Appendices

1. Member List of the Study Team

2. Study Schedule

3. List of Parties Concerned in the Recipient Country

4. Minutes of Discussions

5. Other Relevant Data

Appendix 1 Member List of the Study Team

1-1 Primary Study in Bosnia and Herzegovina

from November 5, 2002 to December 12, 2002

1 **Leader, Yoshihiro KURASHINA**
Senior Assistant to the Managing Director of Office of Technical Coordination and Examination
Grant Aid Management Department, Japan International Cooperation Agency (JICA)

2 **Chief Consultant/Road Traffic Planner, Katsufumi MATSUZAWA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

3 **Bridge Designer I , FBH, Hiroshi FUJISAWA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

4 **Natural Condition Survey Engineer I (Topographic / Geology), FBH, Shoji SAOTOME**
Nippon Koei Co., Ltd. and Central Consultant Inc.

5 **Natural Condition Survey Engineer II (Hydrology), FBH, Hiroshi HASHIMOTO**
Nippon Koei Co., Ltd. and Central Consultant Inc.

6 **Bridge Designer II , RS, Takashi TACHIKAWA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

7 **Natural Condition Survey Engineer III (Topographic / Geology), RS, Takuya FUNAHARA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

8 **Natural Condition Survey Engineer IV (Hydrology), RS, Shoji FUJISHIMA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

9 **Construction Planner/Cost Estimation Engineer I, Tetsuto NAKANO**
Nippon Koei Co., Ltd. and Central Consultant Inc.

10 **Construction Planner/Cost Estimation Engineer II, HirofumiTAKAYAMA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

11 **Coordinator, Yasuaki NAKMURA**
Nippon Koei Co., Ltd. and Central Consultant Inc.

1-2 Discussion on Draft Report in Bosnia and Herzegovina

from February 26, 2003 to March 8, 2003

1 Leader, Kenshiro TANAKA

Staff Member, 3rd Project Management Division, Grant Aid Management Department,
Japan International Cooperation Agency (JICA)

2 Chief Consultant/Road Traffic Planner, Katsufumi MATSUZAWA

Nippon Koei Co., Ltd. and Central Consultant Inc.

3 Bridge Designer I , FBH, Hiroshi FUJISAWA

Nippon Koei Co., Ltd. and Central Consultant Inc.

1-3 2nd Discussion on Draft Report in Bosnia and Herzegovina

from June 4, 2003 to June 14, 2003

1 Leader, Satoru NAKANO

Senior Assistant to the Managing Director of Office of Technical Coordination and Examination
Grant Aid Management Department, Japan International Cooperation Agency (JICA)

2 Chief Consultant/Road Traffic Planner, Katsufumi MATSUZAWA

Nippon Koei Co., Ltd. and Central Consultant Inc.

3 Bridge Designer II , RS, Takashi TACHIKAWA

Nippon Koei Co., Ltd. and Central Consultant Inc.

Appendix 2 Study Schedule

2-1 Primary Study in Bosnia and Herzegovina

No.	Date		Study Team Schedule	Stay	Activities
1	11/5	Tue	Kurashina,Matsuzawa,Fujisawa ,Tachikawa,Funahara move from Tokyo to Vienna	Vienna	Movement
2	11/6	Wed	Kurashina,Matsuzawa,Fujisawa ,Tachikawa,Funahara arrive at Sarajevo	Sarajevo	Courtesy Call on the Embassy of Japan, JICA Austria in Vienna and Embassy of Japan in Sarajevo
3	11/7	Thu		Sarajevo	Courtesy Call on the MOFA, MOCA, FBHRD, Submission of Inception Report Meeting with Field Survey Consultants
4	11/8	Fri	 Saotome,Tachikawa,Funahara move to Banja Luka	Sarajevo Banja Luka	Meeting at FBHRD Field Survey
5	11/9	Sat		Sarajevo Banja Luka	Field Survey Field Survey
6	11/10	Sun	 Kurashina,Matsuzawa move to Banja Luka	Sarajevo Banja Luka	Data Analysis Movement Meeting and Data Analysis
7	11/11	Mon		Sarajevo Banja Luka	Discussion for M/D at RSRD Discussion for M/D at FBHRD
8	11/12	Tue		Sarajevo Banja Luka	Meeting with Field Survey, Data Collection Field Survey, Meeting at MOTC on RS
9	11/13	Wed	 Kurashina,Matsuzawa move to Sarajevo	Sarajevo Banja Luka	Meeting with Field Survey, Data Collection Movement Field Survey, Data Collection
10	11/14	Thu		Sarajevo Banja Luka	Field Survey, Data Collection Field Survey, Data Collection
11	11/15	Fri	 Tachikawa move to Sarajevo	Sarajevo Banja Luka	Field Survey, Data Collection, Inner Meeting Field Survey, Data Collection
12	11/16	Sat	 Tachikawa move to Banja Luka Hashimoto,Fujishima,Nakano,Nakamura move from Tokyo to Vienna	Sarajevo Banja Luka Vienna	Inner Meeting Field Survey Bridge Inspection, Data Collection Movement
13	11/17	Sun	Hashimoto,Fujishima,Nakano,Nakamura arrive at Sarajevo Saotome move to Sarajevo	Sarajevo Banja Luka Sarajevo	Inner Meeting Bridge Inventory, Data Collection Movement
14	11/18	Mon		Sarajevo Banja Luka	Meeting at MOFA and FBHRD Signing of Minutes of Discussions Field Survey
15	11/19	Tue	Kurashina depart from Sarajevo Fujishima move to Banja Luka	Sarajevo Banja Luka	Field Survey with MAC, Meeting, Data Collection Movement Field Survey, Data Collection
16	11/20	Wed	Kurashina transit at Milano Takayama arrive at Sarajevo	in Plane Sarajevo Banja Luka	Movement Field Survey, Data Collection Meeting at FBHRD, Field Survey, Data Collection Movement
17	11/21	Thu	Kurashina arrive at Tokyo Fujisawa,Takayama move to Banja Luka	in Plane Sarajevo Banja Luka	Movement Field Survey, Data Collection Meeting at FBHRD, Field Survey, Data Collection Meeting at Institute
18	11/22	Fri	 Fujisawa,Funahara move to Sarajevo	Sarajevo Banja Luka Sarajevo	Meeting at FBHRD, Data Collection Traffic Volume Survey, Bridge Inspection Field Survey, Data Collection, Meeting at Institute Meeting at Institute
19	11/23	Sat	 Nakamura move to Banja Luka Saotome,Funahara depart from Sarajevo	Sarajevo Banja Luka Vienna	Meeting at FBHRD, Data Collection Movement Field Survey, Data Collection Movement

2-2 Discussion on Draft Report in Bosnia and Herzegovina

No.	Date		Study Team Schedule	Stay	Activities
1	2/26	Wed	Tanaka,Matsuzawa,Fujisawa move from Tokyo to Vienna	Vienna	Movement
2	2/27	Thu	Tanaka,Matsuzawa,Fujisawa arrive at Sarajevo	Sarajevo	Courtesy Call on JIC Austria in Vienna and Embassy of Japan in Sarajevo
3	2/28	Fri		Sarajevo	Courtesy Call on MOFA, MOTC on FBH and Discussion on Draft Report at FBHRD
4	3/1	Sat		Sarajevo	Field Survey (Bogatici and Osanica Bridges)
5	3/2	Sun	Tanaka,Matsuzawa,Fujisawa move to Banja Luka	Banja Luka	Field Survey (Doboj and Modrica Bridges)
6	3/3	Mon	Tanaka,Matsuzawa,Fujisawa move to	Sarajevo	Courtesy Call on MOTC on RS Meeting with Field Survey Company
7	3/4	Tue		Sarajevo	Discussion for M/D at RSFD Discussion for M/D at FBHRD
8	3/5	Wed		Sarajevo	Signing of Minutes of Discussions Meeting at OHR
9	3/6	Thu	Tanaka,Matsuzawa,Fujisawa leave from Sarajevo, arrive at Vienna	Vienna	Report to the EOJ in Sarajevo, Meeting with SFOR
10	3/7	Fri	Tanaka,Matsuzawa,Fujisawa leave for Tokyo	in Plane	Report to JICA Austria in Vienna and the Embassy of Japan in Vienna
11	3/8	Sat	Tanaka,Matsuzawa,Fujisawa arrive at		Movement

