

BAN PHACHI

Appendix 7.6.3 Ban Phachi Station Changeover Procedure

(1) The 1st changeover work

1) Track

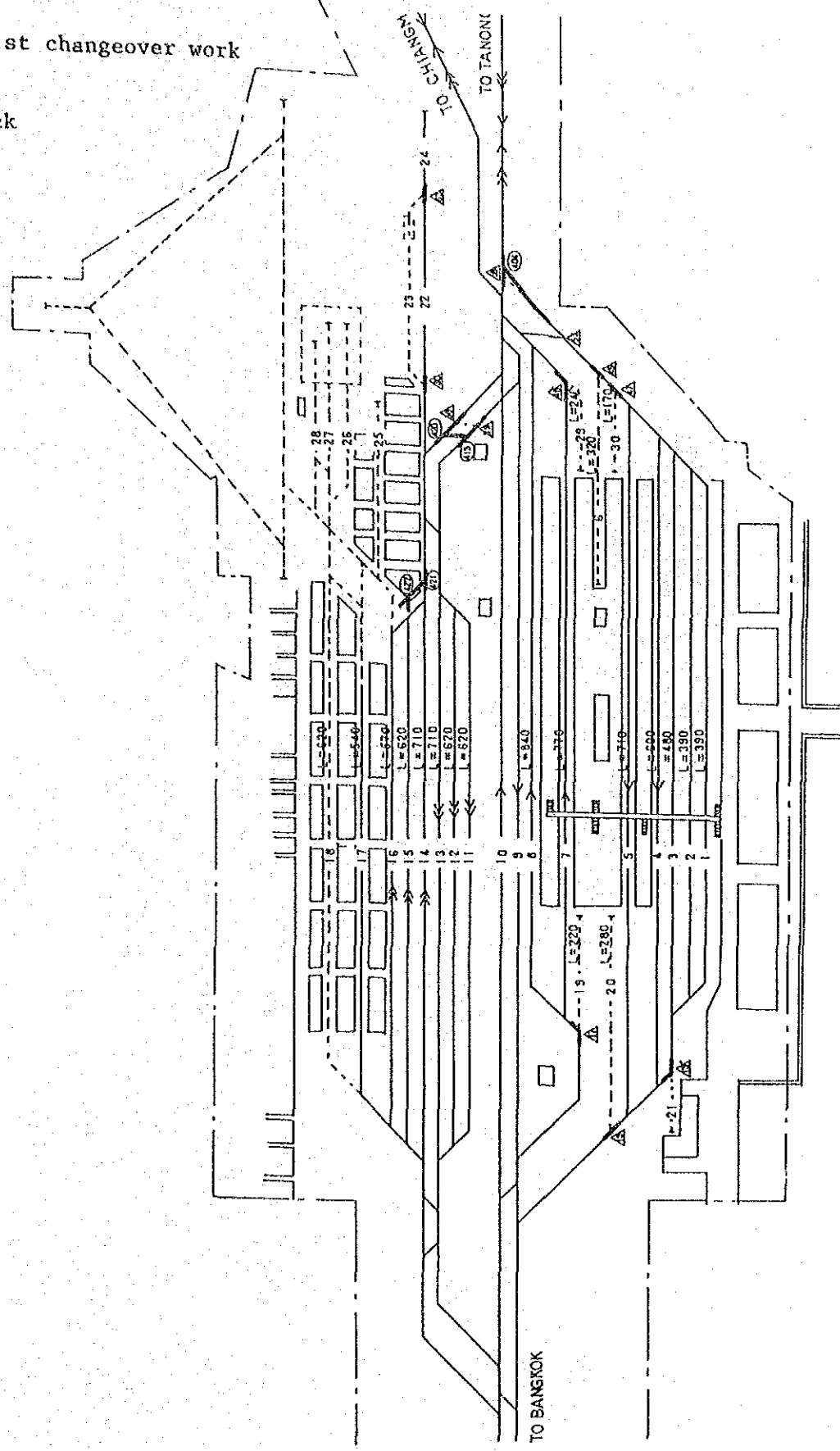


Fig. 1 The 1st Changeover Work Diagram (Track)

1-1 Separation of the Northern and Northeastern Lines

- (1) Turnouts $\triangle 47$, $\triangle 48$ and $\triangle 49$ are removed and track Nos. 6, 29 and 30 abolished.
 - (2) Turnouts $\triangle 15$, $\triangle 17$ and $\triangle 19$ are removed and track Nos. 19, 20 and 21 abolished.
 - (3) Turnout $\textcircled{404}$ is introduced and $\triangle 58$ removed and tracks between $\textcircled{404}$ and $\triangle 53$ changed in connection.
 - (4) Turnouts $\textcircled{419}$ and $\textcircled{420}$ are introduced and connected together.
 - (5) Turnouts $\triangle 38$ and $\triangle 39$ are removed.
- #### 1-2 Installation of freight sorting track
- (1) Turnouts $\triangle 30$ and $\triangle 63$ are removed and track No. 23 abolished.
 - (2) Turnout $\textcircled{421}$ is introduced and $\textcircled{422}$ installed.
 - (3) Tracks of engine shed are removed.

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2) Signals

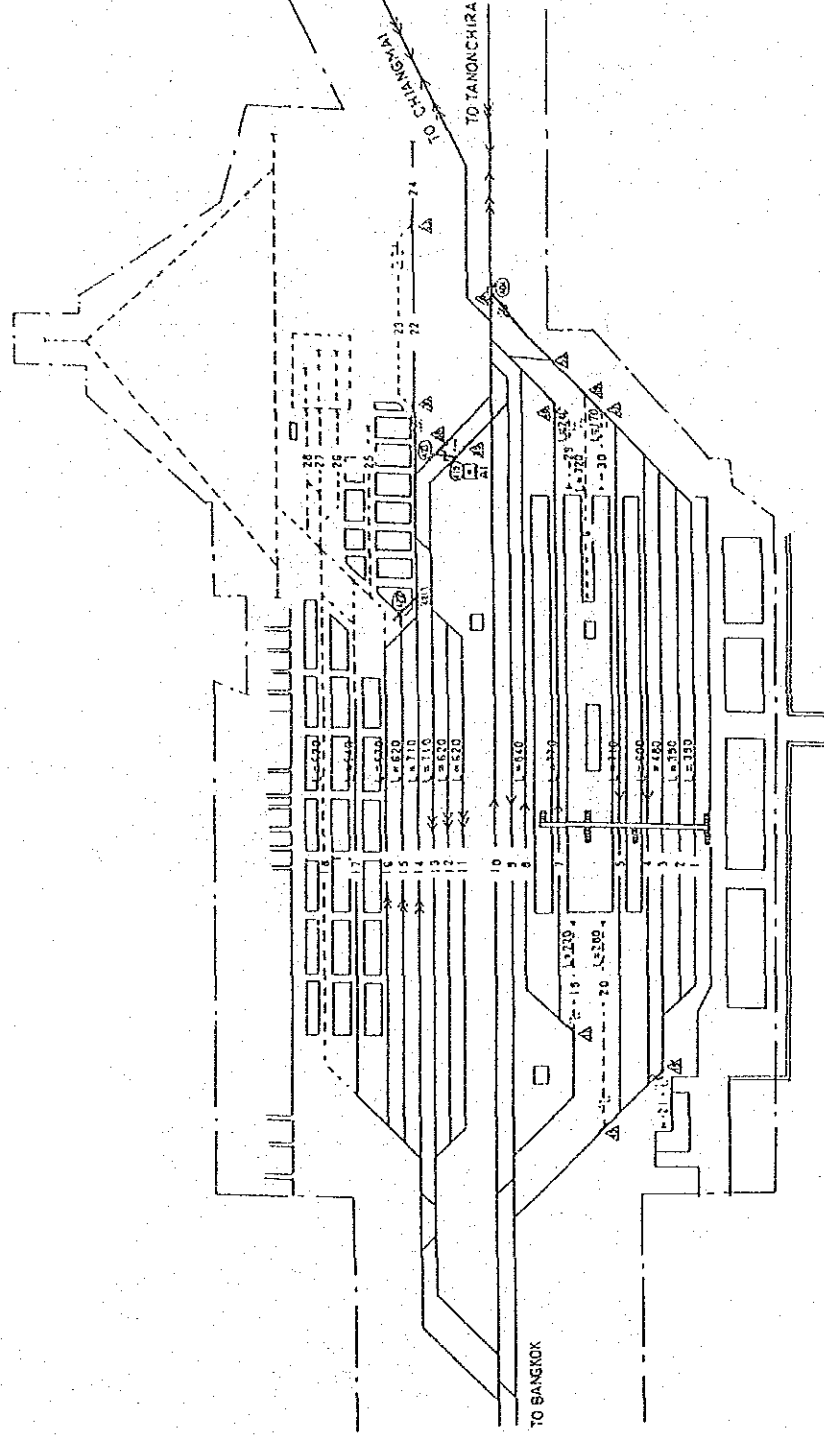


Fig. 2 The 1st Changeover Work Diagram (Signals)

In connection with the separation of the Northern and Northeastern Lines, and additional installation of a goods wagon sorting track, signalling facilities are properly modified.

- (1) Preliminary tests should be conducted.
Modification of board
Change of wire connection
- (2) Electric switch machines are taken out from turnouts $\triangle 47$, $\triangle 48$ and $\triangle 49$, which are to be removed.
- (3) The starting signal of track No. 6 is removed.
- (4) Electric switch machines are taken out from turnouts $\triangle 15$, $\triangle 17$ and $\triangle 19$, which are to be removed.
- (5) Track circuits of track Nos. 6, 29, 30, 19, 20 and 21 are removed.
- (6) The electric switch machine of turnout $\triangle 58$, which is to be removed, is reinstalled in turnout $\circ 404$, which is to be introduced.
- (7) The electric switch machines of turnouts $\triangle 38$ and $\triangle 39$, which are to be removed, are reinstalled in turnouts $\circ 419$ and $\circ 420$, which are to be introduced.
- (8) The electric switch machines of turnout $\triangle 53$, which is to be removed, is taken out.
- (9) Turnouts $\circ 421$ and $\circ 422$, which are to be introduced, shall be of an key lock.
- (10) In connection with the removal or introduction of turnouts, track circuits are modified in composition.
- (11) Interlocking tests should be made.
Track circuit test
Electric switch conversion test
Signal display test

BAN PHACHI

(2) The 2nd chageover work

1) Track

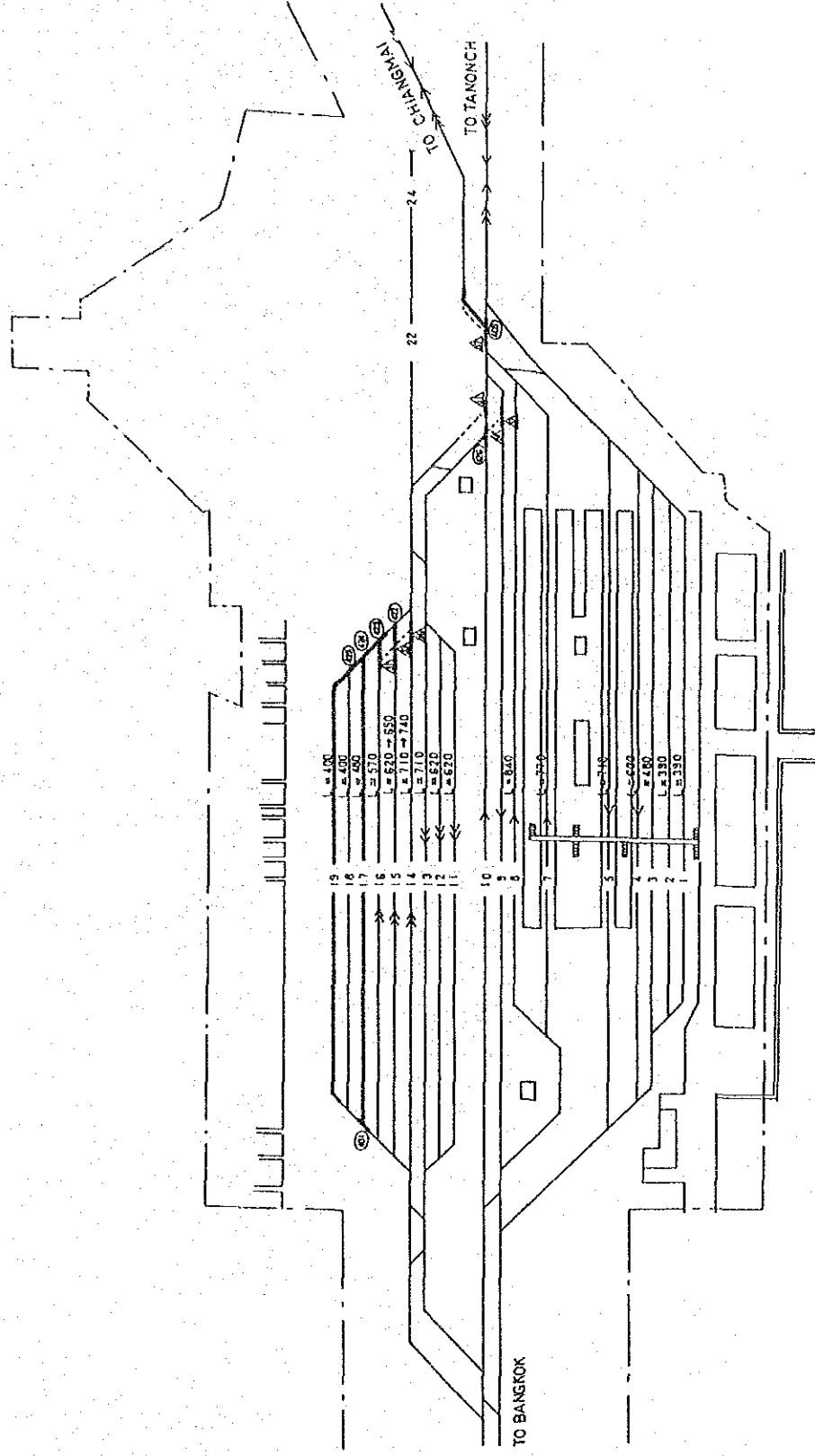


Fig. 3 The 2nd Changeover Work Diagram (Track)

2-1 Separation of the Northern and Northeastern Lines

- (1) Turnout $\triangle 57$ is removed and $\textcircled{409}$ introduced.
- (2) FS turnout $\triangle 51$ is removed and $\textcircled{426}$ introduced.
- (3) Turnouts $\triangle 51$ and $\triangle 52$ are removed.

2-2 Additional installation of freight sorting track

- (1) Turnout $\triangle 33$ is removed and track No. 15 connected to turnout $\textcircled{422}$.
- (2) Turnout $\textcircled{423}$ is installed, turnout $\triangle 31$ removed at the same time as (1), and $\textcircled{423}$ connected to track No. 16.
- (3) Turnout $\triangle 36$ is removed.
- (4) Turnout $\textcircled{425}$ is installed and connected to track No. 18. Turnout $\textcircled{424}$ is installed, $\textcircled{401}$ introduced, and track No. 19 newly installed.

