

資 料

**1. 調査団員・氏名**

## 1. 調査団員・氏名

### ➤ 第一次現地調査 2006 年 6 月 14 日～2006 年 6 月 20 日

氏 名	担 当	所 属
藤澤 博	業務主任／道路計画	日本工営株式会社
市川 敏夫	橋梁設計	日本工営株式会社
石見 和久	道路・護岸施設設計	日本工営株式会社
渡辺真一郎	施工・調達計画/積算	日本工営株式会社
ボララ・リヤナゲ ・ジャヤラトネ	自然条件調査Ⅰ（水理）	オリエンタルコンサルタンツ株式会社

### ➤ 第二次現地調査 2006 年 7 月 27 日～2006 年 8 月 18 日

氏 名	担 当	所 属
坂田 英樹	総括	国際協力機構 スリランカ事務所次長
小柳 桂泉	計画管理	国際協力機構 無償資金協力部 業務第一グループ 交通運輸・電力チーム 副主任
藤澤 博	業務主任／道路計画	日本工営株式会社
市川 敏夫	橋梁設計	日本工営株式会社
石見 和久	道路・護岸施設設計	日本工営株式会社
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ボララ・リヤナゲ ・ジャヤラトネ	自然条件調査Ⅰ（水理）	オリエンタルコンサルタンツ株式会社
小林 宏昭	自然条件調査Ⅱ（地形・地質）	オリエンタルコンサルタンツ株式会社

### ➤ 概要説明 2006 年 11 月 12 日～2006 年 11 月 18 日

氏 名	担 当	所 属
坂田 英樹	総括	国際協力機構 スリランカ事務所次長
藤澤 博	業務主任／道路計画	日本工営株式会社
市川 敏夫	橋梁設計	日本工営株式会社

## 2. 調査行程

### ➤ 第一次現地調査

➤ 第一次現地調査

日	月	曜日	総括	計画管理	業務主任 /道路計画	橋梁設計	施工計画/積算	道路・護岸 施設設計	自然条件調査Ⅰ (水理)
			坂田 英樹	小柳 桂泉	藤澤 博	市川 敏夫	石見 和久	渡辺真一郎	ボララ・リヤナゲ・ ジャヤラトネ
			JICA	JICA	NK	NK	NK	NK	OC
1	6/14	水			成田ーシンガポールーコロombo				
2	15	木			JICA訪問、ERD、MOH、RDA、MNBD、CCD表敬訪問、現地再委託協議				
3	16	金							
4	17	Sat			データ収集				
5	18	日							
6	19	月			データ収集、現地再委託協議				
7	20	火							
8	21	水			コロomboーシンガポールー成田				

➤ 第二次現地調査

日	月	曜日	総括	計画管理	業務主任 /道路計画	橋梁設計	施工計画/積算	道路・護岸 施設設計	自然条件調査Ⅱ (地形・地質)	自然条件調査Ⅰ (水理)						
			坂田 英樹	小柳 桂泉	藤澤 博	市川 敏夫	石見 和久	渡辺真一郎	小林 宏昭	ボララ・リヤナゲ・ ジャヤラトネ						
			JICA	JICA	NK	NK	NK	NK	OC	OC						
1	7/26	水			成田ーバンコークロンボ移動											
2	27	木			JICA訪問、RDA、RDA Research Division協議、現地再委託打合せ											
3	28	金			現地調査、移動コロンボーフウニア、フウニア軍関係者協議											
4	29	Sat			マナー県庁表敬訪問、マナー県庁・関係機関、マナーRDA協議、現地調査											
5	30	日			マナーRDA打合せ、現地調査											
6	31	月			RDA打合せ、マナー県庁関係機関協議、現地調査											
7	8/1	火			RDA打合せ、マナー県庁関係機関協議、現地再委託、現地調査											
8	2	水			RDA打合せ、移動マナーーコロンボ											
9	3	木			データ収集・解析					データ収集 ・解析	データ収集 ・解析					
10	4	金														
11	5	Sat														
12	6	日														
13	7	月														
14	8	火														
15	9	水														
16	10	木														
17	11	金			移動 コロンボーアヌラダブラ					コロンボー成田						
18	12	Sat								成田ーコロンボ		移動マナー、マナー県庁、マナー RDA、 ステークホルダー協議				コロンボー成田
19	13	日								移動 コロンボーアヌラダブラ						
20	14	月	移動マナー、マナー県庁、マナー RDA、 ステークホルダー協議		データ収集 ・解析					データ収集 ・解析						
21	15	火	移動ワウニアー コロンボ								現地調査、移動コロンボ					
22	16	水	MO及びRDAミニッツ協議													
23	17	木	MO及びRDAミニッツ協議													
24	18	金	日本大使館報告、ミニッツサイン													
25	19	Sat	日本大使館、JICA報告													
				コロンボー成田	コロンボーバンコーク成田											

➤ 概要説明

日	月日	曜日	総括	業務主任/道路計画	橋梁設計
			坂田 英樹	藤澤 博	市川 敏夫
			JICA	NK	NK
1	11/12	日		成田ーシンガポールーコロンボ	
2	13	月	JICA訪問・説明、MOH、RDA、ERD、NBD及びCCD説明・協議 移動コロンボーアヌラダプラ		
3	14	火	マナー県庁、マナーRDA、ステークホルダー協議 移動アヌラダプラーコロンボ		
4	15	水	JICA打合せ MOH、RDA、ERD及びNBDミニッツ打合せ		
5	16	木	日本大使館報告 MOH及びRDAミニッツ協議		
6	17	金	ミニッツサイン JICA報告		
7	18	日		コロンボー成田	

