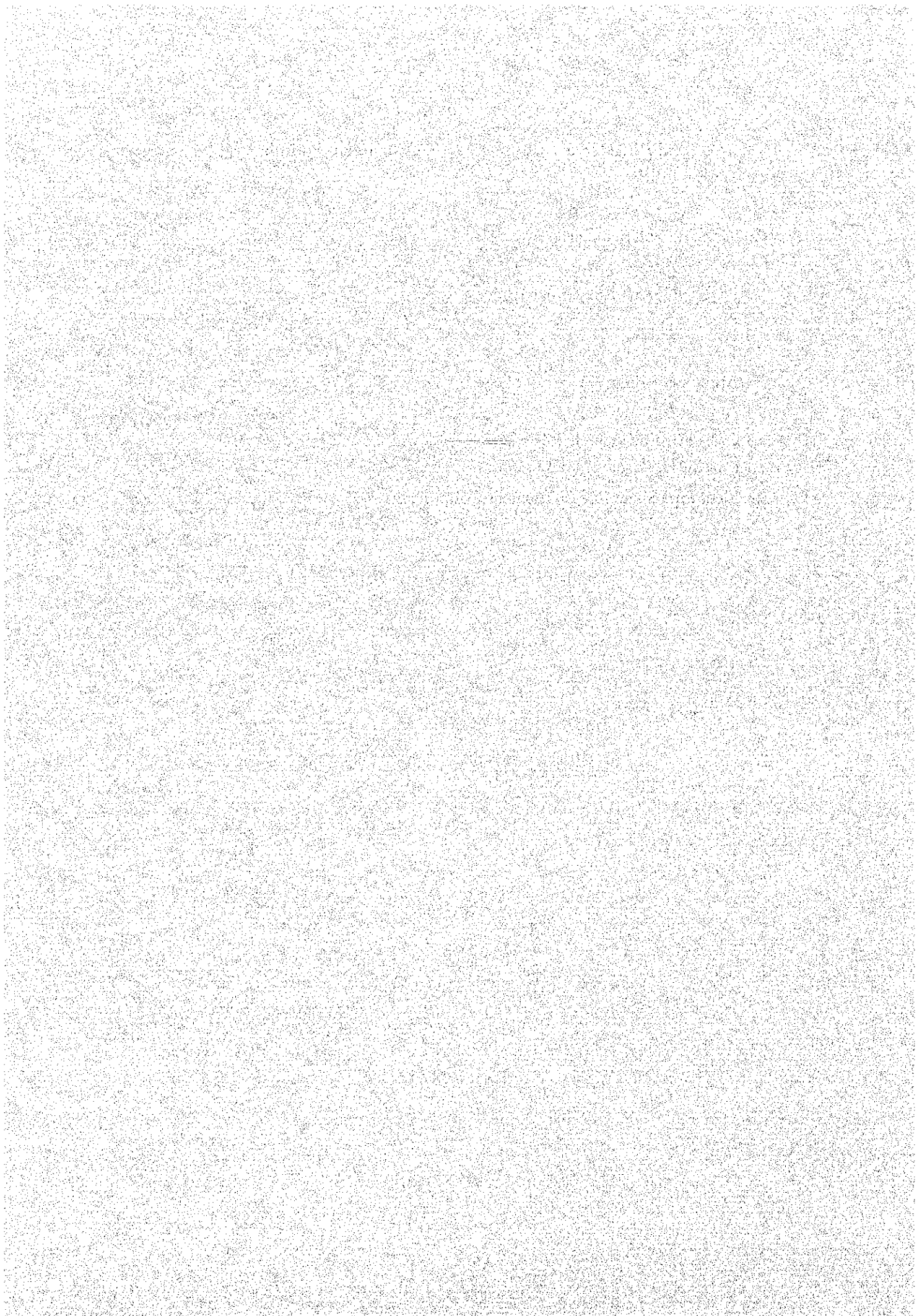


## **APPENDIX 5 Chapter 12 Construction Planning**

### **A12-1 Construction Sequence**

- + PC Continuous Box Girder Bridge**
- + Cable Stayed Bridge**
- + Tower**
- + Approach Bridge (1)**
- + Approach Bridge (2)**
- + Cast- in- situ Concrete Pile**
- + Caisson**
- + Steel Pipe Sheet Pile (Permanent Cofferdam)**



THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF YUGOSLAVIA  
 FEDERAL BUREAU OF HIGHWAYS  
 FEDERAL ROAD ADMINISTRATION UNIT, MINISTRY OF TRANSPORT

PROJECT	FEASIBILITY STUDY FOR THE BRIDGE AND
SECTION	SECTION OF THE BRIDGE AND
NO.	NO.
DATE	DATE
BY	BY
CHECKED BY	CHECKED BY
APPROVED BY	APPROVED BY

# CONSTRUCTION SEQUENCE FOR SUPERSTRUCTURE OF BALANCED CANTILEVER BRIDGE

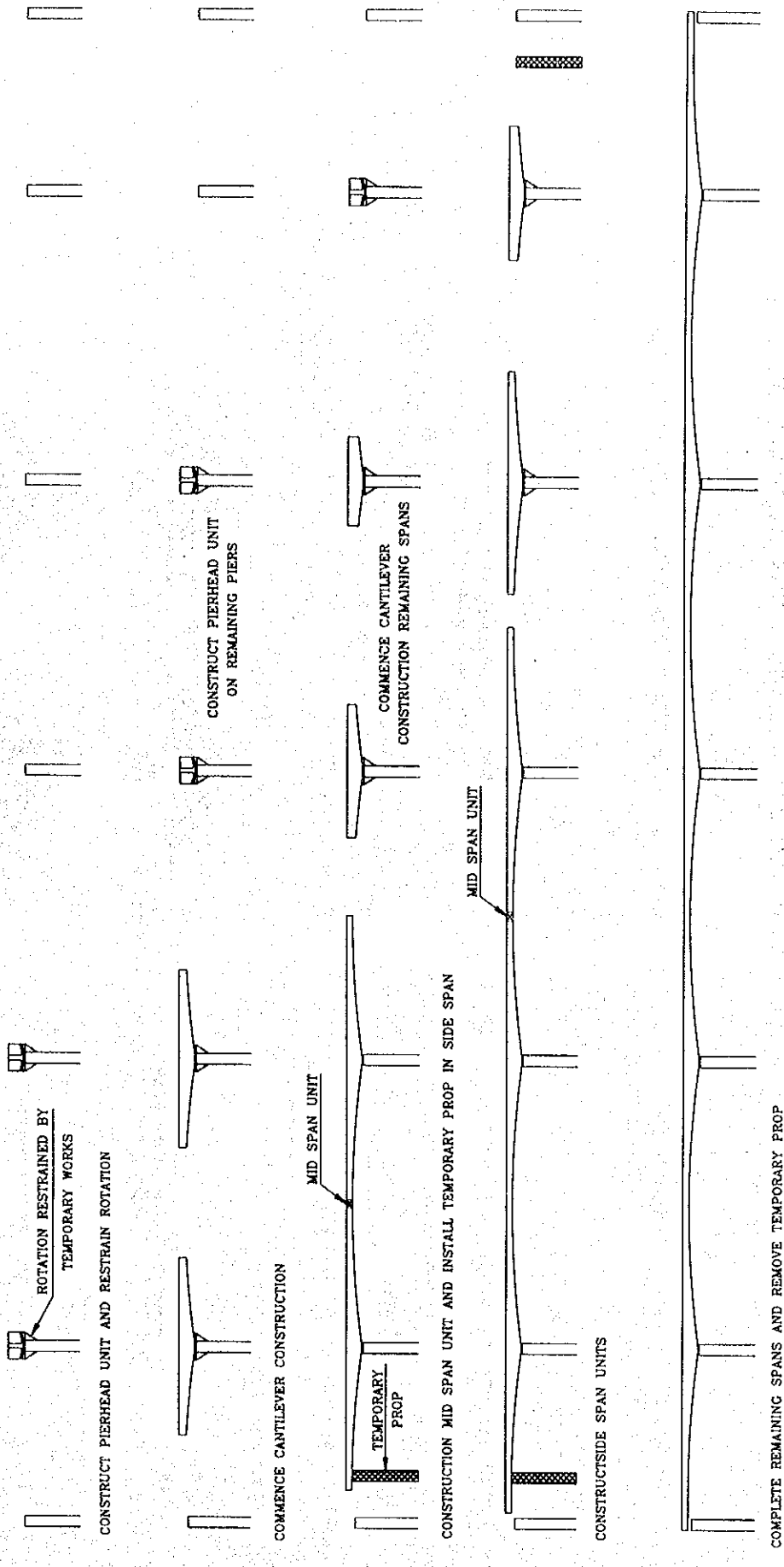


FIGURE 5.7

Drawn by Mr. T. J. ...

THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM	
TRADING PROJECTS MANAGEMENT UNIT, MINISTRY OF TRANSPORT	
FACILITY STUDY FOR THANH TRI BRIDGE AND	
SOUTHERN SECTION OF HOA BANG ROAD (A5.3) IN HA NOI	
DESIGN UNIT	HA NOI CONSULTANTS INTERNATIONAL
DESIGNED BY	
CHECKED BY	
DATE	
SCALE	
NO.	

