Facilities of uit	Relation Facilities of Field Circuit Private wire telephone	Anterna unver guyed John Communication Facilities of Field Circuit Private wire telephone	- communication Facilities of Field Circuit	- communication Facilities of Field Circuit	Communication Pacilities of Field Circuit	nuclua comer gayed 20m communication Facilities of Field Circuit	<pre>nucemin over super oou</pre>	Communication Facilities of Field Circuit	<pre> guyed 20 Communication Facilities Field Circuit</pre>	<pre>communication Facilities Field Circuit</pre>
tower guyed 30m " guyed 20m ion Facilities of uit	exchange Antenna tower guyed 30m ~ guyed 20m Communication Facilities of Field Circuit	exchange Antenna tower guyed 30m ~ guyed 20m Communication Pacilities of Field Circuit	1 exchange Antenna tower guyed 30m ~ guyed 20m Communication Facilities of Field Circuit	1 exchange - Antenna tower guyed 30m - « guyed 20m Communication Facilities of Field Circuit	<pre>1 1 1 exchange</pre>	1 1 1 exchange - - Antenna tower guyed 30m - - - 6uyed 20m - - - Communication Facilities of	1 1 1 exchange - - - Antenna tower guyed 30m - - - - - - - Communication Facilities of	- 1 1 1 exchange Mntenna tower guyed 30m ~ guyed 20m Field Circuit	- 1 1 1 exchange & Antenna tower guyed 30 % guyed 20 Communication Facilities	- 1 1 1 exchange Antenna tower guyed 30 % guyed 20 Field Circuit
equip - New I - regul: Private - Low capa Rural ra - Main - - Main - - Main - - Sub s - Sub s - Sub s - Sub s - Sub s - Sub s - Frivate - exchange exchange - Antenna										equipment "I I I I I - " - New installation at major regulator site "New installation at major regulator site " Private wire telephone cable km

Appendix 4.8

Table 4.8-2 REQUIRED MONITORING FACILITIES BY LEVEL

Appendix 4.8 Page 16

Required Monitoring Facilities by Level (Phonlathep)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	9	-	-	
Automatic water level gauge	"	-	6	8	12
Reserving rainfall gauge	"	1	-	-	· •
Automatic rainfall gauge	"		1	1	2
Telemetering type (1)	"	-	-	1	1
" (2)	"	-	-	1	3
" (3)	11	-	-	-	-
<i>"</i> (4)		-	-	-	-
Water quality meter (portable)	"	-	-	-	
// (fixed)	11	-	_	-	-
Soil moisture meter	"	-		-	-
Ground water level gauge	"	-	-	-	2
Water flow meter (portable)	"	-	-	1	3
Monitoring Facilities in office					
Display panal (off-line)	set	-	-	-	1
Telemetering equipment	uint	-	· _	-	-
Operating room (floor area)	m	-	_ `	10	40
Monitoring Vehicle in Project					
Notorcycle	uni t		2	3	4
Patrol car	"	-	1	1	1

Required Monitoring Pacilities by Level (Borommathat)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area			·	
Staff gauge	set	20	-	-	-
Automatic water level gauge	"	-	8	12	18
Reserving rainfall gauge	"	1	- '	-	-
Automatic rainfall gauge	"	-	1	1	4
Telemetering type (1)	"	-	~	-	-
" (2)	"	-	-	~	3
" (3)	"	-	~	~	-
" (4)	"	-	-	1	- 1
Water quality meter (portable)	"	. ·	-	~	-
" (fixed)	"	-	~	~	-
Soil moisture meter	"	-	-	-	-
Ground water level gauge	"	-	-	-	2
Water flow meter (portable)	"	-	~	1	5
Monitoring Facilities in office		• •			
Display panal (off-line)	set	-	-	-	1
Telemetering equipment	uint	-	-	-	~
Operating room (floor area)	៣	-		10	40
Monitoring Vehicle in Project					
Notorcycle	unit	-	4	5	8
Patrol car	"	-	1	.1	. 1

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Required Monitoring Facilities by Level (Sam Chuk)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				· · ·
Staff gauge	set	16	-		
Automatic water level gauge	"		6	12	16
Reserving rainfall gauge		2	177 - 114 •	1,21,12,22,34 ••	-
Automatic rainfall gauge	n		1	1	4
Telemetering type (1)	11		-	n	-
" (2)		.÷	-	194 <u>1</u> -1-1-	3
" (3)	11	- ' .			-
<i>"</i> (4)	"	- '	· · ·	1	1
Water quality meter (portable)		-			
<pre>// (fixed)</pre>	11	1	말문	-	
Soil moisture meter	"		. <u>+</u> · ·	-	-
Ground water level gauge	"	· . .		ene <u>i</u> nore	2
Water flow meter (portable)	,"		-	1	5
Monitoring Facilities in office		an an Arthur An Arthur	n yîre.		la sur a constante de la const La constante de la constante de
Display panal (off-line)	set				-
Telemetering equipment	uint				1
Operating room (floor area)	'n	·		10	300
Monitoring Vehicle in Project					
Motorcycle	unit	, 1975. 1 - 1	4	5	8
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Donjedee)

Required Facilities	Unit	Level-1 Level-2 Level-3 Level-4	
Observation Facilities in Project	area		
Staff gauge	set	24 - 24	
Automatic water level gauge	"	- 4 12	
Reserving rainfall gauge		n an an an Anna an Anna Anna Anna Anna	
Automatic rainfall gauge	"	- 1 2	
Telemetering type (1)	"		
" (2)			
<i>"</i> (3)			
<i>"</i> (4)			
Water quality meter (portable)	"		
" (fixed)	"		
Soil moisture meter			
Ground water level gauge	"	2 -	
Water flow meter (portable)	"	1 3	
Monitoring Facilities in office	· ·		
Display panal (off-line)	set		
Telemetering equipment	uint		
Operating room (floor area)	'n	- 10 40	
Monitoring Vehicle in Project			•
Notorcycle	unit	- 2 3 4	
Patrol car	"	$\mathbf{H}_{\mathbf{r}} = \{\mathbf{r}_{\mathbf{r}} \mid \mathbf{h}_{\mathbf{r}} \mid \mathbf{h}_{\mathbf{r}} \in \mathbf{H} \mid \mathbf{h}_{\mathbf{r}} \in \mathbf{H} \}$	

Required Monitoring Facilities by Level (Pho Phraya)

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Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area		· .		
Staff gauge	set	11	-	-	-
Automatic water level gauge	u	-	12	16	20
Reserving rainfall gauge	"	1	-	-	
Automatic rainfall gauge	"	-	1	· 1 ·	4
Telemetering type (1)	11	_	- ,		·
" (2)	"	-	-	2	6
" (3)	"	-	-	-	-
" (4)	"	-	•	1	1
Water quality meter (portable)	"	-	-	-	-
/ (fixed)	"	-	-	-	
Soil moisture meter	"	-	-		· -
Ground water level gauge	"	-	-	. .	. 2 .
Water flow meter (portable)	"	-		1 .	5
Monitoring Facilities in office					• •
Display panal (off-line)	set	-		· -· ,	-
Telemetering equipment	uint	-	-	. – .	–
Operating room (floor area)	m ^t -		. –	10	- 40
Monitoring Vehicle in Project					1.1
Motorcycle	unit	- ·	4	5	8
Patrol car	"		1	. 1	- 1

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area	• •			
Staff gauge	set	8	-		요.
Automatic water level gauge	"	-	6	8	10
Reserving rainfall gauge	#	. 1	-		
Automatic rainfall gauge	"	-	1	1	2
Telemetering type (1)	"	-	-	-	·
" (2)	"	-	-	-	2
<i>"</i> (3)	"	-	- -	-	· -
<i>"</i> (4)	"	· - ·		1	1
Water quality meter (portable)	"	-	-		
(fixed)	"	-	· -		-
Soil moisture meter	"	-		-	
Ground water level gauge	"	-	-	-	2
Water flow meter (portable)	"	-	-	1	3
Monitoring Pacilities in office	· ·				
Display panal (off-line)	set	-	-	- '	·. –
Telemetering equipment	uint	· –	-	· •	• • • • • -
Operating room (floor area)	m	· -	· -	10	40
Monitoring Vehicle in Project		•	••	•	
	unit	-	2	3	4

unit

"

3

1

4

1 .