### 3. 関係者（面会者）リスト

### 3. 関係者（面会者）リスト

- 道路省 (MOH: Ministry of Highway)
  - Mr. Sirisena Amarasekara, Secretary
  - Mr. S. Seuavenkl, Director
- 道路開発庁 (RDA: Road Development Authority)
  - Mr. M.B.S. Fernando, Chairman
  - Dr. Asoka Desilva, Director Engineering Services
  - Mr. George Perera, Director Highway
  - Mr. M. Thuraisamy, Director - Japanese Aid Projects
  - Mr. H. M. K. G. G. Bandar, Deputy Director, Planning
  - Mr. D. K. Rohitha Swarna, Deputy Director, Bridge Design
  - Mr. P Ediriweera, Director, AGM Office, RDA
  - Mr. RPKTR Perera, Chief Engineer
  - Ms. Manori Manatunga, Engineer Planning Division
  - Mr. Jayamanna, Director, Research & Development Division (R&D)
  - Mr. W.R.A.N. Prematilake, Senior Engineer (Inves.)
  - Mr. T. Sivananthan, Senior Research Assistant (R&D)
  - Mr. K.W.Silva, Senior Research Assistant (R&D)
- 財務計画省国外資金局 (Ministry of Finance ERD: Department of External Resources)
  - Mr. MPDUK Mapa Pathirana, Director
- 国家建設開発省(NBD: Ministry of National Building and Development)
  - Ms. M.S. Jayasinghe, Secretary
  - Mr. M. I. S. Ahamad, Addt. Secretary
- 水産資源省海岸保全局(Ministry of Fisheries and Ocean (Aquatic) Resources CCD: Coast Conservation Department)
  - Dr. R. A. D. B, Samaranayake, Director
- 水産資源省水産資源局(Department of Fisheries and Aquatic Resources)
  - Mr. G. Piyasena, Director
- マナー県行政事務所 (GA: Government Agents, Mannar District)
  - Mr. V. Vis uvalin gain, Government Agents, District Secretary, Mannar
  - Mr. A. Nicholaspilla Kachcheri, Addt. Government Agents, Mannar

- 道路開発庁マナー事務所 (RDA: Road Development Authority, Mannar)
  - Mr. Moses Mariyathan, Provincial Director, NE-North, RDA
  - Mr. G.J.D. Croos, Chief Engineer, Vavuniya, RDA
  - Mr. V.G.R. Jeffery, Executive Engineer, Mannar, RDA
  - Mr. S. Thangaruban, Technical Officer, Mannar, RDA
  - Mr. K. Rajgiry, Technical Officer, Vavuniya, RDA
  - Ms. B. Prasanthy, Engineer, Vavuniya, RDA
  
- マナー県行政関係者 (Concerned to Government Agents, Mannar)
  - Mr. A. Pathinathan, Project Director, DRRS, Mannar
  - Mr. S.S. Ramakrishnan, Project Engineer, DRRS, Mannar
  - Ms. A. Stanley De Mel, Divisional Secretary, Mannar
  - Ms. S. Krishnathasan, Secretary, Urban Council, Mannar
  - Mr. M.A.Thuram, Regional Asst. Commissioner of Local Government
  - Mr. A. Sebamalai, Department of Co-op. Development, Mannar
  - Ms. P.C. Chandrika, Develop. Assistant, DRRS
  - Mr. A. Stanley De Mel, District Secretariat, D.S. Office, Mannar
  - Mr. S. Sivasubramaniam, Co-portative Department, Mannar
  
- ワウニア地区軍隊 (ARMY, Vavuniya)
  - Mr. Upali Edirisingha, Major General, Army Head Quarters, Vavuniya
  
- マナー地区軍隊 (Army Head Quarters, Mannar)
  - Mr. D.U. Munesinghe, Major General, Army Head Quarters, Mannar
  - Mr. Prasanna, Carnal, Army Head Quarters, Mannar
  
- マナー地区警察 (Police in Mannar)
  - Mr. Sudath Asmadale, Head Quarters Inspector, Mannar Police
  
- 水産資源省水産資源局マナー事務所(FAR: Department of Fisheries & Aquatic Resources)
  - Mr. S. Pavanithy, District Fisheries Inspector, Mannar
  
- 国家上下水道機構 (National Water Supply and Drainage Board, Mannar)
  - Mr. S. Nitiyanandam, Area Officer, Mannar
  
- スリランカ電信電話会社マナー支局 (Sri Lanka Telecom, Mannar)
  - Mr. P. Sanjeevan, Manager, Sri Lanka Telecom, Mannar

- 気象局 (Metrology Department, Mannar)
  - Mr. S. Sivathas, Senior Metrological Observer
  - Mr. C.E. Perins, Metrological Observer
  
- マナー交通警察 (Traffic Branch Mannar Police)
  - Mr. Sudath Asmadale, Inspector, HQ, Mannar Police
  - Mr. Maniyangama, I.P. Office in Charge, Traffic Branch Mannar Police
  - Mr. R.D.M.Cyril, I.P., Mannar Police
  
- 在スリランカ日本国大使館 (Embassy of Japan)
  - 荒木 喜代志 大使
  - 伊藤 璋 公使 (第二次現地調査時)
  - 軽部 洋 公使 (第一次現地調査時)
  - 大西 英之 経済班長
  - 渡邊 泰浩 二等書記官
  -
  
- その他関係者 (MANRECAP)
  - 佐野 幸規 技術部長 (MANRECAP Project 事務所)
  - 税所 卓也 (MANRECAP Project 事務所)
  - 臼井 麻乃 (MANRECAP Project 事務所)
  - 高沢 正幸 (MANRECAP Project 事務所)
  - Mr. A.A. Edward (MANRECAP Project 事務所)
  - Mr. B. S. Sehanandaneya (MANRECAP Project 事務所)
  
- 在スリランカ JICA 専門家
  - 高野 辰雄 専門家 (道路開発庁、アドバイザー)
  
- JICA スリランカ事務所
  - 植嶋 卓巳 所長
  - 坂田 英樹 次長
  - 小田原 康介 所員
  - Mr. G.W. Kaveendraraja, Senior Advisor
  - Mr. CaiinHus R. Abeygoonewardena, Security Consultant
  
- JICA ワウニア事務所 (JICA, Vavuniya Office)
  - 西丸 崇 ワウニア連絡事務所員

#### 4. 討議議事録 (M/D)

#### 4-1 第二次現地調査（2006 年 8 月 17 日）

4. 討議議事録 (M/D)

4-1 第二次現地調査 (2006 年 8 月 17 日)

**Minutes of Discussions  
on the Basic Design Study  
on the Project for Reconstruction of Mannar Bridge and Causeway  
in the Democratic Socialist Republic of Sri Lanka**

Based on the results of the Preliminary Study, the Government of Japan decided to conduct a Basic Design Study on the Project for Reconstruction of Mannar Bridge and Causeway (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "the Sri Lanka") the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Hideki Sakata, Deputy Resident Representative, JICA Sri Lanka Office, and is scheduled to stay in the country from July 23 to August 19, 2006.

