<資料 1-1 要請書>

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Masaru Kawamura

APPLICATION FORM FOR JAPAN'S GRANT AID FOR GENERAL PROJECT

1. Date of entry : month June year 2002
2. Applicant : the Government of Kingdom of Cambodia
3. Project title : The Rehabilitation of Bridges along the Main Trunk Roads in the Kingdom of Cambodia (Phase 1)
4. Sector :Transport, Road
5. Project type :
   1. Equipment supply.
   2. Facilities construction.
6. Target site : (province/country name) : Phnom Penh Metropolitan Are and its vicinity, which is including with Kandal, Kampong Cham, Prey Vieng and Takeo
   : (city/town/village name) : _____
   : (from the metropolis) : about 0 hours'ride to the Biginning
   : (from the metropolis) : about 1.5 hours'ride to the End
   : (from the metropolis) : _____

(Please refer Attached sheet **Appendix 1** Project Location Map)

7. Requested amount : Phase 1 JPY 2,500,000,000
   Phase 2 Not estimated
   Phase 3 Not estimated
   Phase 4 Not estimated
   Total JPY 2,500,000,000

8. Disired fiscal year of implementaion:

   Phase 1

   Additional Survey and BD: FY 2003

   Implementation : FY 2005to 2006

   Phase 2-Phase4

   Implementation : FY 2006 to 2009

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Implementation Schedule

	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY2007	FY2008
Survey and BD		———					
Phase 1			■■■■■	■■■■■	■■■■■		
Phase 2,3 and 4						·····▶	

9. Implementing agency :

Ministry/Agency of Public Works and Transport

Person in charge: (full name) Mr. Chhin Kong Hean

(affiliation) Director General of Public Works

Address: Norodom Boulevard, Phnom Penh

Telephone No.: (855) 23-723515

10. Outline of the implementing agency

Ministry of Public Works and Transport;

(1) Authorities and duties of the Ministry

Administration of transport planning and road infrastructure works in Kingdom of Cambodia, including inland water transport, ports and shipping and national railways. Transport maintenance and improvement of roads and other transport infrastructure are included in its responsibility.

(2) Annual Budget

Actual expenditure in Year 2000 and 2002 was as follows (in million USD):

	2000	2001	2002
Salaries & Indemnities	0.39	0.38	0.14
Public Administration & Subsidies	0.79	0.68	0.08
Operational Expenditure & Small Repair	2.61	1.98	0.67
Social & Cultural Expenditure	0.01	0.64	0.00
Capital Expenditure	3.87	14.48	7.64
Total	7.67	18.17	8.53

(3) Personnel

Total number of the personnel is approximately 1,400 in 2001, excluding temporary employees.

(4) Organization chart of the Ministry

(Please refer Attached sheet **Appendix 2** Organization Chart of MPWT)

Annual budget and staff member of responsible department or section for the last three years and future prospects.

Name of the department/section: General Directorate of Public Works

Year	2000	2001	2002
Annual budget (million USD)	3.1	4.0	N/A
Number of staff members	1400	1400	N/A

11. Background of the request.

(1) Background

Cambodia has 4,165km of national roads, 3,615km of provincial roads and 31,000km of rural and strategic roads networks, the road network of Cambodia was developed in the French colonial era, thus, many of existing road structures on the road network have been constructed from early 1920's to 1960's. During the civil war of Cambodia a number of bridges and other structures have been destroyed or left without maintenance. Accordingly, they are not providing sufficient services to the people in rural areas with access to market and social services. Moreover the development of denser road networks is requested for the agricultural and tourism industries. Thus Cambodian Government is giving the high priority to the rehabilitation/improvement project of transportation infrastructures, especially road infrastructure. This is clearly stated in the Socio-Economic Development Plan (SEDP). Presently, road rehabilitation/reconstruction projects, which are assisted by foreign donors, are progressing on several sections of road network. It can be expected that the total extension of rehabilitated road will reach more than 1,200 km in 2003/2004.

90 percentages of National Population live in the flood plains of Mekong and Tonle Sap, which is also highest agricultural and fishery zone in Cambodia. For this reason, several projects are focused to rehabilitate the Primary National Roads.

However, many bridges and culverts along the national highway/main trunk roads have been left in poor condition even though the rehabilitation projects of road are progressing. Therefore Cambodia Government has requested to Japan in 2000 ODA survey, which are "Development Study: The Study on Project Reconstruction/Rehabilitation Bridges of Major Road Network and Bridge Management System" and "Grant: Improvement of Bridges on NR No.5 and Rehabilitation of NR No5 in Battanbang City"

Thus MPWT is establishing the Bridge Inventory to prepare 'Bridge Rehabilitation Program on Main Trunk Road', the project implementation can be scheduled for selecting bridges and culverts with the priority and it can be expected that these bridge rehabilitations will contribute to the socio-economic development in local regions collaborating with bilateral and multilateral assistance

projects on the national and provincial road.

(2) Problems found in target Sector

Before Paris Peace Agreement, Cambodia has been striving to rehabilitate these structures by themselves, they have repaired / reconstructed more than 400 bridges during 1980's using temporary steel bridges, timber panel and timber column (**Appendix-3**, **Appendix-4**), however, due to shortage of national budget the rehabilitation / reconstruction of these temporary repaired bridges is still difficult for Cambodia government.