**THANH TRI BRIDGE**  
**CABLE STAY OPTION - CONSTRUCTION SEQUENCE OF DECK**

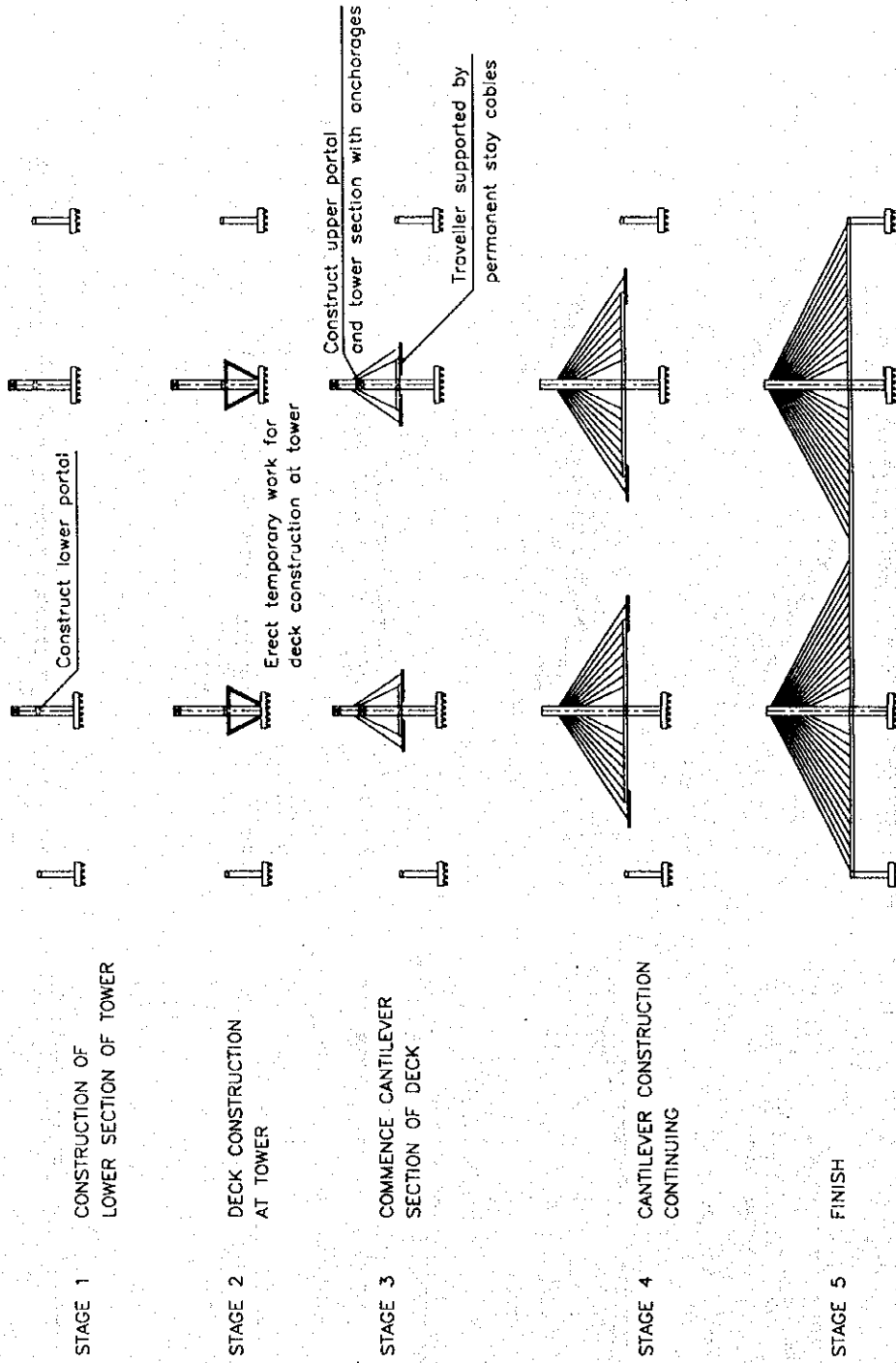
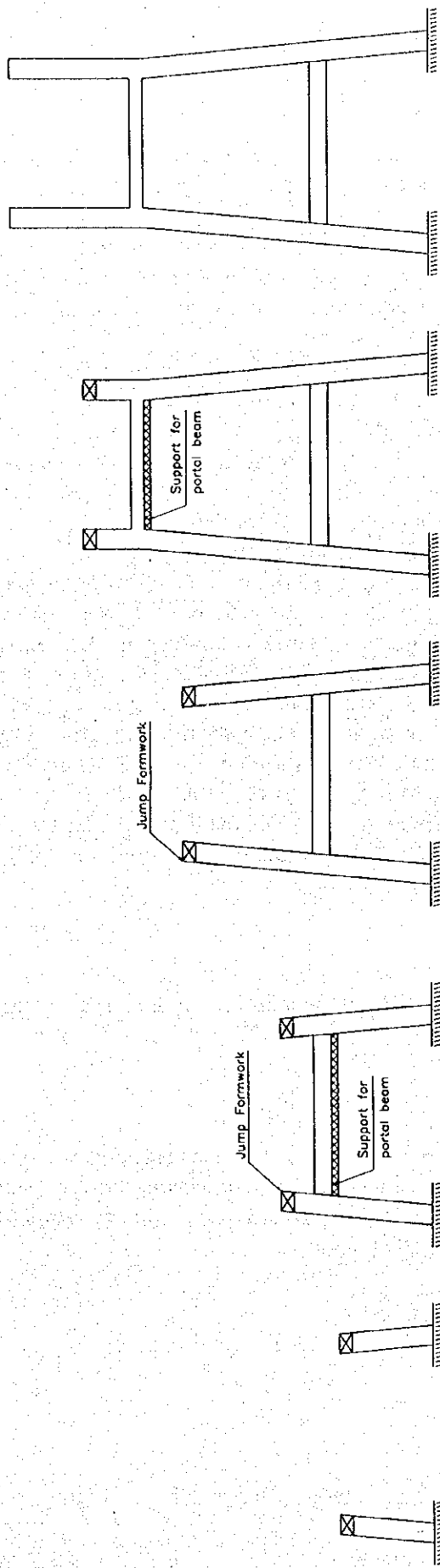


FIGURE 5.9

Drawn by: H. H. H.

# CONSTRUCTION SEQUENCE FOR TOWERS OF CABLE STAY BRIDGE



STAGE 1

- Construct tower leg using jump form technique

STAGE 2

- Construct tower portal beam after jump form has passed  
 (Note: - tower leg construction temporary stop during portal beam construction to minimise slenderness effects)

STAGE 3

- Construct lower leg between upper and lower portal beams.

STAGE 4

- Construct upper portal beam after jump form has passed  
 Construct tower leg above portal beam incorporating stay anchorages.

STAGE 5

Completed Tower.

Note: - Following completion of lower portal beam construction of deck adjacent to tower may commence.

Note: - Following completion of upper portal cantilever erection of deck may commence when individual tower stay anchorages tower beam completed

FIGURE 5.8

Drawn by Mr T.H.N

File: c:\work\case\towers

## Construction Sequence for Approach Bridges

### Approach Bridge (I)

A number of construction techniques are available for the construction of continuous prestressed concrete post-tensioned box girders, namely:-

- (i) the balanced cantilever method using insitu concrete – for short spans the distribution of prestress between the top and bottom flanges is not economical and the construction period for each span is longer than for other methods.
- (ii) the balanced cantilever method using precast concrete – as for the insitu technique the distribution of prestress is not economical for short spans. This method allows the deck to be constructed at the same time as the substructure. However, a precasting yard for the manufacture of the deck units would be required, which will increase the overall cost significantly for short lengths of structure.
- (iii) span by span method – this technique constructs a complete span before prestressing, from  $\frac{1}{4}$  to  $\frac{1}{4}$  points, so allowing an economical use of the prestressing by draping the tendons in the webs between area's requiring prestress i.e. at supports and mid span. The construction sequence for the deck is shown in fig \*.\*.\*. Temporary support for the deck during construction is usually achieved either by steel beams spanning between piers or by falsework from the ground. However, in area's of soft ground, such as Thanh Tri, the use of falsework is not recommended due to the high cost of temporary foundations to limit settlement. This method is not suitable for span over 60 – 70 metres where the initial cost of the temporary works will be significant.

### Approach Bridge (II)

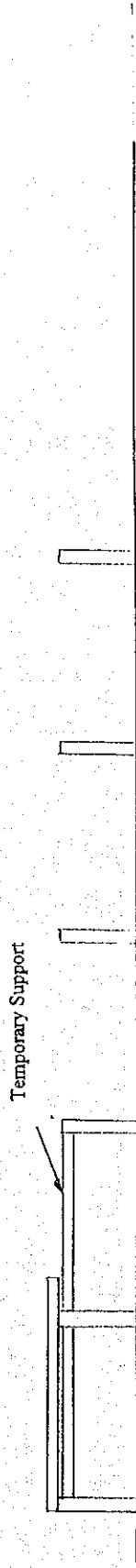
The construction method for precast beam decks have been used recently in the Hanoi area. The experience and equipment are available to local contractors.

## Construction Sequence for Dyke Bridges

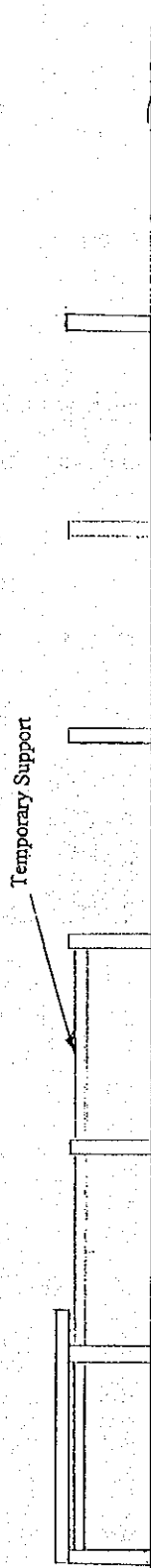
The construction sequence for the dyke will be constructed using either the balanced cantilever method with insitu concrete or supporting the complete deck from falsework. The actual method will depend on the Dyke Authority requirements which will be investigated during the detailed design.



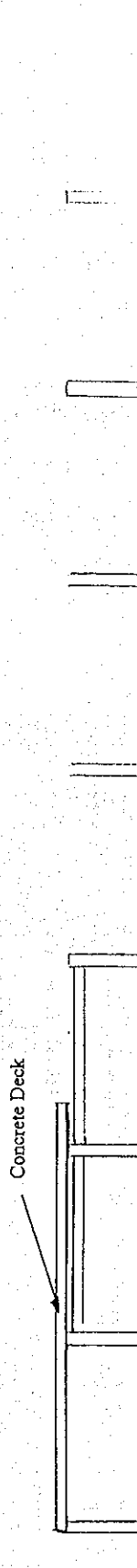
Stage 1 Construct Substructure



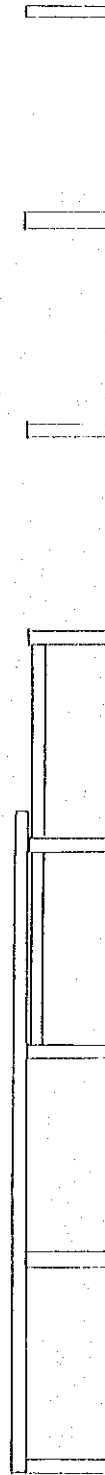
Stage 2 Erect Temporary Support and Construct End Span



Stage 3 Prestress End Span, Move Temporary Support to Third Span



Stage 4 Construct Next Span and Prestress



Stage 5 Move Temporary Support and Repeat

### Construction Method for the Main Bridge Foundation

The applicable foundation types of this project are shown in the above and the Study Team will analyse in detail in the next working step in Japan.

The construction methods of the candidate foundations are briefly shown as follow except driving pipe.

- a. Reverse Circulation Drill Method.

#### 1. Steel Pipe Pile Cofferdam

Steel pipe piles (1.0m dia.) with connecting joints are driven by a 150 ton crane barge to form cofferdams in the river.

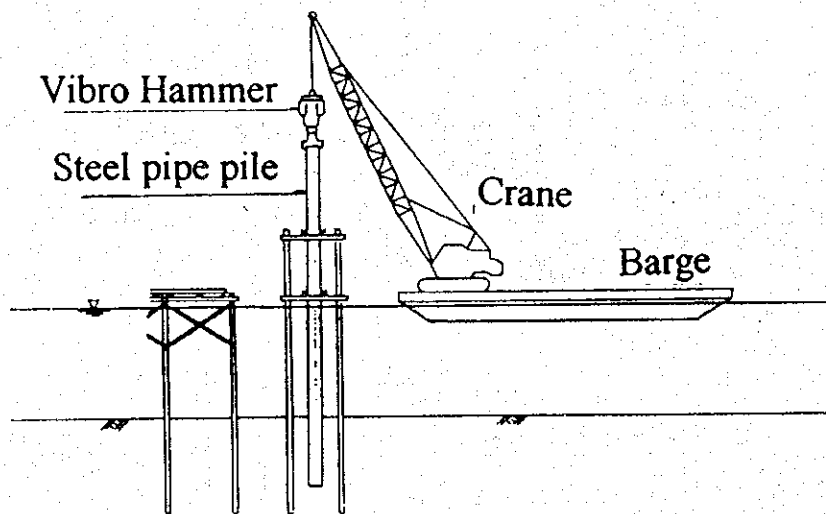


Figure 7.3.7 Steel Pipe Pile Cofferdam



## 2. Reverse Circulation Drill Piles

Holes of the reinforced concrete piles are drilled down to bearing strata through stand pipes while water is still within the cofferdam by RCD method from the staging of the steel pipe pile cofferdam. Reinforcement cages are set, then concrete is poured by tremple pipe to form the Cast-in-Place Reinforced Concrete Pipes.

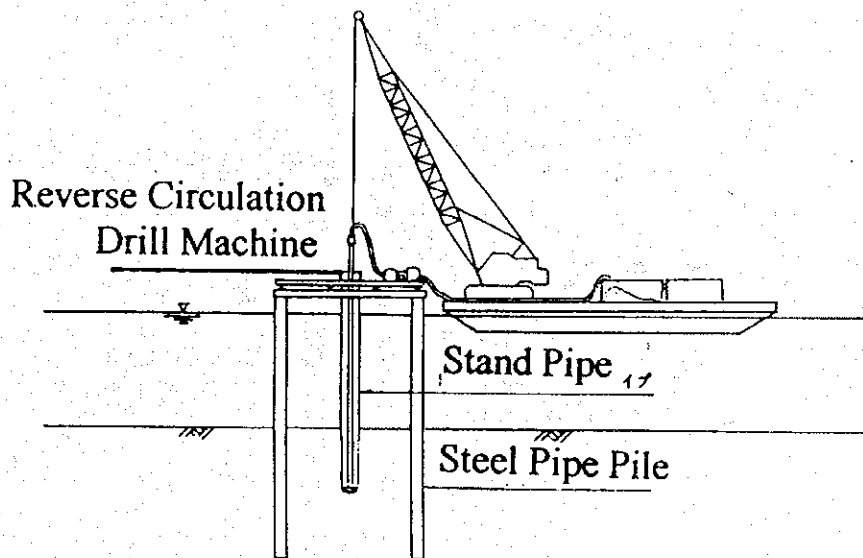


Figure.7.3.8 Reverse Circulation Drill Piles

### 3. Excavation in Cofferdam and Placing of Seal Concrete Underwater

River bed material within the Cofferdam is excavated underwater down to the specified depth. After preparation, concrete is then placed underwater by tremie pipe to establish a firm base and to seal the bottom.