The Team held discussions with the officials concerned of the Government of Sri Lanka and conducted a field survey at the study area.

As a result of discussions and field survey, 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.

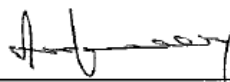
Colombo, August 17, 2006



Hideki Sakata  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency



M.B.S. Fernando  
Chairman  
Road Development Authority (RDA)



M.S. Jayasinghe  
Secretary  
Ministry of Nation Building and Development

(Witnesses)



M P D U K Mapa Pathirana  
Director-Japan Division  
Department of External Resources  
Ministry of Finance and Planning



Sirisena Amarasekara  
Secretary  
Ministry of Highways (MOH)



## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to reconstruct Mannar Bridge and to rehabilitate Causeway on Medawachchiya – Mannar – Thalaimannar Road.

### 2. Project Site

The Project site 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).
- 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 items described below were finally requested by the Sri Lankan side.

- Reconstruction of Mannar Bridge (approximately 160m length)
- Rehabilitation of Causeway (approximately 3.5km length)

Regarding the cross section of the new bridge and causeway, the Sri Lankan side strongly requested that the footwalk on the both sides shall be provided based on the road standard of Sri Lanka.

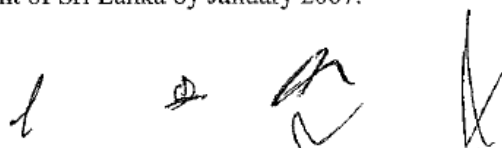
The Sri Lankan side also requested the road lighting facilities to be included in the Project components. The Team explained that the appropriateness of the lighting facilities for the bridge section shall be examined in a forward-looking manner in consideration of the navigational safety. However, for the causeway section, the Team explained that it shall be done by the Sri Lankan side using the foundation prepared by the Japanese side for lighting pole.

### 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 agreed 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) JICA will prepare the draft report and dispatch a mission to Sri Lanka in order to explain its contents around the beginning of November 2006.
- (2) When the contents of the report are accepted in principle by the Government of Sri Lanka, JICA will complete the final report and send it to the Government of Sri Lanka by January 2007.



#### 7. Environmental and Social Considerations

- (1) The Sri Lankan side explained to the Team that the persons who will be affected due to the relocation of petrol station and abandoned houses totally understand and agree with the Project. The Team confirmed its contents appropriate and acceptable through the discussion with the Sri Lankan side.
- (2) The Sri Lankan side agreed that the relocation of buildings/facilities affected by the Project shall be completed by the end of August 2007.
- (3) The Sri Lankan side agreed to conduct the water quality monitoring study to minimize the environmental adverse effect during the construction work.

#### 8. Other relevant issues

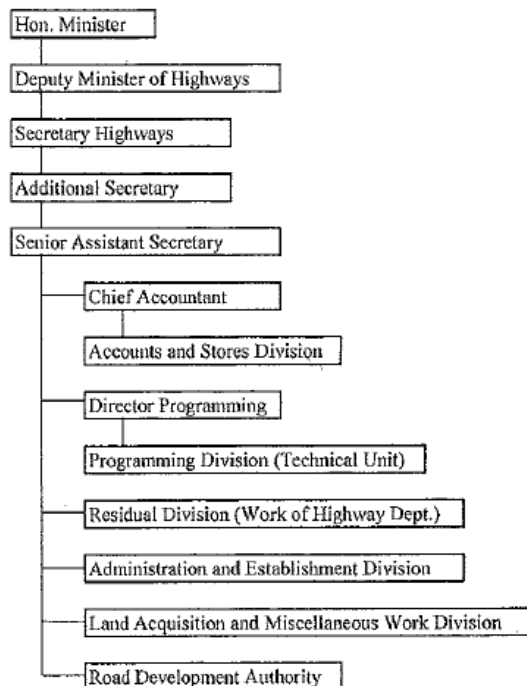
- (1) Based on the result of the discussion with the Department of Fisheries and Aquatic Resources, the Sri Lankan side agreed that the required height at the centre of the Mannar Bridge shall be 4m above the high water level. The Sri Lankan side shall get the approval letter from Coastal Conservation Department (CCD) to change the required navigational clearance from 6m, which is listed on the preliminary clearance by CCD, to 4m.
- (2) The Sri Lankan side shall conduct the necessary procedures to commence the construction work required on the preliminary clearance by CCD, and shall get the formal approval from CCD by the end of March 2007.
- (3) The Sri Lankan side shall secure the appropriate construction yards near the Mannar Bridge by commencement of the construction work.
- (4) The Sri Lankan side shall conduct the necessary coordination with the related organizations for relocation of military check point required for road alignment improvement on the main-island side, and shall complete the relocation of the check point by the end of August 2007.
- (5) The Sri Lankan side shall remove the collapsed steel truss materials under the existing Mannar Bridge on a timely manner during the construction period using the temporary jetty installed by the Japanese side, and the Sri Lankan side shall demolish the existing bridge after completion of the new bridge.
- (6) After completion of the new Mannar Bridge, the Sri Lankan side shall relocate the water pipes, which are attached to the existing Mannar Bridge, to the new bridge.
- (7) The Sri Lankan side shall facilitate to ensure the persons concerned of the Project in safety during the construction period.