Cambodia has more than 600 bridges and 700 culverts along NR1, NR2, NR3, NR4, NR5, NR6, NR7, NR11, NR21 and NR51. And conditions of other bridges along road network are not still unknown. In the past there were several projects on these main trunk roads, which focused on bridge rehabilitation/reconstruction assisted by UNDP, Aus-AID and ADB, although these projects could rehabilitate 50 bridges, many of bridges and culverts are remaining in poor condition and the short of capacity as summarized below:

- Majority of the existing bridges are of temporary structure.
- Bridges are damaged or deteriorated seriously without maintenance work.
- Bridges have small load capacity, which is almost prohibited in 16T, however, their actual capacity is unknown.
- Flood is often bringing collapse or damage on bridges and culverts, because of short of clearance for high-water-level and low discharging capacity.
- Some bridges do not have any protections of slope/river bed.
- Many of existing bridges have a narrow carriageway, thus bridges are often becoming bottleneck for the steady traffic flow
- Few bridges have footpaths/bike lane on bridges.

(3) Relation between the Sector and the Project

Bridges are internal parts of roads. Without rehabilitation of bridges cannot function to full capacity of main trunk road.

(4) Reason Why Japan's Grant Aid is requested for this Particular Project

Urgency of the Project is not only from economic point of view but also from that of basic human needs is outstanding. However the shortage in fund is hindering the Royal Government of Cambodia from implementing necessary rehabilitation/maintenance.

Japan has been the leading donor to Cambodia, especially in road sub-sector. The projects financed under Japan's Grant Aid Program such as the restoration of Chroy Chungwar Bridge

(Cambodia - Japan Friendship Bridge), the rehabilitation of National Road No 6A, 6 and 7, Mekong Bridge, and several projects are going on, have been successfully implemented and the benefits of the projects have been enjoyed by the people of Cambodia. Through these Japan Grant projects Cambodia could have rehabilitated/constructed twenty-two bridges (**Appendix-5**). In addition to those benefits the high quality and resultant low maintenance cost of the facilities rehabilitated/constructed under Japan' Grant Aid Program is highly evaluated. All of these facts justify this project should be financed by Japan's Grant Aid.

12. Relation with the government's development plan and other factors.

(1) Relation with the government's national development plan.

Name of the plan : The Third Five Year Plan (1996-2000)

Period : From 1996 to 2000

The position occupied by the requested project/sector in the above-mentioned plan. This plan lays out the main orientation and targets for development in the major fields of Agriculture, Manufacturing, Construction, Commerce, Transport and Administration. Very high priorities have been given to transport and communication, along with agriculture and the provision of electric power.

Transportation, therefore, has the highest priority among all infrastructure developments, and furthermore, the majority of the highest priority projects laid out in the transport sector of this plan are development of road and bridges. It is also highly significant that the highest ranked productive sectors in the 1996-2000 Plans, agriculture and tourism, depend heavily on the availability of adequate transport, particularly road transport facilities.

(2) Relation with the sector comprehensive/overall program.

Name of the program: The Urban Development and Transport Master Plan of the Phnom Penh Metropolitan Area

Period : from 2000 to 2001

Since the preliminary study for this Master plan was conducted, the requested project has become one of the most important elements in transport infrastructure envisaged for the entire greater Phnom Penh metropolitan area. Several Bridges listed among are "urgent project" in "Transportation Master Plan Study" are expected to be included in this project.

13. Objectives (Itemize as concretely as possible.)

(1) Objectives/purpose of the project.

- Complete the function of main trunk roads which are not fully in service due to defective bridges
- Prevent/reduce damages cause by the traffic or Flood

- Facilitate the movement on traffic and goods through trunk roads
- Reduce travel time and vehicle maintenance cost

(2) Overall goal/medium and long-term objectives.

- Promote economic development of the target areas and nation
- Promote poverty alleviation by providing improved access to markets and places of employment
- Fulfill basic human needs by providing access public facilities such as school and hospital.

14. Outline of the project and request (Itemize as concretely as possible.)

a. In the case of facilities construction project.

Rehabilitation of small bridges (Span Length<20m) and small culverts

Rehabilitation of medium-long bridges and large size culverts

Repairing of minor damages on existing applicable structures through the project particularly on design, construction maintenance and repair

(i) Concept

(a) Providing the bridges with the width 10.0 m (7.0m carriageways and 1.5m both side shoulders) to keep smooth traffic flow.

(b) Improving the load capacity from the present prohibition to 25tf

(c) Improving to the adequate span length and clearance for discharging

(d) Repairing the minor damage to prevent deterioration progress

(e) Providing the protections and drainages for the flood to secure the flood disaster relief

(f) Technology development to be applied to other bridges with the similar condition

(ii) Component, See Bridge List (Appendix-6)

Phase 1	Japan Component	Cambodia Component
Design and Construction	6 bridges (655 m)	7bridges (165m) 1boxculvert
Detail Inspection	Chruoy Changwar Bridge	-
Repairing and Retrofitting	-	23 Bridges along NR6a
Soft Component	Entire Project Management	-

Objective Bridges are mainly selected from Arterial/Collector Road of Phnom Penh and Primary/Secondary National Road located in Phnom Penh and its vicinity.

Although several culverts and small bridges will be rehabilitated/repaired as Emergency Flood Rehabilitation Project assisted by ADB and WB, however those objective bridges are out of scope for ongoing project.

b. In the case of equipment supply project.

List of requested equipment (such as the name and address of the site to install the equipment, equipment-selecting criteria, name, specifications, quantity, unit price, total amount, etc. of the equipment).

c. Methods to operate, manage, and maintain the facilities or equipment, expected number of persons to be secured, together with their technical levels, and prospect to secure necessary budget.