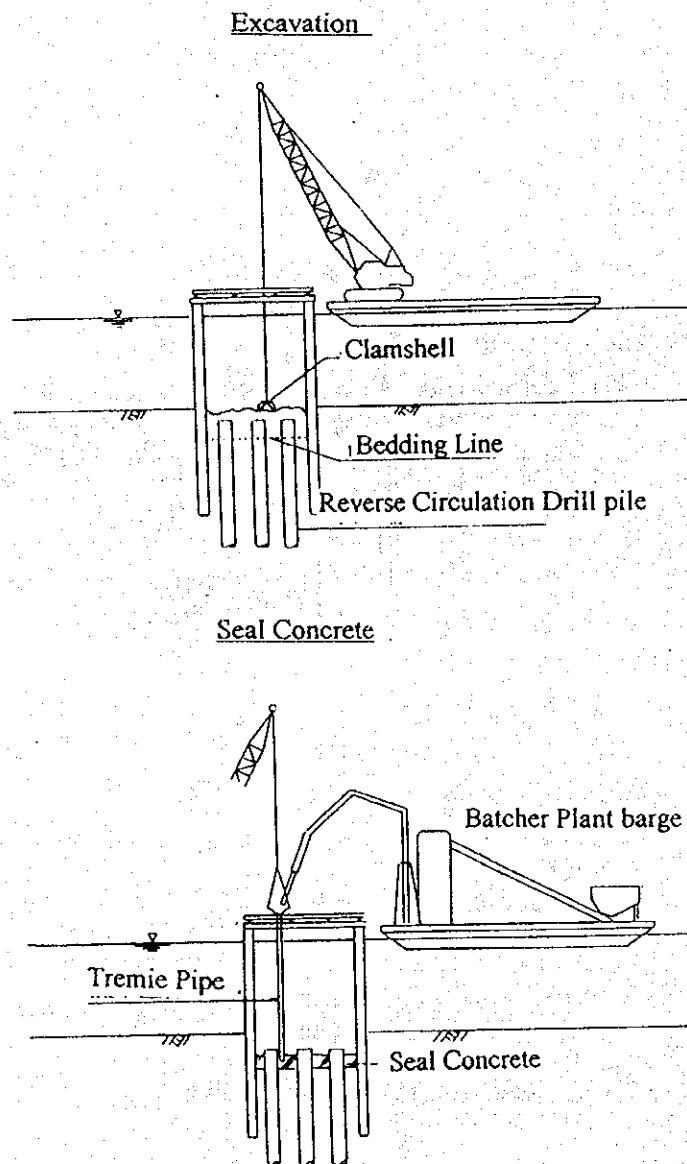


Figure.7.3.9 Excavation in Cofferdam and Placing Seal Concrete Underwater

#### 4. Installation of Steel Shoring and Bracing

As the level of water inside the cofferdams is lowered step by step with pumps, steel shoring and bracing is installed to support against the river water hydropressure. This is continued until the inside of the cofferdams are completely dry.

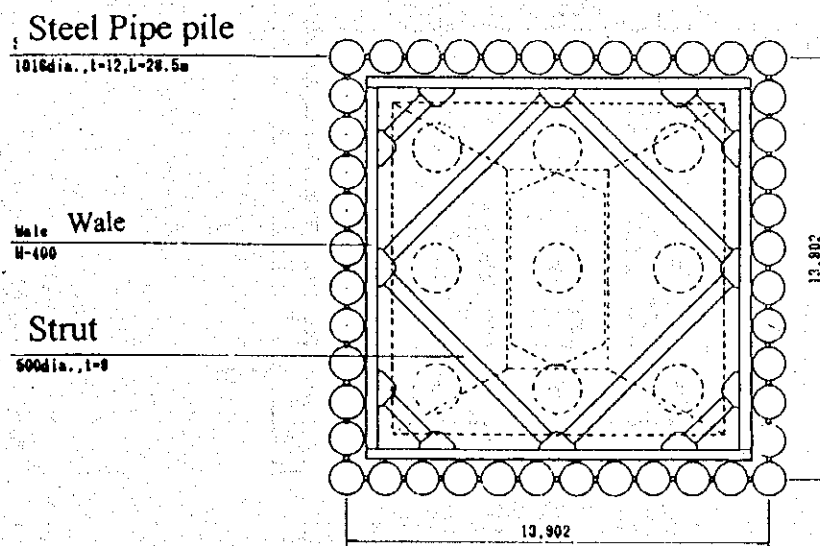
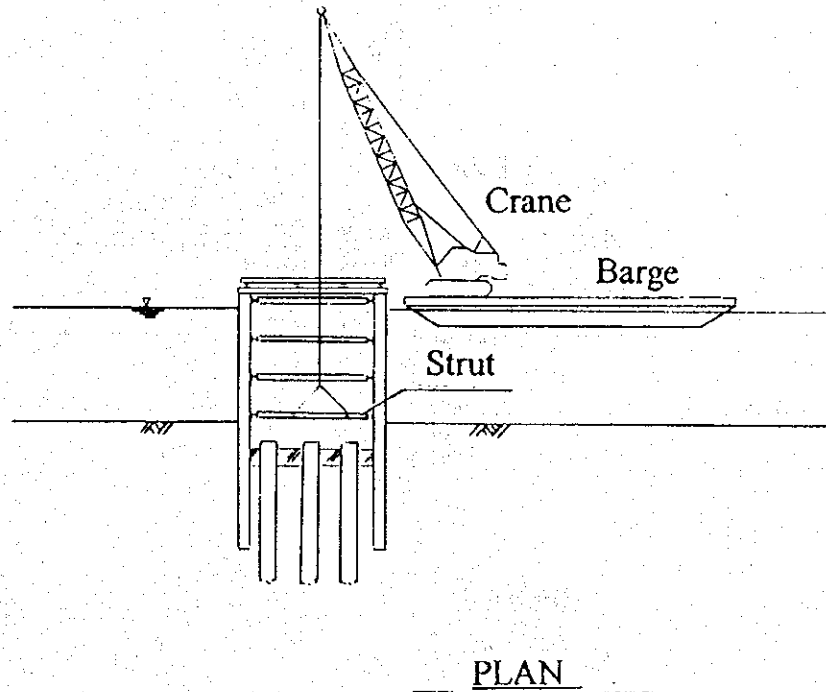


Figure.7.3.10 Installation of Steel Shoring and Bracing

### 5. Construction of Piers

After the preparation of the pile tops, the pile caps, footing, and piers are constructed. Concrete is placed directly by concrete pump, using a special batcher plant barge.

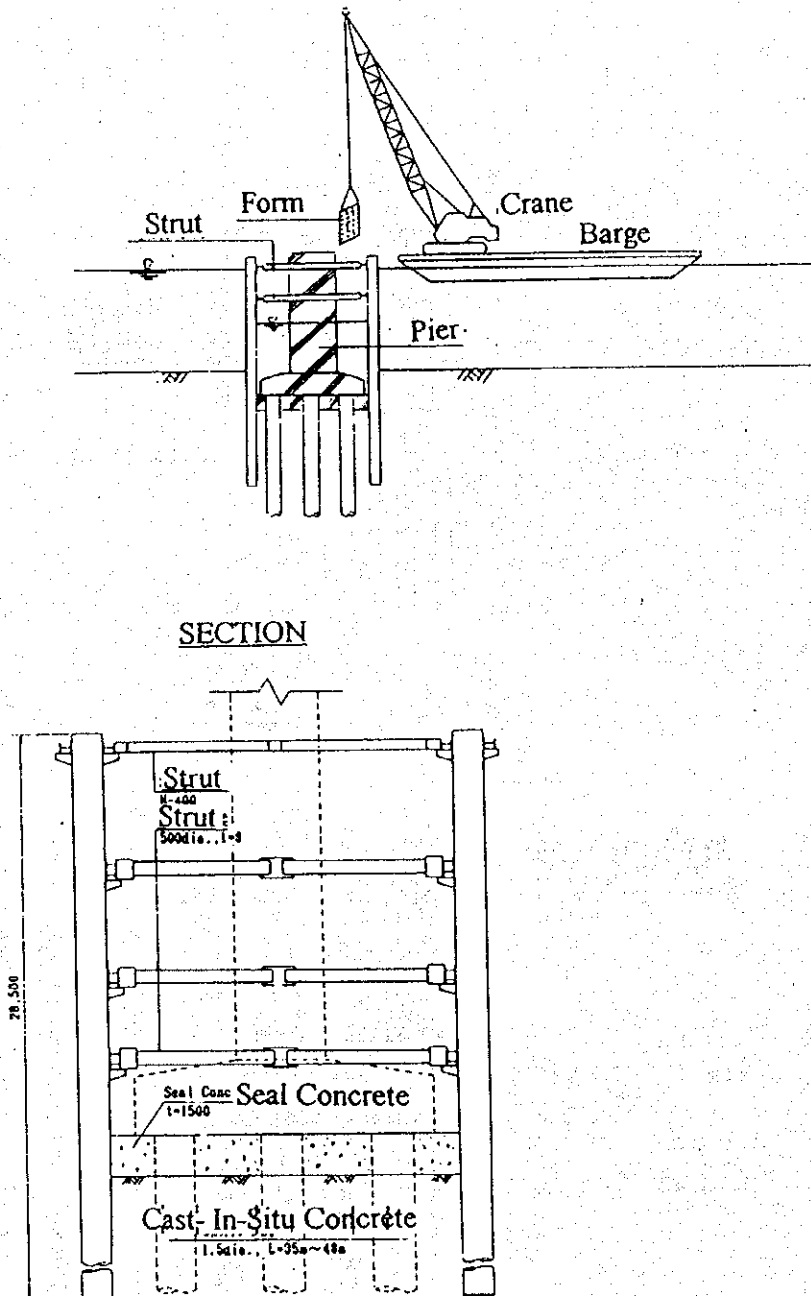
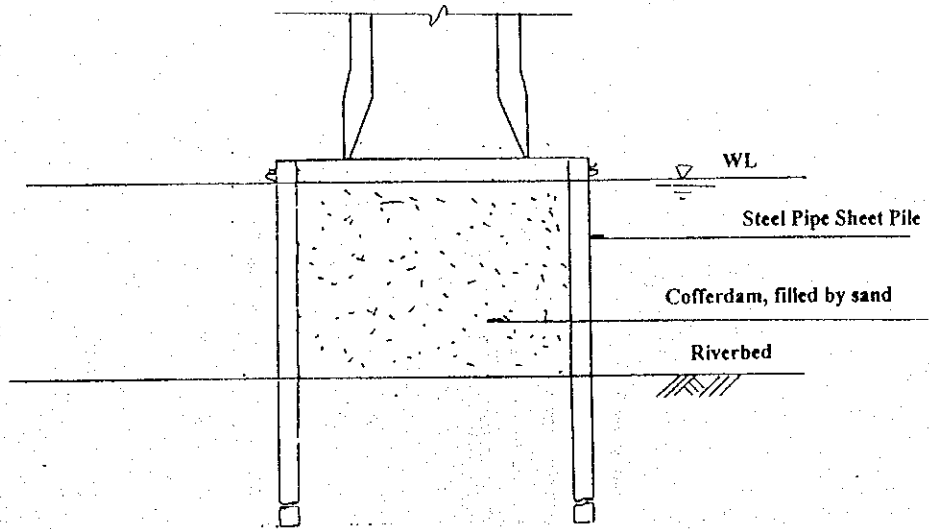


Figure 7.3.11 Constuction Piers

b. Open Caisson.