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2) Signals

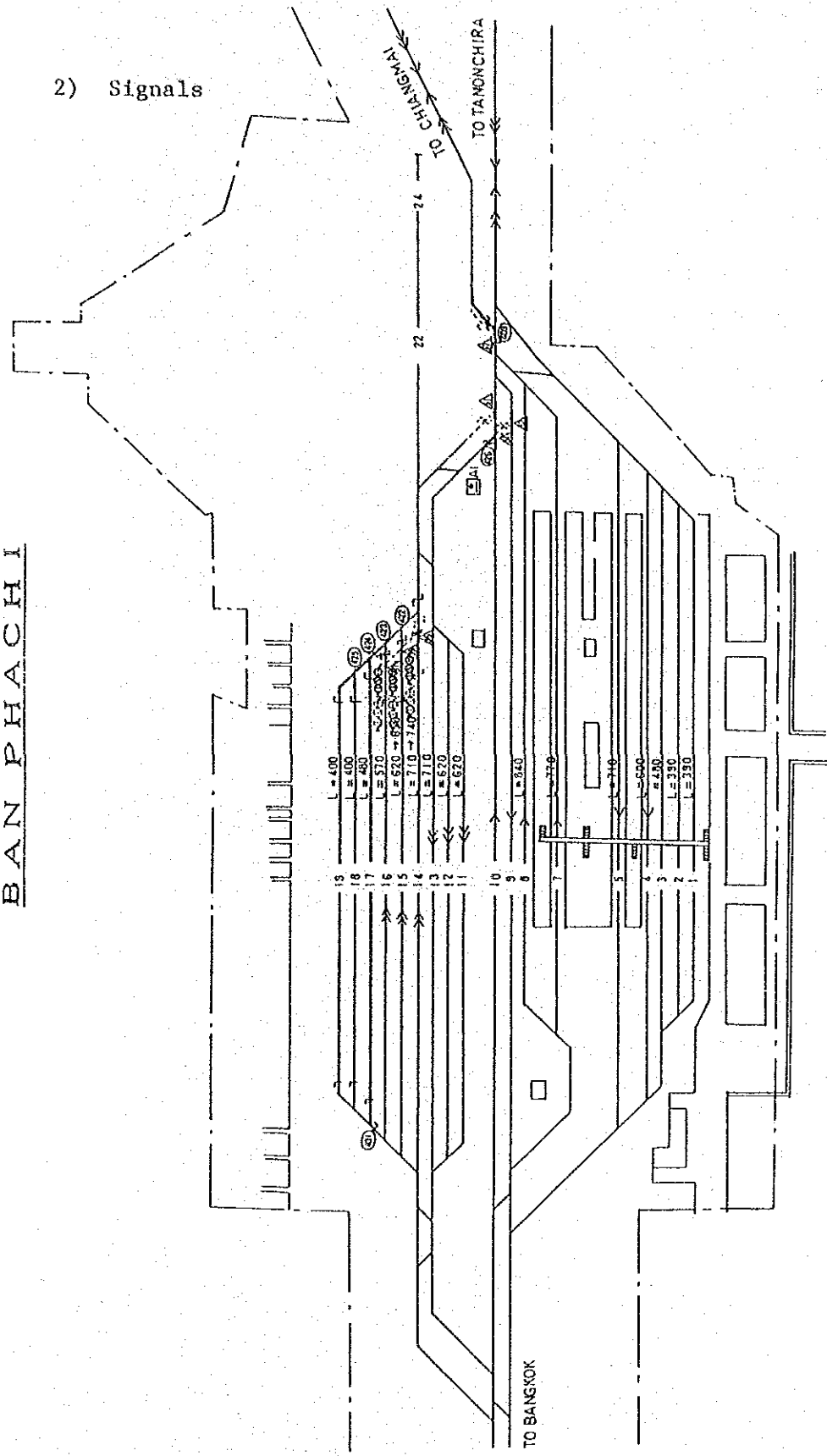


Fig. 4 The 2nd Changeover Work Diagram (Signals)

In connection with the separation of the Northern and Northeastern Lines, and additional installation of sorting track, signalling facilities are modified accordingly.

(1) Preliminary tests should be conducted.

Modification of board

Change of wire connection

- (2) The electric switch machine of turnout $\triangle 57$, which is to be removed, is reinstalled in turnout $\circ 409$, which is to be introduced.
- (3) The electric switch machine of turnout $\triangle 51$, which is to be removed, is reinstalled in turnout $\circ 426$, which is to be introduced.
- (4) Electric switch machines are taken out from turnouts $\triangle 51$ and $\triangle 52$, which are to be removed.
- (5) The electric switch machine of turnout $\triangle 33$, which is to be removed, is reinstalled in turnout $\circ 421$, which is already introduced.
- (6) The electric switch machine of turnout $\triangle 31$, which is to be removed, is reinstalled in turnout $\circ 423$, which is to be introduced.

(7) The electric switch machine of turnout $\triangle 36$, which is to be removed, is reinstalled in turnout (422), which is already introduced.

(8) Electric switch machines are newly installed in turnouts (425), (424) and (401), which are to be introduced.

(9) In connection with the extension of the effective length of track Nos. 14, 15 and 16, starting signals are relocated as required.

(10) In connection with the removal and introduction of turnouts and changing of effective length, track circuits are newly installed, removed or changed in composition accordingly.

(11) Interlocking tests should be made.

Track circuit test

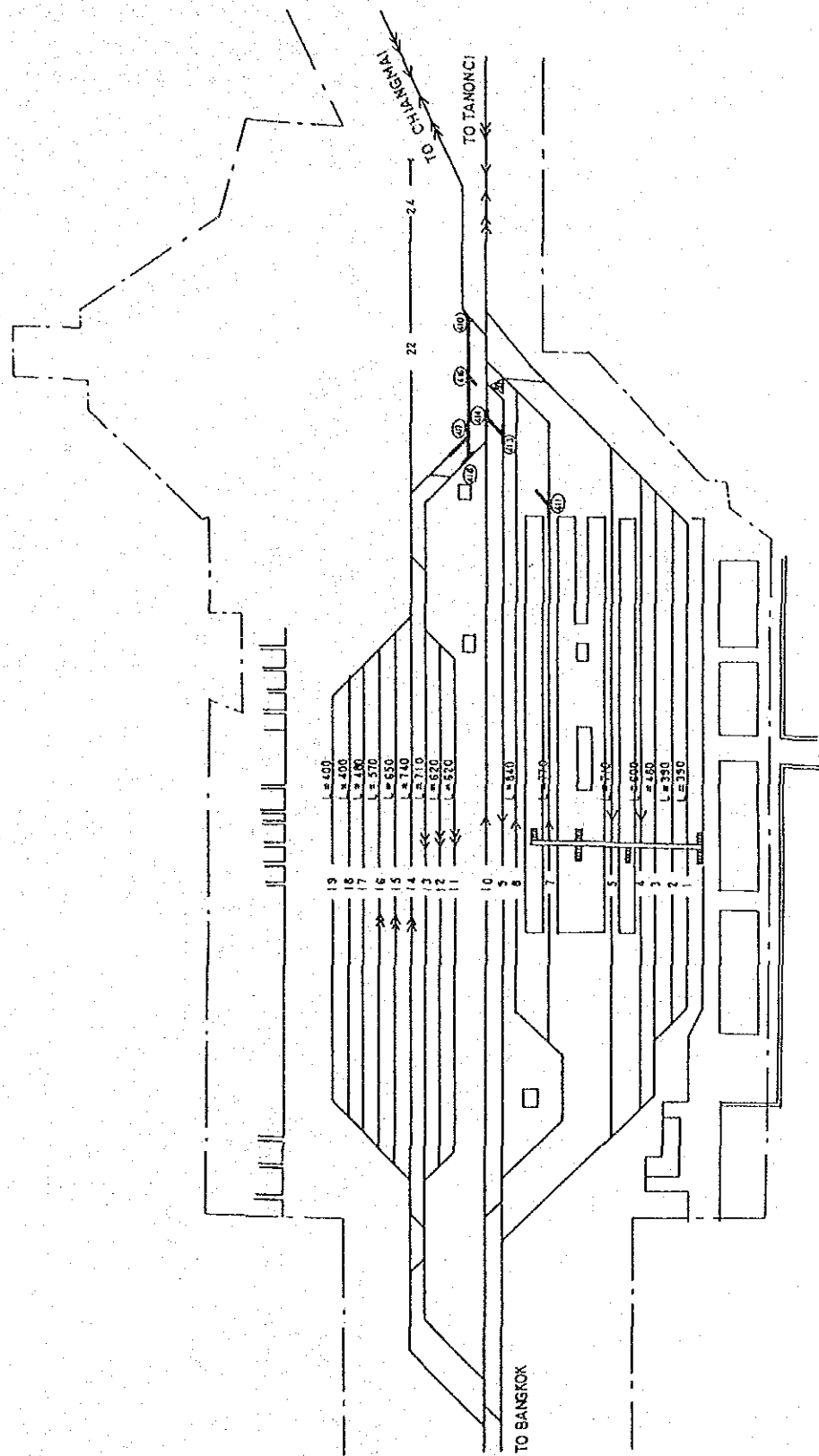
Electric switch conversion test

Signal display test

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(3) The 3rd changeover work

1) Track



3-1 Separation of the Northern and Northeastern Lines

- (1) Turnouts 416 and 417 are newly installed, 418 and 410 introduced and connected together, and a new freight track newly installed. (This is used as the Northern Line's freight route.)
- (2) Turnouts 413 and 414 are introduced and connected together.
- (3) Turnout 55 is removed.
- (4) Turnout 411 is introduced.

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2) Signal

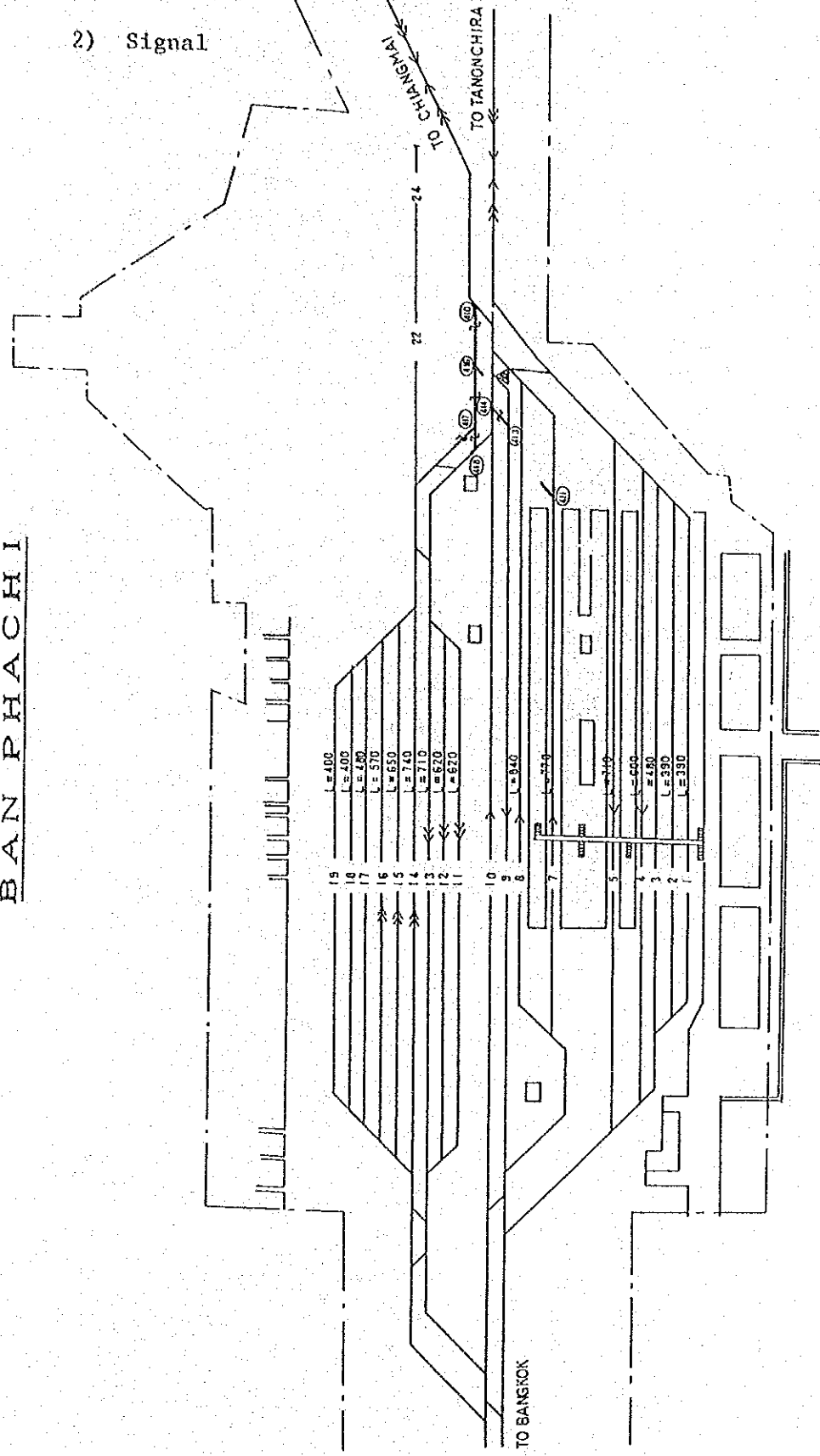


Fig. 6 The 3rd Changeover Work Diagram (Signals)

In connection with the separation of the Northern and Northeastern Lines, signalling facilities are modified accordingly.

- (1) Preliminary tests should be conducted.
Modification of board
Change of wire connection
- (2) Turnout (416), which is to be introduced, shall be of a key lock.
- (3) An electric switch machine is newly installed in turnout (417), which is to be introduced.
- (4) Electric switch machines are newly installed in turnouts (418) and (419), which are to be introduced.
- (5) Electric switch machines are newly installed in turnouts (413) and (414), which are to be introduced.
- (6) The electric switch machine is removed from turnout (55), which is to be removed.
- (7) Turnout (411), which is to be introduced, shall be of a key lock.
- (8) In connection with the removal or introduction of turnouts, track circuits are modified accordingly.
- (9) Interlocking test should be made.
Track circuit test
Electric switch conversion test
Signal display test

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(4) The 4th changeover work

1) Track

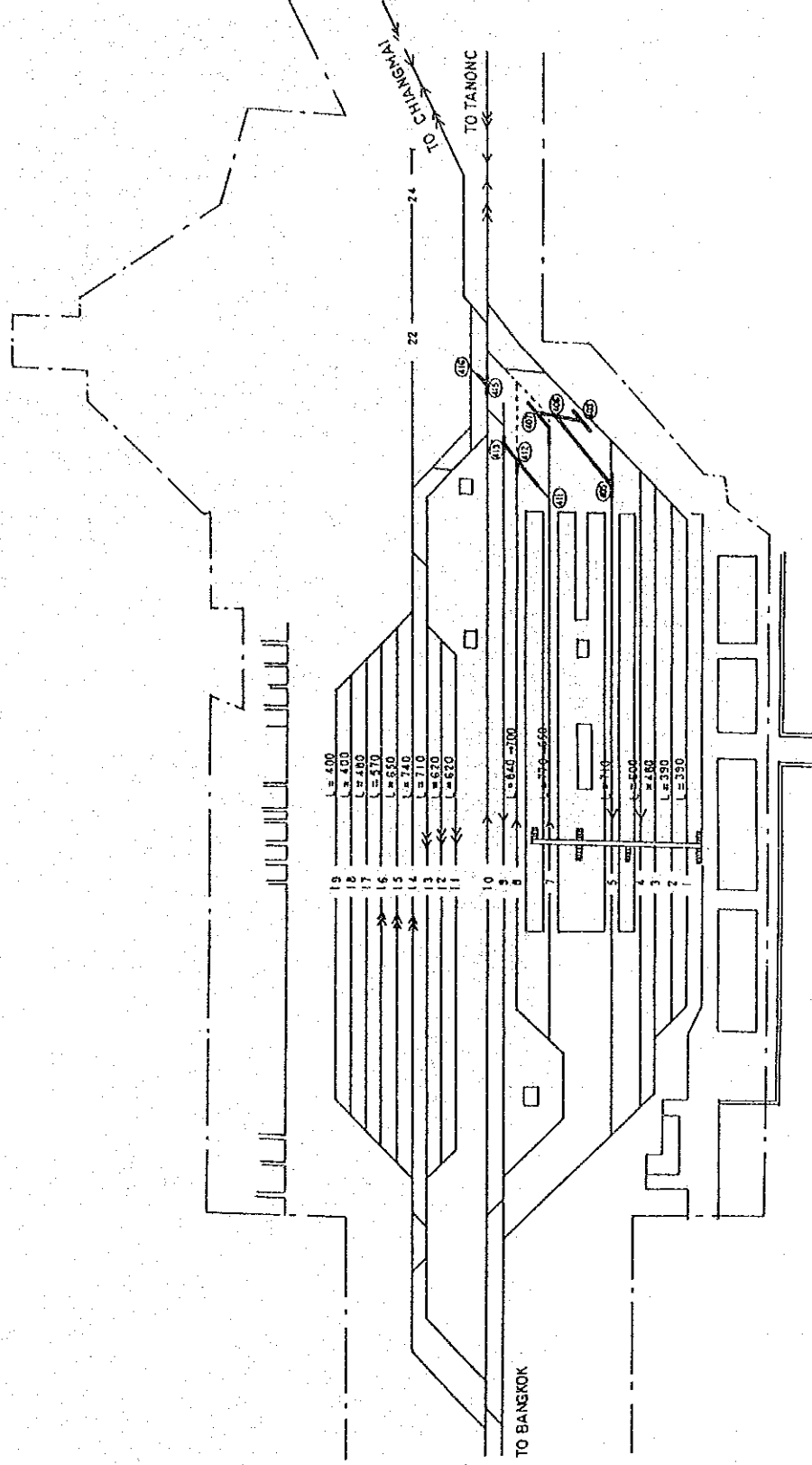


Fig. 7 The 4th Changeover Work Diagram (Track)

4-1 Separation of the Northern and Northeastern Lines

- (1) Turnout (415) is introduced and connected to (416).
- (2) Turnouts (412) and (413) are introduced and connected to (411).
- (3) After the starting route of track Nos. 7 and 8 is changed, the front portion of the track is removed.
- (4) Turnouts (403), (406) and (407) are installed.
- (5) Turnout (405) is introduced and connected to (406).