(i) Maintenance and management of facility:

MPWT has several Departments to supervise in Head Quarter of MPWT. According to their sub-decree, their summarized responsibilities are following as:

- Public Works Research Center: Drafting technical regulations and Providing technical Information
- Heavy Equipment Center: Researching, formulating and supervising construction work, managing construction equipments, training machinery operation staff
- Department of Road Infrastructure: Collecting the road infrastructures condition, Preparing the fund for maintenance works and also supervising, supervising bridge construction
- Department of Public Works and Transport in Provinces: Implementing actually MPWT's affairs

(ii) Budget for Maintenance and Management:

The responsibility for securing the necessary budget for maintenance and management of the road after construction will be fully borne by the Kingdom of Cambodia.

(iii) Expected number of person to be secured

Public Works Research Center	81persons
Heavy Equipment Center	425 persons
Department of Road Infrastructure	856 persons
DPWT in Phnom Penh	472 persons
DPWT in Kandal	241 persons
DPWT in Takeo	106 persons
DPWT in Kg Cham	167 persons
DPWT in Prey Vieng	292 persons

(iv) Budget

No fixed budget has been allocated yet. However RGC has established Fund for Road Maintenance and Repair, thus budget will be allocated appropriately.

d. Financial sources for management and maintenance after completion of the requested project.

Fully borne by the government ;

Partially borne by beneficiaries;

Fully borne by beneficiaries (estimated amounts and number of persons).

(2) Breakdown of total amount of the facilities and equipment and supporting data.

(i) Breakdown of total amount

(3) Additional information.

a. Existing facilities:

No

Yes

Current situation of the existing facilities plans, specifications, supporting photographs, material used, etc.

(i) Please refer Attached sheet Appendix 6: Existing Condition on Bridges and Culverts

b. List of existing equipment covering the name, quantity, year purchased, country of origin of the equipment, together with the manufacturer's name and operating conditions (A = operable, B = partially operable, and C = not operable and the reason(s) for such inoperability.)
Also attach photographs of the equipment so that the current conditions can be grasped.

N/A

c. Project site preparation (including expropriation)

Land:

Already secured

Name of the landowner : Ministry of Public Works and Transport

Area : –

Not yet secured

Name of the landowner : _____

Area : _____

In this case, specify the prospect to secure it, procedures and time needed for expropriating it.

- Current situations of the project site, such as leveling, drainage, availability of power, water supply, telephone, electricity cable, etc.

These facilities are available only in urbanized area (near Phnom Penh metropolitan), however such facilities are deemed not so necessary for the road rehabilitation work.

- Data on natural conditions.

- General Population Census of Cambodia 1998, by National Institute of Statistics, Ministry of Planning, 1999
- Cambodia Business & Investment Handbook, by Ministry of Commerce, 1997-1999
- Cambodia Socio-Economic Survey, Ministry of Planning, 1999
- Agricultural Statistics, Statistics Office, Department of Planning, Statistics and International Cooperation, Ministry of Agriculture, Forestry and Fisheries, 1999-2000
- Data of Meteorological Observation, General Directorate of Meteorology and Hydrology, Ministry of Agriculture, Forestry and Fishery, 1998

- Security situation.

The security situation in this area is considered to be free of UXO. There is no threat from land mine. UXO clearance would be conducted in any areas where deemed necessary before the commencement of the requested project.

d. Related grant aid cooperation in the past.

FY 1992-1994

Title : The Restoration of Chrov Changwar Bridge

Amount \ USD 23.2 million.

Target area : (specify the name of provinces, cities, etc.)

Phnom Penh

Assessment on level of utilization of the project:

A (Good)

B (Passable)

C (Bad)

D (Not utilized)

FY 1993-1995

Title : The Rehabilitation of National Road No. 6A

Amount \ USD 29.94 million.

Target area : (specify the name of provinces, cities, etc.)

Phnom Penh to Thnol Keng

Assessment on level of utilization of the project:

A (Good)

B (Passable)

C (Bad)

D (Not utilized)

FY 1997-1999

Title : The Rehabilitation of National Road Route 6 and 7

Amount \ JPY 944 million.(Stage 1)

Amount \ JPY 3,634 million.(Stage 2)

Target area : (specify the name of provinces, cities, etc.)

Thnol Keng – Skung - Kompong Cham

Assessment on level of utilization of the project:

A (Good)

B (Passable)

C (Bad)

D (Not utilized)

15. Benefit and effect of the project.

(1) Area that will benefit from the project (specify the total area, if possible) :

(i) Directly benefited area: Phnom Penh metropolitan area, Kandal, Takeo, Kg Speu and Prey Vieng

(ii) Indirectly benefited area: The vicinal provinces of benefited area directly; Kg Chhnang, Kampot, Kg Cham and Svay Rieng

(2) Population that will benefit (directly and indirectly):

(i) Population that will benefit directly from the Project

4.4 million

(ii) Population that will benefit indirectly from the Project

3.0 million

(3) Expected social and economic effects (itemize concretely) :

(i) Reduction of urgent repair disbursement due to flood or heavy loaded vehicles

(ii) International/Regional trade and local economy are expected to stimulate by the

rehabilitation.

(iii) Increasing of investment and activities are expected to enhance.

(iv) Better transportation also enhances educational, social development, environment preservation, public administration, regional integration and security.

16. Relation with technical cooperation, etc.

(1) Feasibility study:

Already effected/being effected.

From month ____year _____ to month _____ year _____

Conducted by : JICA

other agency (specify : _____)

Not vet effected.

(2) Technical cooperation.

Which of the following of assistance do you require?

