Appendix 27 Affected Property Inventory and Land Acquisition/Compensation Costs for Pre-FS Projects

A27.1 Introduction

The affected property inventory for all pre-FS projects and the costs for land acquisition and compensation for the Pre-FS projects were estimated based on the unit costs provided by the RDA Land Acquisition Division.

A27.2 Affected Property Inventory

Table A27.1 Affected Property Inventory along Marine Drive

Category	Number of Affected Properties	
	Northern Section	**Southern Section**
Residential Building		
One story	24	64
2 and 3 stories	8	18
More than 3 stories	-	-
Commercial Buildings		
One story	2	11
2 and 3 stories	3	5
More than 3 stories	1	2
Subtotal	**38**	**100**
Tree (Girth)		
<0.3m	19	53
0.3m<G<1.5m	52	74
>1.5m	1	2

Source: This Study

Table A27.2 Affected Property Inventory for B-152

Category	Number of Affected Properties	
	Partially Damaged	**Fully Damaged**
Asbestos Roofed Houses	7	1
Asbestos Roofed Buildings	23	3
Tile Roofed Houses	13	-
Tin Roofed Shops	7	3
Tin Roofed Buildings	2	3
3-Story Concrete Roofed Buildings	1	-
Asbestos Roofed Shops	17	-
2Story Asbestos Roofed Shops	5	-
Concrete Roofed Buildings	6	-
Buildings Under Construction	2	-
Tile Roofed Shops	1	-
2Story Asbestos Roofed Buildings	1	-
Factory	1	-
Foundation	1	-
Hut	-	1
Statue	-	1
Total	85	12

Source: RDA Land Acquisition Division (2005)

Table A27.3 Affected Property Inventory for B-425 and Eppamulla to Pamunugam

Category	Number of Affected Properties	
	B-425	**Eppamulla to Pamunugam**
Residential Building		
One story	115	17
2 and 3 stories	8	1
More than 3 stories	-	-
Commercial Buildings		
One story	107	3
2 and 3 stories	19	3
More than 3 stories		
Subtotal	249	24
Tree (Girth)		
<0.3m	520	199
0.3m<G<1.5m	361	226
>1.5m	159	4

Source: This Study

Table A27.4 Affected Property Inventory for Nugegoda-Kattiya Junction-Pepiliyana Road Widening

Category	Number of Affected Properties
Residential Building	
One story	56
2 and 3 stories	23
More than 3 stories	-
Commercial Buildings	
One story	51
2 and 3 stories	25
More than 3 stories	8
Subtotal	**163**
Tree (Girth)	
<0.3m	129
0.3m<G<1.5m	119
>1.5m	73

Source: This Study

Table A27.5 Affected Property Inventory for Thalawatugoda-Pannipitiya Road Widening

Category	Number of Affected Properties	
	Partially Damaged	**Fully Damaged**
Asbestos Roofed Houses	32	
Asbestos Roofed Buildings	22	2
Tile Roofed Houses	59	
2 Story Tile Roofed Houses	1	
Tile Roofed Buildings	10	1
Tile Roofed Shops	2	
Tile Roofed Schools	1	
Tin Roofed Houses	9	1
Tin Roofed Garages	2	
Tin Roofed Work Shops	1	
Tin Roofed Buildings	4	
Tin Roofed Huts	1	

Category	Number of Affected Properties	
	Partially Damaged	**Fully Damaged**
3Story Concrete Roofed Shops	1	
Asbestos Roofed Shops	8	
Asbestos Roofed Press	1	
Concrete Roofed Houses	1	
Concrete Roofed Buildings	1	
Railway Station	1	
Timber Depot	1	
Asbestos Roofed Meat Stall	1	
Houses Under Construction (Asbestos Roofed House)	1	
Tile Roofed Garages	1	
Total	**165**	

Source: RDA Land Acquisition Division (1998)

Table A27.6 Affected Property Inventory for Thalawatugoda-Koskadwila Road Widening

Category	Number of Affected Properties
Boundary walls to be removed	133
Houses partially demolished: only the front	18
Houses partially removed: only the front	-
Extent of land to be acquired in perches	335.077

Source: Western Province RDA (2006)

Table A27.7 Affected Property Inventory for Pannipitiya-Tumbowil Road Widening

Category	Number of Affected Properties
Boundary walls to be removed	256
Houses partially demolished: only the front	12
Houses partially removed: only the front	39
Extent of land to be acquired in perches	590.37

Source: Western Province RDA (2006)

Table A27.8 Affected Property Inventory for Orugodawatte Flyover

Category	Number of Affected Properties
Residential Building	
One story	2
2 and 3 stories	-
More than 3 stories	-
Commercial Buildings	
One story	11
2 and 3 stories	10
More than 3 stories	9
Subtotal	**32**
Tree (Girth)	
<0.3m	15
0.3m<G<1.5m	21
>1.5m	21

Source: This Study

Table A27.9 Affected Property Inventory for Borella – Kanata Flyover

Category	Number of Affected Properties
Residential Building	
One story	10
2 and 3 stories	4
More than 3 stories	2
Commercial Buildings	
One story	48
2 and 3 stories	27
More than 3 stories	97
Subtotal	188
Tree (Girth)	
<0.3m	7
0.3m<G<1.5m	16

Source: This Study

Table A27.10 Affected Property Inventory for Kohuwala Flyover

Category	Number of Affected Properties
Residential Building	
One story	15
2 and 3 stories	8
More than 3 stories	-
Commercial Buildings	
One story	29
2 and 3 stories	16
More than 3 stories	7
Subtotal	75
Tree (Girth)	
<0.3m	18
0.3m<G<1.5m	30

Source: This Study

Table A27.11 Affected Property Inventory for Armour Street Flyover

Category	Number of Affected Properties
Residential Building	
One story	2
2 and 3 stories	1
More than 3 stories	1
Commercial Buildings	
One story	33
2 and 3 stories	64
More than 3 stories	25
Subtotal	**126**
Tree (Girth)	
<0.3m	9
0.3m<G<1.5m	10

Source: This Study

Table A27.12 Affected Property Inventory for Kelaniya Railway Flyover

Category	Number of Affected Properties
Residential Building	
One story	11
2 and 3 stories	3
More than 3 stories	-
Commercial Buildings	
One story	20
2 and 3 stories	31
More than 3 stories	7
Subtotal	77
Tree (Girth)	
<0.3m	10
0.3m<G<1.5m	8

Source: This Study

Table A27.13 Affected Property Inventory for Rajagiriya Flyover

Category	Number of Affected Properties
Residential Building	
One story	10
2 and 3 stories	9
More than 3 stories	-
Commercial Buildings	
One story	20
2 and 3 stories	7
More than 3 stories	-
Subtotal	56
Tree (Girth)	
<0.3m	38
0.3m<G<1.5m	65

Source: This Study

A27.3 Unit Costs

Table A27.14 Unit Costs for Land Acquisition/Compensation (per Perch/Sq.ft)

NO	TITLE	LAND VALUE Rs. Million Per Perch	CONSTRUCTION COST (Rs./ Sq.ft) Residential			CONSTRUCTION COST (Rs./Sq.ft) Commercial		
			One story	2 and 3 Stories	More than 3 stories	One story	2 and 3 Stories	More than 3 stories
	FLY OVER							
1	Orugodawatta Fly over	0.35 to 0.50	1750 to 2200	2200 to 2750	2750 to 3000	1500 to 1750	1750 to 2500	2000 to 2500
2	Cemetery/Borella Fly over	1.5 to 2.0	1750 to 2200	2200 to 2750	2800 to 3100	1550 to 2000	1850 to 2500	2100 to2600
3	Kohuwala Fly over	1.0 to 1.5	1700 to 2250	2200 to 2700	2650 to 3000	1500 to1750	1750 to 2500	2000 to 2500
4	Panchikawatte Fly over	2.0 to 3.0	1900 to 2250	2400 to 2500	2900 to 3200	1750 to 2100	1900 to 2500	2100 to 2600
5	Kelaniya Railway Fly over	1.0 to 1.5	1700 to 2200	2000 to 2300	2500 to 2800	1500 to 1750	1750 to2500	2000 to 2500
6	Rajagiriya Fly over	1.0 to 1.5	1800 to 2300	2500 to 2600	2900 to 3200	1800 to 2000	1900 to2600	2200 to 2600
	ROAD IMPROVEMENT							
1	Marine Drive Extension	1.0 to 1.5	1900 to 2300	2300 to 2500	2900 to 3200	2000 to 2200	1900 to 2600	2200 to 2600
2	Widening of Eppamulla-Panunugama Road and B425	0.075 to 0.1	1700 to 2100	2100 to 2300	2750 to 3000	1500 to1950	1750 to 2500	2100 to 2500
3	Nugegoda Road Improvement	1.0 to 1.5	1800 to 2300	2400 to 2700	2800 to 3100	1950 to2200	1950 to2200	2200 tO 2600

TREE	
Girth (meters)	**Cost of cutting and Removing (Rs.Tree)**
> 0.3	15,000
0.3< to 1.5	40,000
More than 1.5	50,000

The above unit costs were recalculated into per square meter adopting the medians for each unit cost as below.

Table A27.15 Unit Costs for Land Acquisition/Compensation (Per Sq.m)

NO	TITLE	LAND VALUE Rs. Per Sq.m	CONSTRUCTION COST Residential			CONSTRUCTION COST Commercial		
			One story	2 and 3 Stories	More than 3 stories	One story	2 and 3 Stories	More than 3 stories
	FLY OVER							
1	Orugodawatta Fly over	16,800	21,900	27,500	31,940	18,100	23,600	25,000
2	Cemetery/Borella Fly over	69,200	21,900	27,500	32,800	19,700	24,200	26,100
3	Kohuwala Fly over	49,400	21,900	27,200	31,400	18,100	23,600	25,000
4	Panchikawatte Fly over	99,000	23,100	27,200	33,900	21,400	24,400	26,100
5	Kelaniya Railway Fly over	40,000	21,700	23,900	29,400	18,100	23,600	25,000
6	Rajagiriya Fly over	49,400	22,800	28,300	33,900	21,100	25,000	28,300
					33,900			
	ROAD IMPROVEMENT							
1	Marine Drive Extension	40,000	23,300	26,700	33,900	23,300	25,000	28,300
2	Widening of Eppamulla-Panunugama Road and B425	3,500	21,100	24,400	31,940	19,200	23,600	25,600
3	Nugegoda Road Improvement	40,000	22,800	28,300	32,800	23,100	23,100	28,300

TREE	
Girth (meters)	**Cost of cutting and Removing**
> 0.3	15,000
0.3< to 1.5	40,000
More than 1.5	50,000

A27.4 Land Acquisition and Compensation Costs for Pre-FS Projects

A summary of land acquisition and compensation costs for the Pre-FS Projects is given below.

Table A27.16 Summary of Land Acquisition/Compensation Costs

No.	Project Title	Land Acquisition Cost	Compensation Cost	Total
1	Marine Drive Extension	2,708,400,000	504,645,000	3,213,045,000
2	B152/ B425 Widening	447,580,000	1,187,290,000	1,634,870,000
3	Nugegoda – Kattiya Junction – Pepiliyana Road Widening	772,800,000	596,800,000	1,369,600,000
4	Thalawatugoda – Pannipitiya Road Widening	409,600,000	565,050,000	974,650,000
5	Thalawatugoda – Koskadwila Road Widening	84,800,000	61,560,000	146,360,000
6	Pannipitiya – Tumbowil Road Widening	149,400,000	174,420,000	323,820,000
7	Orugodawatte Flyover (Baseline Road)	141,120,000	106,877,100	247,997,100
8	Borella – Kanata Flyover	581,280,000	680,390,000	1,261,670,000
9	Kohuwala Flyover	414,960,000	245,660,000	660,620,000
10	Armour Street Flyover	831,600,000	454,925,000	1,286,525,000
11	Kelaniya Railway Flyover	336,000,000	237,520,000	573,520,000
12	Rajagiriya Flyover	414,960,000	166,475,000	581,435,000
	Grand Total	7,292,500,000	4,981,612,100	12,274,112,100

The land acquisition and compensation costs for each project are as follows

Table A27.17 Land Acquisition/Compensation Costs for Marine Drive

Items	Unit Cost (Rs.)	North	South	Total	Amount (Rs.)	Remarks
1. Land	40,000	-	-	67710	2,708,400,000	18.3*3.7km
2. Structure and Others						
Residential Building						
One story	23,300	24	64	88	307,560,000	avegarge 150 Sq.m
2 and 3 stories	26,700	8	18	26	104,130,000	avegarge 150 Sq.m
More than 3 stories	33,900	-	-	0	0	avegarge 150 Sq.m
Commercial Building						
One story	23,300	2	11	13	45,435,000	avegarge 150 Sq.m
2 and 3 stories	25,000	3	5	8	30,000,000	avegarge 150 Sq.m
More than 3 stories	25,000	1	2	3	11,250,000	avegarge 150 Sq.m
Subtotal		**38**	**100**	**138**	**498,375,000**	
Tree Girth						
<0.3m	15,000	19	53	72	1,080,000	
0.3m< G <1.5m	40,000	52	74	126	5,040,000	
>1.5m	50,000	1	2	3	150,000	
Subtotal Tree Girth		72	129	201	6,270,000	
Total Structure and Others					**504,645,000**	
Grand Total					**3,213,045,000**	

Table A27.18 Land Acquisition/Compensation Costs for B152/ B425 Widening

Items	Unit Cost (Rs.) /sq.m	B152	B425	Total	Amount (Rs.)	Remarks
1. Land	3,500	-	-	127880	447,580,000	9.2*13.9km
2. Structure and Others						
Residential Building						
One story	21,100	23	132	155	490,575,000	avegarge 150 Sq.m
2 and 3 stories	24,400	0	9	9	32,940,000	avegarge 150 Sq.m
More than 3 stories	31,940	0	0	0	0	avegarge 150 Sq.m
Commercial						
One story	19,200	70	110	180	518,400,000	avegarge 150 Sq.m
2 and 3 stories	23,600	6	22	28	99,120,000	avegarge 150 Sq.m
More than 3 stories	25,600	1		1	3,840,000	avegarge 150 Sq.m
Subtotal		100	273	373	1,144,875,000	
Tree Girth						
<0.3m	15,000	*	719	719	10,785,000	
0.3m< G <1.5m	40,000	*	587	587	23,480,000	
>1.5m	50,000	*	163	163	8,150,000	
Subtotal Tree Girth		0	1469	1469	42,415,000	
Total Structure and Others					1,187,290,000	
Grand Total					1,634,870,000	

*The data for impacts to existing tree are not available.

Table A27.19 Land Acquisition/Compensation Costs for Nugegoda-Kattiya Junction-Pepiliyana Road Widening

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	40,000	19,320	772,800,000	9.2*2.1km
2. Structure and Others				
Residential Building				
One story	22,800	56	191,520,000	avegarge 150 Sq.m
2 and 3 stories	28,300	23	97,635,000	avegarge 150 Sq.m
More than 3 stories	32,800		0	avegarge 150 Sq.m
Commercial Building				
One story	23,100	51	176,715,000	avegarge 150 Sq.m
2 and 3 stories	23,100	25	86,625,000	avegarge 150 Sq.m
More than 3 stories	28,300	8	33,960,000	avegarge 150 Sq.m
Subtotal		163	586,455,000	
Tree Girth				
<0.3m	15,000	129	1,935,000	
0.3m< G <1.5m	40,000	119	4,760,000	
>1.5m	50,000	73	3,650,000	
Subtotal Tree Girth		321	10,345,000	
Total Structure and Others			596,800,000	
Grand Total			1,369,600,000	

Table A27.20 Land Acquisition/Compensation Costs for Thalawatugoda-Pannipitiya Road Widening

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	10,000	40,960	409,600,000	12.8*3.2km
2. Structure and Others				
Residential Building				
One story	22,800	106	362,520,000	avegarge 150 Sq.m
2 and 3 stories	28,300	1	4,245,000	avegarge 150 Sq.m
More than 3 stories	32,800	0	0	avegarge 150 Sq.m
Commercial Building				
One story	23,100	56	194,040,000	avegarge 150 Sq.m
2 and 3 stories	23,100	0	0	avegarge 150 Sq.m
More than 3 stories	28,300	1	4,245,000	avegarge 150 Sq.m
Subtotal		164	565,050,000	
Tree Girth				
<0.3m	15,000		0	Data not available
0.3m< G <1.5m	40,000		0	Data not available
>1.5m	50,000		0	Data not available
Subtotal Tree Girth		0	0	
Total Structure and Others			565,050,000	
Grand Total			974,650,000	

Table A27.21 Land Acquisition/Compensation Costs for Thalawatugoda-Koskadwila Road Widening

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	10,000	8,480	84,800,000	335.077 Perch(data from WPRD
2. Structure and Others				
Residential Building				
One story	22,800	18	61,560,000	avegarge 150 Sq.m
2 and 3 stories	28,300	0	0	avegarge 150 Sq.m
More than 3 stories	32,800	0	0	avegarge 150 Sq.m
Commercial Building				
One story	23,100	0	0	avegarge 150 Sq.m
2 and 3 stories	23,100	0	0	avegarge 150 Sq.m
More than 3 stories	28,300	0	0	avegarge 150 Sq.m
Subtotal		18	61,560,000	
Tree Girth				
<0.3m	15,000		0	Data not available
0.3m< G <1.5m	40,000		0	Data not available
>1.5m	50,000		0	Data not available
Subtotal Tree Girth		0	0	
Total Structure and Others			61,560,000	
Grand Total			146,360,000	

Table A27.22 Land Acquisition/Compensation Costs for Pannipitiya-Tumbowil Road Widening

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	10,000	14,940	149,400,000	590.37 Perch(data from WPRD
2. Structure and Others				
Residential Building				
One story	22,800	51	174,420,000	avegarge 150 Sq.m
2 and 3 stories	28,300	0	0	avegarge 150 Sq.m
More than 3 stories	32,800	0	0	avegarge 150 Sq.m
Commercial Building				
One story	23,100	0	0	avegarge 150 Sq.m
2 and 3 stories	23,100	0	0	avegarge 150 Sq.m
More than 3 stories	28,300	0	0	avegarge 150 Sq.m
Subtotal		51	174,420,000	
Tree Girth				
<0.3m	15,000		0	Data not available
0.3m< G <1.5m	40,000		0	Data not available
>1.5m	50,000		0	Data not available
Subtotal Tree Girth		0	0	
Total Structure and Others			174,420,000	
Grand Total			323,820,000	

Table A27.23 Land Acquisition/Compensation Costs for Orugodawatte Flyover

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	16,800	8,400	141,120,000	6*700*2
2. Structure and Others				
Residential Building				
One story	21,900	2	6,570,000	avegarge 150 Sq.m
2 and 3 stories	27,500		0	avegarge 150 Sq.m
More than 3 stories	31,940		0	avegarge 150 Sq.m
Commercial Building				
One story	18,100	11	29,865,000	avegarge 150 Sq.m
2 and 3 stories	23,600	10	35,400,000	avegarge 150 Sq.m
More than 3 stories	25,000	9	33,750,000	avegarge 150 Sq.m
Subtotal		32	105,585,000	
Tree Girth				
<0.3m	15,000	15	271,500	
0.3m< G <1.5m	40,000	21	495,600	
>1.5m	50,000	21	525,000	
Subtotal Tree Girth		57	1,292,100	
Total Structure and Others			106,877,100	
Grand Total			247,997,100	

Table A27.24 Land Acquisition/Compensation Costs for Borella-Kanata Flyover

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	69,200	8,400	581,280,000	6*700*2
2. Structure and Others				
Residential Building				
One story	21,900	10	32,850,000	avegarge 150 Sq.m
2 and 3 stories	27,500	4	16,500,000	avegarge 150 Sq.m
More than 3 stories	32,800	2	9,840,000	avegarge 150 Sq.m
Commercial Building				
One story	19,700	48	141,840,000	avegarge 150 Sq.m
2 and 3 stories	24,200	27	98,010,000	avegarge 150 Sq.m
More than 3 stories	26,100	97	379,755,000	avegarge 150 Sq.m
Subtotal		188	678,795,000	
Tree Girth				
<0.3m	15,000	7	105,000	
0.3m< G <1.5m	40,000	16	640,000	
>1.5m	50,000	17	850,000	
Subtotal Tree Girth		40	1,595,000	
Total Structure and Others			680,390,000	
Grand Total			1,261,670,000	

Table A27.25 Land Acquisition/Compensation Costs for Kohuwala Flyover

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	49,400	8,400	414,960,000	6*700*2
2. Structure and Others				
Residential Building				
One story	21,900	15	49,275,000	avegarge 150 Sq.m
2 and 3 stories	27,200	8	32,640,000	avegarge 150 Sq.m
More than 3 stories	31,400	0	0	avegarge 150 Sq.m
Commercial Building				
One story	18,100	29	78,735,000	avegarge 150 Sq.m
2 and 3 stories	23,600	16	56,640,000	avegarge 150 Sq.m
More than 3 stories	25,000	7	26,250,000	avegarge 150 Sq.m
Subtotal		75	243,540,000	
Tree Girth				
<0.3m	15,000	18	270,000	
0.3m< G <1.5m	40,000	30	1,200,000	
>1.5m	50,000	13	650,000	
Subtotal Tree Girth		61	2,120,000	
Total Structure and Others			245,660,000	
Grand Total			660,620,000	

Table A27.26 Land Acquisition/Compensation Costs for Armour Street Flyover

Items	Unit Cost (Rs.) /sq.m	Number	Amount (Rs.)	Remarks
1. Land	99,000	8,400	831,600,000	6*700*2
2. Structure and Others				
Residential Building				
One story	23,100	2	6,930,000	avegarge 150 Sq.m
2 and 3 stories	27,200	1	4,080,000	avegarge 150 Sq.m
More than 3 stories	33,900	1	5,085,000	avegarge 150 Sq.m
Commercial Building				
One story	21,400	33	105,930,000	avegarge 150 Sq.m
2 and 3 stories	24,400	64	234,240,000	avegarge 150 Sq.m
More than 3 stories	26,100	25	97,875,000	avegarge 150 Sq.m
Subtotal		126	454,140,000	
Tree Girth				
<0.3m	15,000	9	135,000	
0.3m< G <1.5m	40,000	10	400,000	
>1.5m	50,000	5	250,000	
Subtotal Tree Girth		24	785,000	
Total Structure and Others			454,925,000	
Grand Total			1,286,525,000	

Appendix 28 Videoconference with Thai Office of Transport and Traffic Policy and Planning

A28.1 Introduction

A videoconference was scheduled to provide Sri Lanka counterparts with information on institutional coordination. The presenting agency was the Office of Transport and Traffic Policy and Planning of Thailand. Below is a summary of the background and objectives, agenda, participants, and presentation objectives.

