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1. 調査団員・氏名
2. 調査工程
3. 関係者（面会者）リスト
4. スリランカ国の社会経済状況
5. 討議議事録（M/D）
6. 事業事前計画表（基本設計時）
7. 参考資料/入手資料リスト
8. その他の資料・情報

資料 1.　調査団員・氏名

スリランカ国
マナンピティヤ新幹線道路橋梁建設計画基本設計調査

1-1　　現地調査時

No.	氏　　名	担　　当	所　　属
1	江尻　幸彦	総括	国際協力機構 無償資金協力部審査室 主任審査員
2	今野　啓悟	業務主任／橋梁計画	(株)オリエンタルコンサルタンツ
3	長谷川基裕	環境社会配慮	日本工営(株)
4	久保谷伸博	橋梁設計	(株)オリエンタルコンサルタンツ
5	百瀬　泰	自然条件調査（地形・地質・水文）	日本工営(株)
6	神山　敦	施工計画／積算	(株)オリエンタルコンサルタンツ

1-2　　基本設計概要説明時

No.	氏　　名	担　　当	所　　属
1	坂田　英樹	総括	国際協力機構 スリランカ事務所 次長
2	今野　啓悟	業務主任／橋梁計画	(株)オリエンタルコンサルタンツ
3	長谷川基裕	環境社会配慮	日本工営(株)
4	久保谷伸博	橋梁設計	(株)オリエンタルコンサルタンツ

資料 2.　調査行程

2-1　　スリランカ国 マナンピティヤ新幹線道路橋梁建設計画　基本設計調査行程

No	日付		江尻	今野	長谷川	久保谷	百瀬	神山
1	7.4	日		成田（TG647：11:00）バンコク（15:30/TG307：21:45）コロンボ（23:59）				
2	5	月		表敬訪問：日本大使館・JICA スリランカ事務所、中央環境庁（CEA）				
3	6	火		表敬訪問：道路開発公社（RDA）、野生生物保護局（DWC）、				
4	7	水						
5	8	木						
6	9	金						
7	10	土	成田（SQ997：11:30）シンガポール（17:25/SQ402：22:40）	現地調査				
8	11	日	コロンボ（00:15）					
9	12	月						
10	13	火		インセプションレポート説明・協議：RDA				
11	14	水		同上				
12	15	木		同上				
13	16	金	RDA とのミニッツの署名、日本大使館・JICA スリランカ事務所への報告					
14	17	土	コロンボ（SQ401：1:35）シンガポール（7:30/SQ996：09:05）成田（16:55）					
15	18	日						
16	19	月						
17	20	火		現地調査				
18	21	水						
19	22	木						
20	23	金						
21	24	土						
22	25	日						
23	26	月						
24	27	火						
25	28	水			コロンボ（TG308：1:40）バンコク（6:05/TG640：11:20）成田（19:30）			
26	29	木		RDA 報告			RDA 報告	
27	30	金		日本大使館、JICA スリランカ事務所への報告			日本大使館、JICA スリランカ事務所への報告	
28	31	土		資料整理			資料整理	
29	8/1	日						
30	2	月		コロンボ（TG308：1:40）バンコク（6:05/TG640：11:20）成田（19:30）			コロンボ（TG308：1:40）バンコク（6:05/TG640：11:20）成田（19:30）	

2-2　　スリランカ国 マナンピティヤ新幹線道路橋梁建設計画　基本設計概要説明調査行程

No	日付		坂田	今野	長谷川	久保谷
1	10/24	日		成田（TG647：11:00）バンコク（15:30/TG307：21:45）コロンボ（23:59）		
2	25	月	表敬訪問：日本大使館、JICA スリランカ事務所、道路省（MOH）、財務省対外協力局（ERD）、RDA			
3	26	火	RDA へのドラフト報告書説明			
4	27	水	同上			
5	28	木				
6	29	金		現場調査		
7	30	土				
8	31	日		資料整理		
9	11/1	月	RDA へのドラフト報告書説明・協議			
10	2	火	同上			
11	3	水	RDA とのミニッツの署名、日本大使館・JICA スリランカ事務所への報告			
12	4	木		コロンボ（TG308：1:50）バンコク（6:10/TG676：8:20）成田（16:00）		

資料 3.　関係者（面会者）リスト

Ministry of Highways

Mr. S. Amarasekera	Secretary

Road Development Authority

Mr. M.M.C. Ferdinando	Chairman
Mr. P. Dayananda	General Manager
Dr. G.L. Asoka J. de Silva	Director, Engineering Services Division
Mr. Weerathonga	Director, Planning Division (Predecessor)
Mr. B.V.D.N. Chandrasiri	Director, Planning Division (Present)
Mr. Rohita	Deputy Director, Engineering Services Division
Mrs. Namalie Siyambalapitiya	Civil Engineer
上田　功	JICA 派遣専門家

Central Environment Authority

Mrs. Kanthi de Silva	Acting Director, Environmental Management & Assessment Division

Department of Wildlife Concervation

Mr. Dayananda Kariyawasam	Director General
Mrs. Chandari Wilson	Director

Ministry of Finance

Mr. J.H.J. Jayamaha	Additional Director General, Department of External resources
Mr. Mpduk Mapa Pathirana	Director, Department of External resources

在スリランカ日本大使館

須田明夫	特命全権大使
岩下幸司	一等書記官
福山仁	二等書記官

JICA スリランカ事務所

杉原敏雄	所長（前）
植嶋卓巳	所長（現）
坂田英樹	次長
石黒実弥	所員
後藤光	所員

資料4. スリランカ国の社会経済状況

主要指標一覧

	指標項目	1992年	2000年	2001年	2002年	2002年の地域平均値
社会指標等	国土面積(1000km^2)	65	65	65	65	n.a.
	人口(百万人)	16.6	18.5	18.7	19.0	1,401.5
	人口増加率(%)	1.1	1.4	1.4	1.3	1.7
	出生時平均余命(歳)	71	73	n.a.	74	63
	妊産婦死亡率(/10万人)	n.a.	n.a.	n.a.	92(85-02)	506(2000)
	乳児死亡率(/1000人)	n.a.	17.0	n.a.	16.0	67.9
	一人当たりカロリー摂取量(kcal/1日)*1	2,212	2,377	2,403	2,385	2,696
	初等教育総就学率(男)(%)	108.6	n.a.	110.9	n.a.	n.a.
	(女)(%)	106.2	n.a.	109.8	n.a.	n.a.
	中等教育総就学率(男)(%)	70.7	n.a.	n.a.	n.a.	n.a.
	(女)(%)	77.6	n.a.	n.a.	n.a.	n.a.
	高等教育総就学率(%)	4.6	n.a.	n.a.	n.a.	n.a.
	成人識字率(15歳以上の人口の内:%)	89.3	91.6	91.9	92.1	n.a.
	絶対的貧困水準(1日1$以下の人口比:%)	n.a.	n.a.	n.a.	6.6(95-96)	n.a.
	失業率(%)	14.1	7.4	8.2	n.a.	n.a.
経済指標	GDP(百万USドル)	9,700	16,300	15,700	16,600	649,079
	一人当たりGNI(USドル)	580	890	840	850	460
	実質GDP成長率(%)	4.4	6.0	-1.5	4.0	4.3
	産業構造(対GDP比:%)					
	農業	25.9	19.9	20.1	20.1	23.3
	工業	25.6	27.3	26.8	26.3	26.1
	サービス業	48.5	52.8	53.1	53.6	50.7
	産業別成長率(%)					
	農業	-1.6	1.8	-3.4	2.5	-3.9
	工業	7.1	7.5	-2.1	1.0	6.1
	サービス業	6.4	7.0	-0.5	6.1	6.5
	消費者物価上昇率(インフレ:%)	11.4	6.2	14.2	9.6	n.a.
	財政収支(対GDP比:%)	-5.4	-9.5	-9.8	n.a.	n.a.
	輸出成長率(金額:%)	6.7	18.0	-5.3	5.6	17.4
	輸入成長率(金額:%)	7.9	14.9	-9.5	11.2	6.0
	経常収支(対GDP比:%)	-4.6	-6.4	-1.5	-1.6	n.a.
	外国直接投資純流入額(百万ドル)	123	173	172	242	4,164
	総資本形成率(対GDP比:%)	24.3	27.9	22.0	21.0	21.6
	貯蓄率(対GDP比:%)	15.0	17.3	15.8	14.3	20.2
	対外債務残高(対GNI比:%)	4.8	4.9	4.8	4.4	2.7
	DSR(対外債務返済比率:%)	12.8	10.3	10.1	9.8	14.3
	外貨準備高(対輸入月比:%)	2.9	1.5	2.1	2.7	9.0
	名目対ドル為替レート*2	43.830	77.005	89.383	95.662	n.a.
	(通貨単位:スリランカ・ルピー Sri Lankan rupee)					

政治指標*3	政治体制:共和制。大統領に実権
	憲法:1978年9月7日公布
	元首:大統領。ﾁｬﾝﾄﾞﾘｶ・ﾊﾞﾝﾀﾞﾗﾅｲｹ・ｸﾏﾗﾄｩﾝｶﾞ(Chandrika Bandaranaike KUMARATUNGA)。任期6年。
	1994年11月12日就任、99年12月21日再選。直接選挙制
	議会:1院制。225席。直接選挙制。任期6年

出典 2004 World Development Indicators World Bank Onlineおよび書籍
*1 FAO Food Balance Sheets 2004年 9月 FAO Homepage
*2 International Financial Statistics Yearbook 2003 IMF
*3 世界年鑑 2004 共同通信社

注 ●( )に示されている数値は調査年を示す。(85-02)と示されている場合は1985年から2002年までの間の最新値を示す
●「人口」、「GDP」及び「外国直接投資純流入額」の「2002年の地域平均値」においては、地域の総数を示す
●「妊産婦死亡率」の「2002年の地域平均値」においては、WHO・ユニセフの調整済データを示す
●地域は南アジア。ただし「一人当たりカロリー摂取量」における地域はアジア広域
●就学率が100を超えているのは、学齢人口推計値と実際の就学データの間にずれがあるため

政府歳入・歳出[スリランカ]

	2000年 (百万ルピー)	2001年 (百万ルピー)	2002年 (百万ルピー)	2002年 (百万US$)*	2002年 対GDP比**
歳入	216,389	239,689	266,998	2,791	16.9%
租税収入	182,393	205,840	221,786	2,318	14.0%
社会保障	3,620	2,667	2,630	27	0.2%
贈与受取	5,145	5,500	7,079	74	0.4%
その他	25,232	25,683	35,503	371	2.2%
歳出	289,114	335,149	362,362	3,788	22.9%
人件費	68,544	78,056	88,804	928	5.6%
財貨・サービス	62,221	65,691	50,115	524	3.2%
固定資本減耗	n.a.	n.a.	n.a.	n.a.	n.a.
利払い	71,200	94,307	116,515	1,218	7.4%
補助金	9,377	12,152	21,187	9	1.3%
贈与支払	9,896	7,536	6,118	64	0.4%
扶助費	41,306	52,083	53,046	555	3.4%
その他	26,570	25,324	26,577	278	1.7%
財政収支	−72,725	−95,460	−95,364	−997	−6.0%