2-3 2nd Discussion on Draft Report in Bosnia and Herzegovina

No.	Date		Study Team Schedule	Stay	Activities
1	6/4	Wed	Nakano,Matsuzawa,Tachikawa move from Tokyo to Vienna	Vienna	Movement
2	6/5	Thu	Nakano,Matsuzawa,Tachikawa arrive at Sarajevo	Sarajevo	Courtesy Call on the Embassy of Japan, JICA Austria in Vienna and Embassy of Japan in Sarajevo and MOFA
3	6/6	Fri		Sarajevo	Courtesy Call on MOCA, FBHRD and EOJ in
4	6/7	Sat		Sarajevo	Field Survey (Bogatici and Osanica Bridges)
5	6/8	Sun	Nakano,Matsuzawa,Tachikawa move to Banja Luka	Banja Luka	Field Survey (Doboj and Modrica Bridges)
6	6/9	Mon		Banja Luka	Courtesy Call and meeting on MOTC on RS and Meeting with Field Survey Consultants
7	6/10	Tue		Banja Luka	Meeting at RSRD
8	6/11	Wed	Nakano,Matsuzawa,Tachikawa depart from Vanja Luka	Banja Luka	Meeting at RSRD Signing of Minutes of Discussions
9	6/12	Thu	Nakano,Matsuzawa,Tachikawa transit at Zagreb, arrive at Vienna	Vienna	Movement
10	6/13	Fri	Nakano,Matsuzawa,Tachikawa leave for Tokyo	in Plane	Report to JICA Austria in Vienna and the Embassy of Japan in Vienna
11	6/14	Sat	Nakano,Matsuzawa,Tachikawa arrive at Tokyo		Movement

Appendix 3 List of Parties Concerned in the Recipient Country

3-1 Primary Study in Bosnia snd Herzegovina

from November 5, 2002 to December 12, 2002

MOFA : Ministry of Foreign Affair, Bosnia and Herzegovina

Ms. Lidija Topic	Acting Assistant Minister

Department for Multilateral Relations, Reconstruction Unit

Mr. Mirza Pinjo	Minister-Counselor, Head of the Unit
Ms. Biljana Grujic	Associate Expert

MOCA : Ministry of Civil Affairs and Communications, Bosnia and Herzegovina

Mr. Milan Lovric	Deputy Minister
Mr. Kemal Karkin	Director of Project Implementation Unit
Mr. Nemanja Durovic	Deputy of Director

MOTC : Federal Ministry of Transport and Communications

Mr. Besim Mehmedic	Minister

FBHRD : Road Directorate, Federation of Bosnia and Herzegovina

Mr. Arif Dilberovic	Acting General Director
Mr. Amra Smailagic	Adviser
Mr. Muhamed Halepovic	Bridge Project Manager
Ms. Redsjc Semha	Staff

MOTC : Republic of Srpska, Ministry of Transport and Communications

Mr. Zdravko Kramanovic	Deputy Minister

RSRD : Road Directorate, Ministry of Transport and Communications, Republic of Srpska

Mr. Dragon Mihajlovic	Deputy Director, Project Implementation Directorate
Mr. Nebojsa Prostran	Department for Maintenance and Road Protection
Mr. Igor Jokanovic	Traffic Engineer Dept. Planning & Development
Mr. Stevo	Doboj
Mr. Slavko	Doboj

OHR : Office of High Representative

Mr. Richard Westler	Secretary General, Communication on Public Corporations

SFOR : Peace Stabilization Force, Bosnia and Herzegovina

Ms. Dijana Trivakovic - Lucic	Senior Engineer Consultant
Mr. Jonathan Roose	Maj, UK army Staff Officer Plans

EU : European Union

Mr. Goran Filipovic	Task Manager for Transport Sector

USAID : United States Agency for International Development

Mr. Peter S. Flynn	Sr. Program Coordinator
Ms. Dunja Aganovic	Senior Engineer

MAC : Mine Action Centre, BiH (Sarajevo)

Mr. Nermin Hadzimujagic	Deputy Director
Mr. Tarik Serak	Department Chief
Mr. Danislav Juric	Department Chief
Ms. Sanja Nizic	Interpreter
Ms. Misad Herceqlis	Surveyor

MAC : Mine Action Centre, Bajna Luka

Mr. Alexander Kosici	
Mr. Milan	
Mr. Yugoslav	

imk : Institute for Materials and Structures, Faculty of Civil Engineering, University Sarajevo

Mr. Davorin Loncaric	Director, Senior Lecturer
Mr. Dzemal Sarajcic	Consulting Engineer

Federal Meteorological Institute BiH, Sarajevo

Mr. Zeljko Majstorovic	Head of Climatolological Department
	---, Sector Meteorological
	---, Sector Hydrological
Mr. Ivan Brecek	Seismologist, Sector Seismology

Federal Office of Statistics

Public Enterprise "VODNO PODRUCJE SLIVOVA RIJEKE SAVE", Sarajevo

Mr. Nedzad Vilic	Civil Engineer

Municipality Trnovo (Naocelnk Staba)

Mr. Berilo Emin

BiH Railway Public Corporation

Mr. Frauk Curcic	Vice General Manager
Mr. Bane Nikcevic	Vice General Manager

Instutut za ispitivanje materijala i konstrukcija, Bnja Luka (Institute for Materials and Constructior

Mr. Nedeljko Gajic	Director
Mr. Bundalo Nedeljko	

Embassy of Japan in Austria

Mr. Kazumasa Miyazaki	First Secretary
Mr. Shinichi Nakatsugawa	First Secretary

Austria Office, Japan International Cooperation Agency (JICA)

Mr. Keiichi Muraoka	Resident Representative
Mr. Akihiko Suzuki	Assistant Resident Representative
Mr. Yasuaki Aihara	Project Formulation Adviser
Ms. Yuuko Altmann	Training Coodinator

Embassy of Japan in Bosnia and Herzegovina

Mr. Mitsunori Namba	Charged Affaires
Mr. Yoshiaki Kotaki	Charged Affaires (from 2002/12)
Mr. Hiroyuki Kawamoto	Third Secretary
Ms. Mirjana Vlaski	Program Coordinator

3-2 Discussion on Draft Report in Bosnia and Herzegovina

from February 26, 2003 to March 8, 2003

MOFA : Ministry of Foreign Affair, Bosnia and Herzegovina

Ms. Lidija Topic	Acting Assistant Minister

Department for Multilateral Relations, Reconstruction Unit

Mr. Mirza Pinjo	Minister-Counselor, Head of the Unit
Ms. Biljana Grujic	Associate Expert

MOCT : Ministry of Communications and Transport

former MOCA : Ministry of Civil Affairs and Communications, Bosnia and Herzegovina

Mr. Milan Lovric	Deputy Minister
Mr. Kemal Karkin	Director of Project Implementation Unit
Mr. Nemanja Durovic	Deputy of Director

MOTC : Federal Ministry of Transport and Communications

Mr. Besim Mehmedic	Minister

FBHRD : Road Directorate, Federation of Bosnia and Herzegovina

Mr. Arif Dilberovic	Acting General Director
Mr. Amra Smailagic	Adviser
Mr. Muhamed Halepovic	Head of Design & Road Construction Section
Mr. Esad Osmanbegovic	Secretary

MOTC : Republic of Srpska, Ministry of Transport and Communications

Mr. Zdravko Kramanovic	Deputy Minister

RSRD : Road Directorate, Ministry of Transport and Communications, Republic of Srpska

Mr. Dragon Mihajlovic	Deputy Director, Project Implementation Directora
Mr. Nebojsa Prostran	Department for Maintenance and Road Protection

OHR : Office of High Representative

Mr. Richard Westler	Secretary General, Communication on Public Corporations

SFOR : Peace Stabilization Force, Bosnia and Herzegovina

Ms. Dijana Trivakovic - Lucic	Senior Engineer Consultant
Mr. Andrew Teeton	Maj, UK army Staff Officer Plans
Mr. Attila CSURGO	Maj, HU Army SO OPS

imk : Institute for Materials and Structures, Faculty of Civil Engineering, University Saraje

Mr. Davorin Loncaric	Director, Senior Lecturer

BiH Railway Public Corporation

Mr. Frauk Curcic	Vice General Manager

Embassy of Japan in Austria

Mr. Susumu Ueda	Second Secretary

Austria Office, Japan International Cooperation Agency (JICA)

Mr. Keiichi Muraoka	Resident Representative
Mr. Akihiko Suzuki	Assistant Resident Representative
Mr. Yasuaki Aihara	Project Formulation Adviser

Embassy of Japan in Bosnia and Herzegovina

Mr. Hiroyuki Kawamoto	Third Secretary
Ms. Mirjana Vlaski	Program Coordinator

3-3 2nd Discussion on Draft Report in Bosnia and Herzegovina

from June 4, 2003 to June 14, 2003

MOFA : Ministry of Foreign Affair, Bosnia and Herzegovina

Department for Multilateral Relations, Reconstruction Unit

Mr. Mirza Pinjo	Minister-Counselor, Head of the Unit
Ms. Biljana Grujic	Associate Expert

MOCT : Ministry of Communications and Transport

Mr. Nemanja Durovic	Deputy of Director
Mr. Zoran Jelic	Deputy of Director

FBHRD : Road Directorate, Federation of Bosnia and Herzegovina

Mr. Amra Smailagic	Adviser
Mr. Muhamed Halepovic	Head of Design & Road Construction Section

MOTC : Republic of Srpska, Ministry of Transport and Communications

Mr. Dragan Solaja	Minister
Mr. Miroslav R. Cicic	Assistant of Minister of Roadway's-Traffic
Mr. Sreten Blagojevic	Political Advisor

RSRD : Road Directorate, Ministry of Transport and Communications, Republic of Srpska

Mr. Nemanja Vasic	Director
Mr. Dragon Mihajlovic	Deputy Director, Project Implementation Directorate
Mr. Nebojsa Prostran	Department for Maintenance and Road Protection

Embassy of Japan in Austria

Mr. Susumu Ueda	Second Secretary

Austria Office, Japan International Cooperation Agency (JICA)

Mr. Keiichi Muraoka	Resident Representative
Mr. Akihiko Suzuki	Assistant Resident Representative
Mr. Yasuaki Aihara	Project Formulation Adviser

Embassy of Japan in Bosnia and Herzegovina

Mr. Yoshiaki Kotaki	Charged Affaires (from 2002/12)
Mr. Hiroyuki Kawamoto	Third Secretary
Ms. Mirjana Vlaski	Program Coordinator

Appendices 4. Minutes of Discussions

Minutes of Discussions
in the Basic Design Study
on the Project for Reconstruction of the Main Bridges on Road Network
in Bosnia and Herzegovina

In response to a request from the Government of Bosnia and Herzegovina (hereinafter referred to as "BiH"), the Government of Japan decided to conduct a Basic Design Study on the Project for Reconstruction of the Main Bridges on Road Network in Bosnia and Herzegovina (hereinafter referred to as "the Project") and entrusted the study to the Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to BiH the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Yoshiro Kurashina, a Deputy Director of the Third Project Management Division, the Grant Aid Management Department, JICA and is scheduled to stay in the country from November 6 to December 10, 2002.