A28.2 Background and Objectives

The Government of Sri Lanka's (GOSL) Ministry of Railways and Transport (MORT), Ministry of Highways (MOH), and Road Development Authority (RDA) are conducting urban transport development study with assistance from the Japan International Cooperation Agency (JICA) and its Study Team. One recommendation that emerged from the study was to establish and activate a coordinating body to focus on Colombo's urban transport policy and project implementation. Upon establishing such a coordinating body, the JICA Study Team intends to introduce this case study to other countries to improve knowledge capacity of functional and practical issues.

The Office of Transport and Traffic Policy and Planning (OTP) of the Thai Ministry of Transport was established in 2002 and is responsible for recommending policies and formulating transport, traffic and transport safety plans in line with Master Plans for policy integration purposes. The JICA Study Team invited Dr. Chalermsak, the Deputy Directors of the OTP to a videoconference meeting to share his knowledge and experiences with the Sri Lankan counterparts.

A28.3 Videoconference Details

Place: JICA Sri Lanka Office in Colombo and JICA Thailand Office in Bangkok
Date: Wednesday 6 September 2006
Time: 8:00 to 11:00 (Colombo Time), 9:30 to 12:30 (Bangkok Time)

Table A28.1 Agenda for OTP Videoconference

Time (Colombo)	Time (Bangkok)	Program
8:00-8:20	9:30-9:50	Registration
8:20-8:30	9:50-10:00	Videoconferencing Process/ Introduction of Participants in Thai and Colombo Dr. Chiaki Kuranami, JICA Study Team
8:30-8:40	10:00-10:10	Opening Remark Mr. Hideki Sakata, JICA
8:40-8:50	10:10-10:20	Policy Coordination Issues in Colombo Dr. Arsecularatne, MoRT, Sri Lanka Government
8:50-9:20	10:20-10:50	1st Presentation; Establishment of OTP Dr. Chalermsak, OTP, Thai Government
9:20-9:50	10:50-11:20	Question and Answer Moderator, Mr. P.M. Leelaratne, Secretary, MoRT, Sri Lanka Government
9:50-10:00	11:20-11:30	Break

Time (Colombo)	Time (Bangkok)	Program
10:00-10:30	11:30-12:00	2nd Presentation; Case study on urban transport policy coordination Dr. Chalermsak, OTP, Thai Government
10:30-10:50	12:00-12:20	Question and Answer Session Moderator, Mr. S. Amarasekara, Secretary, Ministry of Highways, Sri Lanka Government
10:50-11:00	12:20-12:30	Closing Remark Mr. M.B.S. Fernando, Chairman, Road Development Authority

Language: English (No simultaneous interpretation)

A28.4 Videoconference Participants

Below is a list of the participants in the videoconference

Table A28.2 Videoconference Participants

Name	Position
Thai OTP Attendees	
Dr. Chalermsak	Deputy Director General, OTP
Mr. Sujun	OTP
Pontavee Lertpanyavit	Local Coordinator
Sri Lanka Attendees	
Mr. P. M. Leelaratne	Secretary, Ministry of Railways and Transport (MORT)
Dr. S. Arsecularatne	Additional Secretary, Development, MORT
Mr. J. W. Chandrasekara	Deputy Director Planning, MORT
Mr. U.N. Mallawaarachchi	Assistant Director Planning, MORT
Mr. S. Amarasekara	Secretary, Ministry of Highway (MOH)
Mr. M. B. S. Fernando	Chairman, Road Development Authority (RDA)
Mrs. S. Senanayke	Director (Programming) MoH
Mr. R.W.R. Pemasiri	General Manager, RDA
Mr. R M Amarasekara	Director, Planning, RDA
Mr. S. Meihandan	Director, RDA
Dr. Jayantha Liyanage	Municipal Commissionner, Colombo Municipal Council (CMC)
Mr. A. M. D. Bandusena	Director of Economic Infrastructure, National Planning Department
Mr. Mapa Pathirana	Japan Division, External Resources Department, Ministry of Finance (MoF)
Mr. Lucky Peiris	Senior Superintendent of Police (SSP) Department Of Police
Mr. Y.G.R.M. Laffir	SSP - Traffic, Department Of Police
Dr. D.S. Jayaweera	Chairman, Urban Development Authority (UDA)
Mrs. D. N. Siyambalapitiya	National Transportation Committee (NTC)
Mr. Jayantha Guruge	Superintending Engineer CMC
Mr. Prasanna Silva	Additional Director General, UDA
Mr. Peiris	General Manager, Sri Lanka Transport Board
Mr. Jeffrey	Director General, NTC
Mr. Dissanayake	Assistant Commissioner, Department of Motor Traffic
Mr. K. A. Pemasiri	General Manager, Sri Lanka Railways
Mr. B. Wijeratne	Commissioner, Department of Motor Traffic
Mr. Wijesiri Soysa	Sri Lanka Transport Board
Mr. Ramal Siriwardana	Chairman, National Traffic Medical Institute

Name	Position
Mr. Harry Jayatunge	General Manager, Western Province Road Passenger Transport Authority
Mr. S.W.Munasinghe	Sri Lanka Railways
JICA Attendees	
Mr. Hideki Sakata	Deputy Director
Mr. Kosuke Odawara	Assistant Resident Representative
JICA Study Team Attendees	
Dr. Chiaki Kuranami	Team Leader/Urban Transport
Mr. Yoshiya Nakagawa	Transport Planner
Mr. Shigeru Sai	Social/Environmental Impact Assessment Specialist
Mr. Austin Fernando	Institutional Issue Specialist

A28.5 Workshop Theme

There are two themes for the presentation (i) how OTP was established; and (ii) a case study of the formulation of a project under inter-ministerial coordination. Details of presentation outline are explained as follows.

(1) Establishing OTP (OCMLT)

- Need to establish a coordination body;
- Outline organization;
- Process to establish OTP including political and administrative arrangements;
- Role of OTP in developing Bangkok's transport system;
- Achievements of OTP;
- Difficulties faced by OTP; and
- Evaluating OTP's role including how Bangkok would operate without it.

(2) Policy Coordination Case Study: Restructuring Bangkok's Bus Operations (1980s)

- OTP's roles, as well as that of ministries and authorities;
- Institutional coordination issues and OTP's contribution to resolve the problems;
- Unresolved issues (if any); and
- Evaluating OTP's role.

A28.6 Workshop Venues

(1) Colombo

JICA Sri Lanka Office in Colombo
8th Floor, Green Lanka Tower, 46/46, Navam Mawatha, Colombo-2
Tel: +94112303700 (Mr. Kosuke Odawara, Mobile +94777800963)
Coordinator: Yoshiya Nakagawa (+94779101416)

(2) Bangkok

JICA Thailand Office in Bangkok
1674/1 New Petchburi Road, Bangkok 10320

Tel: +6622511655 (Ms. Kiyoka Takeuchi, Mobile +6619334228)
Coordinator: Pongtavee Lertpanyavit (+6618157758)

Colombo JICA-Net Room

Bangkok JICA-Net Room

Figure 28.1 Photos of Videoconference Venues

Appendix 29 Terms of Reference for ATC System

A29.1 Introduction

Traffic conditions in the CMR have deteriorated rapidly due to an increase in the number of motor vehicles in recent years. The number of registered vehicles during the first six months of 2006 showed more than a 30% increase as compared with the same period during the previous year. Colombo's road network has limited coverage and is inefficient with substandard design and many winding and dead end roads. Its intersection geometry is inadequate in many locations and traffic control devices are poorly installed.

The Study on the Urban Transport Development of the Colombo Metropolitan Region was undertaken by JICA in 2006 in response to a request by the Government of Sri Lanka. It addressed the traffic and transportation problem in the CMR and recommended, among other projects, the introduction of an Area Traffic Control (ATC) system in Colombo to efficiently mange road traffic.

Below is the Terms of Reference for Detailed Design Work to be undertaken by consultants.

A29.2 Objectives

This Work has the following three objectives:

- Develop and prepare the detailed design of an ATC system for the CMR;
- Prepare necessary tender documents and cost estimates for procurement of the system; and
- Promote technology transfer of the signal control system and related technologies to local counterparts.

A29.3 Scope of Work

(1) Coverage Area

The coverage area of the work will be the Colombo Municipality and its immediate vicinity as shown below. There may be minor changes in the location and number of intersections covered by the work that will reflect changes in the road network and traffic conditions.

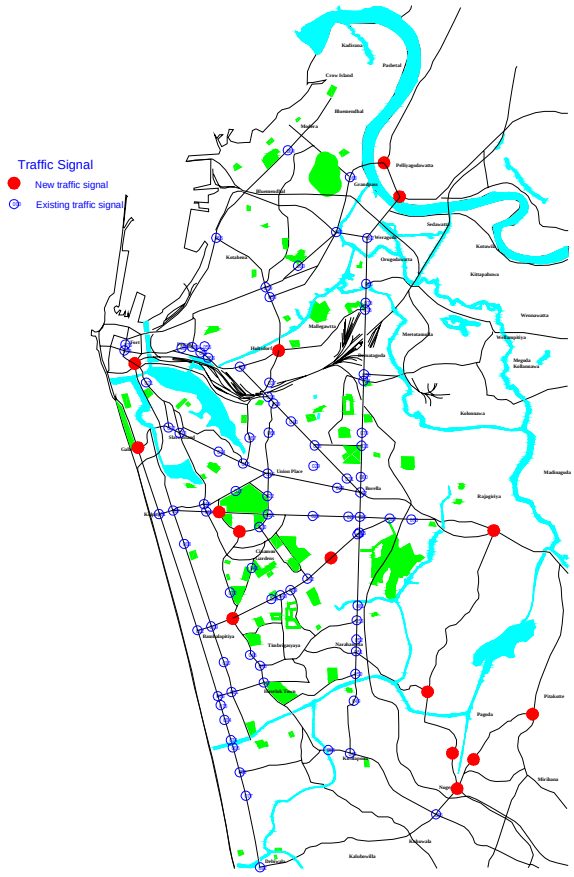

Figure A29.1 Proposed ATC Signal Locations

(2) Tasks

Work is comprised of the following seventeen tasks in four task groups.

Survey and Signal Design Standards

- Intersection turning movement count;
- Intersection topographic survey and intersection base drawings;
- Intersection capacity analysis;
- Signal design standards; and
- Study trip.

Detailed Design of ATC System

- Detailed design of intersection geometry;
- Detailed design of signal control system;
- Vehicle detector system design;
- Closed circuit television system design;
- Functional design of central control system; and
- Control center facilities.

Preparation of Tender Documents

- Preparation of technical specifications and drawings;
- Preparation of conditions of contract and other tender documents; and
- Preparation of bill of quantity and cost estimates.

Implementation Plan, Operation and Maintenance

- Implementation plan;
- ATC system operation; and
- ATC system maintenance.

(3) Task Descriptions

Task Group 1: Survey and Signal Design Standards

Intersection turning movement survey: The consultant will plan, program, conduct, check and analyze a turning movement count survey at all proposed intersections. The actual count will be undertaken by a local survey firm and it should be conducted for 14 hours between 6 am and 8 pm at 15 minute intervals. Vehicle classification will follow the standard procedures adopted by either CMC or RDA to insure data compatibility. The data for each intersection will be input into a Microsoft Excel file in a well organized and consistent manner for easy manipulation to undertake intersection capacity analysis and other data processing. Two peaks, one morning and one afternoon/evening, will be identified and a turning movement volume diagram will be prepared for the two peak periods.

Intersection topographic survey and intersection base drawings: The consultant will plan and conduct a topographic survey of all proposed intersections. The actual survey will be outsourced to a local survey firm. Based on the data, intersection base drawings will be prepared on A3 paper using a scale of 1:500 in the latest version of AutoCad. Position and dimensions of all objects that affect signal design will be surveyed and plotted. If a drawing that shows the current intersection geometry is available in a convertible format, no additional survey is required.

Intersection capacity analysis: The consultant will analyze the intersection capacities for the peak periods using the intersection turning movement count survey and intersection drawings. The objective of the analysis is to determine the necessity of a signal at the proposed locations and later to design signal phasing and timing. The consultant will use suitable intersection capacity analysis computer software for the analysis.

Signal design standards: The consultant will develop signal design standards, which will cover but not be limited to (i) signal warrants; (ii) signal control methods; and (iii) intersection signal layouts. The consultant will develop a signal warrant, which is a guideline to determine the necessity of a traffic signal at a specific intersection. The warrant will take road, traffic, and social conditions of the area into consideration and use the data available in Sri Lanka. Signal control methods refer to the type of signal control such as pre-timed control, time-of-day control, actuation and recall, and coordination. The consultant will prepare guidelines the application of these control methods. A standard intersection layout will be developed by the consultant, which shows the location, height, and size of the primary and secondary signals, configuration of signal lantern assembly and its meaning and use, and symbols for intersection signal design drawings. The outputs of signal design layouts will be compiled into signal design standards.

Study trip: The consultant will arrange a study trip of Sri Lankan officials to a country where an ATC system is being used effectively. At least two cities will be visited, one with an advanced system and another with a similar system to what is proposed for Colombo. A total of four persons will participate in the seven day trip.

Detailed Design of ATC System

Detailed design of intersection geometry: The consultant will undertake a geometric design of all proposed intersections, which includes pavement marking design and traffic signs. Geometric intersection design will be compatible with the signal operations and will ensure the safety of both vehicles and pedestrians. Geometric improvements will be plotted on the intersection base drawing previously prepared.

Detailed design of signal control system: The design work consists of two parts (i) detailed design of signals at each intersection and (ii) detailed design of the signal control system for the central computer. The consultant will undertake signal design of all intersections proposed for the ATC system. The design work will include determining signal phases, local controller and signal lantern layouts and conduits for signal cables. It must be noted that geometric and signal designs are an iterative process which should be undertaken concurrently to achieve the best result. Signal locations, local controllers, and conduit lines will be plotted on the intersection drawing. The proposed ATC system will have multiple signal control modes including isolated time-of-day control and central traffic responsive control. The consultant will design various signal control modes to be provided to the system and define the functional requirements for each mode of control.

Vehicle detector system design: The consultant will design the vehicle detector system that will be used to gather traffic conditions for signal control. Considering pavement conditions in the system coverage area, vehicle detectors will be located above ground and loop detectors will not be adopted. Vehicle detector system design will include basic specifications of vehicle detectors, a detector deployment plan, and a standard detector installation plan. Detector layouts depend on signal control technology to be adopted. As such, the consultant is requested to prepare a reference design to be used for cost estimates and tendering, which would be modified by the system supplier during construction stage, if necessary.

Closed circuit television system design: The consultant will undertake the design of a closed circuit television system. The system is intended to monitor traffic conditions at key locations in the coverage area. A drawing of the tentative camera locations should be created. The consultant will finalize the camera locations in consultation with CMC. The consultant will determine the specifications of the cameras, TV monitors, video recording system, and controllers at the control center. The ability to provide video images to other agencies will be considered and designed if required. The standard installation drawing for the cameras will also be developed. The consultant will design a video signal transmission system in close coordination with Sri Lanka Telecom. The transmission system must be capable of sending live images from all cameras simultaneously at a rate of 25 frames per second. Converting video images into digital signals and using compression technology such as MPEG may be allowed. The availability of cables and circuits in the system coverage area will be considered in the design.

Functional design of central control system: The consultant will undertake the functional design of a central computer system, which will include but be not limited to (i) traffic data collection, compilation, and input; (ii) signal control; (iii) signal monitoring and logging; (iv) human-machine interface; (iv) supporting functions. Because configuration and equipment of a central control system varies among suppliers, hardware specifications of the central equipment

will define only the minimum requirements. Instead, functional specifications will be prepared, which allow multiple vendors to participate in the tendering.

Control center facilities: A control center will be established either within the premises of the existing CMC facilities or a new building. The consultant will design the control room, machine room, emergency generator with fuel tank, air conditioning system, communication cable pit and duct, fire detection and extinguishing system, and other works associated with the construction of the control center. The design will confirm to the prevailing building code regulations and meet the requirements for a traffic control center.

Preparation of tender documents

Preparation of technical specifications and drawings: The consultant will prepare technical specifications that will include but not be limited to (i) general requirements; (ii) intersection signal; (iii) vehicle detector; (iv) central traffic control system; (v) closed circuit television; (vi) control center facilities; (vii) installation; and (viii) traffic signs and pavement markings. A set of drawings will be prepared by the consultant, which will include but not be limited to (i) signal locations; (ii) closed circuit television camera locations; (iii) signal system configuration drawing (reference); (iv) closed circuit television system configuration drawing (reference); (v) standard installation work of signal and CCTV equipment; and (vi) intersection drawings. It will be clearly indicated whether the drawing is a requirement or a reference. All drawings will be prepared on A3 paper, with adequate legends and other supplemental drawings.

Preparation of Conditions of Contract and other tender documents: The consultant will prepare the documents necessary for conducting international tendering. These contract documents will follow the standards generally acknowledged for international tendering including rules and regulations adopted by the financing institution. Regulations of the Government of Sri Lanka at the time of preparation will also be honored as long as they do not conflict with international standards and practices. Documents include (i) contract; (ii) general contract conditions; (iii) special contract conditions; (iv) bill of quantity; and (v) tender documents.

Preparation of bill of quantities and cost estimates: The consultant will prepare a bill of quantities for system equipment, software, installation work, project management, and other project components to fulfill the project. Separately, the consultant will prepare a bill of quantities for geometric improvement work. Items in the bill of quantities will be suitable for items in the cost proposal for bidding. The consultant will then prepare cost estimates for the ATC system and geometric improvement works. The cost estimate will be detailed enough and in a format suitable for the executing agency to secure the budget to implement the project. The cost estimate will cover the following (i) central computer system hardware; (ii) central computer system software; (iii) intersection facilities; (iv) communication device; (v) vehicle detector; (vi) installation works; (vii) traffic signs and pavement markings; (viii) documentation and training; (ix) project management; and (x) geometric improvement works at the intersection. The consultant will also estimate the annual costs to operate and maintain the system, which will include electricity, communications, preventive maintenance, corrective maintenance, and indirect costs necessary to operate and maintain the system.

Task Group 4: Implementation Plan, Operation and Maintenance

Implementation plan: The consultants will examine and prepare recommendations to facilitate the implementation of the ATC system including (i) implementation procedure and schedule; (ii) funding requirements and disbursement schedule; (iii) organizational and institutional

arrangements; (iv) technical proposal evaluation criteria and contractor selection procedures; and (v) installation work supervision, acceptance testing, and commissioning procedure.

ATC System operation: The consultant will prepare an operation and administration plan. The plan will cover (i) operation staff and responsibilities; (ii) ATC system operation plan for normal conditions; (iii) ATC system operation plan in case of incidents; and (iv) system administration.

ATC system maintenance: The consultant will prepare a maintenance management plan that recommends arrangements and procedure for the maintenance organization, staffing, fault reporting procedures, maintenance logs, and the spare parts inventory. The consultant will also prepare a draft maintenance contract that will form the basis for the contract with the maintenance contractor. The draft will cover conditions for preventive and corrective maintenance, spare parts inventory, and payment conditions.

A29.4 Implementation of System

(1) Work Schedule

The work will take ten months from commencement of consulting services. The expected duration of each study task is shown below.