1      2      3      4

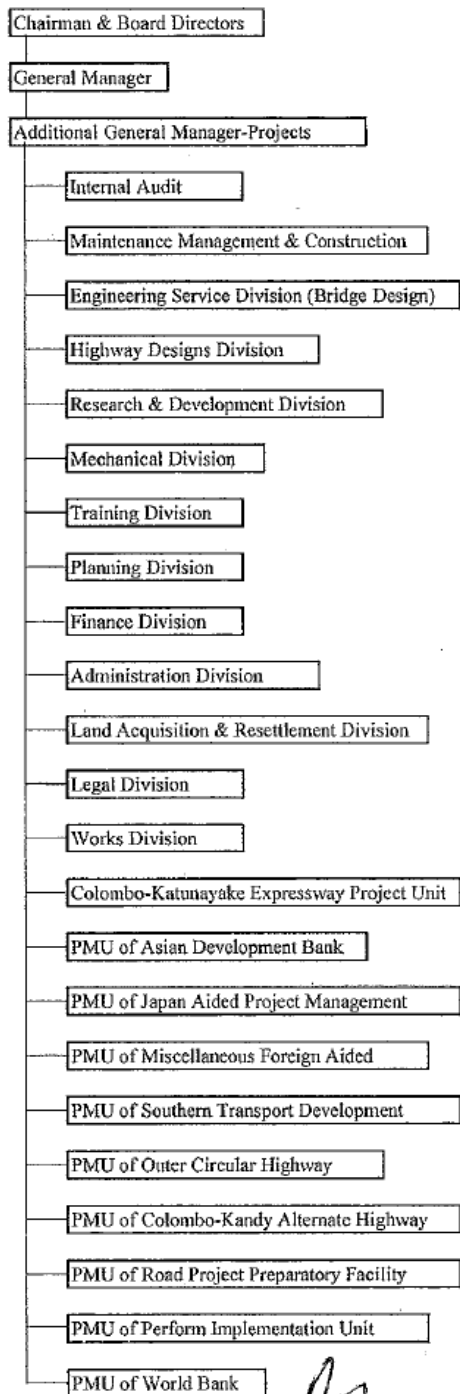
## ORGANIZATION CHART

### MINISTRY OF HIGHWAYS AND RDA

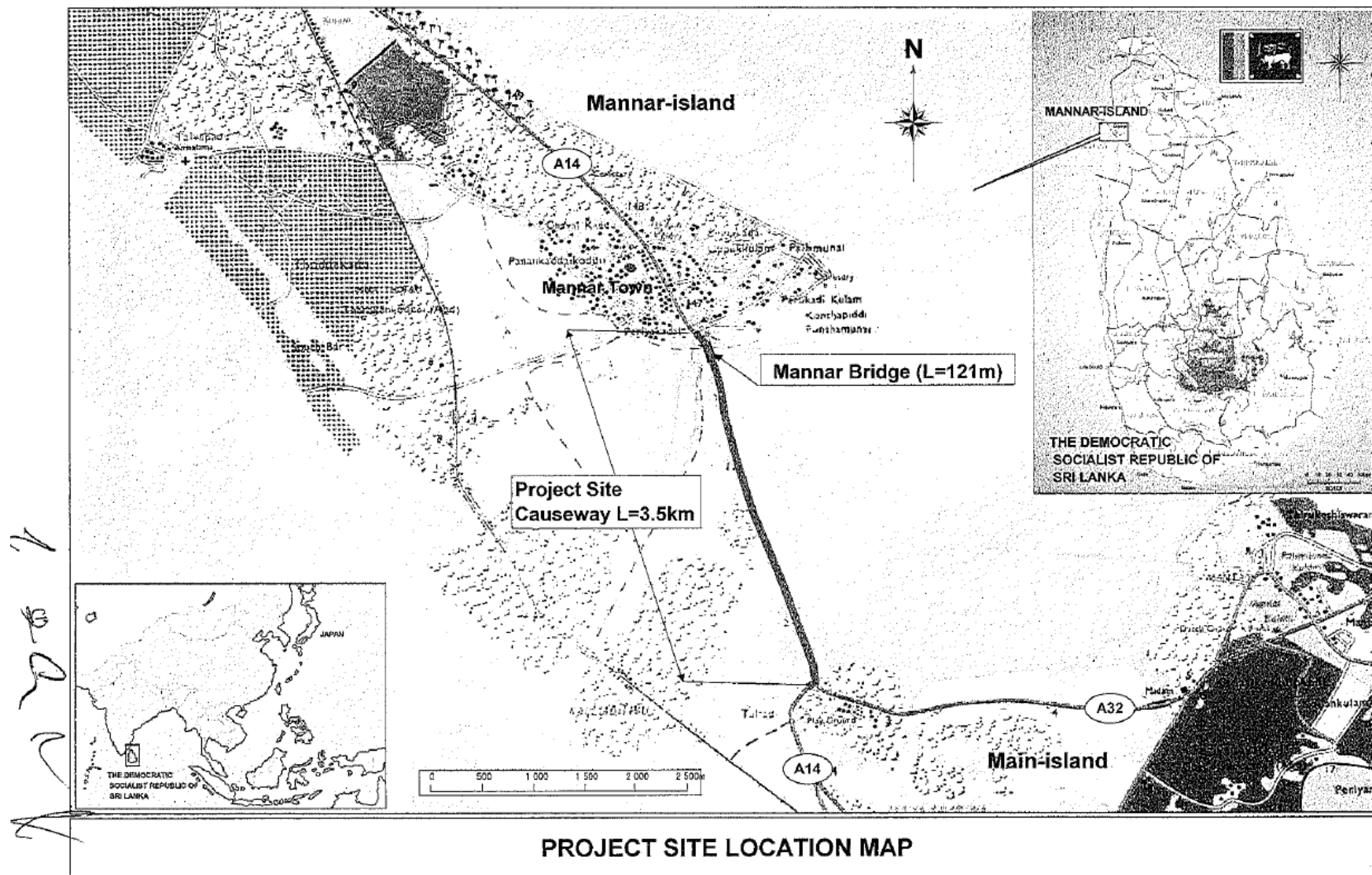
#### Ministry of Highways



#### Road Development Authority



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## JAPAN'S GRANT AID

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 the recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by the Cabinet)
Determination of	(The Note exchanged between the Governments of Japan and recipient
Implementation	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 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 (hereafter referred to as "the Study") conducted by JICA on a requested project (hereafter 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 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 on 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 the 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 consulting 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 consultant 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.