The Team held discussions with the officials concerned of the Government of BiH and entity governments and conducted a field survey at the study area.

In the course of discussions and field survey, both parties confirmed the main items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Sarajevo, November 18, 2002

Yoshiro KURASHINA
Leader
Basic Design Study Team
Japan International Cooperation Agency

Lidija Topic
Acting Assistant Minister
Ministry of Foreign Affairs
Bosnia and Herzegovina

Arif Dilberovic
Acting General Director, Road Directorate
Federation of Bosnia and Herzegovina

Dragan Mihajlovic
Deputy Director, Road Directorate
Ministry of Transport and Communications
Republic of Srpska

WITNESS

Milan Lovric
Deputy Minister
Ministry of Civil Affairs and Communications
Bosnia and Herzegovina

ATTACHMENT

1. Objective of the Project

The objective of the Project is to reconstruct 4 bridges, Osanica Bridge and Ilovica-Bogatic Bridge in the Federation of Bosnia and Herzegovina, Doboj-Stanic Bridge and Modrica Bridge in the Republic of Srpska.

2. Project Sites

The sites of the Project are shown in Annex-1.

3. Responsible and Implementing Agency

The responsible organization is the Ministry of Foreign Affairs of BiH.

The implementing organization for Osanica Bridge and Ilovica-Bogatic Bridge is the Road Directorate, the Federation of Bosnia and Herzegovina.

The implementing organization for Doboj-Stanic Bridge and Modrica Bridge is the Road Directorate, the Ministry of Transport and Communications of the Republic of Srpska.

The organization charts are shown in Annex-2.

4. Items Requested by the Government of BiH

After discussions with the Team, the components of the Project were finally requested by the BiH side are as follows;

- Reconstruction and restoration of Osanica Bridge, Ilovica-Bogatic Bridge, Doboj-Stanic Bridge and Modrica Bridge
- River works for protection of the bridges
- Construction of approach roads

JICA will assess the appropriateness of the request and will recommend to the Government of Japan for approval.

5. Japan's Grant Aid Scheme

5-1. The BiH side understands the Japan's Grant Aid scheme explained by the Team, as described in Annex-3.

5-2. The BiH side will take the 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

6-1. The consultants will proceed to further studies in BiH until December 10.

6-2. JICA will prepare the draft final report in English and dispatch a mission to BiH in order to explain its contents around February 2003.

6-3. In case that the contents of the report are accepted in principle by the BiH side, JICA will complete the final report and send it to the Government of BiH by March 2003.

7. Other Relevant Issues

7-1. The mine inspection and clearance necessary for the Study and construction of bridges (including temporary usage for construction yards, detour etc.) has been completed. Hence, the land for the proposed bridges and approach roads are qualified as mine free by the governments of both entities. During the Basic Design Study, Detailed Design Study and the construction, each implementing organization shall obtain the certificates from the BiH Mine Action Center (MAC) to make sure that the proposed sites are free from mines.

7-2. If the land acquisition for construction of bridges is necessary, the BiH side shall complete the procedure for the acquisition of necessary land before the cabinet decision for this project in Japan.

7-3. In the case the relocation of existing utilities (power and communication lines, water lines) is necessary, it shall be carried out by the BiH side.

7-4. The BiH side will construct the connection roads, temporary roads and temporary bridges before the Project, and demolish or dismantle the old bridges if necessary according to the Basic Design Study, temporary roads, and temporary bridges soon after the Project by their own budget.

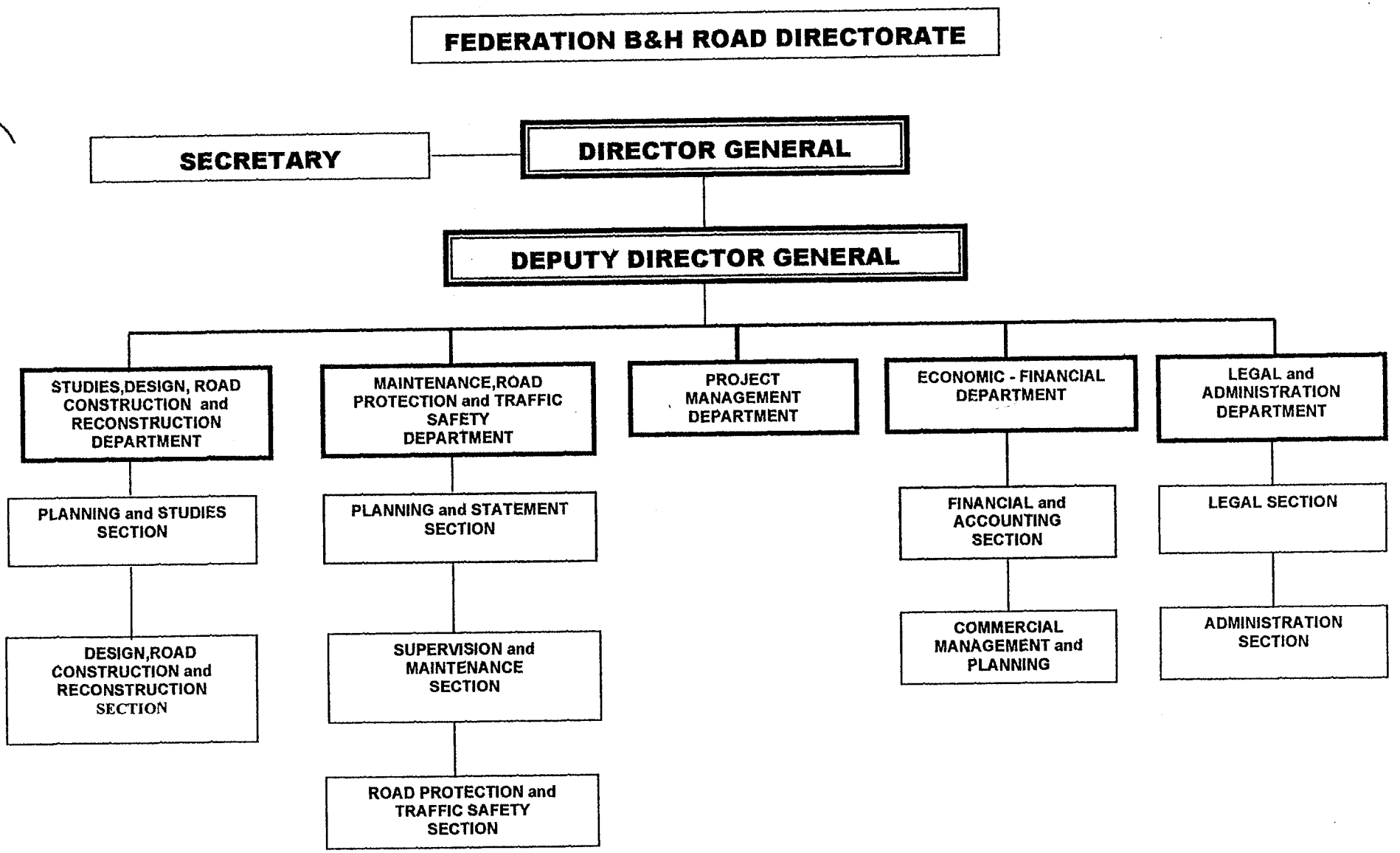
7-5. The procedures necessary for the approval of EIA (Environmental Impact Assessment) shall be implemented by the BiH side.

7-6. Regarding the Doboj-Stanic Bridge, the BiH side requested the Team to construct a new bridge on the new alignment passing downstream of the river confluence. The BiH side will construct the connecting roads to the new bridge including railway underpass by their own budget before the cabinet decision for this project in Japan.