2

1

Required Monitoring Facilities by Level (Thabote)

Patrol car

Motorcycle

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Required Monitoring Facilities by Level (Chanasutr)

and the second			· · · · · · · · · · · · · · · · · · ·		
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Pacilities in Project	area	a sa an			
Staff gauge	set	33	-	<u>+</u>	
Automatic water level gauge	11	- '	4	8	40
Reserving rainfall gauge	"	1	-	in fin	1 ¹¹ -
Automatic rainfall gauge		~	1	1	7
Telemetering type (1)	"	.	•	-	-
" (2)	11	-	12		2
" (3)	"	~	-	-	÷
" (4)	"	-	<u>-</u>	1	1
Water quality meter (portable)	u	-			. -
" (fixed)	<i>11</i>		-	·	~
Soil moisture meter	"	-	· _ ·		11 4
Ground water level gauge	"	-	- 1	· -	2
Water flow meter (portable)	"	` ``	1 - <u>1</u> -	1	8
Monitoring Facilities in office			і. 1		
Display panal (off-line)	set	-		<u>i</u> <u>i</u> i i i	
Telemetering equipment	uint	-	1.1	2	-
Operating room (floor area)	์ทั่	-		10	40
Monitoring Vehicle in Project			· ·		
Notorcycle	unit	-	7	8	14
Patrol car		1. -	1	1	1
and the second					

Required Monitoring Facilities by Level (Yangmanee)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				n n Shekara Ar
Staff gauge	set	20	-	-	
Automatic water level gauge	11	· -	6	12	20
Reserving rainfall gauge	"	1		-	a 17 - 1
Automatic rainfall gauge	"	- ;	1	1	3
Telemetering type (1)	"	-	· -,		e App
" (2)	11	-			2
<i>"</i> (3)	"	. –		-	-
<i>"</i> (4)	"	-	· - ·	1	1
Water quality meter (portable)	"		-	-	-
" (fixed)	11 .	-		- <u>1</u>	
Soil moisture meter	rt.	· • ·			-
Ground water level gauge	<i>u</i> .	· •	.		2
Water flow meter (portable)	"	-		1	4
Monitoring Facilities in office					in inst
Display panal (off-line)	set	-	-	vi Euro	1
Telemetering equipment	uint	· -			-
Operating room (floor area)	m	-		10	40
Monitoring Vehicle in Project			in an		1940 - 19
Motorcycle	unit:	-	3	4	6
Patrol car		-	1	1	1

Required Monitoring Facilities by Level (Pakhai)

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		· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	3	~	-	-
Automatic water level gauge	"	-	6	4	6
Reserving rainfall gauge	"	1	-		-
Automatic rainfall gauge	. "	. –	1	1	2
Telemetering type (1)	"	-	-		- · ·
" (2)	"	-	~	1	1
" (3)	"	-	-	-	-
···· (4)	"	-	·_	2	2
Water quality meter (portable)	. 11	-		-	· _
" (fixed)	"	-	~	÷	-
Soil moisture meter	"	-	-	-	-
Ground water level gauge	"	-	-	· _	2
Water flow meter (portable)	"		~	1	3
Monitoring Pacilities in office			:	·	
Display panal (off-line)	set	-	-	-	· _
Telemetering equipment	uint		-		- '
Operating room (floor area)	m	-	-	10	40
Monitoring Vehicle in Project					
Hotorcycle	un i t	•-	2	3	4
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Bang Ban)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
bservation Facilities in Project	area				
Staff gauge	set	5	-	-	-
Automatic water level gauge	"	-	-	6	14
Reserving rainfall gauge	"	-	- ·	-	-
Automatic rainfall gauge	"	· -	1	1	2
Telemetering type (1)	"	-	-	-	
" (2)	"	-	-	-	-
" (3)	"	-	-	-	-
" (4)	"	-		· _	-
Water quality meter (portable)	"	-	-	-	-
" (fixed)	"	-	-	· _	-
Soll moisture meter	"	-	-	-	
Ground water level gauge		· _	. –	-	2
Water flow meter (portable)	"		-	1	3
Ionitoring Facilities in office			· .		
Display panal (off-line)	set	-		-	- '
Telemetering equipment	uint	-	-	-	1
Operating room (floor area)	៣	-	-	10	300
Ionitoring Vehicle in Project					
Notorcycle	unit	, ••	2	3	4
Patrol car	"	÷	-1	1	· 1

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Required Facilities	Unit	Level-1	Level-2 Level-3 Level-4
Observation Facilities in Projec	t area	· · · · · · · · · · · · · · · · · · ·	and the second sec
Staff gauge	set	9	
Automatic water level gauge	Ĩ	, · ···	and the second second second second
Reserving rainfall gauge	"	1	가 있는 것이 아파 가 있었다. 가 가 가 있다.
Automatic rainfall gauge	"	-	1
Telemetering type (1)	"		
" type (2)	n'	-	- 1 1
" type (3)	"	-	
" type (4)	"	-	
Water quality meter (portable)	"		$\log (1_{\rm eff} + s_{\rm eff} + 1_{\rm eff}) \approx (1 + 1) + (1 + s_{\rm eff} + 3) + (1 + 1)$
<pre>// (fixed)</pre>	"		-1 -1 -1 -1 -1
Soil moisture meter	. 11		
Ground water level gauge	"		
Water flow meter (portable)	"		-
Monitoring Facilities in office		the st	
Display panel (off-line)	set	· · · -	in an
Telemetering equipment	unit	.	$(1-\varepsilon_{1})^{2}=1, (1-\varepsilon_{1})^{2}=1, (1-\varepsilon_{1})^{$
Operating room (floor area)	ฑ์	· _	- 10 40
Monitoring Vehicle in Project			
Motorcycle	unit	-	3 4 6
Patrol car	"		$1_{\mathrm{eq}} = 1_{\mathrm{eq}} + 1_{\mathrm{eq}} + 1_{\mathrm{eq}}$

Required Monitoring Facilities by Level (Chao Chet-Bang Yihon)

Required Monitoring Facilities by Level (Phraya Ban Lu)

		1. Sec.	
Uni t	Level-1	Level-2 Level-	3 Level-4
area	 · .		an a
set	6		na 19.
"		2 -	an the second
"	1		and the second
11	-	1 1	5
"	· -	-	
"	· . -	- 1	1
. 11	. •		× -
"		= 1	1
"	1. - 1	1 1	5
"	t . .	- 1	. 1
	~	- 5	10
"	-	tin a series de la companya de la co	2
"	-	1	6
		y den it early a	n en
set			\overline{r} , \overline{r}
unit	1 . .		a de la secola de la composición de la Composición de la composición de la comp
m		- 10	40
	e di s		
unit	-	5 6	10
	· · ·	1 1	1
	area set " " " " " " " " " " " " " " " " " " "	area set 6 " 1 " 1 " - " 1 " - " - " - " - " - " -	area set 6 " - " 1 " - " - " - " - " - " - " - " - " - " - " - " - " - " - " - " - " - set - mit - mit - 5 6

Required Monitoring Facilities by Level (Phasi Charoen)

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D					
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area	•			
Staff gauge	set	4	-	-	-
Automatic water level gauge	"	-	-	. 4	4
Reserving rainfall gauge	4	-	-		-
Automatic rainfall gauge	11	· _	1	1	2
Telemetering type (1)	"	-		· _ ·	
″ type (2)	"	-	-	-	-
" type (3)	4	-	-	-	-
" type (4)	"				-
Water quality meter (portable)	"	-	i	· 1	2
" (fixed)	"	-		1	2
Soil moisture meter	"	-	-	2	4
Ground water level gauge	"		-	-	2
Water flow meter (portable)	11		-	1	3
Monitoring Facilities in office					
Display panel (off-line)	set		-	-	_
Telemetering equipment	unit	-	-	-	1
Operating room (floor area)	n	~	-	10	300
Nonitoring Vehicle in Project					
Notorcycle	unit	• _ ·	2	3	4
Patrol car	"		1	1	1

Required Monitoring Facilities by Level (Phra Pimon)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4	
Observation Facilities in Project	area	·				
Staff gauge	set	3	-	-		
Automatic water level gauge	"		6	-	- 1.	
Reserving rainfall gauge	"	1		~ .	-	
Automatic rainfall gauge	"	-	1	1	.2	
Telemetering type (1)	"	-	-		-	
" type (2)	"	-	-	1	1	
″ type (3)	"		-	-		
" type (4)	"	-	-	2	2	
Water quality meter (portable)		-	. 1	1	2	
" (fixed)		-	-	1	2	
Soil moisture meter	"	-	-	2	4	
Ground water level gauge	"	-	-	-	2	
Water flow meter (portable)	"	-	-	1	3	
Monitoring Facilities in office						
Display panel (off-line)	set	-	-	-	-	
Telemetering equipment	unit		-		-	i.
Operating room (floor area)	លី	-	-	10	40	
Monitoring Vehicle in Project						
Motorcycle	unit	e e e e e e	2	3	4	
Patrol car	"	-	1 -	1	1	