総支出内訳(目的別分類)[スリランカ]

	2000年 (百万ルピー)	2001年 (百万ルピー)	2002年 (百万ルピー)	2002年 (百万US$)*	2002年 内訳	2002年 対GDP比**
総支出	322,048	371,264	388,861	4,065	100.0%	24.6%
一般サービス	90,892	129,702	133,679	1,397	34.4%	8.4%
国防	56,915	54,242	49,163	514	12.6%	3.1%
公安	13,859	14,048	14,972	157	3.9%	0.9%
農林水産業	13,851	15,014	15,749	165	4.1%	1.0%
エネルギー	1,890	1,944	1,154	12	0.3%	0.1%
鉱工業・建設業	1,490	743	1,599	17	0.4%	0.1%
運輸	28,468	26,814	26,060	272	6.7%	1.6%
通信	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
環境保全	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
住宅・生活関連施設	5,905	10,382	11,916	125	3.1%	0.8%
保健・医療	20,696	18,772	24,946	261	6.4%	1.6%
ﾚｸﾘｭｴｰｼｮﾝ・文化	0	0	0	0	0.0%	0.0%
教育	30,929	28,286	37,209	389	9.6%	2.4%
社会保障・福祉	36,101	45,087	47,715	499	12.3%	3.0%

注:総支出内訳における総支出には非金融資産の純増を含む　　会計年度は1月～12月
*:対ﾄﾞﾙ換算ﾚｰﾄはMarket Rate,Period Average 出典はInternational Financial Statistics Yearbook 2003 IMF
**:GDPの出典はThe World Economic Outlook 2004 IMF Homepage
出典 Government Finance Statistics (CD-ROM) August 2004 IMF

JICAの対スリランカ技術協力

通貨単位	1998年度	1999年度	2000年度	2001年度	2002年度	累計
億円	28.11	30.98	28.02	29.84	25.64	488.63
百万ドル	21.48	27.20	25.99	24.56	20.46	

注:年の区切りは日本の会計年度(4月～3月)。また対ﾄﾞﾙ換算ﾚｰﾄはOECD Homepageによる。
出典 JICA実績表 2003年3月 国際協力機構

対スリランカODA実績 《我が国》

(支出純額、単位:百万ドル)

暦年	贈与						政府貸付			合計	
	無償資金協力		技術協力		計		支出総額	支出純額			
97	44.08	(33)	28.79	(21)	72.87	(54)	119.28	61.69	(46)	134.56	(100)
98	52.06	(26)	24.32	(12)	76.38	(39)	185.34	121.47	(61)	197.85	(100)
99	34.10	(25)	30.48	(22)	64.58	(47)	149.62	71.45	(53)	136.03	(100)
2000	34.23	(21)	35.26	(22)	69.49	(42)	182.53	94.19	(58)	163.68	(100)
2001	19.61	(11)	31.65	(17)	51.26	(28)	221.84	133.46	(72)	184.72	(100)
累計	1,065.50	(32)	438.27	(13)	1,503.75	(45)	2,566.81	1,804.25	(55)	3,307.99	(100)

《DAC諸国・国際機関》

(支出純額、単位:百万ドル)

暦年	1位		2位		3位		4位		5位		うち日本	合計
98	日本	197.9	ドイツ	19.0	英国	13.6	オランダ	13.2	ノルウェー	13.2	197.9	282.3
99	日本	136.0	ｽｳｪｰﾃﾞﾝ	14.3	ノルウェー	14.0	ドイツ	10.8	英国	9.3	136.0	207.7
2000	日本	163.7	ドイツ	21.2	ｽｳｪｰﾃﾞﾝ	16.7	英国	9.9	豪州	6.7	163.7	240.2

暦年	1位		2位		3位		4位		5位		その他	合計
98	ADB	105.8	IDA	83.6	UNDP	5.4	CEC	5.0	UNTA	2.3	−73.8	128.4
99	ADB	82.7	IDA	34.4	CEC	7.1	UNDP	5.7	UNTA	4.2	−90.4	43.6
2000	ADB	58.0	IDA	28.3	CEC	6.0	UNDP	5.0	UNHCR	4.5	−74.6	25.2

注:年の区切りは1月～12月の暦年。　　(　)内はODA 合計に占める各形態の割合(%)。
出典 ODA 国別データブック 2002 外務省

資料5.　ミニッツ（現地調査時）

Minutes of Discussions
on the Basic Design Study
on the Project for Reconstruction of Manampitiya Bridge
in the Democratic Socialist Republic of Sri Lanka

In response to the request from the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka"), the Government of Japan decided to conduct a Basic Design Study on the Project for Reconstruction of Manampitiya Bridge (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Sri Lanka the Basic Design Study Team (hereinafter referred to as "the Team"), headed by Mr. Yukihiko Ejiri, a Senior Assistant to the Director General of the Office of Technical Coordination and Examination, Grant Aid Management Department, JICA, and is scheduled to stay in the country from July 4 to August 2, 2004.

The Team held discussions with the concerned officials of the Government of Sri Lanka.

In the course of the discussions, both sides have confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Colombo, July 16 2004

Yukihiko Ejiri
Leader
Basic Design Study Team
Japan International Cooperation Agency

M.M.C. Ferdinando
Chairman
Road Development Authority (RDA)
Democratic Socialist Republic of Sri Lanka

(Witnesses)

J.H.J. Jayamaha
Additional Director General
Department of External Resources
Ministry of Finance
Democratic Socialist Republic of Sri Lanka

S. Amarasekera
Secretary
Ministry of Highways (MOH)
Democratic Socialist Republic of Sri Lanka

ATTACHMENT

1. Objective

The objective of the Project is to construct a new highway bridge at Manampitiya in the vicinity of the railway bridge across the Mahaweli River.

2. Project Site

The site of the Project is shown in Annex-1.

3. Responsible and Implementing Organizations

(1) The Responsible Ministry is the Ministry of Highways (MOH).

(2) The Implementing Agency is the Road Development Authority (RDA).

(3) The organization charts of MOH and RDA are shown in Annex-2.

4. Items Requested by the Government of Sri Lanka

After discussions with the Team, the following items were finally requested by the Sri Lankan side.

Construction of a new highway bridge at Manampitiya with the following specifications;

- Two (2) lane (3.7 m x 2), total width: 10.4 m
- Total length: about 300 m
- Approach roads for both sides of the bridge

5. Japan's Grant Aid Scheme

(1) The Sri Lankan side understands the Japan's Grant Aid scheme and the necessary measures to be taken by the Government of Sri Lanka explained by the Team as described in Annex-3.

(2) The Sri Lankan side promised to take necessary measures, as described in Annex-4, for smooth implementation of the Project as a condition for the Japan's Grant Aid to be implemented.

6. Schedule of the Study

(1) The Team will proceed to further studies in Sri Lanka until August 2, 2004.

(2) JICA will prepare a draft report in English and dispatch the team to Sri Lanka in order to explain its contents around the end of October 2004.

(3) When the contents of the draft report are accepted in principle by the Government of Sri Lanka, JICA will prepare a final report and send it to the Government of Sri Lanka around the end of January 2005.

7. Other Relevant Issues

(1) The both sides agreed to rename the original title of the Project from "the Project for Reconstruction of Manampitiya Bridge in the Democratic Socialist Republic of Sri Lanka" to "the Project for Construction of A New Highway Bridge at Manampitiya in the Democratic Socialist Republic of Sri Lanka".

(2) The both sides confirmed the contents of the clauses No.6, 7, 8, and 9 of the Minutes of Discussion signed on March 5, 2004 (hereinafter referred to as "the Previous M/D") regarding the Environmental and Social Considerations for the Project.

(3) The Sri Lankan side agreed to include the results of the public information campaigns to local stakeholders regarding involuntary resettlement (including setback) to an Initial Environmental Examination (IEE).

(4) The Sri Lankan side explained to the Study Team that an IEE should be completed by the middle of August 2004 and the IEE report should be submitted to the Department of Wildlife Conservation (DWC), Ministry of Environment and Natural Resources, by the end of August 2004.

(5) The Sri Lankan side also agreed to prepare at least a preliminary environmental appraisal of the proposed Project. It will be done on the information of the proposed Project and submitted to the DWC by July 23 so that the results of preliminary assessment by the DWC can be passed on to the environmental specialist of the Study Team by July 28 2004.

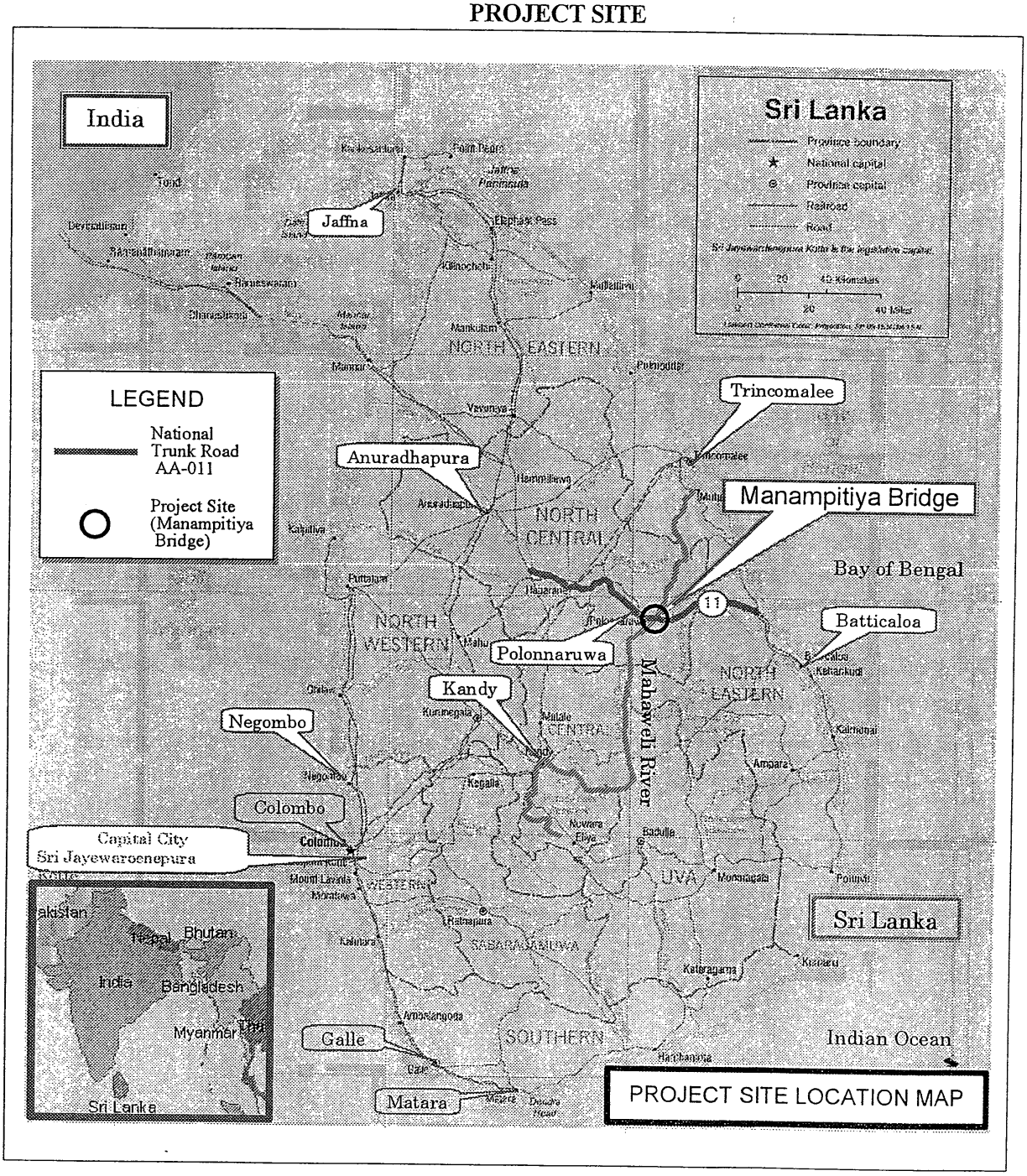
(6) The both sides agreed that the benchmarks for the start of the Detailed Design Study and implementation stage of the Project should be as below;