1) project-type technical cooperation
2) long-term experts : _____ persons
3) short-term experts : _____ persons
4) JOCV : _____
5) acceptance of trainees : _____ persons
6) not needed

When the technical cooperation is underway,

Title : _____

Period : form month _____ year _____ to month _____ year _____

1) project-type technical cooperation
2) long-term experts : _____ persons
3) short-term experts : _____ persons
4) JOCV : _____ persons
5) acceptance of trainees : _____ persons

17. Request to other donors for same project.

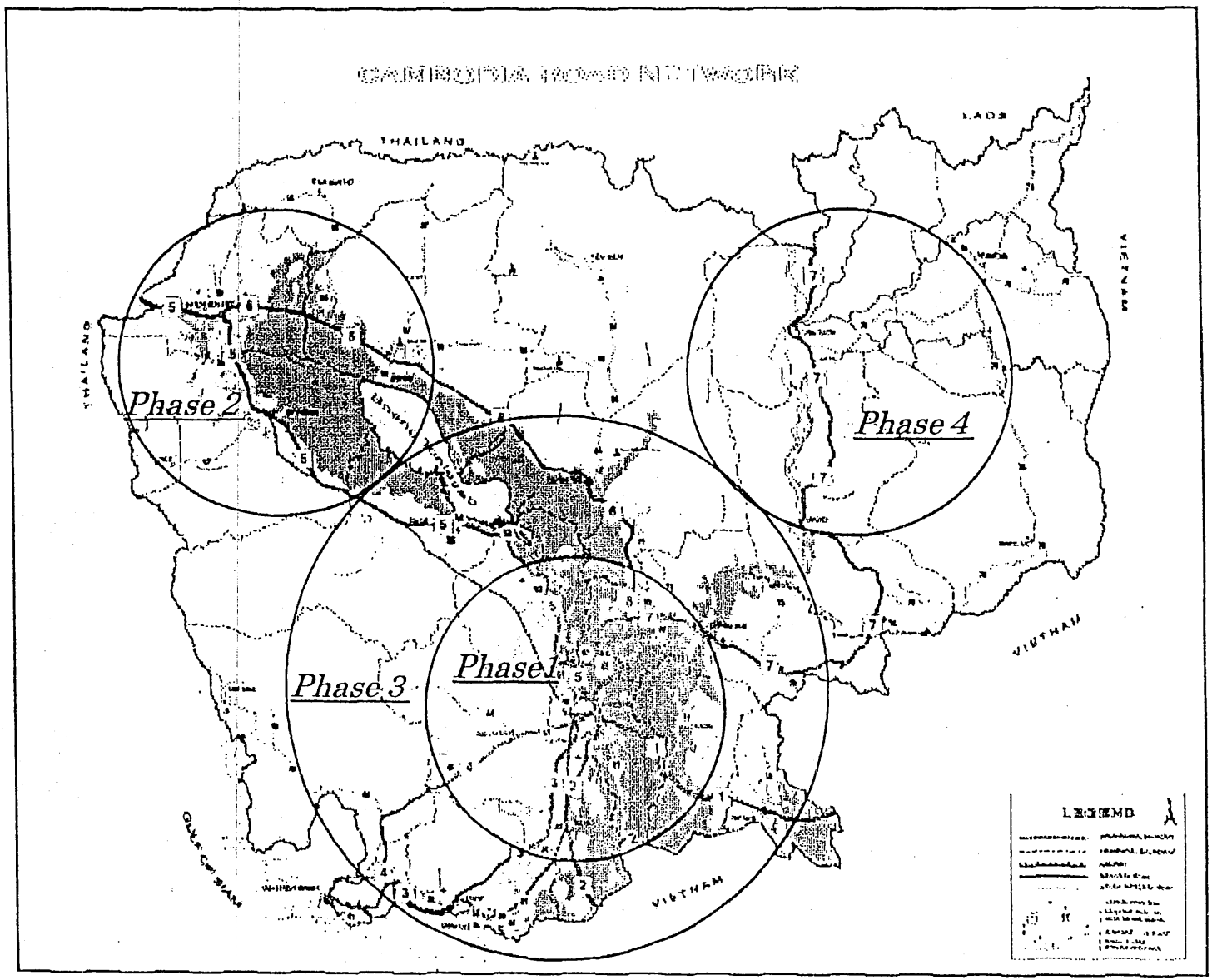
No.