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Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Pacilities in Project	area				
Staff gauge	set	23		-	- '
Automatic water level gauge	"	-	· .		28
Reserving rainfall gauge	"	1.	-	-	··· -
Automatic rainfall gauge		-	1	1	3
Telemetering type (1)	"	÷	'	-	
v type (2)	"	-		-	· -
<pre>// type (3)</pre>		-		-	-
" type (4)	"	-		1	1
Water quality meter (portable)	"	-	-	· _ ·	· _ ·
" (fixed)		-	-		-
Soil moisture meter	"	-	· -	-	í <u>-</u> ·
Ground water level gauge	"		1 - -	-	2
Water flow meter (portable)	"	-		1	4
Monitoring Facilities in office					
Display panel (off-line)	set	-	-		1 1
Telemetering equipment	unit	-		· · · - · ·	· -
Operating room (floor area)	m	~	-	10	40
Monitoring Vehicle in Project				• •	
Motorcycle	unit.	-	3	. 4	6
Patrol car	"	-	- 1	1	1

Required Monitoring Facilities by Level (Manorom)

Required Monitoring Facilities by Level (Chong Kae)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	16	-	-	-
Automatic water level gauge	"	-	6	8	20
Reserving rainfall gauge	"	· 1	-		-
Automatic rainfall gauge	"	· -	1	1	2
Telemetering type (1)	. 11	-		- .	-
// type (2)	"		· -	· -	2
// type (3)	. 11	-	-		-
" type (1)	"	_ ·	-	1	1
Water quality meter (portable)	"		-		- -
(fixed)		- '		•	<u>م الله</u>
Soil moisture meter	"	-	-	· – · ·	-
Ground water level gauge	"		-	. –	2
Water flow meter (portable)	"	. ·	1 - 1 ^{- 1} -	1 1	3
Monitoring Facilities in office					
Display panel (off-line)	set	·	. .	-	-
Telemetering equipment	unit	-		1 - 1	영광 수 가지?
Operating room (floor area)	'n	·	±1.5	10	40
Monitoring Vehicle in Project	· .				tuti e la quite Recent
Motorcycle	unit	. ¹ -1	2	3	4 - 1
Patrol car		. . .	1	1	1

.

Required Monitoring Facilities by Level (Maharaj)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	28	•	-	-
Automatic water level gauge	"	· _	4	10	26
Reserving rainfall gauge	"	1	÷.		-
Automatic rainfall gauge	"	-	. 1	1	6
Telemetering type (1)	"	· -	-	1	- 1
" type (2)	"	-	-	-	3
" type (3)	"	-	-	-	-
" type (4)	"	· _	-	1	1
Water quality meter (portable)	"	-	-	· . 🚽	-
" (fixed)	"	-	-	-	_
Soil moisture meter		-	-	· _	-
Ground water level gauge	"	-		-	2
Water flow meter (portable)	"		-	· 1	7
Monitoring Facilities in office		•		1	
Display panel (off-line)	set	-	-	_	1
Telemetering equipment	uni t	-	-	-	_
Operating room (floor area)	'n	· -	-	10	40
Monitoring Vehicle in Project					
Motorcycle	unit	· _	6	7	12
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Khok Kathiem)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	, area				
Staff gauge	set	14	-	-	-
Automatic water level gauge	"	-	2	8	18
Reserving rainfall gauge	"	1	-	-	-
Automatic rainfall gauge	"	-	1	1	2
Telemetering type (1)	"	-	-		-
" type (2)	"	-	-	-	2
" type (3)	11	-	-	-	-
" type (4)	"	-	-	1	1
Water quality meter (portable)	"	-	-	-	-
<pre>// (fixed)</pre>		-	-		-
Soil moisture meter	"	-	-	-	-
Ground water level gauge	"	-	-	-	2
Water flow meter (portable)	"	-	-	1	3
Monitoring Facilities in office					
Display panel (off-line)	set			-	1
Telemetering equipment	unit	-	-	-	·
Operating room (floor area)	'n	-	-	10	40
Monitoring Vehicle in Project		·			
Notorcycle	uni t	- -	6	7	12
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Roeng Rang)

		:			
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Projec	t area				
Staff gauge	set	7	· . = .	-	en de <mark>e</mark> nse de la composition de la compositi
Automatic water level gauge	"	~	2	6	10
Reserving rainfall gauge	'n	1	-		-
Automatic rainfall gauge		-	1	1	2
Telemetering type (1)	"	· _			. н .,
" type (2)	"	· -	-	-	2
″ type (3)	"	· _	-	-	
" type (4)		~	-	1	1
Water quality meter (portable)	"	·	-		. :,+
" (fixed)	"	-	-		E
Soil moisture meter	"		<u>ب</u> -	-	-
Ground water level gauge	"	<u> </u>		n an	2
Water flow meter (portable)	"		-	1	3
Monitoring Facilities in office					4 1.1
Display panel (off-line)	set			-	1
Telemetering equipment	unit	• = .			in an
Operating room (floor area)	៣	· _		10	40
Monitoring Vehicle in Project					
Notorcycle	uni t	-	2	3	4
Patrol car	"		1	1	1
				· · · · · · · · · · · · · · · · · · ·	

Required Monitoring Facilities by Level (Pasak Tai)

				Carlos de La Carlos	
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area	· · · ·			
Staff gauge	set	12	-	-	, - . [.]
Automatic water level gauge	"		2	4	16
Reserving rainfall gauge	<i>"</i>	1	.	· .	44 - 14 - 14 - 14 - 14 - 14 - 14 - 14 -
Automatic rainfall gauge	"	-	1	1	2
Telemetering type (1)	"	-	-	2	2
" type (2)	"	-		1	1
" type (3)	"	-	-	-	
″ type (4)	"	-		1	1
Water quality meter (portable)	11	-	-	-	
" (fixed)	"	-		· · · · ·	. 19 - 19 19 - 19 19 - - 19
Soil moisture meter	"	- '	· · ·	2	. 4
Ground water level gauge	"	·* _	-	n san n San s a sa	2
Water flow meter (portable)	"	-		1	3
Monitoring Facilities in office					
Display panel (off-line)	set	-			n an Anna Anna Taona an Anna Anna Anna Anna Anna Anna An
Telemetering equipment	unit	. .	-	. <u>-</u>	1
Operating room (floor area)	m	-	-	10	300
Monitoring Vehicle in Project					
Motorcycle	unit	-	2	3	4
Patrol car	"		1	1	1

Required Monitoring Facilities by Level (Nakhon Luang)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area			· · · · ·	
Staff gauge	set	10	-		-
Automatic water level gauge	11	-	2	6	18
Reserving rainfall gauge	"	1		-	`~
Automatic rainfall gauge	"	-	1	1	3
Telemetering type (1)	"	-	~	-	
″ type (2)	"	-	~	-	-
" type (3)	"	-	-	-	-
" type (4)	"		~	-	-
Water quality meter (portable)	. 11	-	~	-	-
" (fixed)	"	-	~		~
Soil moisture meter	11	-	~	3	6
Ground water level gauge	"	-	-	-	2
Water flow meter (portable)	"	-	~	1	4
Monitoring Facilities in office					
Display panel (off-line)	set	-		-	- ```
Telemetering equipment	unit	1 - 1		-	-
Operating room (floor area)	ព	-	-	10	40
Monitoring Vehicle in Project	4				
Notorcycle	unit	·	3	4	6
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Rangsit Nua)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	; area		······································		
Staff gauge	set	5		-	-
Automatic water level gauge	"	→	-	2	4
Reserving rainfall gauge	"	1	-	-	-
Automatic rainfall gauge	"	-	1	1	3
Telemetering type (1)	11	-	-	1	1
" type (2)	11	-		-	-
" type (3)	"	-	-	-	-
<pre>// type (4)</pre>	"	-	-	1	1
Water quality meter (portable)	17	-	1 -	1	3
<pre>// (fixed)</pre>	"		-	÷ '	1
Soil moisture meter	"			3	6
Ground water level gauge	"	-	-	· -	2
Water flow meter (portable)	"	-	-	1	4
Monitoring Facilities in office					
Display panel (off-line)	set		- <u>-</u> -		-
Telemetering equipment	unit	-	-	· _ ·	-
Operating room (floor area)	m		-	10	40
Monitoring Vehicle in Project					
Motorcycle	unit	-	3	4	6
Patrol car	"		1	1	1