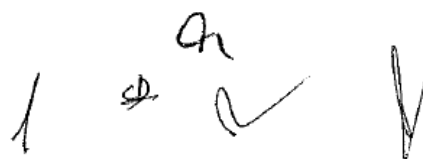
## 3. Japan's Grant Aid Scheme

### (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) consultant 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 national 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, constructing 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 excursion 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 maintain and use the facilities constructed and the 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.

(End)

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### Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	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		●
5	To ensure 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 customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
6	To accord Japanese nationals whose service 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.		●
7	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 contracts		●
8	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
9	To bear all the expenses, other than those to be borne by the Grant Aid, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

(B/A: Banking Arrangement, A/P: Authorization to pay, N/A: Not Applicable)

1      2      3      4

#### 4-2 概要説明（2006 年 11 月 17 日）

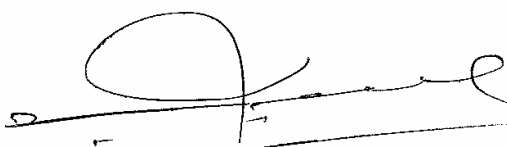
**Minutes of Discussions  
on the Basic Design Study  
on the Project for Construction of New Mannar Bridge and Improvement of Causeway  
in the Democratic Socialist Republic of Sri Lanka  
(Explanation on the Draft Report)**

In August 2006, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Construction of New Mannar Bridge and Improvement of Causeway (hereinafter referred to as "the Project") to the Democratic Socialist Republic of Sri Lanka (hereinafter referred to as "Sri Lanka"), and through discussions, field survey and technical examination of the results in Japan, JICA prepared a draft report of the study.

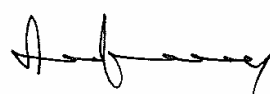

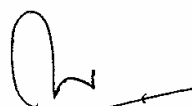
In order to explain and to consult with the officials concerned of the Government of Sri Lanka on the components of the draft report, JICA sent to Sri Lanka the Basic Design Explanation Team (hereinafter referred to as "the Team"), headed by Mr. Hideki Sakata, Deputy Resident Representative of the JICA Sri Lanka Office, from November 12 to 18, 2006.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Colombo, November 17, 2006

  
\_\_\_\_\_  
Hideki Sakata  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency  
\_\_\_\_\_  
M.B.S. Fernando  
Chairman  
Road Development Authority (RDA)

(Witnesses)

  
\_\_\_\_\_  
M.S. Jayasinghe  
Secretary  
Ministry of Nation Building and  
Estate Infrastructure Development  
\_\_\_\_\_  
M.P.D.U.K. Mapa Pathirana  
Director-Japan Division  
Department of External Resources  
Ministry of Finance and Planning  
\_\_\_\_\_  
Sirisena Amarasekara  
Secretary  
Ministry of Highways (MOH)

## ATTACHMENT

### 1. Contents of the Draft Report

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

### 2. Japan's Grant Aid Scheme

The Sri Lankan side reconfirmed 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 and Annex-4 of the Minutes of Discussions (M/D) signed by both sides on August 17, 2006.

### 3. Schedule of the Study

JICA will complete the Final Report in accordance with the confirmed items and send it to the Sri Lankan side by January 2007.

### 4. Other Relevant Issues

(1) The Sri Lankan side agreed to change the Project title to "the Project for Construction of New Mannar Bridge and Improvement of Causeway", which was "the Project for Reconstruction of Mannar Bridge and Causeway" on the M/D signed by both sides on August 17, 2006.

(2) The Sri Lankan side reconfirmed the undertakings to be conducted by the Sri Lankan side described in the "8. Other relevant issues:(1),(2),(3),(4),(6),(7)" of the M/D signed by both sides on August 17, 2006. The issue (5) is revised as follows;

"The Sri Lankan side shall remove the existing Mannar Bridge and the collapsed steel truss materials under the bridge soon after completion of the construction of new Mannar Bridge."

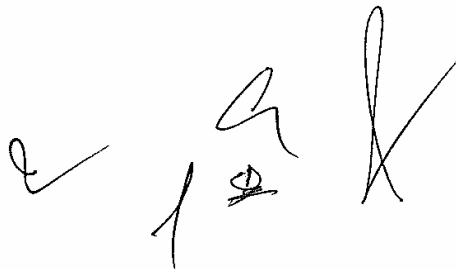
(3) The Sri Lankan side shall relocate the existing utilities and public facilities, such as water pipes, telephone lines and road signboards, on a timely manner if needed.

(4) The Sri Lankan side shall provide the borrow pit and waste disposal area in the government owned land free of charge during the construction period.

(5) The Sri Lankan side shall monitor the water quality around the construction area periodically during the construction period.

(6) The Sri Lankan side shall assign the necessary number of policemen at camp and construction yards for security management during the construction period.

(7) The Sri Lankan side confirmed that the security situations in the area is strong enough to carry out the Project activities smoothly, and to ensure the safety of the people involved in the construction of the Bridge and Causeway during its construction period.

Handwritten signatures and initials in black ink, including a checkmark, a stylized '1', and a large 'K'.