18. Aid by third countries or international organizations in the same or related fields.

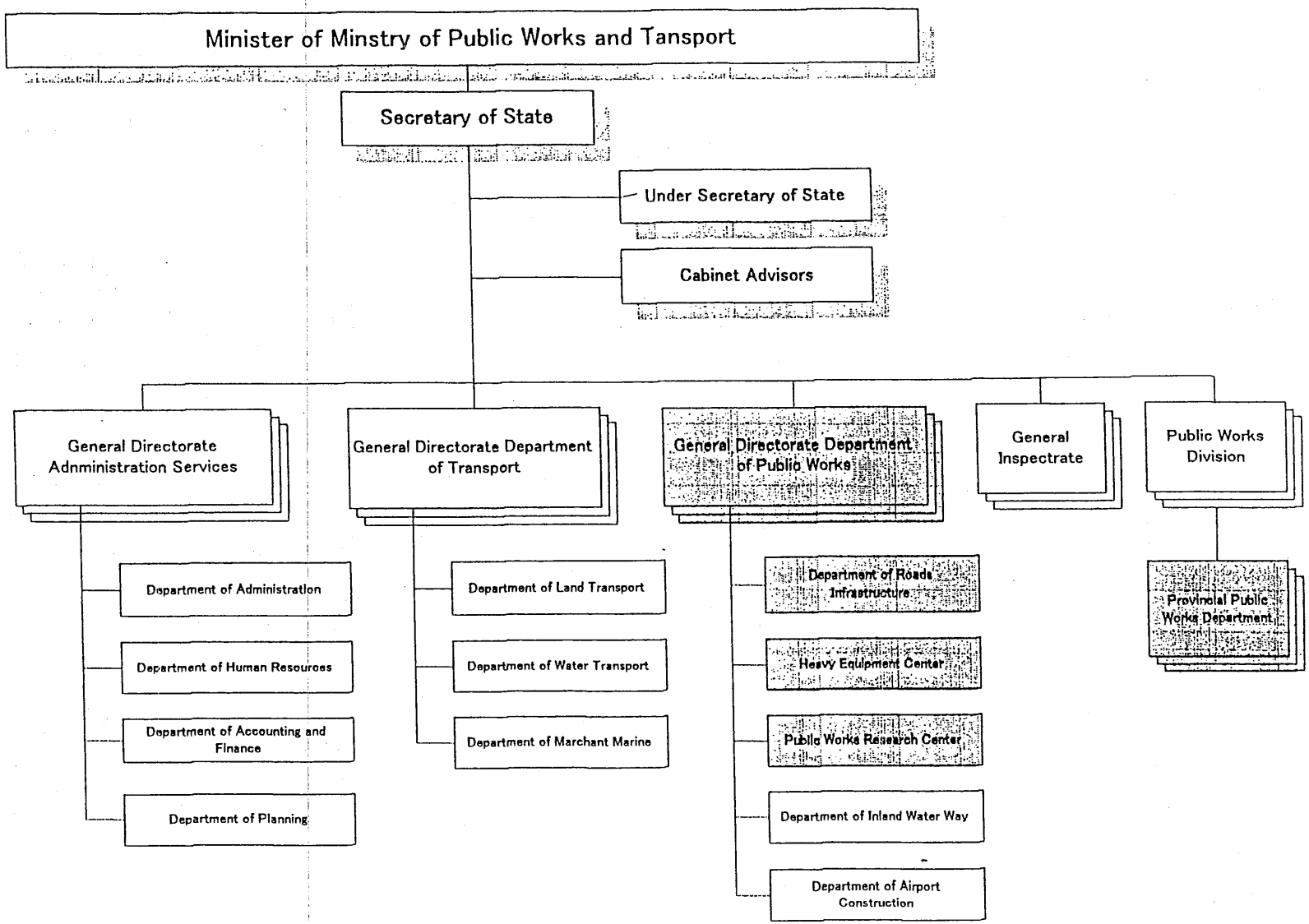
Name of donor	Period	Type	Amount	Outline (concretely)	Relationship with the present request
ADB	1994-1996	Development Loan	USD 2.7 million	Emergency Rehabilitation 570 km of Primary National Road surrounding Phnom Penh, include with temporary Steel Panel bridge installations on the target area	This Project was just only as 'emergency repair'
UNDP/Aus-AID	1994	Grant	USD 5 million	Procurement of 5 prefabricated bridges and construction of 10 bridges on NR5 and NR6	
Aus-AID	1995-1996	Grant	USD 11 million	Procurement of 15 prefabricated bridges and equipments and construction of 10 bridges on NR5 and NR6 by MPWT under supervision of Consultant	
US-AID	1995	Grant	USD 0.55 million	One bridge rehabilitation in Pursat City	
ADB	1999-Ongoing	Development Loan	USD 23 million	NR1 Rehabilitation 105 km Neak Loeung Ferry - Vietnam Border, includes with 3 bridges repair	GMS Project (Part of Thailand, Vietnam highway)
ADB (Aus-AID,OPEC)	2000-On going	Development Loan	USD 65 million	Primary Road restration Project is implementing on NR5, 6 and 7, includes with bridges rehabilitation	
ADB	2000-On Going	Emergency Loan	USD 33 million	Flood damage rehabilitation project is icluding with several minimum maintenance and repairing works for the bridges due to Flood damage	Three Bridges on NR11 is assisted by French
WB	2000-On going	Development Loan	USD 55 million	Part of NR6 and 3 rehabilitation includes with bridges rehabilitation	

19. Other information with special remark (whether or not privatization policy is affected. If yes, indicate the relationship with the requested project.)

Appeidix-1: Location



Appendix-2 Organization Chart



Appendix-3

Repaired and Constructed Bridge by MCTP (Former MPWT) 1980-1991

Year	Bridges Repaired			Bridges Constructed		
	Number	Planed Langth (m)	Required Length (m)	Number	Planed Langth (m)	Required Length (m)
1980	20	546.0	546.0	21	638.0	638.0
1981	34	1,443.0	1,443.0	14	435.0	435.0
1982	56	1,974.0	1,974.0	20	502.0	502.0
1983	17	457.0	457.0	12	672.0	672.0
1984	11	540.0	540.0	10	524.0	524.0
1985	14	496.0	496.0	12	388.0	388.0
1986	11	494.0	494.0	18	487.0	487.0
1987	22	480.0	480.0	20	324.0	324.0
1988	11	245.0	245.0	14	476.0	476.0
1989	2	42.1	42.1	9	95.6	95.6
1990	9	326.7	326.7	32	2,364.0	2,364.0
1991	13	570.0	570.0	7	361.0	361.0
Total	**231**	**7,870.3**	**7,870.3**	**205**	**8,012.6**	**8,012.6**