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area	· · · ·			an a
Staff gauge	set	5	-	-	•
Automatic water level gauge	"	-	2	2	4
Reserving rainfall gauge	"	1	-		
Automatic rainfall gauge		- '	1	1	5
Telemetering type (1)	"	-	· <u>-</u> ·		-
" type (2)	"	-		-	-
" type (3)	"			. –	-
" type (4)	. #	-	. - .	1	1
Water quality meter (portable)	"		1	1	5
" (fixed)	"	· _	-	· 1 ·	1
Soil moisture meter	#		-	5	10
Ground water level gauge	"			⁻ .	2
Water flow meter (portable)		 _	_	1	6
Ionitoring Facilities in office					
Display panel (off-line)	set		-	-	-
Telemetering equipment	unit	-			. 1
Operating room (floor area)	ัก	-	 . - -	10	300
Monitoring Vehicle in Project			· .		
Motorcycle	unit	-	5	6	10
Patrol car			1	1	1

Required Monitoring Facilities by Level (Rangsit Tai)

Required Monitoring Facilities by Level (Klong Dan)

		n an Thugan Th			· · · · ·
Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	2	· - :-	- .	- 1. - 1
Automatic water level gauge	"	-	2	2	6
Reserving rainfall gauge	"	1			÷.
Automatic rainfall gauge	"	1 – .	·1 ·	1	3
Telemetering type (1)	//	-		· ·	
" type (2)	. 11	.	-	÷. +	
″ type (3)	"	· -	·	1. S	
<pre>// type (4)</pre>		-	<u>_</u>	1	1
Water quality meter (portable)	"	·	· · 1,	1	3
" (fixed)	"		-	1	2
Soil moisture meter	"	-	. 	3	6
Ground water level gauge	"	- 1	- 4 - 1	-	2
Water flow meter (portable)	"	<u> </u>	·· 1	. 1 .	4 - 4
Monitoring Facilities in office		1			
Display panel (off-line)	set	a e			-
Telemetering equipment	unit	· -	ta a n a s	u e j	
Operating room (floor area)	m		na an Nu≝ras	10	40
Monitoring Vehicle in Project					
Motorcycle	unit	· · -	3	4	
Patrol car	"	· · ·	1	1	1

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area		····-		
Staff gauge	set	6	-	-	
Automatic water level gauge	11	-	· _	2	6
Reserving rainfall gauge	"	1	<u>-</u>	_	-
Automatic rainfall gauge	"	-	1	1	4
Telemetering type (1)	"	-	-	-	<u> </u>
″ type (2)	"	-	-		
" type (3)	"	-	-	-	
" type (4)	"	-	-	-	_
Water guality meter (portable)	11	-	1	1	- 4
" (fixed)	"	-	-	1	2
Soil moisture meter	"	-	-	4	8
Ground water level gauge	"	-	-+	· · -	2
Water flow meter (portable)		-	-	1	5
Monitoring Facilities in office					
Display panel (off-line)	set	-	-	-	
Telemetering equipment	unit	-	-	-	·
Operating room (floor area)	៣	-	-	10	40
Monitoring Vehicle in Project					*
Motorcycle	unit	· · _	4	5	8
Patrol car	"	-	1	1	1

Required Monitoring Facilities by Level (Phra Ong Chaiyanuchit)

Required Monitoring Facilities by Level (Regional 7 office)

Required Facilities	Uni t	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area				
Staff gauge	set	-		~	· -
Automatic water level gauge	"	-	-	-	-
Reserving rainfall gauge	"	-	- '		-
Automatic rainfall gauge	"				-
Telemetering type (1)	"	-	-		-
v type (2)	"	-	-	~	
″ type (3)	"	-	-	_*	-
" type (4)	"	-	-	-	-
Water quality meter (portable)	"	-	-	2	4
// (fixed)	"	-	-	-	-
Soil moisture meter	"	-	-	-	-
Ground water level gauge	"	. .	-	-	-
Water flow meter (portable)	"	-	-	-	-
Anitoring Facilities in office					
Display panel (off-line)	set	. –	1	1	-
Telemetering equipment	uni t	-	-	· _	1
Operating room (floor area)	'n	-	-	400	800
Ionitoring Vehicle in office			•••		
Motorcycle	unit	-	-	-	-
Patrol car	"	· –	1	1	1
Maintenance car	"	-	-	-	1

Appendix 4.8 Page 29

Required Monitoring Facilities by Level (Head office)

Required Facilities	Unit	Level-1	Level-2	Level-3	Level-4
Observation Facilities in Project	area	n an taon an ta Taon an taon an t			and the second
Staff gauge	set	: ⁻ -		· _ ·	
Automatic water level gauge	"	÷.,			*.
Reserving rainfall gauge	11	-	-	7 . 1.	
Automatic rainfall gauge	"	-		. .	-
Telemetering type (1)	"	-	-		4
" type (2)	11	- '		.=	· - ·
« type (3)	"	· _	•		. - 1
« type (4)	"	· · -		-	· -
Water quality meter (portable)	"			- , ·	-
<pre>// (fixed)</pre>	"			-	-
Soil moisture meter	"	-		-	
Ground water level gauge	"	-		Ξ.	11 2 1 1
Water flow meter (portable)	"	-			- · · · · · · · · · · · · · · · · · · ·
Monitoring Facilities in office				1	and and a second se
Display panel (off-line)	set		· ·		
Telemetering equipment	unit	·		. 1	. 1
Operating room (floor area)	m	-		1000	1500
Monitoring Vehicle in office				÷.,	an a
Notorcycle	unit	+-	-	· ·	7,.:
Patrol car	"	-	-	-	, 1 w
Maintenance car	"	. .	, ¹	. 1	- <u>t</u>

Required Monitoring Facilities by Level (Regional 8 office)

Required Facilities	Uni t	Level-1	Level-2	Level-3 Level-4
Observation Facilities in Project	area			
Staff gauge	set	-	-	- · · -
Automatic water level gauge	"	-	-	
Reserving rainfall gauge	"	-	-	
Automatic rainfall gauge	"	-		-
Telemetering type (1)	"	-	·	
" type (2)	"	-	-	
" type (3)		-	~	÷ –
" type (4)	"	-		÷.
Water quality meter (portable)	"		-	2 4
" (fixed)	"	1 - 11		n Ang P anan ang P anan
Soil moisture meter	"	-		
Ground water level gauge	"	-	=	_
Water flow meter (portable)	"		-	en la companya
Monitoring Facilities in office				
Display panel (off-line)	set	-	1	1 -
Telemetering equipment	unit	-	-	1.5
Operating room (floor area)	กรี่	-	-	400 800
Monitoring Vehicle in office	•		• •	
Notorcycle	uni t	-	-	
Patrol car	"	-	1	1 1
Maintenance car	"	-	-	$= 12^{10} e^{2\pi i t} 12^{10}$

Table 4.8-3 UNIT CONSTRUCTION COST

UNIT CONSTRUCTION COST OF COMMUNICATION FACILITIES

Description	Unit Cost (1000 Yen)
1. VHF/FM Radio Station (Local circuit)	
- New installation	2,780
- Replacement of radio equipment and antenna	2,470
- Replacement of radio equipment	1,810
- New installation at major regulator site	2,210
2. Low Capacity Multiplex Radio Link	20,650
3. Rural Radiotelephone	
- Main station (1)	21,000
- Main station (2)	40,800
- Sub station	3,700
4. Private Automatic Branch Exchange	3,600
5. Antenna Tower Guyed 30 m	420
6. Antenna Tower Guyed 20 m	270
7. Private Wire Telephone	
- Communication cable (km)	846
- Telephone set	20
8. VHF/FM Radio Station (Field circuit)	
- New installation	2,120
- Removal	950
- Land mobil	288
- Portable wireless telephone	170
9. HF/SSB Radio Equipment	709

UNIT CONSTRUCTION COST OF MONITORING FACILITIES (1/2)

Description	nit Cost (1000 Yen)
1. Water Level Staff Gauge	220
 Automatic Water Level Gauge 	1,350
3. Reserving Rain Gauge	85
4. Automatic Rainfall Gauge	1,350
5. Water Level Gauge with Telemeter (Type-1)	10,360
6. Water Level Gauge (2 sites) with Telemeter (Type-2)	12,220
7. Water Level/Rainfall Gauges with Telemeter (type-3)	11,400
8. Water Level (2 sites)/Rainfall Gauges	
with Telemeter (Type-4)	13,800
9. Rainfall Gauge with Telemeter	8,900
10. Water Quality Meter (Portable type)	800
1. Automatic Water Quality Meter (Fixed type)	4,130
2. Soil Moisture Meter	4,130
13. Water Flow Meter	900
4. Ground Water Level Gauge	1,350
5. Monitoring Facilities at Project Office	35,600
6. Monitoring Facilities at Reginal Office (Level-3)	78,200
7. Monitoring Facilities at Reginal Office (Level-4)	83,600
8. Monitoring Facilities at Head Office (Level-3)	169,700
9. Monitoring Facilities at Head Office (Level-4)	215,400
20. Display Panel (manual input type)	23,500
21. Operating room at Project Office (Level-3)	400
22. Operating room at Project Office (Level-4)	1,600
23. Operating room at Regional Office (Level-3)	16,000
24. Operating room at Regional Office (Level-4)	32,000

UNIT CONSTRUCTION COST OF MONITORING FACILITIES (2/2)

Description	Unit Cost (1000 Yen)
25. Operating room at Head Office (Level-3)	40,000
26. Operating room at Head Office (Level-4)	60,000
27. Radio Facilities with Housing	3,249
28. Automatic Water Level Gauge with Radio Facilities	4,599
29. Automatic Water Level/Rainfall Gauge	
with Radio Facilities	5,949
30. Automatic Water Quality/Water Flow Meter in River	20,000

Appendix 4.9-1 QUESTIONNAIRE ON DATA MANAGEMENT

This questionnaire survey were carried out in October, 1987.