Before Excavation



Completion

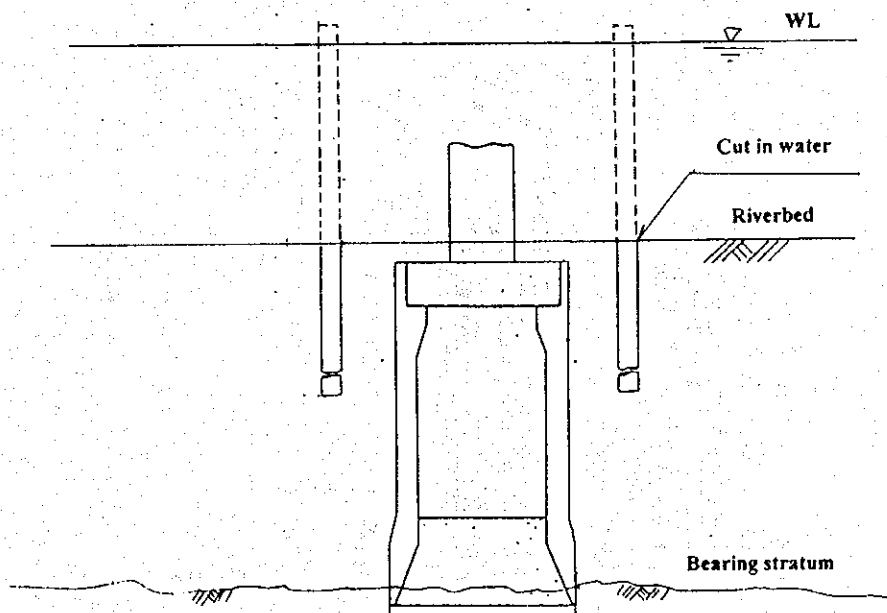


Figure 7.3.12 Open Caisson.

c. Steel Pipe Sheet Pile.

The detailed structure is as shown below

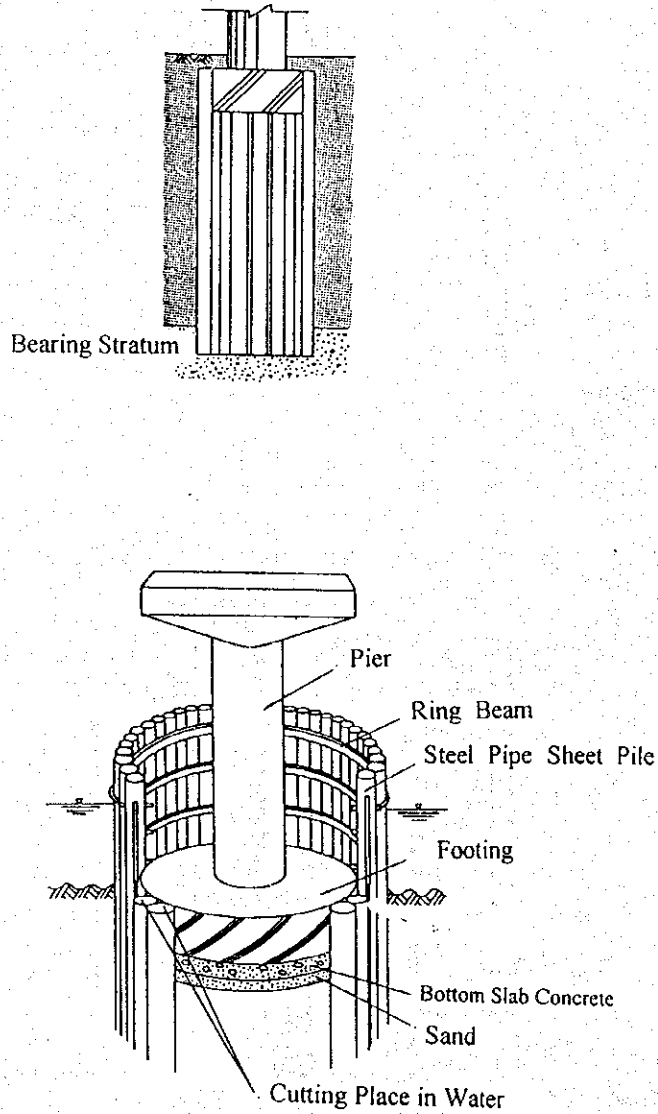


Figure 7.3.13 Steel Pipe Sheet Pile.

d. Sequence of Constuction is as follows

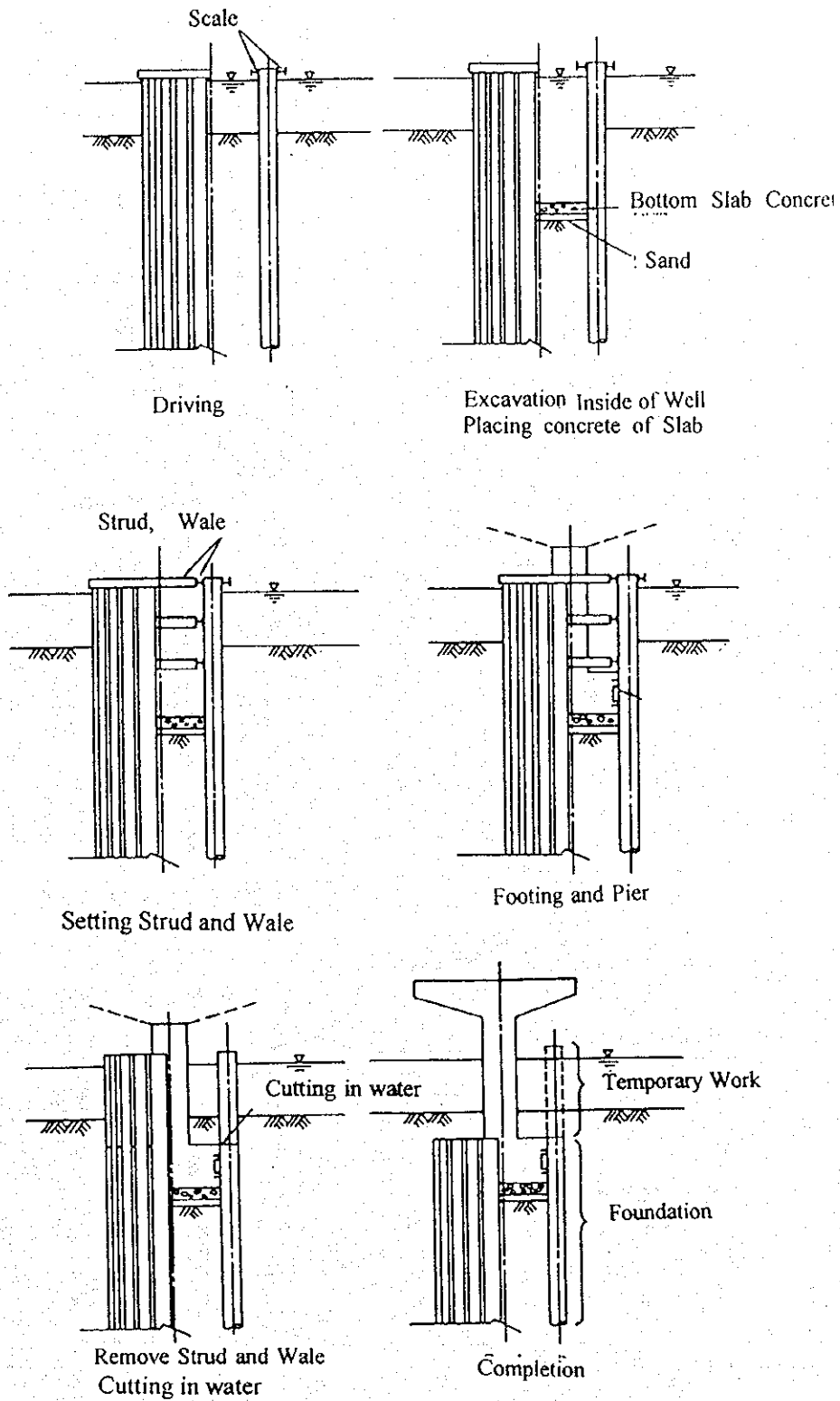


Figure 7.3.14. Sequence of Construction.





## **APPENDIX 6 Chapter 14 Project Cost Estimates**

**Table 14-1 Estimated Construction Cost (Contract Cost)**

**Package 1: Thanh Tri Bridge**

**Table 14-2 Estimated Construction Cost (Contract Cost)**

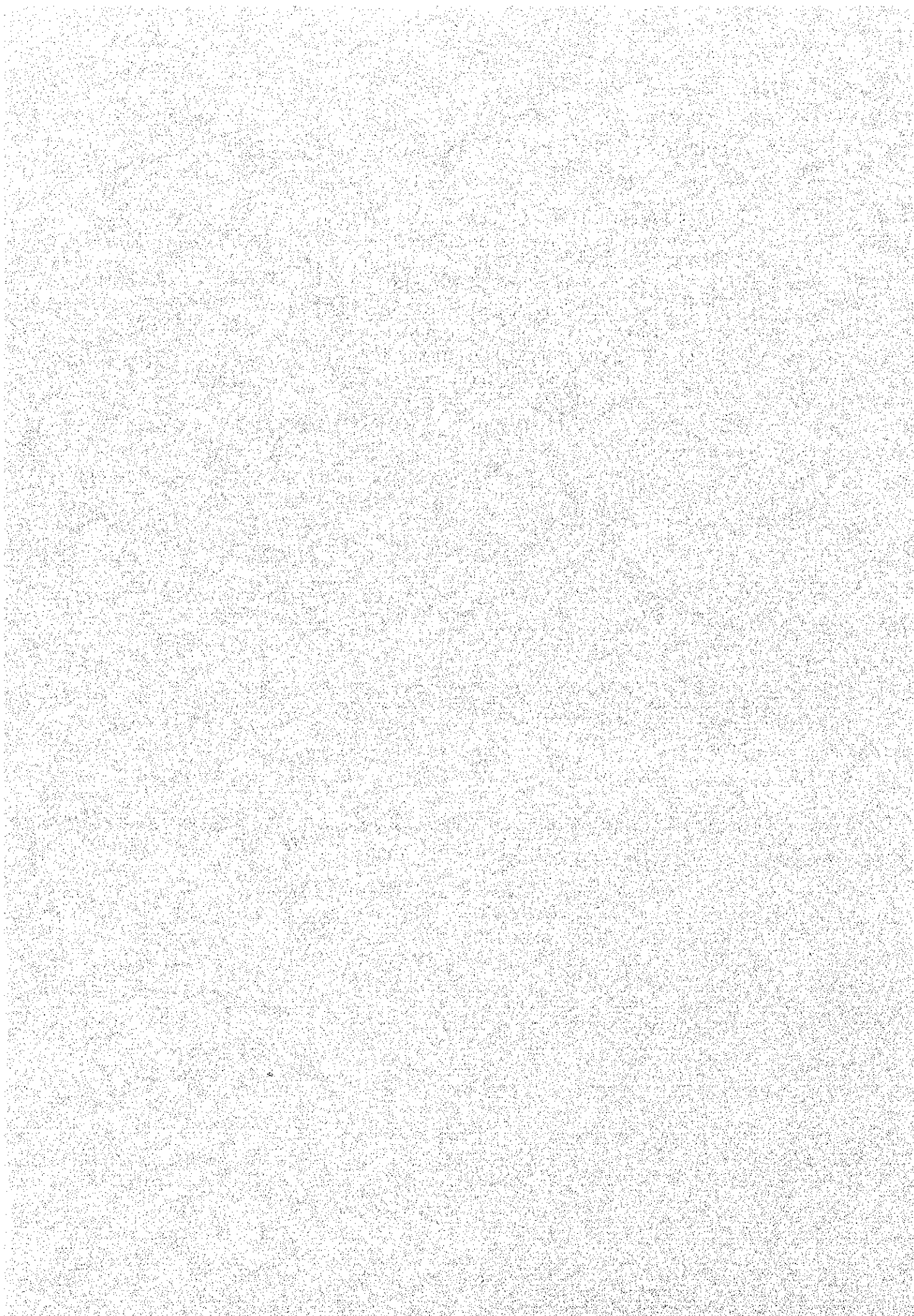
**Package 2: Thanh Tri Section of SHTRR**

**Table 14-3 Estimated Construction Cost (Contract Cost)**

**Package 3: Gia Lam Section of SHTRR**

**Table 14-4 Reference: Estimated Construction Cost**

**Thanh Tri Bridge(PC Cable Stayed Bridge)**



Appendix Table 14.1 Estimated Construction Cost (Contract Cost)  
Package 1: Thanh Tri Bridge