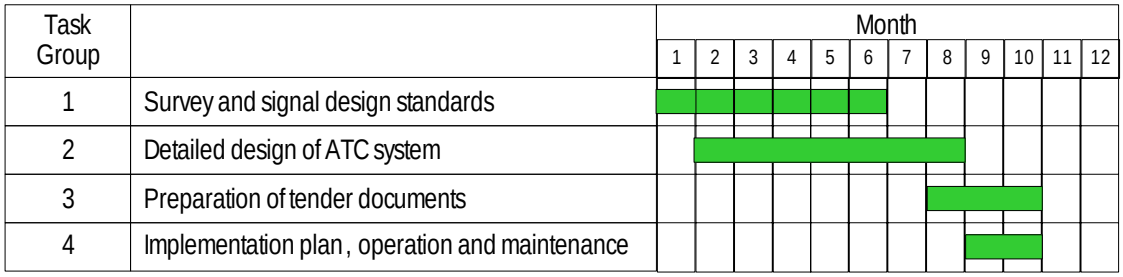

Figure A29.2 Proposed Work Schedule

(2) Report Submission

The consultant will produce and submit the reports as outlined below. All reports should be prepared in English. Technical specifications, drawings, tender documents, and the draft final report will be submitted on CD in addition to the printed format specified below.

Table A29.1 Reports and Deadlines for ATC System

Report Type	Number of Copies	Submission Date
Inception report	20	End of 2nd week
Design concept report	10	End of the 2nd month
Design standards and technical specifications	30	End of the 8th month
Draft tender documents (excl. cost estimates)	10	Middle of 9th month
Cost estimates	3	Middle of 10th month
Draft final report	10	End of 10th month

(3) Inputs of Experts

The consulting team should consist of the professionals listed below. The number in () indicates the number of professionals needed.

International Consultants

- Team leader/traffic management system planning and engineering (1);
- Signal system hardware expert (1);
- Signal system software expert (1);
- Traffic engineer (2);
- Cost estimation expert (1);
- Installation work expert (1); and
- Document specialist (1).

A total of 40 person-months are expected for international consultants.

Local Consultants

- Deputy Team leader / traffic management system (1);
- Traffic survey expert (1);
- Traffic engineer (4);
- Cost estimation expert (1); and
- Organization and institutional specialist (1).

It is anticipated that the four local traffic engineers will then transition into a role on the staff of the executing agency. A total of 60 person-months are expected for local consultants.

Appendix 30 Road Widening and Extension Alignment Drawings

The figures below show the alignment drawings for all road widening and extension projects, as described in Chapter 20.

Figure A30.1 Marine Drive – North

Figure A30.2 Marine Drive – South

Figure A30.3 B152

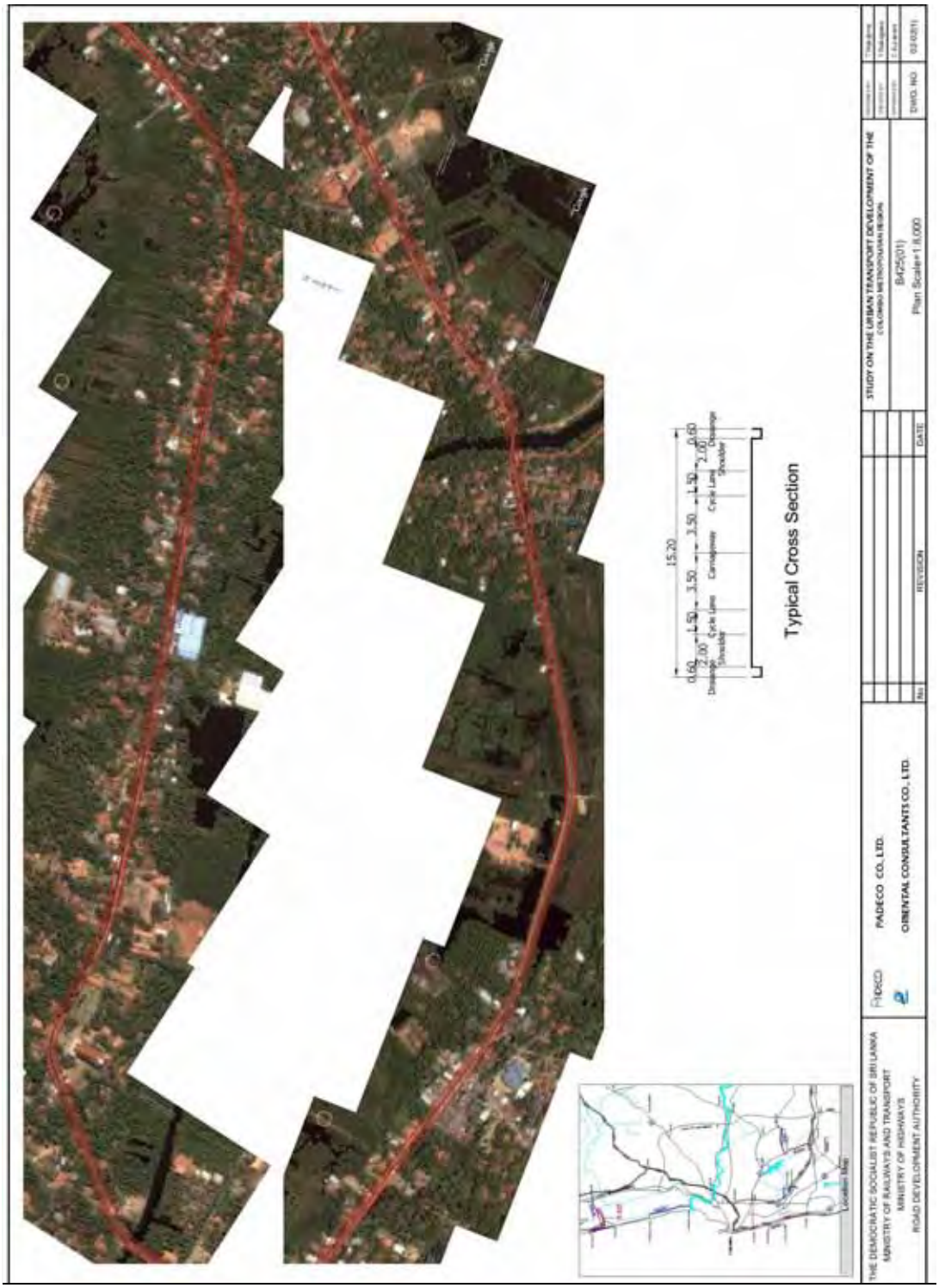

Figure A30.4 B425 Part I

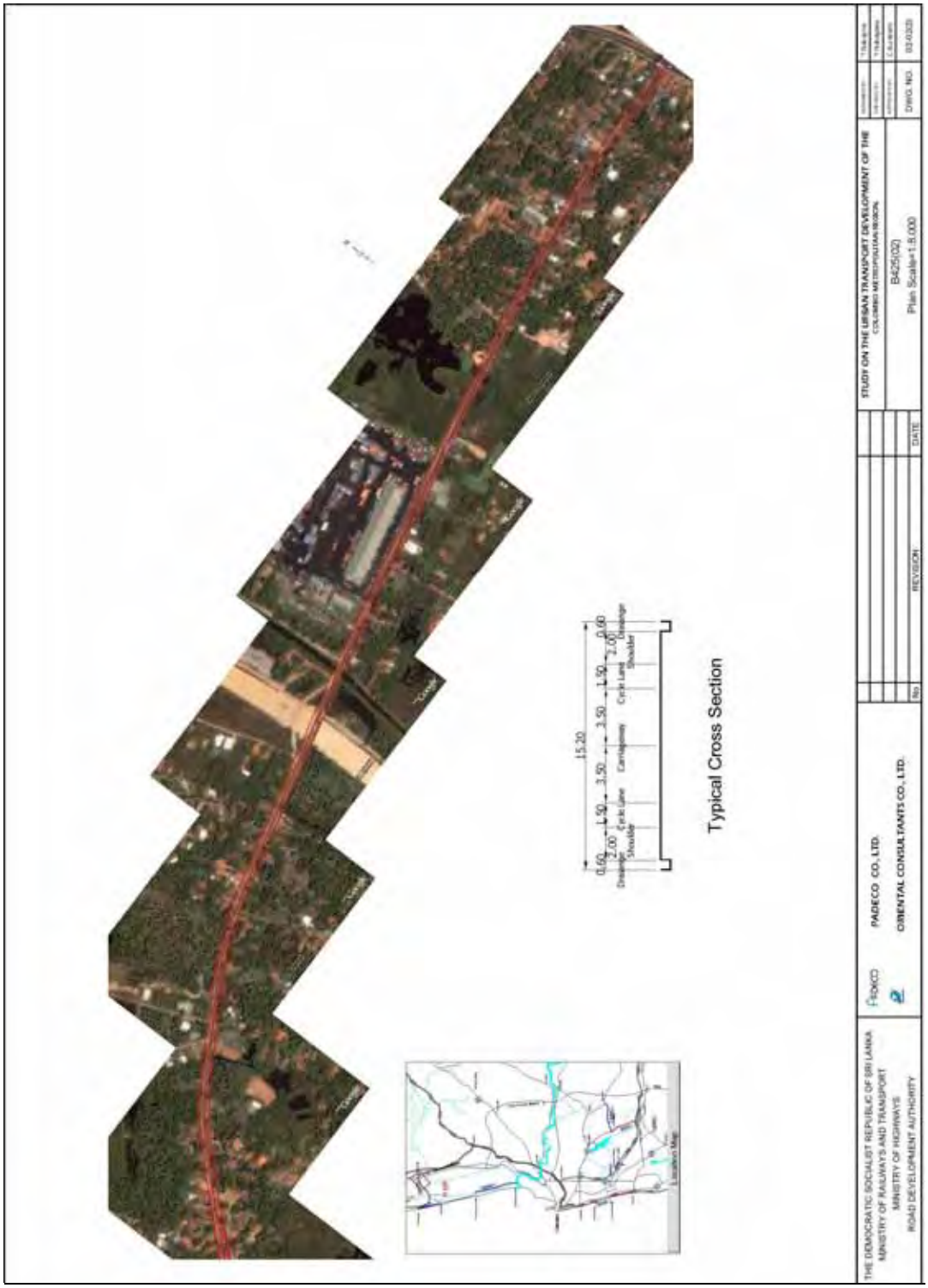

Figure A30.5 B425 Part II

Figure A30.6 Eppamulla – Pamunugama Road

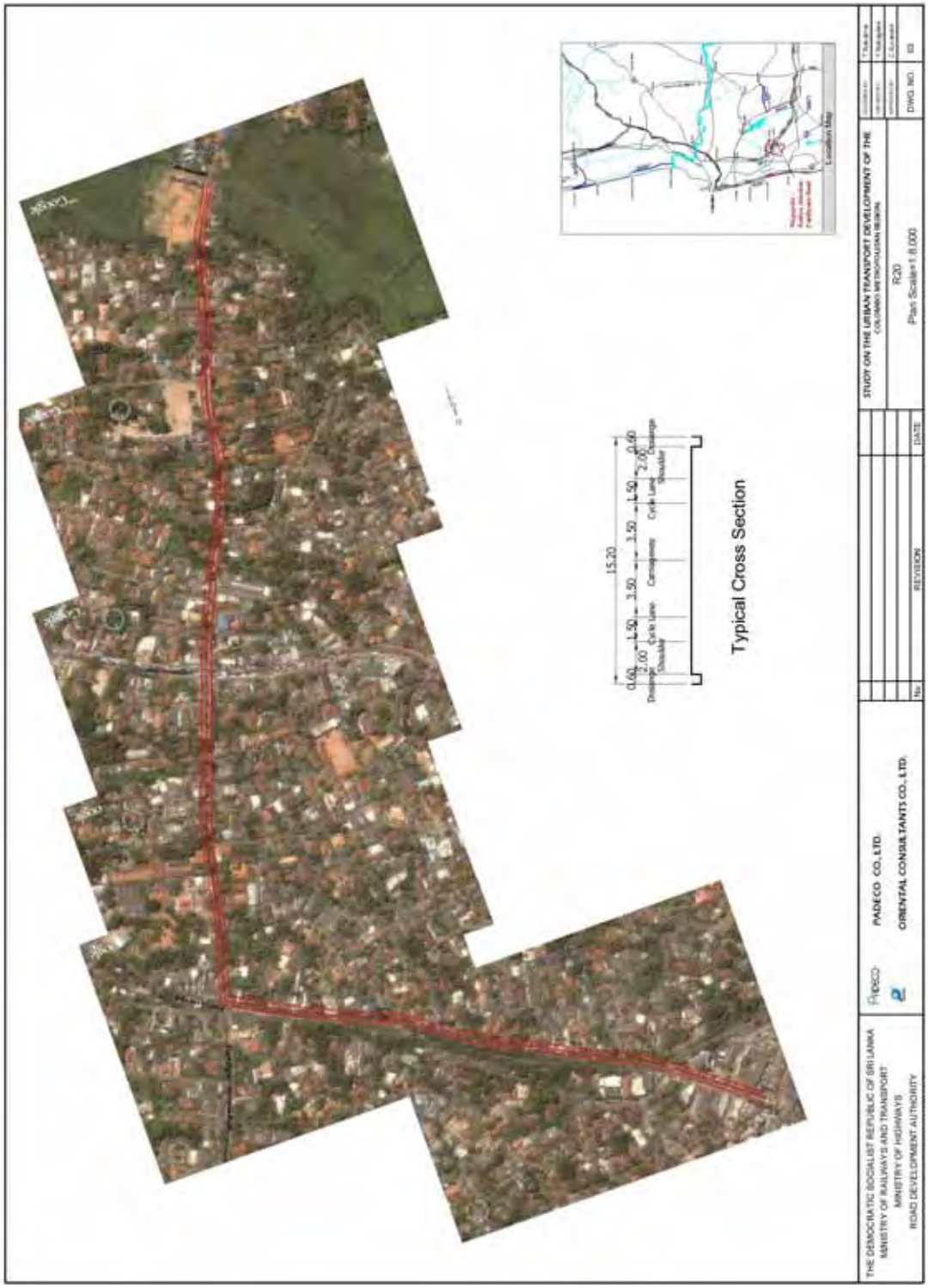

Figure A30.7 Nugegoda-Katiya Junction (R20)

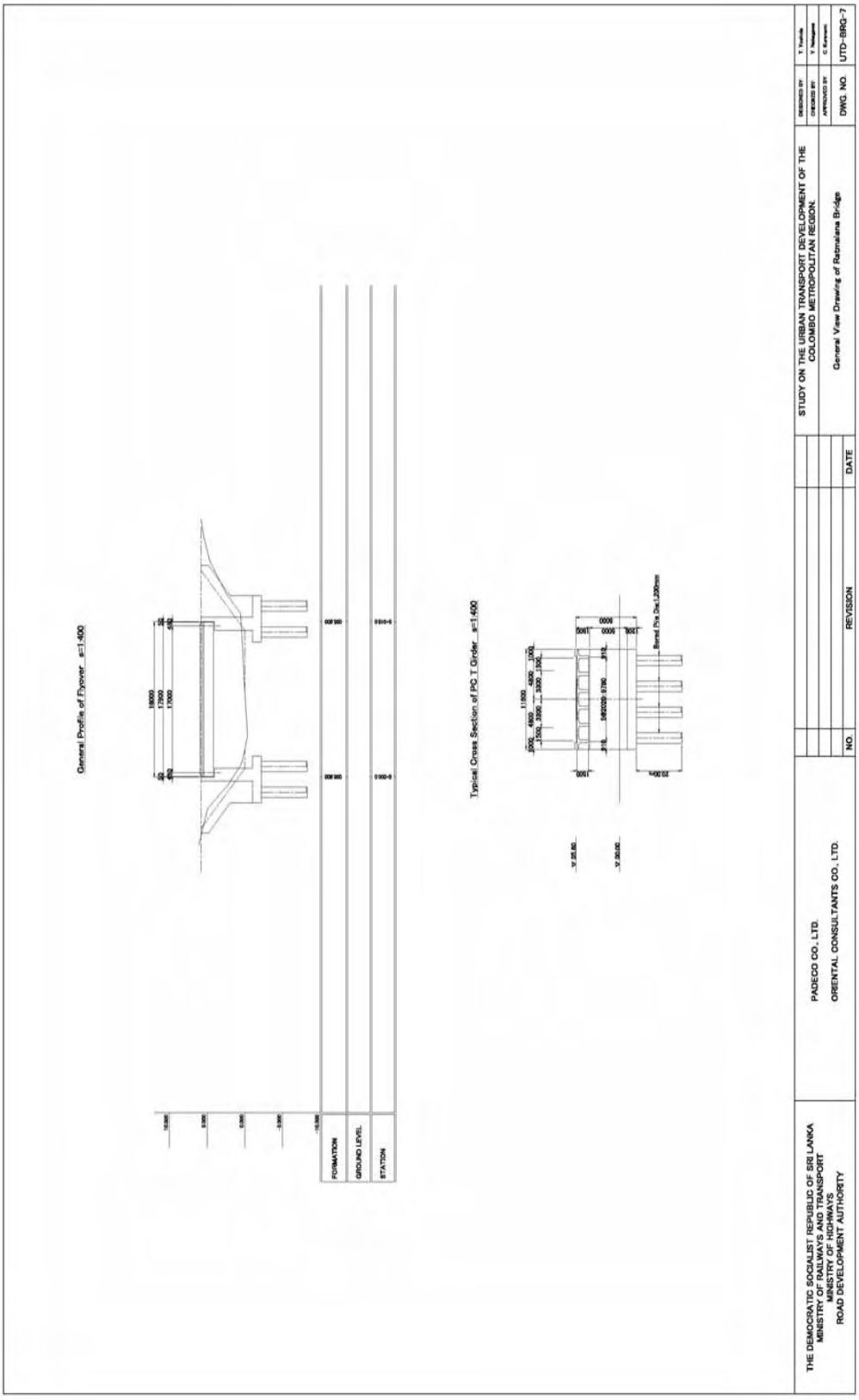

Figure A30.8 General View Drawing of Ratmalana Bridge

Figure A30.9 Thalawathugoda-Pannipitiya Road (R21)

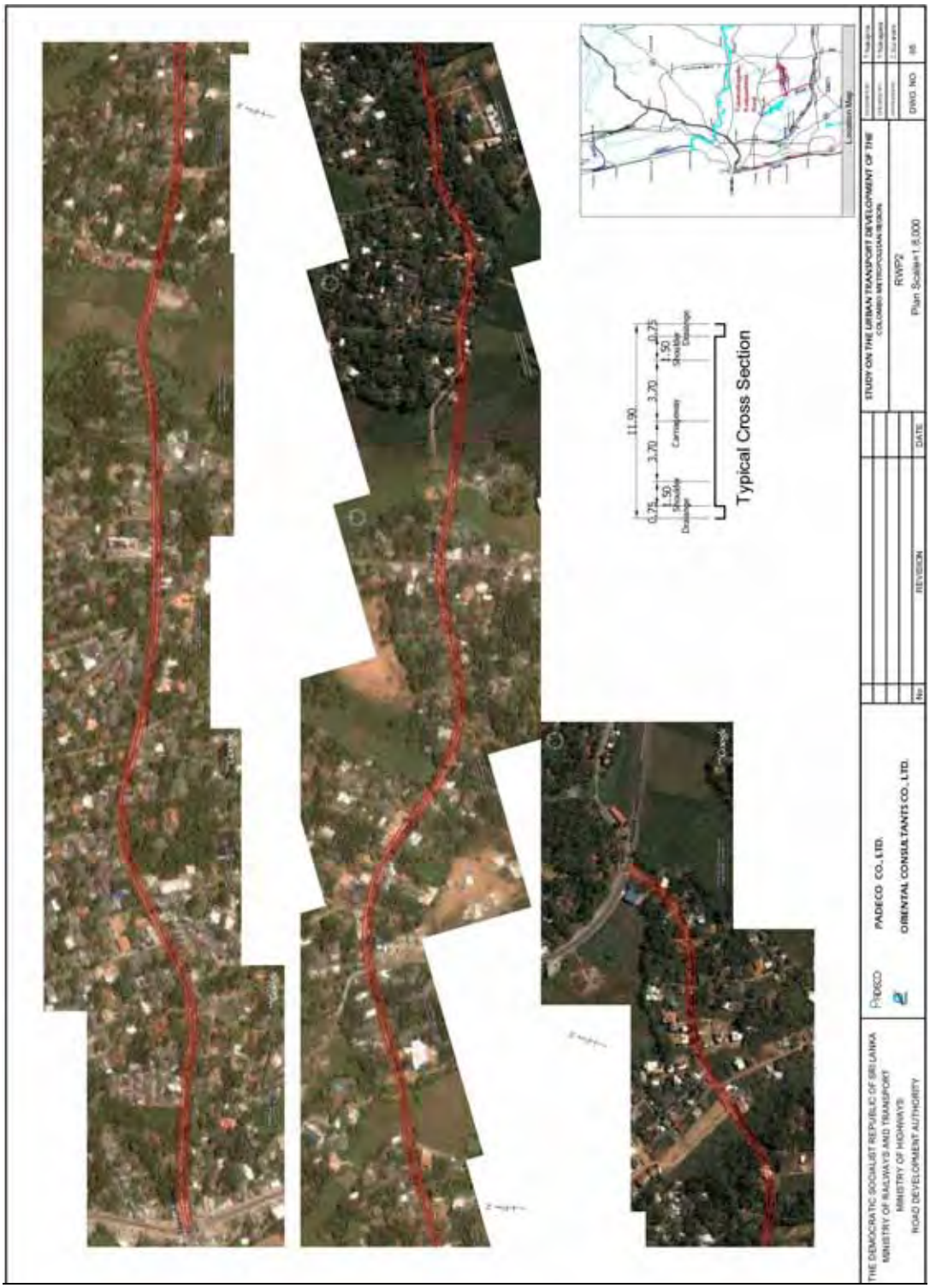

Figure A30.10 Thalawathugoda-Koskadwila Road (RPW2)