Actual questionnaire was written in Thai.

Project Offices which cooperated kindly are listed in Table 4.9-1.

QUESTIONAIRE ON DATA MANAGEMENT

1. Name of Project Office :

2. What kinds of data do you collect? Please check (>>).

Also, please put Duration of Observation (in years) at column "Term".

Surveyed Items	D	W	BW	M	s	A	Ó	Term
1. Water Level								
2. Rainfall		*****						
3. Gate/Pump Operation Record						• • • • • •		
4. Planned Cultivation Area								
5. Planted Area	:							
6. Harvested Area								
7. Underground Water Level		····-						•
8. Underground Water Quality								
9. Construction/Repair Progress								
10. Water Quality								
11. Condition of Facilities								
12. Repair History of each of facilities								
13. Damaged Area (by flood/drought)								
14. (Average or Sample) Yield of Rice								
15. (Average or Sample) Yield of Others								
16. Population/No. of Families of Farmers								
17. Average Income of Farmers								
18. <u>(please specify, if any)</u>								
19(please specify, if any)								

S: seasonal A: annual

O: occasional

3. How do your staff survey farming areas?

🗌 interview to farmers 🔲 measure by eyes 🗋 estimation

🗌 various methods (depending on surveyer/condition)

4. Do you have any problem in data survey/collection?

	🗌 Yes	🗆 N	0					. ·
	lf yes, i	please enumera	te the pr	oblems.				· ·
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	2.							
	3.		· · ·					•
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5	Please eni	umerate your i	deas to e	liminate th	ne above pr	oblem(s),	if any.	•
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8.	Can you <u>e</u> a	nsily retriev	e (find) (data in you	ur office?		· · · · ·	
						· . ·		· ·
	🗌 Yes		D .		1. 1.			
			. * .			· ·		• .
9.	lf "No" or	n the above qu	estion, w	hat are the	e obstacles	s to easy	retrieval?	
	(Plural i	items can be c	hosen)	· · · ·				
	🗌 Inadeo	uate assortme	nt		icient data			
	🗌 Too ma	any data		🗌 Scattei	red data			na an a
		ficient job tr		om predece:	ssor(s)			
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10. Do you think what are needed to eliminate the above obstacle(s)? Please enumerate needed measures.

1. 2. 3.

4.

11. What media is used to send/receive data to/from other offices (Ex. Head Office, Regional Office, Project Office)? Please check (☑). (Plural media for one case can be chosen)

Media	Radi		·····	epho	ne		.*	
Case			Ma i		ers*			
Urgent and Small amount of data		•			* D1	0000		
Urgent and Much amount of data					r I	lease s	specify	y :
Non-urgent and Small amount of data							• .	
Non-urgent and Much amount of data					no -			
Graph/Map						-1		

- 12. If you can use some equipment, such as computer, for data storage and information retrieval, do you think it benefits you?
 - 🗌 Yes 🗌 No
- 13. If computer is introduced into your office, what can be merits and demerits for you? (Plural items can be chosen)

MERITS	DEMERITS
Capacity of data storage	□ Need of training for computer use
Easiness of making copies	□ Need of running/maintenance cost
□ Ability of data assortment	Need of manpower

fy)

Ability of quick calculation

1

- ☐ Ability of inter-office data communication
- □ Ability of quick/correct calculation

(specify)	 \Box	(speci

Thank you very much for your kind cooperation.

			·		
No	Project Office Name	Answer	Irrigation	Region	Notes
1	Phonlathep	V	Gravity		
2	Borommathat	V	- do -		· ·
3	Thabote	V V	- do -		
4	Kra Sieo	V	- do -		
5	Chanasutr	V	- do -		
6	Samchook	V	- do -:		
7	Yang Manee	V V	- do -	7.	
8	Don Chedi	V	- do -		
9	Pho Phraya	₩.	- do -		
10	Pakhai	V	- do -		
11	Bang Ban	v	- do -		Pump Irrigation
12	Chaochet-Bang Yihon	V	W.Conservation		· · · · · ·
13	Phraya Banlu	V	do -		
14	Phra Pimon	V	- do - 🗅	· · ·	
15	Phasi Charoen	√	- do -		· · · · · · · · · · · · · · · · · · ·
16	Manorom		Gravity		
17	Chong Kae		- do -		
18	Maharaj	V -	- do -		
19	Koke Kathiem	V .	- do -		
20	Reong Rang	V	- do -	8	
21	Klong Priew	V	- do -		
22	Nakhon Luang	V	- do -		
23	Pasak Tai	V V	- do -		
24	Rangsit Nua	V	W.Conservation		
25	Rangsit Tai	V	- do -		
26	Klong Darn	V	- do -	 	
27	Phra Ong Chaiyanuchit	V	W.Conservation	9	
28	Naresuan Dam	v	Gravity		
29	Phlai Chumphon	V	- do -	3	} Phitsanulok
30	Dong Setthi	V	- do -		Project
31	Tha Bua	V	~ do -		(Stage 1)

Table 4.9-1 LIST OF PROJECT OFFICES

All of Project Offices sent their answers to RID Head Office.

L

(Answers from Questionnaire)

DATA ITEMS COLLECTED BY PROJECT OFFICE

Table 4.9-2

S S Gravity Irr.A. ₿ M S \triangleleft < 4 ∢ Ę, ଞ୍ଚ À Å S P. S S S Ż Z 0 REGION S 0 o 29 ŝ D ρ Ö 4 S ¢ 'n ⊠ S ഗ S S o S S 4 83 Á Å ß Ż Þ W Μ Á З S 4 SI SI 27 A Ω Ř Σ Á Ŵ Ŀ ò o 0 ß ¢ O នុក OB Ω W. Cons. A. Ω 2 Σ ₽ р ≥ ≿ Ö Z 0 25 4 р 0 4 Ż 0 4 ρ n Σ < 0 Ó 0 S К O Ω 0 S 24 W W. O Д M М 0 S Ś ß Ω ρ S р S ∞ O 0 0 Д O Ò 4 O 0 Ň M X Irrigation Area 0 4 83 ρ Ω S A Ś REG ION 0 0 4 o S o 0 Ś ഗ ú M O ∢ 0 S S 21 S 0 20 Ω 0 Å o ∢ < < 0000 0 5 Ω þ Σ Ä Ś s. 0 S 옆 þ SOS 0 0 W. Gravity M M Ó 18 þ S ρ Å × 0 0 0 NNO 4 M M ı́Ω) S <u>[0]</u> M Δ ρ 10 . M3 Μ S 0 D B M 0 K 10 р ൧ < < 0 A 0 0 0 0 ō A 44 W A4 A3 Σ ម្ន Ω Δ Ω Ö 0 S 0 0 ∢ W.Conserv.A. W 0 S 13 14 Д Ω ρ S ö ΣO ά Д Ω ₽ B ≥ ₿ nn 0 0 \prec S ₿ Ψ 12 ρ Ą ≥ 0 S in ó ρ ß ₽ 2 Σ 0 O Σ М n ≥ Σ Μ Д Σ SO 0 Δ R Μ W Σ O 0 ß S ġ Ś S Ö 0 Ś 0 Ω Ω S ò Ω \triangleleft ∢ 0 ΣΣ ρ νO ρ Ω S S 0 В B 0 S 0 တ BW < REGION Gravity Irrigation Area S Z р Ņ Σ ∢ ò ₿ Μ ≿ S р Д В \geq Ν 4 0 Υ M Σ р Μ N ò Ω ρ M Σ Σ S S SS 4 Ω Z М S Ġ À р S Z 0 ∢ 0 0 0 Σ 0 Á ූ Z Μ S 0 Д Μ ¥ 0 S À 0 ß Y K Ó 0 A Ω Д S in in Σ ¢ 0 S Ś Ś 4 S W М ≽ SS റ്റ 0 А ≥ ≥ Z S р S Μ 0 Д M 0 ∢ S 0 O Ω ŝ Ω ∢ Ω Д Ś 0 S ഗ Σ Z S À Z ₹ 0 S 3. Gate/Pump Operation Record*2 Repair History of Facilities (Ave./Sample) Yield of Rice Project Office" Construction/Repair Record (Ave./Sample) Y. of Others Underground Water Quality Average Income of Farmers 4. Planned Cultivation Area Condition of Facilities Underground Water Level Population of Farmers Condition of FTO etc Canal Cross Section Project Efficiency Harvested Area*3 ti X Prawn-Fish Pond . Water Level *2 Damaged Area*3 Water Quality 5. Planted Area (Unspecified) Drainage Rainfall Data Item ഗ് တ် R ୍ୟ 23

S : Seasonally A : Annually M : Monthly : 3 times a month 10:0nce a ten days 뗥 A3:3 times a year BW: Bi-weekly W:Weekly A4:4 times a year D:Daily

O: 0ccasionally

"! List of Project Offices is shown in Table 4.9-1.