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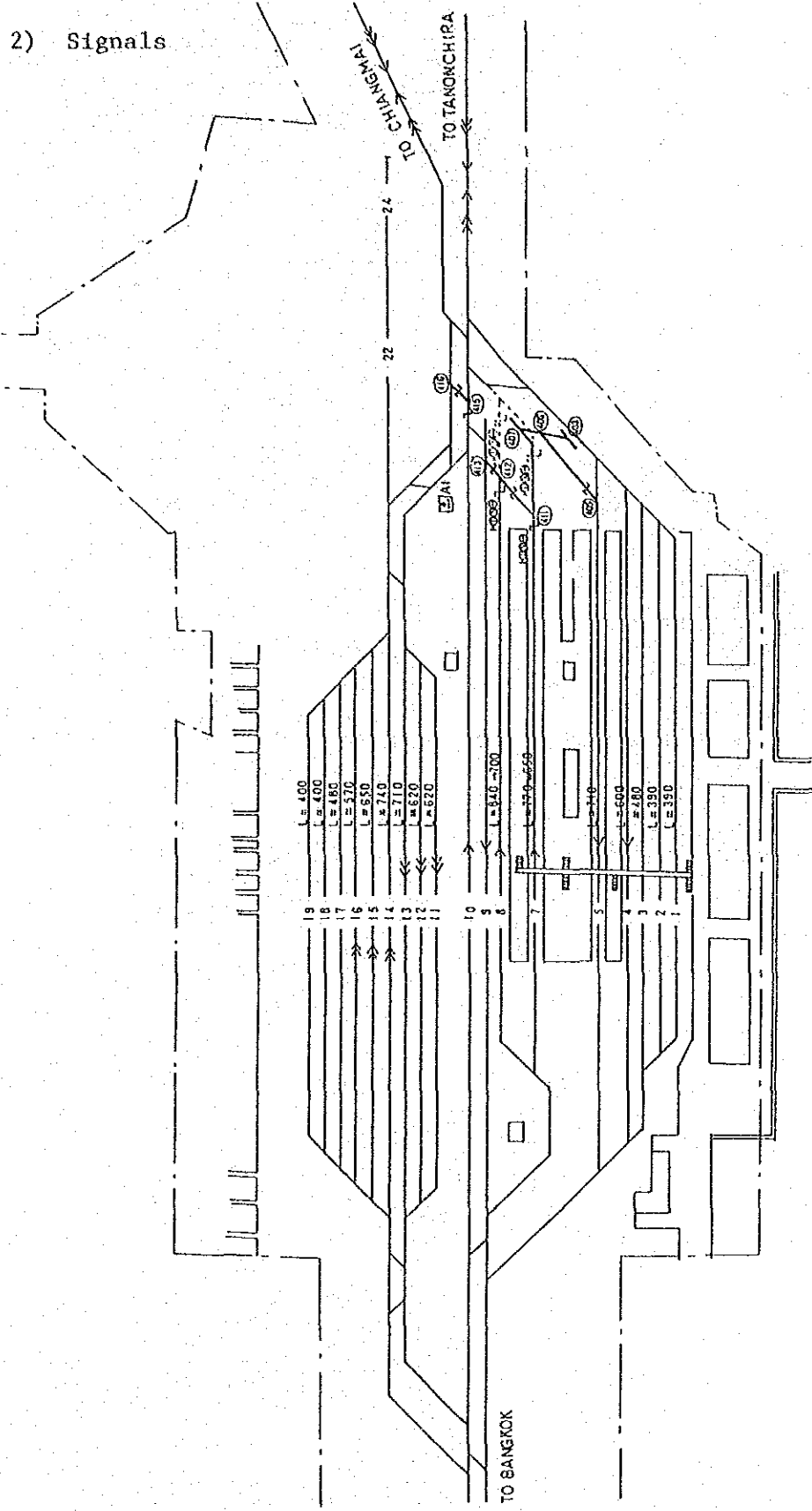


Fig. 8 The 4th Changeover Work Diagram (Signals)

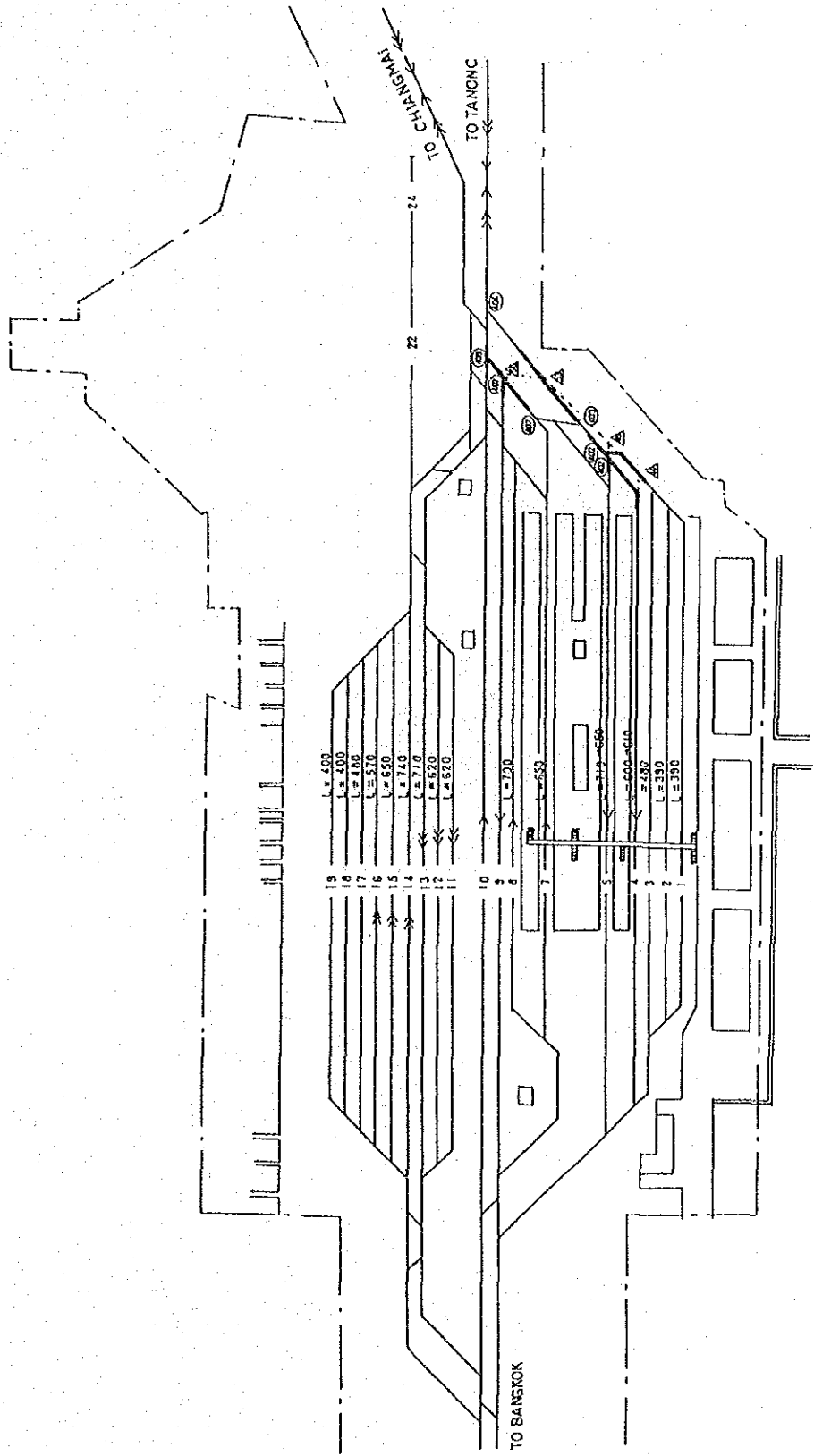
In connection with the separation of the Northern and Northeastern Lines, signalling facilities are modified accordingly:

- (1) Preliminary tests should be conducted.
Modification of board
Change of wire connection
- (2) An electric switch machine is newly installed in turnout (415), which is to be introduced.
- (3) An electric switch machine is newly installed in turnout (416), which is already introduced.
- (4) Electric switch machines are newly installed in turnouts (412 and (413), which are to be introduced.
- (5) An electric switch machine is newly installed in turnout (411), which is already introduced.
- (6) In connection with the changing of the effective length of track Nos. 7 and 8, starting signals are relocated as required.
- (7) Turnouts (403), (406) and (407), which are to be introduced, shall be of a key lock.
- (8) Turnout (405), which is to be introduced, shall be of a key lock.
- (9) In connection with the removal of turnouts and relocation of signals, track circuits are newly installed or modified in composition accordingly.
- (10) Interlocking test should be made.
Track circuit test
Electric switch conversion test
Signal display test

BAN PHACHI

(5) The 5th changeover work

1) Track



5-1 Separation of the Northern and Northeastern Lines

- (1) Turnout (407) is installed, (56) removed, (408) introduced and turnouts (408), (407) and (407) connected together.
- (2) Simultaneously with (1), turnout (402) is introduced and track No.4 and 5 connected together.
- (3) Turnouts (44) and (45) are removed and (402) introduced and connected to track Nos. 1, 2 and 3.
- (4) Turnout (53) is removed and turnouts (403) and (404) connected together.

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2) Signals

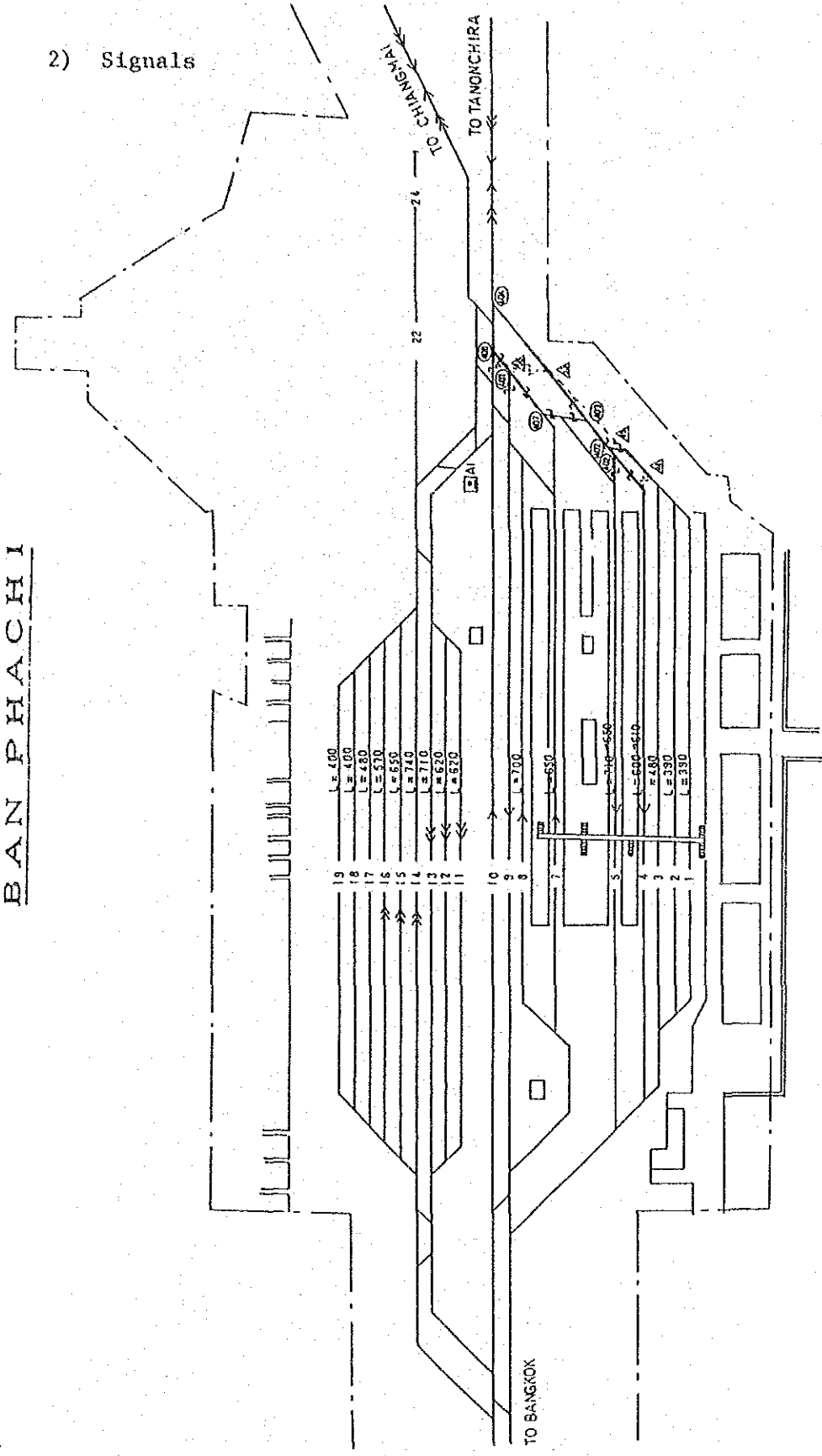


Fig. 10 The 5th Changeover Work Diagram (Signals)

In connection with the separation of the Northern and Northeastern Lines, signalling facilities are modified accordingly.

- (1) Preliminary tests should be conducted.
Modification of board
Change of wire connection
- (2) The electric switch machine of turnout $\Delta 56$, which is to be removed, is reinstalled in turnout $\textcircled{408}$, which is to be introduced.
- (3) An electric switch machine is newly installed in turnout $\textcircled{407}$, which is to be introduced.
- (4) Electric switch machines of turnouts $\Delta 44$ and $\Delta 45$, which are to be removed, are reinstalled in turnouts $\textcircled{402}$ and $\textcircled{402}$, which are to be introduced.
- (5) Electric switch machines are newly installed in turnouts $\textcircled{403}$, $\textcircled{406}$, $\textcircled{407}$ and $\textcircled{405}$, which are already introduced.
- (6) An electric switch machine is newly installed in turnout $\textcircled{402}$, which is to be introduced.
- (7) The electric switch machine is taken out from turnout $\Delta 53$, which is to be removed.
- (8) In connection with the removal or introduction of turnouts, track circuits are newly installed or modified as required.
- (9) Interlocking test should be made.
Track circuit test
Electric switch conversion test
Signal display test

Appendix 7.7.1 Yard Facilities at Phitsanulok Station

Passenger and Freight Facilities

Track	Platform	Number of Tracks	Effective Length(m)	Track Number
Passenger arrival and departure	Yes	4	160 - 350	1, 2, 17 and 19
Freight arrival and departure	No	4	420 - 760	3 - 6
Freight handling	Yes	2	240 and 360	7 and 8
Freight handling	No	3	50 - 970	12, 14 and 15
Passenger storage	Yes	2	100 and 160	13 and 16
Freight storage	No	1	70	21
Freight car depot	No	3	60 and 140	9 - 11
Draw - out	No	2	120 and 490	18 and 20

Appendix 7.8.1 Yard Facilities at Nakhon Ratchasima Station

Passenger and Freight Facilities

Track	Platform	Number of Tracks	Effective Length(m)	Track Number
Passenger arrival and departure	Yes	4	380 - 730	1 - 4
Freight arrival and departure	No	2	680 and 690	5 and 6
Passenger storage	No	4	290 - 600	7 - 10
Freight sorting and storage	No	6	190 - 420	12 - 17
Freight handling	Yes	4	90 - 190	20, 21, 26 and 27
Freight handling	No	4	230 - 370	29 and 30
Freight storage	No	7	90 - 320	18, 19, 22 - 25 and 28
Draw-out	No	1	1,210	11