(Annex-1)

The Project for Reconstruction of the Main Bridges on Road Network in Bosnia and Herzegovina

The Sites of the Project

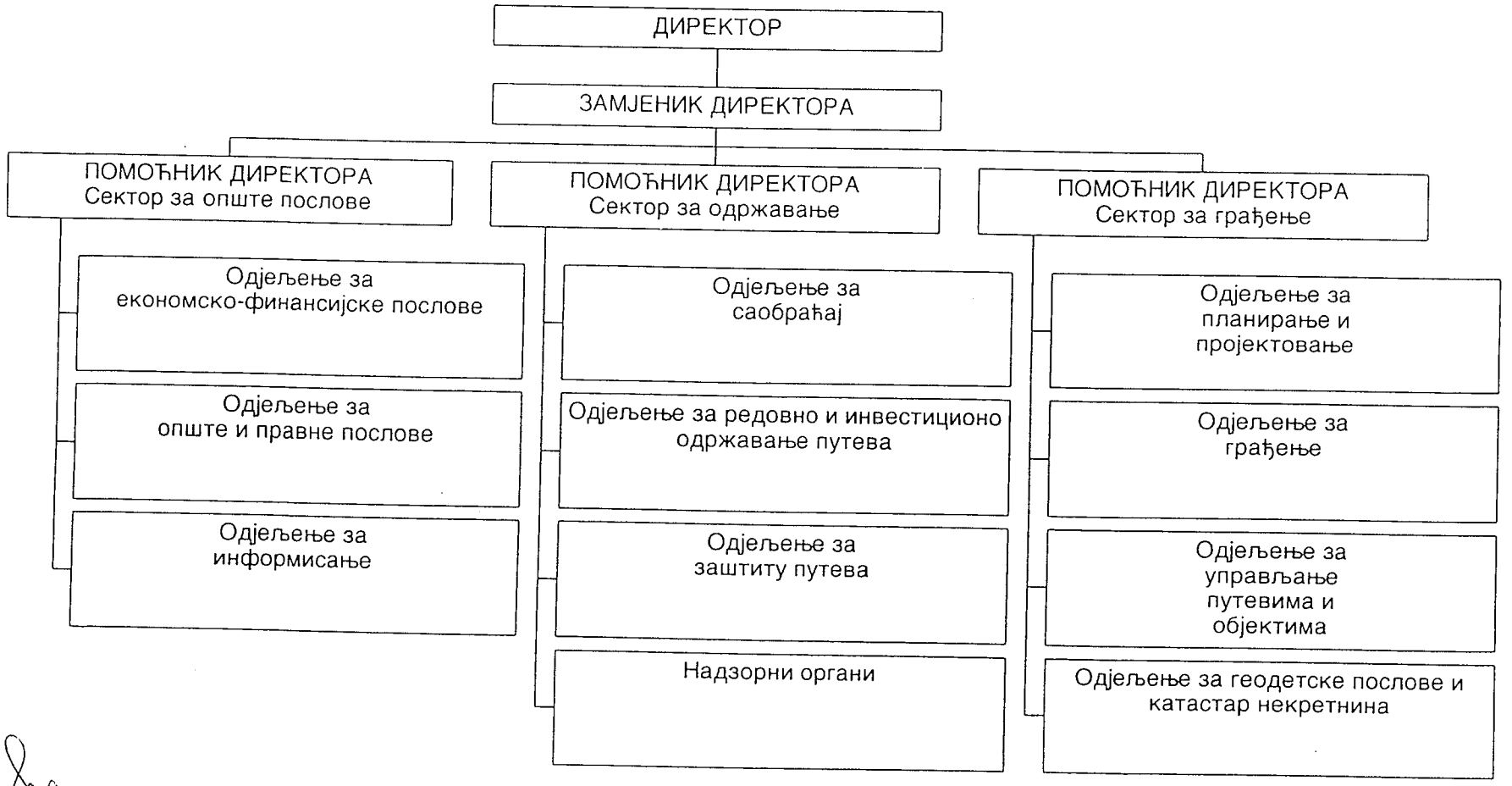


ORGANIZATIONAL CHART

РЕПУБЛИКА СРПСКА
МИНИСТАРСТВО САОБРАЋАЈА И ВЕЗА

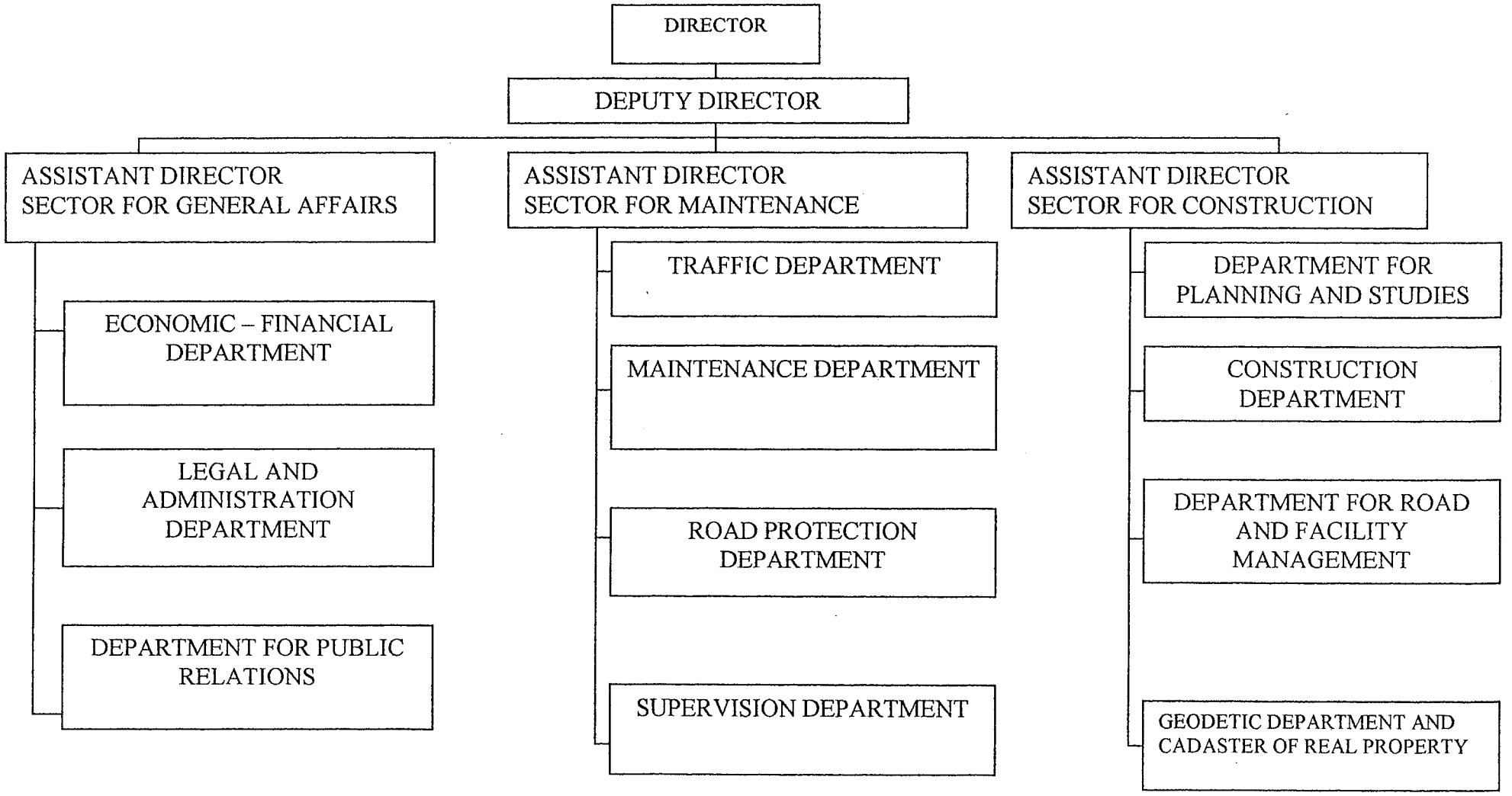
РЕПУБЛИЧКА ДИРЕКЦИЈА ЗА ПУТЕВЕ

ОРГАНИЗАЦИОНА ШЕМА



REPUBLIC OF SRPSKA
MINISTRY OF TRANSPORT AND COMMUNICATION

ROAD DIRECTORATE
ORGANIZATION CHART



(Annex-3)

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 Japanese consulting firms.

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 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 cost 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 through 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 registered consulting firms. JICA selects firms based on proposals submitted by interested firms. The firms selected carry out a Basic Design Study and write a report, based upon terms of reference set by JICA.

The consulting firms used for the Study 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 procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors 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, 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 the 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 of Japanese taxpayers.

5) Undertakings required to 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 expense 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 supply of the products and services under the Verification 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 Arrangement (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 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
1	To secure land including de-mining		●
2	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		●
3	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 customs clearance of the products at the port of disembarkation		●
3)	Internal transportation from the port of disembarkation to the project site	●	
4	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		●
5	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		●
6	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
7	To bear all the expense, other than those to be borne by the Grant Aid, necessary for construction of the facilities		●

РЕПУБЛИКА СРПСКА
МИНИСТАРСТВО САОБРАЋАЈА И ВЕЗА
РЕПУБЛИЧКА ДИРЕКЦИЈА ЗА ПУТЕВЕ
БАЊА ЛУКА

Адреса: Васе Пелагића 10 ☎ 051/309-128 ☎ faks: 051/308-316

Број 03-345-4863/02
Бања Лука, 15.11.2002.