Item	Unit	Unit Cost (Dong)	Quantity	Total (1,000 Dong)
<b>1. Main Bridge</b>				
- Superstructure	sq.m	20,720,000	21,488	445,231,360
- Substructure	cu.m	3,108,000	32,656	101,494,848
- Pile Foundation (cast-in-situ concrete pile $\phi$ 2,000)	l.m	12,432,000	6,076	75,536,832
- Cofferdam	each	31,080,000,000	5	155,400,000
Subtotal				777,663,040
<b>2. Approach Bridge (1)</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	14,504,000	19,952	289,383,808
- Substructure	cu.m	3,108,000	14,400	44,755,200
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	9,936	102,936,960
Subtotal				437,075,968
<b>Gia Lam side</b>				
- Superstructure	sq.m	14,504,000	24,648	357,494,592
- Substructure	cu.m	3,108,000	18,000	55,944,000
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	12,420	128,671,200
Subtotal				542,109,792
Subtotal of Approach Bridge (1)				979,185,760
<b>3. Approach Bridge (2)</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	6,216,000	9,480	58,927,680
- Substructure	cu.m	3,108,000	6,000	18,648,000
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	3,680	38,124,800
Subtotal				115,700,480
<b>Gia Lam side</b>				
- Superstructure	sq.m	6,216,000	10,428	64,820,448
- Substructure	cu.m	3,108,000	6,600	20,512,800
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	4,048	41,937,280
Subtotal				127,270,528
Subtotal of Approach Bridge (2)				242,971,008
<b>4. Dyke Bridge</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	20,720,000	8,848	183,330,560
- Substructure	cu.m	3,108,000	10,138	31,508,904
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	4,160	43,097,600
Subtotal				257,937,064
<b>Gia Lam side</b>				
- Superstructure	sq.m	17,612,000	5,688	100,177,056
- Substructure	cu.m	3,108,000	8,358	25,976,664
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	3,360	34,809,600
Subtotal				160,963,320
Subtotal of Dyke Bridge				418,900,384
<b>Total</b>				<b>2,418,720,192</b>

Appendix Table 14.1 (2) Summary of Bridge Unit Price

No.	Item	Unit Price (1,000Dong/m <sup>2</sup> )
1	<b>Main Bridge</b>	
	Superstructure	20,720
	Substructure/Foundation	8,239
	Cofferdam	7,232
	<b>Total</b>	36,191
2	<b>Approach Bridge - (1)</b>	
	Superstructure	14,504
	Substructure/Foundation	7,451
	<b>Total</b>	21,955
3	<b>Approach Bridge - (2)</b>	
	Superstructure	6,216
	Substructure/Foundation	5,989
	<b>Total</b>	12,205
4	<b>Dyke Bridge</b>	
	1) <b>Thanh Tri side</b>	
	Superstructure	20,720
	Substructure/Foundation	8,432
	<b>Total</b>	29,152
	2) <b>Gia Lam side</b>	
	Superstructure	17,612
	Substructure/Foundation	10,687
<b>Total</b>	28,299	

**Appendix Table 14.2 Estimated Construction Cost (Contract Cost)1/2**  
**Package 2 : Thanh Tri Section of SHTRR**

Item	Unit	Unit Cost (Dong)	Quantity	Total (1,000 Dong)
<b>1. Earthwork</b>				
Embankment (Borrow Material)	cu.m	142,200	970,000	137,934,000
Treatment of Embankment Foundation	sq.m	482,000	105,000	50,610,000
Sub Total				188,544,000
<b>2. Pavement</b>				
Crusher-Run Subbase Course	cu.m	145,700	74,800	10,898,360
Stabilized Aggregate Base Course	cu.m	259,400	40,000	10,376,000
Asphalt Treated Base Course	ton	491,000	35,600	17,479,600
Asphalt Concrete Binder Course	ton	624,500	17,800	11,116,100
Asphalt Concrete Surface Course	ton	624,500	27,970	17,467,265
Asphalt Cement	ton	3,492,000	4,630	16,167,960
Concrete Sidewalk (t = 10 cm)	sq.m	462,000	64,900	29,983,800
Sub Total				113,489,085
<b>3. Drainage Structures and RC Box Culvert</b>				
Pipe Culvert ( D = 0.80 m)	l.m	2,950,000	75	221,250
Pipe Culvert ( D = 1.0 m)	l.m	3,923,000	-	-
Concrete U-Ditch	l.m	4,707,000	1,960	9,225,720
Concrete U-Ditch, covered	l.m	1,575,000	11,300	17,797,500
Inlet with Grating	each	5,343,000	669	3,574,467
RC Box Culvert, 3.0 m (H) x 2.0 m (W)	l.m	14,400,000	170	2,448,000
RC Box Culvert, 3.0 m (H) x 3.0 m (W)	l.m	24,120,000	140	3,376,800
RC Box Culvert, 5.0 m (H) x 5.0 m (W)	l.m	36,000,000	245	8,820,000
RC Box Culvert, 6.0 m (H) x 7.0 m (W)	l.m	67,630,000	295	19,950,850
Sub Total				65,414,587
<b>4. Bridges</b>				
PC-I Girder Bridge, with Foundation Piling	sq.m	10,500,000	35,040	367,920,000
Sub Total				367,920,000
<b>5. Miscellaneous</b>				
Sodding, Solid	sq. m	40,600	109,080	4,428,648
Vehicle Guardrail, Double, Blocked Type	l.m	792,000	5,660	4,482,720
Vehicle Guardrail, Standard	l.m	528,000	11,300	5,966,400
Pedestrian Guardrail	l.m	264,000	10,800	2,851,200
Fence Work	l.m	326,500	11,300	3,689,450
Concrete Curb	l.m	250,000	22,120	5,530,000
Toll Gate	LS	-	-	-
Sub Total				26,948,418
<b>6. Road Lighting and Signal</b>				
Street Lighting Pole, Y-Type with Cabling	each	33,200,000	-	0
Street Lighting Pole, Single Type with Cabling	each	28,000,000	534	14,952,000
Traffic Signal	each	56,400,000	16	902,400
Traffic Signal Control Panel	each	221,500,000	2	443,000
Sub Total				16,297,400
<b>7. Provisional Sum</b>				
Improvement of Existing Road and Environmental Protection Measures	LS	5,000,000,000	-	5,000,000
Re-Routing of Existing Drainage and Utilities	LS	5,000,000,000	-	5,000,000
Sub Total				10,000,000
<b>Total</b>				<b>788,613,490</b>

**Appendix table 14.3 Estimated Construction Cost (Contract Cost)  
Package 3 : Gia Lam Section of SHTRR**

Item	Unit	Unit Cost (Dong)	Quantity	Total (1,000 Dong)
<b>1. Earthwork</b>				
Embankment (Borrow Material)	cu.m	142,200	424,000	60,292,800
Treatment of Embankment Foundation	sq.m	482,000	15,800	7,615,600
Sub Total				67,908,400
<b>2. Pavement</b>				
Crusher-Run Subbase Course	cu.m	145,700	27,300	3,977,610
Stabilized Aggregate Base Course	cu.m	259,400	13,100	3,398,140
Asphalt Treated Base Course	ton	491,000	15,784	7,749,944
Asphalt Concrete Binder Course	ton	624,500	7,890	4,927,305
Asphalt Concrete Surface Course	ton	624,500	9,660	6,032,670
Asphalt Cement	ton	3,492,000	1,860	6,495,120
Concrete Sidewalk (t = 10 cm)	sq.m	462,000	6,400	2,956,800
Sub Total				35,537,589
<b>3. Drainage Structures and RC Box Culvert</b>				
Pipe Culvert ( D = 0.80 m)	l.m	2,950,000	65	191,750
Pipe Culvert ( D = 1.0 m)	l.m	3,923,000	390	1,529,970
Concrete U-Ditch	l.m	4,707,000	1,020	4,801,140
Concrete U-Ditch, covered	l.m	1,575,000	2,140	3,370,500
Inlet with Grating	each	5,343,000	200	1,068,600
RC Box Culvert, 3.0 m (H) x 2.0 m (W)	l.m	14,400,000	125	1,800,000
RC Box Culvert, 3.0 m (H) x 3.0 m (W)	l.m	24,120,000	110	2,653,200
RC Box Culvert, 5.0 m (H) x 5.0 m (W)	l.m	36,000,000	125	4,500,000
RC Box Culvert, 6.0 m (H) x 7.0 m (W)	l.m	67,630,000	65	4,395,950
Sub Total				24,311,110
<b>4. Bridges</b>				
PC I- Girder Bridge, with Foundation Piling	sq.m	10,500,000	23,550	247,275,000
Sub Total				247,275,000
<b>5. Miscellaneous</b>				
Sodding, Solid	sq. m	40,600	58,100	2,358,860
Vehicle Guardrail, Double, Blocked Type	l.m	792,000	22,200	17,582,400
Vehicle Guardrail, Standard	l.m	528,000	44,300	23,390,400
Pedestrian Guardrail	l.m	264,000	1,070	282,480
Fence Work	l.m	326,500	4,430	1,446,395
Concrete Curb	l.m	250,000	5,500	1,375,000
Toll Gate	LS			39,800,000
Sub Total				86,235,535
<b>6. Road Lighting and Signal</b>				
Street Lighting Pole, Y-Type with Cabling	each	33,200,000		0
Street Lighting Pole, Single Type with Cabling	each	28,000,000	114	3,192,000
Traffic Signal	each	56,400,000	16	902,400
Traffic Signal Control Panel	each	221,500,000	2	443,000
Sub Total				4,537,400
<b>7. Provisional Sum</b>				
Improvement of Existing Road and Environmental Protection Measures	LS	5,000,000,000		5,000,000
Re-Routing of Existing Drainage and Utilities	LS	5,000,000,000		5,000,000
Sub Total				10,000,000
<b>Total</b>				<b>475,805,034</b>

Appendix Table 14.4

Reference: Estimated Construction Cost  
Thanh Tri Bridge (PC Cable Stayed Bridge)

Item	Unit	Unit Cost (Dong)	Quantity	Total (1,000 Dong)
<b>1. Main Bridge</b>				
- Superstructure	sq.m	46,620,000	16,432	766,059,840
- Tower	cu.m	20,720,000	8,156	168,992,320
- Substructure	cu.m	3,108,000	24,696	76,755,168
- Pile Foundation (cast-in-situ concrete pile $\phi$ 2,000)	l.m	12,432,000	5,952	73,995,264
- Cofferdam	each	15,540,000,000	8	124,320,000
Subtotal				1,210,122,592
<b>2. Approach Bridge (1)</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	14,504,000	22,120	320,828,480
- Substructure	cu.m	3,108,000	15,600	48,484,800
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	10,764	111,515,040
Subtotal				480,828,320
<b>Gia Lam side</b>				
- Superstructure	sq.m	14,504,000	27,176	394,160,704
- Substructure	cu.m	3,108,000	20,400	63,403,200
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	14,076	145,827,360
Subtotal				603,391,264
Subtotal of Approach Bridge (1)				1,084,219,584
<b>3. Approach Bridge (2)</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	6,216,000	9,480	58,927,680
- Substructure	cu.m	3,108,000	6,000	18,648,000
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	3,680	38,124,800
Subtotal				115,700,480
<b>Gia Lam side</b>				
- Superstructure	sq.m	6,216,000	10,428	64,820,448
- Substructure	cu.m	3,108,000	6,600	20,512,800
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	4,048	41,937,280
Subtotal				127,270,528
Subtotal of Approach Bridge (2)				242,971,008
<b>4. Dyke Bridge</b>				
<b>Thanh Tri side</b>				
- Superstructure	sq.m	20,720,000	8,848	183,330,560
- Substructure	cu.m	3,108,000	10,138	31,508,904
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	4,160	43,097,600
Subtotal				257,937,064
<b>Gia Lam side</b>				
- Superstructure	sq.m	17,612,000	5,688	100,177,056
- Substructure	cu.m	3,108,000	8,358	25,976,664
- Pile Foundation (cast-in-situ concrete pile $\phi$ 1,500)	l.m	10,360,000	3,360	34,809,600
Subtotal				160,963,320
Subtotal of Dyke Bridge				418,900,384
<b>Total</b>				<b>3,214,150,632</b>