Car Depot Facilities

Track	Number of Tracks	Effective Length(m)	Track Number
Engine repair	15	Round house	
Passenger and Freight storage	3	220 - 320	P-1 - P-3
Passenger and Freight repair	2	130	P-4 and P-5
Car repair	4	50 - 160	P-6 - P-9
Passenger repair	5	80 - 220	P-10 - P-14
DL storage	5	40 - 200	P-15 - P-18 and P-21
Incoming and outgoing	2		P-19 and P-20

Appendix 7.9.1 Yard Facilities at Chumphon Station

Passenger and Freight Facilities

Track	Platform	Number of Tracks	Effective Length(m)	Track Number
Passenger arrival and departure	Yes	2	610 and 690	1 and 2
Freight arrival and departure	No	2	460 and 530	3 and 4
Freight sorting and storage	No	2	210 and 170	5 and 6
Freight storage	No	6	120 and 200	8 - 13
Freight handling	Yes	3	160 and 280	14, 15 and 18
Freight handling (petroleum)	No	1	50	16
Weighing	No	1	280	7
Draw - out	No	1	530	17

Car Depot Facilities

Track	Number of Tracks	Effective Length(m)	Track Number
Inspection	4	150 - 250	D-1 - D-4
Freight storage	2	200	D-5 and D-6
Draw - out	2	50 and 120	D-7 and D-8

Appendix 7.10.1 Yard Facilities at Surat Thani Station

Passenger and Freight Facilities

Track	Platform	Number of Tracks	Effective Length(m)	Track Number
Passenger arrival and departure	Yes	2	330 and 590	1 and 3
Freight passing	No	1	640	4
Freight arrival and departure	No	2	400 and 470	5 and 6
Passenger storage	Yes	2	90 and 330	2 and 15
Passenger storage	No	1	170	14
Freight sorting	No	2	70 and 120	7 and 8
Freight handling	Yes	2	160 and 310	11 and 12
Freight storage	No	6	100 - 150	9, 10, 16, 17, 19 and 20
Draw - out	No	2	80 and 320	13 and 18

Appendix 7.11.1 Yard Facilities at Thung Song Station

Passenger and Freight Facilities

Track	Platform	Number of Tracks	Effective Length(m)	Track Number
Passenger arrival and departure	Yes	3	480 - 500	1 - 3
Freight arrival and departure	No	3	420 - 500	4 - 6
Freight handling	Yes	4	90 - 160	14, 15, 17 and 18
Freight handling	No	2	40 - 80	16 and 19
Passenger storage	No	2	90 - 100	7 and 8
Freight sorting and storage	No	4	320 - 500	9 - 12
Draw - out	No	3	240 - 500	13, 20 and 21

Car Depot Facilities

Track	Number of Tracks	Effective Length(m)	Track Number
DL, Passenger and Freight storage	10	70 - 360	D-1, D-2, and D-9 - D-16
Inspection	6	90 - 180	D-3 - D-8

THUNG SONG

(1) The 1st changeover work

1) Track

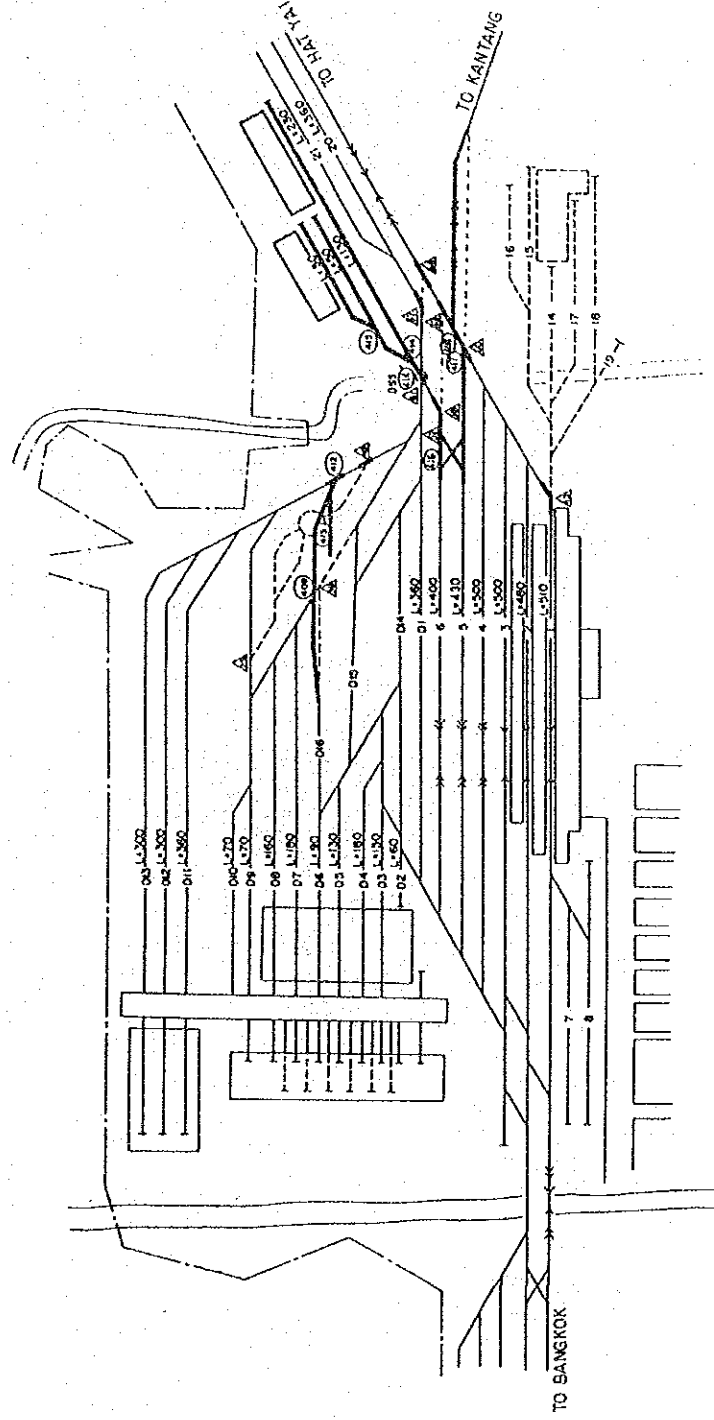


Fig. 1 The 1st Changeover Work Diagram (Track)

1-1 Relocation of freight facilities

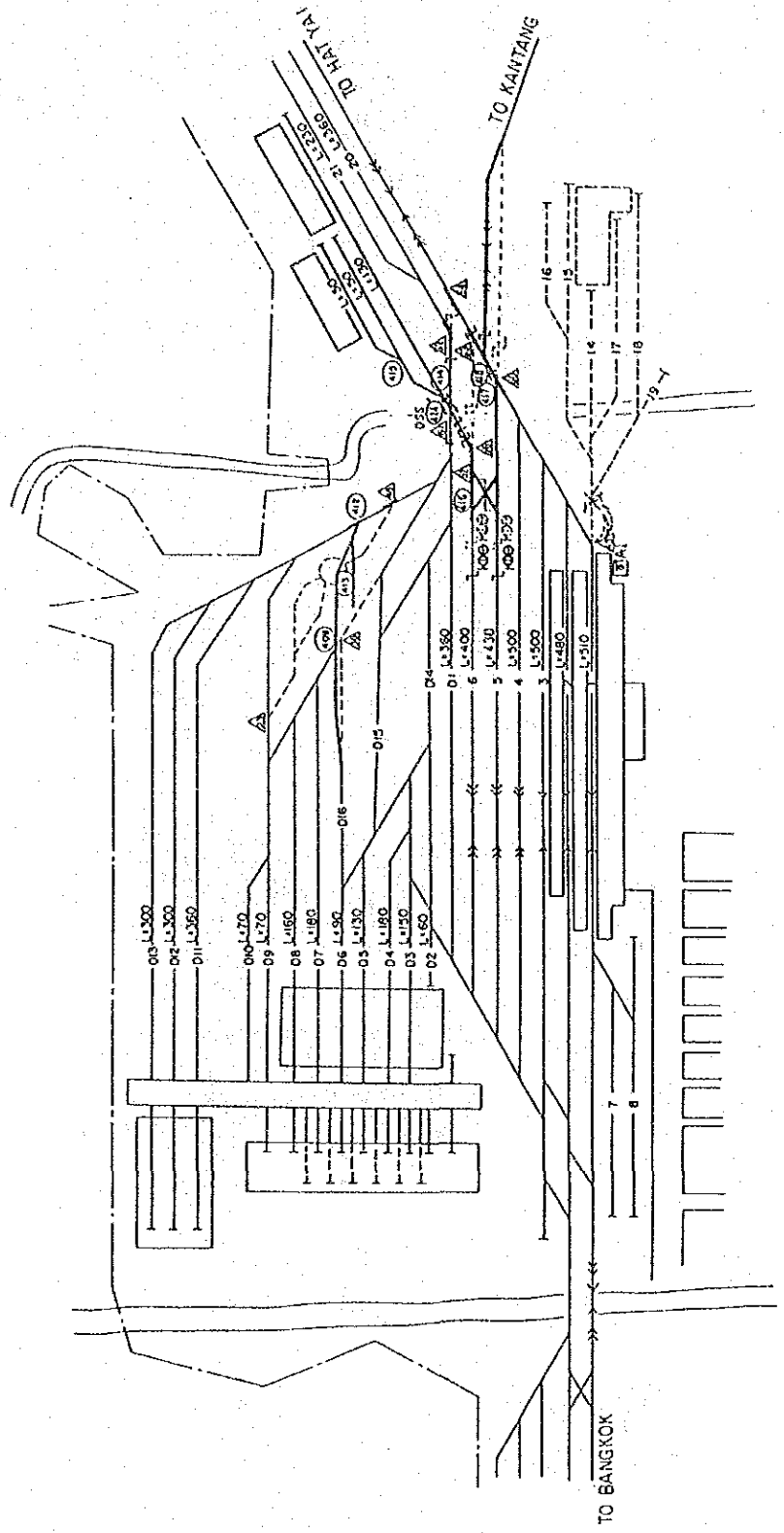
- (1) Turnout $\triangle 61$ is removed, and DSS $\triangle 414$ introduced and new facilities put into operation.
- (2) Turnout $\triangle 43$ is removed and old facilities abolished.

1-2 Change of freight arrival/departure route

- (1) KANTANG Line is newly installed.
- (2) Turnouts $\triangle 56$ and $\triangle 63$ are removed, and $\triangle 418$ introduced and KANTANG Line converted into a new route and the old line removed.
- (3) Turnouts $\triangle 52$ and $\triangle 60$ are removed, and SCs $\triangle 416$ and $\triangle 417$ introduced and connected together.
- (4) Turnouts $\triangle 62$ and $\triangle 64$ are removed.

1-3 Incoming and outgoing routes of engine shed changed

- (1) Turnouts $\triangle 23$ and $\triangle 48$ and the turntable are removed and railroad bed is maintained.
- (2) Turnout $\triangle 413$ is assembled, $\triangle 36$ removed, and $\triangle 409$ and $\triangle 412$ introduced and connected to track No. D16 and used as incoming and outgoing routes.



In connection with the relocation of freight facilities and changing of freight arrival/departure routes, signalling facilities are to be modified as required:

- (1) Preliminary tests should be conducted.
Modification of board
Change of wire connection
- (2) The electric switch machine from turnout 61, which is to be removed, is taken out.
- (3) An electric switch machine is newly installed in DSS 414, which is to be introduced.
- (4) The electric switch machine from turnout 43, which is to be removed, is taken out as well as the Hayesderail.
- (5) The electric switch machine of turnout 63 is to be removed and reinstalled in turnout 418, which is to be introduced.
- (6) The electric switch machine of turnout 60 is to be removed and reinstalled in turnout 417, which is to be introduced.
- (7) An electric switch machine is newly installed in SC 416, which is to be introduced.
- (8) Electric switch machines are taken out from turnouts 56, 53, 52, 62 and 64, which are to be removed.
- (9) In connection with the introduction of SC 416, the starting signals of track Nos. 5 and 6 are relocated as required.
- (10) Interlocking tests should be made.
Track circuit test
Electric switch conversion test
Signal display test

The transformation of signalling facilities is not required after the 2nd transformation, as this has been done.

T H U N G S O N G

(2) The 2nd changeover work

1) Track

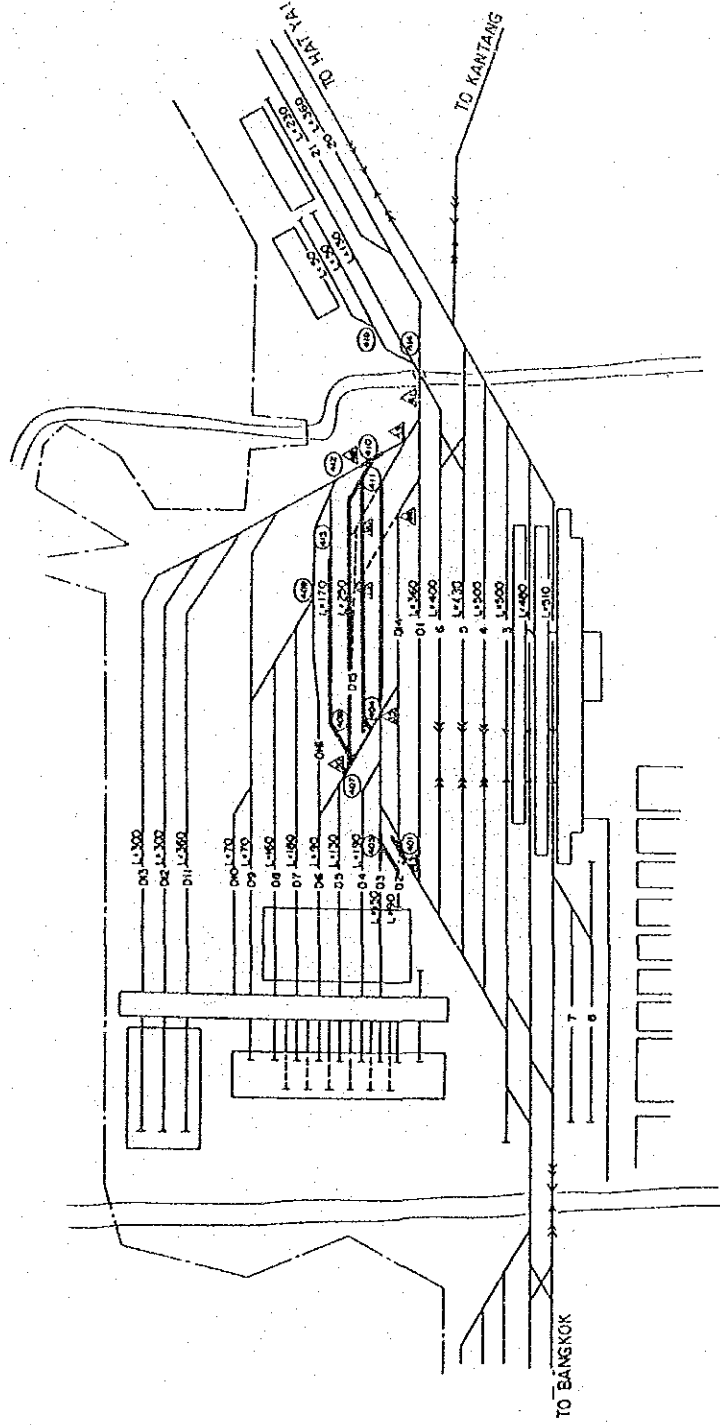


Fig. 3 The 2nd Changeover Work Diagram (Track)

2-1 Relocation of lubrication track (No. D15 track)

- (1) Turnout (411) is assembled and (410) is introduced.
- (2) Turnout (30) is removed, and (407) and (408) introduced and connected to (413) and (411).
- (3) Turnouts (13) and (80) and the old lubrication track are removed and the railroad bed maintained.

2-2 New installation of incoming track for passenger/freight section

- (1) Maintenance of tracks between turnouts (35) and (53).
- (2) Turnout (405) is introduced.
- (3) Turnout (43) is removed and (401) introduced.