О В Л А Ш Т Е Њ Е

Овлашћује се НЕБОЈША ПРОСТРАН, дипл.инж.грађ. да у име Републичке дирекције за путеве може потписати усаглашени текст Записника о почетном извјештају за пројекат "Реконструкција мостова на путевима Босне и Херцеговине".

Пројекат у име Владе Јапана припрема ЈИЦА а имплементацију врши у сарадњи са Министарством саобраћаја и веза Републике Српске и Министарством промета и комуникација Федерације БиХ.

Замјеник директора

Драган Михајловић

Minutes of Discussions
on the Basic Design Study
on the Project for Reconstruction of Main Bridges on the Road Network
in Bosnia and Herzegovina
(Explanation on Draft Report)

In November 2002, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Reconstruction of Main Bridges on Road Network (hereinafter referred to as "the Project") to Bosnia and Herzegovina (hereinafter referred to as "BiH"), and through discussions, field survey and technical examination of the results in Japan, JICA prepared the draft report of the study on the two bridges in the Federation of Bosnia and Herzegovina (hereinafter referred to as "the FBH") and the interim report on the two bridges in the Republic of Srpska (hereinafter referred to as "the RS").

In order to explain and to consult with the officials concerned of the Government of BiH and the FBH on the components of the draft report and with the officials concerned of the Government of the RS on the components of the interim report, JICA sent to the BiH the Basic Design Explanation Team (hereinafter referred to as "the Team"), headed by Mr. Kenshiro Tanaka, an officer of the Third Project Management Division, the Grant Aid Management Department, JICA, from February 27 to March 7, 2003.

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

Sarajevo, March 5, 2003

Kenshiro TANAKA
Leader
Basic Design Explanation Team
Japan International Cooperation Agency

Lidija TOPIC
Deputy Minister
Ministry of Foreign Affairs
Bosnia and Herzegovina

Branko DOKIĆ
Minister
Ministry of Communications and Transport
Bosnia and Herzegovina

Arif DILBEROVIĆ
Acting General Director, Road Directorate
Federation of Bosnia and Herzegovina

Dragan MIHAJLOVIĆ
Deputy Director, Road Directorate
Ministry of Transport and Communications
Republic of Srpska

ATTACHMENT

1. Components of the Reports

The Government of BiH and the FBH agreed and accepted in principle the components of the draft report explained by the Team.

The Government of BiH and the RS agreed and accepted in principle the components of the interim report, based on the inception report submitted in last November, explained by the Team.

2. Japan's Grant Aid Scheme

The BiH and both entities' sides understand the Japan's Grant Aid scheme and the necessary measures to be taken by the Government of the BiH and both entities as explained by the Team and described in ANNEX-3 and ANNEX-4 of the Minutes of Discussions signed by both sides on November 18, 2002.

3. Schedule of the Study

The consultants will continue further natural condition survey (geological and topographical survey) in the RS after thaw and carry out the comparative study on the alternative routes of the Doboj Bridge and the Modrica Bridge. The BiH side shall inform the team of the cost of the implementation of the both bridges undertaken by the BiH side, which are the cost of the connecting roads to the new bridges including railway underpass and the land acquisition, for the comparative study.

JICA will prepare the draft report for the two bridges in the RS and dispatch a mission to BiH in order to explain its components around June, 2003.

JICA will complete the final report in accordance with the confirmed item and send it to the Government of the BiH by July, 2003.

4. Other Relevant Issues

4-1. The BiH side shall construct the connection roads, temporary roads and temporary bridges before the implementation of the Project and remove temporary roads and temporary bridges soon after the implementation of the Project by their own budget.

- The BiH side shall construct the detour road and maintain the ex-railway bridge to convert into temporary road bridge at the site of the Osanica Bridge until March 2004, which is the beginning of the construction of the Osanica Bridge.
- The BiH side shall construct the temporary bridge at the site of the Bogatici Bridge by March, 2004, and remove it around November, 2004, after the completion of the construction of the Bogatici Bridge.
- The BiH side shall manage the traffic at the site of two bridges in the FBH.
- The BiH side shall complete the relocation of existing utilities (power and communication lines, water lines) by the beginning of the construction work.

4-2. The BiH side shall obtain the approval of the construction and EIA (Environmental Impact Assessment) of two bridges in the FBH by the middle of October, 2003.

4-3. The BiH side shall secure the land of the construction yards as well as the land fill areas of solid waste disposal from demolishing works of the existing bridges by the end of January, 2004.

4-4. The BiH side shall secure the necessary budget and personnel for the implementation of the project as described in the items from 4-1 to 4-3 in detail and for the maintenance of the facilities.

4-5. The mine and UXO inspection and clearance necessary for the construction of two bridges (including temporary usage for construction yards, detour, etc.) in the FBH has been completed. Hence, the land for the proposed bridges and approach roads are qualified as mine and UXO free by the BiH Mine Action Center (BiHMAC). During the detailed design stage and the construction stage, the FBH side shall obtain the certificates from the BiHMAC to confirm that the proposed sites are free from mines and UXOs, if necessary.