## 5. 事業事前計画表（基本設計時）

## 5. 事業事前計画表（基本設計時）

1. 案件名
<p style="text-align: center;">スリランカ民主社会主義共和国 新マナー橋建設及び連絡道路整備計画基本設計調査</p>
2. 要請の背景(協力の必要性・位置付け)
<p>スリランカ民主社会主義共和国（以下「ス国」という）は、「コロンボへの一極集中を抑え、国内を均衡ある経済発展させる」目標を掲げている。2005年に作成した道路総合計画では、コロンボ以外に8箇所の経済開発拠点を創設し、これらの都市を連結する道路ネットワークを策定し、2006年から2015年の10年間にわたり道路改修を実施する計画である。マナー地区は道路総合計画の中で設定された経済開発拠点に含まれ、北西スリランカの農業・漁業を基盤としたインフラ整備が期待されている。「ス」国政府は、反政府組織(LTTE)支配地域と政府支配地域が対峙するこの地域での幹線道路整備は、地域開発のみならず平和構築及び復興支援となることからマナー橋及びコースウェイの再建を重要課題と位置付けている。</p> <p>既設マナー橋は1930年英国統治時代に建設されたが、1990年にLTTEの爆破により中央径間は落橋し、全ての橋脚に大きな亀裂が生じたが、現在に至るまで補修はされていない。中央径間は仮設のベイリー橋により復旧されたが、幅員は約4mで大型車はすれ違いができない交通の隘路となっている。さらに、海浜部のため塩害による橋脚、コンクリート桁の劣化と老朽化により耐荷力が大きく不足し、重積載車輛の通行は10トンに規制されている。一方、コースウェイは、1918年にオランダの植民地時代に建設されたが、建設後約90年が経過し、近年の交通量増加、車輛の大型化・重車輛化に伴う擁壁の傾倒・崩壊、舗装面の劣化・不陸もあり、車道幅員はさらに狭まり、脱輪や転落の危険性が生じている。また提体が沈下したと推測される低い箇所では雨期の満潮時に冠水が生じ、車輛・歩行者の安全な通行の障害となっている。</p> <p>このような橋梁及びコースウェイの状況は、地区内で生産した農業・漁業の生産物を広範囲に流通させるための障害となり、健全な地域産業の発展を阻害している。</p> <p>本プロジェクトは、上記の問題を有する既設マナー橋を新橋に架け替え、コースウェイを拡幅・嵩上げ及び修復することで、交通の安定化と地域の持続的な発展に資するものである。</p>
3. プロジェクト全体計画概要
<p>(1) プロジェクト全体計画の目標</p> <p style="padding-left: 20px;">マナー島民の生活を支えるライフラインが整備され、マナー島と本土間において円滑で安定的な交通が確保される。</p> <p style="padding-left: 20px;">裨益対象の範囲及び規模：「ス」国マナー県、ワウニア県住民約20万人(2004年)</p> <p>(2) プロジェクト全体計画の成果</p> <p style="padding-left: 20px;">ア <u>新橋及びその取付道路を建設する。</u></p> <p style="padding-left: 20px;">イ <u>コースウェイを拡幅する。</u></p> <p>(3) プロジェクト全体計画の主要活動</p> <p style="padding-left: 20px;">ア <u>マナー島とスリランカ本土を連結する道路を整備する。</u></p> <p style="padding-left: 20px;">イ 供与後の維持管理体制を確保する。</p> <p>(4) 投入（インプット）</p> <p style="padding-left: 20px;">ア <u>日本側：無償資金協力18.78億円</u></p> <p style="padding-left: 20px;">イ 「ス」国側：建設用地の確保</p> <p>(5) 実施体制</p> <p style="padding-left: 20px;">主管官庁：「ス」国道路省</p> <p style="padding-left: 20px;">実施機関：「ス」国道路開発庁</p>

4. 無償資金協力案件の内容									
<p>(1) サイト 「ス」国北部州マナー市</p> <p>(2) 概 要 マナー橋の建設及びコーズウェイの整備</p> <p>(3) 相手国負担事項</p> <p>① 環境社会配慮（用地取得）</p> <p>② 電柱・配電線・水道管の移設</p> <p>③ キャンプヤード・建設ヤード警備の警察官配備</p> <p>④ 落橋した鋼トラスの残骸及び既設マナー橋の撤去</p> <p>(4) 概算事業費 概算事業費 18.97 億円（日本側負担 18.78 億円、「ス」国側負担 0.19 億円）</p> <p>(5) 工 期 詳細設計・入札期間を含め約 37 ヶ月（予定）</p> <p>(6) 貧困、ジェンダー、環境及び社会面の配慮 「ス」国側による施工中の水質モニタリングの実施</p>									
5. 外部要因リスク（プロジェクト全体計画の目標達成に関して）									
「ス」国内の政情・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									
<p>(1) プロジェクト全体計画の目標達成を示す成果指標</p> <table border="1"> <thead> <tr> <th>成果指標</th> <th>現状の数値 (2006 年)</th> <th>計画値 (2010 年)</th> </tr> </thead> <tbody> <tr> <td>橋梁通行車輛の重量制限の緩和</td> <td>10 トン／台</td> <td>30 トン／台</td> </tr> <tr> <td>交通量の増加</td> <td>3,000 台/日</td> <td>増加する</td> </tr> </tbody> </table> <p>(2) その他の成果指標 特になし。</p> <p>(3) 評価のタイミング 2010 年以降（協力対象施設竣工後）</p>	成果指標	現状の数値 (2006 年)	計画値 (2010 年)	橋梁通行車輛の重量制限の緩和	10 トン／台	30 トン／台	交通量の増加	3,000 台/日	増加する
成果指標	現状の数値 (2006 年)	計画値 (2010 年)							
橋梁通行車輛の重量制限の緩和	10 トン／台	30 トン／台							
交通量の増加	3,000 台/日	増加する							