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(3) The 3rd changeover work

1) Track

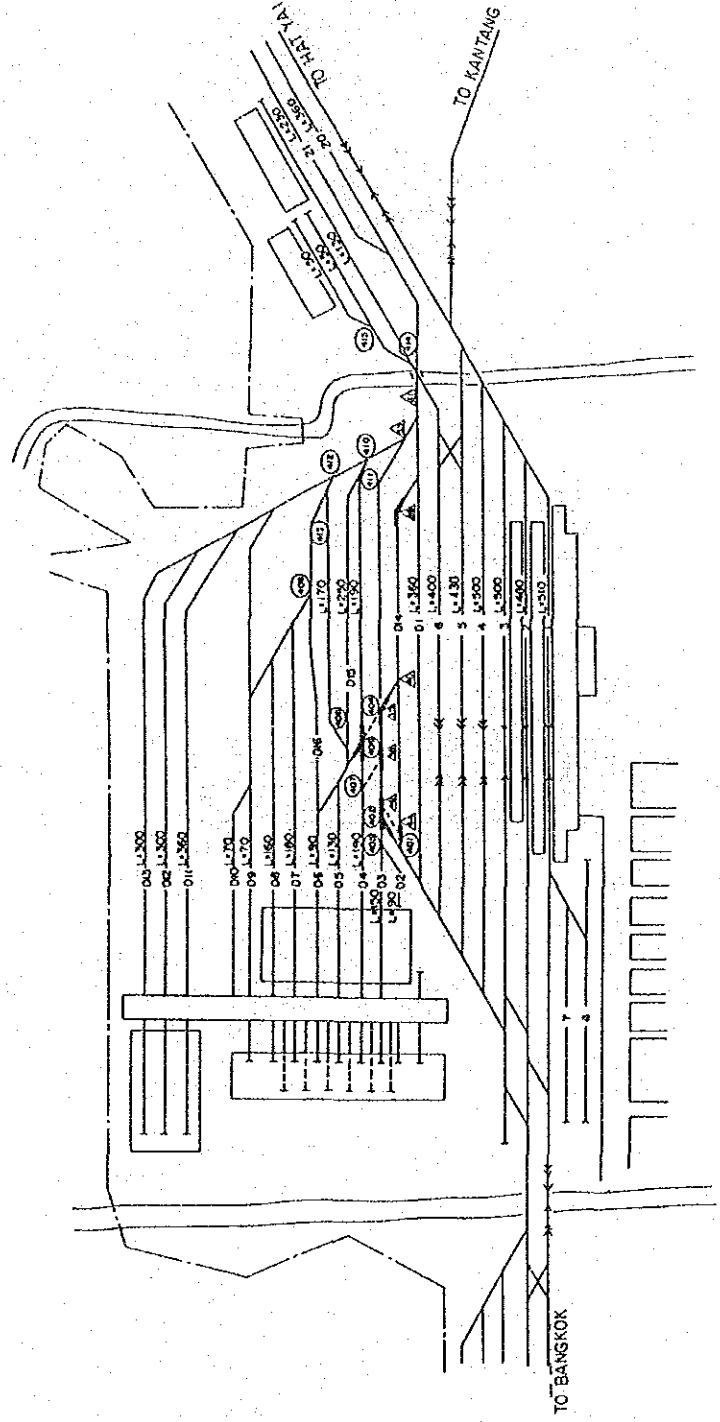


Fig. 4 The 3rd Changeover Work Diagram (Track)

3-1 New installation of incoming track for passenger/freight section

- (1) Turnout (406) is introduced and connected to track No. D4.
- (2) Turnout (38) is removed and routes (40), (35) and (46) become an incoming route.
- (3) Turnout (402) is introduced and connected to (401).
- (4) Turnouts (44), (46) and (88) are removed.

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(4) The 4th changeover work

1) Track

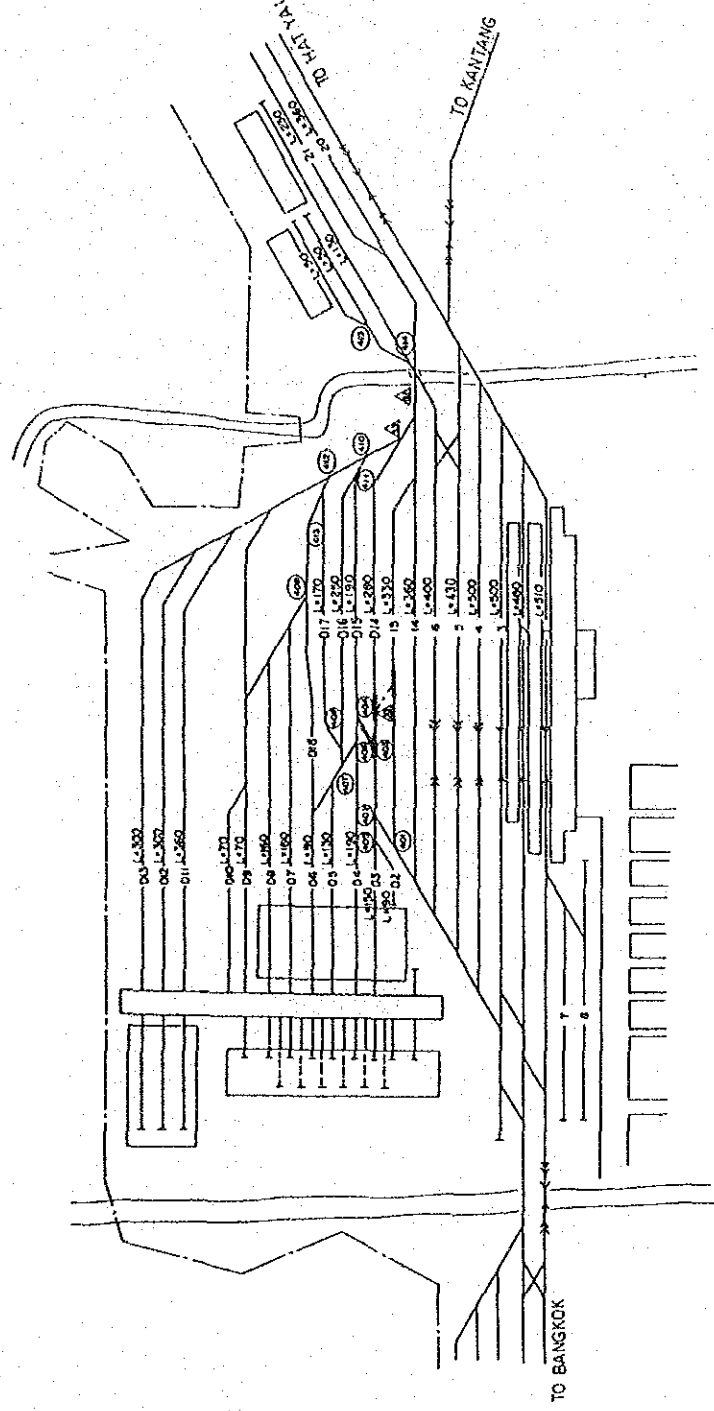


Fig. 5 The 4th Changeover Work Diagram (Track)

4-1 Changing of incoming line to a passenger/freight section

(1) Turnout $\triangle 35$ is removed and turnout $\textcircled{403}$ introduced.

(2) Turnouts $\textcircled{403}$ and $\textcircled{404}$ are connected together and used as an incoming line for the passenger/freight section.

4-2 Additional installation of new sorting track

(1) Track Nos. D1 and D14 are converted into station track Nos. 14 and 15 and used as sorting tracks.

Appendix 7.12.1--(1) Investment by Station in Detail (F/S Plan, 4 stations)

Work Item	Unit	Price (Bahts)	Bangkok			Mae Nam			Bang Sue			Hat Yai		
			Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign Currency Commodity ()
Cost for Right-of-way	. Land . Compensation for housing	5,000				9,900	49.5							
Railway bed	. Cutting and banking	130				1,700	0.2	(0.1)	17,000	2.2		13,500	1.8	(0.8)
	. Removal of rails and ballast	600	3,530	2.1		2,100	1.3		1,800	1.1		2,160	1.3	
	. Access roads						15.0	(3.0)		0.1	(0.1)		0.2	
Station facilities	. Platform installations	1,350	1,600	2.2	(1.2)									
	. Fuel supply			2.7	(0.7)		0.8	(0.4)					4.9	3.1 (4.1)
Track facilities	. Installation of 80A rails	5,900	1,490	8.8	4.0 (7.3)				1,840	10.9	4.9 (9.0)	270	1.6	0.7 (1.3)
	. Installation of 70A rails	4,500	2,150	9.7	6.0 (7.8)	2,260	10.2	6.3 (8.2)	940	4.2	2.6 (3.4)	2,110	9.5	5.9 (7.6)
	. Removal of rails	100	2,520	0.3		480	0.1		2,070	0.2		1,990	0.2	
	. Installation of 80A turnouts	282,000	21	5.9	3.5 (4.1)				12	3.4	2.0 (2.4)	11	3.1	1.9 (2.2)
	. Installation of 70A turnouts	246,000	10	2.5	1.4 (1.6)	11	2.7	1.6 (2.2)	5	1.2	0.7 (0.9)	10	2.5	1.4 (1.7)
	. Installation of 80A SCs	1,510,000	1	1.5	0.9 (1.1)									
	. Installation of 80A DCs	212,000	1	0.2	0.1 (0.1)				1	0.2	0.1 (0.1)			
. Track changeover				3.4	0.9 (1.6)		1.7	1.0 (1.3)		3.9	1.8 (2.7)		1.2	0.6 (1.0)
Buildings	. Passenger sheds	3,100	5,050	15.7	(9.0)									
	. Others			1.3	(0.6)									
Subtotal				56.3	16.8 (35.1)		87.4	8.9 (15.2)		27.4	12.1 (18.6)		26.3	13.6 (18.7)
Electric facilities	. Signalling			25.7	25.3 (19.5)					0.2	0.1 (0.2)			
	. Interlocking device			27.4	27.4 (18.7)					15.9	5.9 (4.4)		4.3	4.3 (3.2)
	. Others			36.9	33.9 (34.0)					12.0	10.0 (10.9)		11.9	10.0 (11.3)
Subtotal				90.0	86.6 (72.2)					18.1	16.0 (15.5)		16.2	14.3 (14.5)
Administration cost				15.7	15.7 (0)		4.4	4.4 (0)		5.8	5.8 (0)		5.7	5.7 (0)
Total				162.0	119.1 (107.3)		91.8	13.3 (15.2)		51.3	33.9 (34.1)		48.2	33.6 (33.2)

Appendix 7.12.2-(2) Investment by Station in Detail (Master Plan)

Work Item	Unit	Price (Bahts)	Bang Sue			Ban Phachi			Phitsanulok			Nakhon Ratchasima			Thung Song		
			Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign currency Commodity ()	Volume	Cost (M฿)	Foreign Currency Commodity ()	Volume	Cost (M฿)	Foreign currency Commodity ()
Cost for Right-of-way	. Land	m ²	1,000	6,450	6.5												
Railway bed	. Cutting and banking	m ³	130	28,000	3.6												
	. Removal of rails and ballast	m	600	3,700	2.2	2,100	1.3		860	0.5		360	0.2		1,750	1.1	
	. Access roads				0.1		0.1									0.4	(0.2)
Station facilities	. Platform installations	m ²	1,350												1,000	1.4	(0.9)
	. Fuel supply																
Bridge				18.0	3.5 (4.5)											1.2	0.3 (0.6)
Track facilities	. Installation of 80A rails	m	5,900	4,900	28.9	1,750	10.3	4.7 (8.6)	460	2.7	1.3 (2.1)	130	0.8	0.4 (0.6)	400	2.4	1.1 (2.0)
	. Installation of 70A rails	m	4,500	940	4.2	1,180	5.3	3.3 (4.3)	420	1.9	1.2 (1.5)	290	1.3	0.8 (1.1)	1,650	7.4	4.6 (6.0)
	. Removal of rails	m	100	2,220	0.2	5,500	0.6		120	0		90	0		3,180	0.3	
	. Installation of 80A turnouts	Set	282,000	26	7.3	24	6.8	4.0 (4.7)	2	0.4	0.4 (0.4)	1	0.3	0.2 (0.2)			
	. Installation of 70A turnouts	Set	246,000	5	1.2	5	1.2	0.7 (0.9)	3	0.7	0.4 (0.5)	2	0.5	0.3 (0.4)	9	2.2	1.3 (1.5)
	. Installation of 80A SCs	Set	1,510,000	3	4.5			2.5 (3.0)							2	2.3	1.0 (1.8)
	. Installation of 80A DCs	Set	212,000	2	0.4			0.3 (0.3)									
	. Track changeover				5.4		3.4	1.1 (1.9)		1.2	0.5 (0.6)		0.4	0.1 (0.3)		1.9	1.0 (1.5)
Buildings	. Passenger sheds	m ²	3,100												500	1.6	(1.1)
	. Others															0.6	
Subtotal				82.5	29.2 (44.5)		29.0	13.8 (20.4)		7.4	3.8 (5.1)		3.5	1.8 (2.6)		22.8	9.3 (15.6)
Electric facilities	. Signalling			0.4	0.3 (0.4)											0.2	0.1 (0.2)
	. Interlocking device			11.8	11.8 (8.9)		5.6	5.6 (4.2)		0.6	0.6 (0.5)					2.8	2.8 (2.1)
	. Others			25.4	21.2 (22.5)		13.7	10.6 (11.8)		3.3	2.4 (2.9)		0.8	0.4 (0.6)		3.5	2.9 (2.8)
Subtotal				37.6	33.3 (31.8)		19.3	16.2 (16.0)		3.9	3.0 (3.4)		0.8	0.4 (0.6)		6.5	5.8 (5.1)
Administration cost				9.9	9.1 (0)		6.2	6.2 (0)		1.4	1.4 (0)		0.5	0.5 (0)		2.2	2.2 (0)
Total				130.0	71.6 (76.3)		54.5	36.2 (36.4)		12.7	8.2 (8.5)		4.8	2.7 (2.4)		31.5	17.3 (20.7)

Appendix 8.6.1 Economic and Financial Calculations

III, Alternative 1

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BAHTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
INVESTMENT DIFF	121	41	13	39	73	3671	109	127	136	96	105	120	187
WITH	121	41	13	39	73	5768	174	194	205	167	178	195	264
CIVIL WORK	27	6	4	11	69	0	0	0	0	0	0	0	0
TRACK	28	21	9	16	4	0	0	0	0	0	0	0	0
SIGNALS	66	14	0	12	0	0	0	0	0	0	0	0	0
ROLLING STOCK	0	0	0	0	0	5768	174	194	205	167	178	195	264
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	0	0	0	0	0	2095	65	67	69	71	73	75	78
BUS	0	0	0	0	0	362	12	12	13	14	14	14	15
CAR	0	0	0	0	0	1402	46	48	50	51	53	55	56
LORRY	0	0	0	0	0	331	6	6	6	6	6	6	7
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	0	0	0	0	0	574	437	474	514	560	611	665	723
TIME SAVING	0	0	0	0	0	316	347	380	417	458	502	551	604
PASSENGERS	0	0	0	0	0	361	394	429	468	510	556	607	662
FREIGHT	0	0	0	0	0	-46	-47	-49	-50	-52	-54	-56	-58
COST SAVING	0	0	0	0	0	259	91	94	97	102	109	114	119
OPTIMAL ALLOCATION	0	0	0	0	0	138	2	2	2	3	2	2	3
EFFICIENCY INCREASE	0	0	0	0	0	120	89	91	94	99	106	112	116
CASHFLOW FOR EIRR	-121	-41	-13	-39	-73	-3096	328	347	378	464	507	545	537
EIRR %													

ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND

(UNIT : MIL. BAHTS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
INVESTMENT DIFF	118	144	-1277	2826	-104	150	204	199	204	199	234	228	-508
WITH	199	227	210	3321	378	312	371	371	382	382	423	423	1095
CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLING STOCK	199	227	210	3321	378	312	371	371	382	382	423	423	1095
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	80	83	1487	496	482	162	167	172	178	183	189	195	1603
BUS	15	16	16	378	30	30	31	33	34	35	36	37	38
CAR	58	60	1464	111	114	118	122	126	130	135	139	144	1550
LORRY	7	7	7	7	338	14	14	14	14	14	14	15	15
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	786	857	933	1017	1107	1207	1315	1412	1535	1671	1817	1977	2149
TIME SAVING	663	726	796	872	955	1045	1144	1252	1370	1499	1639	1793	1960
PASSENGERS	723	788	860	938	1024	1117	1218	1329	1449	1581	1724	1880	2051
FREIGHT	-60	-62	-64	-67	-69	-71	-74	-76	-79	-82	-85	-88	-91
COST SAVING	124	131	137	145	152	162	171	180	185	192	197	184	190
OPTIMAL ALLOCATION	2	3	2	2	3	3	2	3	2	3	3	3	2
EFFICIENCY INCREASE	121	128	135	143	149	159	168	157	163	169	174	181	187
CASHFLOW FOR EIRR	668	713	2210	-1809	1211	1057	1111	1213	1331	1472	1582	1749	2658
EIRR %													

== ** ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ** ==

(UNIT : MIL. BAHTS)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
INVESTMENT DIFF	236	2953	292	-44	329	321	358	321	-3643	8577
WITH	490	3577	575	579	637	638	686	659	-5037	18328
CIVIL WORK	0	0	0	0	0	0	0	0	0	117
TRACK	0	0	0	0	0	0	0	0	0	77
SIGNALS	0	0	0	0	0	0	0	0	0	93
ROLLING STOCK	490	3577	575	579	637	638	686	659	747	23825
-SALVAGE VALUE	0	0	0	0	0	0	0	0	5784	5784
WITHOUT	254	623	284	623	308	317	328	338	-1394	9751
BUS	40	402	55	56	58	60	62	64	66	2047
CAR	200	206	213	220	228	235	243	251	259	8087
LORRY	15	15	15	347	22	22	23	23	23	1359
-SALVAGE VALUE	0	0	0	0	0	0	0	0	1742	1742
TOTAL BENEFIT	2340	2545	2772	3017	3282	3573	3890	4233	4608	52602
TIME SAVING	2142	2341	2559	2796	3054	3336	3644	3979	4345	47487
PASSENGERS	2236	2438	2659	2899	3161	3447	3758	4097	4467	49832
FREIGHT	-94	-97	-100	-104	-107	-111	-114	-118	-122	-2346
COST SAVING	198	204	213	221	228	236	246	253	263	5115
OPTIMAL ALLOCATION	3	3	3	3	3	3	3	3	3	220
EFFICIENCY INCREASE	195	201	210	218	224	233	242	250	259	4896
CASHFLOW FOR EIRR	2105	-408	2480	3061	2953	3252	3532	3912	8250	44025
EIRR %										17.33

III, Alternative 2

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BARTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
INVESTMENT DIFF	121	54	66	54	77	4187	125	145	156	111	121	137	213
WITH	121	54	66	54	77	6584	199	222	235	192	204	223	302
CIVIL WORK	27	11	18	7	69	0	0	0	0	0	0	0	0
TRACK	28	30	30	30	7	0	0	0	0	0	0	0	0
SIGNALS	66	14	17	18	1	0	0	0	0	0	0	0	0
ROLLING STOCK	0	0	0	0	0	6584	199	222	235	192	204	223	302
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	0	0	0	0	0	2397	74	77	79	81	83	87	89
BUS	0	0	0	0	0	416	14	15	15	15	16	16	17
CAR	0	0	0	0	0	1611	53	55	57	59	61	62	65
LORRY	0	0	0	0	0	370	7	7	7	7	7	7	7
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	0	0	0	0	0	529	366	399	434	472	518	566	616
TIME SAVING	0	0	0	0	0	238	264	292	323	357	395	436	482
PASSENGERS	0	0	0	0	0	303	331	361	394	430	470	514	562
FREIGHT	0	0	0	0	0	-65	-66	-68	-71	-73	-75	-78	-80
COST SAVING	0	0	0	0	0	291	102	106	110	115	123	130	134
OPTIMAL ALLOCATION	0	0	0	0	0	155	2	3	2	3	2	3	2
EFFICIENCY INCREASE	0	0	0	0	0	136	100	103	108	112	120	127	132
CASHFLOW FOR EIRR	-121	-54	-66	-54	-77	-3658	242	254	278	361	397	430	403
EIRR %													

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==

(UNIT : MIL. BAHTS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
INVESTMENT DIFF	136	165	-1468	3246	-111	173	233	229	234	228	268	262	-606
WITH	228	260	241	3816	432	358	425	426	438	438	485	485	1236
CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLING STOCK	228	260	241	3816	432	358	425	426	438	438	485	485	1236
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	92	95	1709	570	544	186	191	197	204	210	217	224	1842
BUS	17	18	18	435	34	35	36	37	39	40	41	42	43
CAR	67	69	1683	127	132	136	140	145	150	155	160	165	1782
LORRY	7	7	7	7	378	15	15	15	15	15	16	16	16
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	672	733	801	874	954	1043	1139	1219	1329	1447	1576	1716	1871
TIME SAVING	531	586	645	710	781	859	945	1038	1140	1252	1374	1508	1653
PASSENGERS	614	671	733	801	875	956	1045	1141	1247	1362	1488	1625	1774
FREIGHT	-83	-85	-88	-91	-94	-97	-100	-103	-107	-110	-114	-117	-121
COST SAVING	141	148	156	164	173	184	195	181	188	195	202	209	217
OPTIMAL ALLOCATION	3	3	3	2	3	3	3	3	3	3	3	3	3
EFFICIENCY INCREASE	138	145	153	161	169	180	191	178	185	192	199	206	214
CASHFLOW FOR EIRR	536	568	2269	-2372	1065	870	906	990	1094	1219	1308	1455	2476
EIRR %													

** ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND **

(UNIT : MIL. BAHTS)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
INVESTMENT DIFF	289	3392	335	-41	376	367	410	368	-4191	9839
WITH	560	4109	659	664	730	731	785	755	-5783	21007
CIVIL WORK	0	0	0	0	0	0	0	0	0	132
TRACK	0	0	0	0	0	0	0	0	0	124
SIGNALS	0	0	0	0	0	0	0	0	0	116
ROLLING STOCK	560	4109	659	664	730	731	785	755	856	27274
-SALVAGE VALUE	0	0	0	0	0	0	0	0	6638	6638
WITHOUT	291	717	324	705	353	363	375	386	-1592	11169
BUS	45	463	62	65	67	68	71	73	75	2351
CAR	230	237	245	253	261	270	279	288	298	9296
LORRY	17	17	17	387	25	25	25	25	25	1513
-SALVAGE VALUE	0	0	0	0	0	0	0	0	1991	1991
TOTAL BENEFIT	2038	2220	2422	2637	2872	3132	3412	3718	4052	45778
TIME SAVING	1813	1987	2178	2386	2613	2861	3133	3429	3752	39963
PASSENGERS	1938	2116	2311	2523	2754	3007	3283	3584	3912	43124
FREIGHT	-125	-129	-133	-137	-141	-146	-150	-155	-160	-3161
COST SAVING	225	232	244	251	259	270	279	290	300	5814
OPTIMAL ALLOCATION	3	3	4	3	3	4	3	3	4	245
EFFICIENCY INCREASE	222	229	240	248	256	266	276	286	296	5569
CASHFLOW FOR EIRR	1769	-1172	2087	2678	2496	2764	3002	3350	8243	35939
EIRR %										13.40

III, Alternative 3

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==

(UNIT : MIL. BAHTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
INVESTMENT DIFF	121	41	13	39	73	3697	153	138	141	111	121	137	213
WITH	121	41	13	39	73	5792	218	204	209	192	204	223	302
CIVIL WORK	27	6	4	11	69	7	5	2	1	0	0	0	0
TRACK	28	21	9	16	4	14	24	6	3	0	0	0	0
SIGNALS	66	14	0	12	0	5	15	3	1	0	0	0	0
ROLLING STOCK	0	0	0	0	0	5766	174	194	205	192	204	223	302
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	0	0	0	0	0	2095	65	67	69	81	83	87	89
BUS	0	0	0	0	0	362	12	12	13	15	16	16	17
CAR	0	0	0	0	0	1402	46	48	50	59	61	63	65
LORRY	0	0	0	0	0	331	6	6	6	7	7	7	7
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	0	0	0	0	0	574	437	474	514	545	567	615	665
TIME SAVING	0	0	0	0	0	316	347	380	417	357	395	436	482
PASSENGERS	0	0	0	0	0	361	394	429	468	430	470	514	562
FREIGHT	0	0	0	0	0	-46	-47	-49	-50	-73	-75	-78	-80
COST SAVING	0	0	0	0	0	259	91	94	97	187	172	179	183
OPTIMAL ALLOCATION	0	0	0	0	0	138	2	2	2	20	2	3	2
EFFICIENCY INCREASE	0	0	0	0	0	120	89	91	94	167	170	176	181
CASHFLOW FOR EIRR	-121	-41	-13	-39	-73	-3123	284	336	373	434	446	479	452
EIRR %													

** ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND **
 (UNIT : MIL. BAHTS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
INVESTMENT DIFF	136	165	-1258	2847	-76	168	221	229	234	228	268	262	-474
WITH	228	260	241	3356	420	343	410	426	438	438	485	485	1158
CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLING STOCK	228	260	241	3356	420	343	410	426	438	438	485	485	1158
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	92	95	1499	509	496	176	189	196	204	210	217	224	1632
BUS	17	18	18	381	33	33	34	37	39	40	41	42	43
CAR	67	69	1473	120	124	128	140	145	150	155	160	165	1572
LORRY	7	7	7	7	339	14	14	14	15	15	16	16	16
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	721	732	850	923	1003	1092	1188	1268	1378	1496	1625	1766	1920
TIME SAVING	531	586	645	710	781	859	945	1038	1140	1252	1374	1506	1653
PASSENGERS	614	671	733	801	875	956	1045	1141	1247	1362	1488	1625	1774
FREIGHT	-83	-85	-88	-91	-94	-97	-100	-103	-107	-110	-114	-117	-121
COST SAVING	190	197	205	213	222	233	244	230	237	244	251	258	266
OPTIMAL ALLOCATION	3	3	3	2	3	3	3	3	3	3	3	3	3
EFFICIENCY INCREASE	187	194	202	210	218	229	240	227	234	241	248	255	263
CASHFLOW FOR EIRR	585	618	2109	-1924	1079	924	967	1039	1143	1268	1357	1504	2393
EIRR %													

** ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND **
 (UNIT : MIL. BAHTS)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
INVESTMENT DIFF	272	2990	328	-16	364	368	410	368	-4013	9017
WITH	557	3645	643	648	714	731	785	755	-5563	19234
CIVIL WORK	0	0	0	0	0	0	0	0	0	132
TRACK	0	0	0	0	0	0	0	0	0	124
SIGNALS	0	0	0	0	0	0	0	0	0	116
ROLLING STOCK	557	3645	643	648	714	731	785	755	856	25280
-SALVAGE VALUE	0	0	0	0	0	0	0	0	6418	6418
WITHOUT	284	655	315	664	350	363	374	386	-1549	10216
BUS	45	409	61	62	65	68	71	73	75	2170
CAR	223	230	238	253	261	270	279	288	298	8602
LORRY	17	17	17	349	24	24	24	25	26	1393
-SALVAGE VALUE	0	0	0	0	0	0	0	0	1949	1949
TOTAL BENEFIT	2087	2269	2471	2686	2921	3161	3461	3767	4101	47347
TIME SAVING	1813	1987	2178	2386	2613	2861	3133	3429	3752	40305
PASSENGERS	1938	2116	2311	2523	2754	3007	3283	3584	3912	43387
FREIGHT	-125	-129	-133	-137	-141	-146	-150	-155	-160	-3082
COST SAVING	274	281	293	300	308	319	328	339	349	7043
OPTIMAL ALLOCATION	3	3	4	3	3	4	3	3	4	245
EFFICIENCY INCREASE	271	278	289	297	305	315	325	335	345	6797
CASHFLOW FOR EIRR	1815	-721	2142	2702	2557	2813	3050	3399	8114	38330
EIRR %									15.95	

III, Alternative 4

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==

(UNIT : MIL. BAHTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
INVESTMENT DIFF	121	67	57	39	73	3846	118	145	156	111	121	137	213
WITH	121	67	57	39	73	6051	187	222	235	192	204	223	302
CIVIL WORK	27	13	9	11	69	2	1	0	0	0	0	0	0
TRACK	28	35	33	16	4	6	3	0	0	0	0	0	0
SIGNALS	66	19	15	12	0	3	1	0	0	0	0	0	0
ROLLING STOCK	0	0	0	0	0	6040	183	222	235	192	204	223	302
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	0	0	0	0	0	2204	69	77	79	81	83	87	89
BUS	0	0	0	0	0	384	13	15	15	15	16	16	17
CAR	0	0	0	0	0	1489	49	55	57	59	61	63	65
LORRY	0	0	0	0	0	331	6	7	7	7	7	7	7
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	0	0	0	0	0	554	415	447	461	499	545	594	643
TIME SAVING	0	0	0	0	0	291	320	292	323	357	395	436	482
PASSENGERS	0	0	0	0	0	337	367	361	394	430	470	514	562
FREIGHT	0	0	0	0	0	-46	-47	-68	-71	-73	-75	-78	-80
COST SAVING	0	0	0	0	0	263	95	155	138	142	150	157	161
OPTIMAL ALLOCATION	0	0	0	0	0	138	2	19	2	3	2	3	2
EFFICIENCY INCREASE	0	0	0	0	0	124	93	135	135	139	148	154	159
CASHFLOW FOR EIRR	-121	-67	-57	-39	-73	-3292	297	302	305	389	425	457	430
EIRR %													

== ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND. ==

(UNIT : MIL. BAHTS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
INVESTMENT DIFF	136	165	-1345	3013	-79	173	233	229	234	228	268	262	-561
WITH	228	260	241	3547	425	358	425	426	438	438	485	485	1158
CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
ROLLING STOCK	228	260	241	3547	425	358	425	426	438	438	485	485	1158
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
WITHOUT	92	95	1586	534	504	185	191	197	204	210	217	224	1719
BUS	17	18	18	403	33	35	36	37	39	40	41	42	43
CAR	67	69	1560	123	132	136	140	145	150	155	160	165	1680
LORRY	7	7	7	7	339	14	15	15	15	15	16	16	16
-SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL BENEFIT	700	761	829	901	981	1070	1167	1246	1356	1475	1604	1744	1898
TIME SAVING	531	586	645	710	781	859	945	1038	1140	1252	1374	1508	1653
PASSENGERS	614	671	733	801	875	956	1045	1141	1247	1362	1488	1625	1774
FREIGHT	-83	-85	-88	-91	-94	-97	-100	-103	-107	-110	-114	-117	-121
COST SAVING	168	175	184	191	200	211	222	208	216	223	230	236	244
OPTIMAL ALLOCATION	3	3	3	2	3	3	3	3	3	3	3	3	3
EFFICIENCY INCREASE	165	172	181	189	197	208	219	205	212	220	226	233	241
CASHFLOW FOR EIRR	564	596	2174	-2112	1060	897	933	1018	1122	1247	1335	1482	2459
EIRR %													

== ** ECONOMIC ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ** ==

(UNIT : MIL. BAHTS)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
INVESTMENT DIFF										
WITH	269	3155	329	-3	377	367	410	368	-4084	9348
CIVIL WORK	0	0	0	0	0	0	0	0	0	132
TRACK	0	0	0	0	0	0	0	0	0	124
SIGNALS	0	0	0	0	0	0	0	0	0	116
ROLLING STOCK	557	3840	652	664	730	731	785	755	850	26081
-SALVAGE VALUE	0	0	0	0	0	0	0	0	6502	6502
WITHOUT	287	685	323	566	352	363	375	386	-1563	10602
BUS	45	431	61	65	67	68	71	73	75	2251
CAR	226	237	245	253	261	270	279	288	298	8916
LORRY	17	17	17	349	24	25	25	25	26	1396
-SALVAGE VALUE	0	0	0	0	0	0	0	0	1962	1962
TOTAL BENEFIT	2065	2247	2449	2664	2900	3159	3439	3746	4080	46638
TIME SAVING	1813	1987	2178	2386	2613	2861	3133	3429	3752	40073
PASSENGERS	1938	2116	2311	2523	2754	3007	3283	3584	3912	43195
FREIGHT	-125	-129	-133	-137	-141	-146	-150	-155	-160	-3123
COST SAVING	252	260	271	279	287	297	306	317	328	6566
OPTIMAL ALLOCATION	3	3	4	3	3	4	3	3	4	245
EFFICIENCY INCREASE	249	257	267	275	283	293	303	314	323	6321
CASHFLOW FOR EIRR	1796	-908	2120	2667	2523	2792	3029	3378	8163	37291
EIRR %										14.77