5. Other Relevant Data

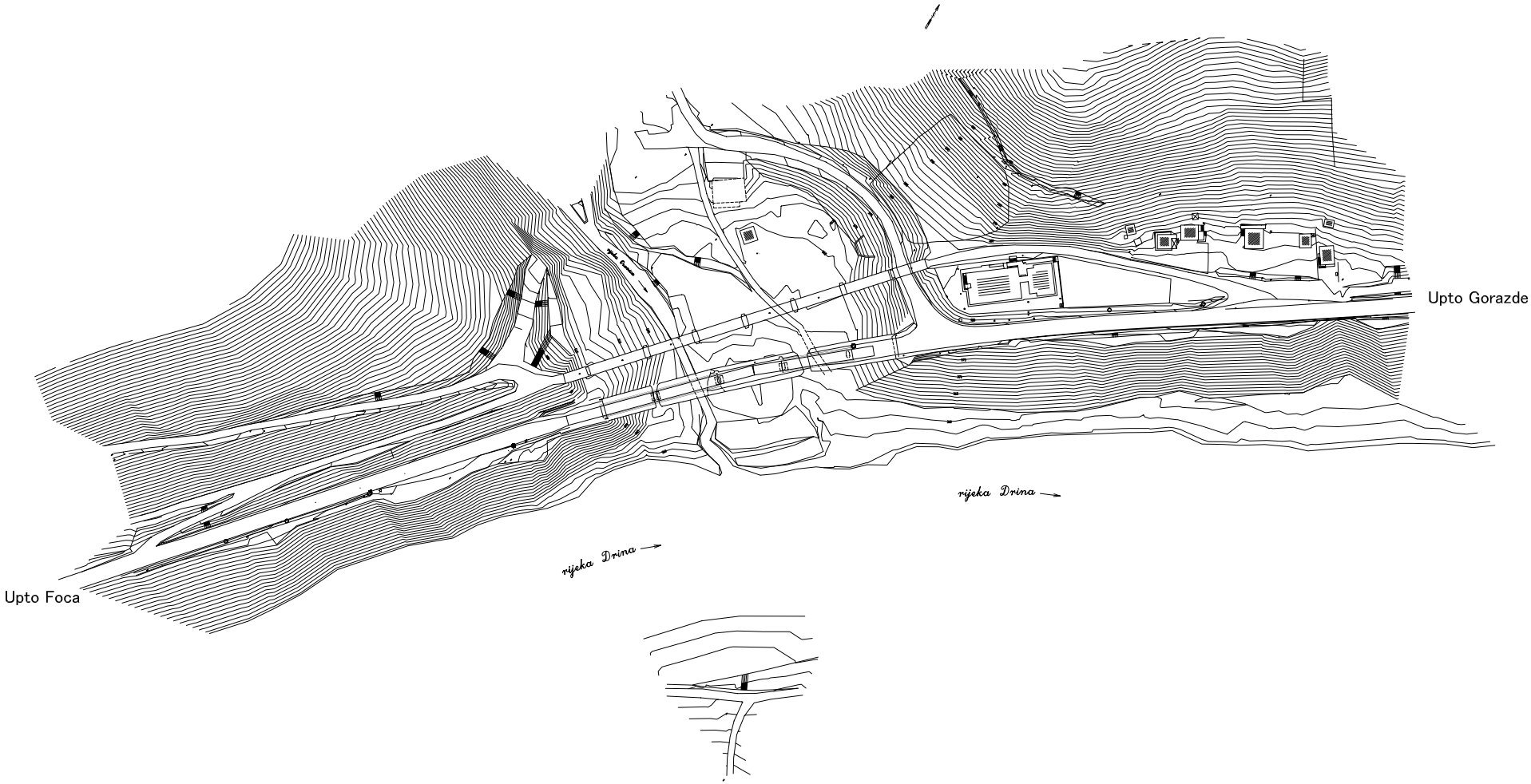
5 - 1 TOPOGRAPHICAL SURVEY

5 - 2 GEOTECHNICAL INVESTIGATION

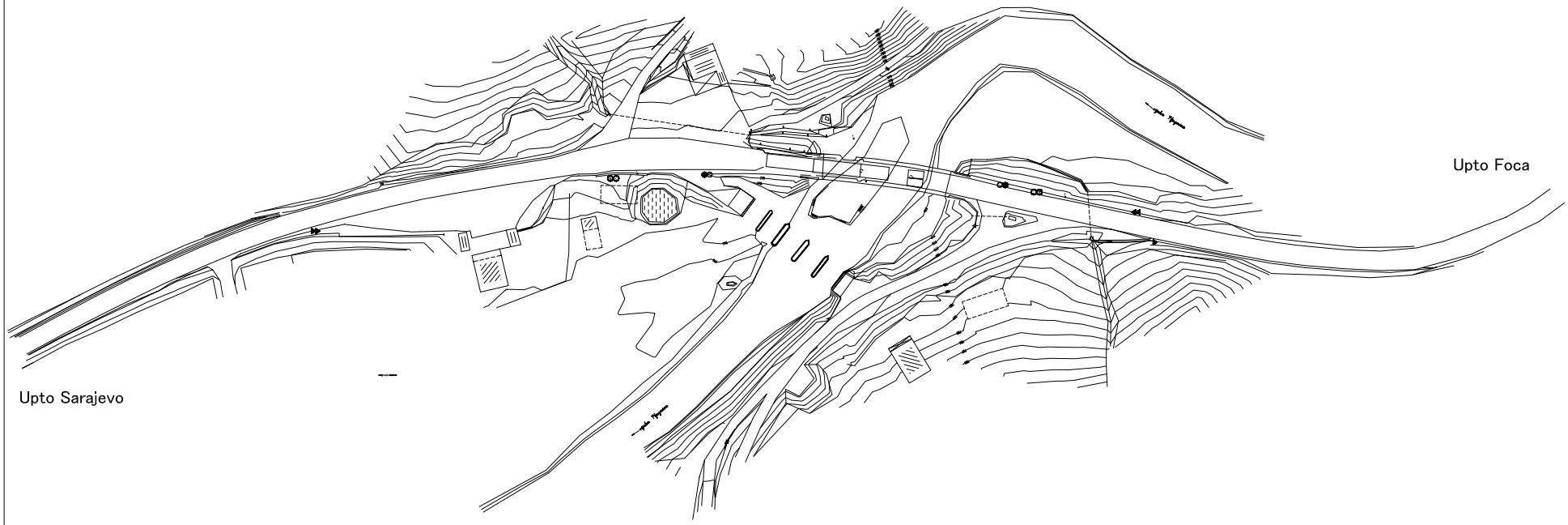
5 - 3 TRAFFIC VOLUME SURVEY

5 - 4 STRUCTURAL SOUNDNESS OF EXISTING BRIDGES

Osanica Birdge PLAN



Bogatici Birdge PLAN



PROFILE OF THE BOREHOLE 1

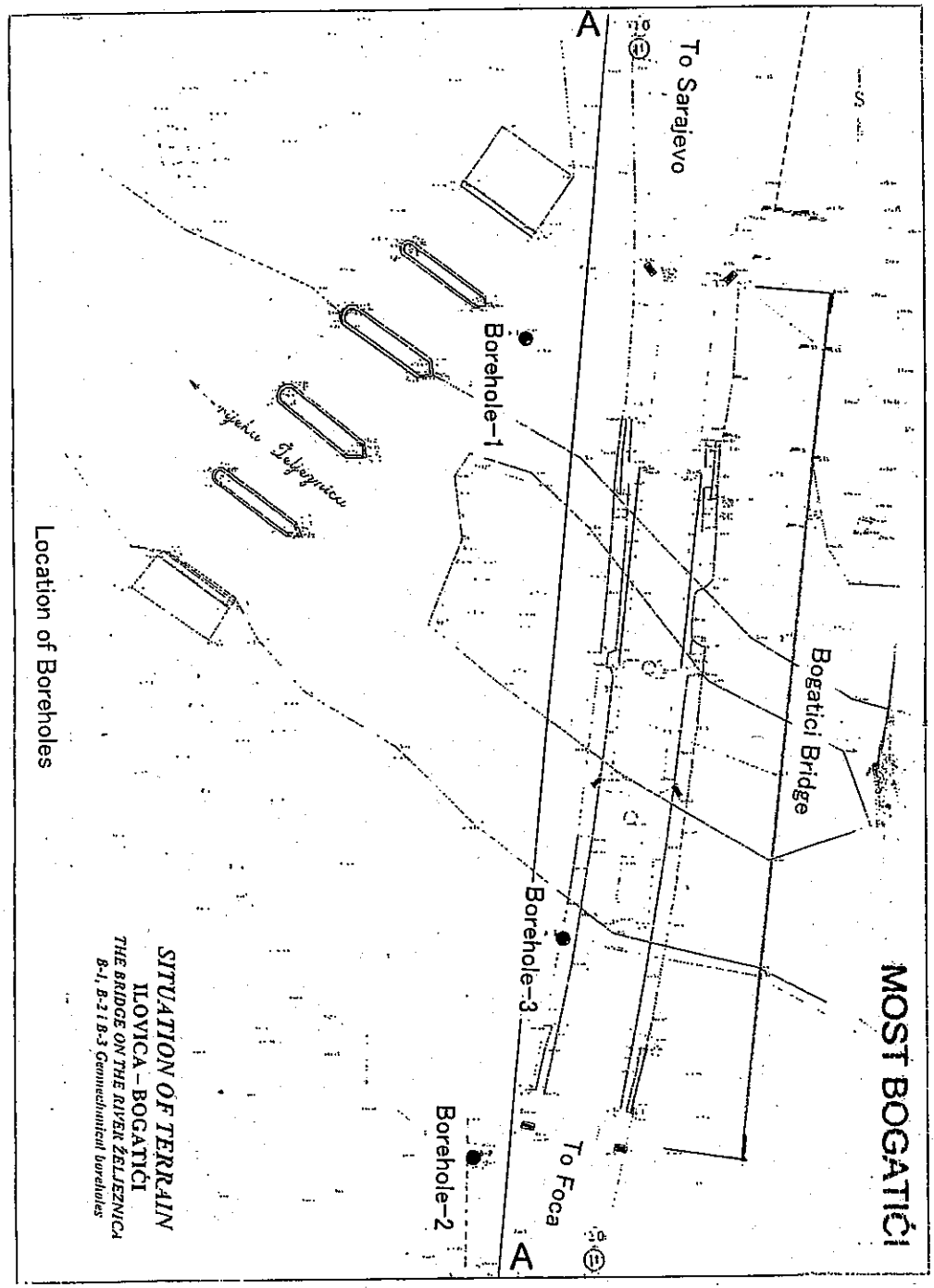
Vertical R 1 : 200

PLACE AND LOCATION:	Ilovica – Bogatići, Bridge on the river Željeznica		
CONTRACTOR OF BORING:	„EARTH" Tuzla	DIAMETER OF BOREHOLE:	101 mm
LOCATED BY:	Investitor	COORDINATES:	
DETERMINATED BY:	Ph.D. Dr M.Stević Mustafa Mulalić, B.Sc.	y=	
DATE OF BORING:	19.-22.11.2002.year	x=	
		z=	776,14

GEOTEHNICAL DATA				GEODESY DATA	
DIAGRAM OF STATIC PENETRATION SPP NUMBER OF STROKES 5 10 15 20 25 30 35 40	DESCRIPTION OF MATERIAL	GRAPHIC REVIEW	HYDRO-GEOLOGICAL CHARACTERISTICS	DEPTH (m)	THICKNESS (m)
5, 23, 22, 38, 18, 15, 12, 19, 36, 41, 44, 42, 39, 40, 52, 50, 51, 50, 57, 54	Brown and dark red dusty clay with sandy and pebbly layers, middle hard			2,4	2,4
	Brown and grey-green sandy clay with crumbled and embedded limestone, middle hard			5,4	3,0
	Conglomerates with crushed limestone and clay connective tissue, well consolidated, hard			8,8	3,4
	Dark red mica siltstones with sandstones layers, hard			17,5	8,7
	Dolomite sandstones, grey-red, hard and dry			21,5	4,0

PV – Water appearance SV – Static level ▣ - Undisturbed sample

ENCLOSURE 2.1.