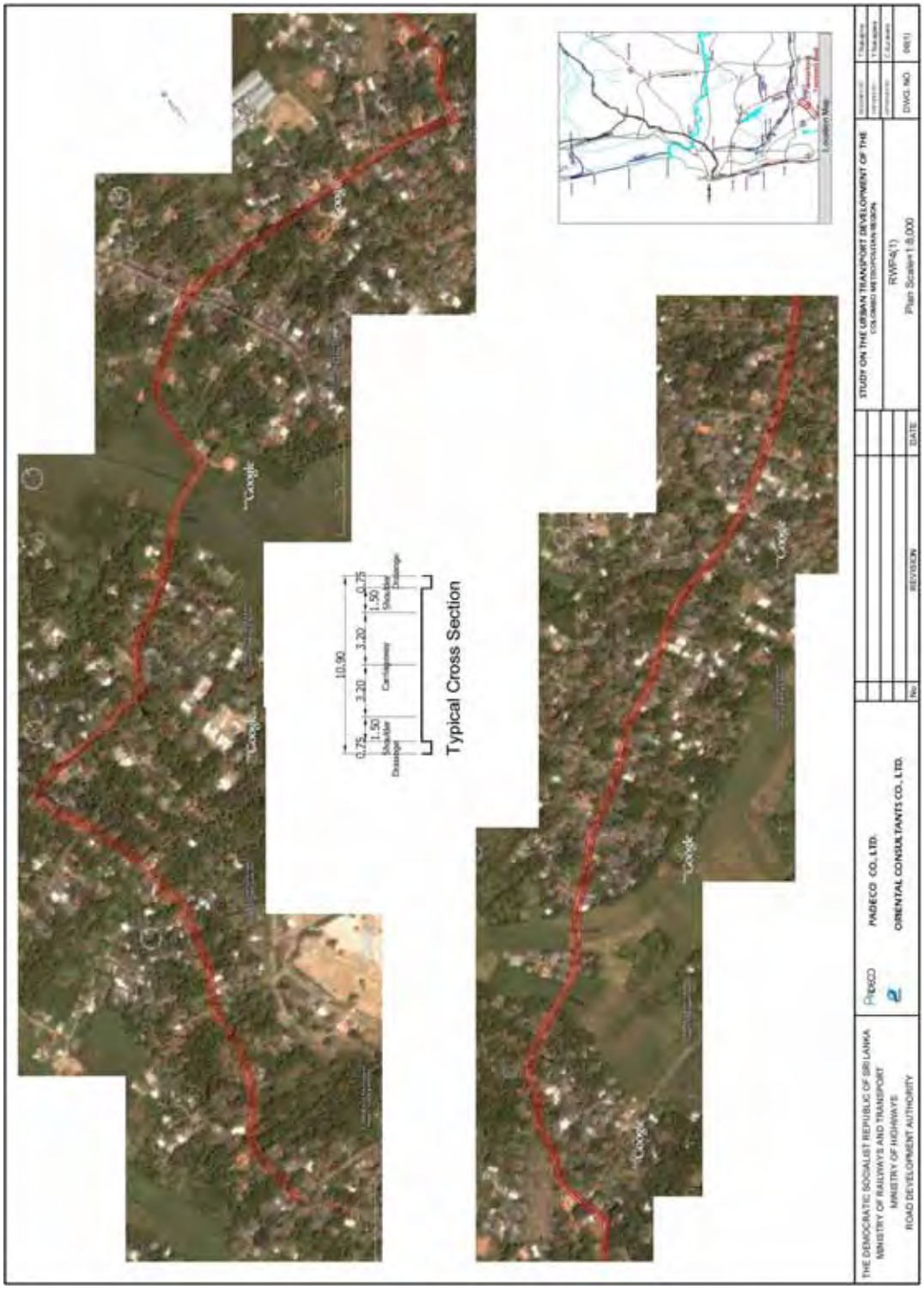

Figure A30.11 Pannipitiya-Tumbowil Road (RPW4) Part I

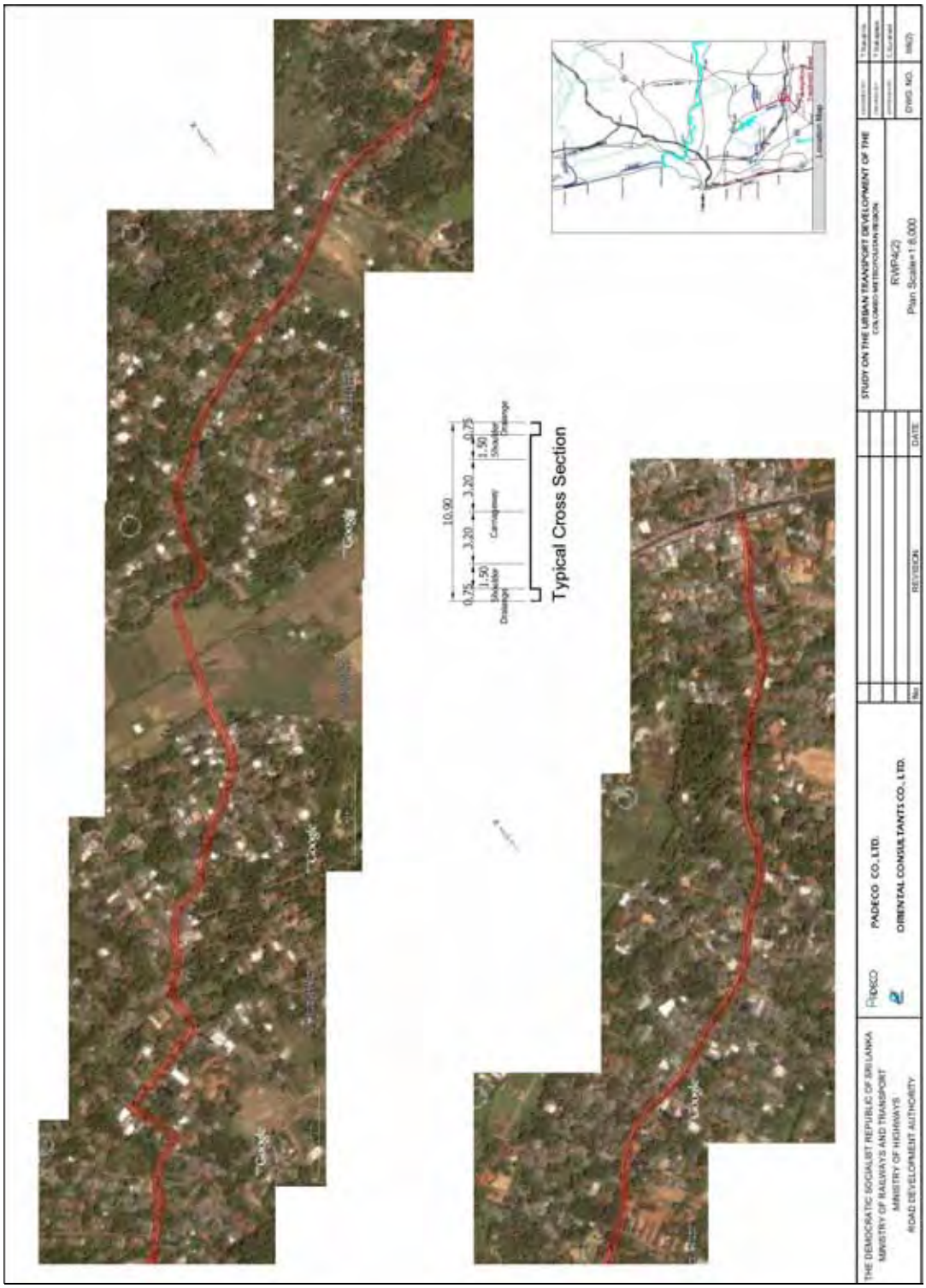

Figure A30.12 Pannipitiya-Tumbowil Road (RPW4) Part II

Appendix 31 Flyover Drawings

The figures below show the alignment drawings for all flyover projects as well as the general profile of each flyover the cross sections of the girders, as described in Chapter 21.