- To obtain agreements from all of the Project Affected Persons (PAPs) about the conditions and contents of the resettlement and setback, in principle"
- To obtain the general environmental approval from the DWC, and confirm that the Project has no significant adverse impacts on the environment and society

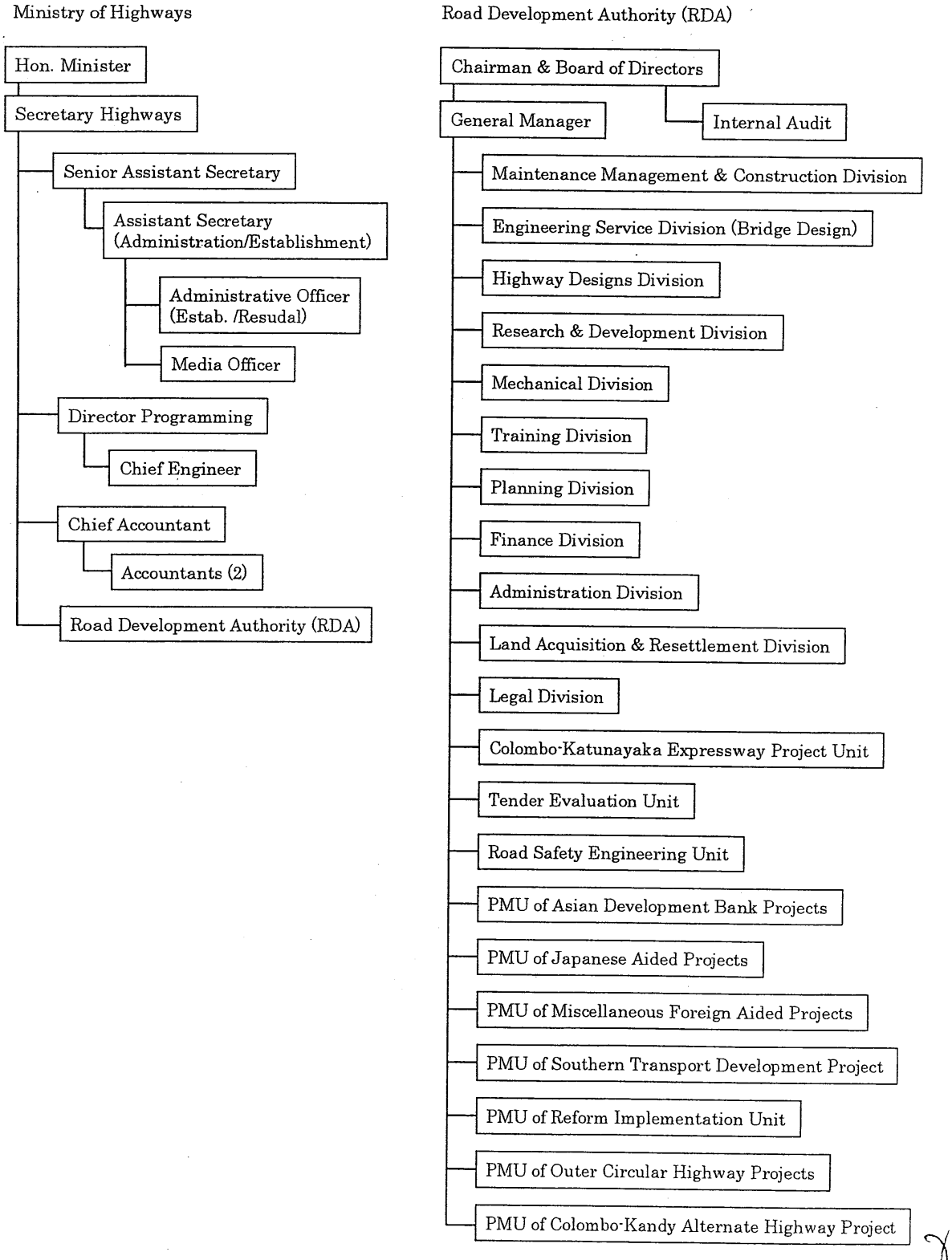
(7) The Sri Lankan side will submit answers in English to the Questionnaire, which the Study Team handed to the Sri Lankan side, by July 27 2004.

(8) The Sri Lankan side shall provide necessary number(s) of counterpart personnel to the Team during the period of their studies in Sri Lanka.

PROJECT SITE



ORGANIZATION CHART



Japan's Grant Aid Scheme

The Grant Aid scheme provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

1. Grant Aid Procedures

Japan's Grant Aid scheme is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid scheme, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the recipient country.

Finally, for the smooth implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

2. Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project") is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- Confirmation of the background, objectives, and benefits of the requested project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.
- Evaluation of the appropriateness of the Project to be implemented under the Grant Aid scheme from a technical, social and economic point of view.
- Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
- Preparation of a basic design of the Project

- Estimation of costs of the Project

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA selects (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA.

The consulting firm(s) used for the Study is(are) recommended by JICA to the recipient country to also work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency.

3. Japan's Grant Aid Scheme

1) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

2) "The period of the Grant Aid" means the one fiscal year which the Cabinet approves the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consulting firm(s) and (a) contractor(s) and final payment to them must be completed.

However in case of delays in delivery, installation or construction due to unforeseen factors such as natural disaster, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

3) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.

When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However, the prime contractors, namely, consulting, contracting and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

4) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability to Japanese taxpayers.

5) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to

undertake such necessary measures as the following:

a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.
b) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.
c) To secure buildings prior to the procurement in case the installation of the equipment.
d) To ensure all the expenses and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.
e) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.
f) To accord Japanese nationals, whose services may be required in connection with the supply of the products and services under the Verified Contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

6) "Proper Use"

The recipient country is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

7) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

8) Banking Arrangements (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.
b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay (A/P) issued by the Government of the recipient country or its designated authority.

9) Authorization to Pay (A/P)

The Government of the recipient country should bear an advising commission of an Authorization to Pay and Payment commissions to the Bank.

Annex-4

Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to Pay)

資料5　ミニッツ（基本設計概要説明時）

Minutes of Discussions
on the Basic Design Study
on the Project for Construction of a New Highway Bridge at Manampitiya
in the Democratic Socialist Republic of Sri Lanka
(Explanation on the Draft Report)

In response to the request from the Government of the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka"), the Government of Japan decided to conduct a Basic Design Study on the Project for Construction of a New Highway Bridge at Manampitiya (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Sri Lanka the Basic Design Study Team (Explanation on the Draft Report) (hereinafter referred to as "the Team"), headed by Mr. Hideki Sakata, the Deputy Resident Representative of the JICA Sri Lanka Office, and is scheduled to stay in the country from October 24 to November 4, 2004.

The Team held discussions with the concerned officials of the Government of Sri Lanka.

In the course of the discussions, both sides have confirmed the main items described in the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Colombo, November 3, 2004

Hideki Sakata
Leader
Basic Design Study Team
Japan International Cooperation Agency

M.M.C. Ferdinando
Chairman
Road Development Authority (RDA)
Democratic Socialist Republic of Sri Lanka

(Witnesses)

J.H.J. Jayamaha
Department of External Resources
Ministry of Finance and Planning
Democratic Socialist Republic of Sri Lanka

S. Amarasekera
Secretary
Ministry of Highways (MOH)
Democratic Socialist Republic of Sri Lanka

ATTACHMENT

1. Components of the Draft Report

The Sri Lankan side agreed and accepted in principle the components of the Draft Report explained by the Team.

2. Schedule of the Study

JICA will complete the Final Report in accordance with the confirmed items and send it to the Sri Lankan side around the end of January 2005.

3. Other Relevant Issues

(1) The Sri Lankan side explained to the Team that the Road Development Authority (RDA) submitted the Initial Environmental Examination (IEE) report to the Department of Wildlife Conservation (DWC), Ministry of Environment and Natural Resources, and already obtained its approval by letter issued on September 10, 2004. The Team discussed about the contents of the letter with RDA and formulated common understandings regarding the conditions (environmental mitigation measures) imposed by DWC for each clause of the above-mentioned letter as per Annex-1. However, the Team requested RDA to discuss / confirm the details of the conditions with DWC and Mahaweli Authority of Sri Lanka (MASL). RDA had discussions on practicality and technical feasibility of the mitigation measures with them and confirmed in writing that there should be flexibility with the conditions as per Annex-2.

(2) The Sri Lankan side explained to the Team that RDA conducted the public information campaigns to local stakeholders regarding involuntary resettlement including setback at Polonnaruwa District Office of RDA on July 21, 2004. The memorandums of the campaigns are attached as Annex-3.

(3) The Sri Lankan side agreed to conduct resettlement of households and relocation of public utilities before the commencement of construction works in accordance with due processes stipulated in the relevant laws and/ or regulations of Sri Lanka.

(4) The Sri Lankan side agreed to allocate the budget for securing land(s), relocation of public utilities, undertakings to be done by the Sri Lankan side, which were shown in Annex-4 of the M/D signed by both sides on July 16, 2004, based on the budget of the fiscal year 2005.

(5) The Sri Lankan side submitted the annual maintenance plan for the Bridge including staff assignment and budget allocation of Polonnaruwa District Office of RDA as per Annex-5.

Annex-1

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வன ஜீவராசி பாதுகாவல் திணைக்களம்
Department of Wildlife Conservation

අංක 18, ග්‍රෙගරි පාර, කොළඹ 07.
இல. 18, கிறகெரி வீதி, கொழும்பு 07.
No. 18, Gregory's Road, Colombo 07.

GENERAL MANAGER'S OFFICE
15 SEP 2004

ROAD DEVELOPMENT AUTHORITY
Engineering Services Division
17 SEP 2004
BATTARAMULLA.

මගේ අංකය / எனது இல. / My No. WI/6/1/9/159

ඔබේ අංකය / உமது இல. / Your No.

Date 15/09/2004

General Manager,
Road Development Authority.

Proposed New Highway Bridge at close Vicinity of the Existing Rail Cum Road Bridge at Manampitiya Across Mahaweli Ganga.