SITUATION OF TERRAIN
ILOVICA – BOGATIĆI
THE BRIDGE ON THE RIVER ŽELJEZNICA
B-1, B-2 I B-3 Gennechanical boreholes

PROFILE OF THE BOREHOLE 2

Vertical R 1 : 200

PLACE AND LOCATION: *Ilovica – Bogatići, Bridge on the river Željeznica*

CONTRACTOR OF BORING: *„EARTH" Tuzla*

DIAMETER OF BOREHOLE: *101 mm*

LOCATED BY: *Investitor*

COORDINATES:

DETERMINATED BY: *Ph.D. M.Stević, Mustafa Mulalić, B.Sc.*

y=

x=

DATE OF BORING: *23-25.11.2002.year*

z= *780,28*

GEOTEHNICAL DATA: DIAGRAM OF STATIC PENETRATION SPP – NUMBER OF STROKES (5 10 15 20 25 30 35 40)	DESCRIPTION OF MATERIAL	GRAPHIC REVIEW	HYDRO-GEOLOGICAL CHARACTERISTICS	GEODESY DATA: DEPTH (m)	GEODESY DATA: THICKNESS (m)
	Brown and dark red dusty clay with sandy and pebbly layers, middle hard			5,3	5,3
	Brown and grey-green sandy clay with crumbled and embedded limestone, middle hard			8,0	2,7
	Conglomerates with crushed limestone and clay connective tissue, well consolidated, hard			11,6	3,6
	Dark red mica siltstones with sandstones layers, hard			20,5	8,9
	Dolomite sandstones, grey-red, hard and dry			25,0	4,5

PV – *Water appearance* SV – *Static level* ▣ – *Undisturbed sample*

ENCLOSURE 2.2.

PROFILE OF THE BOREHOLE 3

Vertical R 1 : 200

PLACE AND LOCATION: *Ilovica – Bogatići, Bridge on the river Željeznica*

CONTRACTOR OF BORING: *„EARTH" Tuzla*

DIAMETER OF BOREHOLE: *101 mm*

LOCATED BY: *Investitor*

COORDINATES:

DETERMINATED BY: *Ph.D. Dr M.Stević, Mustafa Mulalić, B.Sc.*

y=

x=

DATE OF BORING: *23.-25.11.2002.year*

z= *775,95*

GEOTEHNICAL DATA: DIAGRAM OF STATIC PENETRATION SPP – NUMBER OF STROKES (5 10 15 20 25 30 35 40)	DESCRIPTION OF MATERIAL	GRAPHIC REVIEW	HYDRO-GEOLOGICAL CHARACTERISTICS	GEODESY DATA: DEPTH (m)	GEODESY DATA: THICKNESS (m)
	Brown and dark red dusty clay with sandy and pebbly layers, middle hard			2,0	2,0
	Brown and grey-green sandy clay with crumbled and embedded limestone, middle hard			4,9	2,9
	Conglomerates with crushed limestone and clay connective tissue, well consolidated, hard			7,5	2,6
	Dark red mica siltstones with sandstones layers, hard			17,1	9,6
	Dolomite sandstones, grey-red, hard and dry			21,0	3,9

PV – *Water appearance* SV – *Static level* ▣ – *Undisturbed sample*

ENCLOSURE 2.3.

Appendix 5-3 Traffic Volume Survey (1) Osanica Bridge

Date: 21, November, 2002 (Thursday) Location: Osanica Bridge

Time	Motorcycle	Passenger Cars	Buses		Trucks		Tractor, Roadroller etc	Total	Total of each direction		Bicycle	Pedestrian	Total	Total of each direction	
			Mini Bus	Bus	2axles, 3axles	4 or more axles			To Gorazde	To Foca				To Gorazde	To Foca
7:00 - 8:00	0	40	5	2	2	10	2	61	28	33	0	0	0	0	0
8:00 - 9:00	0	90	8	2	1	2	1	104	52	52	0	0	0	0	0
9:00 - 10:00	0	76	13	4	11	2	3	109	52	57	0	2	2	2	0
10:00 - 11:00	0	76	8	0	7	0	4	95	30	65	0	0	0	0	0
11:00 - 12:00	0	106	14	1	8	6	1	136	71	65	0	0	0	0	0
12:00 - 13:00	0	95	13	4	3	3	1	119	62	57	0	0	0	0	0
13:00 - 14:00	0	91	12	2	3	2	2	112	64	48	0	0	0	0	0
14:00 - 15:00	0	86	11	2	6	7	2	114	57	57	0	0	0	0	0
15:00 - 16:00	0	99	6	6	8	8	3	130	71	59	0	0	0	0	0
16:00 - 17:00	0	40	3	1	1	7	1	53	28	25	0	0	0	0	0
17:00 - 18:00	0	65	4	0	3	5	0	77	43	34	0	0	0	0	0
18:00 - 19:00	0	60	3	4	2	4	0	73	28	45	0	0	0	0	0
Sub Total	0	924	100	28	55	56	20	1183	586	597	0	2	2	2	0
19:00 - 20:00	0	46	1	1	2	1	1	52	23	29	0	0	0	0	0
20:00 - 21:00	0	33	0	1	0	0	0	34	16	18	0	0	0	0	0
21:00 - 22:00	0	35	0	1	0	1	0	37	16	21	0	0	0	0	0
22:00 - 23:00	0	24	1	2	0	1	0	28	15	13	0	0	0	0	0
23:00 - 0:00	0	27	2	1	1	0	1	32	18	14	0	0	0	0	0
0:00 - 1:00	0	15	1	1	2	4	1	24	14	10	0	0	0	0	0
1:00 - 2:00	0	14	0	0	0	0	0	14	8	6	0	0	0	0	0
2:00 - 3:00	0	7	1	0	1	0	0	9	5	4	0	0	0	0	0
3:00 - 4:00	0	3	0	0	2	0	0	5	3	2	0	0	0	0	0
4:00 - 5:00	0	9	1	0	0	0	0	10	5	5	0	0	0	0	0
5:00 - 6:00	0	20	3	4	3	4	1	35	16	19	0	0	0	0	0
6:00 - 7:00	0	20	0	0	0	0	0	20	10	10	0	0	0	0	0
Sub Total	0	253	10	11	11	11	4	300	149	151	0	0	0	0	0
Grand Total	0	1177	110	39	66	67	24	1483	735	748	0	2	2	2	0

Date: 22, November, 2002 (Friday) Location: Osanica Bridge

Time	Motorcycle	Passenger Cars	Buses		Trucks		Tractor, Roadroller etc	Total	Total of each direction		Bicycle	Pedestrian	Total	Total of each direction	
			Mini Bus	Bus	2axles, 3axles	4 or more axles			To Gorazde	To Foca				To Gorazde	To Foca
7:00 - 8:00	0	63	12	5	5	4	0	89	49	40	0	3	3	3	0
8:00 - 9:00	0	60	4	2	14	5	2	87	46	41	0	1	1	0	1
9:00 - 10:00	0	97	13	3	10	2	2	127	77	50	0	0	0	0	0
10:00 - 11:00	0	83	6	14	9	1	7	120	54	66	0	0	0	0	0
11:00 - 12:00	0	99	6	1	15	0	6	127	65	62	1	0	1	1	0
12:00 - 13:00	3	112	10	3	15	1	1	145	70	75	0	0	0	0	0
13:00 - 14:00	0	50	11	2	7	3	2	75	32	43	0	0	0	0	0
14:00 - 15:00	0	123	12	3	15	3	1	157	81	76	0	0	0	0	0
15:00 - 16:00	0	75	6	6	3	4	0	94	35	59	0	0	0	0	0
16:00 - 17:00	0	90	1	1	2	3	1	98	47	51	0	0	0	0	0
17:00 - 18:00	0	94	4	2	3	2	1	106	51	55	0	0	0	0	0
18:00 - 19:00	0	40	5	1	4	4	0	54	27	27	0	0	0	0	0
Sub Total	3	986	90	43	102	32	23	1279	634	645	1	4	5	4	1
19:00 - 20:00	0	55	3	1	3	2	0	64	35	29	0	0	0	0	0
20:00 - 21:00	0	57	4	0	2	0	0	63	32	31	0	0	0	0	0
21:00 - 22:00	0	35	3	4	4	3	5	54	31	23	0	0	0	0	0
22:00 - 23:00	0	48	4	4	2	0	0	58	30	28	0	0	0	0	0
23:00 - 0:00	0	26	1	1	0	0	0	28	16	12	0	0	0	0	0
0:00 - 1:00	0	21	3	1	2	0	0	27	18	9	0	0	0	0	0
1:00 - 2:00	0	11	1	1	3	2	0	18	9	9	0	0	0	0	0
2:00 - 3:00	0	12	1	1	1	1	0	16	9	7	0	0	0	0	0
3:00 - 4:00	0	9	1	2	2	0	0	14	9	5	0	0	0	0	0
4:00 - 5:00	0	9	0	1	1	1	0	12	6	6	0	0	0	0	0
5:00 - 6:00	0	11	2	1	2	0	0	16	10	6	0	0	0	0	0
6:00 - 7:00	0	18	0	0	0	0	0	18	10	8	0	0	0	0	0
Sub Total	0	312	23	17	22	9	5	388	215	173	0	0	0	0	0
Grand Total	3	1298	113	60	124	41	28	1667	849	818	1	4	5	4	1