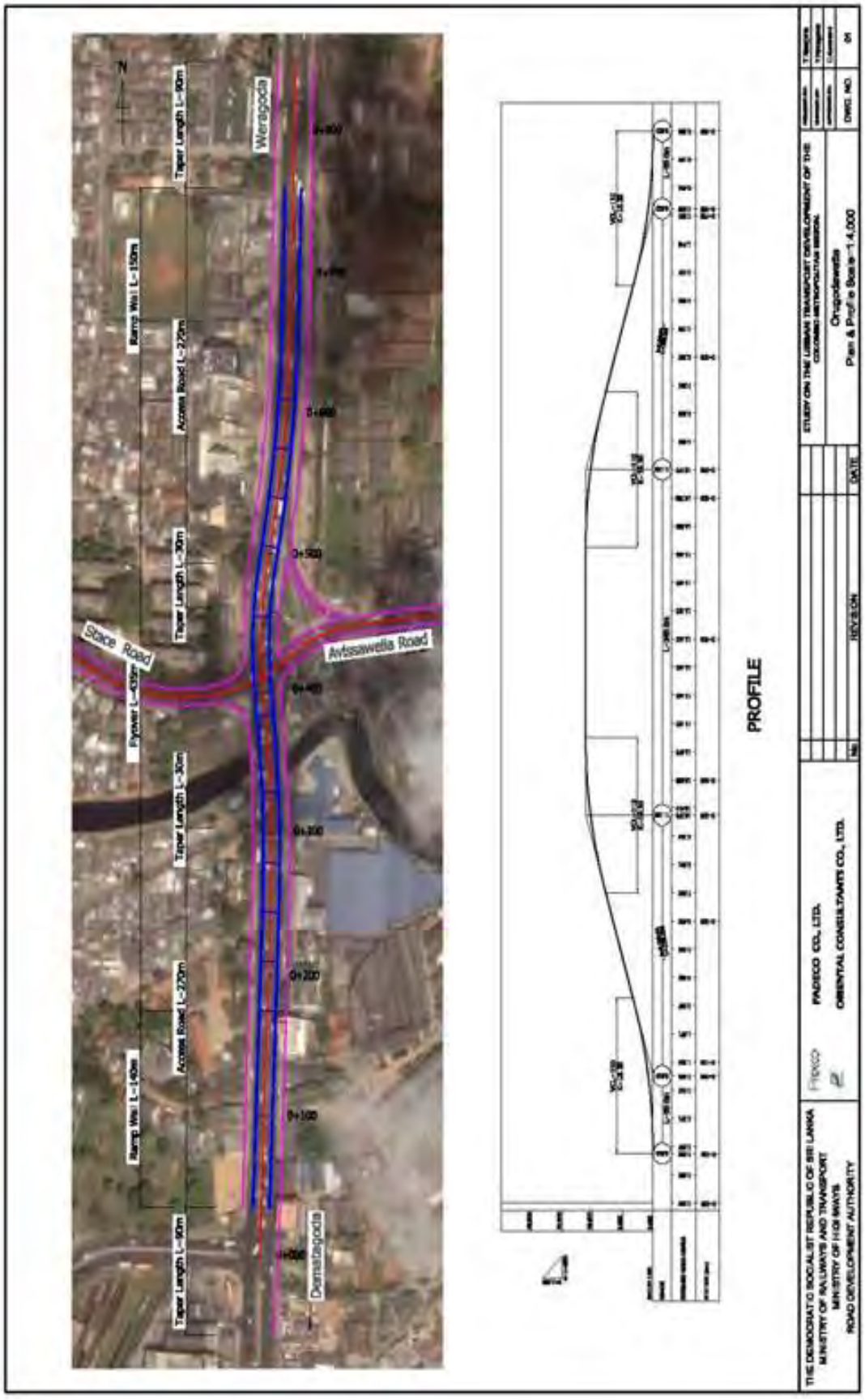

Figure A31.1 Orugodawatte Flyover

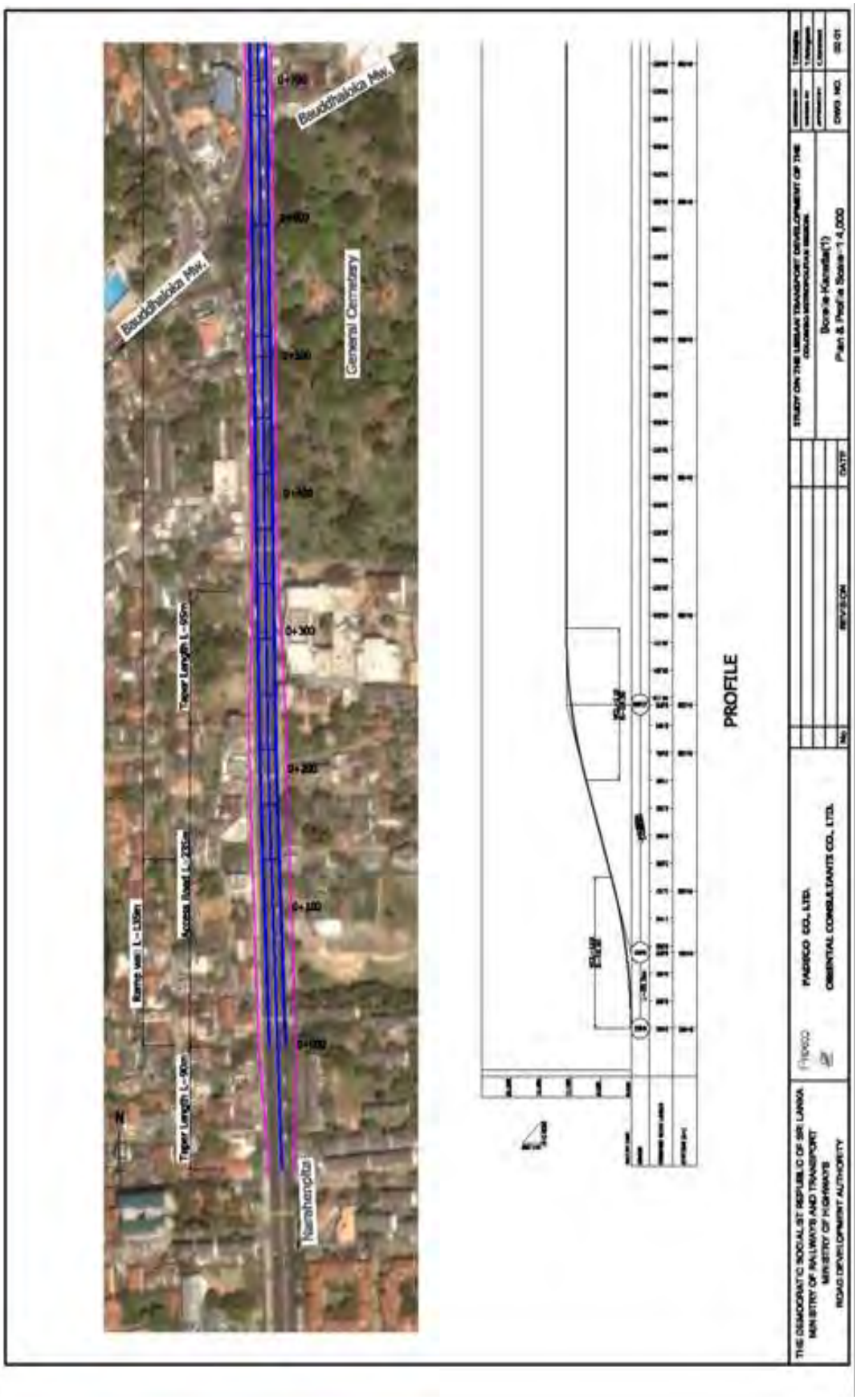

Figure A31.2 Borella-Kanata Flyover Part I

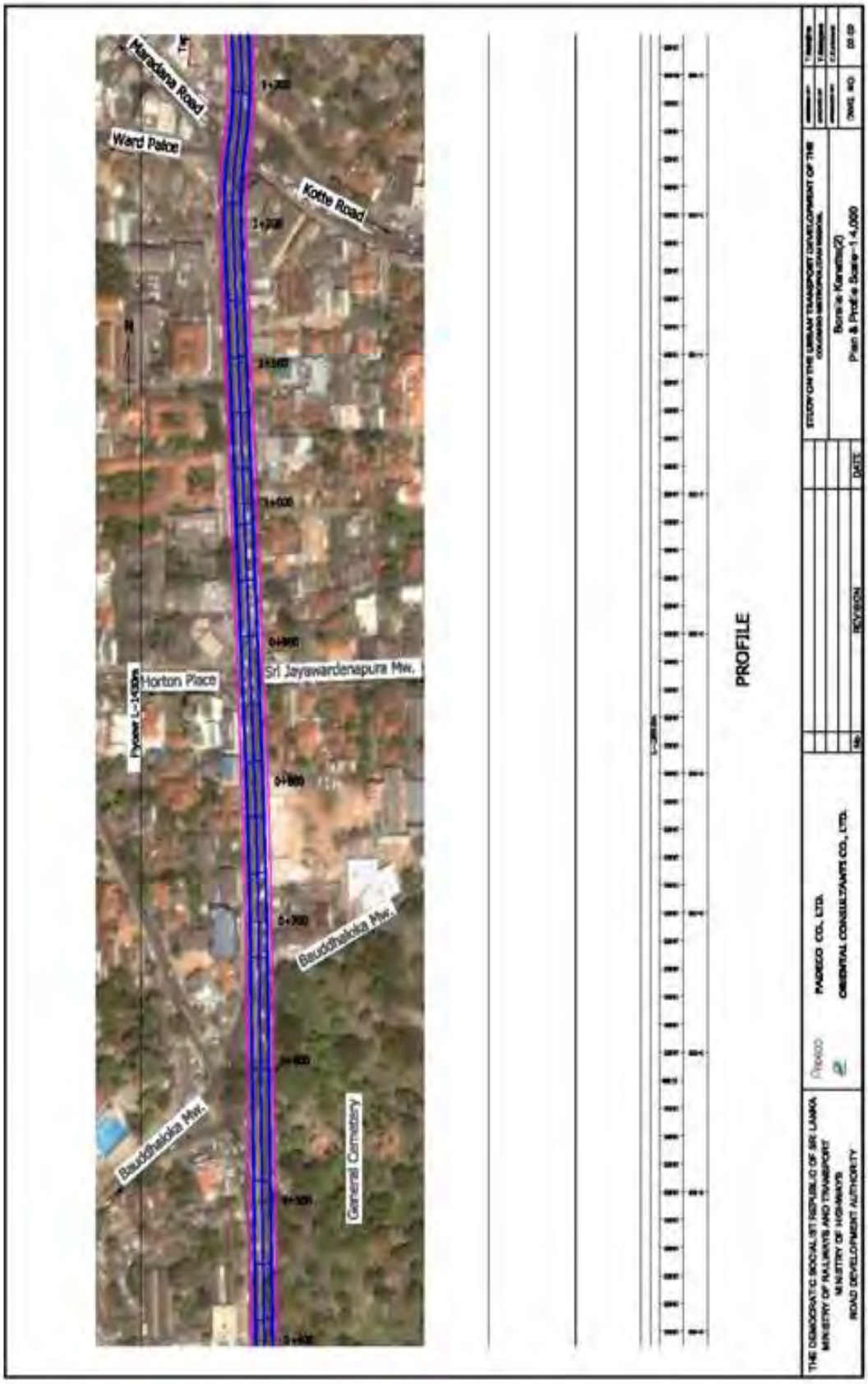

Figure A31.3 Borella-Kanata Flyover Part II

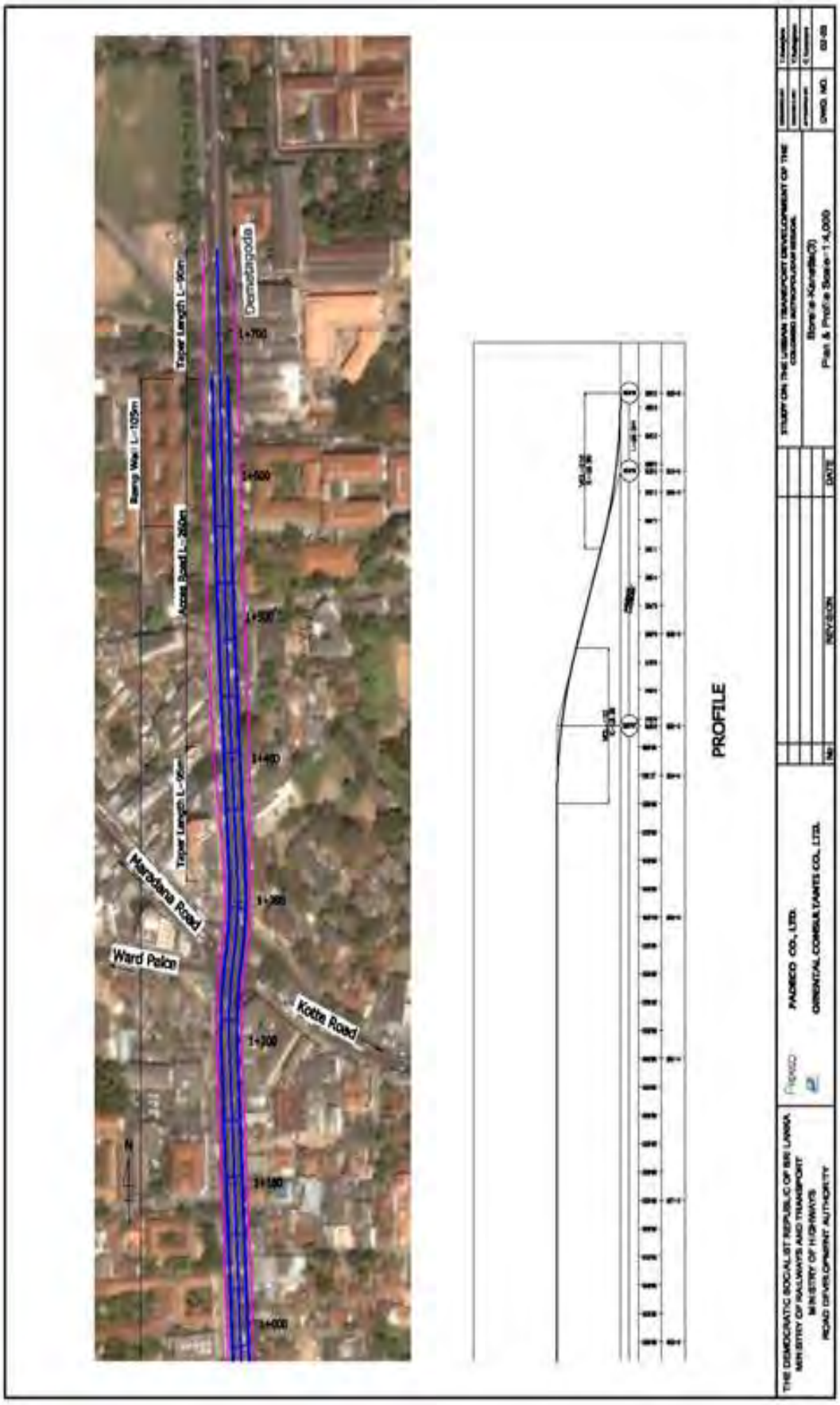

Figure A31.4 Borella-Kanata Flyover Part III

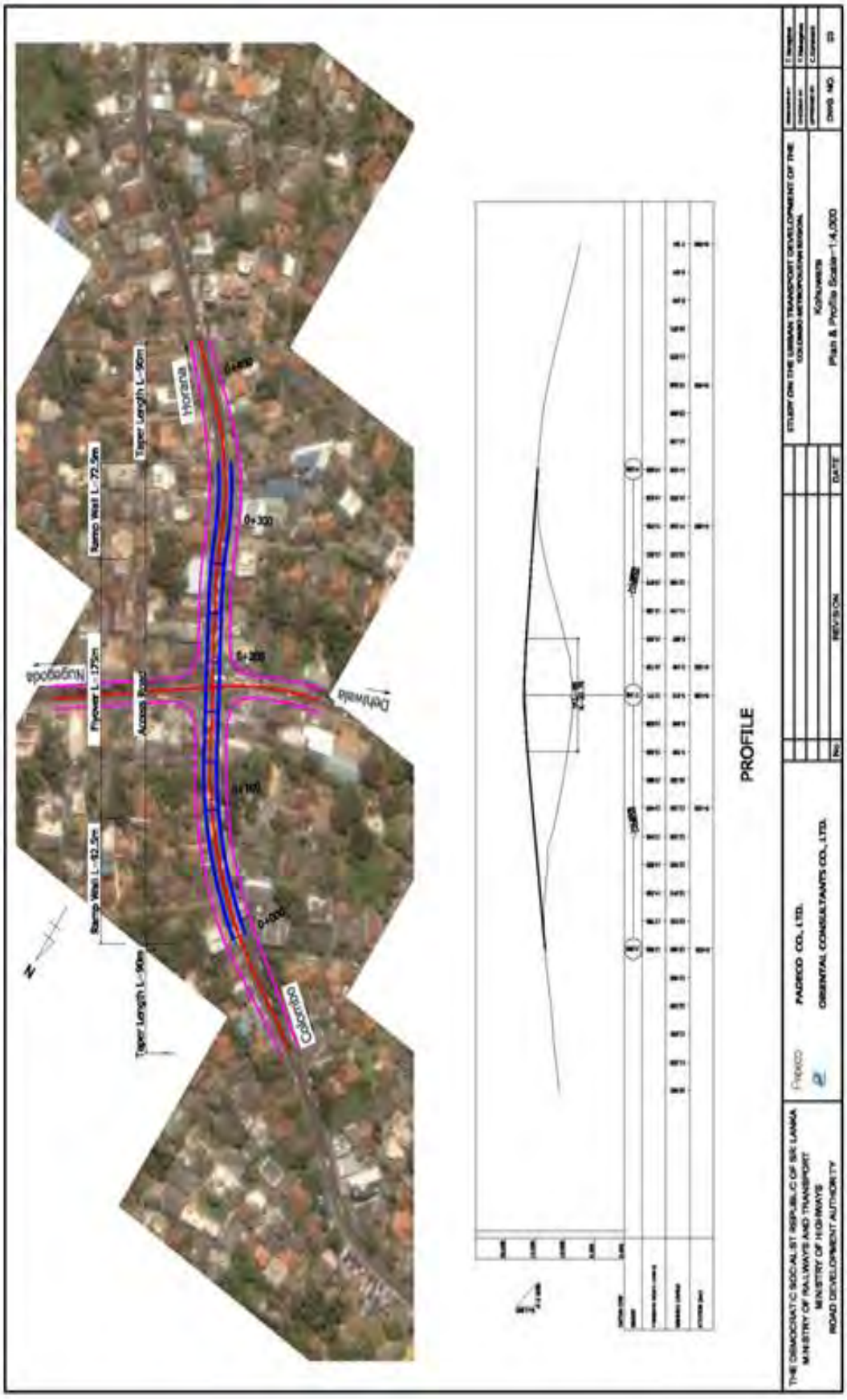

Figure A31.5 Kohuwala Flyover

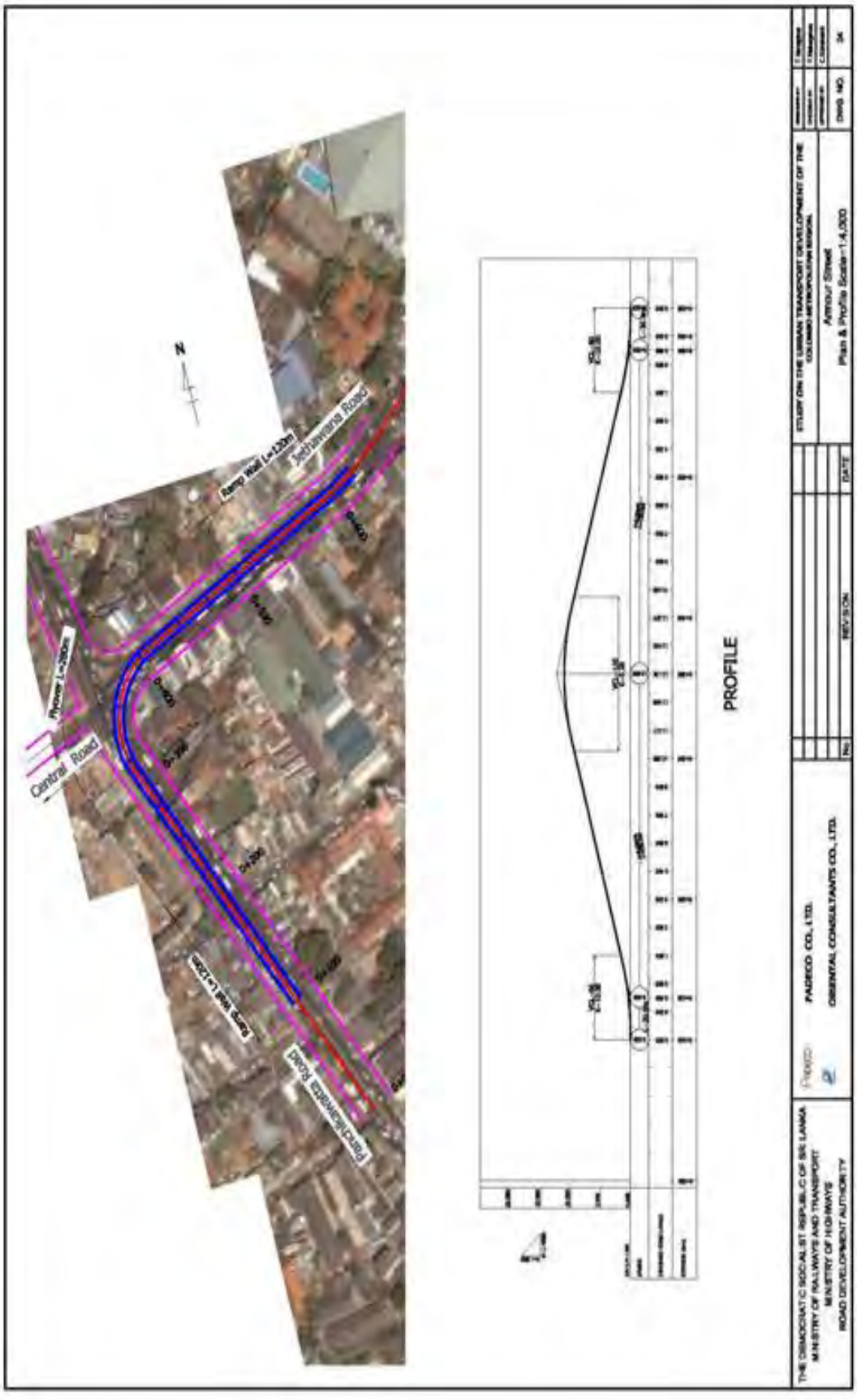

Figure A31.6 Armour Street Flyover

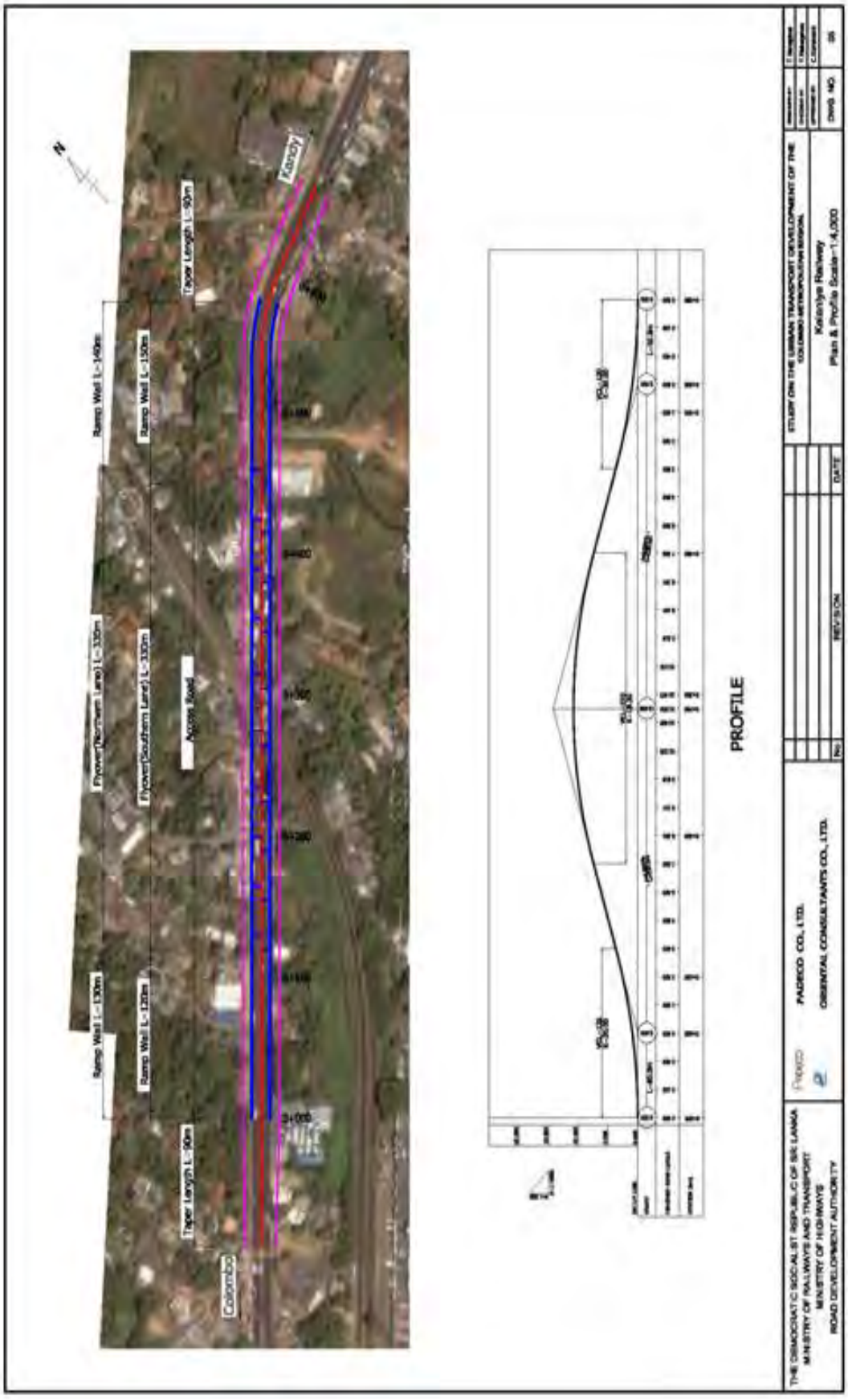

Figure A31.7 Kelaniya Railway Flyover

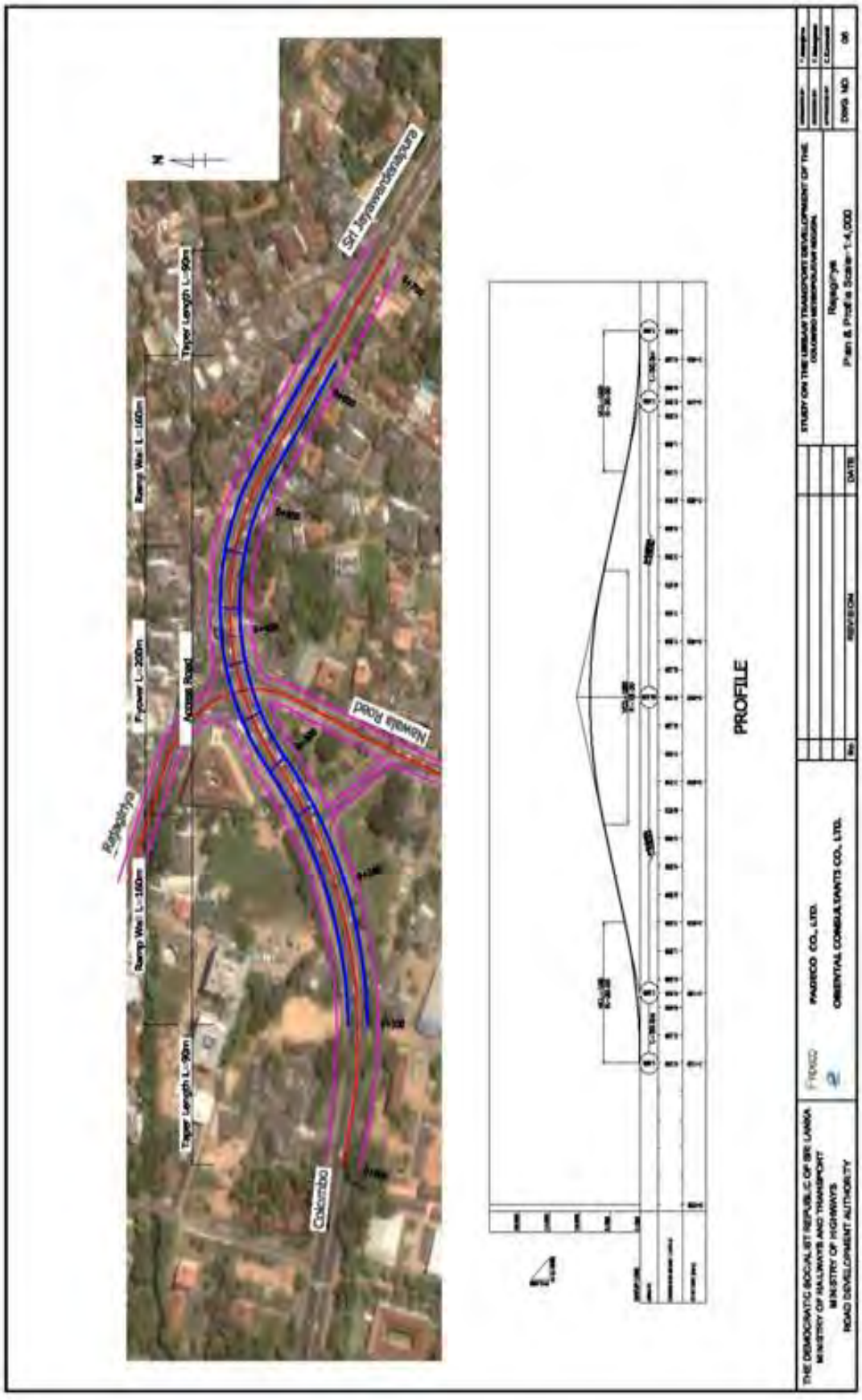

Figure A31.8 Rajagiriya Flyover

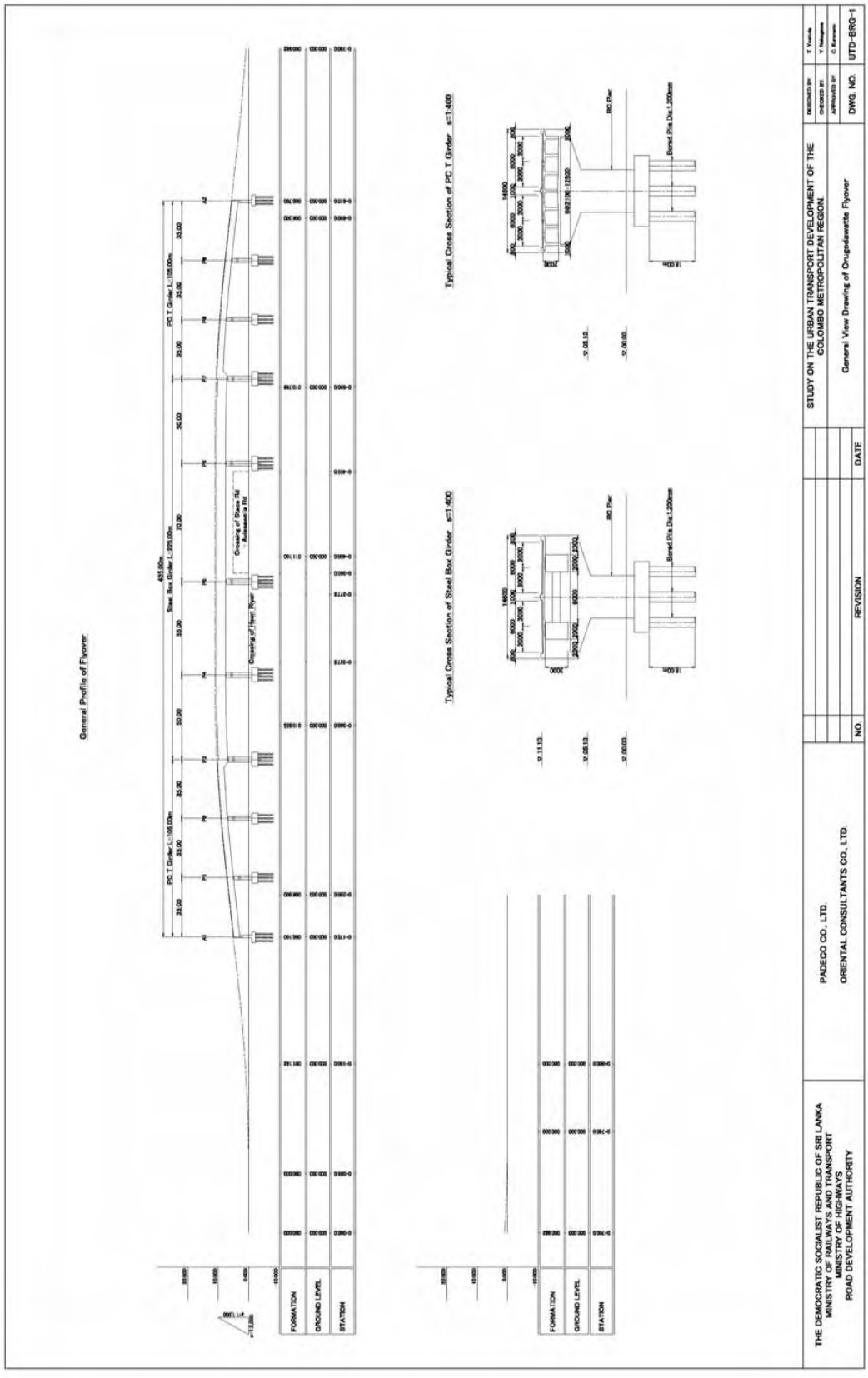

Figure A31.9 General View Drawing of Orugodawatte Flyover