This is to inform you that the Department of Wildlife Conservation after studying the IEE Report of the proposed " New Highway Bridge at close Vicinity of the Existing Rail Cum Road Bridge at Manampitiya Across Mahaweli Ganga" and Reviewing the comments from the TEC members and your responses to such comments, has decided, in forms of regulations 9 (1) of the National Environmental (procedure for the approval of projects) Regulations No. 1 of 1993 to grant approval for the implementation of the above project subject to the following conditions.

1.0 General

1.1 The project should be concluded within 2 years unless upon written application within thirty days prior to this date Department of Wildlife Conservation extends this time.

1.2 Construction activities within the Flood Plains National Park are not allowed from 6.00 p.m. to 6.00 a.m.

1.3 All labour camps and machinery units must be placed outside the National Park and outside the 60 m reservation on either side of the Mahaweli Ganga.

1.4 Necessary approval should also be obtained from the Mahaweli Authority of Sri Lanka prior to commencement of the construction activities.

2.0 Mitigation of impacts during construction phase of the project.

2.1 Ecological resources

2.1.1 Existing high canopy cover (if any) of the project area within the wildlife reserve should not be cleared

2.1.2 Any of the existing valuable trees should not be damaged or removed

2.1.3 The disturbed areas within the 60 m on either side of the Mahaweli Ganga (Environmental sensitive reservation of the river) should also be replanted with indigenous plant species and horticulture spices for conservation and to improve the aesthetic beauty of the site Suitable plant species are recommended to introduce in the affected areas of the river banks.

2.1.4 No borrow areas should be allowed in Flood Plains National Park and 60 m reservations on either side of the Mahaweli Ganga.

කාර්යාලය / அலுவலகம் / Office 94-011-2694241
ෆැක්ස් / தொலைநகல் / Fax 94-011-2698556
ඊ-මේල් / மின்னஞ்சல் / E-Mail director@dwlc.lk, dg@dwlc.lk
අධ්‍යක්ෂ ජනරාල් / பணிப்பாளர் நாயகம் / Director General 94-011-2698086
අධ්‍යක්ෂ (පාලන) / பணிப்பாளர் (நிர்வாகம்) / Director (Admin.) 94-011-2698559
අධ්‍යක්ෂ (මෙහෙයුම්) / பணிப்பாளர் (தொழிற்பாடுகள்) / Director (Operation) 94-011-2678751

2.2 Mitigation of Social Impacts

2.2.1 The people living inside the project area should be relocated according to the National resettlement policy prepared by the Ministry of Agriculture, Land, Livestock and Irrigation.

2.2.2 The project proponent shall employ as many as possible from the local areas. Preference shall be given to the residents living around the area.

2.3 Noise from the construction activities

The noise levels at the boundaries of the construction site shall not exceed the stipulated limits stated in schedule III of the National Environmental (Noise Control Regulations No. 1 of 1996) as per Gazette extra ordinary No. 924/12 dated 23rd May 1996

We wish to draw your attention to regulation 17 which states.

17. i A project proponent shall inform the appropriate Project Approving Agency of –

(a) any alteration to a proscribed project approved under regulations 9 (i), and 13 (i); and / o

(b) the abandonment of such approved project

ii The project proponent shall where necessary obtain fresh approval in respect of any such alterations that are intended to be made to such project. The Project Approving Agency shall in consultation with the authority determine the scope and format of the supplemental report required to be submitted for such alterations.

iii The project proponent shall, where a project is abandoned, restore the project site to a condition as specified by the project approving agency.

Dayananda Kariyawasam,
Director General of Wildlife Conservation.

Cc. – (1) Secretary, Ministry of Highways - For information Pl.
(2) Director General, Central Environmental Authority - -do-
(3) Director General, Mahaweli Authority of Sri Lanka - -do-

Annex-2

මගේ අංකය
எனது இல.
My No. RDA/P/RB/MBP

මගේ අංකය
உமது இல.
Your No. .....

දිනය
திகதி
Date 28.10.2004

"සෙත්සිරිපාය", බත්තරමුල්ල.
"செத்சிரிபாய", பத்தரமுல்லை.
"Sethsiripaya", Battaramulla,
Sri Lanka.

Mr. Dayananda Kariyawasam,
Director General
Wild Life Conservation Department.

Proposed New Highway Bridge at close Vicinity of the Existing Rail cum Road Bridge At Manampitiya Across Mahaweli Ganga

Your attention is kindly drawn to your letter dated 19.09.2004, on the above matter.

Presently the basic Design Study Team is in Sri Lanka to finalise the conceptual design and other preliminaries and they have expressed deep concern on some of the laid down conditions though they are of general nature in our context. Therefore it is necessary to clarify to them that the conditions laid down will not hamper the construction in any significant manner.

With a view to achieve the above it is requested to reconsider some of the general conditions laid down in the approved letter and inform the Team that the following alterations/interpretations are acceptable to the DWC with respect to the IEE approval.

1. The project duration though mentioned as 2 years could extend further depending on the Site conditions.
2. Construction activities could be allowed after 6.00 p.m. depending on the engineering requirements subject to specific security arrangements and acceptable to the DG/DWLC.
3. Machinery units and construction yard could be allowed within the river reservation where it is not practical and economical to travel up and down during construction subject to strict supervision of DG/DWLC.

The above measures are necessary for the economical construction of the above bridge and are generally adopted in the country in carrying out Bridge Construction.

In order to obtain grant aid assistance from Japan through JICA, to construct a new bridge to replace the existing Manampitiya Bridge over Mahaweli Ganga your cooperation in this regard is vital and very much appreciated please.

M.M.C.Ferdinando
CHAIRMAN
ROAD DEVELOPMENT AUTHORITY

c.c.: (I) Secretary- Ministry of Highways – f.i. pl.
(ii) Additional Secretary – Ministry of Environment and Natural Resources

	Chairman	*General Manager*	*Director Admin.*	*Director Finance*	*Director MM&C*	*General*
දුරකථන / தொலைபேசி /Telephone	862767	862795	865245	864799	864804	871821-30
ෆැක්ස් / பெக்ஸ் / Fax	864801	872272	865844	864799	862297	

Annex-2

වනජීවී සංරක්ෂණ දෙපාර්තමේන්තුව
வன ஜீவராசி பாதுகாவல் திணைக்களம்
Department of Wildlife Conservation

අංක 18, ග්‍රෙගරි පාර, කොළඹ 07.
இல. 18, கிறெகெரி வீதி, கொழும்பு 07.
No. 18, Gregory's Road, Colombo 07.

CHAIRMAN'S OFFICE
01 NOV 2004
WL/ 01/9/259A. R. D. A.

මගේ අංකය / எனது இல. / My No.

ඔබේ අංකය / உமது இல. / Your No.

දිනය / திகதி / Date 29 /10/2004

Mr.M.M.C. Ferdinando
Chairman
Road Development Authority
Sethsiripaya
Battaramulla

Proposed New Highway Bridge at Close Vicinity of the Existing Rail cum Road Bridge at Manampitiya Across Mahaweli Ganga

This refers to your letter dated 28th October 2004, and I wish to place the following with regard to your issues raised therein.

1 We do not have any objection to extend the project duration with valid justification to avoid undue delays and continued disturbance to the fauna in the area.

2 Depending on the engineering requirements, construction activities could be allowed after 6.00 p.m. depending on the nature and the exact location of the activity. This could be jointly agreed by the RDA and the DWC.

3 A yard for machinery which is not practical and economical to travel up and down during the construction period could be allowed in a suitable location without any disturbance to present landscape through a joint inspection of the area by DWC and RDA.

4 I believe the above clarifications would suffice for you to proceed with your planned efforts in obtaining assistance to construct the new bridge to replace the existing Manampitiya Bridge over Mahaweli Ganga.

Dayananda Kariyawasam
Director General

Copy: Assistant Director (Mahaweli) – For information please.

කාර්යාලය / அலுவலகம் / Office – 94-011-2694241
ෆැක්ස් / தொலைநகல் / Fax – 94-011-2698556
ඊ-මේල් / மின்னஞ்சல் / E-Mail – director@dwlc.lk, dg@dwlc.lk
අධ්‍යක්ෂ ජනරාල් / பணிப்பாளர் நாயகம் / Director General – 94-011-2698086
අධ්‍යක්ෂ (පාලන) / பணிப்பாளர் (நிர்வாகம்) / Director (Admin.) – 94-011-2698559
අධ්‍යක්ෂ (මෙහෙයුම්) / பணிப்பாளர் (தொழிற்பாடுகள்) / Director (Operation) – 94-011-2678751

Annex-2

28th October 2004.

The Director General
Mahaweli Authority of Sri Lanka
T.B. Jaya Mawatha
Colombo 10.

Construction of a New Highway Bridge at Bridge No: 81/2 on Maradankadawala-Habarana-Thirikondiyadimadu (A11) Road across Mahaweli Ganga at Manampitiya

This has reference to my letter of even number dated 28th July 2004 seeking your co-operation for the Initial Environmental Examination (IEE) carried out by the Road Development Authority to obtain the environmental clearance from the Department of Wild Life Conservation (DWC) for the implementation of the above project. As I intimated therein Mr. M.M.S.A. Perera, Additional Director of your authority served in the Technical Evaluation Committee appointed by the DWC for the IEE study.

The Director General of Wildlife Conservation in his letter No. W1/6/1/9/159 dated 10 /09/ 2004 addressed to the General Manager, RDA with copies to you and others granted approval for the implementation of the project subject to certain conditions indicated therein. Two of the conditions given below stipulated in the approval letter under general, include issues requiring attention of your organization.

- All labour camps and machninary units must be placed outside the 60 m reservation on either side of Mahaweli Ganga.
- Necessary approval should also be obtained from the Mahaweli Authority of Sri Lanka prior to commencement of the construction activities.

The JICA Basic Design Study Team presently in Sri Lanka expects to finalise the Minutes of Discussion on the Basic Design Study of the above referred project in order to forward same to the Government of Japan for the approval of the project under the Grant Aid Assistance.

For this purpose it is necessary for the RDA to confirm to the Study Team that the general approval of the Mahaweli Authority of Sri Lanka (MASL) is available for the implementation of the project as required under the IEE approval.

Also the concurrence of the MASL to use an area of 15000 sq. m on the left bank and 5000 sq. m on the right bank within the reservation of Mahaweli Ganga just adjacent to the corridor of the new bridge for the construction yard and site offices.

We wish to mention that the basic design proposal submitted by the JICA team confirms the adoption of same span lengths for the new highway bridge in order to locate the mid piers in line with the existing piers of the existing bridge to ensure minimal effects to the river flow due to the construction of this new bridge as indicated in my earlier letter to you. Also that the soffit of the bridge will be maintained at the same level as that of the existing bridge.

.....

As such it is much appreciated if you would confirm in writing your approval for the construction of the bridge and make available the above indicated land areas on the river banks for the use of construction activities.

Your co-operation on this national project is greatly appreciated please.

Dr. G.L. Asoka J. De Silva
Director / Engineering Services
for General Manager
ROAD DEVELOPMENT AUTHORITY

Annex-2

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இலங்கை மகாவலி அதிகாரசபை
Mahaweli Authority of Sri Lanka
500, ටී.බී. ජයා මාවත, කොළඹ 10.
500. டி.பி. ஜயா மாவத்தை, கொழும்பு 10.
500, T.B. Jayah Mawatha, Colombo 10.