Appendix-4 Repaired/Constructed Bridge in 1980's

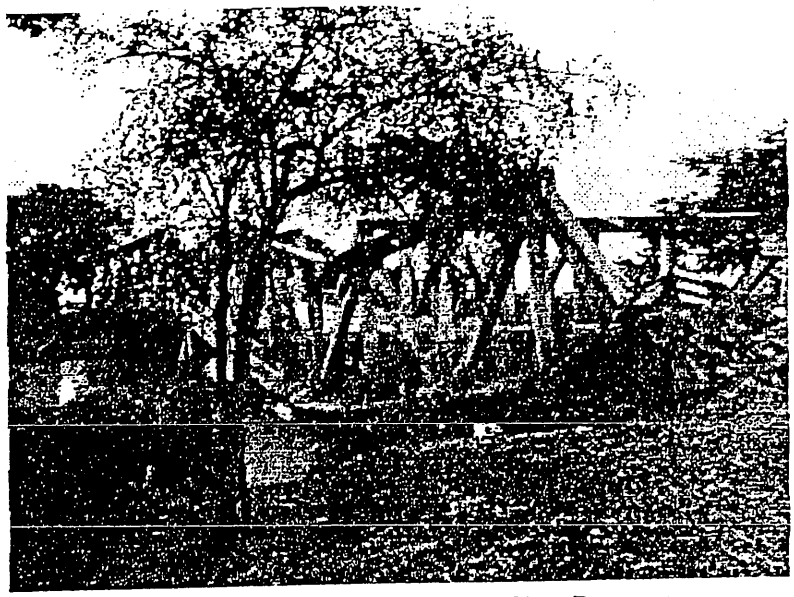


Photo-1 Repaired Bridge in Siem Reap

Photo-2 Bailey Bridge Constructed on Collapsed Bridge in Siem Reap

Appendix-5 Bridges Constructed by Japan Grant

Number	Route	Name	Type of Structure before rehabilitation	Extension (m)	Effctive Width (m)	Type of New Structure	New Extension (m)	Carriageway (m)	Shoulder x2 (m)	Footpath x2 (m)	Completion Year	Detail of Project
1	NR6A	Chroy Changva	Total Extension	708.8	10.8	Total Extension	708.8	7.0	3.8	2.2		
			Simple-RC-I Shaped Beam@4spans	85.4		Simple RC-I Shaped Girder @4spans	85.4				1963	Pavement Repaired in 1994
			2Spans-Continuous Steel Deck Box Girder	137.0		2Spans Continuous Steel Deck Box Girder	137				1963	Pavement Repaired and Repainted in 1994
			Collapesed	265.0		3Spans Continuous Steel Deck Box Girder	265				1994	Two Piers Construction Fabrication with Paint and Pavement and Erection of Girder
			2Spans-Continuous Steel Deck Box Girder	137.0		2Spans Continuous Steel Deck Box Girder	137				1963	Pavement Repaired and Repainted in 1994
			RC-Simple-I Shaped Beam@4spans	78.4		Simple RC-I Shaped Girder @4spans	78.4				1963	Pavement Repaired in 1994
2	NR6A	No.24	Simple-RC-I Shaped Beam@7spans	84.0	9.0	6spans Continuous PC- I shaped Girder	150	7.0	2.0	1.5	under construction	Reconstruct
3	NR6A	No.25	Simple-RC-T -Shaped Beam	12.0	9.0	2spans Continuous RC- I shaped Girder	50	7.0	2.0	1.5	under construction	Reconstruct

Number	Route	Name	Type of Structure before rehabilitation	Extension (m)	Effctive Width (m)	Type of New Structure	New Extension (m)	Carriageway (m)	Shoulder x2 (m)	Footpath x2 (m)	Completion Year	Detail of Project
4	NR6A	No.26	Collapesed	—	—	4spans Continuous PC-I shaped Girder	100	7.0	2.0	1.5	2002	Reconstruct
5	NR6	Thnal Keng	Box Culvert	0.9	11.0	3spans- Continuous RC- I shaped	54	7.0	3.0		1999	Reconstruct
6	NR6	Trapaing Veng	-	—	—	3spans Continuous RC- I shaped Girder	54	7.0	3.0		1999	New
7	NR6	Prek Tros	Bailey	149.5	4.5	6spans Continuous RC- I shaped Girder	159	7.0	3.0		1999	Reconstruct
8	NR6	Tumnop	-	—	—	3spans Continuous RC- I shaped Girder	54	7.0	3.0		1999	New
9	NR6	Batheay	-	—	—	3spans Continuous RC- I shaped Girder	54	7.0	3.0		1999	New
10	NR6	Phum Stung	Simple-RC-Slab	35.0	4.0	3spans Continuous RC- I shaped Girder	36.2	7.0	3.0		2002	Reconstruct
11	NR6	Lo Lum	Bailey	35.0	4.0	3spans Continuous RC- I shaped Girder	36.2	7.0	3.0		2002	Reconstruct
12	NR6	Kaek	Bailey	25.0	4.0	2spans Continuous RC-I-shaped Girder	26.2	7.0	3.0		2002	Reconstruct
13	NR7	Skun	Simple-RC-Slab	9.1	6.8	Simple RC-T-Shaped Girder	10	7.0	3.0		1999	Reconstruct
14	NR7	Tropeang Traep	Temporary Steel I Girder	9.0	4.0	Simple RC-T-Shaped Girder	10	7.0	3.0		1999	Reconstruct
15	NR7	Tounsoung Slap	Simple-RC-Slab	10.7	10.7	Simple RC-T-Shaped Girder	12	7.0	3.0		1999	Reconstruct
16	NR7	Anlong Chrey	Simple-RC-Truss@2 spans	40.5	5.0	Simple RC-T-Shaped Girder	42	7.0	3.0		1999	Reconstruct