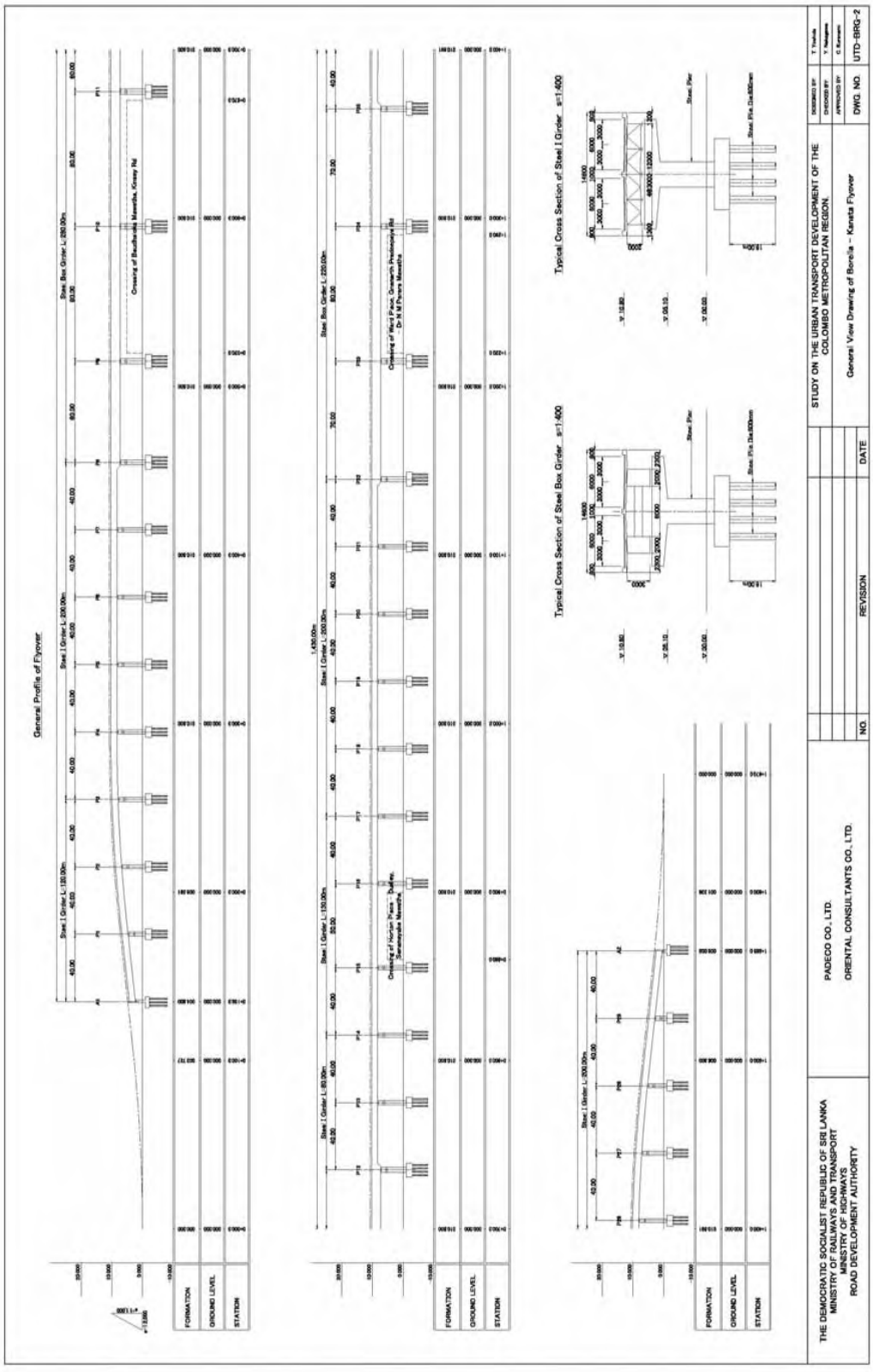

Figure A31.10 General View Drawing of Borella - Kanata Flyover

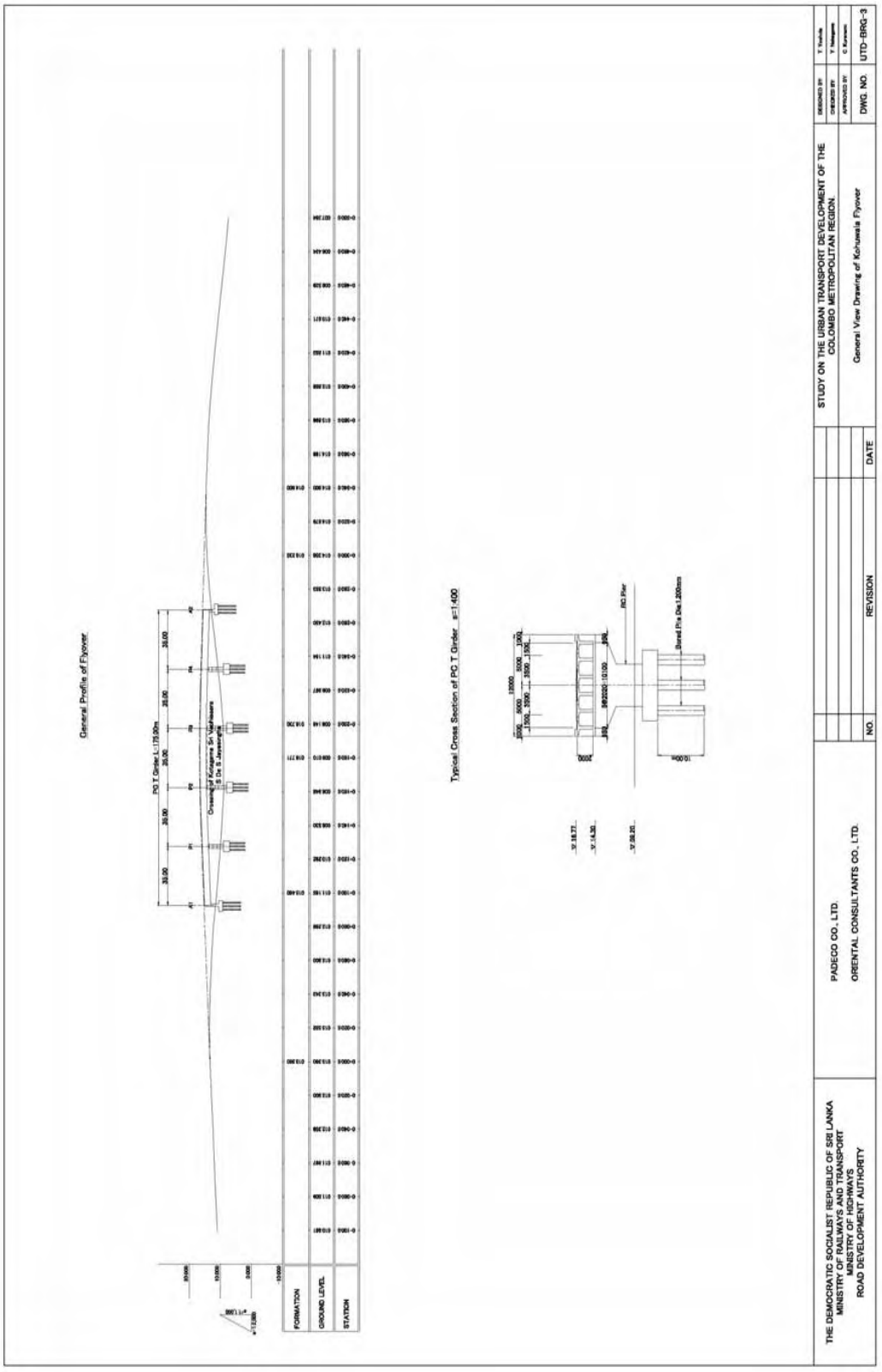

Figure A31.11 General View Drawing of Kohuwala Flyover

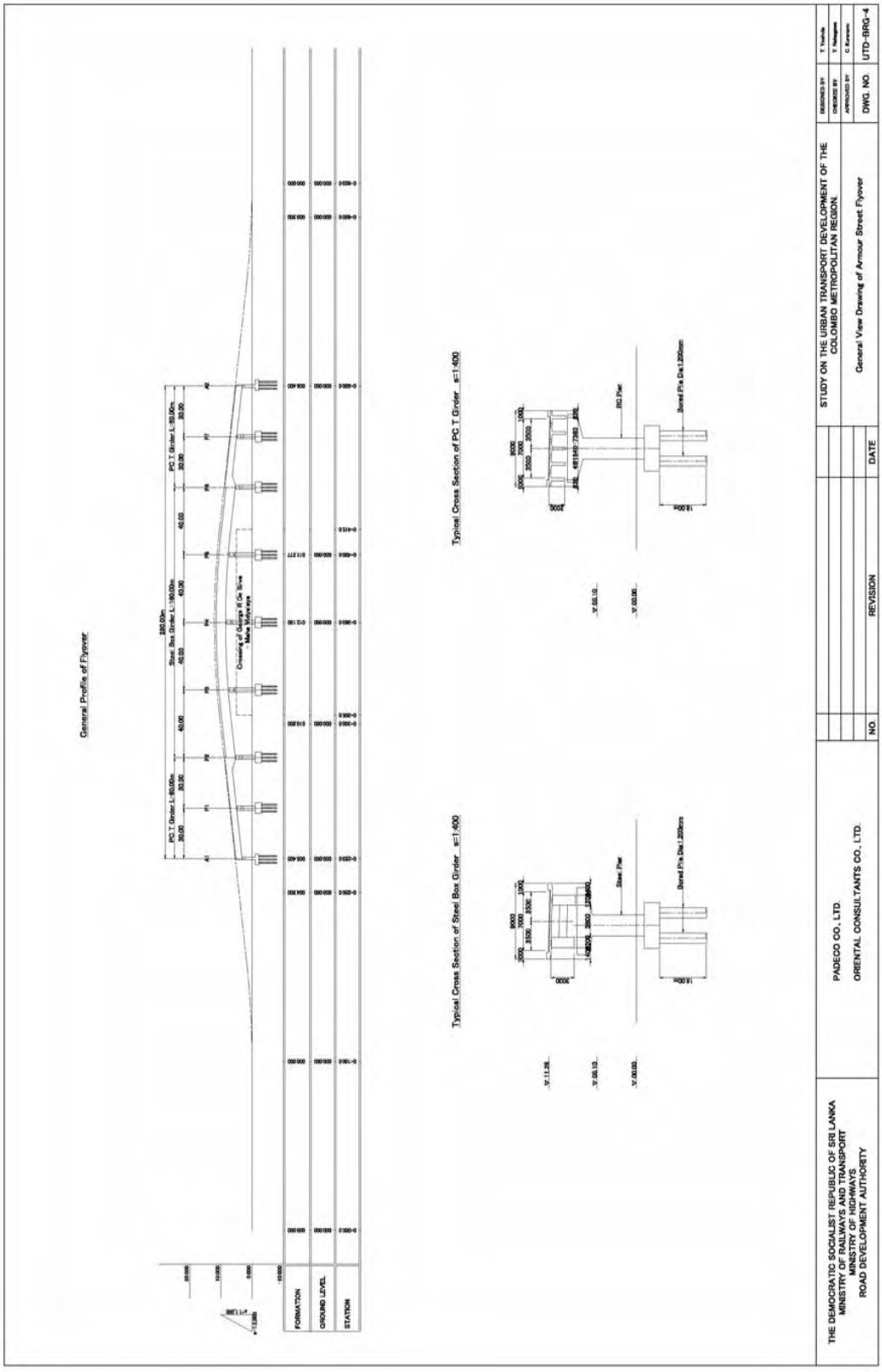

Figure A31.12 General View Drawing of Armour Street Flyover

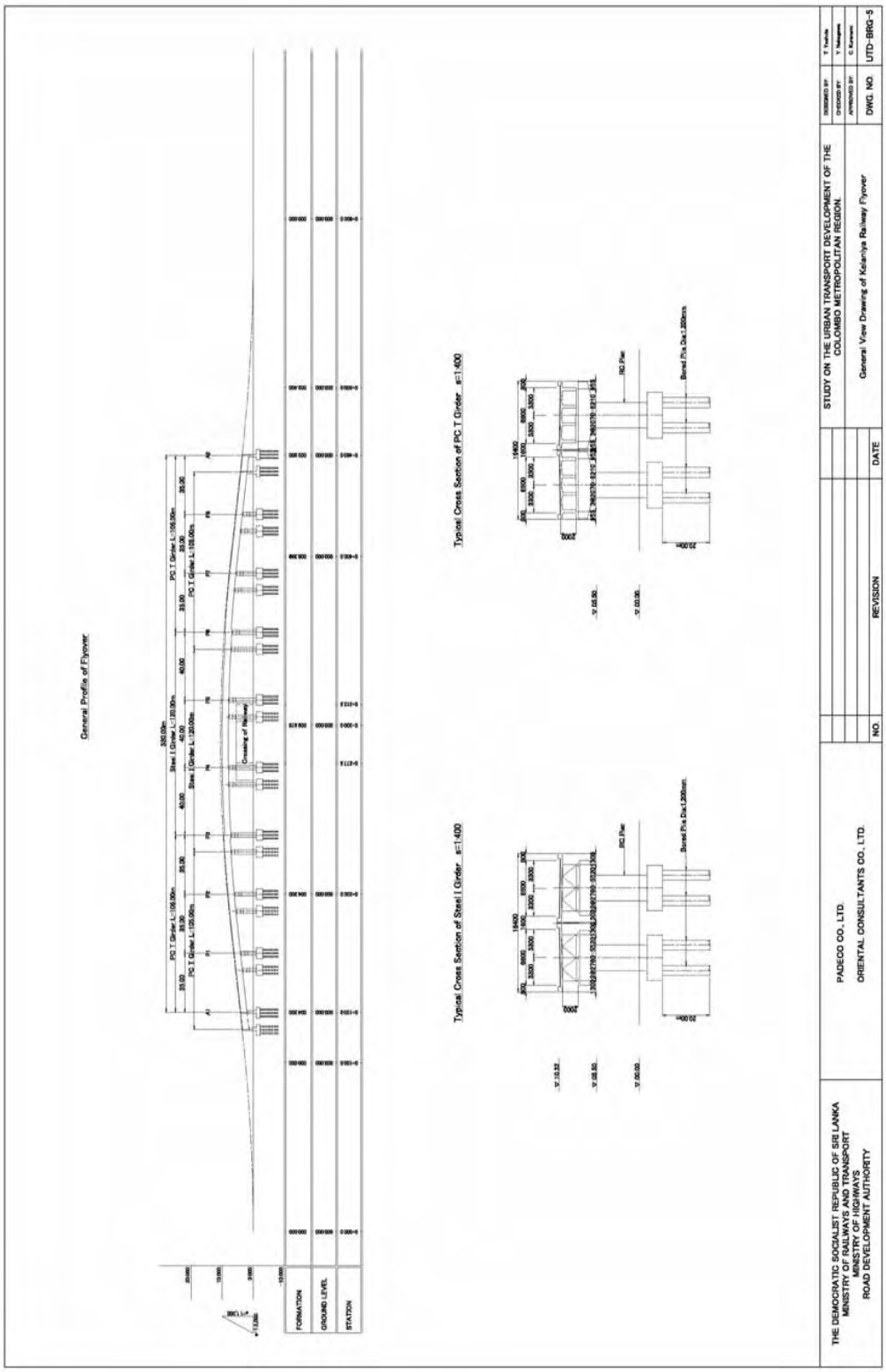

Figure A31.13 General View Drawing of Kelaniya Railway Flyover

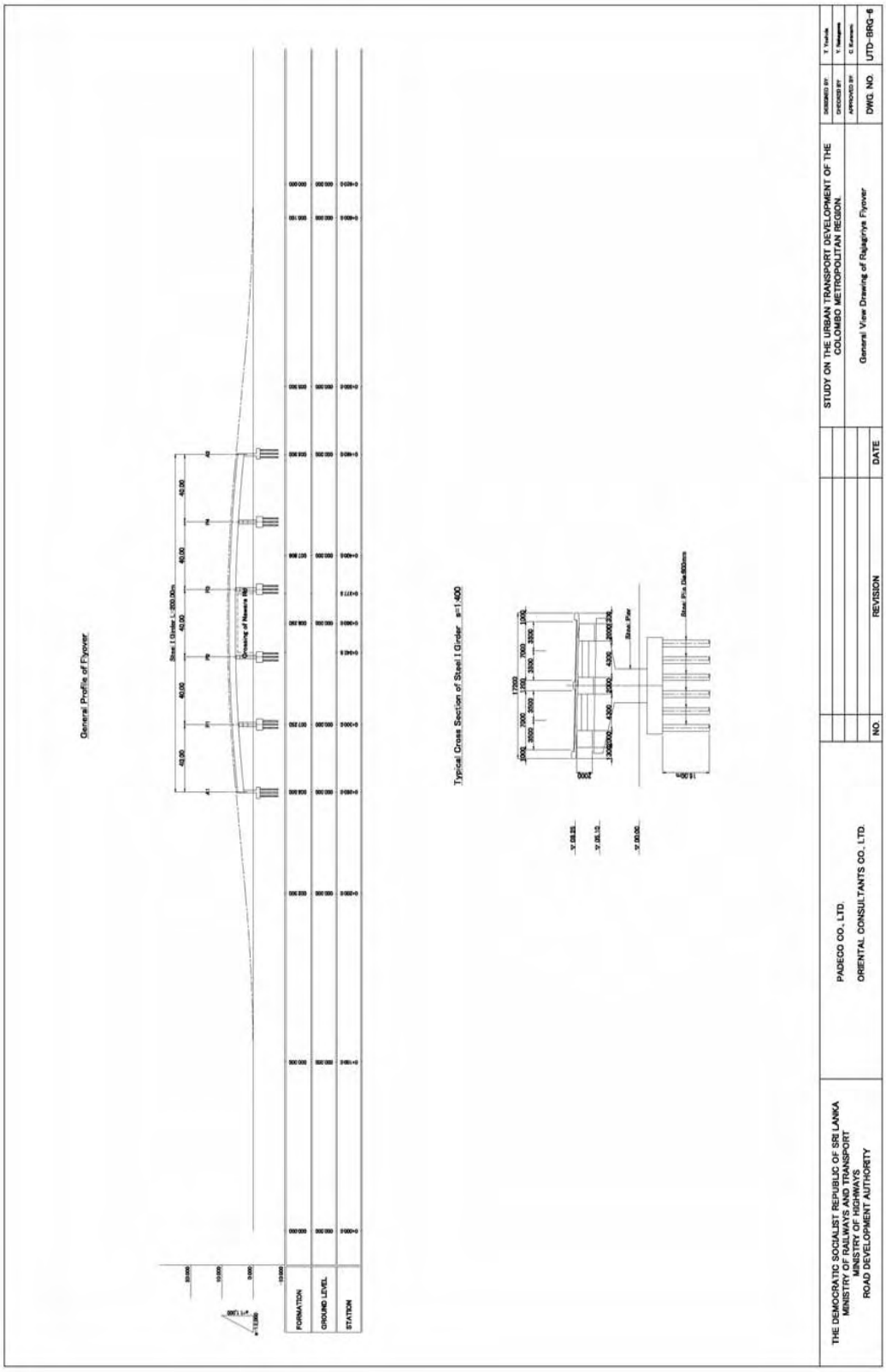

Figure A31.14 General View Drawing of Rajagiriya Flyover

Appendix 32 OD Tables for Traffic Demand Model

This appendix provides the origin destination tables for 2013, 2025, and 2030 that are used in Chapter 19 to conduct the traffic demand analysis.