Our Ref.RBM/402
Your Ref.RDA/ES/JICA-BMP Vol IV

2nd November 2004

General Manager
Road Development Authority
Sethsiripaya
Battaramulla.

ATTN: Dr. G.L. Asoka J. De Silva, Director/Engineering Services

Construction of a New Highway Bridge at Bridge No. 81/2 on Maradankadawala, Habarana – Thirikondivadimadu (A 11) Road Across Mahaweli Ganga at Manampitiya

This has reference to your letter of 28th October 2004 on the above. Mahaweli Authority of Sri Lanka (MASL) will grant approval to use the land area necessary for the construction of the above bridge and the roadway within the 60 M. reservation on either side of the left and right banks of the Mahaweli Ganga.

It should be noted that 60 M. on either side of the Mahaweli Ganga is the protected reservation (environmental sensitive) of the Mahaweli Ganga.

It is regretted that MASL cannot grant concurrence for your request to use an area of 15,000 Sq. M. on left bank and 5,000 Sq. M. on right bank within the reservation of the Mahaweli Ganga for the construction yard and site Office. In this regard you may liaise with the DWLC as the land area outside 60 M. on either side of the river falls within the jurisdiction of the DWLC. I am also annexing herewith the letter (Ref. No.RBM/402 dated 27.8.2004) addressed to the Head of the Project Approving Agency (PAA) for the above project (Director General of the Dept. of Wild Life Conservation-DWLC) regarding 60 M. reservation of the Mahaweli Ganga.

Dr. M.U.A. Tennakoon
Director General
Mahaweli Authority of Sri Lanka

MMSRP/uks

CC. Director General-DWLC - for information please
Executive Director – Technical Services - for information & necessary action please

අධ්‍යක්ෂ ජනරාල් / பொது இயக்குனர் / Director General 687238
පොදු කාර්යාලය / பொது அலுவலகம் / General Office
දුරකථනය / தொலைபேசி / Telephone 687491-5
කේබල් / கேபல் / Cable MAHAGANGA
ෆැක්ස් / பெக்ஸ் / Fax 687240

Annex-2

ශ්‍රී ලංකා මහවැලි අධිකාරිය
இலங்கை மகாவலி அதிகாரசபை
Mahaweli Authority of Sri Lanka
500, ටී.බී. ජයා මාවත, කොළඹ 10.
500, டி.பீ. ஜயா மாவத்தை, கொழும்பு 10.
500, T.B. Jayah Mawatha, Colombo 10.

Our Ref:RBM/402
Your Ref:WL/6/1/9/159

27th August 2004

Mr. Dayananda Kariyawasam
Director General of Wild Life Conservation
Dept. of Wild Life Conservation

PROPOSED NEW HIGHWAY BRIDGE AT CLOSE VICINITY OF EXISTING RAIL CUM ROAD BRIDGE AT MANAMPITIYA ACROSS MAHAWELI GANGA – IEE REPORT

This has reference to your letter of 13th August 2004 regarding the abovementioned IEE Report.

It is appreciated that if you could include the following as conditions on granting Environmental approval for the proposed new highway bridge at Manampitiya across Mahaweli ganga.

- The riverbanks of the disturbed areas should be replanted using indigenous bank stabilization spices. Other precautionary measures such as gabions etc. should also be constructed when ever necessary to stabilize the effected bank of the Mahaweli River.
- Relocation package should be in place before the commencement of the construction activities. Relocation sites should be located away from the 60 M reservation on either side of the Mahaweli Ganga and away from the flood plain National Park, which is an important protected area to maintain the integrity of the Mahaweli Systems of protected areas.
- The disturbed areas within the 60 M on either side of the Mahaweli Ganga (Environmental sensitive reservation of the river) should also be replanted with indigenous plant species and horticulture spices for conservation and to improve the aesthetic beauty of the site.
- No camps should be permitted to construct within 60 M reservation on either side of the Mahaweli Ganga.
- No borrow areas should be allowed within 60 M reservations on either side of the Mahaweli Ganga.
- Necessary approval should also be obtained from the Mahaweli Authority of Sri Lanka prior to commencement of the construction activities.

Dr. M.U.A. Tennakoon
Director General
Mahaweli Authority of Sri Lanka

CC - Addl. Director (Env.)/RBP&M of MASL

අධ්‍යක්ෂ ජනරාල් / பொது இயக்குனர் / Director General 687238
පොදු කාර්යාලය / பொது அலுவலகம் / General Office
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තේබල් / கேபல் / Cable MAHAGANGA
ෆැක්ස් / பெக்ஸ் / Fax 687240

Annex-3

Minutes of the Public Awareness Meeting held on 21.07.2004 for the Cnstruction of Manampitiya Bridge

This meeting was conducted by the Chief Engineer, RDA/ Polonnaruwa with the participation of Executive Engineer, RDA/ Polonnaruwa and T.OO. Mr. W.M. Gemunu & Mr. M.T.S. Perera of RDA at the C.E.'s office Polonnaruwa on 21st July 2004 at 11.00 a.m. to make the people involved in sand mining near the bridge and the people where there is a possibility of whose houses may get affected due to the construction of bridge aware of the construction of the new bridge.

At the outset the Chief Engineer intimated to the participants that the New Bridge would be located 50m upstream of the existing bridge and he requested the fullest corporation for this work from them.

Then the participants have stated that there is no any sand harvesting activity or any brick cutting industry at the proposed bridge location but close proximity is used only to pile the harvested sand.

At this instance in the process of the discussion the Chief Engineer informed the participants that RDA has no authority for approval of sand mining or any other industry to be carried out at the bridge site but only the Wild Life Department has the sole authority on these issues.

Then most of the people living in the area under reference who participated at this meeting have admitted that the sand mining activity near the bridge and the residences that they have put up are illegal and have also disclosed that the WLCD has already filed court cases against them.

The house owners requested payment of compensation for the houses that may have to be removed for the construction of the new bridge and the C.E. intimated to them that he would inform this matter to the Head Office.

Further at this point the CE has informed the participants that a team of RDA officers would visit the people living in the vicinity of the proposed bridge site on 26.07.2004 to obtain further details and information and he expects their corporation for same.

In concluding the meeting the CE explained the benefits of construction of this bridge and the importance of extending their co-operation for the implementation of this project and thanked them for their participation at the meeting.

2004.07.21 වන දින පැවති මනම්පිටිය නව පාලම ඉදි කිරීම
පිළිබඳ දැනුවත් කිරීමේ රැස්වීම

(Public Awareness meeting held on 21-07-2004 for the construction of Manampitiya Bridge)

පැමිණීමේ ලේඛනය
(Attendance List)

(No) අංකය	(Name) නම	(Designation & Address) තනතුර හා ලිපිනය	(Signature) අත්සන
01.	A.S.A. [illegible]	[illegible]	[signature]
02.	W.R. [illegible]	[illegible]	[signature]
03.	M.W. [illegible]	[illegible]	[signature]
04.	[illegible]	[illegible]	[signature]
05.	L.A. [illegible]	[illegible]	[signature]
06.	R M [illegible]	[illegible]	[signature]
07.	[illegible]	[illegible]	[signature]
08.	[illegible]	[illegible]	[signature]
09.	[illegible]	[illegible]	[signature]
10.	[illegible]	[illegible]	[signature]
11.	K.A. [illegible]	[illegible]	[signature]
12.			

01. A.S.A. Asar. — C.E | Polonnaruwa, RDA
02. W.R. Wijesekara — E.E | Polonnaruwa, RDA
03. M.W. Gemunu — T.O | Polonnaruwa, R.D.A
04 Sunil Perera — T.O | Polonnaruwa, RDA
05 L.A. Siripala — Yakkure Junction, Polonnaruwa
06 R.M.C. Herath — Yakkure Junction, Manampitiya
07 W. Samantha — Yakkure Junction, Manampitiya
08 G. Ajith Kumara — Yakkure Junction, Manampitiya
09 W. Seelawathie — Yakkure Junction, Manampitiya
10 D.P.P. Jayawardena — Dhammika Stores, Manampitiya
11. K.A. Ajith kumara — Devala Junction, Manampitiya.

Annex-4

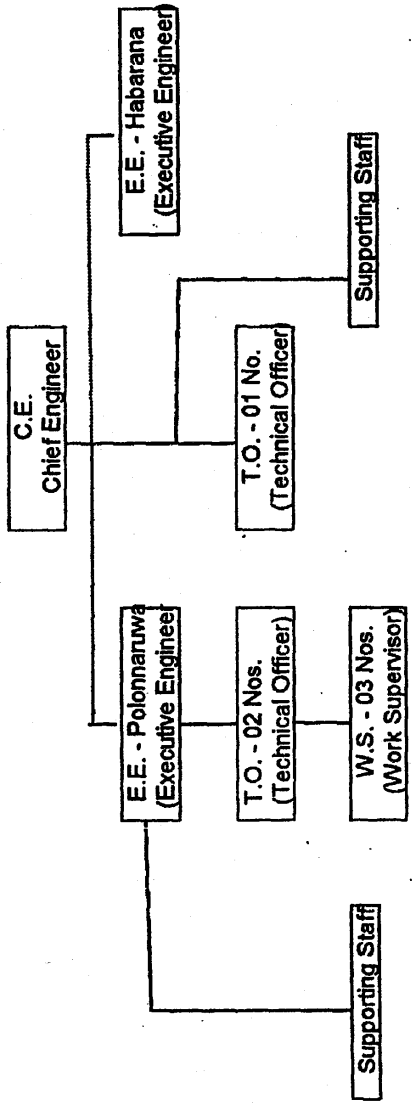
Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient side
1	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
2	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Marine(Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	(●)	(●)
3	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●
4	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
5	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
6	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to Pay)

Annex-5

Organization Chart of the Chief Engineers' Office
Polonnaruwa
R.D.A.



To JICA - Basic design Team

Annex-5

My No. RDA/JAP/ACTION PLAN

Japan Aided Projects Division,
Road Development Authority,
Battaramulla.

9th September, 2004.

Attn: Chief Accountant – M/H

Secretary,
MINISTRY OF HIGHWAYS

BUDGET ESTIMATE FOR THE YEAR 2005

With reference to your letter No. MH/AC5/EST/2005 dated 02.09.2004, we are forwarding herewith the duly filled format on the above subject for you to submit to the treasury.

Director,
JAPAN AIDED PROJECTS,
ROAD DEVELOPMENT AUTHORITY.

AcnPln/anjrs/09/09/04

* Sent on 10/9/04 (copy not)

Annex-5

Annexure IV

PROJECT SUMMARY - 2005 - 2007

Ministry/ Department

Head No. 181 Name : Ministry of Highways

Programme No. 50 Name : Construction & Maintenance of Highways

Project No. 08 Name : Japan Funded Projects

Manampitiya Bridge (JICA Grant Aid)

Project Objective
Replace the old narrow Bridge and to provide ~~passes~~ passage for the free movement of traffic along this road across the river Mahaweli.