II, Case 11

== FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BAHTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ASSUMPTION													
=====													
TRAFFIC DEMAND													
PASSENGERS (MIL. PERS.KMS)	0	0	0	0	0	2906	3003	3103	3207	3314	3314	3314	3314
FREIGHTS (MIL. TON KMS)	0	0	0	0	0	379	385	391	397	404	411	417	424
FARE & TARIFF													
PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
ESCALATION RATE													
=====													
FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PROFIT & LOSS STATEMENT													
=====													
REVENUE													
PASSENGERS	0	0	0	0	0	639	661	683	705	729	729	729	729
FREIGHTS	0	0	0	0	0	140	142	145	147	149	152	154	157
TOTAL	0	0	0	0	0	779	803	827	853	878	881	883	886
EXPENSE													
=====													
MAINT. & REPLAC. (NEW)	0	0	0	0	0	9	9	9	9	9	9	9	9
(EXISTING)	0	0	0	0	0	182	187	192	197	202	203	204	205
FUEL	0	0	0	0	0	347	356	366	376	387	390	392	395
PERSONNEL	0	0	0	0	0	167	172	177	183	188	189	189	190
DEPRECIATION	0	0	0	0	0	-1	-1	-1	-1	-2	-2	-2	-3
INTEREST PAYMENT	0	0	0	0	0	35	28	22	15	7	0	0	0
TOTAL	0	0	0	0	0	739	751	766	779	792	789	792	796
NET INCOME BEFORE TAX	0	0	0	0	0	41	52	62	73	86	92	91	90
INCOME TAX	0	0	0	0	0	10	13	15	18	22	23	23	23
NET INCOME AFTER TAX	0	0	0	0	0	30	39	46	55	65	69	68	68

CAPITAL EXPENDITURE

CAPITAL COST

FOREIGN	119	43	51	44	7	-234	-7	-8	-9	-9	-12	-14	-15
LOCAL	43	23	29	23	75	0	0	0	0	0	0	0	0
TOTAL	162	66	80	67	82	-234	-7	-8	-9	-9	-12	-14	-15
CUMULATIVE	162	228	308	375	457	222	216	208	199	191	178	164	149

DETAILED CAPITAL COST

CIVIL WORK	29	11	19	7	73	0	0	0	0	0	0	0	0
CUMULATIVE	29	40	59	66	139	139	139	139	139	139	139	139	139
TRACK	32	34	35	34	8	0	0	0	0	0	0	0	0
CUMULATIVE	32	66	101	135	143	143	143	143	143	143	143	143	143
SIGNALS	102	21	26	26	1	0	0	0	0	0	0	0	0
CUMULATIVE	102	122	148	174	175	175	175	175	175	175	175	175	175
ROLLING STOCK	0	0	0	0	0	-234	-7	-8	-9	-9	-12	-14	-15
CUMULATIVE	0	0	0	0	0	-234	-241	-249	-257	-266	-278	-293	-308
INT. DURING CONST.	0	11	15	22	27	0	0	0	0	0	0	0	0
CUMULATIVE	0	11	26	48	75	75	75	75	75	75	75	75	75
SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CAPITAL COST	162	76	95	89	109	-234	-7	-8	-9	-9	-12	-14	-15
CUMULATIVE	162	238	334	423	532	298	291	283	275	266	253	239	224

FINANCE PROGRAM

TOTAL CAPITAL COST

TOTAL CAPITAL COST	162	76	95	89	109	0	0	0	0	0	0	0	0
CUMULATIVE	162	238	334	423	532	532	532	532	532	532	532	532	532
SRT FUND	81	38	48	44	55	0	0	0	0	0	0	0	0
CUMULATIVE	81	119	167	211	266	266	266	266	266	266	266	266	266

LONG-TERM LOAN

DRAWDOWN	81	38	48	44	55	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	53	53	53	53	53	53	53	53
BALANCE	81	119	167	211	266	213	180	106	53	0	0	0	0
INTEREST	0	11	15	22	27	35	28	21	14	7	0	0	0
SHORT-TERM LOAN	0	0	0	0	0	0	9	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	9	0	0	0	0
BALANCE	0	0	0	0	0	0	0	9	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	1	1	0	0	0	0

CASHFLOW STATEMENT

CASH IN

NET INCOME AFTER TAX	0	0	0	30	39	46	55	65	69	68	68
ADD BACK DEPRECIATION	0	0	0	-1	-1	-1	-1	-2	-2	-2	-3
SRT FUND	81	38	44	55	0	0	0	0	0	0	0
LOAN DRAWDOWN : L-T	81	38	44	55	0	0	0	0	0	0	0
: S-T	0	0	0	0	9	0	0	0	0	0	0
TOTAL	162	76	89	109	46	46	54	63	67	66	65

CASH OUT

CAPITAL COST	162	66	80	82	-7	-8	-9	-9	-12	-14	-15
INT. DURING CONST.	0	11	15	27	0	0	0	0	0	0	0
LOAN REPAYMENT : L-T	0	0	0	53	53	53	53	53	0	0	0
: S-T	0	0	0	0	0	0	9	0	0	0	0
TOTAL	162	76	95	109	46	46	53	45	-12	-14	-15
NET CASHFLOW	0	0	0	0	0	0	0	19	79	80	80
CUMULATIVE	0	0	0	0	211	211	211	230	309	389	469

FINANCIAL STATISTICS

DSC RATIO : YEARLY	.00	.00	.00	.00	.89	1.00	1.13	1.31	.00	.00	.00
DSC RATIO : CUMULATIVE	.00	.00	.00	.00	2.20	1.83	1.68	1.62	1.83	2.05	2.26
CASHFLOW FOR IRR (ROI)	-162	-66	-80	-82	299	72	77	79	79	80	80
IRR (ROI) %	-81	-38	-48	-55	211	0	0	19	79	80	80
CASHFLOW FOR IRR (ROE)											
IRR (ROE) %											

== FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BAHTS.)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ASSUMPTION													
=====													
TRAFFIC DEMAND													
=====													
PASSENGERS (MIL. PERS.KMS)	3314	3314	3314	3314	3314	3314	3314	3314	3314	3314	3314	3314	3314
FREIGHTS (MIL. TON KMS)	431	438	445	453	460	468	475	483	491	499	507	516	524
FARE & TARIFF													

PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
ESCALATION RATE													

FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PROFIT & LOSS STATEMENT													
=====													
REVENUE													
PASSENGERS	729	729	729	729	729	729	729	729	729	729	729	729	729
FREIGHTS	160	162	165	167	170	173	176	179	182	185	188	191	194
TOTAL	889	891	894	896	899	902	905	908	911	914	917	920	923
EXPENSE													

MAINT. & REPLAC. (NEW)	9	9	9	9	9	9	9	9	9	9	9	9	9
(EXISTING)	205	205	206	206	205	205	204	205	206	207	208	209	210
FUEL	398	401	404	407	410	414	417	420	423	427	430	434	437
PERSONNEL	190	191	191	192	192	193	194	194	195	195	196	197	197
DEPRECIATION	-3	-4	-5	-6	-6	-7	-8	-9	-9	-10	-10	-11	-11
INTEREST PAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	799	802	805	808	811	813	815	819	824	828	833	837	842
NET INCOME BEFORE TAX	89	89	88	88	89	89	90	89	87	86	84	82	81
INCOME TAX	22	22	22	22	22	22	23	22	22	21	21	21	20
NET INCOME AFTER TAX	67	67	66	66	66	67	68	66	65	64	63	62	61

CAPITAL EXPENDITURE
=====

CAPITAL COST

FOREIGN	-18	-20	-23	-24	-29	-32	-36	-13	-14	-14	-15	-15	-16
LOCAL	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	-18	-20	-23	-24	-29	-32	-36	-13	-14	-14	-15	-15	-16
CUMULATIVE	130	110	87	63	35	3	-33	-47	-61	-75	-91	-106	-122

DETAILED CAPITAL COST

CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	139	139	139	139	139	139	139	139	139	139	139	139	139
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	143	143	143	143	143	143	143	143	143	143	143	143	143
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	175	175	175	175	175	175	175	175	175	175	175	175	175
ROLLING STOCK	-18	-20	-23	-24	-29	-32	-36	-13	-14	-14	-15	-15	-16
CUMULATIVE	-326	-346	-369	-393	-422	-454	-490	-503	-518	-532	-547	-563	-579
INT. DURING CONST.	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	75	75	75	75	75	75	75	75	75	75	75	75	75
SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CAPITAL COST	-18	-20	-23	-24	-29	-32	-36	-13	-14	-14	-15	-15	-16
CUMULATIVE	206	186	163	139	110	78	42	29	14	0	-15	-31	-47

FINANCE PROGRAM
=====

TOTAL CAPITAL COST

TOTAL CAPITAL COST	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	532	532	532	532	532	532	532	532	532	532	532	532	532
SRT FUND	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	266	266	266	266	266	266	266	266	266	266	266	266	266

LONG-TERM LOAN

DRAWDOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0	0

SHORT-TERM LOAN

DRAWDOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0	0

CASHFLOW STATEMENT

=====

CASH IN

NET INCOME AFTER TAX

ADD BACK DEPRECIATION

SRT FUND

LOAN DRAWDOWN : L-T

: S-T

TOTAL

CASH OUT

CAPITAL COST

INT. DURING CONST.

LOAN REPAYMENT : L-T

: S-T

TOTAL

NET CASHFLOW

CUMULATIVE

FINANCIAL STATISTICS

=====

DSC RATIO : YEARLY

DSC RATIO : CUMULATIVE

CASHFLOW FOR IRR (ROI)

IRR (ROI) %

CASHFLOW FOR IRR (ROE)

IRR (ROE) %

67	67	66	66	65	64	63	62	61	60	59	58	56	54	53	51	49
-3	-4	-5	-6	-6	-6	-6	-6	-6	-7	-8	-9	-9	-10	-10	-11	-11
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
63	62	62	61	60	60	59	58	56	54	53	51	49				
-18	-20	-23	-24	-28	-32	-36	-40	-44	-48	-52	-56	-60	-64	-68	-72	-76
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-18	-20	-23	-24	-29	-32	-36	-40	-44	-48	-52	-56	-60	-64	-68	-72	-76
82	83	84	85	89	91	96	101	106	111	116	121	126	131	136	141	146
551	633	718	803	891	982	1078	1149	1219	1288	1356	1423	1488				

== FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==

(UNIT : MIL. BAHTS)

	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
ASSUMPTION										
TRAFFIC DEMAND										
PASSENGERS (MIL. PERS.KMS)	3314	3314	3314	3314	3314	3314	3314	3314	3314	85121
FREIGHTS (MIL. TON KMS)	533	542	551	560	569	578	588	597	607	12152
FARE & TARIFF										
PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	6.82
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	11.47
ESCALATION RATE										
FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PROFIT & LOSS STATEMENT										
REVENUE										
PASSENGERS	729	729	729	729	729	729	729	729	729	18727
FREIGHTS	197	200	204	207	210	214	217	221	225	4496
TOTAL	926	929	933	936	939	943	946	950	954	23223
EXPENSE										
MAINT. & REPLAC. (NEW)	8	8	8	8	8	8	8	8	8	226
(EXISTING)	211	212	213	214	215	216	217	218	219	5322
FUEL	441	445	448	453	456	460	465	469	473	10677
PERSONNEL	198	199	199	200	201	201	202	203	204	4969
DEPRECIATION	-12	-12	-13	-13	-14	-14	-15	-16	-16	-177
INTEREST PAYMENT	0	0	0	0	0	0	0	0	0	106
TOTAL	847	852	857	861	866	871	877	882	887	21124
NET INCOME BEFORE TAX	79	78	76	75	73	71	70	68	67	2099
INCOME TAX	20	19	19	19	18	18	17	17	17	525
NET INCOME AFTER TAX	59	58	57	56	55	54	52	51	50	1574

CAPITAL EXPENDITURE

=====

CAPITAL COST

FOREIGN	-16	-17	-19	-18	-19	-20	-20	-21	-23	-405
LOCAL	0	0	0	0	0	0	0	0	0	193
TOTAL	-16	-17	-19	-18	-19	-20	-20	-21	-23	-212
CUMULATIVE	-138	-156	-175	-193	-212	-232	-252	-273	-286	2077

DETAILED CAPITAL COST

CIVIL WORK

CUMULATIVE	0	139	139	139	139	139	139	139	139	139	3951
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TRACK

CUMULATIVE	0	143	143	143	143	143	143	143	143	143	4190
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SIGNALS

CUMULATIVE	0	175	175	175	175	175	175	175	175	175	5285
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ROLLING STOCK

CUMULATIVE	-16	-17	-19	-18	-19	-20	-20	-21	-23	-669
	-595	-612	-632	-650	-669	-689	-709	-730	-753	-11329

INT. DURING CONST.

CUMULATIVE	0	75	75	75	75	75	75	75	75	75	2114
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SALVAGE VALUE

CUMULATIVE	0	0	0	0	0	0	0	0	-107	0
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TOTAL CAPITAL COST

CUMULATIVE	-16	-17	-19	-18	-19	-20	-20	-21	84	-137
	-63	-80	-100	-118	-137	-157	-177	-198	-114	4191

FINANCE PROGRAM

=====

TOTAL CAPITAL COST

CUMULATIVE	0	532	532	532	532	532	532	532	532	532	15520
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SRT FUND

CUMULATIVE	0	266	266	266	266	266	266	266	266	266	7760
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LONG-TERM LOAN

DRAWDOWN

REPAYMENT	0	0	0	0	0	0	0	0	0	0	266
BALANCE	0	0	0	0	0	0	0	0	0	0	1376
INTEREST	0	0	0	0	0	0	0	0	0	0	179

SHORT-TERM LOAN

DRAWDOWN

REPAYMENT	0	0	0	0	0	0	0	0	0	0	9
BALANCE	0	0	0	0	0	0	0	0	0	0	9
INTEREST	0	0	0	0	0	0	0	0	0	0	18

CASHFLOW STATEMENT

=====

CASH IN

NET INCOME AFTER TAX
ADD BACK DEPRECIATION
SRT FUND
LOAN DRAWDOWN : L-T
 : S-T

59	58	57	56	55	54	52	51	50	1574
-12	-12	-13	-13	-14	-14	-15	-16	-16	-177
0	0	0	0	0	0	0	0	0	266
0	0	0	0	0	0	0	0	0	266
0	0	0	0	0	0	0	0	50	9
48	46	44	43	41	39	37	36	84	1938

TOTAL

CASH OUT

CAPITAL COST
INT. DURING CONST.
LOAN REPAYMENT : L-T
 : S-T

-16	-17	-19	-18	-19	-20	-20	-21	84	-212
0	0	0	0	0	0	0	0	0	75
0	0	0	0	0	0	0	0	0	266
0	0	0	0	0	0	0	0	0	9
-16	-17	-19	-18	-19	-20	-20	-21	84	138

TOTAL

NET CASHFLOW

=====

CUMULATIVE

64	63	64	61	60	59	57	57	0	1800
1553	1616	1679	1740	1800	1859	1917	1974	1974	24209

FINANCIAL STATISTICS

=====

DSC RATIO : YEARLY
DSC RATIO : CUMULATIVE

CASHFLOW FOR IRR (ROI)
IRR (ROI) %
CASHFLOW FOR IRR (ROE)
IRR (ROE) %

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5.17	5.34	5.51	5.68	5.84	6.00	6.15	6.31	6.17	6.17
64	63	64	61	60	59	57	57	-50	1715
64	63	64	61	60	59	57	57	16.12	1534
								0	1534
								17.44	17.44

II, Case 5
 == FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BAHTS)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
ASSUMPTION													
=====													
TRAFFIC DEMAND													

PASSENGERS (MIL. PERS.KMS)	0	0	0	0	0	2529	2613	2700	2790	2883	2883	2883	2883
FREIGHTS (MIL. TON KMS)	0	0	0	0	0	339	344	350	356	362	367	374	380
FARE & TARIFF													

PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
ESCALATION RATE													

FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
PROFIT & LOSS STATEMENT													
=====													
REVENUE													

PASSENGERS	0	0	0	0	0	556	575	594	614	634	634	634	634
FREIGHTS	0	0	0	0	0	125	127	130	132	134	136	138	140
TOTAL	0	0	0	0	0	682	702	723	745	768	770	772	775
EXPENSE													