## 6. 参考資料／入手資料リスト

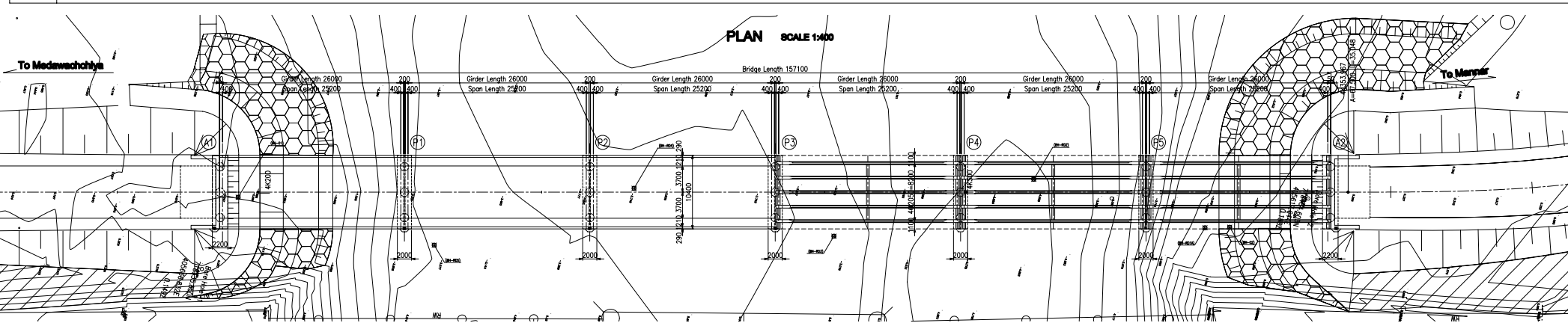
## 収集資料リスト

調査名 新マナー橋建設及び連絡道路整備計画基本設計調査

番号	名 称	形態 図書・ビデオ 地図・写真	オリジナル ・コピー	発行機関	発行年
1	Statistical Hand Book 2005 Mannar District	図書	オリジナル	DistrictPlanning Office, District Secretariat, Mannar	2005
2	Pehabilitation and Development Framework for Mannar District 2004	図書	オリジナル	DistrictPlanning Office, District Secretariat, Mannar	2004
3	Sri Lanka Socio- Economic Data 2006	図書	オリジナル	Central Bank of Sri Lanka	2006
4	Economic and Social Statistics of Sri Lanka 2005	図書	オリジナル	Central Bank of Sri Lanka	2005
5	Annual Report 2005, Central Bank of Sri Lanka 2005	図書	オリジナル	Central Bank of Sri Lanka	2005
6	Labour Statistics	図書	オリジナル	Department of Labour	2004
7	Topographic Maps (1:50,000) Sheets 11 & 15	データ	コピー	Meteorological Dep.	2005
8	Rainfall Data (Meteorological Dep.)	データ	コピー	Meteorological Dep.	2005
9	Wind Data(Meteorological Dep.)	データ	コピー	Meteorological Dep.	2005
10	Mannar Wind Data -Monthly Average for 10 years	データ	コピー	Meteorological Dep.	2005
11	Mannar Wind Data -Daily Data (2005)(Refer book)	データ	コピー	Meteorological Dep.	2005
12	Mannar Rainfall Data - Monthly Average for 30 years	データ	コピー	Meteorological Dep.	2005
13	Mannar Temperature Data (Min., Aver., Max) Monthly Average for 10 years	データ	コピー	Meteorological Dep.	2005
14	Geotechnical Map	地図	コピー	Meteorological Dep.	-

## 7. 基本設計図

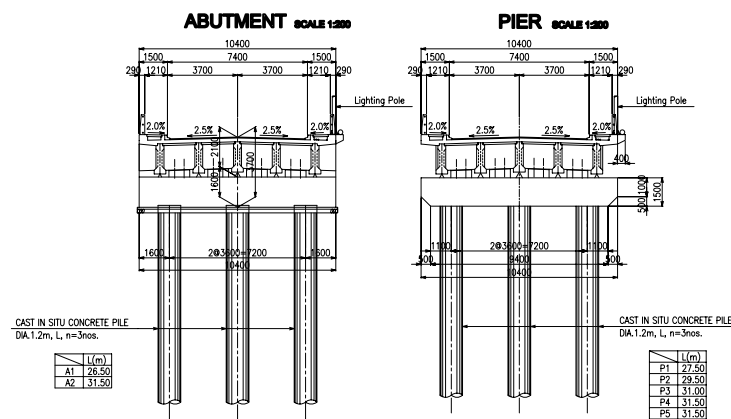
**ELEVATION**    **SCALE 1:400**



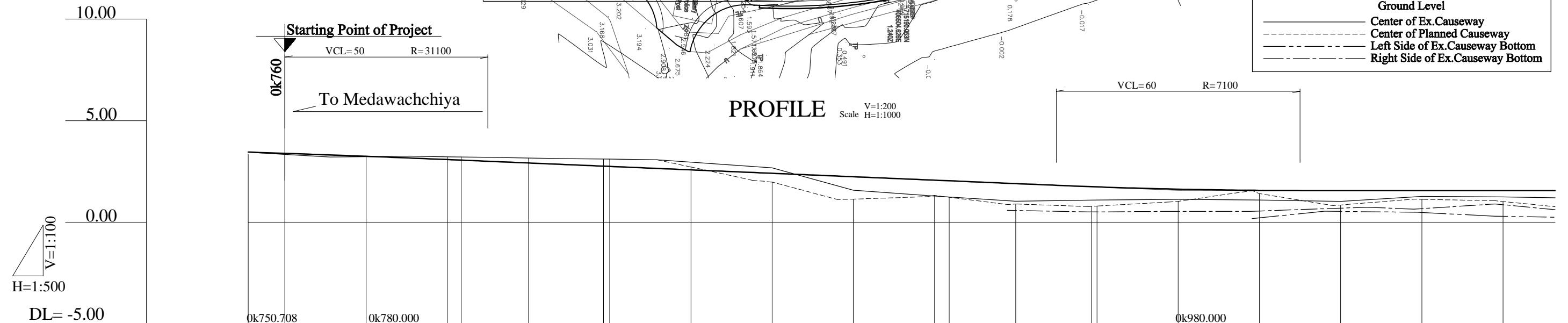
1500 10400 1500  
300 1210 3700 7400 3700 1210 300  
1050  
2.0% 2.5% 2.5% 2.0%  
Cold-mix Asphalt Concrete (t=50mm)  
RC-Slab (t=200mm)  
Water Pipe Line exist. Dia 250  
Telephone Lines  
Telephone x2  
Fiber x1  
1600  
1100 4ø2050-8200 1100

DESIGN CRITERIA	
TYPE	Connection PC I-shaped Girder
TOTAL BRIDGE LENGTH	157.100m
GIRDER LENGTH	26.000m
SPAN	25.200m
WIDTH	10.400m
LIVE LOAD	HA Load, HB Load:30unit
ANGLE OF SKEW	90°
HORIZONTAL CURVATURE	2.500%
LONGITUDINAL SLOPE	4.0% (Max.)