Key Activities
MOU signed for the Manampitiya Bridge
IEE being carried out as requested by CEA
Japanese Design Team arrived for Basic Designs

Activity No.	Performance Indicator	Actual 2003 Rs. Mn.	Estimate 2004 Rs. Mn.	Estimate 2005 Rs. Mn.	Projection 2006 Rs. Mn.	Projection 2007 Rs. Mn.
				30	40	20

AcnPln-anj-rs-09/09/04

資料 6.　事業事前計画表（基本設計時）

事業事前計画表（基本設計時）

１．案件名
スリランカ民主社会主義共和国　マナンピティヤ新幹線道路橋梁建設計画基本設計調査
２．要請の背景（協力の必要性・位置付け）
「ス」国の主要内陸輸送手段は道路と鉄道であり、道路が支配的で同国の全旅客輸送量の 94%、全貨物輸送量の 98%を占めている。また、幹線道路上には、イギリス領時代の 50～100 年前に建設された古い橋梁が数多く存在し、今もなお利用されているが、これらの橋梁は老朽化や幅員不足、取付道路の線形不良等の問題を抱えているだけでなく、現交通量への対応も困難になっているものも多い。 今般要請のあった橋梁は、鉄道・道路併用橋として供用されている現マナンピティヤ橋に近接して道路専用橋梁として新規に建設されるものである。現橋はもともと鉄道橋として建設され、同国の東西を結ぶ幹線道路である国道 11 号線上の橋梁としても使用するために床版を改修された橋梁であるが、列車通過時には車輌の通行が不可能となるだけでなく、幅員制限により交互通行を余儀なくされるなどボトルネックとなっている。 他方、「ス」国政府は、2002 年 9 月に「総合的な地域別開発アプローチの方が、セクター別の開発アプローチよりも効率的である」との考え方を基本理念として、国をいくつかの経済圏や都市圏に分割して計画作りを行っている。この計画ではコロンボ大都市圏に加え、アヌダラプラやトリンコマレー、ダンブラ、ポロンナルワを含む北中部州及び東部州が大都市圏の候補地と位置付けられている。中でも要請対象橋梁が位置する国道 11 号線の主要都市であるポロンナルワとバティカロアを含む 9 都市は、早期開発促進地域の中心都市として選定されている。これら 9 都市は、今後 30 年間にわたり、都市基盤整備活動の中心となって改修が進められ、中長期的な経済発展に寄与することが期待されている。 このように要請対象である道路専用橋梁は、東西幹線道路のボトルネック解消に寄与するだけでなく、地域開発政策面でも和平プロセスの進展により復興が期待される北東部地域（反政府勢力の支配地域）の開発に寄与する協力の必要性が高いプロジェクトである。
３．プロジェクト全体計画概要
（1）プロジェクト全体計画の目標 ①新たな道路橋の建設により交通のボトルネックが解消され、ポロンナルワ～バティカロア間の通年交通の確保と人の移動・物流が改善される。 ②対面通行が可能になり滞留時間が解消されるとともに、鉄道橋と分離されることで道路交通の安全性が確保される。 裨益対象：直接裨益人口：約 1,024,000 人（プロジェクト対象施設直近地区の人口） 北中部州ポロンナルワ県：約 368,000 人 東部州バティカロア県：　約 536,000 人 システムＣ地区：　約 120,000 人 （2）プロジェクト全体計画の成果 ①プロジェクト運営体制が整備される。 ②橋梁及び取付道路が整備される。 ③供用後の維持管理体制が確保される。 （3）プロジェクト全体計画の主要活動 ①橋梁及び取付道路を建設する。 ②プロジェクト運営のための人員を配置する。 ③橋梁及び取付道路を維持管理する。 （4）投入（インプット） ア．日本側（本案件）：無償資金協力 10.80 億円 イ．相手国側 （ア） 公共施設の移設、住民移転に係る経費 （イ） 建設資機材の購入税 （ウ） 施設の運営・維持管理に係る経費 （5）実施体制 主管官庁：道路省 実施機関：道路開発公社

４．無償資金協力案件の内容

（１）サイト

北中部州ポロンナルワ県マナンピティヤ地区

（２）概要

当該無償資金協力により整備される主要な施設は以下のとおりである。

①道路専用橋の建設（302m）、②取付道路の建設（左岸側：246m、右岸側：182m）

（３）相手国負担事項

①事業用地の確保、②資材採取場所の提供、③公共施設等の移設（左岸側：教育大学用ポンプ施設の高圧電線、右岸側：砂採取業者の家屋、警察用低圧電線）

（４）概算事業費

10.82 億円（無償資金協力 10.80 億円、「ス」国側負担 0.02 億円）

（５）工期

詳細設計・入札期間を含め約 32.5 ヶ月（予定）

（６）貧困、ジェンダー、環境及び社会面の配慮

既存家屋、居住者の移転に対する損失補償、移転に要する費用等の補償を実施する。

５．外部要因リスク

和平合意プロセスの頓挫により治安が悪化しない。

６．過去の類似案件からの教訓の活用

特になし。

７．プロジェクト全体計画の事後評価に係る提案

（１）プロジェクト全体計画の目標達成を示す指標

事業成果	成果測定指標	現時点数値（2004 年）	目標数値（2013 年）（完工後 5 年後）
通年通行による人的移動・物流の改善及び安全な交通走行の確保	列車通過時の車輌の滞留時間 交互通行による車輌の滞留時間	20 分 x4 回 =80 分／日 5 分 x3 回／時間 x12 時間 =180 分／日	解消
	車両走行速度	10～15 km/h	40～50 km/h

（２）その他の成果指標

交通量が 2004 年時点の 4,600 台／日より増加する。

（３）評価のタイミング

2013 年（施設完工後 5 年経過後）とする。

資料 7.　収集資料リスト

（2004 年 7 月 31 日　作成）

主管部長	文書管理課長	主管課長	情報管理課長	図書資料室受付印

		プロジェクト ID	スリランカ国	調査団番号			
地域	南西アジア	調査団	マナンピティヤ橋架け替え計画基本設計調査	調査の種類	道路開発基本設計	担当部課	無償資金協力部業務第二グループ交通インフラチーム
国名	スリランカ	配属機関名		現地調査期間	平成 16 年 7 月 4 日 ～ 平成 16 年 8 月 2 日	担当者氏名	林　宏之

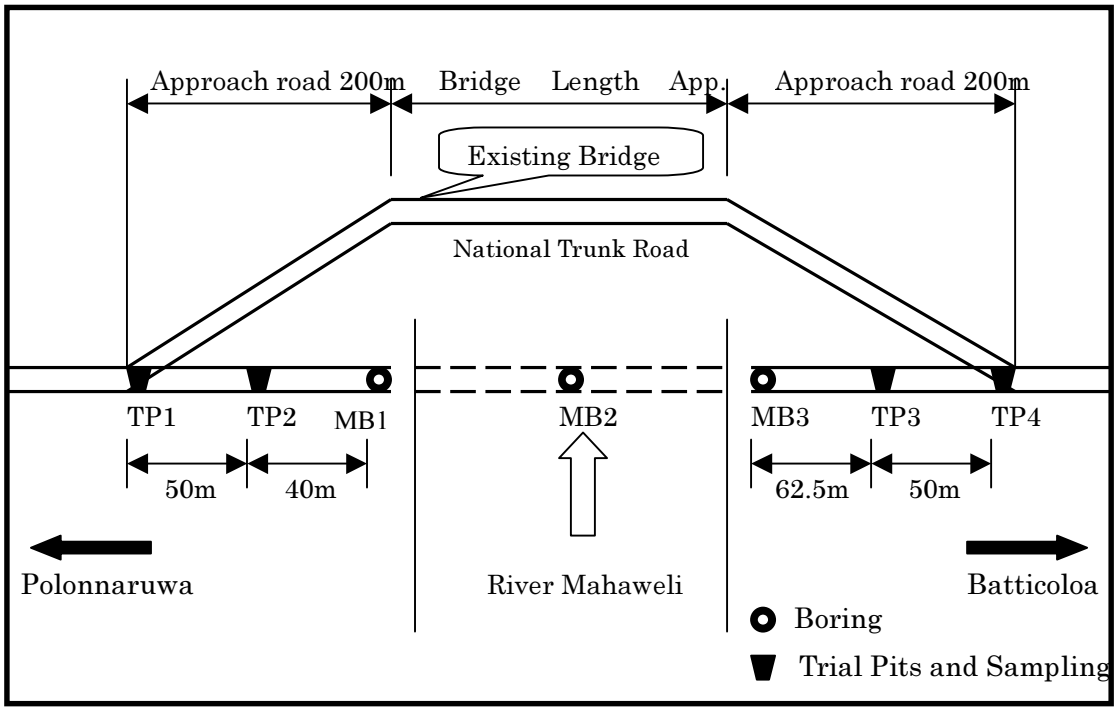
番号	資　料　の　名　称	形態（図書・ビデオ・地図・写真等）	発行年	版型	頁数	オリジナル・コピーの別	部数	収集先名称又は発行機関	寄贈・購入（価格）の別	取扱区分	利用表示	利用者所属氏名	納入予定日	納　入確認欄
	社会・経済・交通・建設・地図													
1	National Physical Planning Policy	図書	2002	A4	74	コピー	1	National Physical Planning Policy	寄贈					
2	Labor Code of Sri Lanka	図書	2004	A4	608	オリジナル	1	Ministry of Employment and Labor	Rs.1,500					
3	Annual Report 2003	図書	2004	A4	650	オリジナル	1	Central Bank of Sri Lanka	Rs.200					
4	Economic and Social Statistics of Sri Lanka 2003	図書	2004	A4	163	オリジナル	1	Central Bank of Sri Lanka	Rs.100					
5	Sri Lanka Socio- Economic Data 2004 Vol.XXVII	図書	2004	手帳	86	オリジナル	1	Central Bank of Sri Lanka	Rs.150					
6	Estimate-2004	図書	2004	A4	15	コピー	1	RDA	寄贈					
7	Agreement Data	図書	2004	A4	6	コピー	1	ERD	寄贈					
8	スリランカ国　国別業務実施方針	図書	2002	A4	63	オリジナル	1	国際協力銀行	寄贈					
	RDA（道路開発公社）・道路・橋梁関係													
10	Polonnaruwa District Organization Structure	図書	2004	A4	1	コピー	1	RDA	寄贈					
11	A Guide To The Structural Design Of Roads Under Sri Lankan Conditions	図書	1999	A4	24	コピー	1	RDA	寄贈					

資料８　地質資料

6-1　ボーリング柱状図

Summary of borehole investigation

Borehole no.	Coordinates		Drilling in Overburden (m)	Drilling in rock (m)	Total Depth (m)
	Northing	Easting			
MB-01	600895.4110	534641.1560	21.65	5.00	26.65
MB-02	600899.4784	534786.8011	15.85	3.00	18.85
MB-03	600903.7080	534936.4250	19.15	2.85	22.00



The Site Sketch with Survey locations

Engineering & Laboratory Services (Pvt) Ltd.

Borehole No : MB - 01

Sheet 1 of 3

Equipment & Methods : Rotary drilling with SPT

Location : Manampitiya Bridge.