*2 Water level and Gate operation activity are recorded more than one time a day

*³ These farming activities are reported once a week to RID Head Office, and once a month to RID Regional Office, from each Project Office. The answers from some Project Offices might have confusion about survey period and reporting period. Moreover, Project Offices prepare seasonal/annual report to RID Regional/Head Office.

Appendix 4.9 Page 6 DIFFICULTIES/PROBLEMS IN DATA COLLECTION AT PROJECT OFFICE Table 4.9-3

(From Answers to Buestionnaire)

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	h Project Office enumerated, "-" for item which Project Office didn't list up	1

Appendix 4.9 Page 7

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Table 4.9-4 WAYS TO OVERCOME DIFFICULTIES/PROBLEMS IN DATA COLLECTION AT PROJECT OFFICE

(From Answers to Questionnaire)

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Project Ulice		Way to Overcome Difficulties	Increase of number of staff	Training/Education to staff	Education/Information to farmers	Map shall be attached to survey sheet for check	5. Cross-check of surveyed data	Unification of survey by authorities concerned	Increase of number of survey vehicles/equipment	Assignment of an engineer for communication equipment	Establishment of a meeting center to contact farmers	10. Increase of survey budget	Clarification and Announce- ment of survey purposes for farmers/officials	Modernization of communica- tion equipment	Announcement of results or summery of analysis from the RID Center to Project	Maintenance of survey equip.	No way to solve the problem of far dwellings of farmers
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CONDITION OF DATA SHEETS AT PROJECT OFFICE Table 4.9-5

(From Answers to Questionnaire)

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Easiness of Data Retrieval

Y: Easy N: Difficult 33% (12/31) of Project Offices feel difficulty in data retrieval. This shows it is hard to search data even for persons in close charge.

(From Answers to Questionnaire) Table 4.9-6 DIFFICULTIES/PROBLEMS IN DATA RETRIEVAL AT PROJECT OFFICE

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ifficulties \ Project Office*	1. Inadequate Assortment	2. Too many/much Data	3. Insufficient Data Index	. Scattered Data	. Insufficient Job Transfer from Predecessor(s)	6. Insufficient Storing Space	. Shortage of Custodian	. Unsteady Data Reporting	9. Wrong Inquiry	
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* List of Project Offices is shown in Table 4.9-1. Mark at each columnm : " ~" for difficulty/problem which Project Office enumerated, "-" for item which Project Office didn't list up as difficulty. Answers from each Project Office correspond Table 4.9-7.

Table 4.9-7 WAYS TO OVERCOME DIFFICULTIES/PROBLEMS IN DATA RETRIEVAL AT PROJECT OFFICE

(From Answers to Questionnaire)

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* List of Project Offices is shown in Table 4.9-1. Mark at each columum : ~ ~ for way to overcome which Project Office enumerated, "-" for item which Project Office didn't list up. Answers from each Project Office correspond Table 4.9-6 and 4.9-6.

Appendix 4.9 Page 10 Table 4.9-8 MERITS AND DEMERITS OF INTRODUCTION OF COMPUTER TO PROJECT OFFICE (From Answers to Questionnaire)

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2. Need of Running/Maintenance Cost	1	۱,	>	>	>	1.	۶ ,	>	1	I	>	1	>	>		>		>	.		>	>		1			~		~	> >
3. Need of Manpower	>	>	>		>	>	1	>	1	 .	>	>	>	>	1	1	>	>	>	i	>				>	1			>	> >
4. No Budget for others, if computer is introduced	<u>`</u> 1` '	1	. <u> </u>	<u> </u>	ļ	1	1	1	1	l	ļ.	- I	1		1	. 1	1	1	ł	1		>			1				1	<u> </u>
*' List of Project Offices is shown in Table 4 Mark at each column : " v" for item which Proj Arswers to the nustion whether introduction of	own i item	n Ta whic	h Pier o	14.9 Tojec		fice	.9-1. ject Office enumerated, commuter for data stor	mera	ted.		fo /retri	ated. "-" for item which Project Office did storage/retrieval henefits Project Office or	80 H	fiit fiit	which Project Office didn't list up. mefits Project Office or not	oiect	t Off	i ce	didr	n't l	Ist	e.								
Does computer benefit Office ?	7	>	×		. <mark>></mark>	>	>-	Х	X	ال ا (7	X	×	>	>	- 	7	7	>.	7	<u> </u>		X	2			- - 		×	×
Y : YES for the question. (In accordance with answers from Project Offices,	Proj	st i	Offi	ices,		85	96.8% (30/31)	D of	f and	mers	app	answers appreciate introduction of computer, while none of	ate	intr	oqnc	tion	l, of	8	outer	물	ile	Jone		MSU	srs d	feny	answers deny it.)			

Appendix 4.9 Page 11 (From Answers to Questionnaire)

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*1 List of Project Offices is shown in Table 4.9-1.

Appendix 4.9-2 QUESTIONNAIRE ON NECESSARY INFORMATION FOR DIVISIONS CONCERNED

Questionnaire on Necessary Information for Divisions Concerned

Divisions Which cooperated kindly are;

Hydrology Division Operation and Maintenance Division Programs and Budget Division Project Planning Division

(Alphabetical Order)

Questionnaire on Necessary Information for Divisions Concerned

Q1. Name of Your Division :_______ Name of Your Section/Branch :______

Q2. Please check (☑) in the Right square (□), if Your Division/Section needs the information/data. Please check in the Left square, if Your Dividion/Section is currently collecting the data. More than one item can be selected.

(1) Project Location

- 🔲 🗌 RID Regional Office No.
- 🗌 🗌 Changwat Name/Code
- Amphoe Name/Code
- Tambol Name/Code
- 🗌 🗌 Basin 🛛 Name/Code
- Others (Please specify)
 - 🗋 Others (Please specify)_____,

(2) Construction Record

Completion Year

C Construction Period

Construction Cost

Constructor

□ □ Supervisor

- □ □ Volume/Unit Cost of Excavation
- 🔲 🔲 Volume/Unit Cost of Barth Move
- 🔲 🗌 Volume/Unit Cost of Concrete
- □ □ Volume/Unit Cost of Gravel
- □ □ Volume/Unit Cost of Sand
- Unit Cost of Steel Work
- □ □ Volume/Unit Cost of Masonry

□ □ Manpower

- Others (Please specify)_____,
 - 🗍 Others (Please specify)_____, ____

(3) Planning/Design Record

- 🗍 🗍 Design Irrigable Area in wet season
- 🔲 🗋 Design Irrigable Area in dry season
- 🔲 🔲 Design Watershed Area
 - Design Runoff and Return Period

Design Rainfall (height) and Return Period

Design Flood height, Return Period and Flood Area

□ □ No. of beneficiaries

Drawing Sheet No.

Purpose of the Project

🔲 🗌 Project Initiator

(4) Repair/Rehabilitation Record

Reported Year/Season

Budget Requisition No.

□ □ Reported Necessary Part of Repair/Rehabilitation

□ □ Reason of Repair/Rehabilitation

Estimated Cost

□ □ Rank of Priority set by Head/Regional Office

Approval No.

🗋 🗋 Allocated Budget Amount

Drawing Sheet No.