CONCRETE	SUPERSTRUCTURE	Design Strength 50N/mm <sup>2</sup>
	SUBSTRUCTURE	Design Strength 40,50N/mm <sup>2</sup>
STEEL	REINFORCEMENT	Grade 460, 460N/mm <sup>2</sup>

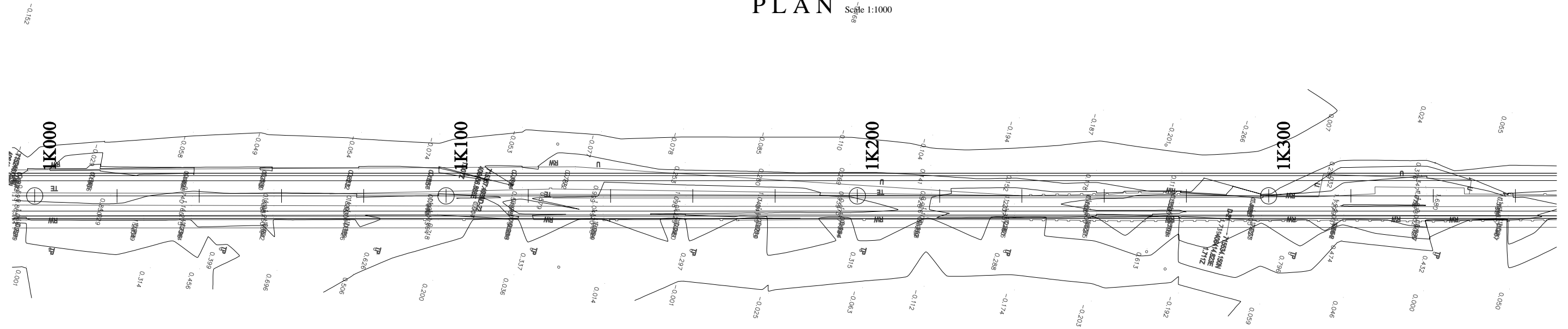


PLAN Scale 1:1000

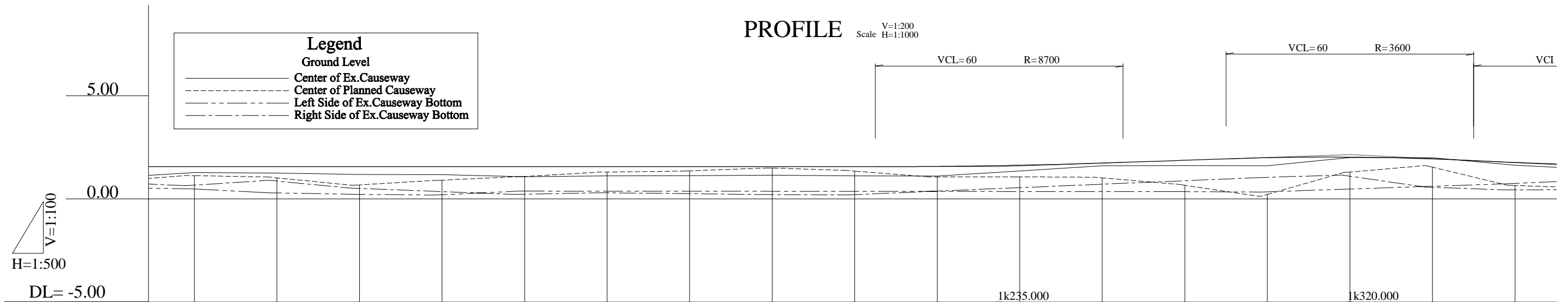
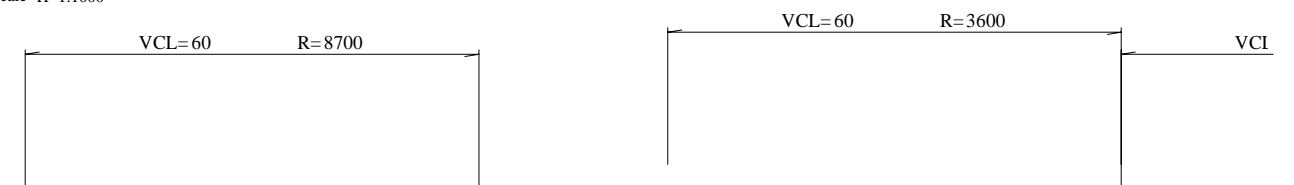


GRADE	PROPOSED HEIGHT	GROUND HEIGHT	ACCUMULATED DISTANCE	DISTANCE	CHAINAGE	CURVE ELEMENT	SUPER ELEVATION
3.454	3.392	3.340	760.000	9.073	0k+760	<p>Diagram details: The diagram shows a series of vertical curve segments. It starts with a 3.0% grade, followed by a 3.0% grade, then a 6.0% grade, and finally a 6.0% grade. Key points include: a vertical curve with R=8 and L=52.494; a vertical curve with A=67.500 and L=35.048; a vertical curve with R=130 and L=85.126; and another vertical curve with A=67.500 and L=35.048. The diagram also shows a 3.0% grade at the end.</p>	3.0%
3.248	3.246	3.230	780.000	20.000	+780		3.0%
3.087	3.058	3.220	800.000	20.000	+800		6.0%
2.918	2.769	3.160	820.000	20.000	+820		6.0%
2.580	2.411	2.675	880.000	20.000	+880		6.0%
2.242	2.072	1.292	920.000	20.000	+920		6.0%
1.903	1.741	1.096	960.000	20.000	+960		3.0%
1.565	1.572	1.092	1000.000	20.000	+1k+0		3.0%
1.565	1.565	1.029	1020.000	20.000	+20		3.0%
1.565	1.565	1.275	1040.000	20.000	+40		3.0%
1.565	1.565	1.250	1060.000	20.000	+60	3.0%	3.0%

# PLAN



Scale V=1:200  
H=1:1000



GRADE	LEVEL L= 255.000																		1.565		i = 0.688 % L= 85.000		2.150		i = 0.975 % L= 60.000	
PROPOSED HEIGHT	1.565																		1.565		1.565		1.565		1.565	
GROUND HEIGHT	1.275																		1.250		1.184		1.173		1.079	
ACCUMULATED DISTANCE	1040.000																		1060.000		1080.000		1100.000		1120.000	
DISTANCE	40.000																		20.000		20.000		20.000		20.000	
CHAINAGE	+ 40																		+ 60		+ 80		+ 100		+ 120	
CURVE ELEMENT																										
SUPER ELEVATION																										