Carried out for :

M/s. Oriental Consultants Co. Ltd.,

Elevation : 35.928m.

G.W.L 3.60m.

Chainage :

Co-ordinate 600895.4110 534641.1560

Date 13/07/2004 22/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Test	Field Records
LOOSE TO MEDIUM DENSE DARK BROWN TO BROWN SILTY FINE SAND			1	1.00 - 1.45			S N=9	3 4 5
			2	2.00 - 2.45			S N=12	3 5 7
			3	3.00-3.45			S N=8	3 4 4
LOOSE BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE TO MEDIUM SAND			4	4.00 - 4.45			S N=11	4 5 6
			4.45					
MEDIUM DENSE LIGHT BROWN TO BROWN SLIGHTLY FINE GRAVELY MEDIUM TO COARSE SAND			5	5.00 - 5.45			S N=13	5 5 8
			6	6.00-6.45			S N=6	6 4 2
			7	7.00-7.45			S N=15	5 6 9
			8	8.00-8.45			S N=16	5 7 9
			9	9.00-9.45			S N=25	5 10 15
			10					

G.W.L. at 3.60m.

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)

Depths : All depths and reduced levels in meter.

GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)

S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.	Borehole No : MB - 01 Sheet 2 of 3
Equipment & Methods : Rotary drilling with SPT	Location : Manampitiya Bridge.
Carried out for : **M/s. Oriental Consultants Co. Ltd.,**	Elevation : 35.928m. Chainage : Date G.W.L 3.60m. Co-ordinate 600895.4110 13/07/2004 534641.1560 22/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Test	Field Records
MEDIUM DENSE LIGHT BROWN TO BROWN SLIGHTLY FINE GRAVELLY MEDIUM TO COARSE SAND				10.00-10.45			S N=11	1 3 8
			11	11.00 - 11.45			S N=33	7 20 13
			11.45					
MEDIUM DENSE TO DENSE GREY TO BROWNISH GREY SILTY FINE SAND			12	12.00-12.45			S N=22	3 7 15
			13	13.00-13.45			S N=34	6 13 21
			14	14.00-14.45			S N=37	7 14 23
			15	15.00-15.45			S N=23	7 10 13
			15.45					
DENSE GREYISH BROWN TO GREY SILTY MEDIUM TO COARSE SAND			16	16.00-16.45			S N=36	11 16 20
			17	17.00-17.45			S N=24	7 10 14
			18	18.00 - 18.45			S N=32	9 15 17
			19	19.00 - 19.45			S N=39	20 21 18
			20					

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)
Depths : All depths and reduced levels in meter.
GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)
S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.

Borehole No : MB - 01

Sheet 3 of 3

Equipment & Methods : Rotary drilling with SPT

Location : Manampitiya Bridge.

Carried out for :

M/s. Oriental Consultants Co. Ltd.,

Elevation : 35.928m.

G.W.L 3.60m.

Chainage :

Co-ordinate 600895.4110 534641.1560

Date 13/07/2004 22/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Sample / Test: Test	Field Records
GREENISH GREY TO GREYISH BLACK SILTY FINE SAND COMPLETELY WEATHERED ROCK			21	20.00 - 20.45 21.00 - 21.45			S N>50 S N>50	28/7cm/HB 35/3cm/HB
GREENISH GREY MEDIUM GRAINED MODERATELY DISCOLOURED HIGHLY FRACTURED THINLY FOLIATED MODERATELY WEATHERED BIOTITE GNEISS			21.65 22 22.50		100%	0%		
GREY MEDIUM GRAINED SLIGHTLY DISCOLOURED HIGHLY FRACTURED SLIGHTLY WEATHERED BIOTITE GNEISS 23.10m - 23.20m MODERATELY WEATHERED ROCK			23 24 24.10		100%	9%		
GREENISH GREY MEDIUM GRAINED MODERATELY DISCOLOURED HIGHLY FRACTURED MODERATELY WEATHERED BIOTITE GNEISS			25 25.10		65%	12%		
GREY MEDIUM GRAINED SLIGHTLY DISCOLOURED HIGHLY FRACTURED SLIGHTLY WEATHERED BIOTITE GNEISS MODERATELY WEATHERED AREA IN BETWEEN.			26 26.65		68%	0%		
BOREHOLE TERMINATED AT DEPTH OF THE 26.65m.			27 28 29 30		C	r		

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)

Depths : All depths and reduced levels in meter.

GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)

S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks:
Exsisting Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.

Borehole No : MB - 02

Sheet 1 of 2

Equipment & Methods : Rotary drilling with SPT

Location : Manampitiya Bridge.

Carried out for :

M/s. Oriental Consultants Co. Ltd.,

Elevation : 31.755m

G.W.L 0.00m.

Chainage :

Co-ordinate 600899.4784 534786.8011

Date 21/07/2004 24/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Test	Field Records
LOOSE BROWN TO YELLOWISH BROWN SLIGHTY SUBANGULAR TO SUBROUNDED FINE GRAVELLY MEDIUM TO COARSE SAND			1	1.00 - 1.45			S N=9	1 4 5
			2	2.00 - 2.45			S N=10	2 4 6
			3	3.00-3.45			S N=19	4 9 10
MEDIUM DENSE BROWN TO YELLOWISH BROWN SLIGHTLY SILTY SUBANGULAR TO SUBROUNDED FINE TO MEDIUM GRAVELLY MEDIUM TO COARSE SAND			4	4.00 - 4.45			S N=20	5 8 12
			5	5.00 - 5.45			S N=23	6 9 14
			6	6.00-6.45			S N=20	6 8 12
			7	7.00-7.45			S N=25	8 12 13
			8	8.00-8.45			S N=24	8 12 12
			9	9.00-9.45			S N=26	9 11 15
			10					

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)

Depths : All depths and reduced levels in meter.

GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)
S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.

Borehole No : MB - 02

Sheet 2 of 2

Equipment & Methods : Rotary drilling with SPT

Location : Manampitiya Bridge.

Carried out for :

M/s. Oriental Consultants Co. Ltd.,

Elevation : 31.755m

G.W.L 0.00m.

Chainage :

Co-ordinate 600899.4784 534786.8011

Date 21/07/2004 24/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Sample / Test: Test	Field Records
MEDIUM DENSE BROWN TO YELLOWISH BROWN SLIGHTLY SILTY SUBANGULAR TO SUBROUNDED FINE TO MEDIUM GRAVELLY MEDIUM TO COARSE SAND				10.00-10.45			S N=28	10 12 16
			11	11.00 - 11.45			S N=27	10 12 15
			12	12.00-12.45			S N=31	12 14 17
			13	13.00-13.45			S N=29	10 13 16
			14	14.00-14.45			S N=26	11 12 14
			15	15.00-15.45			S N>50	50/5cm/HB
			15.60					
BLACKISH GREY TO GREY SILTY FINE SAND COMPLETELY WEATHERED ROCK			15.85 16					
GREY MEDIUM GRAINED THINLY FOLIATED FRESH BIOTITE GNEISS			17		90%	68%		
			17.35					
GREY MEDIUM GRAINED THINLY FOLIATED FRESH GNEISSIC ROCK MODERATELY FRACTURED ROCK FRACTURES - 15^0 - 20^0 TO THE HORIZONTAL			18		90%	51%		
			18.85					
BOREHOL TERMINATED AT DEPTH OF 18.85m.			19		C	r		
			20					

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)

Depths : All depths and reduced levels in meter.

GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)

S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.

Borehole No : MB - 03

Sheet 1 of 3

Equipment & Methods : Rotary drilling with SPT

Location : Manampitiya Bridge.

Carried out for :

M/s. Oriental Consultants Co. Ltd.,

Elevation : 35.673m.

G.W.L 3.90m.

Chainage :

Co-ordinate 600903.7080 534936.4250

Date 23/07/2004 24/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Sample / Test: Test	Field Records
LOOSE BROWN SILTY FINE SAND			1	1.00 - 1.45			S N=12	5 5 7
			2	2.00 - 2.45			S N=9	5 4 5
MEDIUM DENSE BROWN SLIGHTLY SILTY CLAYEY FINE SAND			3	3.00-3.45			S N=12	5 5 7
			3.90 4		UD			G.W.L AT 3.90m.
SOFT GREY TO YELLOWISH GREY SLIGHTLY SILTY CLAY			5	5.00 - 5.45			S N=06	3 3 3
			6	6.00-6.45			S N=10	6 5 5
			6.40 6.50					
SOFT BLACK TO DARK GREY SLIGHTLY FINE SANDY ORGANIC CLAY			7	7.00-7.45			S N=11	4 5 6
FIRM DARK BROWN TO YELLOWISH BROWN SLIGHTLY FINE SANDY SILTY CLAY			8	8.00-8.45			S N=12	4 5 7
			8.90 9	9.00-9.45			S N=17	4 8 9
SAME AS NEXT DESCRIPTION			10					

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)

Depths : All depths and reduced levels in meter.

GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)

S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.								Borehole No : MB - 03 Sheet 2 of 3
Equipment & Methods : Rotary drilling with SPT			Location : Manampitiya Bridge.					
Carried out for : **M/s. Oriental Consultants Co. Ltd.,**			Elevation : 35.673m. G.W.L 3.90m.		Chainage : Co-ordinate			Date 600903.7080 23/07/2004 534936.4250 24/07/2004
Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test Depth & Thickness (m)	Sample Type	No	Test	Field Records
VERY STIFF BROWNISH RED, BROWN, RED FINE SANDY CLAY			10.00-10.45 11 11.00 - 11.45 12 12.00-12.45 12.90	10.00-10.45 11.00 - 11.45 12.00-12.45			S N=20 S N=26 S N=21	5 8 12 6 12 14 5 10 11
YELLOW, YELLOWISH GREY CLAYEY FINE TO MEDIUM GRAVELLY COARSE SAND COMPLETELY WEATHERED ROCK			13 13.00-13.45 14 14.00-14.45 15 15.00-15.45 16	13.00-13.45 14.00-14.45 15.00-15.45			S N=18 S N=33 S N>50	10 9 9 10 13 20 35/5cm/HB
BLACKISH GREY TO GREY FINE SANDY SILT COMPLETELY WEATHERED ROCK			17 18 19					
GREY MEDIUM GRAINED MODERATELY DISCOLOURED HIGHLY FRACTURED MODERATELY WEATHERED BIOTITE GNEISS			19.15 20		61%	36%		

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)
Depths : All depths and reduced levels in meter.
GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)
S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Existing Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

Engineering & Laboratory Services (Pvt) Ltd.	Borehole No : MB - 03
	Sheet 3 of 3

Equipment & Methods : Rotary drilling with SPT	Location : Manampitiya Bridge.	
Carried out for :	Elevation : 35.673m.	Chainage : Date
M/s. Oriental Consultants Co. Ltd.,	G.W.L 3.90m.	Co-ordinate 600903.7080 23/07/2004 534936.4250 24/07/2004

Description of Strata	Reduced Level (m)	Legend	Depth (m)	Sample / Test: Depth & Thickness (m)	Sample: Type	Sample: No	Sample / Test: Test	Field Records
SAME AS PREVIOUS DESCRIPTION			20.30					
GREY MEDIUM GRAINED MMODERATELY DEISCOLOURED HIGHLY FRACTURED MODERATELY WEATHERED BIOTITE GNEISS 21.35m - 21.60m SLIGHTLY WEATHERED ROCK			21		50%	18%		
			21.60					
GREY MEDIUM GRAINED SLIGHTLY WEATHEED BIOTITE GNEISS			22		75% C	25% r		
BOREHOLE TERMINATED AT DEPTH OF 22.00m.			23					
			24					
			25					
			26					
			27					
			28					
			29					
			30					

SPT : Where full 0.3 m penetration has not been achieved the number of blows for the quoted penetration is given (not N-value)
Depths : All depths and reduced levels in meter.
GWL : Ground Water Level observed inside the Borehole, after the saturation.