MAINT. & REPLAC. (NEW)	0	0	0	0	0	0	0	0	0	0	0	0	0
(EXISTING)	0	0	0	0	0	160	165	169	173	178	179	179	180
FUEL	0	0	0	0	0	305	314	322	331	341	343	345	348
PERSONNEL	0	0	0	0	0	128	131	135	140	144	144	145	145
DEPRECIATION	0	0	0	0	0	-1	-1	-1	-1	-2	-2	-2	-3
INTEREST PAYMENT	0	0	0	0	0	27	22	16	11	5	0	0	0
TOTAL	0	0	0	0	0	626	637	648	660	672	670	673	676
NET INCOME BEFORE TAX													

NET INCOME BEFORE TAX	0	0	0	0	0	56	66	75	85	96	100	99	98
INCOME TAX	0	0	0	0	0	14	16	19	21	24	25	25	25
NET INCOME AFTER TAX	0	0	0	0	0	42	49	57	64	72	75	74	74

CAPITAL EXPENDITURE
=====

CAPITAL COST

FOREIGN	119	34	9	34	4	-210	-7	-7	-7	-7	-9	-11	-12	-14
LOCAL	43	17	5	15	73	0	0	0	0	0	0	0	0	0
TOTAL	162	51	15	48	77	-210	-7	-7	-7	-7	-9	-11	-12	-14
CUMULATIVE	162	213	228	276	353	144	137	130	124	115	104	91	77	77

DETAILED CAPITAL COST

CIVIL WORK	29	7	4	12	73	0	0	0	0	0	0	0	0	0
CUMULATIVE	29	35	40	51	124	124	124	124	124	124	124	124	124	124
TRACK	32	24	10	18	5	0	0	0	0	0	0	0	0	0
CUMULATIVE	32	56	66	84	89	89	89	89	89	89	89	89	89	89
SIGNALS	102	21	0	18	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	102	122	122	141	141	141	141	141	141	141	141	141	141	141
ROLLING STOCK	0	0	0	0	0	-210	-7	-7	-7	-7	-9	-11	-12	-14
CUMULATIVE	0	0	0	0	0	-210	-216	-223	-230	-238	-250	-262	-277	-277
INT. DURING CONST.	0	11	15	16	21	0	0	0	0	0	0	0	0	0
CUMULATIVE	0	11	25	42	62	62	62	62	62	62	62	62	62	62
SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CAPITAL COST	162	62	29	65	98	-210	-7	-7	-7	-9	-11	-12	-14	-14
CUMULATIVE	162	224	253	318	415	206	199	192	186	177	166	153	139	139

FINANCE PROGRAM

TOTAL CAPITAL COST

TOTAL CAPITAL COST	162	62	29	65	98	0	0	0	0	0	0	0	0	0
CUMULATIVE	162	224	253	318	415	415	415	415	415	415	415	415	415	415
SRT FUND	81	31	15	32	49	0	0	0	0	0	0	0	0	0
CUMULATIVE	81	112	126	159	208	208	208	208	208	208	208	208	208	208

LONG-TERM LOAN

DRAWDOWN	81	31	15	32	49	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	42	42	42	42	42	42	42	42	42
BALANCE	81	112	126	159	208	166	125	83	42	0	0	0	0	0
INTEREST	0	11	15	16	21	27	22	16	11	5	0	0	0	0

SHORT-TERM LOAN

DRAWDOWN	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0	0	0

CASHFLOW STATEMENT

=====

CASH IN

NET INCOME AFTER TAX	0	0	0	0	42	49	57	84	72	75	74	74
ADD BACK DEPRECIATION	0	0	0	0	-1	-1	-1	-1	-2	-2	-2	-3
SRT FUND	81	31	15	32	0	0	0	0	0	0	0	0
LOAN DRAWDOWN : L-T	81	31	15	32	0	0	0	0	0	0	0	0
: S-T	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	162	62	29	65	41	48	55	63	70	73	72	71

CASH OUT

CAPITAL COST	162	51	15	48	-210	-7	-7	-7	-9	-11	-12	-14
INT. DURING CONST.	0	11	15	16	0	0	0	0	0	0	0	0
LOAN REPAYMENT : L-T	0	0	0	0	42	42	42	42	42	42	42	42
: S-T	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	162	62	29	65	-168	35	35	35	33	-11	-12	-14
NET CASHFLOW	0	0	0	0	209	13	20	28	37	84	84	85
CUMULATIVE	0	0	0	0	209	222	243	271	308	392	476	562

FINANCIAL STATISTICS

=====

DSC RATIO : YEARLY	.00	.00	.00	.00	4.05	1.21	1.35	1.53	1.79	.00	.00	.00
DSC RATIO : CUMULATIVE	.00	.00	.00	.00	4.05	2.69	2.28	2.12	2.97	2.36	2.65	2.95
CASHFLOW FOR IRR (ROI)	-162	-51	-15	-48	278	76	78	80	84	84	84	85
IRR (ROI) *												
CASHFLOW FOR IRR (ROE)	-81	-31	-15	-32	209	13	20	28	37	84	84	85
IRR (ROE) *												

== FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==

(UNIT : MIL. BAHTS)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ASSUMPTION													
TRAFFIC DEMAND													
PASSENGERS (MIL. PERS.KMS)	2883	2883	2883	2883	2883	2883	2883	2883	2883	2883	2883	2883	2883
FREIGHTS (MIL. TON KMS)	386	392	398	405	412	419	425	432	439	447	454	462	469
FARE & TARIFF													
PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22	.22
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37	.37
ESCALATION RATE													
FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
PROFIT & LOSS STATEMENT													
REVENUE													
PASSENGERS	634	634	634	634	634	634	634	634	634	634	634	634	634
FREIGHTS	143	145	147	150	152	155	157	160	163	165	168	171	174
TOTAL	777	779	782	784	787	789	792	794	797	800	802	805	808
EXPENSE													
MAINT. & REPLAC. (NEW)	6	6	6	6	6	6	6	5	5	5	5	5	5
(EXISTING)	180	181	181	181	181	180	180	181	182	182	183	184	185
FUEL	351	353	356	359	362	364	367	370	373	376	379	383	386
PERSONNEL	145	146	146	147	147	148	148	149	149	150	150	151	151
DEPRECIATION	-3	-4	-4	-5	-6	-7	-8	-8	-8	-9	-9	-10	-10
INTEREST PAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	679	682	685	687	689	691	693	697	701	705	709	713	717
NET INCOME BEFORE TAX	98	97	97	97	97	98	99	97	96	95	93	92	91
INCOME TAX	24	24	24	24	24	24	25	24	24	24	23	23	23
NET INCOME AFTER TAX	73	73	73	73	73	73	74	73	72	71	70	69	68

CAPITAL EXPENDITURE

=====

CAPITAL COST

FOREIGN	-15	-18	-20	-22	-26	-29	-32	-12	-12	-13	-13	-14	-13
LOCAL	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	-15	-18	-20	-22	-26	-29	-32	-12	-12	-13	-13	-14	-13
CUMULATIVE	61	43	23	1	-25	-53	-85	-97	-110	-123	-137	-151	-164

DETAILED CAPITAL COST

CIVIL WORK	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	124	124	124	124	124	124	124	124	124	124	124	124	124
TRACK	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	89	89	89	89	89	89	89	89	89	89	89	89	89
SIGNALS	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	141	141	141	141	141	141	141	141	141	141	141	141	141
ROLLING STOCK	-15	-18	-20	-22	-26	-29	-32	-12	-12	-13	-13	-14	-13
CUMULATIVE	-292	-310	-330	-352	-378	-407	-438	-451	-463	-477	-490	-504	-518
INT. DURING CONST.	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	62	62	62	62	62	62	62	62	62	62	62	62	62
SALVAGE VALUE	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL CAPITAL COST	-15	-18	-20	-22	-26	-29	-32	-12	-12	-13	-13	-14	-13
CUMULATIVE	124	105	85	63	37	9	-23	-35	-48	-61	-75	-89	-102

=====

FINANCE PROGRAM

=====

TOTAL CAPITAL COST

CUMULATIVE

S&T FUND

CUMULATIVE

LONG-TERM LOAN

DRAWDOWN

REPAYMENT

BALANCE

INTEREST

SHORT-TERM LOAN

DRAWDOWN

REPAYMENT

BALANCE

INTEREST

TOTAL CAPITAL COST	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	415	415	415	415	415	415	415	415	415	415	415	415	415
S&T FUND	0	0	0	0	0	0	0	0	0	0	0	0	0
CUMULATIVE	208	208	208	208	208	208	208	208	208	208	208	208	208
LONG-TERM LOAN	0	0	0	0	0	0	0	0	0	0	0	0	0
DRAWDOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0	0
SHORT-TERM LOAN	0	0	0	0	0	0	0	0	0	0	0	0	0
DRAWDOWN	0	0	0	0	0	0	0	0	0	0	0	0	0
REPAYMENT	0	0	0	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	0	0	0	0
INTEREST	0	0	0	0	0	0	0	0	0	0	0	0	0

CASHFLOW STATEMENT

	70	71	72	73	74	75	76	77	78	79	80
CASH IN											
NET INCOME AFTER TAX	73	73	73	73	74	73	72	71	70	69	68
ADD BACK DEPRECIATION	-3	-4	-5	-6	-8	-8	-8	-9	-9	-10	-10
SRT FUND	0	0	0	0	0	0	0	0	0	0	0
LOAN DRAWDOWN : L-T	0	0	0	0	0	0	0	0	0	0	0
: S-T	0	0	0	0	0	0	0	0	0	0	0
TOTAL	70	69	68	67	66	65	64	62	61	59	58
CASH OUT											
CAPITAL COST	-15	-18	-20	-22	-26	-29	-32	-32	-13	-14	-13
INT. DURING CONST.	0	0	0	0	0	0	0	0	0	0	0
LOAN REPAYMENT : L-T	0	0	0	0	0	0	0	0	0	0	0
: S-T	0	0	0	0	0	0	0	0	0	0	0
TOTAL	-15	-18	-20	-22	-26	-29	-32	-32	-13	-14	-13
NET CASHFLOW	85	87	88	90	93	95	98	98	74	74	71
CUMULATIVE	647	734	822	912	1005	1100	1198	1275	1427	1501	1646

FINANCIAL STATISTICS

DSC RATIO : YEARLY	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
DSC RATIO : CUMULATIVE	3.24	3.54	3.85	4.16	4.48	4.81	5.15	5.42	6.20	6.45	6.70
CASHFLOW FOR IRR (ROI)	85	87	88	90	93	95	98	98	74	74	71
IRR (ROI) %	85	87	88	90	93	95	98	98	74	74	71
CASHFLOW FOR IRR (ROE)	85	87	88	90	93	95	98	98	74	74	71
IRR (ROE) %	85	87	88	90	93	95	98	98	74	74	71

== FINANCIAL ANALYSIS FOR THE RAILWAY YARD IMPROVEMENT PROJECT IN THAILAND ==
 (UNIT : MIL. BAHTS)

ASSUMPTION	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
=====										
TRAFFIC DEMAND										
PASSENGERS (MIL. PERS.KMS)	2883	2883	2883	2883	2883	2883	2883	2883	2883	74055
FREIGHTS (MIL. TON KMS)	477	485	493	501	509	517	526	535	544	16876
FARE & TARIFF										
PASSENGERS (B PER PERS.KMS)	.22	.22	.22	.22	.22	.22	.22	.22	.22	6.82
FREIGHTS (B PER TON KMS)	.37	.37	.37	.37	.37	.37	.37	.37	.37	11.47
ESCALATION RATE										
FARE & TARIFF (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MAINT. & OPERAT. COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
INVESTMENT COST (%)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
=====										
PROFIT & LOSS STATEMENT										
=====										
REVENUE										
PASSENGERS	634	634	634	634	634	634	634	634	634	16292
FREIGHTS	178	179	182	185	188	191	195	198	201	4024
TOTAL	811	814	817	820	823	826	829	832	835	20316
EXPENSE										
=====										
MAINT. & REPLAC. (NEW) (EXISTING)	5	5	5	5	5	5	5	5	5	149
FUEL	186	187	188	189	190	191	192	192	193	4685
PERSONNEL	399	392	396	399	403	406	410	414	417	9409
DEPRECIATION	152	152	153	154	154	155	156	156	156	3802
INTEREST PAYMENT	-11	-11	-12	-12	-13	-13	-14	-14	-15	-163
INTEREST PAYMENT	0	0	0	0	0	0	0	0	0	81
TOTAL	721	726	730	734	739	743	747	752	757	17961
NET INCOME BEFORE TAX	89	88	87	85	84	83	81	80	79	2355
INCOME TAX	22	22	22	21	21	21	20	20	20	589
NET INCOME AFTER TAX	67	66	65	64	63	62	61	60	59	1766

CAPITAL EXPENDITURE
=====

CAPITAL COST

FOREIGN	-15	-15	-16	-17	-17	-17	-19	-18	-20	-399
LOCAL	0	0	0	0	0	0	0	0	0	153
TOTAL	-15	-15	-16	-17	-17	-17	-19	-18	-20	-246
CUMULATIVE	-180	-195	-211	-229	-246	-263	-282	-300	-320	276

DETAILED CAPITAL COST

CIVIL WORK	0	0	0	0	0	0	0	0	0	124
CUMULATIVE	124	124	124	124	124	124	124	124	124	3500
TRACK	0	0	0	0	0	0	0	0	0	89
CUMULATIVE	89	89	89	89	89	89	89	89	89	2639
SIGNALS	0	0	0	0	0	0	0	0	0	141
CUMULATIVE	141	141	141	141	141	141	141	141	141	4280
ROLLING STOCK	-15	-15	-16	-17	-17	-17	-19	-18	-20	-599
CUMULATIVE	-533	-548	-565	-582	-599	-616	-635	-654	-674	-10142
INT. DURING CONST.	0	0	0	0	0	0	0	0	0	62
CUMULATIVE	62	62	62	62	62	62	62	62	62	1756
SALVAGE VALUE	0	0	0	0	0	0	0	0	-121	0
TOTAL CAPITAL COST	-15	-15	-16	-17	-17	-17	-19	-18	-20	-184
CUMULATIVE	-118	-133	-149	-166	-184	-201	-220	-238	-138	2032

FINANCE PROGRAM
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TOTAL CAPITAL COST

SRT FUND	0	0	0	0	0	0	0	0	0	208
CUMULATIVE	208	208	208	208	208	208	208	208	208	6087

LONG-TERM LOAN

DRAWDOWN	0	0	0	0	0	0	0	0	0	208
REPAYMENT	0	0	0	0	0	0	0	0	0	208
BALANCE	0	0	0	0	0	0	0	0	0	1101
INTEREST	0	0	0	0	0	0	0	0	0	143

SHORT-TERM LOAN

DRAWDOWN	0	0	0	0	0	0	0	0	0	56
REPAYMENT	0	0	0	0	0	0	0	0	0	0
BALANCE	0	0	0	0	0	0	0	0	0	56
INTEREST	0	0	0	0	0	0	0	0	0	0

CASHFLOW STATEMENT

	56	55	53	52	50	49	47	46	101	2013
CASH IN										
NET INCOME AFTER TAX	67	66	65	64	63	62	61	60	59	1766
ADD BACK DEPRECIATION	-11	-11	-12	-12	-13	-13	-14	-14	-15	-163
SRT FUND	0	0	0	0	0	0	0	0	0	208
LOAN DRAWDOWN : L-T	0	0	0	0	0	0	0	0	0	208
: S-T	0	0	0	0	0	0	0	0	58	0
TOTAL	56	55	53	52	50	49	47	46	101	2013

CASH OUT

CAPITAL COST	-15	-15	-16	-17	-17	-17	-19	-18	101	-246
INT. DURING CONST.	0	0	0	0	0	0	0	0	0	62
LOAN REPAYMENT : L-T	0	0	0	0	0	0	0	0	0	208
: S-T	0	0	0	0	0	0	0	0	0	0
TOTAL	-15	-15	-16	-17	-17	-17	-19	-18	101	24
NET CASHFLOW	72	70	70	69	68	68	66	64	0	1994
CUMULATIVE	1718	1788	1858	1927	1994	2060	2127	2191	2191	27159

FINANCIAL STATISTICS

DSC RATIO : YEARLY	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
DSC RATIO : CUMULATIVE	6.95	7.19	7.43	7.67	7.91	8.14	8.37	8.59	8.39	8.39
CASHFLOW FOR IRR (ROI)	72	70	70	69	68	68	66	64	-56	1930
IRR (ROI) %									19.72	
CASHFLOW FOR IRR (ROE)	72	70	70	69	68	68	66	64	0	1787
IRR (ROE) %									22.64	

JICA