## **APPENDIX 7 Chapter 16 Economic and Financial Analysis**

Table 16.3.1 Gross Regional domestic Product per Worker in the Study Area

Table 16.3.2 Income Structure in the Study Area

Table 16.3.3 Working Time Value by the Type of Vehicle Users

Table 16.3.4 Time Value of Trips by Vehicle Types

Table 16.3.5 Comparison of Time Saving with and without Project

Table 16.3.6 Input Data for Unit Vehicle Operating Cost Calculation by Base Speed

Table 16.3.7 Unit Vehicle Operating Cost Per Km by Base Speed

Table 16.3.8 Composite Unit of Vehicle Operating Cost

Table 16.4.1 Cost Benefit Analysis for Investment Justification  
Prestressed Concrete Cable Stay Bridge

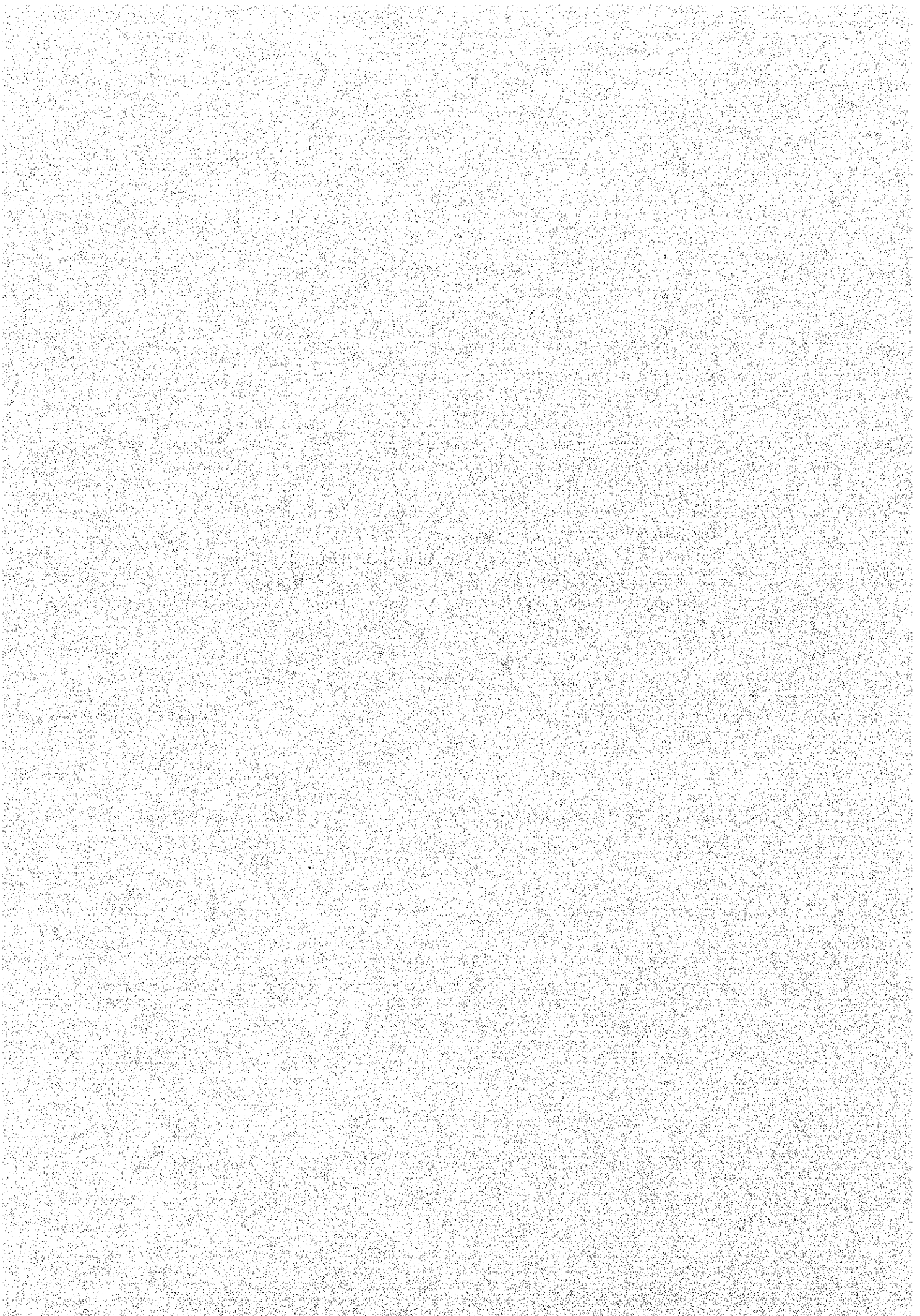
Table 16.5.1 Toll Rate of Thang Long and TL-NB Highway in 1998

Table 16.6.1 Revenue and Expenditure of Chuong Duong & Thang Long  
Bridges

Table 16.6.2 Interest During Construction and Total Debt

Table 16.6.3 Cost and Toll Revenue Analysis of Thanh Tri Bridge  
Private Base, Case 2

Table 16.6.4 Cost and Toll Revenue Analysis of Thanh Tri Bridge  
Private Base,1



Appendix Table A16.3.1 Gross Regional Domestic Product per Worker in the Study Area

1) GRDP in the Study Area			
Gross Regional Domestic Product	a	1996	6,121,000 Mil.Dong
Annual Growth Rate: 9%	b=aX9%	1997	6,671,890 Mil.Dong
2) Number of Workers in Study Area			
Population	c	1996	10,079,400
Average annual growth: 2.7%	d=cX2.7%	1997	10,351,544
Employment ratio: 50%	e		0.50
Number of Workers in 1997	f=dX50%		5,175,772
3) GRDP per Worker		1997	1,289,062 Dong
	g=b/f		

Appendix Table A16.3.2 Income Structure in Study Area Unit:dong

	Rich	Upper Rich	Middle	Lower Middle	Poor
Income per person by class	445,690	173,750	94,540	62,050	38,980
Distribution of class	2.5%	15.1%	36.6%	24.5%	21.3%
Average income by class	309,720		65,190		
Ratio	4.75		1		

Note: Monthly Income in 1993,Dong

Source: Statistical Data on Labor and Social Affairs 1994

Appendix Table A16.3.3 Working Time Value by the Type of Vehicle User

Unit : Dong

Vehicle User	Income/Year	Time Value/Hour
Income Level of Car Passenger	6,123,045	3,402
Income Level of Pedestrians & Bus Passengers	1,289,062	716
Income Level of Motorcycle Passengers	3,706,053	2,059

Note: Divided by Weighted Average Working Hour 1800

Appendix Table A16.3.4 Time Value of Trips by Vehicle Types

Unit :  
Dong

Usage of Vehicle Types by Passenger	Trip Purpose			Time Productivity			Utilization of Trip	
	Work	Non-Leisure	Leisure	Work	Non-Leisure	Leisure	of Time	Time Value/h
	a	b	c	d	e=bx0.60	f	g=d+e	h
Passenger Car	35%	45%	20%	35%	27%	0%	62%	2,109
Bus(& Pedestrians)	15%	60%	25%	15%	36%	0%	51%	365
Motorcycle	35%	45%	20%	35%	27%	0%	62%	1,277
	No. of Passengers		Trip Time Value/Vehicle/Hour			Trip Time Value/Minute		
Passenger Car	2.8		5,905 Dong			98.42 Dong		
Bus	29.3		10,701 Dong			178.36 Dong		
Motorcycle	1.06		1,353 Dong			22.55 Dong		

Business trips are valued at 100% of wage while non-work related trips are valued at 60%

Source: (1) Statistical Data on Labor and Social Affairs 1994

(2) Chapter 4. of this Report)

Appendix Table 16.3.5 Comparison of Time Saving With and Without Project

Unit: Vehicle-Hour/day

No.	Year	Without Project / day			With Project / day			Time Saving (vehicle-hour / day)					
		P.Car a	Bus b	Truck c	M.cycle d	P.Car e	Bus f	Truck g	M.cycle h	P.Car i=a-e	Bus j=b-f	Truck k=c-g	M.cycle l=d-h
1	2004	28,386	16,348	52,023	473,298	24,700	13,463	44,625	414,218	3,685	2,885	7,398	59,080
2	2005	31,877	18,245	56,601	506,429	27,739	15,025	48,552	443,214	4,139	3,220	8,049	63,216
3	2006	35,798	20,361	61,581	541,879	31,150	16,767	52,824	474,239	4,648	3,594	8,757	67,641
4	2007	40,201	22,723	67,001	579,811	34,982	18,712	57,473	507,435	5,219	4,011	9,528	72,376
5	2008	45,146	25,359	72,897	620,398	39,285	20,883	62,530	542,956	5,861	4,476	10,366	77,442
6	2009	50,699	28,301	79,312	663,826	44,117	23,306	68,033	580,963	6,582	4,995	11,278	82,863
7	2010	56,935	31,584	86,291	710,293	49,543	26,009	74,020	621,630	7,392	5,575	12,271	88,663
8	2011	67,980	33,479	92,418	684,012	59,154	27,570	79,275	598,630	8,826	5,909	13,142	85,383
9	2012	81,169	35,487	98,979	658,704	70,630	29,224	84,904	576,480	10,538	6,264	14,075	82,224
10	2013	96,915	37,616	106,007	634,332	84,333	30,977	90,932	555,151	12,583	6,639	15,075	79,181
11	2014	115,717	39,873	113,533	610,862	100,693	32,836	97,388	534,610	15,024	7,038	16,145	76,252
12	2015	138,166	42,266	121,594	588,260	120,228	34,806	104,303	514,829	17,938	7,460	17,291	73,430
13	2016	164,970	44,802	130,227	566,494	143,552	36,894	111,708	495,781	21,418	7,908	18,519	70,713
14	2017	196,974	47,490	139,474	545,534	171,401	39,108	119,640	477,437	25,574	8,382	19,834	68,097
15	2018	235,187	50,339	149,376	525,349	204,652	41,454	128,134	459,772	30,535	8,885	21,242	65,577
16	2019	280,814	53,360	159,982	505,911	244,355	43,942	137,232	442,760	36,459	9,418	22,750	63,151
17	2020	335,292	56,561	171,341	487,193	291,760	46,578	146,975	426,378	43,532	9,983	24,365	60,814
18	2021	385,585	59,389	179,908	469,166	335,524	48,907	154,324	410,602	50,061	10,482	25,584	58,564
19	2022	443,423	62,359	188,903	451,807	385,852	51,352	162,040	395,410	57,571	11,006	26,863	56,397
20	2023	509,937	65,477	198,348	435,090	443,730	53,920	170,142	380,780	66,206	11,557	28,206	54,311
21	2024	586,427	68,751	208,266	418,992	510,290	56,616	178,649	366,691	76,137	12,134	29,616	52,301
22	2025	674,391	72,188	218,679	403,489	586,833	59,447	187,582	353,123	87,558	12,741	31,097	50,366
23	2026	775,550	75,797	229,613	388,560	674,858	62,419	196,961	340,058	100,691	13,378	32,652	48,503
24	2027	891,882	79,587	241,093	374,183	776,087	65,540	206,809	327,476	115,795	14,047	34,285	46,708
25	2028	1,025,664	83,567	253,148	360,339	892,500	68,817	217,149	315,359	133,164	14,750	35,999	44,980

Appendix Table A16.3.6 Input Data for Unit Vehicle Operating Cost Calculation by Base Speed