Sample Key / Test Key

D - Disturbed Sample
B - Bulk Sample
W - Water Sample
WS- Wash Sample
UD- Undisturbed Sample
- Position (P) Tube (u)
S - Standard Penetration Test (SPT)
V - Vane Test
C - Core Recovery (CR), %
r -Rock Quality Designation (RQD) %
HB-Hammer Bounce
FD- Free Down

Remarks: Exsisting Ground level taken as Zero.

Logged By : R.M.W.K.Rathnayake
Supervised By: Randil Asiri
Drilled By: K.A.Somasiri
Scale:1:50 Fig:

6-2 室内試験結果

1) 試験結果のまとめ

The design study on the project for reconstruction of Manmpitiya Bridge
Oriental Consultants Co. Ltd.

Job ref: ELS/1703
Client Ref:
Date: 30.07.2004

Depth of Sample MSL (m)	Soil Description	Unified Soil Class	Atterberg Limit LL %	PL %	PI %	Grain Size Analysis Fines < 0.075 %	Sand 2.00-0.075 %	Gravel >2.0mm %	NMC %	Specific gravity	UCT Rock N/mm2	UUT soil q_u kPa	CBR	Density g/cm^3
0.0.-0.50													4.1	
0.5-1.0	Clayey sand	SC	52	44	8	46.90	53.10	0.00	3.72	2.38	-	-	13.25	
0.0-0.5													7.7	
0.5-1.0			28	21	7	-	-	-			-	-	9.6	
0.0-0.5													6.8	
0.5-1.0	Clayey sand	SC	31	20	11	47.23	45.81	6.96	7.88	2.61	-	-	6.1	
0.0-0.5													45.4	
0.0-0.5			54	38	16	-	-	-			-	-	27.1	
-	Poorly graded sand with silt	SP-SM				0.71	91.86	7.43	3.00	2.66	-	-	9.4	
-	Poorly graded sand with silt	SP-SM				2.72	89.60	7.68	3.20	2.65	-	-	-	
0.0-0.5	Silty sand	SM	NP	NP	NP	44.95	54.83	0.22	9.19	2.19	-	-	6.1	
0.5-1.0	Silty sand	SM	NP	NP	NP	42.47	57.36	0.17	6.94	2.04	-	-	14.5	
0.0-0.5	Silty sand	SM	NP	NP	NP	44.82	54.71	0.47	7.61	2.10	-	-	5.8	
0.5-1.0	Silty sand	SM	NP	NP	NP	45.59	54.36	0.05	8.03	2.16	-	-	11.65	
0.0-0.5	Silty sand	SM	NP	NP	NP	36.71	63.04	0.25	7.82	2.29	-		9.7	
0.5-1.0	Silty sand	SM	NP	NP	NP	32.57	64.69	2.74	9.31	2.21	-		42.25	
0.0-0.5	Sandy silt	ML	NP	NP	NP	52.00	47.68	0.32	6.41	2.19	-		4.9	
0.5-1.0	Silty sand	SM	NP	NP	NP	44.12	55.81	0.07	3.64	2.08	-		16.4	
22.95-23.10											23.790			
24.95-25.10											6.320			
17.03-17.35											76.810			
16.10-16.32											70.100			
4.10-4.20												74.40		1.865
4.33-4.44											-	52.58		1.889
20.30-20.40											44.51			

* NP - Non Plastic

2) アッターベルグ限界

LIQUID LIMIT AND PLASTIC LIMIT OF SOIL

BS 1377:PART 2:1990

Client	Oriental Consultants co . Ltd	Job ref.	ELS/1703
Project.:	The Desing Study on the Project for Reconstruction of Manampitiya Bridge		
Location:	Borrow pit 1-TP2	Depth. (M)	0.0-0.5
		Date	25/07/04
Soil Description:			
Test Method	ASTM - D 4318		

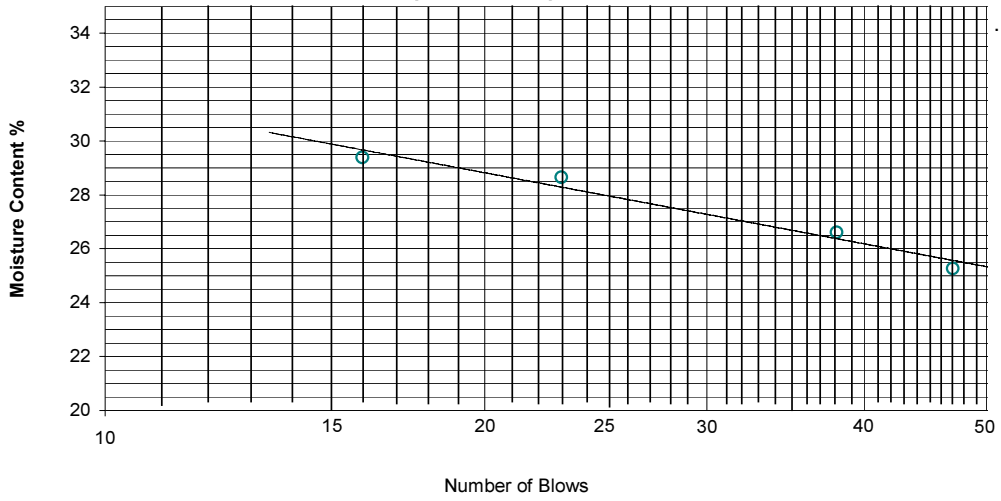
Liquid Limit

Test No.		1	2	3	4
Number of Blows		47	38	23	16
Can No.		N	J	X	C
Weight of Can + Wet Soil	g	39.37	34.10	28.58	37.38
Weight of Can + Dry Soil	g	36.30	31.40	26.30	34.50
Weight of Can	g	24.15	21.25	18.34	24.70
Weight of Water	g	3.070	2.700	2.280	2.880
Weight of Dry Soil	g	12.15	10.15	7.96	9.80
Moisture Cont ent	%	25.3	26.6	28.6	29.4

Plastic Limit

1	2	Average
R	M	
26.65	29.14	
25.50	28.00	
19.93	22.53	
1.150	1.140	
5.57	5.47	
20.6	20.8	20.7

Liquid Limit Graph



Liquid Limit	28	Plastic Limit	21	Plasticity Index	7

3) 自然含水比

NATURAL MOISTURE CONTENT							
Client	Oriental Consultants co . Ltd					Job ref :	ELS/1703
Project	The Design Study on the Project for Reconstruction					Sample	
	of Manampitiya Bridge						
Consultant						Date of repor	25/07/04
Location	Manampitiya						
Depth (m)	Barrow 1						
	TP1-0.5-1.0 m						
Can No	E - 2						
Can + wetsoil	316.70						
Can + Drysoil	307.31						
Weight of Can	55.14						
Weight of Water	9.39						
Weight of drysoil	252.17						
Moisture Content %	**3.72**						

4) 比重

SPECIFIC GRAVITY OF SOIL

Client :	Oriental Consultants Co . Ltd	Job ref :	ELS/1703
Project :	The Design Study on the Project for Reconstruction of	Depth	0.5-1.0m
	Manampitiya Bridge		
Location	Borrow Pit -1	Date of report	25/07/04

Location		Barrow - 1 TP1-0.5-1.0 m			
Specific Gravity Bottle No		P			
Weight of Empty Bottle	g	22.47			
Weight of Dry Soil	g	22.22			
Weight of Bottle + Soil + Water	g	87.73			
Weight of Bottle Full Water	g	74.83			
Temperature of water	^{0}C	29.00			
Volume of Sample	cm^3	9.32			
Specific Gravity of Soil		**2.38**			

Remarks

5) C B R

CALIFORNIA BEARING RATIO

Client:	Oriental Consultants Co.Ltd	Job ref.	ELS/1703
		Client ref.	-
Project.:	The Design Study on the Project for Reconstruction of Manampitiya Bridge		-
		Sample No.	
			-
Test Method	BS 1377 Part 4	Date	28/07/04

Soil description: Barrow 1 TP1 (0.5 - 1.0)

Maximum Dry Density	**2.024 g/cm^3**	**Optimum Moisture Content**	**12.3 %**

Sample Preperation

Weight of Mould + sample	10955
Weight of Mould	6125
Weight of soil	4830
Volume of mould	2170.00
Bulk Density	2.226
Moisture content	13.70
Dry density	1.958

Soaking

Soaked 4 days

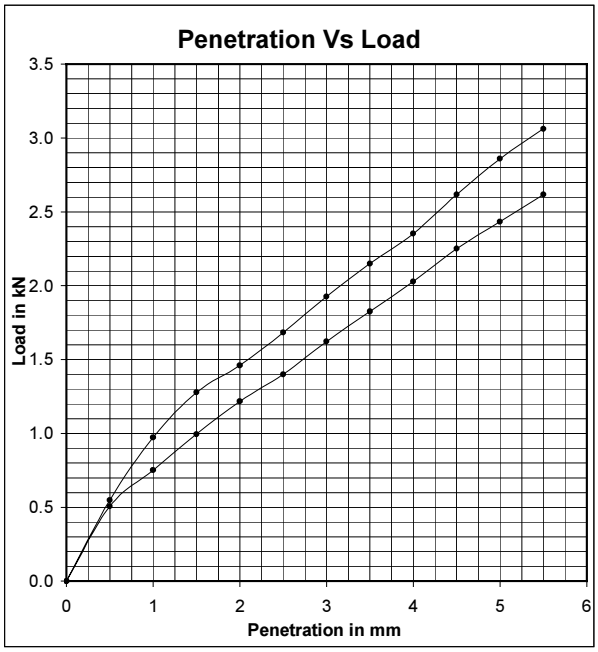
After Test

Moisture Content 11.3

Prooving Ring Factor - 0.0101

Penetration Test

Penetration	Top		Bottom	
mm	Dial	Load kN	Dial	Load kN
0.00	0	0.00	0	0.00
0.50	50	0.51	54	0.55
1.00	74	0.75	96	0.97
1.50	98	0.99	126	1.28
2.00	120	1.22	144	1.46
2.50	138	1.40	166	1.68
3.00	160	1.62	190	1.93
3.50	180	1.83	212	2.15
4.00	200	2.03	232	2.35
4.50	222	2.25	258	2.62
5.00	240	2.43	282	2.86
5.50	258	2.62	302	3.06



Results CBR %

Penetration	**Top**	**Bottom**
2.5 mm	10.6	12.8
5.0 mm	12.2	14.3