Table A32.1 Vehicle Trip Matrix for 2013 (All Trip Types)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
1 Negombo	0	438	429	452	231	3641	683	261	132	123	47	35	0	6	1	21	21	60	253	174	392	149	85	247	865	198	325	143	379	240	177	10208
2 Katana	954	0	412	790	243	3932	1109	281	101	95	30	8	0	1	5	4	10	48	205	178	451	132	122	121	649	52	18	13	121	68	161	10314
3 Ja-Ela	575	372	0	1509	323	4581	1071	318	111	99	26	17	0	2	1	8	11	53	231	232	456	191	132	233	1168	76	48	34	206	142	174	12400
4 Wattala	724	618	1033	0	1307	13586	2943	713	244	209	60	26	0	4	11	17	26	127	502	482	1057	591	450	585	1148	64	43	38	207	209	391	27415
5 Kelaniya	540	373	553	1507	0	11660	2612	586	207	173	52	20	0	4	9	18	22	112	437	429	1038	591	460	535	1073	54	28	39	182	193	359	23866
6 Colombo	5892	3762	4836	18203	7365	0	52340	9681	3362	2752	734	437	1	56	116	204	368	1262	8280	5518	14931	6528	1957	3662	7822	512	423	419	2025	1932	3421	168801
7 Nugegoda	1649	1178	1310	3471	1550	58435	0	4021	1085	978	223	105	0	11	43	42	126	449	3833	2335	5197	1765	605	724	2056	103	52	67	438	378	1015	93244
8 Moratuwa	465	321	359	1006	429	11482	3989	0	1280	755	136	82	0	10	20	38	102	259	1635	715	1291	392	197	239	660	41	35	39	161	164	374	26676
9 Panadura	199	98	118	284	125	3544	1066	1246	0	1666	111	91	0	9	10	26	88	144	488	242	442	104	45	104	226	20	24	20	82	76	143	10841
10 Kalutara	160	77	96	194	123	2340	710	652	1544	0	99	73	0	7	9	29	154	169	460	213	346	101	55	80	182	17	15	20	67	65	139	8196
11 Beruwela	75	36	40	74	42	953	277	170	123	116	0	83	1	7	4	11	13	33	111	67	134	31	18	33	77	7	7	7	27	25	55	2657
12 Matugama	50	13	19	21	21	502	128	87	85	78	81	0	1	45	4	26	12	41	82	56	89	14	6	23	53	6	6	9	28	26	38	1650
13 Walallawita	0	0	0	0	1	9	2	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	15
14 Agalawatte	6	0	1	2	2	49	11	8	8	6	6	44	0	0	0	5	1	4	7	7	8	2	1	4	5	1	1	1	4	4	5	203
15 Dodangoda	2	2	2	3	4	68	22	8	2	5	1	2	0	0	0	0	0	2	5	5	8	1	1	2	2	0	0	0	0	1	2	150
16 Bulathsinhala	25	4	9	10	15	228	57	38	31	32	11	27	0	5	0	0	7	30	43	34	50	10	5	12	28	5	5	6	16	17	25	785
17 Bandaragama	25	7	11	25	13	386	123	108	83	156	10	10	0	1	0	6	0	47	119	37	57	9	4	10	25	1	4	4	10	10	21	1322
18 Horana	99	59	69	161	94	1561	524	275	161	196	29	45	0	5	6	30	50	0	264	243	312	78	52	52	138	8	6	11	43	47	125	4743
19 Kesbewa	387	186	238	531	266	8257	3263	1466	443	496	82	80	0	7	6	39	117	222	0	860	1302	271	97	193	453	37	31	37	138	148	275	19928
20 Homagama	380	197	245	506	261	6165	2317	750	241	247	63	48	0	6	11	29	42	208	913	0	2146	260	140	172	472	26	26	31	134	140	340	16516
21 Kaduwella	576	316	405	1000	609	11371	3260	981	347	331	83	68	0	9	11	46	52	241	1032	1852	0	601	343	400	843	57	47	58	230	297	657	26123
22 Kolonnawa	208	138	193	559	428	7686	2196	378	124	109	27	17	0	2	2	9	12	61	330	280	675	0	163	174	342	25	13	19	84	103	185	14542
23 Biyagama	117	150	201	616	507	2405	762	188	79	63	22	5	0	3	2	12	6	68	123	212	395	266	0	234	387	18	13	16	64	118	214	7266
24 Mahara	287	98	190	501	396	3529	623	205	94	74	23	20	0	5	0	11	10	39	188	167	382	149	151	0	978	64	45	61	330	470	146	9236
25 Gampaha	1023	435	987	914	491	5973	1297	429	179	157	51	39	0	5	5	20	22	86	356	317	724	245	185	919	0	394	144	133	890	629	287	17336
26 Minuwangoda	244	77	91	76	45	705	148	54	25	18	7	5	0	1	0	4	1	9	50	38	89	23	16	76	463	0	42	31	168	59	32	2597
27 Divulapitiya	321	6	38	32	23	343	39	27	19	15	7	6	0	1	0	5	4	6	31	21	38	14	5	45	133	42	0	73	104	57	23	1478
28 Mirigama	152	11	35	36	27	415	62	32	20	18	7	8	0	1	0	6	4	10	36	28	54	16	6	57	132	31	73	0	202	82	37	1598
29 Attanagalla	437	120	206	284	182	2047	394	179	78	73	24	25	0	5	0	17	10	46	142	147	257	102	74	386	997	165	113	206	0	500	167	7383
30 Weke	274	67	135	191	146	2083	414	165	81	75	25	29	0	5	0	17	10	43	166	143	338	90	77	496	704	64	57	84	486	0	162	6627
31 Hanwella	251	156	195	439	308	3150	923	318	140	155	50	37	0	7	2	28	19	113	259	325	678	218	193	159	349	30	29	45	145	167	0	8888
Total	16097	9315	12456	33397	15577	171086	83365	23625	10429	9270	2128	1493	3	230	278	728	1320	3992	20581	15357	33338	12944	5645	9977	22430	2118	1673	1664	6971	6367	9150	543004

Table A32.2 Vehicle Trip Matrix for 2025 (All Trip Types)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
1 Negombo	0	676	586	633	291	5228	1043	371	178	170	61	48	0	8	4	25	31	76	353	237	567	185	105	323	1157	252	411	181	489	306	233	14228
2 Katana	1570	0	640	1195	332	6405	1814	449	157	150	46	15	0	1	10	7	17	69	335	271	733	175	161	180	1011	77	24	20	188	97	235	16384
3 Ja-Ela	840	566	0	2142	425	6916	1657	467	161	144	36	25	0	2	4	10	16	73	346	323	696	244	166	319	1627	101	64	45	279	189	242	18125
4 Wattala	1093	918	1460	0	1671	20200	4449	1041	358	308	87	38	0	4	17	20	36	170	768	680	1598	748	561	804	1639	89	56	48	297	277	527	39962
5 Kelaniya	831	549	782	2029	0	17186	3908	853	293	247	74	28	0	4	16	23	30	149	650	586	1545	737	559	716	1527	70	38	51	251	249	480	34461
6 Colombo	9039	6035	7360	26973	10208	0	82193	14568	4990	4190	1093	622	1	73	188	259	539	1832	12571	8130	23084	8715	2700	5114	11631	709	556	544	2896	2626	4950	254389
7 Nugegoda	2732	1937	2093	5396	2254	93715	0	6371	1712	1577	357	162	0	16	70	55	196	686	6153	3605	8468	2463	861	1094	3260	154	68	91	685	555	1557	148343
8 Moratuwa	714	501	539	1461	577	17340	6226	0	1800	1090	196	113	0	15	30	49	142	360	2395	1027	1971	513	259	336	971	55	48	52	228	222	526	39756
9 Panadura	296	158	180	429	175	5439	1710	1792	0	2255	153	123	0	12	16	35	118	200	712	354	683	142	64	146	334	27	33	27	114	103	205	16035
10 Kalutara	234	119	137	276	157	3492	1094	920	2025	0	131	97	0	9	16	36	201	224	648	294	512	129	67	108	257	24	20	27	92	85	186	11617
11 Beruwela	112	59	63	110	58	1500	452	258	171	165	0	109	1	9	9	13	21	48	169	100	209	43	22	47	116	12	9	9	39	33	77	4043
12 Matugama	72	21	29	31	27	741	199	123	111	105	103	0	1	56	9	33	17	54	113	78	129	20	9	32	75	8	8	12	39	35	52	2342
13 Walallawita	0	0	0	0	1	16	5	0	0	0	1	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	28
14 Agalawatte	11	0	1	2	2	70	15	13	11	8	8	55	0	0	0	7	1	4	12	12	13	2	1	4	8	1	1	1	4	4	5	276
15 Dodangoda	5	5	5	6	7	105	36	15	5	10	1	5	0	0	0	0	0	5	10	10	15	1	1	5	5	0	0	0	0	1	5	263
16 Bulathsinhala	34	7	14	13	20	318	82	52	42	44	13	37	0	7	0	0	9	40	59	44	68	12	5	17	39	5	7	8	24	21	32	1073
17 Bandaragama	38	11	15	35	18	566	186	150	109	207	16	12	0	1	0	8	0	61	162	52	84	14	7	16	36	1	4	4	16	16	30	1875
18 Horana	144	86	100	225	120	2329	794	393	224	272	41	60	0	5	11	37	67	0	376	336	460	97	63	71	196	11	8	14	59	59	167	6825
19 Kesbewa	581	297	359	780	369	12355	5077	2117	622	709	117	109	0	9	10	51	157	307	0	1216	1951	359	132	265	671	52	40	48	190	194	389	29533
20 Homagama	599	312	375	725	350	9378	3613	1105	350	365	94	65	0	8	17	38	61	287	1320	0	3167	347	183	234	704	38	35	44	189	187	485	24675
21 Kaduwella	872	482	588	1384	785	16748	4946	1426	490	470	117	89	0	11	17	57	72	326	1489	2538	0	774	430	540	1212	73	60	75	317	390	895	37673
22 Kolonnawa	302	202	265	733	537	11106	3272	553	173	157	37	24	0	2	5	11	19	81	491	393	994	0	198	239	484	34	15	26	113	133	239	20838
23 Biyagama	153	193	251	813	583	3347	1037	241	103	79	30	8	0	3	5	12	9	81	171	263	533	310	0	295	500	21	18	18	81	142	254	9554
24 Mahara	384	140	253	647	494	4841	892	283	127	100	32	27	0	5	0	13	16	49	259	224	531	184	183	0	1282	82	56	80	425	594	190	12393
25 Gampaha	1439	666	1372	1268	641	8804	1997	630	251	225	71	51	0	5	10	24	29	119	518	444	1076	314	234	1211	0	511	184	170	1162	807	391	24624
26 Minuwangoda	338	123	129	110	59	1065	239	81	37	27	12	7	0	1	0	4	1	14	74	57	134	32	23	100	624	0	53	39	219	78	47	3727
27 Divulapitiya	405	9	50	43	28	439	49	36	23	20	9	8	0	1	0	7	4	8	40	25	49	16	5	56	169	53	0	91	130	72	28	1873
28 Mirigama	195	18	45	49	35	562	89	42	27	25	9	11	0	1	0	8	4	16	46	39	72	21	9	74	170	39	91	0	257	106	48	2108
29 Attanagalla	577	170	268	376	224	2790	552	239	102	94	33	34	0	5	0	22	16	58	193	193	351	123	87	498	1288	208	141	261	0	632	214	9749
30 Weke	367	102	186	258	190	2981	629	239	110	104	34	40	0	5	0	21	16	58	232	197	483	115	98	648	939	85	72	108	625	0	214	9156
31 Hanwella	361	226	267	604	370	4646	1373	447	193	213	69	49	0	7	5	32	26	145	374	438	977	262	226	207	481	40	39	56	195	212	0	12540
Total	24338	14588	18412	48746	21008	260628	129628	35275	14955	13530	3081	2072	3	285	469	917	1871	5600	31039	22166	51157	17097	7419	13699	32413	2832	2159	2150	9603	8425	12903	808468

Table A32.3 Vehicle Trip Matrix for 2030 (All Trip Types)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total
1 Negombo	0	805	669	732	324	6076	1237	431	204	194	71	53	0	8	4	28	33	85	408	273	660	207	113	363	1313	281	455	200	548	341	266	16382
2 Katana	1898	0	762	1409	380	7728	2190	538	189	181	56	17	0	1	11	7	19	83	408	321	883	200	182	212	1204	91	28	21	225	115	278	19637
3 Ja-Ela	981	673	0	2488	479	8169	1970	545	189	172	41	27	0	2	4	10	18	84	410	370	824	273	187	366	1872	115	70	48	319	214	278	21198
4 Wattala	1289	1081	1688	0	1866	23758	5256	1217	417	362	99	42	0	4	19	22	42	195	911	784	1887	832	617	925	1907	101	62	54	343	316	600	46696
5 Kelaniya	985	643	905	2307	0	20170	4605	994	340	289	83	30	0	4	17	24	36	169	766	672	1814	816	610	813	1771	78	40	56	288	282	544	40151
6 Colombo	10715	7253	8713	31689	11730	0	98171	17190	5868	4958	1283	720	1	82	228	290	630	2138	14874	9533	27454	9897	3097	5898	13681	814	627	612	3366	2997	5769	300278
7 Nugegoda	3309	2344	2511	6430	2629	112591	0	7629	2047	1898	427	194	0	18	86	60	233	812	7396	4284	10220	2838	994	1294	3903	184	78	105	815	650	1848	177827
8 Moratuwa	848	596	634	1704	655	20494	7426	0	2081	1269	226	129	0	15	36	53	164	416	2804	1197	2339	579	293	384	1137	63	51	57	267	251	606	46774
9 Panadura	352	192	213	507	203	6457	2054	2085	0	2570	176	138	0	13	18	38	133	231	835	416	813	161	74	169	394	31	36	30	132	116	239	18826
10 Kalutara	272	140	159	318	176	4110	1302	1064	2284	0	149	107	0	9	17	40	225	252	748	340	603	145	74	123	301	27	21	29	103	94	213	13445
11 Beruwela	134	71	74	131	65	1791	546	306	199	191	0	123	1	9	10	15	23	53	199	118	253	47	25	53	137	12	9	9	45	38	89	4776
12 Matugama	84	25	33	35	30	868	238	143	124	119	115	0	1	62	10	37	19	60	130	89	151	21	9	36	86	8	8	13	42	38	58	2692
13 Walallawita	0	0	0	0	1	18	5	0	0	0	1	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	30
14 Agalawatte	11	0	1	2	2	80	18	13	12	8	8	61	0	0	0	7	1	5	12	12	13	2	1	5	9	1	1	1	5	5	6	302
15 Dodangoda	5	5	5	6	7	128	43	17	5	11	1	5	0	0	0	0	0	5	11	11	17	1	1	5	5	0	0	0	0	1	5	300
16 Bulathsinhala	38	7	14	14	21	366	96	59	46	49	15	41	0	7	0	0	9	44	66	48	79	12	5	19	42	6	7	8	25	23	35	1201
17 Bandaragama	43	13	18	42	20	663	219	172	122	233	17	14	0	1	0	8	0	67	185	59	98	14	7	17	42	1	5	5	17	17	33	2152
18 Horana	170	102	113	260	133	2742	941	458	257	312	45	66	0	6	11	41	73	0	439	385	539	109	68	82	228	12	8	15	68	67	191	7941
19 Kesbewa	686	359	423	913	424	14551	6049	2466	719	819	135	123	0	9	12	56	178	354	0	1407	2299	410	152	309	784	56	45	53	221	224	451	34687
20 Homagama	717	373	441	842	399	11104	4307	1296	407	424	109	71	0	8	19	40	70	332	1537	0	3712	392	206	268	828	40	38	48	219	213	562	29022
21 Kaduwella	1028	568	687	1594	877	19644	5852	1663	567	548	135	101	0	11	19	63	82	373	1736	2908	0	867	476	616	1410	83	66	84	364	438	1022	43882
22 Kolonnawa	352	235	303	824	597	12935	3847	645	200	181	41	27	0	2	5	11	20	92	578	452	1164	0	215	276	559	39	17	28	132	150	271	24198
23 Biyagama	173	218	277	919	623	3861	1185	270	117	88	31	8	0	3	5	13	9	89	197	289	607	331	0	332	563	22	19	19	90	155	273	10786
24 Mahara	437	162	288	723	548	5546	1035	324	147	115	35	30	0	6	0	15	17	56	298	253	609	204	204	0	1449	91	62	87	475	661	212	14089
25 Gampaha	1663	789	1579	1462	720	10323	2371	736	292	262	82	57	0	6	11	26	33	135	604	511	1263	351	259	1368	0	569	204	189	1306	901	446	28518
26 Minuwangoda	386	150	151	130	66	1258	288	96	41	31	12	7	0	1	0	5	1	16	85	64	160	35	25	113	711	0	58	43	245	86	52	4316
27 Divulapitiya	449	9	54	47	30	488	55	38	26	21	9	8	0	1	0	7	5	8	45	28	53	18	5	62	187	58	0	101	144	80	31	2067
28 Mirigama	218	20	50	56	37	638	105	46	30	27	9	12	0	1	0	8	5	17	53	43	81	23	9	81	191	43	101	0	285	117	53	2359
29 Attanagalla	649	196	303	429	246	3193	638	272	116	106	36	36	0	6	0	23	17	66	222	216	401	136	94	559	1445	231	157	288	0	701	241	11023
30 Weke	418	122	211	294	214	3465	744	279	126	119	38	44	0	6	0	23	17	64	268	228	562	126	110	730	1064	94	80	119	700	0	242	10507
31 Hanwella	422	264	306	694	403	5448	1615	518	222	246	77	53	0	8	5	35	29	164	434	497	1137	287	244	235	551	43	42	61	219	237	0	14496
Total	28732	17415	21585	57001	23905	308663	154408	41510	17394	15803	3562	2345	3	309	547	1005	2141	6465	36659	25808	60699	19334	8356	15713	37774	3194	2395	2383	11008	9528	14914	950558

Appendix 33 Working Group Evaluation of Long List Projects

A33.1 Introduction

This appendix provides the results from each working group's evaluation of the long list projects. The Social and Natural Environment Working Group and the Institutional and Policy Coordination are not included as they did not conduct an evaluation of the applicable project long list. Also the Public Transport Working Group and the Road Development Planning Group evaluated the projects as a group, while each participant of the Traffic Management and Safety Working Group evaluated each project. Hence the Traffic Management and Safety Working Group results shown below are a total of all evaluations, with the total score possible for each set to be 30 (10 evaluators, with 3 = High) and the PTWG and RDPWG has a total score for each criteria of 3.