Number	Route	Name	Type of Structure before rehabilitation	Extension (m)	Effctive Width (m)	Type of New Structure	New Extension (m)	Carriageway (m)	Shoulder x2 (m)	Footpath x2 (m)	Completion Year	Detail of Project
17	NR7	Kvet Thom	Temporary Steel I Girder	10.0	4.5	Simple RC-T-Shaped Girder	10	7.0	3.0		1999	Reconstruct
18	NR7	O Da	Simple-RC-Truss	35.8	5.4	3spans Continuous RC-T shaped Girder	38	7.0	3.0		1999	Reconstruct
19	NR7	Stg Proyoul	Bailey	18.3	4.5	Simple RC-T-Shaped Girder	20	7.0	3.0		1999	Reconstruct
20	NR7	Treung	2 spans Continuous RC-Slab	11.0	7.0	Simple-RC T-Shaped Girder	12	7.0	3.0		1999	Reconstruct
21	NR7	Mekong	—	—	—	Total Extension	1360	7.0	3.0	1.5	2002	New
						5spans Continuous PC-I shaped Girder	199.8					
						9spans Continuous PC- Box Girder	998.3					
						4spans Continuous- PC- I shaped Girder	159.8					
22	NR7	Mot Kmong	Bailey	168.0	4.0	5spans Continuous PC- T shaped Girder	175.0	7.0	3.0		under construction	Reconstruct

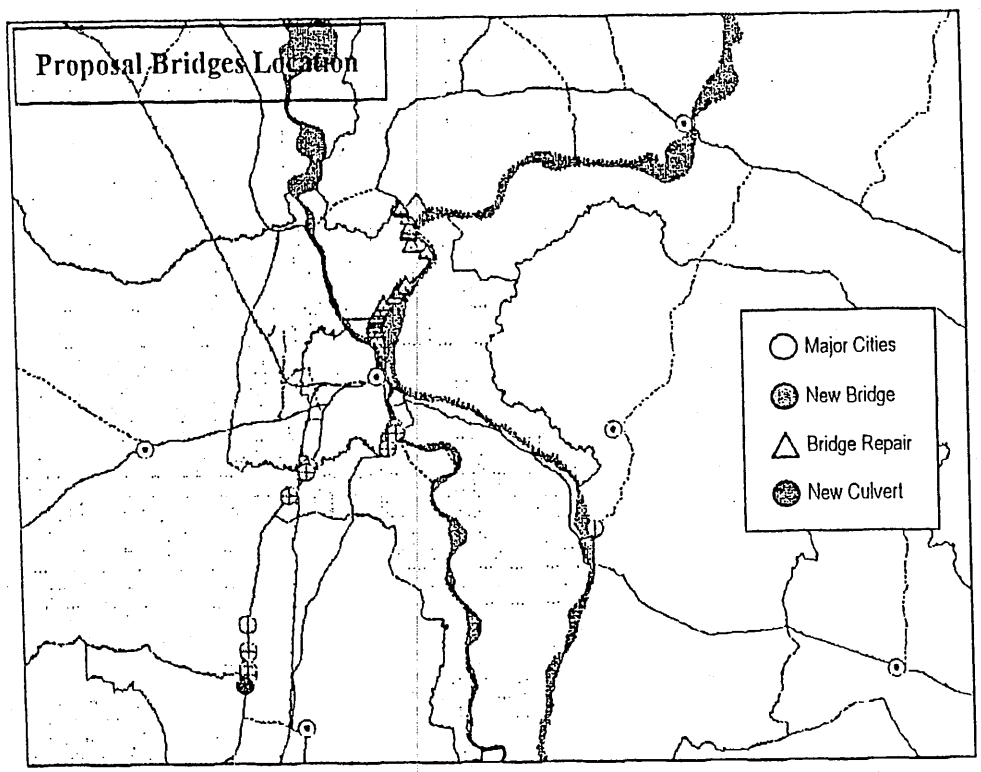
Appendix-6 Existing Bridge Condition, Proposed Type for Rehabilitation and Cost Estimation

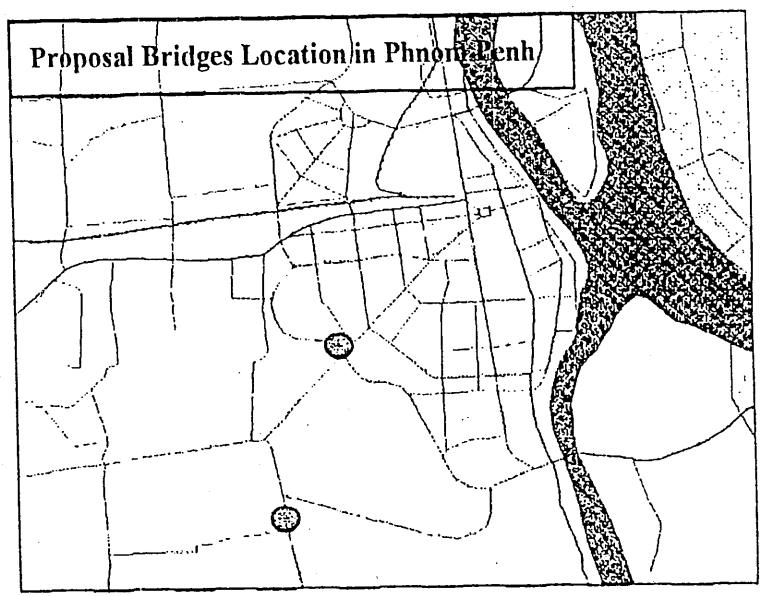
These bridges were selected from bridges, which existing span length are greater than 20 m, the criteria of selection is as below,