Traffic Volume Survey (2) Bogatici Bridge

Date: 21, November, 2002 (Thursday) Location: Bogatici Bridge

Time	Motorcycle	Passenger Cars	Buses		Trucks		Tractor, Roadroller etc	Total	Total of each direction		Bicycle	Pedestrian	Total	Total of each direction	
			Mini Bus	Bus	2axles, 3axles	4 or more axles			To Foca	To Sarajevo				To Foca	To Sarajevo
8:00 - 9:00	0	106	16	3	9	1	0	135	82	53	0	0	0	0	0
9:00 - 10:00	0	104	8	3	6	2	0	123	71	52	0	0	0	0	0
10:00 - 11:00	0	115	12	1	5	3	0	136	77	59	0	0	0	0	0
11:00 - 12:00	0	76	9	4	3	0	0	92	59	33	0	0	0	0	0
12:00 - 13:00	0	134	10	1	14	5	0	164	76	88	0	0	0	0	0
13:00 - 14:00	0	80	12	5	7	2	0	106	42	64	0	0	0	0	0
14:00 - 15:00	0	120	4	5	2	2	0	133	55	78	0	0	0	0	0
15:00 - 16:00	0	108	5	2	3	1	0	119	54	65	0	0	0	0	0
16:00 - 17:00	0	73	18	3	12	5	0	111	49	62	0	0	0	0	0
17:00 - 18:00	0	89	4	0	0	2	0	95	46	49	0	0	0	0	0
18:00 - 19:00	0	64	7	4	7	8	0	90	38	52	0	0	0	0	0
19:00 - 20:00	0	22	1	1	1	3	0	28	5	23	0	0	0	0	0
Sub Total	0	1091	106	32	69	34	0	1332	654	678	0	0	0	0	0
20:00 - 21:00	0	38	0	2	1	0	0	41	20	21	0	0	0	0	0
21:00 - 22:00	0	46	1	1	1	1	0	50	28	22	0	0	0	0	0
22:00 - 23:00	0	46	1	0	0	2	0	49	18	31	0	0	0	0	0
23:00 - 0:00	0	33	6	0	0	2	0	41	16	25	0	0	0	0	0
0:00 - 1:00	0	31	1	0	1	1	0	34	19	15	0	0	0	0	0
1:00 - 2:00	0	23	6	0	0	1	0	30	12	18	0	0	0	0	0
2:00 - 3:00	0	25	0	0	0	0	0	25	10	15	0	0	0	0	0
3:00 - 4:00	0	8	3	0	0	0	0	11	3	8	0	0	0	0	0
4:00 - 5:00	0	30	6	2	2	1	0	41	9	32	0	0	0	0	0
5:00 - 6:00	0	35	1	4	3	4	0	47	22	25	0	0	0	0	0
6:00 - 7:00	0	42	1	4	1	0	0	48	22	26	0	0	0	0	0
7:00 - 8:00	0	65	3	2	4	2	0	76	45	31	0	0	0	0	0
Sub Total	0	422	29	15	13	14	0	493	224	269	0	0	0	0	0
Grand Total	0	1513	135	47	82	48	0	1825	878	947	0	0	0	0	0

Date: 22, November, 2002 (Friday) Location: Bogatici Bridge

Time	Motorcycle	Passenger Cars	Buses		Trucks		Tractor, Roadroller etc	Total	Total of each direction		Bicycle	Pedestrian	Total	Total of each direction	
			Mini Bus	Medium Bus over	2axles, 3axles	4 or more axles			To Foca	To Sarajevo				To Foca	To Sarajevo
8:00 - 9:00	0	87	17	4	7	0	0	115	68	47	0	0	0	0	0
9:00 - 10:00	0	102	12	3	4	0	0	121	59	62	0	0	0	0	0
10:00 - 11:00	0	100	10	3	15	2	0	130	74	56	0	1	1	1	0
11:00 - 12:00	0	78	7	1	1	0	0	87	42	45	0	0	0	0	0
12:00 - 13:00	0	98	8	1	4	1	0	112	47	65	0	0	0	0	0
13:00 - 14:00	0	112	20	10	13	3	0	158	86	72	0	0	0	0	0
14:00 - 15:00	0	131	6	4	11	0	0	152	71	81	0	0	0	0	0
15:00 - 16:00	0	120	17	2	5	4	0	148	65	83	0	0	0	0	0
16:00 - 17:00	0	105	9	7	6	3	0	130	57	73	0	0	0	0	0
17:00 - 18:00	0	84	11	3	8	3	0	109	43	66	0	0	0	0	0
18:00 - 19:00	0	87	16	4	9	2	0	118	47	71	0	0	0	0	0
19:00 - 20:00	0	111	14	4	12	1	0	142	67	75	0	0	0	0	0
Sub Total	0	1215	147	46	95	19	0	1522	726	796	0	1	1	1	0
20:00 - 21:00	0	80	7	3	7	1	0	98	50	48	0	0	0	0	0
21:00 - 22:00	0	45	2	2	2	1	0	52	22	30	0	0	0	0	0
22:00 - 23:00	0	40	2	0	1	1	0	44	19	25	0	0	0	0	0
23:00 - 0:00	0	48	3	2	1	0	0	54	27	27	0	0	0	0	0
0:00 - 1:00	0	36	0	1	0	0	0	37	18	19	0	0	0	0	0
1:00 - 2:00	0	24	1	0	0	0	0	25	12	13	0	0	0	0	0
2:00 - 3:00	0	28	0	0	1	0	0	29	15	14	0	0	0	0	0
3:00 - 4:00	0	6	2	2	0	1	0	11	4	7	0	0	0	0	0
4:00 - 5:00	0	24	4	3	3	0	0	34	20	14	0	0	0	0	0
5:00 - 6:00	0	38	5	2	3	2	0	50	24	26	0	0	0	0	0
6:00 - 7:00	0	54	3	4	5	1	0	67	34	33	0	0	0	0	0
7:00 - 8:00	0	78	6	3	5	2	0	94	46	48	0	0	0	0	0
Sub Total	0	501	35	22	28	9	0	595	291	304	0	0	0	0	0
Grand Total	0	1716	182	68	123	28	0	2117	1017	1100	0	1	1	1	0

Appendix 5-4 Investigation Sheets of Osanica and Bogatici Bridges

1) Osanica Bridge

			Osanica Bridge	
Bridge Data	Style		RC 5-span Continuous T-girder Bridge	
	Length		129.660	
	Span		22,400+3@28,000+22,400	
	Width	Total	10.700	
		Roadway	7.000	
		Sidewalk	1,850 (effective width 1,450) × 2	
	Abutment		Gravity-Concrete Abutment	
	Pier		T type Pier	
	Foundation		Spread Foundation	
Status Damages	Concrete Deck Slab		The spans between abutment A1 and pier P2 (2 spans) were felled down by bombardment. The concrete deck slab between piers P3 and P4 has a big hole also caused by bombardment.	
	Main Girder		The girder A1 section between piers P1 and P2 was destroyed, as well as the deck slab. The section between piers P3 and P4 was also damaged by bombardment and corroded reinforcement bars are exposed.	
	Abutment		Some cracks appear on the back wall of the abutment on Foca side, due to the bridge fall by bombardment. Although the structure is deformed at some parts, the surface of both abutments is protected by pitched stone. Serious damage is not seen, except for deterioration of bridge sheets and stripping of stone at some places.	
	Pier		Except for the pier P1 which was destroyed completely by bombardment, all the piers have some damage such as removed surface concrete and some cracks at the bottom of piers by the bending force caused by bombardment.	
	Foundation		Spread Foundation	
Inspection	Schmidt hammer		Superstructure	Deck slab : 519 kgf/cm2
			Substructure	Pier column : 505 kgf/cm2 Pier foundation : 515 kgf/cm2
	Neutralization		Depth : 5~10mm (at fallen girder and pier)	
Durability *			Rank : E (Dangerous)	

* : Durability is assessed in accordance with the criteria established by the Tokyo Metropolitan Government.

2) Bogatici Bridge

			Bogatici Bridge	
Bridge Data	Style		RC 5-span Continuous T-girder Bridge	
	Length		43.250	
	Span		13,000+16,250+13,000	
	Width	Total	8.300	
		Roadway	6.000	
		Sidewalk	1,150 (effective width 750) × 2	
	Abutment		Concrete Abutment	
	Pier		RC Column type Pier	
	Foundation		Unknown	
Status Damages	Superstructure		The slabs of both end spans, which were bombarded during the war, have totally deteriorated due to the lack of repair work and maintenance thereafter. Isolation lime seepage through the cracks on the bottom surface of the slab is observed.	
	Abutment		It is assumed that the foundation of both abutments is of spread type, but the bottom of the foundation is exposed due to local scouring and insufficiency of embedment depth. Moreover, bridge sheets and main walls which were damaged by bombardment, are now in a deteriorated condition due the absence of maintenance work for a long period.	
	Pier		Serious damage of the pier columns is not observed, but some flaked concrete surfaces caused by bombardment are still apparent . The slabs and columns are connected solidly in the form of Pilt type structure. For this reason, columns cannot be separated from damaged deck slabs and re-used.	
	Foundation		Unknown	
Inspection	Schmidt hammer		Superstructure	Deck slab : 370 kgf/cm2
			Substructure	Pier column : 400 kgf/cm2 Pier foundation : 480 kgf/cm2
	Neutralization		Not appricable	
Durability			Rank : D (Damaged)	

* : Durability is assessed in accordance with the criteria established by the Tokyo Metropolitan Government.