Unit : Dong

Items	Passenger Car	Van	Mid-Bus	Large Bus	Medium Truck	Heavy Truck	MotorCycle
Vehicle Price(Excl. Tyres)Fin-Dong	214,000,000	236,300,000	262,000,000	945,000,000	277,200,000	558,000,000	19,760,000
Vehicle Price(excl. Tyres)Econ-Dong	173,205,000	200,855,000	227,939,000	822,149,000	252,252,000	505,680,000	17,629,500
Vehicle Life(Years)	8	9	9	8	8	8	6
Vehicle Life Km	104,000	255,000	382,500	320,000	224,000	322,500	90,000
Vehicle Annual Km	13,000	30,000	45,000	40,000	28,000	43,000	15,000
Vehicle Life Operating Hours	4,000	10,200	12,750	12,800	9,600	11,250	3,600
Vehicle Annual Operating Hours	500	1,200	1,500	1,600	1,200	1,500	600
Fuel Price (Fin-Dong/Liter)	4,500	3,600	3,500	3,500	3,500	3,500	4,200
Fuel Price (Econ-Dong/Liter)	3,150	2,520	2,450	2,450	2,450	2,450	2,940
Fuel Consumption (Liter/Km)	0	0	0	0	0	0	0
Tyre Unit Price (Fin-Dong /Price)	855,460	855,460	1,657,636	2,334,321	2,334,321	2,334,321	855,460
Tyre Unit Price (Econ-Dong/Price)	777,691	777,691	1,823,400	2,122,110	2,122,110	2,122,110	777,691
Number of Tyres	4	4	4	6	6	6	2
Tyre Life -Km	30,000	30,000	30,000	40,000	40,000	40,000	30,000
Lubricants Price(Fin-Gong/Liter)	3,300	9,417	13,320	20,038	9,417	18,067	3,300
Lubricants Price(Econ-Dong/Liter)	2,310	6,592	9,324	14,026	6,592	13,550	2,310
Lubri OilConsumpt. (Liter/100km)	1	1	2	2	3	3	0
Maintenance Spares/Year (%)	7	8	8	10	8	8	3
Maintenance Labor(Hour/1000km)	3	7	15	15	12	15	2
Maintenance LaborCost(Fin-Dong/h)	10,293	10,393	11,837	11,837	13,381	20,586	10,393
Maintenance LaborCost(Econ-D./h)	8,234	8,234	9,469	9,469	10,705	16,468	8,234
Depreciation Distance Related(%)	60	70	80	85	70	70	60
Depreciation Time Related(%)	40	30	20	15	30	30	40
Opportunity Cost of Capital(%)	12	12	12	12	12	12	12
Real Rate of Interest of Capital (%)	8	8	8	8	8	8	8
Overhead cost(Annum Fin-Dong)	0	3,285,000	7,391,250	657,000	3,066,000	7,062,750	0
Overhead cost(Annum Econ-Dong)	0	3,285,000	7,391,250	657,000	3,066,000	7,062,750	0
Crew-Number(Driver)	0	1	1	1	1	1	0
Crew-Number(Assistant)	0	0	1	1	1	1	0
Crew Unit Cost (Fin-Dong/Hour)	0	9,112	9,112	10,478	10,478	10,478	0
Crew Unit Cost(Econ-Dong/Hour)	0	8,200	8,300	9,430	9,430	9,430	0

Unit: Dong

Appendix Table A16.3.7 Unit Vehicle Operating Cost Per Km by Base Speed

Items	Passenger Car	Van	Mid-Bus	Large Bus	Medium Truck	Heavy Truck	M/Cycle
<b>(1) Basic Financial Running Costs</b>							
Fuel Costs	585.00	504.00	630.00	875.00	945.00	1,050.00	126.00
Lubricant Costs	3.96	12.24	26.64	44.08	28.25	61.43	0.66
Tyre Costs	114.06	114.06	221.02	350.15	350.15	583.58	57.03
Maintenance Spares Costs	144.04	74.13	54.80	295.31	99.00	138.42	6.59
Maintenance Labor Costs	30.88	72.75	177.56	177.56	160.57	308.79	20.79
Depreciation Costs	1,234.62	648.67	547.97	2,510.16	866.25	1,211.16	131.73
Total Running Costs/vehicle-km	2,112.55	1,425.85	1,657.98	4,252.26	2,449.22	3,353.38	342.80
<b>(2) Basic Financial Fixed Costs</b>							
Capital Costs (Dep.-Time Relation)	21,400.00	6,950.00	4,109.80	11,074.22	8,662.50	14,880.00	2,195.56
Long Term Interest Cost	51,360.00	23,630.00	20,960.00	70,875.00	27,720.00	44,640.00	3,952.00
Overhead Cost	0.00	2,737.50	4,927.50	410.63	2,555.00	4,708.50	0.00
Crew Costs	0.00	9,112.00	18,224.00	20,956.00	20,956.00	20,956.00	0.00
Fixed Costs, All	72,760.00	42,429.50	48,221.30	103,315.84	59,893.50	85,184.50	6,147.56
Factor	0.30	0.50	0.65	0.65	0.70	0.70	0.30
Total Fixed Costs/Vehicle-hour	21,828.00	21,214.75	31,343.85	67,155.30	41,925.45	59,629.15	1,844.27
Total Fixed Costs/Vehicle-km	485.07	471.44	696.53	1,678.88	1,048.14	1,490.73	46.11
Total Financial Cost/Vehicle-km	2,597.62	1,897.29	2,354.51	5,931.14	3,497.36	4,844.11	388.90
<b>(1) Basic Economic Running Costs</b>							
Fuel Costs	409.50	352.80	441.00	612.50	661.50	735.00	88.20
Lubricant Costs	2.77	8.57	18.65	30.86	19.78	46.07	0.46
Tyre Costs	103.69	103.69	243.12	318.32	318.32	530.53	51.85
Maintenance Spares Costs	116.58	63.01	47.67	256.92	90.09	125.44	5.88
Maintenance Labor Costs	24.70	57.64	142.04	142.04	128.46	247.02	16.47
Depreciation Costs	999.26	551.37	476.74	2,183.83	788.29	1,097.60	117.53
Total Running Costs/vehicle-km	1,656.51	1,137.08	1,369.21	3,544.46	2,006.43	2,781.66	280.38
<b>(2) Basic Economic Fixed Costs</b>							
Capital Costs (Dep.-TimeRelation)	17,320.50	5,907.50	3,575.51	9,634.56	7,882.88	13,484.80	1,958.83
Opportunity Cost of Capital	41,569.20	20,085.50	18,235.12	61,661.18	25,225.20	40,454.40	3,525.90
Overhead Cost	0.00	2,737.50	4,927.50	410.63	2,555.00	4,708.50	0.00
Crew Costs	0.00	8,200.00	16,600.00	18,860.00	18,860.00	18,860.00	0.00
Fixed Costs, All	58,889.70	36,930.50	43,338.13	90,566.36	54,523.08	77,507.70	5,484.73
Factor	0.30	0.50	0.65	0.65	0.70	0.70	0.30
Total Fixed Costs/Vehicle-hour	17,666.91	18,465.25	28,169.79	58,868.13	38,166.15	54,255.39	1,645.42
Total Fixed Costs/Vehicle-km	392.60	410.34	626.00	1,471.70	954.15	1,356.38	41.14
Total Economic Costs/Vehicle-km	2,049.10	1,547.42	1,995.21	5,016.17	2,960.58	4,138.04	321.52

Appendix Table A16.3.8 Composite Unit of Vehicle Operating Cost  
(Economic) Unit: Dong

Speed km/h	Passenger Car			Bus			Truck			Motor Cycle		
	Running	Fixed	Total	Running	Fixed	Total	Running	Fixed	Total	Running	Fixed	Total
10	3,564	395	3,959	3,410	419	3,830	4,159	998	5,157	381	41	422
15	3,271	395	3,666	3,172	419	3,591	3,788	998	4,787	355	41	397
20	3,001	395	3,396	2,957	419	3,376	3,453	998	4,451	334	41	375
25	2,753	395	3,148	2,766	419	3,186	3,152	998	4,150	316	41	357
30	2,528	395	2,923	2,599	419	3,018	2,886	998	3,885	302	41	343
35	2,325	395	2,720	2,456	419	2,875	2,655	998	3,654	292	41	333
40	2,145	395	2,540	2,337	419	2,756	2,460	998	3,458	286	41	327
45	1,987	395	2,382	2,241	419	2,661	2,299	998	3,298	284	41	325
50	1,852	395	2,247	2,170	419	2,589	2,173	998	3,172	286	41	327
55	1,739	395	2,135	2,122	419	2,541	2,083	998	3,081	291	41	332
60	1,649	395	2,044	2,098	419	2,517	2,027	998	3,026	300	41	342
65	1,581	395	1,977	2,098	419	2,517	2,006	998	3,005	314	41	355
70	1,536	395	1,932	2,122	419	2,541	2,021	998	3,019	331	41	372
75	1,514	395	1,909	2,169	419	2,589	2,070	998	3,069	352	41	393
80	1,513	395	1,909	2,241	419	2,660	2,155	998	3,153	377	41	418
85	1,536	395	1,931	2,336	419	2,756	2,274	998	3,272	405	41	447
90	1,581	395	1,976	2,456	419	2,875	2,428	998	3,427	438	41	479
95	1,648	395	2,044	2,599	419	3,018	2,618	998	3,616	475	41	516

Appendix Table A16.4.1 Cost Benefit Analysis for Investment Justification  
 Prestressed Concrete Cable Stay Bridge

Internal Economic Rate of Return: 12.07% Unit : Million Dong

year	Economic Cost			Benefits				Present Worth		
	Capital	Routine Operation	Total	Passenger Time	V.O.C Saving		Total	Discount Factor	Cost Mill.Dong	Benefit Mill.Dong
					Distance	Design				
1	125,982		125,982					0.892	112,411	
2	369,976		369,976					0.796	294,562	
3	1,079,500		1,079,500					0.710	766,879	
4	1,700,859		1,700,859					0.634	1,078,137	
5	1,270,196		1,270,196					0.566	718,419	
6		8,256	8,256	48,391	235,795	95,748	379,934	0.505	4,167	191,742
7		8,256	8,256	52,718	253,224	105,553	411,495	0.450	3,718	185,299
8		8,256	8,256	57,459	272,446	116,609	446,514	0.402	3,317	179,410
9		8,256	8,256	62,658	293,702	129,114	485,474	0.359	2,960	174,052
10		8,256	8,256	68,361	317,274	143,301	528,936	0.320	3,114	169,207
11		8,256	8,256	74,620	343,490	159,449	577,559	0.285	2,357	164,859
12		8,256	8,256	81,493	372,735	177,888	632,116	0.255	2,103	160,995
13		8,256	8,256	84,270	388,808	191,768	664,846	0.227	1,876	151,091
14		8,256	8,256	87,786	407,441	207,663	702,890	0.203	1,674	142,530
15		8,256	8,256	92,158	428,960	225,903	747,021	0.181	1,761	135,162
16		8,256	8,256	97,528	453,748	246,877	798,153	0.161	1,333	128,857
17		8,256	8,256	104,067	482,257	271,045	857,369	0.144	1,189	123,507
18		8,256	8,256	111,974	515,020	298,954	925,948	0.129	1,061	119,018
19		8,256	8,256	121,491	552,662	331,247	1,005,400	0.115	947	115,310
20		8,256	8,256	132,905	595,919	368,689	1,097,513	0.102	996	112,315
21		8,256	8,256	146,557	645,655	412,183	1,204,395	0.091	754	109,976
22		8,256	8,256	162,856	702,722	462,713	1,328,291	0.081	673	108,224
23		8,256	8,256	162,856	702,722	462,713	1,328,291	0.073	600	96,566
24		8,256	8,256	162,856	702,722	462,713	1,328,291	0.065	536	86,164
25		8,256	8,256	162,856	702,722	462,713	1,328,291	0.058	478	76,883
26		8,256	8,256	162,856	702,722	462,713	1,328,291	0.052	503	68,601
27		8,256	8,256	162,856	702,722	462,713	1,328,291	0.046	380	61,211
28		8,256	8,256	162,856	702,722	462,713	1,328,291	0.041	339	54,618
29		8,256	8,256	162,856	702,722	462,713	1,328,291	0.037	303	48,734
30		8,256	8,256	162,856	702,722	462,713	1,328,291	0.033	270	43,485
	4,552,421	206,400	4,758,821	2,890,140	12,883,634	7,646,408	23,420,182	12.07%	3,007,816	3,007,816



Appendix Table A16.5.1 Toll Rate of Thang Long Bridge and TL-NB Hwy in 1998

Unit: Dong

Classification	Toll Fee	Traffic Component	Weighted	Average Toll Fee
Passenger Cars	12,000	100%	12,000	12,000
Bus				21,480
Small Bus	20,000	63%	12,600	
Large Bus	24,000	37%	8,880	
Truck				22,840
Small Truck	20,000	50%	10,000	
Truck	24,000	43%	10,320	
Trailer	36,000	7%	2,520	
Motor Cycles				667
Each Payment	1,000	50%	500	
Monthly Payment	333	50%	167	

Toll fee: Toll rate on Thang Long bridge and 15km of TL-NB Highway

Toll on Chuong Duong Bridge is 50% of the Thang Long Bridge.