A33.2 Public Transport Working Group

Table A33.1 Results of Public Transport Working Group Evaluation

						0=None, 1=Low, 2=Medium, 3=High								
Project Code	**Project Title**	**Implementing Agency**	**Complete by 2010**	**Complete by 2015**	**Complete after 2015**	**Technical Feasibility**	**Impact on Reducing Traffic Congestion**	**Promote Public Transport System and Use**	**Level of Cooperation of Rationalizing Activities**	**Institutional Barriers**	**Negative social impacts**	**Negative environmental impacts**	**Lack of policy consistency**	**Total**
					Weight	**1**	**1**	**1**	**1**	**-1**	**-1**	**-1**	**-1**	
PT-2	Develop Regulations for School and Office Transport	NTC WPRPTA CMT	X			3	3	2	3	0	0	0	0	11
Bus-11	Develop Crew Training Center at WPRPTA	WPRPTA	X			3	2	3	3	1	0	0	0	10
PT-3	Develop Large Capacity School Transport Services in the CMR	NTC	X			3	3	3	1	0	0	0	0	10
Bus-4	Timetable Creation, Implementation, and Enforcement	WPRPTA, SLTB	X			3	3	3	2	2	0	0	1	8
Bus-3	Pilot Concessioning Project of New and/or Intra-Provincial Luxury Routes on High Demand Corridors	WPRPTA		X		3	3	3	2	2	0	0	3	6
PT-1	Audit of Government Expenditures	Central Bank/ Independent Agency	X			3	0	2	2	0	0	0	1	6
Rail-4	Increase Intermodal Coordination between Bus Sector and SLR	SLR	X			3	3	3	1	2	0	0	2	6
Rail-1	Rehabilitation of Rail Siding, Signaling, and Communications	SLR		X		3	2	3	2	2	0	0	2	6
Bus-2	Project to Lay the Groundwork for Concessioning Urban Bus Routes	NTC WPRPTA		X		3	2	3	2	2	0	0	3	5
Rail-11	Technical Assistance to Develop Fare Policy for SLR	SLR	X			3	2	3	1	1	0	0	3	5
Rail-2	Develop Long-Term Strategic Plan and Framework for Improving the Provision of SLR Services, Especially in Colombo Metropolitan Area	SLR		X		3	3	3	1	3	0	0	3	4
Rail-5	Straighten the KV Line from Maradana - Homagama	SLR		X		2	3	3	2	2	2	1	1	4
Rail-10	Identify and Install Automated Ticketing Printing and Purchasing System	SLR, MoRT		X		2	2	3	1	2	1	0	2	3
IM-2	Integrate Bus and Rail Ticketing and Fares	SLR, SLTB, NTC		X		1	3	3	1	3	0	0	3	2
Rail-6	Double Track the KV Line	SLR			X	Not evaluated as it would not be completed until after 205								0
Rail-7	Electrification of the Railway	SLR			X	Not evaluated as it would not be completed until after 205								0

A33.3 Traffic Management and Safety Working Group

Table A33.2 Results of Traffic Management and Safety Working Group Evaluation

		Evaluation Criteria							(+) factors		(-) factors		Total	Rank	Short List
Code	Projects	(a)	(b)	(c)	(d)	(e)	(f)	(g)							Project
TM-01	Intersection geometric improvement	29	26	22	11	8	3	21	98	2	22	11	76	8	X
TM-02	Area traffic control (ATC) system	29	28	23	9	4	3	19	99	1	16	8	83	3	X
TM-03	Traffic signal rehabilitation	27	23	23	5	2	3	18	91	5	10	4	81	5	X
TM-04	CCTV traffic monitoring system	23	22	18	12	5	5	22	85	9	22	11	63	13	
TM-05	Model area traffic management	26	22	17	13	6	3	19	84	10	22	11	62	14	
TM-06	Corridor traffic management improvement	25	25	20	10	9	4	18	88	7	23	12	65	11	X
TM-07	Pedestrian overpass/underpass	26	27	20	10	4	3	24	97	3	17	9	80	6	
TM-08	Pavement marking improvement	25	22	18	8	8	3	18	83	11	19	10	64	12	
TM-09	Improvement of parking management system	24	26	20	11	10	4	18	88	7	25	13	63	13	
TM-10	Parking policy development	27	23	21	16	7	3	18	89	6	26	14	63	13	
TM-11	Traffic sign management system	26	24	17	4	5	2	22	89	6	11	5	78	7	
TM-12	Truck ban	24	26	19	12	9	5	17	86	8	26	14	60	15	
TM-13	Road user education program	29	24	14	2	3	2	24	91	5	7	1	84	2	X
TM-14	Traffic safety improvements	26	22	19	4	1	3	25	92	4	8	2	84	2	X
TM-15	Traffic safety awareness program	30	25	19	4	1	2	25	99	1	7	1	92	1	X
TM-16	Upgrade accident database system	26	20	16	4	4	4	24	86	8	12	6	74	9	
TM-17	Institutional Strengthening of CMC	26	20	13	4	4	3	16	75	13	11	5	64	12	X
TM-18	Institutional Strengthening of RDA	27	20	13	4	2	3	16	76	12	9	3	67	10	X
TM-19	Institutional Strengthening of Traffic Police	28	25	16	4	3	4	22	91	5	11	5	80	6	X
TM-20	Traffic demand management	25	24	24	11	8	4	15	88	7	23	12	65	11	
Bus-1	Bus priority measures	22	22	26	10	11	4	19	89	6	25	13	64	12	
Bus-8	Develop bus stop facilities	26	25	27	6	6	3	19	97	3	15	7	82	4	X

(a)	Technical Feasibility (+)	Max=	99	Min=	7	Max=	92	
(b)	Impact on Reducing Congestion (+)	Min=	75	Max=	26	Min=	60	
(c)	Impact on Promoting Public Transport Use (+)							
(d)	Institutional Barriers (-)	92~		~12		82~		
(e)	Negative Social Impacts (-)	~91		~18		~81		
(f)	Negative Environmental Impacts (-)	~82		19~		~72		
(g)	Impact on enhancing traffic safety (+)							

TM-06, TM-07 and TM-11 are merged into one project as TM-06.

Note: TM-13 and TM-15 were combined into one project (TM-13) at final stage.
TM-17 and TM-18 were combined into one project (TM-17) at final stage.

A33.4 Road Development Planning Working Group

Table A33.3 Results of Road Development Planning Working Group Evaluation (1/5)

Project Code	Project Title	Implementation Demarcation	Technical Feasibility (+)	Impact on Reducing Congestion (+)	Impact on Promoting Public Transport Use (+)	Institutional Barriers (-)	Negative Social Impacts (-)	Negative Environmental Impacts (-)	Improvement of Transport Network Connectivity (+)	Consistency with Urban Development Plans (+)	Total	Note
Road-6	Baseline Road Extension	by 2010	3	3	3	1	1	1	3	3	**12**	4. Grade separated interchange construction for Orugodawatte Intersection (Road-45) is combined with Baseline Road Extension (Road-6)
Road-21	Improve Road from Pannipitiya - Battaramulla	by 2010	3	3	3	1	1	1	3	3	**12**	
Road-34	Improve Road from Panadura-Bandaragama (A8)	by 2010	3	3	3	1	1	1	3	3	**12**	
Road-15	Improve Road from Colombo - Horana	by 2010	3	3	3	1	2	1	3	3	**11**	2. Flyover Construction for Kohuwala Intersection (Road-37) is combined with Improve Road from Colombo – Horana (Road-15)
Road-16	Improve Road from Colombo - Ratnapura	by 2010	3	3	3	1	2	1	3	3	**11**	
Road-17	Improve Road of Kandy Road (I)	by 2010	3	3	3	1	2	1	3	3	**11**	1. Flyover Construction for Railway crossing at Kelaniya on Kandy road (road 36) and Grade separated interchange construction for Panchikawatte Roundabout (Road-44) are combined with Improve Road of Kandy Road (I) (Road-17)
Road-20	Improve Road from Rajagiriya - Ratmalana	by 2010	3	3	3	1	2	1	3	3	**11**	
Road-14	B152 Widening	by 2010	3	3	3	1	1	1	1	3	**10**	
Road-10	Extension of Duplication Road (I)	by 2010	3	3	2	1	2	1	3	3	**10**	
Road-49	Intermodal Transport Center (suburb area)	by 2010	3	3	3	2	1	1	2	3	**10**	

Table A33.3 Results of Road Development Planning Working Group Evaluation (2/5)

Project Code	Project Title	Implementation Demarcation	Technical Feasibility (+)	Impact on Reducing Congestion (+)	Impact on Promoting Public Transport Use (+)	Institutional Barriers (-)	Negative Social Impacts (-)	Negative Environmental Impacts (-)	Improvement of Transport Network Connectivity (+)	Consistency with Urban Development Plans (+)	Total	Note
Road-50	Intermodal Transport Center (CMC area)	by 2010	3	3	3	2	1	1	2	3	**10**	
Road-7	Marine Drive Extension (I)	by 2010	3	3	3	2	2	1	3	3	**10**	3. Flyover Construction for Dehiwala Junction on Galle Road (Road-39) is combined with Marine Drive Extension (I) (Road-7)
Road-WP5	Piliyandala - Henemulla (5.65 Km) + Bridge 150m span	by 2010	2	3	3	2	1	1	3	3	**10**	
Road-WP1	Pelawatta -Malabe - Kahantota Road (7 Km)	by 2010	3	2	3	2	1	1	3	3	**10**	
Road-WP2	Pittakotte -Thalawatugoda - Hokandara - Koskadawila Road (8.4.Km)	by 2010	3	2	3	2	1	1	3	3	**10**	
Road-WP4	Pannipitiya - Moralatiya - Tuumbowila - Wewala - Suwarapola Road (7.4 km)	by 2010	3	2	3	2	1	1	3	3	**10**	
Road-36	Flyover Construction for Railway crossing at Kelaniya on Kandy road	by 2010	3	3	2	1	2	1	2	3	**9**	
Road-23	Improve Road from Rajagiriya- Koswatte - Kelanimulla- Kiribathgoda	by 2010	3	3	3	2	2	2	3	3	**9**	
Road-WP6	Biyagama - Malwana - Walgama - Malwana - Walgama - Ulhitiwala - Pananwala -Keragala -Henegama - Wanaluwawa Road	by 2010	3	3	3	2	3	1	3	3	**9**	
Road-WP7	Kottawa - Pitipana Road (5.1 Km)	by 2010	3	3	3	2	3	1	3	3	**9**	

Table A33.3 Results of Road Development Planning Working Group Evaluation (3/5)

Project Code	Project Title	Implementation Demarcation	Technical Feasibility (+)	Impact on Reducing Congestion (+)	Impact on Promoting Public Transport Use (+)	Institutional Barriers (-)	Negative Social Impacts (-)	Negative Environmental Impacts (-)	Improvement of Transport Network Connectivity (+)	Consistency with Urban Development Plans (+)	Total	Note
Road-WP8	Homagama -Thalagala - Olaboduwa - Palanoruwa - Kahatapitiya - Kedalpitiya sections	by 2010	3	3	3	2	3	1	3	3	**9**	
Road-28	Improve Road from Delkanda - Rattanapitiya	by 2010	3	3	1	1	2	2	3	3	**8**	
Road-37	Flyover Construction for Kohuwala Intersection	by 2010	3	3	2	2	2	1	2	3	**8**	
Road-38'	Flyover Construction for Nugegoda Intersection on High Level Road	by 2010	3	3	2	2	2	1	2	3	**8**	
Road-39	Flyover Construction for Dehiwala Junction on Galle Road	by 2010	3	3	2	2	2	1	2	3	**8**	
Road-31	Improve Road from Kottawa - Hokandara	by 2010	3	3	3	2	3	2	3	3	**8**	
Road-51	Develop Pedestrian Circulation at Pettah	by 2010	3	2	2	2	1	1	1	3	**7**	
Road-52	Independent square pedestrian garden development	by 2010	3	2	2	2	1	1	1	3	**7**	
Road-53	Beira lake pedestrian circulation development	by 2010	3	2	2	2	1	1	1	3	**7**	
Road-29	Improve Road from Nawala-Koswatte - Etul Kotte	by 2010	3	3	1	1	3	2	3	3	**7**	
Road-38	Flyover Construction for Kirilapone Intersection	by 2010	3	3	2	2	2	2	2	3	**7**	

Table A33.3 Results of Road Development Planning Working Group Evaluation (4/5)

Project Code	Project Title	Implementation Demarcation	Technical Feasibility (+)	Impact on Reducing Congestion (+)	Impact on Promoting Public Transport Use (+)	Institutional Barriers (-)	Negative Social Impacts (-)	Negative Environmental Impacts (-)	Improvement of Transport Network Connectivity (+)	Consistency with Urban Development Plans (+)	Total	Note
Bus-9	Relocate the Pettah Bus Stands to the Periphery	by 2010	3	3	3	3	2	2	1	3	**6**	
3W-2	Construct Additional Three-Wheeler Stands	by 2010	3	3	3	3	2	2	1	1	**4**	
Road-1	Outer Circular Highway (OCH) within CMR	by 2015	3	3	3	1	1	1	3	3	**12**	
Road-26	Improve Road from Nugegoda, Jubili Post - Etul Kotte	by 2015	3	3	3	2	1	1	3	3	**11**	
Road-18	Improve Road of Kandy Road (II)	by 2015	3	3	3	2	2	1	3	3	**10**	
Road-33	Improve Road from Yakkala-Biyagama-Malambe	by 2015	3	3	3	2	2	1	3	3	**10**	
Road-43	Grade separated interchange construction for Rajagiriya Intersection	by 2015	3	3	2	1	1	1	2	3	**10**	
BRT/LRT/ New Railway	BRT line development between Dematagoda and Battalamulla	by 2015	3	3	3	2	1	2	3	3	**10**	
Road-8	Marine Drive Extension (II)	by 2015	3	3	3	2	2	2	3	3	**9**	
Road-12	Maradana - Galle Face Link	by 2015	2	3	3	2	1	2	3	3	**9**	

Table A33.3 Results of Road Development Planning Working Group Evaluation (5/5)

Project Code	Project Title	Implementation Demarcation	Technical Feasibility (+)	Impact on Reducing Congestion (+)	Impact on Promoting Public Transport Use (+)	Institutional Barriers (-)	Negative Social Impacts (-)	Negative Environmental Impacts (-)	Improvement of Transport Network Connectivity (+)	Consistency with Urban Development Plans (+)	Total	Note
Road-30	Improve Road from Udahamulla - Polwatte	by 2015	3	2	3	2	2	1	3	3	**9**	
Road-32	Improve Road from Maharagama - Nugegoda	by 2015	3	3	3	2	3	1	3	3	**9**	
Road-44	Grade separated interchange construction for Panchikawatte Roundabout	by 2015	3	3	2	2	2	1	2	3	**8**	
Road-45	Grade separated interchange construction for Orugodawatte Intersection	by 2015	2	3	2	2	1	1	2	3	**8**	
Road-11	Extension of Duplication Road (II)	by 2015	3	3	2	2	3	2	3	3	**7**	
Road-46	Lipton Circle extending over the roundabout at Alexandra Place on the State Drive to Parliament	by 2015	1	3	2	3	3	3	2	1	**0**	
Road-47	Liberty Roundabout at Dharmapala Mawatta and Duplication Road	by 2015	1	3	2	3	3	3	2	1	**0**	

Revised on 7th Meeting on 15th May

Appendix 34 Summary of Working Group Meetings

A34.1 Introduction

Below is a summary of the dates and agendas for each of the Working Groups

A34.2 Public Transport Working Group

Table A34.1 Public Transport

Number	Date	Key Issues Discussed
1	10 January 2006	Introduce WG concept; review goals and objectives; first draft of issues
2	17 January 2006	Brainstorming to better clarify and identify issues
3	31 January 2006	Prioritize the major public transport issues; generate ideas for implementable projects
4	21 February 2006	Discuss broad implementable measures for the bus, rail and three wheeler issues that were prioritized at the 3rd meeting
5	7 March 2006	Evaluate the long list of projects to identify short list projects
6	4 April 2006	Reviewed project sheets developed by Study Team and comment on project tasks, risks, benefits, implementation agency diagrams, and implementation schedule

A34.3 Traffic Management and Safety Working Group

Table A34.2 Traffic Management and Safety

Number	Date	Key Issues Discussed
1	10 January 2006	Scope of work, identified congested locations in CMC
2	25 January 2006	Identified congested locations outside CMC, discussed traffic safety, enforcement, capacity building, and coordination
3	8 February 2006	Prioritized issues related to traffic management, parking, and safety
4	22 February 2006	Discussed results of issue prioritization and reasons that previous projects were not implemented
5	8 March 2006	Discussed project long list and selection criteria and evaluated projects
6	22 March 2006	Discussed short listed projects, in particular, project scope, project locations, and project schedule
7	17 May 2006	Discussed capacity building and project locations

A34.4 Road Development Planning Working Group

Table A34.3 Road Development Planning

Number	Date	Key Issues Discussed
1	10 January 2006	Structure of issues (1) - introductory discussion
2	23 January 2006	Structure of issues (2) - Analyze structure in road development sector
3	2 February 2006	Long list preparation (1) - long list project confirmation
4	24 February 2006	Structure of issues (3) - Finalize Long list preparation (2) - additional project to solve the existing issues Short list selection (1) - Criteria setting
5	3 March 2006	Shortlist project selection (2) - Scoring work
6	9 March 2006	Shortlist project selection (3) - Scoring work
7	15 May 2006	Revision of shortlist project - Project from WPRDA, and flyover projects
8	29 June 2006	Final discussion of selection, and Implementation scheme

A34.5 Institutional and Policy Coordination Working Group

Table A34.4 Institutional and Policy Coordination

Number	Date	Key Issues Discussed
1	29 December 2005	Scope of Work for Working Group, Institutional & Policy Coordination Issues
2	19 January 2006	Need & Feasibility of One Authority to Coordinate Transport
3	3 February 2006	Draft TOR & Organizational Chart for Transport Policy Coordination Body, Legal Framework and Coordinating Issues
4	22 February 2006	Discussion on the tentatively proposed PCUT, list of high priority projects, Fund availability within the budgets of the implementing agencies
5	3 August 2006	Proposed videoconference connecting Bangkok and Colombo introducing Thai experience in transport policy coordination

A34.6 Social and Natural Environment Working Group

Table A34.5 Social and Natural Environment Coordination

Number	Date	Key Issues Discussed
1	27 December 2005	Discussed the scope of work, brainstorming on environmental issues that result from urban transport
2	19 January 2006	Discussed social issues
3	3 February 2006	Discussed natural environmental issues
4	23 February 2006	Presented results of high priority issue evaluation and discussed mitigation measures for the high priority issues
5	23 March 2006	Discussed issue categorization and mitigation measures and prepared project proposals

A34.7 Area Traffic Control Institutions Working Group

Table A34.6 Area Traffic Control Institutions Coordination

Number	Date	Key Issues Discussed
1	16 August 2006	Institutional Arrangements to ensure the Efficient and Effective Implementation of the ATC system
2	11 September 2006	Proposed Institutional Arrangement for Implementation, Operation/maintenance, Financing for ATC Construction, Operation and Maintenance

Appendix 35 Summary of Counterpart Training in Japan

A35.1 Introduction

This appendix provides a summary of the counterpart training that occurred in Japan between 29 March and 14 April 2006.

A35.2 Objectives

- Observe and experience urban transport system in cities in Japan and learn its background of planning, design and implementation
- Compare current situation of Colombo and CMR with cities in Japan, and find what can be applicable to Colombo and CMR
- Study on the theme specified by the JICA study team, and understand the background of urban transport proposals for the study.

A35.3 Themes

(1) Traffic Control and Management

- Metropolitan Police Agency Traffic control center and Schematic signals
- Metropolitan Police Agency, Traffic Control Bureau
  - Effectiveness of schemed signals, costs and benefit, first step for schematic, information provision of wide area traffic condition by internet, radio and TV
  - Regulations, One way system, Parking regulation and guidance system

(2) Intelligent Transport System (ITS)

- Japan Road Transport Information Center
  - Effectiveness of information provision and its system
- VICS Center
  - System of VICS and its effectiveness
- Bus Location System (Tokyo Metro Bus, Nagoya City Bus, Other private)
  - Effectiveness of information provision and its system
- Parking Variety
  - (Using ETC- Marunouchi, Automated parking- Azabu Public parking, Off street coin parking, Parking meter/ticket system)

(3) Vehicle Inspection and Vehicle Standards

- Vehicle Inspection Center (Shinagawa)
  - Vehicle inspection measure, Private partnership, taxation
- Private Driving Schools (Nagoya)
  - Education system for traffic safety by private organization

(4) Urban Development and Transport Infrastructure Development

- Public space for inter modal connection,
  - Kiss N Ride, taxi space, bike N ride, funding resources

- Urban Renaissance Agency
  - Integration of urban development and transport facilities, land readjustment, and transport facility development

(5) Bus Transport and Management

- Bus terminals and its operation facilities (Tokyo Metro Bus)
- Key-route bus in Nagoya (Bus Rapid Transit)
- Guideway bus in Nagoya (Bus Rapid Transit)

(6) Rail Transport

- Subway and Railway transport system (Tokyo Metro and others)
- Railway terminal development
- Bike N Ride
- Ticketing system

(7) New Transportation System

- Tama Monorail
- Yuri-kamome New Transportation System

(8) Pedestrian facilities

- Pedestrian Environment
  - Ginza Chuo Dori street, Tokyo National Highway Bureau
  - Quality of pavement, integrated design of drainage system, lightings and utilities, participation of land owners, information provision system design accommodating shopping malls, street furniture to enforce pedestrian behavior, and budget and effects
- Street Design Standard
  - Roads of Tokyo Metropolitan Government
  - Bicycle lanes, congestion alleviation measures by road design improvement, Maintenance activities, etc.
- Hierarchy of road and pedestrian segregation/share
  - (Kozoji New Town in Aichi Prefecture, Tama New town in Kanagawa Prefecture)
  - Segregation of vehicle flow and pedestrian flow, Hierarchy design, planting/landscaping of road, integrated development of residences and railways, kiss N ride system

(9) Funding methodologies

- Earmarked road fund, rail-resident integrated development, and
  - MLIT
  - Legislative, institutional, how to apply, political background

A35.4 Training Participants

The following counterpart colleagues participated in the training in Japan. Prior to leaving for Japan, participants were asked to read a textbook on Japanese infrastructure development that was provided by the Study Team.

- Mr. Leeranatra Secretary, Ministry of Railway and Transport: Planning of urban transportation, public transport services, related facilities and services, railways
- Mr. S. Amarasekara, Ministry of Highway: funding, planning and maintenance activities, and urban transport facilities
- Mr. R. M. Amarasekara, Road Development Authority: Street design, planning and maintenance activities, and urban transport facilities

A35.5 Itinerary

The itinerary for the counterpart training in Japan was as follows:

Table A35.1 Training Itinerary

Date	Item	Detail
3/29 Wed.	Depart Colombo	
3/30 Thu.	Travel to Tokyo	
3/31 Fri	JICA registration	At JICA Tokyo International Center (TIC)
4/1 Sat.		
4/2 Sun.		
4/3 Mon-Tue	Ministry of Land, Transport and Infrastructure (MLIT)	General Policy Bureau, International Cooperation
4/4	In Tokyo	Metropolitan Police Agency
		Vehicle inspection center
4/5		MLIT Tokyo National Highway Bureau
		Tokyo Metropolitan Government, Construction Bureau
4/6		Tokyo Metropolitan Government Transport Bureau
4/7 Fri		Urban Renaissance Agency and Tama Monorail Company
4/8, 9	Holiday	Move to Nagoya
4/10	In Nagoya	Nagoya City, Transport Bureau
4/11		Driver education facility Urban road design in Residential area
4/12		Nagoya City, Parking regulation
4/12	Travel to Tokyo	
4/13	Briefing and Evaluation	At JICA Tokyo International Center (TIC)
4/14	Travel to Colombo	