Completion Year

C Construction Period

□ □ Construction Cost

C Constructor

□ □ Supervisor

□ □ Volume/Unit Cost of Excavation

□ □ Volume/Unit Cost of Earth Move

🗌 🗌 Volume/Unit Cost of Concrete

□ □ Volume/Unit Cost of Gravel

□ □ Volume/Unit Cost of Sand

□ □ Volume/Unit Cost of Steel Work

U Volume/Unit Cost of Masonry

□ □ Manpower

Others (Please specify)

🗌 Others (Please specify)

(5) Socio/Agro Economic Data

Population in the Project Area

Farm Acreage

🗌 🗋 Irrigated Area

□ □ Acreage of Fish/Prawn Pond in the Project Area

□ □ Crops and Acreage of each growing stage in wet/dry season

□ □ Harvested Area of each crop

□ □ Damaged Area and Cause of Damage

□ □ Average/Sample Yield of crop

🗌 🔲 Average/Sample Farmyard Unit Price of crop/fish/prawn

Average/Sample Market Unit Price of crop/fish/prawn

□ □ Average/Sample Agricultural Income of Farmers

□ □ Average/Sample Total Income of Farmers

🗋 🗋 Major Souces of Income

🗌 🔲 Average/Sample Farm Cost

Distance to Market

□ □ Source of Domestic Water

□ □ Source of Livestock Water

□ □ No, of Livestock

□ Others (Please specify)____,

□ Others (Please specify) ,

(6) Operation Log of Facilities

🔲 🔲 Upstream Water Level of Regulator

Downstream Water Level of Regulator

□ □ Calibration Curve/Formulae of Regulator/Pump

□ □ Flow at Regulator

🗋 🔲 Pumped Water Amount

Pump Operation Hours

Departive Instructions from Senior Office

🗌 🗍 Release from Reservoir

🗌 🗌 Water Storage of Reservoir

🔲 🗌 Water Height (Depth) at Reservoir

Others (Please specify)_____,

Others (Please specify)

(7) Hydrological/Meteorological Data

□ □ Rainfall

□ □ Flow/Water Level of River

Termperature

🗌 🔲 Humidity

🗌 🗌 Sunshine

□ □ Wind Velocity

□ □ Flood Hight

🗌 🗍 Water Quality

🗍 🗍 Ground Water Table

Ground Water Quality

□ Others (Please specify)

🗌 Others (Please specify)_

(8) Structural Data

- □ □ Type of Main Structure
- 🔲 🔲 RID Standard Type No. of Main Structure
- D Dimension/Capacity of Main Structure
- Elevation of Specific parts of Main Structure
- □ □ Location of Main Structure
- □ □ Calibration Curve/Formulae of Main Structure
- □ □ Type and No. of Appurtement Structure
- Dimension/Capacity of Canal/Ditch
- Elevation/Slope of Canal/Ditch
- Dimension/Capacity of Appurtement Structure
- Elevation of Specific parts of Appurtemant Structure
- □ □ Location of Appurtement Structure
- Calibration Curve/Formulae of Appurtement Structure
- ① Others (Please specify)____,
 - □ Others (Please specify)

(9) Others

- □ □ Location, Type and No. of Tele-communication Facilities
- □ □ Initial Cost of Tele-communication Facilities
- Operation Cost of Tele-communication Facilities
- □ □ Quality of Transmission/Reception
- □ □ Condition of Tele-communication Facilities
- □ □ Repair History of Tele-communication Facilities
- □ □ Location, Type and No. of Data Processing Facilities

- 🗌 🗌 Initial Cost of Data Processing Facilities
- Operation Cost of Data Processing Facilities
- □ □ Frequency/Amount of Data Processing
- □ □ Condition of Data Processing Facilities
- □ □ Repair History of Data Processing Facilities
- □ Others (Please specify)
 - □ Others (Please specify)

Table 4.9-10 NECESSARY DATA/INFORMATION FOR DIVISIONS

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(1) Project Location															10.110 A
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Planning Analyses		. <u>  `</u>	<u>v</u>	ļ	ļ									 	
Any Other Information on Proj	ect Location	<u> </u>	<u>v</u>	<u> </u>	v		<u> </u>		<u> </u>	ļ		<u>, 51, </u>			
(2) Construction Record										1		· ·			}
Completion Year			ļ	<u>v</u>	1.1		٧		<u> </u>	ļ		<u>. :v</u> .	<b>v</b>		
Construction Period				. <b>Y</b>	í.,	<b>Y</b>	<u>. v</u>		<u>.</u>	:		Y	Ξ <b>V</b>	l	
Construction Cost		. <b>.</b>		V.		. v			v				V		
Constructor				<u>.</u>	1	<b> </b>	ŀ		<u>v</u>				Y		
Supervisor		: <b>.</b>		<u>. y</u>	<u>, v</u>			·   · · ·	<u>v</u>			: .	۷		
Volume/Unit Cost of Excavatio		-		<u>. v</u>	.:X.				Y				V		
Volume/Unit Cost of Earth Wor	ĸ			<u>. v</u>	<u>v</u>	<b> </b>		ļ	<u>v</u>				v		
Volume/Unit Cost of Concrete				<u>. Y</u>	V			ļ	v				Y		
Volume/Unit Cost of Gravel				. <b>Y</b> .	<u> </u>				, v				V.		
Volume/Unit Cost of Sand				: Y.					<u>.</u>				. <u>Y</u>		
Volume/Unit Cost of Steel Hor	K	. <b>.</b>	[	<u>v</u>	<u> </u>				Y			· · · · ·	<u>.</u>	•••••	
Volume/Unit Cost of Masonry		·		<u> </u>	1			ļ	<u>v</u>	<u></u>		!	Y		
Manpower	······································			<u>. Y</u>	<u> </u>							i	V		
Problems/Constraint in Constr				<b>-</b>									Y		
Any Other Information on Cons	truction			<u>v</u>	v							11			
(3) Planning/Design Record	rtus L'Étables											1			
Design Irrigable Area in wet		- <b> -</b> -X-		<b>Y</b>	1	<b>Y</b> .			<u>×</u>		<u>, Х</u> ,	<b></b>	<u>. У</u>		<b>v</b>
Design Irrigable Area in dry Design Watershed Area	season	. <b></b>	<u>v</u>	<b>Y</b> .	1.1	<u>¥</u> .			<u>.</u> X				<u> </u>		⊻
Design Runoff and Return Perio		- <b>  . Y</b> .	<u>v</u>	<u>Y</u> .	1				<u>Υ</u>		<u>v</u>	· · · ·	<u>. Y</u>		<u>. : Y</u>
Design Rainfall (in height) a		. <b>†.</b> . <u>Y</u>	<u>v</u>	. <u>. Y</u> .	<u></u>				<u>. Y</u>	<b></b> .	¥.		<u> </u>		<u>: v</u>
Design Flood in height, Return		<b>··</b>	<b>Y</b>	<b>Y</b> .	<u> </u>				¥.	ļ			<u>. Y</u>	<u>¥</u> .	Y
	n refiled and flood area	-1	. <u>v</u>	<b>Y</b> .,	<b>Y</b> .				<u> </u>				<u>₩</u> .	<b>Y</b>	<b>x</b>
No. of Beneficiaries	· · · · · · · · · · · · · · · · · · ·	- <u>  *</u>	<u>.</u>		<u>.</u>			;-	<u>.</u> v	<b> </b>		<b>}</b>	<u>v</u>		
Drawing Sheet No.	••••	•		<u>. Y</u> .			·						<u>. Y</u>		
Purposes of Project		<b>.</b>		,	<b>Y</b>	:			<u>Y</u>		<u>. v</u>		<u>. Y</u>		
Project Initiator Water Use Simulation		. <b>.</b>	<u>v</u> .	<u>Y</u> .	<u> </u>	• • • •				<b> </b>		· · · · · ·	<u>v</u>		
Design Rule Curve of Reservoir	r Ororation		<u>.</u>					····-					<u>¥</u> .		
Any Other Information on Plan		rf				·	•	<b>.</b>		<b>.</b>					Y
(4) Repair/Rehabilitation Record	11116/ DC2161	<u> </u>	<u>v</u>	<u>v</u>	×.		1		<u>+</u>		<del>  .</del>	·			
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Reported Necessary Part of Re	nair/Rehabilitation			<u>Y</u> .	v	. <u>.</u> V						}	. <u>Y</u>	•••••	
Reason of Repair/Rehabilitation				<b>Y</b> .	. <u>.</u>	1			<u>v</u>		V		<u>.</u>	***	- Y
Estimated Cost	·····			1.5	v	<u>∨</u>   ∨		<b> </b>	<u>v</u>	·	. <u>Y</u>	¹ .	<u>. </u> ⊻.		¥
Rank of Priority set by Head/	Regional Office				v	v v		· · · · ·	<u>Y</u>   			<b>*</b>	( : <u>V</u> V	••••	
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Construction Period					V		•				V		<u>: v</u>	•	
Construction Cost	· · · · · · · · · · · · · · · · · · ·	•†••••			V V	¦	·	† <u>-</u>			v v	¦	<u> </u>	•••÷	
Constructor		• • • • • •			v.	•••••				<u> </u>	, ×.	•••••	V V		•••