1. Present Effective Width is less than 6 m

or

2. The Type of Existing Super Structure is a temporary bridge like as Bailey, Wood or Combination of Both





Objective Bridges

#	Route Number	Structure Number	Description	Exisitng Structure					
				TYPE	TYPE2	TYPE3	Deck Type	Length m	Width m
1	PHN		Phum Mul	Bridge	Bailey		S	15	4
2	PHN		Stung Meancheay	Bridge	RC	I	C	100	5.5
3	RN002	1	Ta Khmau1	Bridge	RC	Arch-Truss	C	93	4
4	RN002	1	Ta Khmau2	Bridge	St	Truss	C	90	5
5	RN002	2	Prek Ho	Bridge	RC	I	C	125	4
6	RN003	12		Bridge	Bailey			15	4
7	RN003	13		Bridge	Bailey			36	4
8	RN003	17		Bridge	Bailey			12	4
9	RN003	50		Bridge	Bailey			15	4
10	RN003	53		Bridge	Bailey			12	4
11	RN003	54	Slakou	Bridge	RC			52	5
12	RN003	55		Bridge	Bailey			55	4
13	RN003	58		Bridge	Bailey			6	4
14	RN006a	1	Chruoy Changwar	Bridge	St	B	S	798	12
15	RN006a	2	No.1	Bridge	RC	I	C	12	9
16	RN006a	3	No.2	Bridge	RC	I	C	24	9
17	RN006a	4	No.3	Bridge	RC	I	C	12	9
18	RN006a	5	No.4	Bridge	RC	I	C	24	9
19	RN006a	6	No.5	Bridge	RC	I	C	12	9
20	RN006a	7	No.6	Bridge	RC	I	C	60	9
21	RN006a	9	No.7 Prek	Bridge	RC	I	C	12	9
22	RN006a	10	No.8	Bridge	RC	I	C	36	9
23	RN006a	12	No.9	Bridge	RC	I	C	24	9
24	RN006a	15	No.10	Bridge	RC	I	C	12	9
25	RN006a	16	No.11	Bridge	RC	I	C	12	9
26	RN006a	17	No.12	Bridge	RC	I	C	24	9
27	RN006a	18	No.13	Bridge	RC	I	C	24	9
28	RN006a	20	No.14	Bridge	RC	I	C	120	9
29	RN006a	21	No.15	Bridge	RC	I	C	24	9
30	RN006a	22	No.16	Bridge	RC	I	C	36	9
31	RN006a	23	No.17	Bridge	RC	I	C	36	9
32	RN006a	24	No.18	Bridge	RC	I	C	36	9
33	RN006a	25	No.19	Bridge	RC	I	C	24	9
34	RN006a	26	No.20	Bridge	RC	I	C	36	9
35	RN006a	27	No.21	Bridge	RC	I	C	24	9
36	RN006a	29	No.22	Bridge	RC	I	C	120	9
37	RN006a	30	No.23	Bridge	RC	I	C	60	9
38	RN011	2	Peam Ror	Bridge	Bailey	I	W	129	4

Condition of Objective Bridges

#	Route Number	Structure Number	Description	Bridge Condition Loading Capacity	Lane Width	Deterioration	Sum up
1	PHN		Phum Mul	Very small 5t	Narrow	Seriously	Bad
2	PHN		Stung Meancheay	Small 15t	Narrow	Fair	Poor
3	RN002	1	Ta Khmau1	Small 15t	Narrow	Very bad	Very bad
4	RN002	1	Ta Khmau2	Small 15t	Narrow	Very bad	Very bad
5	RN002	2	Prek Ho	Small 15t	Narrow	Very bad	Very bad
6	RN003	12		Small 20t	Narrow	Fair	Bad
7	RN003	13		Small 20t	Narrow	Fair	Bad
8	RN003	17		Small 20t	Narrow	Fair	Bad
9	RN003	50		Small 20t	Narrow	Fair	Bad
10	RN003	53		Small 20t	Narrow	Fair	Bad
11	RN003	54	Slakou	Small 10t	Narrow	Very bad	Very bad
12	RN003	55		Small 20t	Narrow	Fair	Bad
13	RN003	58		Small 20t	Narrow	Fair	Bad
14	RN006a	1	Chruoy Changwar	25t	Sufficient	Fair	Fair
15	RN006a	2	No.1	25t	Sufficient	Poor	Poor
16	RN006a	3	No.2	25t	Sufficient	Poor	Poor
17	RN006a	4	No.3	25t	Sufficient	Poor	Poor
18	RN006a	5	No.4	25t	Sufficient	Poor	Poor
19	RN006a	6	No.5	25t	Sufficient	Poor	Poor
20	RN006a	7	No.6	25t	Sufficient	Poor	Poor
21	RN006a	9	No.7 Prek	25t	Sufficient	Poor	Poor
22	RN006a	10	No.8	25t	Sufficient	Poor	Poor
23	RN006a	12	No.9	25t	Sufficient	Poor	Poor
24	RN006a	15	No.10	25t	Sufficient	Poor	Poor
25	RN006a	16	No.11	25t	Sufficient	Poor	Poor
26	RN006a	17	No.12	25t	Sufficient	Poor	Poor
27	RN006a	18	No.13	25t	Sufficient	Poor	Poor
28	RN006a	20	No.14	25t	Sufficient	Poor	Poor
29	RN006a	21	No.15	25t	Sufficient	Very bad	Very bad
30	RN006a	22	No.16	25t	Sufficient	Very bad	Very bad
31	RN006a	23	No.17	25t	Sufficient	Very bad	Very bad
32	RN006a	24	No.18	25t	Sufficient	Poor	Bad
33	RN006a	25	No.19	25t	Sufficient	Poor	Bad
34	RN006a	26	No.20	25t	Sufficient	Poor	Bad
35	RN006a	27	No.21	25t	Sufficient	Poor	Bad
36	RN006a	29	No.22	25t	Sufficient	Poor	Bad
37	RN006a	30	No.23	25t	Sufficient	Almost fair	Almost fair
38	RN011	2	Peam Ror	Very small 10t	Narrow	Very bad	Very bad