Traffic component: Ref. Table 3-18, Summary of Traffic Count Survey

Appendix Table A16.6.1 Revenue and Expenditure of Chuong Duong & Thang Long Bridge

Unit: Billion Dong

Chuong Duong Bridge		1995		1996		1997
1) Toll revenue		17,316		20,400		24,408
2) Use	Collection	3,069	18%	2,968	15%	
	Repairing	7,321	42%	9,272	45%	
	State Budget	6,926	40%	8,160	40%	
		17,316	100%	20,400	100%	

Thang Long Bridge & Noi Bai HWY		1995		1996		1997
1) Toll revenue				15,636		19,356
2) Use	Collection	3,063		3,390	22%	
	Repairing			5,992	38%	
	State Budget			6,254	40%	
				15,636	100%	

(Revenue in Year 1997 is based on the first 8 months data)

Source: Thang Long and Chuong Duong Bridge Management Agency No.234

Appendix Table 16.6.2 Interest During Construction and Total Debt

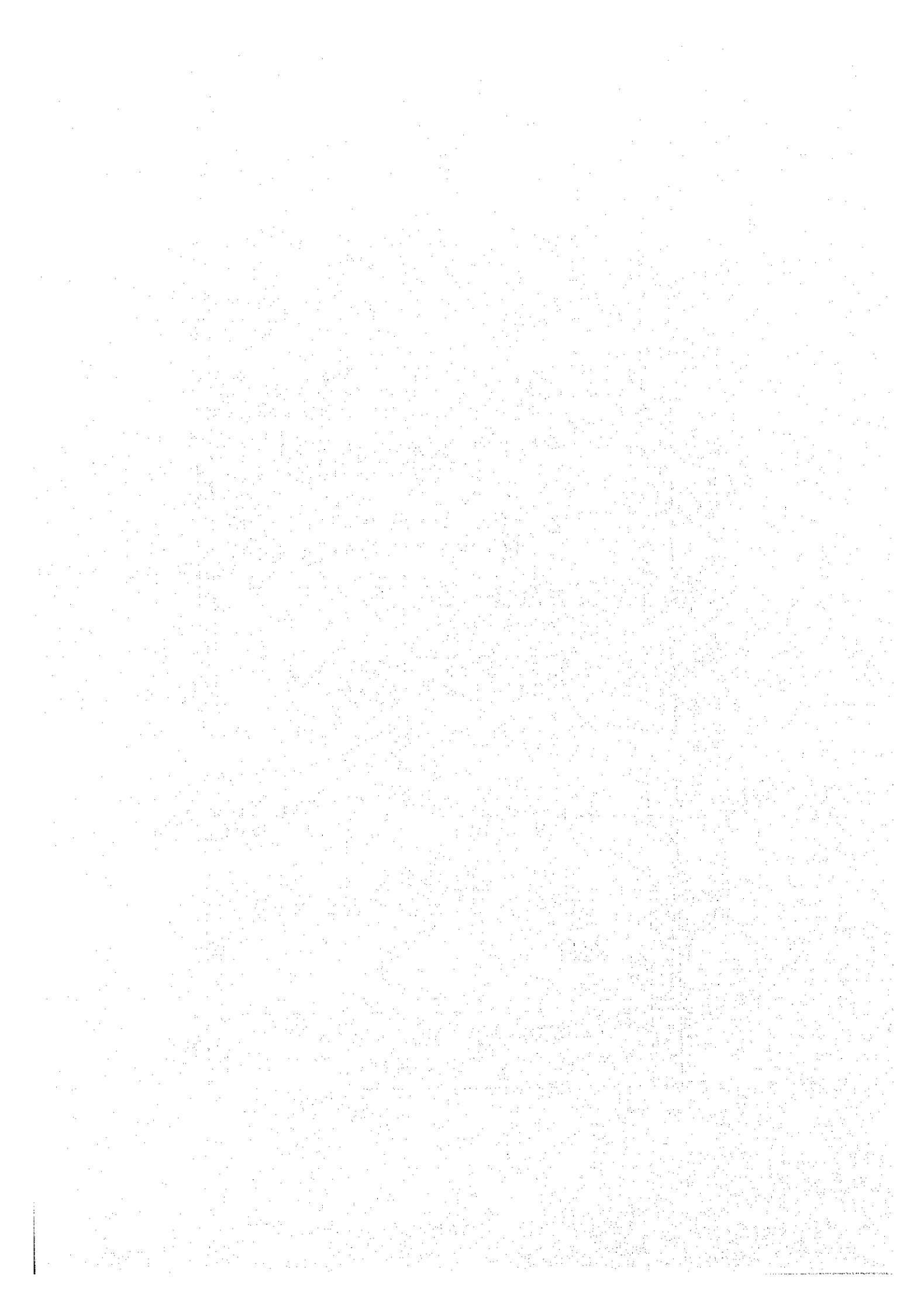
Year	Capital Cost		Fund Component		Interest during Const.		Total Debt
	Allocation	Comp.	Equity	Bank Loan	Balance	Bank Loan	
1999	123,517	3%	1,375,977	86,462	-1,289,515		
2000	361,329	8%	0	252,930	-1,036,585		
2001	1,054,047	23%	0	737,833	-298,752		
2002	1,740,617	38%	0	1,218,432	919,680	193,133	1,112,813
2003	1,307,079	28%	0	914,955	1,834,636	183,464	2,018,099
	4,586,589	100%		3,210,612		376,596	3,130,912

Appendix Table A16.6.3 Cost and Toll Revenue Analysis of Thanh Tri Project  
 Private Base, Case 2 (Charge to be Increased from 45% of Benefit in 1998 to 70% in 2020)

Year	Unit Million Dong										
	Capital Cost	Toll Revenue	Ment. & Repair	Operation	Depreciation	Bank Loan	Profit Before Tax	Tax	Net Inflow	Discount Rate	Present Value
1	123.517								-123.517	0.947	-116.933
2	361.329								-361.329	0.896	-323.836
3	1,054.047								-1,054.047	0.848	-894.320
4	1,740.617								-1,740.617	0.803	-1,398.128
5	1,307.079								-1,307.079	0.760	-993.932
6		189.737	27.520	37.947	229.329	313.091	-418.151	0	124.270	0.720	89.461
7		209.097	27.520	41.819	229.329	292.218	-381.790	0	139.758	0.682	95.247
8		230.863	27.520	46.173	229.329	271.346	-343.504	0	157.171	0.645	101.405
9		255.412	27.520	51.082	229.329	250.473	-302.992	0	176.810	0.611	107.995
10		283.199	32.106	56.640	229.329	229.600	-264.477	0	194.453	0.578	112.441
11		314.766	27.520	62.953	229.329	208.727	-213.764		224.293	0.547	122.783
12		350.767	27.520	70.153	229.329	187.855	-164.090	-16.409	269.503	0.518	139.667
13		375.964	27.520	75.193	229.329	166.982	-123.060	-12.306	285.538	0.491	140.099
14		404.974	27.520	80.995	229.329	146.109	-78.979	-7.898	304.338	0.464	141.363
15		438.483	32.106	87.697	229.329	125.236	-35.886	-3.589	322.269	0.440	141.704
16		477.318	27.520	95.464	229.329	104.364	20.642	2.064	352.271	0.416	146.640
17		522.477	27.520	104.495	229.329	83.491	77.642	7.764	382.698	0.394	150.814
18		575.166	27.520	115.033	229.329	62.618	140.666	14.067	418.547	0.373	156.150
19		636.842	27.520	127.368	229.329	41.745	210.879	21.088	460.866	0.353	162.773
20		709.268	32.106	141.854	229.329	20.873	285.106	28.511	506.798	0.334	169.455
21		794.579	27.520	158.916	229.329		378.814	37.881	570.262	0.317	180.511
22		895.123	27.520	179.025	229.329		459.249	45.925	642.654	0.300	192.583
23		925.508	27.520	185.102	229.329		483.557	48.356	664.531	0.284	188.524
24		957.009	27.520	191.402	229.329		508.758	50.876	687.212	0.269	184.567
25		989.670	32.106	197.934	229.329		530.300	53.030	706.600	0.254	179.658
26		1,023.536	27.520	204.707	229.329		791.309	79.131	712.178	0.241	171.425
27		1,058.654	27.520	211.731	229.329		819.404	81.940	737.463	0.228	168.049
28		1,095.072	27.520	219.014	229.329		848.538	84.854	763.684	0.216	164.748
29		1,132.842	27.520	226.568	229.329		878.754	87.875	790.879	0.204	161.520
30		1,172.017	32.106	234.403	229.329		905.307	90.551	814.957	0.193	157.566
		16,018.343	710.921	3,203.669	4,586.589	2,504.730	5,012.434	693.711	6,823.453	5.63%	0

**Appendix Table A1.6.6.4 Cost and Toll Revenue Analysis of Thanh Tri Project  
Private Base, Case 1 (Charging 45% of Benefit)**

Year	Internal Financial Rate of Return 2.80%											Unit Million Dong	
	Capital Cost	Toll Revenue	Ment. & Repair	Operation	Depreciation	Bank Loan	Profit Before Tax	Tax	Net Inflow	Discount Rate	Present Value		
1	123,317								-123,317	0.973	-120,151		
2	361,329								-361,329	0.946	-341,905		
3	1,054,047								-1,054,047	0.920	-970,205		
4	1,740,617								-1,740,617	0.895	-1,558,504		
5	1,307,079								-1,307,079	0.871	-1,138,434		
6		169,235	27,520	33,847	229,329	313,091	-434,552	0	107,868	0.847	91,391		
7		182,944	27,520	36,589	229,329	292,218	-402,712	0	118,836	0.824	97,939		
8		198,095	27,520	39,619	229,329	271,346	-369,719	0	130,956	0.802	104,987		
9		214,882	27,520	42,976	229,329	250,473	-335,416	0	144,386	0.780	112,599		
10		233,534	32,106	46,707	229,329	229,600	-304,209	0	154,721	0.759	117,371		
11		254,318	27,520	50,864	229,329	208,727	-262,122		175,935	0.738	129,827		
12		277,549	27,520	55,510	229,329	187,855	-222,665	-22,266	216,786	0.718	155,613		
13		291,377	27,520	58,275	229,329	166,982	-190,729	-19,073	224,655	0.698	156,867		
14		307,185	27,520	61,437	229,329	146,109	-157,210	-15,721	233,949	0.679	158,906		
15		325,246	32,106	65,049	229,329	125,236	-126,475	-12,648	240,738	0.661	159,061		
16		345,886	27,520	69,177	229,329	104,364	-84,504	-8,450	257,640	0.643	165,589		
17		369,485	27,520	73,897	229,329	83,491	-44,752	-4,475	272,544	0.625	170,395		
18		396,496	27,520	79,299	229,329	62,618	-2,270	-227	289,904	0.608	176,310		
19		427,448	27,520	85,490	229,329	41,745	43,364	4,336	310,102	0.592	183,454		
20		462,969	32,106	92,594	229,329	20,875	88,067	8,807	329,462	0.575	189,596		
21		503,797	27,520	100,759	229,329		146,189	14,619	360,899	0.560	202,028		
22		550,676	27,520	110,135	229,329		183,692	18,369	394,652	0.545	214,902		
23		556,922	27,520	111,384	229,329		188,689	18,869	399,149	0.530	211,428		
24		563,253	27,520	112,651	229,329		193,753	19,375	403,708	0.515	208,016		
25		569,672	32,106	113,934	229,329		194,302	19,430	404,201	0.501	202,595		
26		576,178	27,520	115,236			433,423	43,342	390,081	0.488	190,189		
27		582,774	27,520	116,555			438,700	43,870	394,830	0.474	187,259		
28		589,462	27,520	117,892			444,050	44,405	399,645	0.461	184,378		
29		596,243	27,520	119,249			449,475	44,947	404,527	0.449	181,544		
30		603,118	32,106	120,624			450,388	45,039	403,349	0.437	176,956		
		4,586,589	710,921	2,029,749	4,586,589	2,504,730	316,755	242,549	2,578,936	2.80%	0		







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