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(4) Repair/Rehabilitation Rec	cord (cont'd)				į							.		
Supervisor				<b>Y</b> .	<b>V</b> .	ļ					ļ		<u>. v</u>	<b> </b>
Volume/Unit Cost of Exca				<b>Y</b> .	<u> </u>		ļ				V		<u>. y</u>	ļ
Volume/Unit Cost of Eart				<u>۲</u> .	. <u>v</u> .			• • •			X.		٧	
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Volume/Unit Cost of Grav				<u>Y</u> .	<u>v</u> .						<u> </u>		<u>Y</u> .	l
Volume/Unit Cost of Sand				<u>. v</u>							<u>.</u>		<u>, v</u>	<b>.</b>
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Volume/Unit Cost of Masc	กกy			<u>v</u>		<b> </b>				ļ	<u>v</u>		<u>.</u>	<b> </b>
Nanpower				<b>Y</b> .	<u> </u>		[			l	<u>v</u>		V.	ļ
Total Cost						<b> </b>							۷.	<b> </b>
Dimension of Each Work						<b> </b>	ļ						v	<b> </b>
Any Other Informations of	n Repair/Rehabilitation			°v	<u>v</u>		<u> </u>				· · ·			ļ
(5) Socio/Agro Economic Data													1	
Population in the Project	t Area	<b>. v</b>	۷	<u>ب</u>	<u>v</u>	<b> </b>			٧		v		v	<b>.</b>
Farm Acreage		Y.	<u>v</u>	<u>.</u>	v	<b>.</b>			<u>v</u>	<u> </u>	v	V.	1	1
Irrigated Area		V	v	v	v.	[			v		v		v	<u> </u>
Acreage of Fish/Prawn Pc	nd in the Project Area	v	v	v	v				v		v	v	v	
Crops and Acreage of eac	h growing stage in season		v	V	v				v		v		v	
llarvested Area of each o	гор	v	v	v	v				v		v		v	
Damaged Area and Cause o	of Damage	v		v	v				v		v	V	v	
Average/Sample Yield of	crop	V		v		[		[	v		v		٧	[
Average/Sample Farmyard	Unit Price of Products	v		v	v	]			v	1	v		v	1
······································	it Price of Crop/Fish/Prawn	v		v	v	<b></b>			v		Y		v	[
Average/Sample Agricultu	iral Income of Farmers		v	v	v				v	r	v		v	1
Average/Sample Total Inc			v	v				···	٧	[	v		v	1
Najor Source of Income		T	v	r • • • •	Y				v		v		. v	
Average/Sample Farming (	òst	1	v	. v	i i		-		v		v		v	
Distance to Market		V	1	1	1	1				[		[	v	1
Source of Domestic Water		Y	v				1		l		v		v	1
Source of Livestock Wate		v	4			1		1			v		V	
No. of Livestock		T	v			[		1		· · · ·	v		v	
Average Number of Farm L	abours					1							v	
Labour Movement in Agric	cultural Sector				1	1					1	h	v	1
Farming Technology	······································										1		V V	1
	Socio/Agro Economic Aspects	v	γ		1	1		ļ		†		ļ		†
(6) Operation Log of Faciliti		ļ,	<u> </u>		1		<u> </u>			<u>⊦</u>	1	<u> </u>		
Upstream Water Level of													v	V
Downstream Water Level of				••••	•••	†							v	l v
Calibration Curve/Formul			; 	ŀ		†		†••••			v	¦	v	†*
Flow at Regulator		<b> </b> -		ŀ	1	+		<u>†</u> ····			v	·····	v	1
Pumped Water Amount												†		†
Pump Operation Hours		†		¦		†	•	ļ		<u>†</u>	<b>.</b>	ţ	v	<u>†</u>
Operative Instructions I	from Senior Office			<u>⊦</u> …		†	<b>.</b>	<u>+</u>	 	·		ł	v.	<u>†</u>
Release from Reservoir				 		†		†		<u> </u>		<u> </u>		1
Water Storage of Reserve	)i <i>r</i>			1	<u>v</u>	1		†		<u>†</u>	1	†	, v	<u>-</u>
Water Height (Depth) at		·		<u> </u>		1		<b> </b>		<b> </b>	<b> </b>	<u> </u>		†¥
Conveyance Time	IN401 1011	<b>⊦</b>	<u> </u>	<u> </u>	<u> Y</u>	<u>†</u>	·	<u> </u>		†		<b> </b>	Y	<u>†</u> ¥
Discharge Contribution	·····	•••••		ł		••••••		†		<b> </b>		<b> </b>	<u> </u>	<u>†</u>
Reservoir Evaporation	·····	ł		ł	¦		<b>:</b>	ł		†	<b>;</b>	¦	<u></u>	<u>†</u>
Any Other Information or		1	<u>.</u>	1		<b></b>	<b>.</b>	4	<b>!</b>		1	<b>.</b>	•••••	

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(7) Hydrological/Meteorologic	al Data															
Rainfall Plow/Water Level of Rive		•••••••••••••••••••••••••••••••••••••••	- í		1	<u>v</u>	Į'					<u> </u>		v	<u>Y</u> .	
** ************************************	<u>r</u>		. <b></b>	<b>X</b> .	<b>Y</b> .	<u>v</u>						: :		<u>v</u> ,	v	1.1
Temperature														Y	Y	. ,
Humidi ty		•••••••••••••••••••••••••••••••••••••••	. <b> </b> '											v	<u>v</u>	. \
Sunshine				· • • • •										. <b>y</b>		. <b>v</b>
Wind Volocity												ļ		. v	<u>. y</u>	. ,
Flood Hight		•		• • • • • •			(·						!	<b>v</b>		۰.
Water Quality														v	<b>v</b> .	١
Ground Water Level			· · · ·	<b>X</b> .	<b>.</b>									<u></u>		<u> </u>
Ground Water Quality			. <b>.</b>	· · · · ·			ŀ							<u> </u>		
Evaporation Rate														<u>.</u> Y		. \
Average Rainfall coverin Sediment	g each zo	ne												. Y		
				- • • • •												
Solar Radiation																
Soil Moisture Profile																. 1
Any Other Hydrological/M	eteorolog	ical Data	V	<u>v</u>												
(8) Structural Data																
Type of Main Structure	N 1 01		4			<u>. y</u>				۷.		<u>Y</u>	<u> </u>	v		
RID Standard Type No. of						<u>γ</u>				. v				<u>v</u>		
Dimension/Capacity of Ma				• • -	<u>v</u> .	Ý				<b>X</b>			<u>Y</u> .	. <u>v</u>	· • • • • •	
Elevation of specific particular		in Structure	·			. <u>v</u>								. <u>v</u>		
Location of Main Structur		Ct		<b></b>	<u>.</u> Y	Y							1 4	<b>Y</b>	••••	
Calibration Curve/Formula					•••••					. v		<u>x</u>	1 1	<b>v</b>	· · · · ·	¦
Type and No. of Appurtena						<b>v</b>				. <u>Y</u>			<b>Y</b> .	<u>v</u>		
Dimension/Capacity of Ca						۷.				<u>v</u>	• • •		[·····]	<b>v</b>		
Elevation/Slope of Canal,		Ctaughuan .			•	. <b>v</b>								<u>v</u>		
Dimension/Capacity of Ap Elevation of specific par						<b>Y</b>				<b>Y</b> .				<u> </u>		
Location of Appurtenant 3		In Princing			<b>Y</b> .'	<u> </u>					• • • • •		ļ	<u>X</u> .		
Calibration Curve/Formula			+	•	<b>Y</b>	<u>. v</u>							·····	<u> </u>		
Post Construction Approv		i chait Structure							. <b>.</b>	<u> </u>	• • • • •	<u>X</u>	<u></u>	. <u>v</u> .		
(9) Others	n bata								<u> </u>							
Location, Type, No. of Te		ication Recilition					:				}	;				
Initial Cost of Tele-com					 			¦	<u> </u>	; ;			V			¦
Operation Cost of Tele-co						V	<b>-</b>			·····	<b> </b> •••••	. <u>Y</u> V		. <u>v</u>		
Quality of Transmission/					<u>Y</u> .				ł		• • • • •				• • • • • •	
Condition of Tele-commun		rilities		<b>.</b>	¥. V		· • • •			¦		v		<u>Y</u>		
Repair History of Tele-co			+		) <u>Y</u> .							<u> </u>		X		
Location, Type and No. of			<b> </b>		 V			• • • • •	{ <i>·</i> ·		f. <b></b> .			 	•	
Initial Cost of Data Proc			······		¥.	í						v		- ¥ - v		 
Operation Cost of Data Pr					¥ V	•			·····			v				 
Frequency/Amount of Data			1			v	·····		¦		r	····				
Condition of Data Process						····						v				
Repair llistory of Data P							<b> </b>		¦			;	v	v		
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